

ANNUAL REPORT 2016-2017

FINANCIAL YEAR

DEPARTMENT OF SCIENCE AND TECHNOLOGY

Vote No. 30



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA



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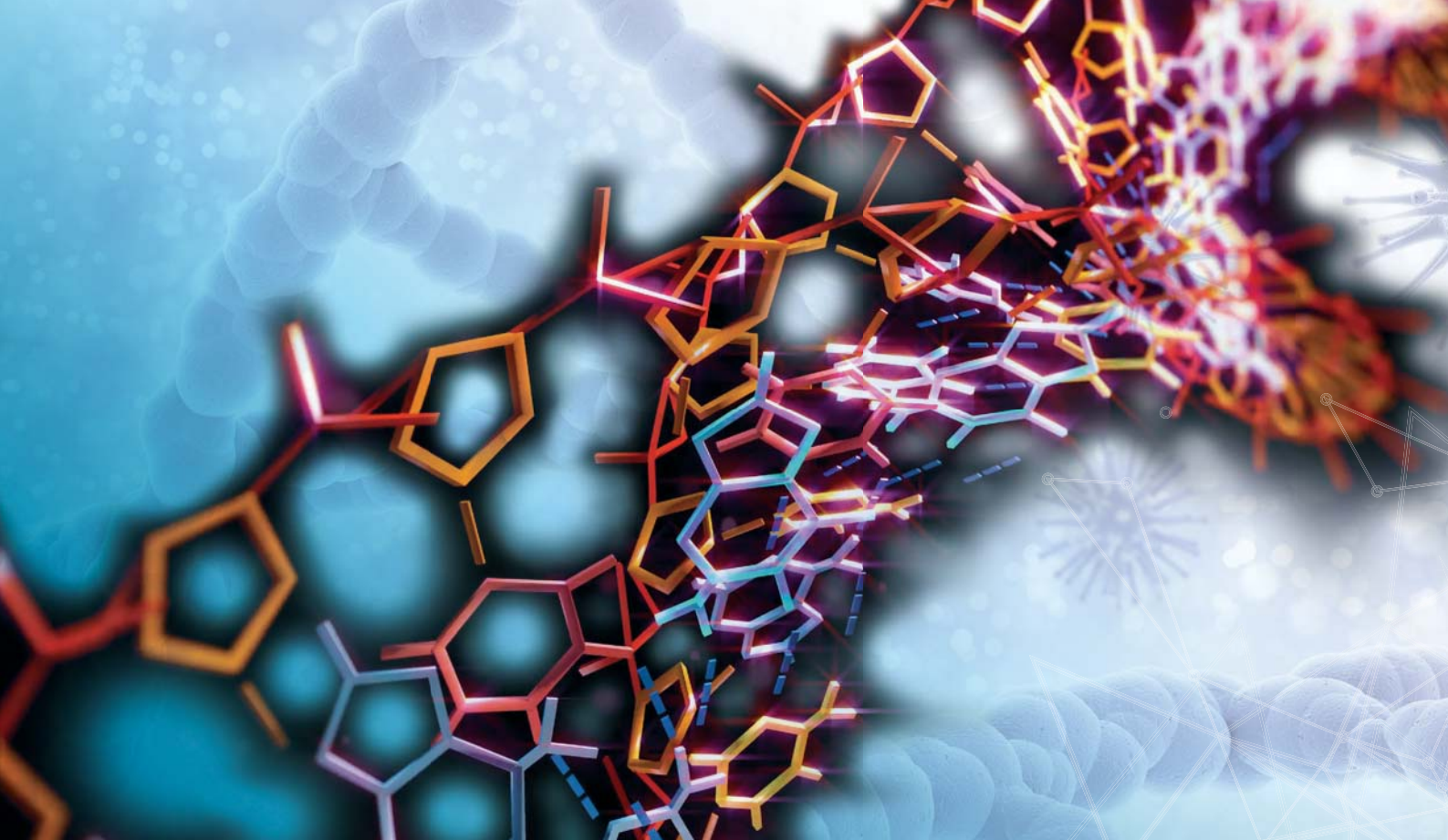
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PART A

GENERAL INFORMATION

1. CONTACT INFORMATION

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2. LIST OF ABBREVIATIONS

AAAS	American Association for the Advancement of Science
ACCESS	Applied Centre for Climate and Earth Systems Science
AG	Auditor-General
AISA	Africa Institute of South Africa
AM	additive manufacturing
AMI	Advanced Metals Initiative
APP	Annual Performance Plan
ARC	Agricultural Research Council
ASCA	Agulhas System Climate Array
ASSAf	Academy of Science of South Africa
AU	African Union
AVN	African Very Long Baseline Interferometry Network
BIDC	Biomanufacturing Industry Development Centre
BGP	Beef Genomics Programme
BRICS	Brazil, Russia, India, China and South Africa
CARRS	Corrective Action Request and Report System
CFI	Commercialisation Framework Initiative
CHPC	Centre for High Performance Computing
CoE	Centre of Excellence
CPUT	Cape Peninsula University of Technology
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DBE	Department of Basic Education
DDG	deputy director-general
DEA	Department of Environmental Affairs
DHET	Department of Higher Education and Training
DIRISA	Data Intensive Research Initiative of South Africa
DPME	Department of Planning, Monitoring and Evaluation
DST	Department of Science and Technology
DTI	Department of Trade and Industry
EDCTP	European and Developing Countries Clinical Trials Partnership
ENE	Estimates of National Expenditure
ERM	Enterprise Risk Management
ESASTAP	European South African Science and Technology Advancement Programme
EO	Earth observation
EU	European Union
Exco	The DST Executive Committee
GERD	gross expenditure on research and development
HCD	human capital development
HDI	historically disadvantaged institutions
HEI	higher education institutions
HSRC	Human Sciences Research Council
HySA	Hydrogen South Africa
ICSU	International Council for Science
ICT	information and communication technology
IDC	Industrial Development Corporation
IK	indigenous knowledge
IKS	indigenous knowledge systems
IKS Bill	The Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill
IP	intellectual property

2. LIST OF ABBREVIATIONS (CONTINUED)

IPR Act	Intellectual Property from Publicly Financed Research and Development Act
ISI	Institute for Scientific Information
MEA	membrane electrode assembly
MMV	Medicines for Malaria Venture
MPAT	Management Performance Assessment Tool
MTEF	Medium-Term Expenditure Framework
NACI	National Advisory Council on Innovation
NDP	National Development Plan
NICIS	National Integrated Cyberinfrastructure System
NIPMO	National Intellectual Property Management Office
NRF	National Research Foundation
NSI	national system of innovation
NSW	National Science Week
NT	National Treasury
NZG	National Zoological Gardens
OHS	occupational health and safety
OECD	Organisation for Economic Cooperation and Development
OEM	original equipment manufacturers
OWSD	Organisation for Women in Science for the Developing World
OTT	office of technology transfer
PPP	public participation programme
R&D	research and development
RDI	research, development and innovation
S&T	science and technology
SAASTA	South African Agency for Science and Technology Advancement
SACNASP	South African Council for Natural Scientific Profession
SADC	South African Development Community
SAEON	South African Environmental Observation Network
SANAS	South African National Accreditation System
SANBI	South African National Biodiversity Institute
SANSA	South African National Space Agency
SARCHI	South African Research Chairs Initiative
SARIR	South African Research Infrastructure Roadmap
SAYAS	South African Young Academy of Science
SDN	software defined networking
SEIAS	Socio Economic Impact Assessment System
SETI	science, engineering, technology and innovation
SEZ	special economic zone
SHIP	Strategic Health Innovation Partnerships
SKA	Square Kilometre Array
SME	small and/or medium enterprise
STEMI	science, technology, engineering, mathematics and innovation
STI	science, technology and innovation
TIA	Technology Innovation Agency
TLIU	Technology Localisation Implementation Unit
TLP	Technology Localisation Programme
TYIP	Ten-Year Innovation Plan
VRESM	Variable-resolution Earth System Model
WISA	Women in Science Awards

3. FOREWORD BY THE MINISTER



Mrs GNM Pandor, MP

Minister of Science and Technology

South Africa is a recognised hub of scientific and technological excellence, playing an important role in major international projects and making groundbreaking progress in new research.

After 23 years of democracy, the Department of Science and Technology and the entities that report to the Minister – the Council for Scientific and Industrial Research, the Human Sciences Research Council, the National Research Foundation, the South African National Space Agency, the Technology Innovation Agency, the Academy of Science of South Africa, and the South African Council for Natural Scientific Professions – have much to celebrate.

We have made progress in HIV/Aids prevention and treatment through the Department's collaboration with the Centre for the AIDS Programme of Research in South Africa and the Bill & Melinda Gates Foundation. The Southern African Large Telescope and the Square Kilometre Array are of global interest to astronomers. We have launched Earth observation satellites into space, made exciting finds in palaeontology, undertaken fruitful work in alternative energy technologies and made important advances in the area of fluorochemicals.

We have supported service delivery and poverty alleviation through technology applications, accelerated

government support for business innovation, and gone a long way towards ensuring that indigenous knowledge is recorded and equitably exploited.

South Africa has several geographic advantages, an abundance of natural resources, strong public and private-sector institutions, a highly skilled (though small) workforce and a large youthful population. These provide a good foundation on which to build a national system of innovation that drives inclusive and sustainable growth, and increases the country's global competitiveness.

One of the strategies the DST has developed, with strong support from global partners, is to build big science infrastructure projects. The iconic Square Kilometre Array radio telescope project, in which South Africa invested over R1 billion in 2016, is one such initiative. It brings together scientists in disciplines such as mathematics, physics, computer science and other fields working in Africa to build the largest scientific infrastructure on the continent. With global partners such as the UK, China, Japan, Italy and nine African partners this is a great example of a global scientific partnership. One of its benefits has been attracting young talented researchers and scientists from Africa and other regions of the world. For the first time there has been a reversal of the loss of talent from Africa.

3. FOREWORD BY THE MINISTER (CONTINUED)

Our science system is still relatively small compared to systems in the developed world. This is one of the reasons we have focused on local and global partnerships. We have created 15 centres of excellence as hubs that draw together a whole range of universities and science councils in partnerships to tackle challenges such as HIV/AIDS, tuberculosis, food security and malaria. We are hoping some of these centres will benefit from one of our biggest international science and innovation partnerships the European and Developing Countries Clinical Trials Partnership (EDCTP). The partnership has contributed to accelerating the development of new interventions to fight HIV/AIDS, malaria and tuberculosis. The EDCTP is a public-private partnership between 13 European and 13 Sub-Saharan African countries. The 10-year budget is €1,9bn and harnesses health innovation and technology investment.

New research infrastructure

In order to provide medium to large research infrastructure, the Department launched the country's first research infrastructure roadmap (SARIR). The Roadmap is the apex of a long and deep commitment by South Africa to infrastructure development: in the last eight years the DST has invested more than R2,7 billion in R&D infrastructure, R1,5 billion in cyber-infrastructure, and R3,5 billion in the MeerKAT and SKA project.

A sector-based bottom-up approach was used to develop the Roadmap. Six scientific domains were identified in which research infrastructure needs to be developed, namely, humans and society; health, biological and food security; Earth and environment; energy; materials and manufacturing; and physical sciences and engineering.

On the basis of a comprehensive and robust assessment process, seven research infrastructures were approved for establishment in the 2016/17 financial year: an expanded environmental observation network; a nuclear medicine research facility; a network of health and demographic surveillance sites; a national centre for digital language resources; a natural science collections facility; a shallow

marine and coastal research infrastructure; and a distributed platform for "omics" research.

We made significant progress in the construction of the MeerKAT, a precursor to the Square Kilometre Array. The first set of 16 integrated antennas, referred to as Array Release 1 (AR1), was launched in July 2016. The MeerKAT "first light" image produced by AR1 showed more than 1 300 radio galaxies in the distant universe. The previous best image (obtained with a telescope in Australia) showed only 70 radio galaxies, demonstrating that the AR1 MeerKAT is already the best radio telescope in the Southern Hemisphere. Support was also provided to local industry by ensuring that 75% of MeerKAT components were sourced locally.

We have also made strides with the Kuntunse telescope in Ghana, which has been refurbished and is now ready to do science. Part of the African Very Long Baseline Interferometry Network, it achieved a milestone with the production of its own "first light" image.

New technology

South Africa needs market development opportunities, with a sustainable value chain that will create viable technology uptake to reduce the country's balance of payments. In the reporting period, three spin-out companies (PTiP, HyPlat, GeoSun) successfully sold products/services in the local and global markets

We are creating opportunities for new industries through the Hydrogen South Africa (HySA) programme office. This office provides support to centres of competence in the commercialisation of intellectual property produced through the programme. This enables the development of high-value commercial products in the hydrogen and fuel cell technology sector through the beneficiation of the country's platinum group metal resources.

The commercialisation of intellectual property (IP) is supported through the work of the National Intellectual Property Management Office.

3. FOREWORD BY THE MINISTER (CONTINUED)

To date, NIPMO has received 1 297 actionable disclosures from institutions for IP developed from publicly financed R&D, of which 255 have been granted IP rights. In the coming year, NIPMO will continue to investigate a range of methodologies for IP valuation, which may inform the establishment of an IP Enforcement Fund to protect publicly financed IP.

International Co-operation

In the period under review, the Department continued to build and maintain international STI partnerships. We were able to secure R689 million in foreign funds from international partners in support of STI initiatives.

Significant bilateral activities included cooperation with the United Kingdom, which saw the launch of the first trilateral research programme between South Africa, Kenya and the UK, and the extension of the SA-UK Newton Fund collaboration until 2021, as well as the launch of three SA-UK bilateral research chairs at the Global Leadership Summit for leaders in international education. Two of the research chairs are in the area of food security, and are hosted by the University of the Western Cape and Nelson Mandela University. The third, hosted by the University of the Witwatersrand, is in political theory.

In the reporting period, we celebrated the 20th anniversary of the European South African Science and Technology

Cooperation Agreement, and signed a declaration of intent on marine research and innovation cooperation.

The Department also took part in the first Science and Technology Ministerial Meeting of the Group of 20, under the 2016 Chinese Presidency of the G20.

Complementing foreign direct investment efforts is the Africa Engagement Strategy, under which investments have been made in 54 jointly funded projects with African partners.

We have started preparations for South Africa to assume leadership in STI-related matters while South Africa is chair of the Southern African Development Community in 2018, and will be ready to use this opportunity for the further benefit of South Africa and the region.

My gratitude goes to the Portfolio Committee of Science and Technology, Deputy Minister Zanele kaMagwaza-Msibi, our Director-General, Dr Phil Mjwara, and the staff and management of the Department and its entities.



Mrs GNM Pandor, MP

Minister of Science and Technology

3. AMAZWI OKWENDLALELA ATHULWA NGUNGQONGQOSHE

INingizimu Afrika iyisizinda esihlonishwayo ngekhono lezesayensi nezobuchwepheshe, edlala indima ebalulekile kumaphrojekthi amakhulu omhlaba nokwenza inqubekela phambili engumlando kucwaningo olusha.

Ngemuva kweminyaka engama-23 yentando yeningi, uMnyango Wezesayensi Nezobuchwepheshe kanye nezinhlangano ezibika kuNgqongqoshe - uMkhandlu Wezocwaningo Lwezesayensi Nezimboni, uMkhandlu Wezocwaningo Lwezesayensi, Inhlangano Kazwelonke Yezesayensi, Inhlangano Kazwelonke Yezomkhathi YaseNingizimu Afrika, Inhlangano Yezokusungula Kwesayensi, Isikhungo Sesayensi saseNingizimu Afrika, kanye noMkhandlu waseNingizimu Afrika Wemisebenzi Yesayensi Yezemvelo – banokuningi okumele bakugubhe.

Sibe nenqubekela phambili ekuvinjelweni kanye nasekulashweni kwe-HIV/AIDS ngokusebenzisaba koMnyango kanye neSikhungo Sohlelo Locwaningo Lwengculaza eNingizimu Afrika kanye neBill & Melinda Gates Foundation. I-Telescope Enkulu kunawo Wonke eNingizimu Ne-Afrika kanye ne-Square Kilometer Array (i-SKA) kuheha izazi zezinkanyesi zomhlaba. Sithule amasathalayithi okubheka umhlaba emkhathini, sathola izinto ezijabulisayo ku-palaeontology, senza umsebenzi onemiphumela emihle kubuchwepheshe benye inhlobo kagesi futhi senza inqubekela phambili ebalulekile kumkhakha we-fluorochemicals.

Sisekele ukulethwa kwezinsizakalo kanye nokunciphisa ubuphofu ngokusebenzisa izinhlelo zobuchwepheshe, usekelo lukahulumeni olusheshayo lwamabhezini okusungula, futhi senza umsebenzi omningi ekuqinisekiseni ukuthi ulwazi lwendabuko luyaqoshwa futhi lusetshenziswa ngokulinganayo.

INingizimu Afrika inobuhle obuningi ngenxa yendawo etholakala kuyo, imithombo yemvelo eminingi, izikhungo eziqotho zikahulumeni kanye nezizimele, izisebenzi ezinamakhono (nakuba zincane) kanye nabantu abaningi abasha. Lokhu kuhlizeka isisekelo esihle sokwakha uhlelo lukazwelonke lwezokusungula oluholela ekukhuleni komnotho okuqhubekayo nokusimeme, futhi kwandisa

ukukwazi kwaleli lizwe ukuncintisana namanye amazwe emhlabeni jikelele.

Elinye lamaqhinga elithuthukiswe yi-DST, ngokusekelwa okuqinile ngokubanjiswene nabo emhlabeni jikelele, ngukwakha amaphrojekthi amakhulu enqalasizinda yesayensi. Iprojekthi edumile yetheleskopu ye-SKA, lapho iNingizimu Afrika etshale khona imali engaphezulu kwamarandi ayisigidigidi esi-1

Ngo-2016, ngenye yalezi zinhlelo. Ihlanganisa ndawonye ososayensi ezifundweni ezifana nezibalo, i-physics, isayensi yamakhompuyutha kanye neminye imikhakha esebenza e-Afrika ukwakha ingqalasizinda enkulu kunazo zonke yezesayensi ezwenikazi lase-Afrika. Ngokusebenzisana nokubanjiswene nabo emhlabeni jikelele njenge-UK, i-China, i-Japan, i-Italy kanye namanye amazwe ayi-9 esisebenzisana nabo e-Afrika, lokhu yisibonelo esihle sokubambisana kwesayensi emhlabeni jikelele. Enye yezinzuzo zayo kube wukuheha intsha engabacwaningi abanamakhono kanye nososayensi abavela e-Afrika nakwezinye izindawo zomhlaba. Ngokokuqala ngqa kube nokuncipha kokufuduka kwabantu abanamakhono e-Afrika.

Uhlelo lwethu lwezesayensi luseluncane kakhulu uma luqhathaniswa nezinhlelo ezisemazweni athuthukile. Lesi esinye sezizathu esenze ukuthi sigxile ekubambisaneni kwezangaphakathi ezweni kanye nasemhlabeni jikelele. Sakhe izikhungo ezi-15 njengezizinda ezihlanganisa wonke amanyuvesi kanye kanye nemikhandlu yesayensi ekusebenzisane ekubhekaneni nezinsalelo ezifana ne-HIV/AIDS, isifo sofuba, ukudla okwanele kanye nomalaleveva. Sithemba ukuthi ezinye zalezi zikhungo zizozuza kokunye ukubambisana okukhulu emhlabeni kwezesayensi kanye nokusungula i-European and Developing Countries Clinical Trials Partnership (i-EDCTP). Ukubambisana kuye kwaba nomthelela ekusheshiseni ukungenelela okusha ekulweni ne-HIV/AIDS, umalaleveva kanye nesifo sofuba. I-EDCTP ngokubambisana komphakathi kukahulumeni nomkhakha ozimele phakathi kwamazwe angu-13 aseYurophu nangu-13 aseNingizimu ne-Afrika Isabelomali seminyaka eyishumi siyizigidigidi ezi-€ 1,9 futhi sihlanganisa utshalomali kwezokusungula nobuchwepheshe kwezempilo.

3. AMAZWI OKWENDLALELA ATHULWA NGUNGQONGQOSHE

Ingqalasizinda entsha yocwaningo

Ukuze kuhlinzekwe ingqalasizinda yezocwaningo ephakathi nendawo kuya kwenkulu, uMnyango uthule umhlahlandlela wokuqala wengqalasizinda yezocwaningo yezwe. Lo mhlahlandlela ngumphumela wokuzinikela okujulile futhi kwesikhathi eside kweNingizimu Afrika ekuthuthukiseni ingqalasizinda: eminyakeni eyisishiyagalombili edule, i-DST itshale izigidigidi ezingaphezu kwamarandi ayi-2,7 kungqalasizinda yezocwaningo nentuthuko, izigidigidi zamarandi ezi-1,5 kungqalasizinda yezobuchwepheshe kanye nezigidigidi zamarandi ezi-3,5 kumaprojekthi eMeerKAT neSKA.

Indlela yokusebenza eqala phansi iye phezulu egxile kumikhakha yasetshenziselwa ukuthuthukisa umhlahlandlela. Kuhlonzwe imikhakha eyisithupha yezesayensi lapho okudinga khona ukuthuthukiswa kwengqalasizinda yezocwaningo, nokuyile elandelayo: abantu nomphakathi; ezempilo, ezebhayoloji kanye nokudla okwaneleli; umhlaba kanye nemvelo; ezamandla; izinto ezisetshenziswayo kanye nezokwakwa; i-physical sciences kanye nobunjiniyela.

Ngokwesisekelo senqubo yokuhlola ephelele futhi eqotho, izinsiza zocwaningo eziyisikhombisa kwagunyazwa ukuthi zakhiwe ngonyaka wezimali we-2016/17: uchungechunge olunwetshiwe lokubukwa kwendawo yemvelo, indawo yocwaningo lwezokwelapha ngenuzi; uchungechunge lwezindawo zokuhlola ezempilo kanye nabantu; isikhungo sikazwelonke sezinsiza zolimi lwedijithali; Indawo yokuqoqa isayensi yemvelo; Ingqalasizinda yokucwaninga olwandle olungajulile nasogwini; Kanye nendawo enkulu yocwaningo lwe “omics”.

Senze inqubekela phambili enkulu ekwakhiweni kwe-MeerKAT, eyandulela i-Square Kilometre Array. Iqoqo lokuqala lama-antenna ahlanganisiwe angu-16, abizwa ngokuthi i-Array Release 1 (i-AR1), athulwa ngokusemthethweni ngoNtulikazi 2016. Isithombe se-MeerKAT “sokukhanya kokuqala” esakhiqizwa yi-AR1 sibonise izinkanyezi ezingaphezu kwe-1 300 ze-radio galaxies emhlabeni okude. Isithombe esigcono esedlule

esatholakala (esatholwa ngokusebenzisa itheleskopu e-Australia) sabonisa ama-radio galaxies anga-70 kuphela, nokubonisa ukuthi i-AR1 MeerKAT isivele iyitheleskopu egcono kunawo wonke eMazweni Aseningizimu. Kuphinde kwahlinzekwa usekeelo ebhonini yezwe ngokuqinisekisa ukuthi izingxenye ezi-75% ze-MeerKAT zithengwa kuleli lizwe.

Siye senza nenqubekela phambili ngeKuntunse telescope eGhana, evuselelwe futhi manje esikulungele ukwenza umsebenzi wesayensi. Ingxenye ye-African Very Long Baseline Interferometry Network, ibe nempumelelo ngokukhiqiza isithombe sayo “sokukhanya kokuqala”.

Ubuchwepheshe obusha

Kulesi sikhathi esibika ngaso, izinkampani ezintathu (i-PTiP, i-HyPlat, i-GeoSun) zidayise ngempumelelo imikhiqizo/ izinsizakalo kumakethe yangaphakathi kuleli kanye nasemhlabeni jikelele. INingizimu Afrika idinga amanye amathuba okuthuthukiswa kwezimakethe afana naleli, ezinohlelo lwemikhiqizo olufanele oluzokwakha imakethe ezinzile yezibuchwepheshe ukunciphisa isikweletu sezwe.

Sakha amathuba ezimboni ezintsha ngehhovisi lohlelo lweHydrogen South Africa (i-HySA). Leli hhovisi lihlinzeka usekelo kuzizinda ezinamakhono okufaka emakethe impahla esungulwe ngokusebenzisa lolu hlelo. Lokhu kuvumela ukuthuthukiswa kwemikhiqizo esezingeni eliphezulu yokuhweba emkhakheni kwezehydrogeni kanye nobuchwepheshe be-fuel cell ngokusebenzisa ukuhlomulisa kweqoqo lezwe leplathinamu yezinsiza zezensimbi.

Kuze kube yimanje, Ihhovisi Likazwelonke Lokuphathwa Kwempahla Esunguliwe (i-NIPMO) lithole ukubhaliswa kwempahla okuyi-1 297 okuvela kuzikhungo zemfundo kwempahla esunguliwe (i-IP) ethuthukiswe ngocwaningo kanye nentuthuko exhaswe ngemali kahulumeni, kanti angama-255 anikezwe amalungelo e-IP. Kunyaka ozayo, iNIPMO izoqhubeka nokuphenya izindlela ezihlukahlukene zokuhlolwa kwe-IP, nokungaholela ekusungulweni kwesiKhwama Sokuthotsheliswa kwe-IP ukuvikela i-IP exhaswe ngemali kahulumeni.

3. AMAZWI OKWENDLALELA ATHULWA NGUNGQONGQOSHE

Emazingeni omhlaba

Kulesi sikhathi esibuyekwayo, Umnyango uqhubekile nokwakha kanye nokuqhuba ubudlelwano bezomhlaba kwezesayensi, ezobuchwepheshe kanye nokusungula. Sikwazile ukuthola izigidi zamarandi ezi-689 zoxhaso oluvela ngaphandle kwesisebenzisana nabo emhlabeni jikelele ukusekela izinhlelo ze-STI.

Imisebenzi ebalulekile phakathi kwamazwe amabili ifaka ukusebenzisana ne-United Kingdom, nokuholele ekuthulweni ngokusemthethweni kohlelo lokuqala locwaningo olubandakanya iNingizimu Afrika, iKenya kanye ne-UK, kanye nokwelula ukusebenzisana kwe-SA-UK Newton Fund kuze kube ngowe-2021, kanye nokuthulwa ngokusemthethweni kocwaningo oluthathu olufaka amazwe amabili i-SA-UK Emhlanganweni Kazwelonke Wezobuholi wabohli kwezemfundo yomhlaba. Ucwangingo olubili lusemkhakheni wezokudla okwanele, futhi lusingethwe yiNyuvesi Yasentshonalanga Kapa neNyuvesi iNelson Mandela. Olwesithathu, olusingethwe yiNyuvesi yaseWitwatersrand, yithiyori yezombusazwe.

Kulesi sikhathi okubikwa ngaso, sigubhe iminyaka engama-20 yeSivumelwano Sezokubambisana Kwezesayensi Nezobuchwepheshe phakathi kweYurophu kanye neNingizimu Afrika, futhi sasayina isimemezelo senhloso yokubambisana kwezocwaningo lwasolwandle kanye nokusungula.

UMnyango uphinde wabamba iqhaza kuMhlangano Wokuqala woNgqongqoshe Bezesayensi Nezobuchwepheshe bamazwe angama-20 ngaphansi kobuholi beChina bowe-2016 be-G20.

Okusekela imizamo yotshalomali oluvela ngaphandle yiQhinga Lokusebenzisana e-Afrika, ngaphansi kwalo osekutshalwe imali kumaphrojekthi axhashwe ngokubambisana angama-54 ngokuhlanganyela nokubanjiswene nabo e-Afrika.

Sesiwaqalile amalungiselelo okuthi iNingizimu Afrika iqalw ubuholi ezindabeni eziphathelele ne-STI ngesikhathi iNingizimu Afrika ingusihlalo weNhlangothi Yamazwe aseNingizimu ne-Afrika ngowe-2018, futhi sizobe sesimi ngomumo ukusebenzisa leli thuba ukuhlomulisa iNingizimu Afrika kanye nesifunda.

Ngibonga Ikomidi Elibhekelele Ezesayensi Nezobuchwepheshe, Iphini Likangqongqoshe ukaMagwaza-Msibi, Umqondisi-Jikelele wethu, uDkt. Phil Mjwara, kanye nabasebenzi kanye nabaphathi boMnyango kanye nezikhungo zawo.



Nkz GNM Pandor, MP

UNgqongqoshe Wezesayensi
Nezobuchwepheshe

3. KETAPELE KA TONA

Afrika Borwa e lemogwa bjalo ka hapo ya bokgoni bja tša saenthefiki le tša mahlale, ka go kgatha tema diprotšekeng tša kgoparara tša boditšhabatšhaba le go dira dikgatelopele tša diphetogo diphatisišong tše difsa.

Morago ga mengwaga ye 23 ya temokrasi, Kgoro ya Saense le Theknolotši le makalagwebo ao a begago go Tona ebago *the Council for Scientific and Industrial Research, the Human Sciences Research Council, the National Research Foundation, the South African National Space Agency, the Technology Innovation Agency, the Academy of Science of South Africa*, le *South African Council for Natural Scientific Professions* – ka moka ga ona a nale dilo tše ntši tšeo a ka di ketekago.

Re fihleletše kgatelopele thibelong le phekolong ya HIV ka tšhomišano ya Kgoro gotee le *Centre for the AIDS Programme of Research* mo Afrika Borwa le Bill & Melinda Gates Foundation. *Southern African Large Telescope* le *Square Kilometre Array* (SKA) ke diprotšeke tša go goga šedi ya lefase ka bophara go banepadinaledi. Re tsebagaditše disathalaete tša go bogela lefase kua lefaufaug, re fihleletše dikhwetšo tše kgahlišago ka mašaledi a diphedi, re dirile mošomo wa dipelo tše nago le mohola ka ditheknolotši tše dingwe tša go fehla mohlagase le dikgatelopele tše bohlokwa mo go tša *flurochemicals*.

Re thekgile kabo ya ditirelo le phedišo ya bohloki ka didirišwa tša theknolotši, ra potlakiša thekgo ya mmušo diphetogong tša kgwebo, ebile re sepetše leeto le le telele go netefatša gore tsebo ya tlhago e ya gatišwa le go dirišwa ka tshwanelo ka go lekalekana ga tšona.

Afrika Borwa e nale dikgatelopele tše mmalwa tša thutafase, maphaaphaa a didirišwa tša tlhago, dihlolongwa tše tiilego tša bohle le tša disektara tša praebete, bašomedi ba bokgoni ba maemo a godimo (le ge e le ba palo ye nnyane) le dipalopalo ta setšhaba tše tletšego ka thaka ye sese. Tše ka moka di refa motheo wo re ka agago sistemo ya bosetšhaba ya diphetogo tšeo di tlišago kgolo yeo e akaretšago bohle ya go swarelela, le go hlatloša phadišano ya naga ye lefaseng ka bophara.

Le lengwe la maanopeakanyo leo DST e le tšweleditšego, ka thekgo ye tiilego go tšwa bagwebišaneng ba lefaseng ka bophara, ke go aga diprotšeke tše kgolo tša mananeokgoparara a saense. Protšeke ye tumilego ya thelesekoopu ya radio ya SKA, yeo go yona Afrika Borwa e beeditšego tšhelete ya go feta R1 bilione ka 2016, ke ye nngwe ya maihlamelo ao. E kgoboketša boramahlale mo dithutong tše bjalo ka dipalo, fisika, mahlale a khomphuthara le mafapa a mangwe ao a šomang mo Afrika go aga mananeokgoparara a magologolo a tša saenthefiki mo kontinenteng. Ka bagwebišani ba lefaseng ka bophara bjalo ka UK, China, Japan, Italy le dinagakgwebišano tše senyane tša Afrika, wo ke mohlala wo botse kudu wa kgwebišano ya saenthefiki lefaseng ka bophara. Ye nngwe ya mohola wa bogwebišani bjo e bile go goketša badiradiphatišo ba bafsa ba go ba le talente le boramahlale go tšwa Afrika le dilete tše dingwe tša lefase. Ke lekga la mathomothomo go eba le pušetšomorago ya tahlegelo ya talente go tšwa Afrika.

Sistemo ya rena ya saense e sale ye nnyane kudu ge e bapetšwa le disistemo tša dinaga tšeo di hlabologilego. Ke le lengwe la mabaka ao a dirilego gore re šetše dikgwebišano tša ka mo nageng le tša lefase ka bophara. Re hlomile disenthara tše lesometlhano tša bokgoni bjalo ka dihapo tšeo di kopanyago mehutahuta ya diyunibesithi le dikhansele tša saense gore e be dikgwebišano go swaragana le ditlhotlo tše bjalo ka HIV/AIDS, bolwetši bja mafahla, tšhireletšego ya dijo le malaria. Re holofela gore tše dingwe tša disenthara tše di tla hologa go tšwa go ye nngwe ya dikgwebišano tša rena tše kgolokgolo tša saense ya boditšhabatšhaba le diphetogo ebago *European and Developing Countries Clinical Trials Partnership* (EDCTP). Kgwebišano ye e kgathile tema go potlakiša tlhabollo ya magatharollo a mafsa a go lwantšha HIV/AIDS, malaria le bolwetši bja mafahla. EDCTP ke kgwebišano ya bohle le ya praebete magareng ga dinaga tše 13 tša Yuropa dinaga tše 13 tša bogareng bja leganata la Sahara la Afrika. Tekanyetšokabo ya mengwaga ye lesome ke €1,9 bilione ebile e kopanya mmogo diphetogo tša maphelo le dipeeletšo tša theknolotši.

3. KETAPELE KA TONA

Mananeokgoparara a mafsa a diphathišišo

Ka nepo ya go aba mananeokgoparara a diphathišišo a magareng go fihla go a magologolo, Kgoro e tsebagaditše leanopeakanyo la naga la mathomothomo la diphathišišo tša mananeokgoparara. Leanopeakanyo le ke sehloa sa maikgafo a matelele le ao a tseneletšego ka Afrika Borwa tlhabollong ya mananeokgoparara: mo mengwageng ye seswai ye fetilego, DST e beeditše tšhelete ya go feta R2,7 bilione go mananeokgoparara a diphathišišo le a tlhabollo, R1,5 bilione go mananeokgoparara a mahlale a tša tshedimošo le R3,5 bilione diprotšekeng tša MeerKAT le tša SKA.

Lemanoga leo le ikadilego ka sektara la go thoma fase le nyologela godimo le dirišitšwe go hlama lenapeakanyo le. Mafapa a tshela a saentefiki a hlaotšwe fao go ona mananeokgoparara a diphathišišo a hlokago go hlabollwa, elego, batho le setšhaba, tša maphelo, tšhireletšego ya diphedi le ya dijo, lefase le tikologo, enetši, dimatheriale le botšweletši; le disaense tša tikologo le boentšineere.

Ka baka la tshepedišo ye feletšego ka botlalo le ditshekatsheko tše mangangahlaga, mananeokgoparara a šupa a diphathišišo a dumeletšwe gore a tle a hlongwe ngwageng wa ditšhelete wa 2016/17. Ona ke netweke ye katološitšwego ya bobogelo bja tikologo, senolofatši sa diphathišišo tša meryana ya nyuklea; netweke ya tša maphelo le mafelo a phuruputšo ya dipalopalo tša batho; senthara ya bosetšhaba ya didirišwa tša polelo tša dithithale; senolofatši sa kgoboketšo ya mahlale a tlhago; mananeokgoparara a mabopo ao a sa išego le diphathišišo tša mabopong; le platfomo ye phatlaladitšwego gohle ya diphathišišo tše felelago ka moselana wa "omics".

Re fihleletše kgatelopele ye kgolo kagong ya MeerKAT, ebago protšeke ye dirilwego pele ga protšeke ya *Square Kilometre Array*. Sehlopha sa pele sa dieriele tše 16 tše kopantšwego, tša go bitšwa *Array Release 1 (AR1)*, di tsebagaditšwe ka Julae 2016. Seswantšho sa lebone la mathomothomo la MeerKAT seo se tšweleditšwego ke AR1 se laeditše sehlophadinaledi tša maphoto a radio tša go feta 1 300 yunibeseng ya kgakala. Seswantšho sa mafelelo

se kaonekaone (seo se tšeerwego ka thelesekoupu kua Australia) se laeditše fela dihlophadinaledi tša maphoto a radio tše 70, gomme se se laetša gore AR1 MeerKAT e šetše e le thelesekoupu ye kaonekaone ya radio kua Hemisfere ye Borwa. Diintasteri tša ka mo nageng le tšona di filwe thekgo ka go netefatša gore 75% ya dikarolo tša MeerKAT di hweditšwe ka mo nageng.

Re fihleletše dikgatelopele ka Kuntunse thelesekoupu gola Ghana, yeo e mpshafaditšwego ebile gabjale e lokile go ka dira tša mahlale. Bjalo ka karolo ya *African Very Long Baseline Interferometry Network*, e fihleletše dilo tše kgolo ka tšweletšo ya seswantšho sa yona sa lebone la mathomothomo.

Teknolotši ye mpsha

Mo nakong ye ya dipego, mahlogedi a mararo a dikhamphani elego (PTiP, HyPlat, GeoSun) di rekišitšwe ditšweletšwa tša tšona/ditirelo mebarakeng ya ka mo nageng le ya lefase ka bophara. Afrika Borwa e hloka menyetla ye bjalo ya tlhabollo ya mebaraka, ka magatotatelano a kgwebo ao a swarelalago ao a tla hlolago kgatelopele ya theknolotši yeo e ka dirišegago go fokotša palotšhalo ya ditefo tša naga ye.

Re hlola menyetla diintastering tše difsa ka lenaneo la kantoro la Hydrogen South Africa (HySA). Kantoro ye e aba thekgo disenthareng tša bokgoni mo kgwebafatšong ya thoto ya kelelo ye tšweleditšwego ke lenaneo le. Se se kgontšha tlhabollo ya ditšweletšwa tša kgwebo tša boleng bja godimo sektareng ya haedrotšene le theknolotši ya makhura a sele ka kholego ya didirišwa tša naga ye tša go šika ka sehlopha tša tšhipi le tša platinamo.

Go fihla tšatšing la lehono, *National Intellectual Property Management Office* (NIPMO) e amogetše dikutullo tše ka tšeelwago magato tše 1 297 go tšwa dihlongweng tša *intellectual property (IP)* tše tšweleditšwego go tšwa go diphathišišo tše di thekgilwego ke bohle ka mašelang le tlhabollo, tše go tšona tše 255 di filwego ditokelo tša IP. Mo ngwageng wo otlago, NIPMO e tla tšwelapele go nyakišiša mehutahuta ya mekgwa ya go šoma bakeng sa tšhekatsheko ya IP, yeo e ka hlalago go thakgolwa ga Sekhwama sa Phethagatšo sa IP go šireletša di-IP tše di thekgilwego ke bohle ka ditšhelete.

3. KETAPELE KA TONA

Tša boditšhabatšhaba

Mo nakong ye ya dipego, Kgoro e tšwetše pele go aga le go hlokomela dikgwebišano tša mahlale a boditšhabatšhaba, theknolotši le diphetogo (STI). Re kgonne go šireletša R689 milione ya dikhwama tša ka ntle go tšwa bagwebišanang ba rena ba boditšhabatšhaba ka thekgo ya maihlamelo a STI.

Ditiragalo tše bohlokwa tša dinaga-pedi di akaretša tšhomišano le United Kingdom, yeo e dirilego gore go tsebagatšwe lenaneo la mathomothomo la diphatišišo tša dinaga-tharo magareng ga Afrika Borwa, Kenya le UK, le go katološwa ga tšhomišano ya sekhwama sa SA-UK Newton Fund go fihla ka 2021 gotee le go tsebagatšwa ga baduladitulo ba bararo ba diphatišišo tša dinaga-pedi ebago SA-UK kua Samiting ya Boetapele bja Lefase (Global Leadership Summit) bakeng sa baetapele ba thuto ya boditšhabatšhaba. Ba babedi ba baduladitulo ba diphatišišo ba mo lefapeng la tšhireletšego ya dijo, ebile modiro wo o swerwe ke Yunibesithi ya Kapa Bodikela le Yunibesithi ya Nelson Mandela. Wa boraro, wo bego o swerwe ke Yunibesithi ya Witwatersrand, o mo lefapeng la diteori tša sepolotiki.

Mo nakong ye ya dipego, re ketekile anibesari ya bo-20 ya kwano ye bitšwago *European South African Science and Technology Cooperation Agreement*, le go saena tsebagatšo ya maikemišetšo a diphatišišo tša mabopong le tšhomišano ya diphetogo.

Kgoro e kgathile tema gape Kopanong ya mathomo ya Tona ya Saense le Theknolotši ya Sehlopha sa 20, ka fase ga Bopresidente bja China bja 2016 bja G20.

Go tlaleletša maitekelo a dipeeletšo tša thwi tša dinagadišele ke Leanopeakanyo la Afrika Kwebong (Africa Engagement Strategy), leo ka tlase ga lona dipeeletšo di dirilwego mo diprotšekeng tše 54 tše thekgo ya tšona e kopanetšwego gotee le bagwebišani ba Afrika.

Re thomile ka boitukišetšo bja Afrika Borwa bja go tšwelapele ka boetapele mererong ye amanago le STI

mola Afrika Borwa e le modulasetulo wa *Southern African Development Community* ka 2018, ebile e tlaaba e le komana madula a bapile go šomiša monyetla wo go hola Afrika Borwa go ya pele le selete se.

Ke lebiša ditebogo tšaka Komiting ya Potfolio ya Saense le Theknolotši, go Motlatšatona kaMagwaza-Msibi, go Molaodipharephare wa rena Ngaka Phil Mjwara, go bašomedi le balaodi ba Kgoro ye gotee le makalagwebo a yona.



Mohumagadi GNM Pandor, MP

Tona ya Saense le Teknolotši

4. STATEMENT BY THE DEPUTY MINISTER



Zanele kaMagwaza-Msibi

Deputy Minister of Science and Technology



The importance of science and technology in national development cannot be emphasised too strongly. They are the basis of modern civilisation.

The Department of Science and Technology (DST) has the responsibility to contribute to the achievement of government priorities like the transformation of the economy by providing cutting-edge science and technology to enable effective decision-making and facilitate appropriate action in relation to the collective needs of, opportunities for and challenges faced by all South Africans.

As recognised in the National Development Plan (NDP), science, technology and innovation are sources of economic growth, with the potential to create new types of jobs, and provide new solutions to problems like poor health and water shortages trapping people in poverty.

To this end, various initiatives were undertaken as the DST continued to add value to the efforts of the rest of government to implement the NDP.

National Intellectual Property Management Office

During the period under review, the National Intellectual Property Management Office (NIPMO) continued to play an enabling role in the utilisation of knowledge for

economic and social development through support provided to offices of technology transfer (OTTs) for human capacity, as well as for costs incurred for the protection and maintenance of intellectual property rights.

Since the enactment of the Intellectual Property Rights from Publicly Financed Research and Development Act (IPR Act), the total support for OTTs through the OTT Support Fund has reached R113 million, with 104 posts created to date.

The South African National Survey of Intellectual Property and Technology Transfer at Publicly Funded Research Institutions: Inaugural Baseline Study (2008-2014) was finalised. The survey revealed some exciting trends, making it possible to track outputs more comprehensively than merely using publication figures, looking at outcomes and the early stage impact of publicly funded research and development.

During the 2016/17 period, the National Health Laboratory Service was added to Schedule 1 of the IPR Act. The support that NIPMO has provided to the service for intellectual property management and the transfer of technologies is a clear illustration of the value to an institution of scheduling in the IPR Act.

4. STATEMENT BY THE DEPUTY MINISTER (CONTINUED)

Energy Storage RDI Roadmap

As South Africa moves steadily towards meeting its commitment to reduce greenhouse gas emissions, the focus in the next financial year will be on consolidating the implementation of the Energy Storage Research, Development and Innovation Roadmap through the establishment of a programme structure, which will support the alignment of activities at individual science institutions across South Africa. In addition, a review of the first eight years of the DST's Renewable Energy Hub and Spokes programme will be completed to assist in planning for future funding commitments.

Bio-economy Strategy

Five instruments were used to support research and innovation under the Bio-economy Strategy, namely, the Strategic Health Innovation Partnerships (human health), soybean improvement and wheat-breeding programmes (agriculture), the Biocatalysis Initiative, and the protein and enzyme bioprocess initiative (industrial biotechnology).

In the year under review the strategy has provided support to 134 postgraduate students. The DST investment in this area resulted in 26 publications and one new patent (filed in three regions), four new health candidate products, and four new commercial products. The second Survey on Public Perceptions of Biotechnology in South Africa was released, and indicated a substantial improvement in South African's awareness of genetically modified organisms. The Biosafety Risk Communication Strategy was launched.

Marine protection and governance is one of the key economic drivers identified under Operation Phakisa. The Department continued to support Operation Phakisa's Oceans Economy component through, among other things, the development of the Oceans and Coastal Information Management System, which provides access to a number of decision-support tools. The tools include the integrated vessel tracking tool, which provides a web interface that allows authorised access to monitor vessels

activities within South Africa's exclusive economic zone. Another tool is used for monitoring sea conditions that create ideal conditions for harmful algal blooms.

The development of the planned maritime domain awareness CubeSat constellation has progressed well, and the precursor mission should be completed in 2018. This will provide a second-generation automatic identification system for vessel tracking and telecommunication applications.

Conclusion

I wish to express my sincere gratitude to Minister Pandor and the Director-General, Dr Mjwara, for their leadership and support. To our deputy directors-general and the Department's stakeholders, your continued efforts to ensure that the Department succeeds in its endeavours to make our country a better place are highly appreciated. Such commitment and dedication contribute significantly to the well-being of our people and the Department's reputation as one of the best performing departments in the country.



Zanele kaMagwaza-Msibi

Deputy Minister of Science and Technology

31 July 2017

5. REPORT OF THE ACCOUNTING OFFICER



Dr PM Mjwara

Accounting Officer



5.1 Introduction

South Africa's National Development Plan (Vision 2030) (NDP) highlights the centrality of STI in national development. In ensuring that the NDP goals are realised, the Minister of Science and Technology commissioned the National Advisory Council on Innovation (NACI) to review the 1996 White Paper on Science and Technology. The Department of Science and Technology (DST) is in the process of drafting a new White Paper. This will be followed by a decadal plan for 2019-2029 to provide policy direction and leadership in the coordination and management of the NSI for this period, and creating an enabling environment for the NSI. The decadal plan will build on achievements attained in the implementation of the Ten-Year Innovation Plan.

The DST will continue to contribute to government's Nine-Point Plan, given the central role of science, technology and innovation in addressing poverty, unemployment and inequality. The Department will also continue to support the achievement of government priorities like transformation and developing human capital by supporting postgraduate studies.

5.2 Overview of departmental operations

Corporate governance

The Department is committed to maintaining the highest standards of corporate governance, which are crucial to the management of scarce public finances and resources. During the 2016/17 financial year, the Department continued to implement its policies and key priorities, operational strategies, and transversal monitoring and evaluation (the Management Performance Assessment Tool). The DST's functional risk and combined assurance profiles were finalised. Combined assurance is central to the integration and alignment of the assurance processes in the Department to maximise risk and governance oversight, control efficiencies, and optimise overall assurance to the Audit and Enterprise Risk Management Committees. To assist the Audit Committee in their oversight role, the Internal Audit Activity used the Department's planning instruments and risk profile to develop and implement a three-year risk-based internal audit plan.

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

The Department has an effective management system for fraud risk management (fraud risk management and whistle-blowing policies). In the period under review, risk assessments for key projects were conducted, including for some projects managed on behalf of the Department by its entities.

The Department of Planning Monitoring and Evaluation's Management Performance Assessment Tool (MPAT), designed to ensure operational efficiency in government, focuses on four departmental management areas, namely, strategic management, governance and accountability, human resources and systems management, and financial management. The DST remains one of the top-performing departments in terms of the MPAT.

The Department continues to implement the Supply Chain Management turnaround plan approved in the previous financial year, as well as the departmentally approved Supply Chain Management Guidelines and all applicable prescripts for the prevention and detection of unauthorised, irregular, fruitless and wasteful expenditure.

The Department developed and implemented an acquisition management checklist, which assists in ensuring that all processes for the acquisition of goods and services are complied with at all times to avoid irregular expenditure.

The Department has functioning bid management committees in place. Bid Evaluation Committees were appointed on an ad hoc basis, depending on the goods or services required. No unsolicited bids were approved during the year under review.

The Portfolio Committee on Science and Technology, as an oversight body, plays a vital role in advising the Department on matters pertaining to the NSI. Among other matters, the following briefings were made to the Portfolio Committee on the following during the year under review:

- Progress with implementing the Intellectual Property Rights from Publicly Financed Research and Development Act.
- An overview of the DST's indigenous knowledge systems (IKS) programme and legislative developments, as well as the SEIAS report on the Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill.
- The 2015/16 financial year annual reports of the DST and its entities, as well as 2016/17 quarterly performance reviews and 2016/17 annual performance plans and budgets.
- Inputs of budget cuts on performance targets and variances.

The DST also briefed the Portfolio Committee on Science and Technology on projects carried out under the Innovation for Poverty Alleviation Programme, with details on the number of jobs created and the provinces these projects have been established.

During the reporting period, the Minister and Director-General led delegations to historically black higher education institutions to gain insight into the reality of research activities at the institutions. From the discussions during the visits, numerous follow-up actions were proposed. For example, the DST needs to liaise with the Department of Higher Education and Training (DHET) on the deployment of the New Generation of Academics Programme (NGAP) to historically disadvantaged HEIs in order to build staff capacity. The DST should also engage the NRF on developing a new institutional research capacity development programme for historically disadvantaged institutions, aligned with DHET's differentiation framework for the HEI sector. A decision also needs to be taken in consultation with the DST, the Department of Trade and Industry (DTI) and Industrial Development Corporation (IDC) on where to locate the commercial production facility for the manganese precursor programme at the University of Limpopo.

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

5.3 Significant developments and major projects undertaken

A brief overview of significant developments and major projects undertaken during the financial year is outlined below. More details are given in the performance overview sections of strategic outcome oriented goals.

PTip, HyPlat and GeoSun

In the reporting period, three spin out companies (PTiP, HyPlat, GeoSun) have successfully sold products/services into the local and global market. In addition, other spin out companies struggle to source funding from the Technology Innovation Agency (TIA) and Industrial Development Corporation (IDC) due to the inability of the management of the companies to properly articulate the value proposition and market potential of the company's products.

Hydrogen South Africa

The Hydrogen South Africa (HySA) Programme Office was established and will be responsible for assisting the centres of competence with the process of supporting the commercialisation of HySA intellectual property. This will assist in the third phase of the HySA programme, which will commence within the next two years. The findings of an independent assessment of HySA technological outputs completed during the 2016/17 financial year will be used to inform these efforts.

Square Kilometre Array

The 3rd SKA African Partner Countries Ministerial Meeting was held in South Africa in April 2016. Senior officials of countries met in Namibia on 3 and 4 November 2016. Partner countries are making good progress in matters related to the African Very Long Baseline Interferometry Network (AVN), such as human capital development, the roll-out of high-performance computing, and big data projects. There was good progress in the implementation of the AVN initiative and radio spectrum frequency allocation.

In addition, the SKA SA Project Office provided bursaries to 919 students of which 133 students from other countries in Africa, while 91 are from SKA partner countries. South Africa is playing a leadership role in the establishment of the international treaty organisation that will govern the construction and operational phases of the SKA project.

5.4 Future plans of the Department

Energy Storage Research, Development and Innovation Roadmap

In the next financial year, the focus will be on consolidating the implementation of the Energy Storage Research, Development and Innovation (RDI) Roadmap through the establishment of a programme structure that will support the alignment of activities at individual science institutions currently involved across South Africa. In addition, the first eight years of the DST's Renewable Energy Hub and Spokes programme will be reviewed in preparation for future planning and funding commitments.

The implementation of the Bio-economy Strategy

The Department will continue to implement the Bio-economy Strategy, among other things contributing to relevant interdepartmental initiatives on bioprospecting (BioPANZA), agri-parks, and precision medicine. Indigenous knowledge-based technology innovation is also a focus. Over the next three years, the transition of research along the various technology readiness levels to commercialisation and the measures used to support the process will be assessed, as will the information used towards the development and implementation of a framework/methodology by the Department to support technology development and commercialisation funding decisions.

Satellite build programme

In the next financial year, the Department will complete the process of establishing a spin-out company to manufacture cube satellites for the maritime domain

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

awareness constellation for Operation Phakisa, and launch the precursor mission (ZACUBE-2). The Houwteq Assembly, Integration and Testing Facility will be migrated to the South African National Space Agency for its satellite development programme, which will also support the growth of the domestic space industry.

National Intellectual Property Management Office

The Department will continue to implement its prescribed legislative mandate (the Intellectual Property Rights from Publicly Financed Research and Development Act) through instruments such as the OTT Support Fund and IP Fund. In addition, NIPMO will support, where necessary, an appointed panel on the review of the impact of NIPMO and the IPR Act.

5.5 Discontinued activities and implications for the Department

The following activities will be discontinued in the next financial year:

- The Energy Efficiency and Demand-Side Management Hub will be consolidated under the Centre for Energy Systems Analysis and Research programme to improve the relevance of the hub in informing energy policy, particularly energy efficiency policy, in South Africa.
- Financial support to the Technology Top 100 (TT100) awards will be discontinued owing to, among other things, budget constraints, the evolving nature of the DST's relationships with its stakeholders, a shifting focus to mutually beneficial (non-financial) support partnerships, and a greater focus on the DST's Innovation Bridge (technology showcase and matchmaking) event. The DST will, however, continue to provide non-financial support to the TT100 network.

5.6 New or proposed activities and implications for the Department

The following new/proposed activities will be implemented in the next financial year:

- The Department will establish a new initiative focused on enabling technology for energy storage to support the Nine-Point Plan's commitments in this regard. The Integrated Resource Plan included energy storage technologies, which gives a positive signal that a local market will be viable.
- The process of developing a new biorefinery initiative to expand the application of the industrial biotechnology chapter of the Bio-economy Strategy is under way.
- The Department, through NIPMO, will investigate a range of methodologies for IP valuation, which may inform the establishment of an IP Enforcement Fund. It has emerged that institutions are spending a lot of money on protection and maintenance of their IP rights, but are unable to protect themselves against unauthorised use of their IP by third parties. This inability may be the result of factors such as the high costs of litigation in the enforcement of IP rights, as this is a complex process requiring costly attorneys and lengthy court time. With government placing increasing emphasis of securing IP rights for socio-economic impact, there is a need to ensure that unauthorised use of this IP by third parties is prohibited. Currently, there is no accessible form of funding to assist institution to enforce their IP rights. NIPMO has identified a need to intervene by providing one or more mechanisms to assist against third party infringements.

The budget will be provided through a prioritisation of the existing allocation. The magnitude of the IP Enforcement Fund depends on the modality and the technology but could be between R5 million and R50 million annually (depending on the valuation of IP from publicly financed research and development). NIPMO will engage with National Treasury on the possibility of funding.

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

5.7 Overview of the financial results of the Department

Departmental receipts

The table below highlights receipts collected by the Department in the financial year under review (2016/17) and the previous financial year (2015/16).

Departmental receipts	2015/16			2016/17		
	Estimate	Actual amount collected	(Over)/Undercollection	Estimate	Actual amount collected	(Over)/Undercollection
	R'000	R'000	R'000	R'000	R'000	R'000
Sale of goods and services other than capital assets	29	46	(17)	29	57	(28)
Interest, dividends and rent on land	8	6	2	8	9	(1)
Sale of capital assets	-	-	-	-	45	(45)
Financial transactions in assets and liabilities	320	453	(133)	6 963	8 087	(1 124)
Total	357	505	(148)	7 000	8 198	(1 198)

The Department does not generate revenue on a recoverable basis from the general public. The revenue generated by the Department was from commission on Persal transactions, interest received from a deposit account held with a commercial bank, payments of bursary debts by officials, and other recoverable expenditure. The overcollection for 2016/17 was due to surpluses on project funds that were returned to the Department, and the sale of old vehicles that were uneconomical to maintain.

Spending trends

The Department's appropriation for the year under review was R7,429 billion, compared to R7,466 billion in 2015/16. This 0,5% decrease was due to budget cuts effected by National Treasury during the 2016 MTEF period, mainly to the compensation of employees budget.

The table below shows budget and actual expenditure per Programme for the financial year under review (2016/17) and the previous financial year (2015/16).

Programme	2016/17			2015/16		
	Final appropriation	Actual expenditure	(Over)/under expenditure	Final appropriation	Actual expenditure	(Over)/under expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Administration	356 110	332 629	23 481	309 823	301 996	7 827
Technology Innovation	1 027 588	1 016 471	11 117	1 070 645	1 063 297	7 348
International Cooperation and Resources	121 316	118 466	2 850	116 921	114 968	1 953
Research Development and Support	4 157 604	4 152 019	5 585	4 226 922	4 218 854	8 068
Socio-economic Innovation Partnerships	1 766 378	1 764 009	2 369	1 741 795	1 738 346	3 449
Total	7 428 996	7 383 594	45 402	7 466 106	7 437 461	28 645

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

Since its creation, the Department's spending performance has remained consistently above 90%. It was 99,4% in the 2016/17 financial year.

Summary of budget expenditure analysis per economic classification

The table below summarises budget expenditure per economic classification for 2016/17.

Details	2016/17	2016/17
	R'000	%
Amount voted	7 428 996	100
Actual expenditure	7 383 594	99,4%
Unspent funds	45 402	0,6%
Economic classification		
Current payments	507 913	6,844%
Transfer payments	6 860 077	92,345%
Payments for capital assets	15 478	0,209%
Payments for financial assets	126	0,002%
Total payments	7 383 594	99,4%

Virements

The Department effected virements amounting to R59,8 million after the Adjusted Estimates of National Expenditure process (1% of the adjusted budget). R6,4 million was moved between major items and R33,1 million was moved between Programmes.

The virements under transfers and subsidies were redirected to the IP Fund to capacitate offices of technology transfer, to the operations and infrastructure of the Cape Town component of the International Centre for Genetic Engineering and Biotechnology, and to the commercialisation of African traditional medicine.

5.8 Gifts and donations received in kind from non-related parties

No gifts or donations were received in kind from non-related parties.

5.9 Standing Committee on Public Accounts (SCOPA) resolutions

There were no SCOPA resolutions.

5.10 Prior modifications to audit reports

The Auditor-General found no matters of significance regarding the administration of the Department.

5.11 Exemptions and deviations received from the National Treasury

No exemptions or deviations were raised by the National Treasury.

5.12 Events after the reporting date

No significant events occurred after the reporting date.

5. REPORT OF THE ACCOUNTING OFFICER (CONTINUED)

5.13 Other

It is envisaged that the new White Paper on Science and Technology will be finalised in 2017 while the development of the decadal plan will be finalised in 2018.

5.14 Acknowledgements and appreciation

I would like to express my sincere appreciation to all the Department's employees, the governance committees and the executive team for their tireless dedication to achieving the Department's objectives. I would also like to thank the Minister and Deputy Minister for the support received during the period under review.

5.15 Conclusion

Despite the current funding and human resource challenges experienced by the Department and the country as a whole, the Department will do its utmost to carry out its mandate.

5.16 Approval and sign-off

The Annual Financial Statements have been approved by the Accounting Officer.



Dr PM Mjwara

Director-General

31 May 2017

6. STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF ACCURACY OF THE ANNUAL REPORT

I confirm that, to the best of my knowledge and belief:

- All information and amounts disclosed throughout the Annual Report are consistent.
- The Annual Report is complete, accurate and free from any omissions.
- The Annual Report has been prepared in accordance with the Guidelines on Annual Reports issued by the National Treasury.
- The Annual Financial Statements (Part E) have been prepared in accordance with the modified cash standard and the relevant frameworks and guidelines issued by the National Treasury. The Accounting Officer is responsible for the preparation of the annual financial statements and for the judgements made in this information.
- The Accounting Officer is responsible for establishing and implementing a system of internal control that have been designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information and the Annual Financial Statements.
- External auditors are engaged to express an independent opinion on the Annual Financial Statements.

In my opinion, the Annual Report fairly reflects the operations, the performance information, the human resources information and the financial affairs of the Department for the financial year ended 31 March 2017.



Dr Phil Mjwara

Director-General

31 May 2017

7. STRATEGIC OVERVIEW

7.1 Vision

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

7.2 Mission

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

7.3 Values

- **Professionalism**

The Department is professional and delivers high-quality performance to both internal and external stakeholders.

- **Innovation**

The Department is innovative in solving problems and enhancing effectiveness and efficiency.

- **Ethical behaviour**

The Department and its employees are consistent in their actions, and accountable and transparent in dealing with public funds and other resources.

- **Knowledge sharing**

The Department and its employees share and use knowledge constructively to ensure it contributes to the building of a robust and productive knowledge economy.

8. LEGISLATIVE MANDATE

8.1 Academy of Science of South Africa Act, 2001

This Act establishes the Academy of Science of South Africa to promote common ground in scientific thinking across all disciplines, including the physical, mathematical and life sciences, as well as human, social and economic sciences; to encourage and promote innovative and independent scientific thinking; to promote the optimum intellectual development of all people; to advise and facilitate appropriate action in relation to the country's needs, opportunities and challenges; and to link South Africa with high-level scientific communities within the Southern African Development Community, the rest of Africa and internationally.

8.2 Astronomy Geographic Advantage Act, 2007

This Act provides for the preservation and protection of areas in South Africa uniquely suited to optical and radio astronomy, and for intergovernmental cooperation and public consultation on matters concerning such areas.

8.3 Human Sciences Research Council Act, 2008

This Act provides for the continued existence of the Human Sciences Research Council, which carries out research that generates critical and independent knowledge relative to all aspects of human and social development.

8.4 Income Tax Act, 1962

Section 11D of the Income Tax Act gives the Minister of Science and Technology authority to approve scientific and/or technological research and development undertaken or funded in South Africa for a tax deduction in order to promote private sector R&D activities in the country.

8.5 Intellectual Property Rights from Publicly Financed Research and Development Act, 2008

This Act provides for the more effective use of intellectual property emanating from publicly financed research and development, through the establishment of the National

8. LEGISLATIVE MANDATE (CONTINUED)

Intellectual Property Management Office, the Intellectual Property Fund, and offices of technology transfer at higher education institutions and science councils.

8.6 National Advisory Council on Innovation Act, 1997

This Act establishes the National Advisory Council on Innovation to advise the Minister of Science and Technology and, through the Minister, the Cabinet, on the role and contribution of science, mathematics, innovation and technology in promoting and achieving national objectives.

8.7 National Research Foundation Act, 1998

This Act establishes the National Research Foundation to promote basic and applied research, as well as the extension and transfer of knowledge in the various fields of science and technology.

8.8 Natural Scientific Professions Act, 2003

This Act establishes the South African Council for Natural Scientific Professions and legislates the registration of professional natural scientists, natural scientists-in-training, natural science technologists and natural science technologists-in-training.

8.9 Scientific Research Council Act, 1988

This Act refers to the activities of the Council for Scientific and Industrial Research, which undertakes directed research and development for socio-economic growth in areas that include the built environment, defence, the environmental sciences, and biological, chemical and laser technology.

8.10 South African National Space Agency Act, 2008

This Act establishes the South African National Space Agency to promote space science research, cooperation in space-related activities, and the creation of an environment conducive to the development of space technologies by industry.

8.11 Technology Innovation Agency Act, 2008

This Act established the Technology Innovation Agency to promote the development and exploitation of discoveries, inventions, innovations and improvements in the public interest.

9. ORGANISATIONAL STRUCTURE



The Minister of Science and Technology
Mrs Naledi Pandor



Deputy Minister of Science and Technology
Mrs Zanele kaMagwaza-Msibi



Director-General
Dr Phil Mjwara



Deputy Director-General: Institutional Planning and Support
Mr Tommy Makhode



Deputy Director-General: Corporate Services
Ms Nombuyiselo Mokoena



Deputy Director-General: International Corporation and Resources
Mr Daan du Toit



Deputy Director-General: Technology Innovation
Mr Mmboneni Muofhe



Deputy Director-General: Research Development and Support
Dr Thomas Auf Der Heyde



Deputy Director-General: Socio-Economic Innovation Partnerships
Mr Imraan Patel

10. ENTITIES REPORTING TO THE MINISTER

10.1 Academy of Science of South Africa



Overview of objectives

The Academy of Science of South Africa (ASSAf) aspires to be the apex organisation for science and scholarship in South Africa, recognised and connected both nationally and internationally. Through its membership, which represents the collective voice of the most active scholars in all fields of scholarly enquiry, ASSAf aims to generate evidence-based solutions to national problems.

As the only national science academy to be officially recognised by the South African government, ASSAf recognises and rewards excellence; promotes innovation and scholarly activity; provides effective, evidence-based scientific advice to government and other stakeholders; promotes public interest in and awareness of science and science education; and promotes national, regional and international linkages.

Below are some of the highlights for the period under review.

Membership

The core function of a national science academy is to honour the country's most outstanding scholars by electing them to membership of the academy. It draws its membership from all population groups and from all scientific disciplines. In its criteria for membership, ASSAf places particular emphasis on the application of scientific thinking to the problems and challenges facing South

African society. In the year under review, 38 new members were elected and inaugurated. Although membership has increased, black people, women and certain disciplines are still underrepresented. The current gender and racial profile of ASSAf is 25% female and 29% black. However, ASSAf strives to reflect the changing profile of South African scholars more accurately.

Institutional review

A five-year institutional review of the Academy was undertaken in 2016. Those interviewed included heads of South African institutions that work closely with ASSAf, as well as representatives of other African and international science academies. The review panel acknowledged the excellent work that has been done by ASSAf from its inception to date, and encouraged it to retain this standard as a minimum. Several findings and recommendations were made. Challenges highlighted included insufficient funding and the need to transform ASSAf's membership.

Council

As required by legislation, a new ASSAf Council was elected in October 2016 for a period of four years. Prof. Jonathan Jansen was elected the new President, succeeding Prof. Daya Reddy. New office-bearers are Prof. Brenda Wingfield and Prof. Barney Pityana, who were elected Vice-Presidents, Prof. Himla Soodyall (General Secretary) and Prof. Eugene Cloete (Treasurer). The activities of the Academy are structured into four programmes, namely the Governance and Administration Programme, the Scholarly Publishing Programme, the Liaison Programme, and the Science Advisory Programme.

Science advice

Authoritative evidence-based studies aimed at providing critical scientific advice take cognisance of the National Development Plan and government priorities. Many of the Academy's current studies address skills development challenges for a knowledge-based economy.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

For ASSAf to fulfil its science advisory role in support of policy development regarding key challenges facing the nation, a variety of consensus studies were undertaken. In addition, ASSAf produced concise policymakers' booklets and reports on the proceedings of various workshops/symposiums convened by the Academy.

Studies generally fall into broad categories related to health, education, humanities, climate change, energy, the science-policy nexus, biosafety and biosecurity, and poverty reduction. Once concluded, considerable effort is expended on disseminating the findings and ensuring effective uptake of the recommendations.

Fourteen study reports – consensus studies, proceedings reports, books and policymakers' booklets were produced. An e-publication strategy for study reports was adopted, considerably reducing production and printing costs for ASSAf. The 2016/17 publications include the following:

- *Workshop on Measuring Deprivation in order to Promote Human Development in South Africa*
- *ASSAf Annual Report 2015/16*
- *South Africa's Technical Readiness to Support the Shale Gas Industry Pre-publication*
- *South Africa's Technical Readiness to Support the Shale Gas Industry*
- *Social Protection in Africa - Overview for Policymakers*
- *Proceedings of the InterAcademy Partnership Conference on Science Advice*
- *Young Scientists' Conference 2016*
- *Social Determinants of Health*
- *Career Pathways*
- *Finding Synergies in the Mathematical Sciences*
- *Annual Meeting of African Science Academies Proceedings Report*
- *ASSAf History Book*
- *The Regulatory Implications of New Breeding Techniques*

Scholarly publishing

The Scholarly Publishing Programme is aimed at enhancing the national capacity to produce and publish research, as well as increasing the quality and visibility of South African research publications. It is making a valuable contribution to improved access to international scholarly publications, an essential ingredient for human capital development in a modern, rapidly developing knowledge-based economy.

The responsibilities for the publication of the *South African Journal of Science (SAJS)* and *Quest: Science for South Africa* have recently been included in this programme to consolidate all ASSAf's activities related to scholarly publishing.

SciELO SA

The first fully open access platform for scholarly publishing in South Africa, the Scientific Electronic Library Online (SciELO) SA Collection was started in 2009 as a full-text searchable database of selected, high-quality open access South African scholarly journals. A total of 65 journals and thousands of articles are now available on the SciELO SA platform. The collection has been viewed almost six million times since its inception.

SciELO SA is included in the Web of Science (formerly Web of Knowledge) and Scopus search platforms; and as an index for automatic accreditation under the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions.

Open data/open science platform for Africa

The Science International Accord on Open Data in a Big Data World was launched at the Science Forum South Africa (SFSA) in December 2015. In 2016, SFSA saw the launch of the African Open Science Platform initiative, to put into practice the principles and enabling practices for open data and open science articulated in the accord. A web page for the project has been designed and is maintained by ASSAf. Open source software was installed and is maintained by the Data Intensive Research Initiative for South Africa.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

The Africa-wide initiative will promote the development and coordination of data policies, data training and data infrastructure. An open science platform is conceived as an integrated set of arrangements that provides a policy, capacity-building and infrastructural framework for enhanced accessibility and impact. The initiative also focuses on the creation of national open science forums through which policies can be discussed and coordination established. The pilot phase is supported by the DST, funded by the NRF, directed by CODATA, the Committee on Data of the International Council for Science (ICSU), and implemented by ASSAf.

South African Journal of Science

The *South African Journal of Science (SAJS)* is now in its 113th year of publication. After several years of unprecedented growth in the number of submissions, there was a reduction in the number of formal submissions, from 471 in the 2015/16 financial year to 407 in 2016/17. The submissions were received from 49 countries, including 20 African countries, with 47% of submissions from South Africa, 18% from the rest of Africa (including 8% from Nigeria), 11% from China and 5% from India. The Web of Science impact factor showed little change (from 0.96 in 2015 to 0.90 in 2016), and the 2016/17 rejection rate was 88% compared with 89% in 2015/16.

After splitting the humanities and social sciences at the end of 2015 into “humanities” and “social sciences and education”, the number of submissions in the latter were the highest of the 10 individual disciplinary areas (at almost 20%).

An ASSAf anniversary compilation was published in December 2016 to highlight the work of ASSAf over the last 20 years. This publication is the compilation of the series of articles published across all six issues in 2016 to commemorate the 20th anniversary of the Academy.

Prizes and awards

ASSAf annually awards the ASSAf Science-for-Society Gold Medal for outstanding achievement in scientific

thinking to the benefit of society. In 2016 the award was presented to Prof. Brian van Wilgen of Stellenbosch University at ASSAf's Annual Awards event on 12 October. His career in applied ecology in Africa spans 40 years, and has made a major impact in many ways. He has worked on the ecology and management of invasive alien plants, and particularly the use of fire in managing invasions, the population dynamics of invasive plants, water use by invasive plants, the biological control of invasive plants, studies on resource economics, and the development of research and management strategies.

Through the award of the prestigious postdoctoral fellowship, named after the former South African Nobel Laureate, Sydney Brenner, ASSAf aims to attract excellent young scientists in the field of molecular and cellular biosciences to undertake postdoctoral study at a South African institution. Although this fellowship was widely known in South Africa as a top award in its field, it has had to be indefinitely suspended owing to financial constraints.

To promote the humanities, the first ASSAf Annual Humanities Lecture and Book Award event was held on 9 March 2017 in Pretoria. Prof. Kwesi Kwaa Prah, Director of the Centre for Advanced Studies of African Society, gave a lecture entitled “Has Rhodes Fallen? Decolonising the Humanities in Africa and Constructing Intellectual Sovereignty”.

The winner of the first Humanities Book Award was announced. This is presented for a scholarly, well-written work of non-fiction, published up to three years prior to its nomination, that makes a noteworthy contribution to developing new understanding of a topic in the humanities. The award went to Keith Breckenridge for his *Biometric State: The Global Politics of Identification and Surveillance in South Africa, 1850 to the Present*. The book shows how the South African obsession with Francis Galton's universal fingerprint identity registration served as a 20th century incubator for the current systems of biometric citizenship being developed throughout the South.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

International liaison

Internationally, ASSAf has strengthened collaboration with African and overseas academies of science. It continues to represent South Africa in various continental and global science advice bodies, including the Network of African Science Academies and the InterAcademy Partnership (IAP). ASSAf also hosts regional offices for two key international partners, namely, the ICSU and The World Academy of Science.

ASSAf hosted the 12th Annual Meeting of African Science Academies in November 2016, as part of its 20th anniversary celebrations.

A report on the proceedings of the IAP General Assembly and Conference hosted by ASSAf in February/March 2016 was released in September 2016. The conference theme was science advice, which is aligned to global science-policy agendas such as the Sustainable Development Goals, and science and technology for development dialogues.

ASSAf was one of 19 science academies that endorsed a call emphasising the need for evidence-based strategies to combat communicable and non-communicable diseases which continue to seriously endanger individual well-being and global health, and threaten the global economy.

Young scientists

In its quest to support the growth of the South African Young Academy of Science (SAYAS), ASSAf continues to provide secretariat support to the young academy. In 2016/17, ASSAf has set aside budget and staff time for joint activities with SAYAS and will assist them to raise their profile with the Global Young Academy and with African science academies, and created opportunities for SAYAS members to participate in ASSAf's Standing Committees and study panels.

The 7th Annual Young Scientists' Conference took place on 6 and 7 October 2016. The conference was hosted

by ASSAf, the DST, SAYAS, GenderInSITE, and the South African National Chapter of the Organization for Women in Science in the Developing World (OWSD). The conference theme, Human Rights, was aligned to the 2016 African Union theme of human rights with a special focus on the rights of women.

Gender and STI activities

All gender-related activities in ASSAf are coordinated by the South African National Chapter of the OWSD, which is hosted by ASSAf. ASSAf also hosts the focal point for GenderInSITE for the southern African region. GenderInSITE is a global initiative to raise decision-makers' awareness of the gender and science, innovation, technology and engineering dimensions of development. The initiative is aimed at both men and women.

10.2 The Council for Scientific and Industrial Research



Overview of objectives

The Council for Scientific and Industrial Research (CSIR) is a world-class African research and development organisation, which was established through an Act of Parliament in 1945. The CSIR undertakes directed, multidisciplinary research and technological innovation that contributes to the improved quality of life of South Africans. The organisation plays a key role in supporting government's programmes through directed research that is aligned with the country's priorities, the organisation's mandate and its science, engineering and technology areas of competence.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Below are some of the highlights for the period under review.

Economy and employment

Titanium beneficiation

The reconstructed CSIR titanium pilot plant was commissioned and operated for a short period during which 10 kg of titanium metal powder was produced for the first time since its establishment. The spherical high quality Ti6Al4V alloy powder, suitable for additive manufacturing, will be tested at the Aeroswift project. The manufacture of Ti6Al4V automotive valve seat prototypes is complete. This is a precursor to the manufacture of an automotive part in collaboration with a private company.

Aluminium beneficiation

An aluminium valve for localising manufacture and supply into the electrical transmission industry was successfully completed. A batch of 150 valves was machined in the interim to satisfy supply. The valves have passed Eskom qualification requirements and a second batch is currently being manufactured.

Additive manufacturing

The Aeroswift project has progressed significantly and has now achieved the milestone of a functional system with a reduced build volume, and production of the first sample part. Parallel process development on a laboratory system is ongoing. The 5 kW laser used in the Aeroswift platform is currently being modified by the supplier in Germany so that the machine will be able to print larger parts.

Enterprise creation and development

The CSIR was appointed to undertake the development of a model and business case for the establishment of the Gauteng Special Economic Zone (SEZ). The project entails the establishment of a high-tech science, technology and innovation precinct as a core enabling instrument within the SEZ. The intention is to address technological

imbalances, support the NSI and address the challenges experienced by historically marginalised communities. The first phase involved the development of a model for promoting STI and the commercialisation of intellectual property associated with research and technology development taking place in the SEZ.

The CSIR was involved in the Department of Defence's Radar and Electronic Warfare Transformative Enterprise Development. The programme is aimed at developing black-owned small and medium enterprises (SMEs) for the defence sector. Strategy work sessions were held, and assistance in preparing business plans provided. Three SMEs were established under the programme and have employed their first black engineers.

Technology localisation

The Aerospace Industry Support Initiative worked with two local original equipment manufacturers (OEMs), namely, Aerosud and Denel Aerostructures, to enable part of their SME manufacturing supplier base and increase the contracted amounts placed with these companies by the local OEMs. The two OEMs identified a network of 11 companies, which were integrated into the supply chain.

Paltech, a valve manufacturer, was assisted with safety integrity level and pressure equipment directive certifications, design software installations, enterprise requirements planning implementation and product development. The product development support for this project involved the testing of prototypes. As a result of these interventions, Paltech had transformer valve approved by Eskom. This project is expected to increase the company's revenue by R10 million per annum.

Elcast Foundry was assisted with mould-making for the electronic simulated patterns required for wind turbine gear box housings. This project is linked to a localisation opportunity in the wind energy sector. Once completed, it is expected that the project will add revenue of R10 million for the first year of production.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Digital opportunities

Piloting and licensing of the Micro-Enterprise Media Engine for Broadcast (MEME-B) was completed; shedding light on the kinds of SME that can commercially benefit from the technology. There are currently three active pilot licences (Sky Rink Studios, eMbizo and Psybergate). Participants have developed six mobile device applications based on the CSIR Android Reference Design. Thirty-nine direct and indirect jobs were created across the license holders.

Support for the Bio-economy Strategy

Fourteen companies have been incubated through the Biomanufacturing Industry Development Centre programme. A total of 31 products was transferred to these companies in 2016/17. A CSIR team has developed a first-generation prototype for the biological treatment of hydrocarbon contaminated soils, waters and effluents. Laboratory-scale tests have demonstrated that the product works on mining effluents, and oil-contaminated soil and water. The technology will now be trialled in real-world settings.

Resource efficiency

The Waste Research, Development and Innovation (RDI) Roadmap group has successfully concluded the first year of 11 Waste RDI grant projects, started in 2016. The 11 research projects, hosted by South African higher education institutions and science councils, have achieved their targets for postgraduate students, with 18 master's and 10 PhD students being supported (fully or partially) through the Roadmap funding. One of the Waste RDI grant projects, awarded to the CSIR's Natural Resources and the Environment division, has recently lodged an application for a technology demonstrator on the beneficiation of forestry biomass.

In addition, 12 postgraduate students are now being funded directly through Waste RDI Roadmap scholarships (managed by NRF on behalf of the CSIR). Six students started in 2016, while six new scholarships (five master's and one PhD) were awarded in 2016 for the 2017 academic year.

Mining

The CSIR has led a number of R&D initiatives to derive benefits from post-mining and marginal landscapes. In partnership with the City of Johannesburg, it has developed tools for the marrying of post-mining/marginal land characteristics with green economic development opportunities and available technologies. A key outcome has been the successful strategic planning and research support for the City of Johannesburg "biogas for mobility" project. This included the application of the tool for land and technology selection for a biogas production plant to supply the city's new biogas-driven public transport system. In addition, the team conducted research and techno-economic feasibility studies for the city on the conversion of mining overburden and building rubble into "stone paper" as a solution for these prominent waste streams.

Improving health

E-health

As of 31 March 2017, the electronic Health Patient Registration System developed by the CSIR was deployed in 1 849 clinics across eight provinces in South Africa, and a total of 5,5 million patient registrations have been completed. The National Department of Health is satisfied with the effect of the system on improving administrative efficiency at the clinics. The time required to locate and retrieve patient files has been drastically reduced, and the need to re-register patients at multiple clinics has been completely eliminated. The system also produces accurate, up-to-the-minute reports on patient visits at each clinic across the country, which is immensely valuable for health resource planning especially in the context of National Health Insurance.

Health technology

Three patents have been granted for Cellnostics technology, a low-cost mobile health diagnostic platform developed by the CSIR. The point-of-care device incorporates digital holography and micro-fluidics, as well as an integrated signal and image processing system.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Economic and social infrastructure

Water infrastructure

A full design for a chemical-free water disinfection prototype plant, specifically for rural water supply purposes, has been completed. A novel ICT-based system for reporting and correcting water service delivery incidents has been developed and implemented in seven district municipalities. Monitoring and evaluation is under way in all areas where the system has been implemented.

The pilot on-site phycoremediation technology for the treatment of wastewater treatment at small-scale wastewater treatment works has been extremely well received. An operational and training manual on algal-based tertiary treatment in maturation ponds of small-scale wastewater treatment works has been developed to support the implementation of the technology. A pilot implementation of the phycoremediation technology at the Brandwacht wastewater treatment plant of the Mossel Bay Municipality is progressing well.

In cooperation with the University of Venda, the CSIR has developed a novel technology that uses cryptocrystalline magnesite to neutralise acid mine drainage and remove heavy metals from water. In combination with bentonite, this technology can also be used to treat wastewater. Two patents have been initiated to protect this technology and a private-sector partner has indicated willingness to co-invest in the development of a pilot plant for this purpose.

ICT infrastructure

The installation of a petascale high performance computing system at the Centre for High Performance Computing (CHPC) was completed and successfully launched on 7 June 2016. Phase 1 of a new system (Lengau) had 793 TFLOPS processing capability and was ranked 121 in the TOP 500 list announced in Frankfurt, Germany, in June 2016. Phase 2 of the new system was successfully completed in March 2017 as planned. The full system now has 1 petaflop processing capability.

The CHPC South Africa Student Team won the first prize in the International Student Cluster Competition with the highest overall score for all benchmarks for the third time in four years.

The CSIR has commenced with the building of a software defined networking (SDN) laboratory which supports research and development in SDN and network function virtualisation as well as the accreditation of emerging SDN standard equipment. SDN and network function virtualisation standards increase the programmability of the telecommunication network and thus the flexibility in sharing of these networks. The SDN laboratory will offer professional services in the certification of open flow standard devices. An investment of R6,2 million has been committed by the DST.

Transition to a low-carbon economy

Climate change

Ocean and terrestrial measurements continued in 2016/17, with concrete plans to improve the integration of ocean and terrestrial measurements, with the development of empirical algorithms for seamless carbon accounting products for decision-makers starting in 2017/18. To that end, a comprehensive five-year research plan integrating terrestrial and ocean carbon measurements into the Integrated Carbon Observatory Network has been instituted. The ocean component completed the 8th year of ship-based carbon dioxide measurement, with the glider platform completing its 5th year. The CSIR contributed its second batch of globally quality controlled datasets through SOCAT, the Surface Ocean CO₂ Atlas, which positions the organisation among the leading research institutions in the world on carbon biogeochemistry.

The terrestrial measurements of carbon have expanded, with three additional flux towers being built in Bushbuckridge and two in Middleburg, including a high precision carbon dioxide tower in addition to the existing three flux towers in Skukuza, Agincourt and Malopeni, doubling the terrestrial observation infrastructure. The

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

work has an extremely sound base for undertaking global standard measurements, and for building the skills necessary for developing products that provide model validation data and products relevant for carbon accounting and land use decision-making.

Significant progress was made during 2016/17 on the development of the first African-based Earth System Model, the Variable-resolution Earth System Model (VRESM) at the CSIR, and its application to study climate change over Africa and the Southern Ocean. On the terrestrial side, extensive simulations exploring the parameters that are most important to describe the physiology of plant functional types occurring in the African savannahs were successfully performed, and the key parameters were identified. The first global simulations with the Community Atmosphere Biosphere Land Exchange (CABLE) system coupled to the CASA-CNP model, which simulates the carbon-nitrogen-phosphorous cycle, has also been performed – a key step to preparing the VRESM for its application in the Intergovernmental Panel on Climate Change.

Green economy solutions

The CSIR completed its analysis of the National Household Waste Recycling Behaviour Survey for South Africa. This included survey data on packaging waste behaviour for 3 620 domestic households and on food waste for 1 720 households. This is only the second national survey conducted; the first was conducted in 2010. Using the two studies, the CSIR has been able to illustrate trends in waste behaviour and provide critical insights into what mechanisms are working and where greater understanding or incentive is required.

Eight technologies are currently under development for the production of alternative and new products from biomass and waste streams. The beneficiation of sawdust waste to high value chemicals is a high priority technology and was a key focus during 2016/17. The team have successfully developed a novel technology for the production of nanocrystalline cellulose from waste at a fraction of the cost of traditional methods. The other

seven technologies are also proving to be conceptual and bench-scale successes, and will be screened through a techno-economic feasibility study in 2017/18 to evaluate pilot suitability.

Ecosystem services

A CSIR team is developing techniques for the analysis and automated detection of sinkholes and mining-related subsidence. The research work uses machine learning-based feature extraction methods to improve the rate at which subsidence features can be detected in large synthetic aperture radar satellite scenes (150 km x 150 km swathes) instead of the features being detected by manual inspection methods.

The joint GIZ (German Technological Cooperation)-Department of Environmental Affairs (DEA) Carbon Sink Atlas project has been completed. Locally calibrated and validated EO products (including leaf area index, tree cover and biomass) were generated by the EO group and added to the Carbon Sink Atlas as demonstrators for future improvement (lower errors, higher details) of national carbon stocks and fluxes assessment. Phase 2 of the shale gas strategic environmental assessment has been completed. The final scientific assessment report has been published. The study has involved 135 experts and 71 national and international reviewers.

Renewable energy

The CSIR has also embarked on a study for Eskom on improving solar photovoltaic economics. One of the primary objectives of this study, being done with input from Nelson Mandela Metropolitan University and the University of Venda, is to study photovoltaic system performance and validate simulation tools for future solar photovoltaic projects in South Africa. The International Renewable Energy Agency Planning Governance Project: A Best Practices Report on Regional Power System Planning, based on international experiences, has been completed. The CSIR has also developed guidelines for the Regional Electricity Regulators Association of Southern Africa in support of their effort to provide oversight of

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

regional planning initiatives. The report is under review by International Renewable Energy Agency and will be submitted and presented to the SADC ministers responsible for energy in June 2017.

Capable state – decision support

In respect of waste management, the CSIR developed a novel and effective characterisation method which, coupled with CSIR recommendations regarding development opportunities, provides a powerful decision-support tool for municipalities. Through the GLZ-DEA initiative on scaling up the national waste management flagship programme, the CSIR has supported six local municipalities. In terms of developing evidence and a tool to support unlocking the barriers associated with waste separation and collection models and growing the market for recyclate, one of the key highlights is the SASCOST model, a software technology developed for use by municipalities to identify the most cost-effective option for implementing waste separation at source in each suburb.

To allow departments to respond more quickly and more proactively to harmful algae threats, the harmful algal blooms decision-support system was developed and released to public sector users and some users in the aquaculture industry. The system detects harmful algal blooms through marine remote sensing, making use of the detection of fluorescence and deriving chlorophyll in ocean water. The analysis of the concentration levels, and the assessment of movement over time and the extent of the detection, create a risk indicator of harmful concentrations of algae in the water. The system generates alerts and information which is then sent to the DEA and the Department of Agriculture, Forestry and Fisheries (DAFF), allowing them to implement appropriate mitigation actions.

DAFF also receives a daily report from the vessel tracking decision-support tool on all fishing vessels detected in South African waters, including the identification of ships and their most recent positional information. Further investigation may then be taken. The system was used to provide evidence for a specific event in which three vessels (which were moving illegally through South Africa's Exclusive Economic Zone) were stopped and found to have 600 tonnes of squid on board (worth

approximately R70 million). The DAFF fisheries compliance department will have an *Oceans and Coasts Information System* Vessel Tracking Decision Support Tool installed in their control centre in 2017 to assist operators with monitoring compliance with fishing regulations, including the detection of potential illegal fishing in South African waters.

10.3 Human Sciences Research Council



Overview of objectives

The Human Sciences Research Council (HSRC) is mandated to initiate, undertake and foster strategic basic and applied policy research in the human sciences, and to gather, analyse and publish data relevant to developmental challenges in South Africa, elsewhere in Africa and in the rest of the world. Below are some of the highlights for the period under review.

Of all the work that the HSRC has done, two areas deserve emphasis. The first is the alignment of the organisation's research priorities around poverty and inequality. The second is its development of its research trainee and postdoctoral fellowship programmes.

Aligning research priorities around poverty and inequality

The HSRC has been able to consolidate its work in the focal area of poverty and inequality around three new research initiatives on the themes of well-being, urbanisation, development and transformative governance. The organisation has completed the first phase of mapping and bringing together existing work in its programmes under these three themes. As part of the second phase, research teams are planning how to extract insights and lessons from what has been done to generate new transdisciplinary understandings of poverty and inequality, and to work out what the necessary next phase of development of these priority areas should be.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

The HSRC's research agenda – across its various research programmes, centres, institutes and units – continued to be inspired in the year under review by a positive vision of inclusive development that encompassed issues of equity, participation, social trust, the legitimacy of public institutions, and public good.

Research trainee and postdoctoral fellowship programmes

This area also contributes to the goals of the National Development Plan. In the 2016/17 financial year, the HSRC had in its research trainee and postdoctoral fellowship programmes a total of 52 master's degree research interns, 52 PhD degree research interns and 27 postdoctoral fellows. These interns and fellows are employed on two or three-year contracts and given both practical research experience, and the space and facilities to complete their degrees and prepare for careers anywhere in the science, technology and innovation sectors. These programmes are aligned to the Human Capital Development for Research and Innovation Strategy and, in the 2016/17 financial year, the HSRC for the first time exceeded all its targets for the employment of these interns and fellows.

10.4 National Advisory Council on Innovation



Overview of objectives

The National Advisory Council on Innovation (NACI) is a statutory advisory board that advises the Minister for Science and Technology and Cabinet on the role and contribution of science, technology and innovation to national objectives. The National Advisory Council on Innovation Act, 1997, gives NACI a broad policy (advisory) mandate over all matters intrinsic to the functioning of the NSI.

Highlights for the period under review.

A performance analysis and situational analysis of the NSI, and a global and local trend analysis were carried out, consulted on, and finalised.

In partnership with the DST's IT Unit, NACI successfully completed the development of the National Science, Technology and Innovation Information Portal.

NACI completed the 2016 South African Science, Technology and Innovation Indicators report and, to coincide with the launch of the STI Indicators Booklet, hosted a business symposium on STI investment on 2 June 2016.

NACI was awarded the right to host the third Global Forum of National Advisory Councils on Science, Technology and Innovation in 2017.

10.5 National Research Foundation



Overview of objectives

The National Research Foundation (NRF) is an agency of government. Its primary objective is to contribute to the improvement of the quality of life of all the people of the country through the promotion of a knowledge economy that is based on the generation, transfer and use of knowledge. The organisation therefore promotes and supports research through the provision of grants and bursaries, research infrastructure, international- and industry collaboration opportunities and mobility through all the stages of a researcher's career, across the spectrum of basic, applied and strategic research, with an

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

appropriate mix of programmes and funding mechanisms, in alignment to national priorities. The NRF also supports and promotes awareness of and engagement with science in order to improve the level of science literacy and public participation in science, technology, engineering, mathematics and innovation (STEMI).

Below are some highlights for the period under review.

Business and systems intelligence

The NRF Business Intelligence unit continued to refine the internal business intelligence system (BIS) modules. The external business intelligence environment has been upgraded and refactored into a more streamlined interface which includes tablet and smartphone-friendly dashboard reporting. The external BI system take-up exceeded expectation as more institutions requested access to the system than anticipated.

Employment equity

For the period under review, overall representation of black staff was 74,7% against a target of 76%. The target of 43% for female staff was achieved. The proportion of black and female staff in senior positions (Peromnes 1-8) is increasing, with 46%, of such positions being occupied by black staff, and 32% by female staff.

Optimising return on investment

The organisation managed to keep its corporate overheads below 3%, and its organisational overheads below 10%, with actual achievement of 1,4% and 5,3%, respectively.

Providing leading-edge ICT systems

GMSA and the IT development team worked together to review and rationalise the call provisioning process. The call provisioning process includes preparing calls that elicit funding applications from researcher and students. A substantial component of the process has now been automated and application forms have been rationalised

to improve the user experience and to enhance the data collection protocol in order to enhance the NRF BIS.

Science engagement

More than 1 million members of the public were reached through various festivals and exhibitions. Through focused interactions dealing with educator development and learner performance in mathematics, technology and science, 17 997 educators and 385 690 learners were reached.

During the reporting period 207 scientists and researchers participated in science education, science communication and awareness activities. The participating researchers benefit from these activities by the associated exposure in the media.

A "Newsclip" analysis indicated a total of 20 242 media placements recorded for the NRF. The majority (73%) was recorded on social media. Communication of science in the media through different South African languages is increasing due to the collaboration with the community media in Limpopo, KwaZulu-Natal, the North West and the Eastern Cape. There was media coverage in English, isiZulu, isiXhosa, Northern Sotho, Tshivenda and Shangaan.

Science communication capacity is being established at certain universities. The Universities of Limpopo and Venda each received a science community engagement grant from the NRF. SAASTA projects, including the Hydrogen Public Awareness and the Nanotechnology Public Engagement Programme, were presented at a number of conferences; Science communication workshops were facilitated as part of the DST-funded Youth Science and Technology Journalism Programme; and collaborative exhibitions between SKA SA and the University of East Anglia (UEA) in the UK.

RISA has provided postgraduate funding support to 10 747 black students (80%) and 8 017 female students (60%). In total 4 936 honours, 4 995 master's and 3 363 doctoral students were supported.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Transformation

For the year in review, a total of 34% (1 563) of researchers supported, were black, and 37% (1 699) were female. There was also a 12% increase in the number of black and female rated researchers (104 black and 122 female).

Global competitiveness

The number of international co-publications with South African authors was 10 534, an increase of 19% from the previous year.

Human capital development

Strategic investments, including in SARChI and the centres of excellence, amounted to R682m of the investment in human capacity development. The NRF also established communities of practice with the chair holders to ensure socially beneficial research outputs.

A total of 733 interns have enrolled into the DST-NRF Internship Programme and were placed at various participating host institutions throughout the country to be trained under the guidance of experienced mentors. The participation target for black candidates was exceeded by 11% (91% against a target of 80%). Female candidates comprised 71% of the total, against a target of 50%. The national facilities supported 554 postgraduate students against a target of 420. The target of 1 164 users of the national facilities platforms was achieved as well.

Research outputs

Over the reporting period the programme published 137 ISI (Web of Science) publications with an average impact rating of 1.32.

Scientific research highlights include the following:

- SAAO researchers in collaboration with UK astronomers published a joint paper on the discovery of a bizarre binary star system where a degenerate white dwarf pulsar is “lashing” its red dwarf companion with its strong magnetic field and beamed radiation every minute as it spins on its axis.

- An international collaboration to densify the celestial reference frame (CRF) at 22 GHz, with specific emphasis on the Southern Hemisphere, where K-band CRF coverage is weak, recently yielded the tripling of resolutions. This achievement can contribute to the next generation international standard for determining angular positions in the sky. HartRAO is part of the only array of radio telescopes that can do state-of-the-art work at the 1,2 cm wavelength in the far Southern Hemisphere, thus making this a breakthrough achievement for the South African multiwavelength agenda.
- Since MeerKAT has started to collect data more frequently, the data-processing systems and infrastructure are being reviewed to ensure optimal scientific value from the telescope. Archiving equipment, from which data will be made available to the scientific community, is being installed. SKA SA will form part of a consortium that will set up storage and computing infrastructure in support of astronomy and other science domains.

10.6 South African Council for Natural Scientific Professions



Overview of objectives

The South African Council for Natural Scientific Professions (SACNASP) is the regulatory body for natural science practitioners (professional natural scientists, natural scientists in training, natural science technologists and natural science technologists in training) in South Africa. Below are some of the highlights for the period under review.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Highlights in the period under review

The 2016/17 financial year was an exciting but busy one for SACNASP. In terms of growth of registered scientists, SACNASP experienced a healthy growth in the number of registered scientists from 8 900 in the 2015/16 financial year to 10 870 at the end of the 2016/17 financial year.

In terms of key stakeholder engagement, SACNASP has focused on industry, government and academia in this financial year as well as ensuring that it met its obligations to voluntary associations. SACNASP is still in discussions with DST entities with the aim of allowing registered scientists to be more involved in some of their work and to contribute to the national agenda. These entities include the National Advisory Council on Innovation, the Academy of Science South Africa and the Council for Scientific and Industrial Research. Entities are starting to realise the value of engaging with scientists on the SACNASP register and are starting to work more closely with us. SACNASP has also engaged with numerous government departments regarding the registration of scientists working in these departments.

For example, SACNASP not only accompanied the Department of Science and Technology to some of its engagements, but also actively consulted with the DST on the revision of the White Paper on Science and Technology. SACNASP has also engaged with the Department of Higher Education and Training, higher education institutions (e.g. North West University, and Sefako Makgatho University), and councils like the South African Qualifications Authority and the Council for Higher Education on aspects of training and developing scientists for the benefit of the South African economy. SACNASP also engaged with Eskom, South Africa's public electricity utility, and Necsa, the South African Nuclear Energy Corporation SOC Limited, on the professional registration of their scientists. To be more inclusive and relevant in terms of the broader scientific population in the South African economy, SACNASP has engaged on the South African National Accreditation System with SANAS signatories, the Department of Agriculture, Forestry and Fisheries on extension scientists, and the Department of Environmental Affairs on environmental assessment practitioners.

Having ended the previous financial year with a budget deficit of R2,66m, one of the key focus areas for the 2016/17 financial year was to turn this situation around. SACNASP ended the 2016/17 financial year with a budget surplus of R280 000. This was achieved by prudent budgeting and strict financial control. Expenses had to be reduced and, where possible, external contractor services were terminated.

However, SACNASP received a R12,6 million grant from the DST, which was used for DST-approved projects. SACNASP started the process of writing off bad debts and removing registered scientists who had not paid their annual fees for more than a year from its database. One of the key successes funded by the DST grant was the launch of the continuing professional development programme on 1 April 2017. This programme will assist registered scientists develop their skills and ensure that they remain current and relevant in their fields of practice.

To ensure good institutional governance, SACNASP focused on filling key management positions, making appointments in finance, operations and registration, where applicable moving these functions from contractors to in-house staff. Other key operational positions were filled, and contract and temporary staff had their positions made permanent. SACNASP has put a performance appraisal system in place to ensure optimal delivery. One of the areas on which staff focused in the period under review was putting important policies (including financial and human resource policies) in place. SACNASP is working on developing the outstanding policies required and having them approved by the Council. In addition, the movement of registered scientists from categories of registration not defined in the Natural Scientific Professions Act to categories that are was concluded. Concerns raised by registered scientists were successfully addressed.

The Council's Professional Conduct Committee, established in 2015, concluded investigations into 14 outstanding cases of reported complaints of alleged transgressions by registered members against the SACNASP Code of Conduct between June 2015 to March 2017. This year, SACNASP, for the first time, took a case against a registered

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

scientist all the way to a tribunal level. The tribunal found the registered scientist not guilty, and SACNASP gained valuable experience in dealing with matters of this kind in terms of the regulatory function of the Council.

The Council is also focusing on providing information and advice to the government about the Natural Sciences Professions in South Africa. SACNASP has requested input from its 41 voluntary associations, to gain greater insights into the practice of natural science professions and compile a report for government. This information has been collated and SACNASP has engaged the Human Science Research Council to assist in compiling a report on the responses. SACNASP is hoping that this report will be completed and ready for publication by end of June 2017. This will assist in understanding the key role of the Natural Scientific professions in the National System of Innovation.

The DST, in conjunction with SACNASP, is revising the Natural Scientific Professions Act, 2003. SACNASP has encouraged registered scientists to add their comments to those of the Council members. The DST is further assisting SACNASP by hosting discussions with other government departments where there is potential for conflict between Acts. SACNASP has been working closely with departmental officials to ensure the revised Act is taken to Parliament by 2018. SACNASP, for the first time, presented a five-year strategic plan and an annual performance plan to the Minister of Science and Technology. This is to ensure that the operations of SACNASP are clearly outlined to the Ministry and the Department.

10.7 South African National Space Agency



Overview of objectives

The South African National Space Agency (SANSA) is mandated to promote the peaceful use of space; support

the creation of an environment conducive to industrial development in space technology; foster research in space science, communications, navigation and space physics; advance scientific, engineering and technological competencies and capabilities through human capital development, outreach programmes and infrastructure development; and foster international cooperation in space-related activities. Below are some of the highlights for the period under review.

Space technology for socio-economic benefit

To ensure the supply of cost-effective data and information to government departments in support of various national imperatives, SANSA acquires, archives, processes and distributes imagery and products to government entities, R&D institutions and higher education institutions. In addition, the availability of processed imagery to stakeholders, such as research councils and academic institutions, enables these organisations to use all the multigovernment licensed imagery at no additional cost. Higher education institutions (HEIs) are also provided with geospatial resources for student training through the Fundisa Disk Programme to promote the use of spatial information at tertiary level. For the year 2016/17 SANSA launched various Earth observation (EO) products to industry stakeholders from various government departments and state institutions. Furthermore, a memorandum of understanding was also signed with the Gauteng Office of the Premier and underpins SANSA's strategic goal to address South Africa's challenges through space services and products. SANSA provided various services to international clients, including space qualified fluxgate magnetometer tuning; space qualified fluxgate magnetometer calibration and temperature testing; calibration and temperature testing of four space qualified Lemi magnetometers; calibration and temperature testing of a Magnetic Resonance Spectrometer orientation magnetometer; and the evaluation of three space qualified torque rods.

The successful completion of this work marks an entry into the international satellite build sector. SANSA continues

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

to contribute to making sure that the local space industry remains globally competitive and attractive to the global space market. SANSA has contracted the French South African Institute of Technology at the Cape Peninsula University of Technology to develop, fabricate, test and launch a nanosatellite, ZACUBE-2, which is a precursor mission for a constellation of nine 3U cubesats that will be used to monitor illegal fishing in South African oceans. The main payload of the mission is an automatic identification system/VHF data exchange system sensor. The ZACUBE-2 Mission is part of a grant award received from the DST. The ZACUBE-2 Mission will also have an imager that will be used for remote sensing purposes. The CSIR's Defence, Peace, Safety and Security division will develop this sensor. The CSIR Meraka Institute will add a fire-detection sensor to ZACUBE-2 as part of a technology demonstration mission. ZACUBE-2 will have a store and forward communication capability that could be used for rural and remote communications. SME development is one of the key requirements for this programme.

Conducting cutting-edge research, development and innovation in space science

Space weather services and space science research are valuable contributors to South Africa's national security. SANSA provides the South African National Defence Force with several services, including high-frequency communications prediction, geospatial information and training. A national communications tool and broadcast communications tool was developed in consultation with the South African Navy and Armscor to enable the Navy to use space weather information to communicate effectively with its vessels at sea. SANSA also developed a deperming system and procedure for reducing the magnetism of ballistic shields, used on-board patrol vessels for the protection of the crew against enemy fire. This deperming system and procedure has solved a major challenge for the Navy and will make a significant contribution to the country's safety and security. SANSA continues to set new standards in generating space-related knowledge, probing the unknown and questioning the underlying assumptions

of our scientific discourse. The impact is measured through a research productivity score that encompasses internationally reviewed journal papers, contributions to expert textbooks, research rating of individual researchers, and the number of research students graduated through this programme. The score for this financial year was 1 728.

Building capacity and developing skills

In the 2016/17 financial year, 116 employees were trained in individual development and generic programmes. Currently 29 employees are on the SANSA study assistance programme for formalised degree/diploma programmes. In the period under review, 21 employees graduated, including four with university bachelor's degrees, two with master's degrees and 15 who did the SANSA Management Development Programme (postgraduate diploma in business management). In total, 47 postgraduate SET bursary recipients were supported by SANSA. SANSA is also a host employer for six interns, four of which are on the SANSA payroll. A number of employees attended various short courses in the period under review, in the research and application development; data, products and services; science advancement services; and synthetic aperture radar (SAR) satellite data analysis for marine information offered by MSDE and SAR training by the Japan International Cooperation Agency.

Student development, science advancement and public engagement

SANSA directly engaged with 18 782 learners through various STEM outreach activities to increase the uptake of science, technology, engineering and mathematics at schools and create a wide pipeline of skills in these areas. The initiatives, such as science exhibits/festivals, mobile outreach activities and science centre activities, continue to excite and challenge young people, and expose them to new opportunities in science and technology. These engagements highlight the importance of the interface between science and society in line the DST Science Engagement Strategy. Parallel to South Africa's quest to become a knowledge economy is the need to develop an extensive knowledge workforce. In this regard, SANSA's 2016/17 student development programmes supported

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

87 postgraduate students and interns studying space science, EO and engineering. Addressing critical skills shortages in these areas will improve South Africa's global competitiveness and reduce the currently high trade deficit in high-tech products and services.

Positioning SANSA as an emerging space player

Through its participation in the African Union Space Working Group, SANSA contributed to the development of the African Space Policy and Strategy, and the implementation plan. It is intended that the implementation plan and the governance mechanism will be presented to the AU Heads of State meeting in 2018. In collaboration with the USA (Institute of Scientific Research, Boston College), UK (University of Lancaster) and India (Indian Institute of Geomagnetism), SANSA published a paper on the first simultaneous observations of poleward and equatorward travelling ionospheric disturbances during a geomagnetic storm. This was the first time that experimental evidence of these waves (on a global scale) had been shown since their prediction in 1969.

SANSA researchers participated in conferences and workshops, including the SuperDARN 2016 workshop (Alaska), the US Space Weather week (USA), the European Space Agency Living Planet Symposium (Czech Republic), the Beacon Satellite Symposium (Italy), the Scientific Committee for Antarctic Research open science meeting (Malaysia), the 43rd Annual European Meeting on Atmospheric studies by Optical methods (UK), the 18th International Congress on Plasma Physics (Taiwan), the International Symposium on Recent Observations and Simulations of the Sun-Earth System (Bulgaria), the DemoGRAPE workshop (Italy), the European Space Weather Week (Belgium), the Interdisciplinary Research and Global Outlook meeting (Japan), and the American Geophysical Union Fall Meeting (USA). SANSA's participation ranged from presenting research posters and papers to chairing sessions and giving invited presentations on space-science-related topics.

10.8 Technology Innovation Agency



Overview of objectives

To provide customer-centric technology development funding and support, to provide an enabling environment for technology innovation in collaboration with other role players, and to develop an effective and efficient internal environment for the execution of the strategy.

Below are some of the highlights for the period under review.

Health

The Drug Discovery and Development Centre was successful in identifying and developing a second potent antimalarial preclinical candidate through the collaboration between the University of Cape Town, TIA, the Medicines for Malaria Venture (MMV), and other partners. Delivery of a preclinical candidate (the second within five years) is an outstanding achievement, especially for a drug discovery centre based at an academic institution. The centre has received follow-on funding from MMV and the Strategic Health Innovation Partnerships (SHIP) to continue the programme.

TIA invested in the Durban-based company FaCT cc to support the development of the novel formulation of low glycaemic index sugar products and a technology package for licensing. The company officially launched Logical Sugar (low GI sugar) on 24 November 2016. The objective is to assist the market to reduce the rate of obesity and initiate a decline in the onset of diabetes in consumers. The low GI sugar will compete for a major portion of the market for artificial sweeteners currently being used as replacements for sugar.

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

Agriculture

AgriProtein Technologies (Pty) Ltd received funding from TIA to develop and demonstrate the production of low-cost and environmentally sustainable protein animal feed, particularly for the poultry and aquaculture industries. In October 2016, AgriProtein signed a partnership agreement worth US\$10m with an Austria-based engineering group, Christof Industries. The money will be applied to construct and establish 25 fly farms a year. AgriProtein received an additional investment boost in October 2016, for selling shares to a German investor to the value of US\$2 000 780.

TIA supported Beonics Feed Supplements (Pty) Ltd with funding over a period of three years. The intention was to progress the development of the Beonic technology, which uses the propolis from a natural resource as a feed supplement and nutraceutical. The aim is to provide an antibiotic growth promoter (AGP) replacement solution in the European poultry industry, where the use of antibiotics and AGPs have been banned, and farmers are seeking immediate solutions for legal compliance. Beonics completed the technology development for the feed additive and it was successfully registered as Vivo Care.

The commercialisation strategy for Beonics is to adopt a dual go-to-market strategy where two products will be developed to target two market segments with varied technology development and commercialisation risks, namely, a feed additive (low barrier to market entry, to build the brand), and a nutraceutical (high barrier to market entry, but global market opportunity).

Natural resources

Settec Mining and Industrial Solutions (Pty) Ltd developed the Settled Bed Detector (SBD) Probe for the identification of slurry settlement on mines and oil sands industries. A unit was purchased by Black Mountain Mining (Pty) Ltd for their Northern Cape underground mine pipe installation and Settec has delivered and installed the unit at the mine. This transaction marks the beginning of the commercialisation phase of the SBD project. Settec is seeking funding to set up facilities for the full production, marketing and sales of the SBD units.

Energy

The success of the HySA Catalysis programme resulted in the establishment of a spin-off company (HyPlat), which will be responsible for ensuring the uptake of the technology in the market. The development and demonstration of a membrane electrode assembly (MEA) was successfully completed in 2016 and has been proven to perform better than other types of MEAs in the market. It is also more cost effective.

This MEA technology is expected to contribute significantly towards the development of the fuel cell industry in South Africa and to assist in addressing the energy challenges in the country as it provides alternative energy sources without negatively affecting the environment. It will also contribute towards increasing the demand for platinum which is used as a catalyst, thereby supporting South Africa's minerals beneficiation strategy.

This project led to five invention disclosures (four from the University of Cape Town and one from Mintek), which led to three patent applications, a software license and trade secrets.

Seed Fund Programme

In the period under review the Seed Fund Programme issued two calls for proposals as part of its Higher Education Institute (HEI) Seed Fund. Through responses received, the unit enlarged its existing portfolio to 332 HEI applications. The project portfolio of the Seed Fund consists of 192 activated, 61 delayed, 58 completed and 21 terminated/closed out projects.

Technology Platforms Programme

The Centre for Proteomic and Genomic Research officially launched its "omics" accelerator programme on 1 June 2016. The programme is to stimulate and support life science and biomedical start-ups in South Africa. The programme is unique in that it focuses on cutting-edge "omics" technological capabilities and provides a professional organisation compliant with key quality management standards (the International Organisation for Standardization: ISO 9001:2008, ISO 17025). It blends these features into an offering that facilitates the development

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

of products, testing of business models and starting of new ventures in a lean and cost-effective fashion. The Centre for Proteomic and Genomic Research launched its first start-up, Tokeid Biotech, which offers food (process) quality control testing services, with an initial focus on meat contamination and adulteration in the Halaal food sector.

Technology Innovation Programmes

TIA has been a facilitator and enabler of the Beef Genomics Programme (BGP). In August 2016, TIA had disbursed around R10m in support of the programme and attracted R1m in co-funding. The BGP work has been published and presented at conferences. BGP has also pursued collaboration with the Animal Genetics and Breeding Unit at the University of New England in Australia, and submitted a proposal to the MLA Donor Company in Australia. The programme submitted 1 593 samples from 10 breeds to be genotyped by the Agricultural Research Council (ARC) Biotechnology Platform. The total of biological samples collected is currently 4 964 samples, with 2 635 of these genotyped by the Biotechnology Platform. With regard to feed intake testing, the BGP received 404 samples and processed 355.

A programme review and impact assessment study was carried out on the uYilo eMobility Technology Innovation Programme to determine the programme's impact so far and to guide future programme scope and financial support requirements. The results of the impact study indicated that the programme made the following contributions in the first three years of its existence:

- R38,29m or 1,78 times the grant value has been contributed to GDP.
- R13,73m to regional GDP with 64% of the grant value spent locally.
- 74 jobs to the local economy at a cost of R292 063 per decent job opportunity in the form of direct, indirect and induced employment.
- R5,99m to household income with 28% of the grant ending up as new household income.

- Following the results of the impact study, a new business plan for 2017-2022 was crafted. The business plan was co-created between the uYilo team and TIA, and has been presented to various industry players.

Animal health

A portfolio review was completed on all the projects in the Animal Health Technology Innovation Programme. The review provided the status update of the projects and the challenges encountered. One project from the University of Pretoria has filed an invention disclosure form for a trademark on a diagnostic kit for H5 and H7-specific enzyme linked immunosorbent assays for ostrich influenza. Two projects from the University of Pretoria have been completed, and one of the projects in the process of finalising an agreement with Onderstepoort Biological Products (OBP) for a technology transfer package. The process of registering a patent from the project is under way. OBP submitted a third dossier in February 2017 for an alternative medium to produce a tetanus vaccine.

Innovation skills development

TIA has reached 309 young people through critical thinking skills workshops, innovation challenges and science activities. The critical thinking skills workshop resulted in the delivery of 89 pitches, and the 20 winners will be undertaking an international innovation tour to Canada during 2017.

TIA collaborated with the City of Johannesburg Educating Digital Interns programme and, through joint funding, sponsored 20 interns to undertake an international innovation tour to Hong Kong. The interns visited the top ICT Innovation Hub (Cyberport), Hong Kong Broadband, the top Hong Kong ICT Company, PWWC, VIU TV, Smart Living Labs and Huawei. The interns were challenged to come up with innovative ideas to pitch to the International ICT and Smart Living Platform. This led to an application for improved service delivery in the Johannesburg Metropolitan.

CHUMA technology commercialisation and business development practitioner programme candidates are adding significant value in the offices of technology

10. ENTITIES REPORTING TO THE MINISTER (CONTINUED)

transfer (OTTs) by conducting evaluations and assessments of research and entrepreneur projects that results in substantial inputs for market analysis. They also do intellectual property portfolio analysis, strategy and business plan development. Candidates are seconded to IP firms for three months and then moved to venture capital firms for another three months as part of formal on-the-job training.

The Future 500 programme provides support in building innovation skills through workplace experience in innovation host companies and projects, giving interns practical exposure to add to their academic training, increasing their creative, entrepreneurial and business skills. Of the 134 candidates, 97% were black, 3% white, 51% were female and 49% male.

Innovation skills development tracking and employment opportunities

On completion of the TIA/Energy and Water Sector Education and Training Authority and National Research Foundation (NRF) internship programme, interns are well positioned for potential absorption in the workplace.

Successes of the programme include the following:

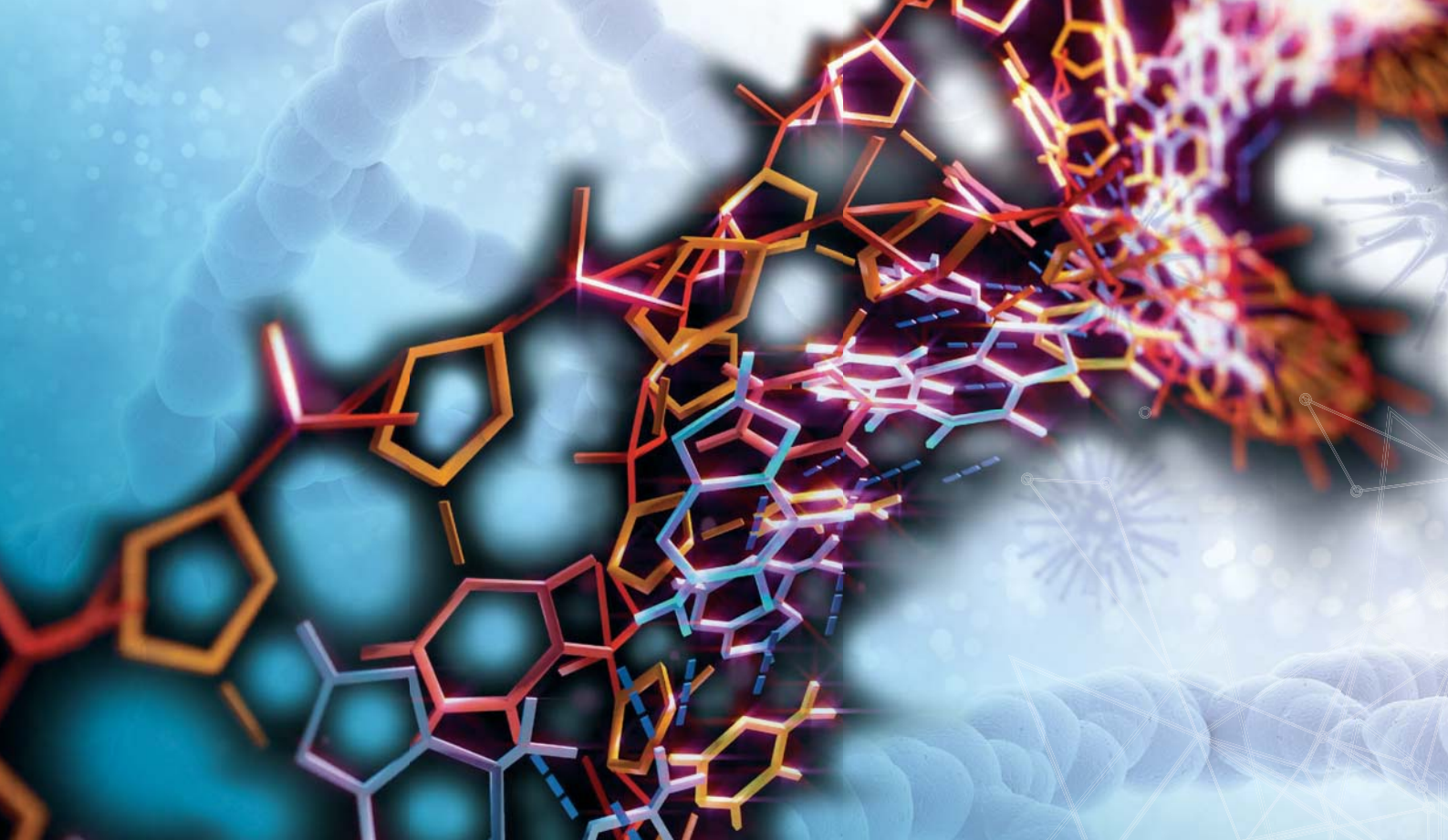
- Candidates are retained in the energy and biotechnology sectors of the NSI.
- 124 Energy and Water Sector Education and Training Authority and NRF interns took part in the programme, and 99% of candidates completed the programme.
- More than 55% found employment (10 honours and master's students and two doctoral).
- 19 national diploma interns registered to complete their BTech in Engineering.

At the end of March 2017, Africa finalists for the Africa Prize had the opportunity to pitch their innovations at Pitch@Palace Africa in London, a platform for entrepreneurs to pitch their technology solutions to an audience of global influencers.

Thought Leadership Sessions

TIA hosted a series of three Thought Leadership dialogues on e-waste in KwaZulu-Natal, Cape Town and Gauteng, capitalising on the visit of two experts from India, Mr Raman Sharma (Exigo Recycling Ltd) and Prof. Raza Gauhar (India's Council of Scientific and Industrial Research), who attended the South African Technology Network conference. The sessions drew speakers from the Department of Environmental Affairs, e-Waste Association of South Africa, researchers, policy makers, producers and recyclers.

TIA hosted the first in a series of thought provoking discussions for 2017 on 29 March. The Thought Leadership Workshop involved industry leaders who provided insight in their field of expertise to stakeholders in the NSI and SME representatives, among others. Guest speaker Dr Padmashree Gehl Sampath delivered an address focused on the importance of science, technology and innovation in developing countries and the benefits of combining this sector with industrial policy.



PART B

PERFORMANCE INFORMATION

1. AUDITOR-GENERAL'S REPORT: PREDETERMINED OBJECTIVES

The Auditor-General currently performs certain audit procedures on the performance information to provide reasonable assurance in the form of an audit conclusion. The audit conclusion on the performance against predetermined objectives is included in the report to management, with material findings being reported under the Predetermined Objectives heading in the

Report on other legal and regulatory requirements section of the auditor's report.

Refer to page 159 for the Report of the Auditor-General, published in Part E: Financial Information.

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE

2.1 Service delivery environment

The DST derives its mandate from the 1996 White Paper on Science and Technology, which introduced the concept of a national system of innovation (NSI). The NSI concept is an enabling framework for the development of science, technology and innovation (STI) at the national sphere. The NSI can be understood as a set of functioning institutions, organisations and policies that interact constructively in the pursuit of a common set of social and economic goals and objectives, seeking to promote change through the introduction of innovations.

The DST, as the custodial coordinator for the development of the NSI, influences the NSI through key strategies such as the 2002 National Research and Development Strategy and the 2008 Ten-Year Innovation Plan. The latter, particularly, seeks to contribute to transforming the South African economy into a knowledge-based economy, in which the production and dissemination of knowledge lead to economic benefits and enrich all fields of human endeavour. In this regard, the measure of success will be the level to which STI plays a driving role in enhancing productivity, economic growth and socio-economic development.

2.2 Alignment with broader government policies

The DST's 2015-2020 Strategic Plan is implemented through five successive Annual Performance Plans. In planning for the 2016/17 financial year, the Department began communicating ways in which its work and the NSI could contribute to the reduction of inequality, poverty and unemployment. The current performance outlook is based on the second year of the implementation of the 2015-2020 Strategic Plan as per the approved Annual Performance Plan for the 2016/17 financial year.

South Africa's National Development Plan (Vision 2030) (NDP) highlights the centrality of STI in national development. The NDP acknowledges that STI should play a vital role in addressing poverty, unemployment and inequality. Internationally, STI and related discoveries are recognised as future sources of economic growth, with the potential to create new kinds of jobs, and new solutions to challenges like poverty, poor health and water shortages.

Research capacity is the fuel that drives the NSI. The DST has made substantial progress in enhancing knowledge production, growing and transforming the pool of knowledge workers, and exploiting knowledge for

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

development. Increasing the number of researchers in South Africa and enhancing research innovation outputs are vital to the country's international competitiveness. During the reporting period, the DST made substantial investments in instruments aimed at boosting human capital development (HCD) in priority areas. The key instruments in this regard are the Centres of Excellence Programme and the South African Research Chairs Initiative (SARCHI). The NDP sets a target of 100 000 PhDs by 2030 to improve research and innovation capacity. To contribute to achieving this target, the DST's effort is to train 5 000 PhDs per annum.

During the 2016/17 financial year the Department continued to invest in the development of skills needed for economic growth and development through the NRF, an agency mandated to develop high-level human capital in research. The Department supported a total of 5 938 male and 7 784 female postgraduate students. These figures include 3 454 PhD students, 5 185 master's students, and 5 083 honours or honours equivalent students. A total of 883 postdoctoral researchers were also supported.

The NDP notes that developments in STI fundamentally alter the way people live, communicate and transact, with profound effects on economic growth and development. STI is vital for equitable economic growth, underpinning economic advances and improvements in health systems, education and infrastructure. The NDP argues that countries that are able to tackle poverty effectively by growing their economies are characterised by strong STI. The NDP acknowledges that economic development takes time and that innovation should grow in years to come.

During the period under review, the Department therefore focused on intensifying South Africa's expenditure on R&D, with emphasis on opportunities linked to existing industries. The DST focused on maximising what could be leveraged from the private sector under the Sector Innovation Fund programme (private sector investment), and dealt with the administrative weaknesses in the R&D tax incentive programme. The objective was to provide an environment conducive to increased private sector funding. The highlight for this work was Cabinet approval for a government R&D budget coordination process.

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

2.3 Service delivery improvement plan

The Department has completed a service delivery improvement plan. The table below highlights the achievements to date.

Table 1: Main services and standards

Main services	Beneficiaries	Current/actual standard of service	Desired standard of service	Actual achievement
Provide funding to institutions and agencies to support technology solutions in the areas of space science, energy and biosciences	Public research institutions, science councils, universities and entities	All funding transferred by the end of the financial year	All funding transferred by the end of March of each financial year	All funding transferred by the end of the financial year
Financially support for offices of technology transfer (OTTs) located at higher education institutions and science councils	Recipients include 25 higher education institutions and 10 Schedule 1 institutions as per the Intellectual Property Rights from Publicly Financed Research and Development Act	OTTs financially supported by the end of the financial year	OTTs financially supported by the end of each financial year	OTTs financially supported by the end of the financial year
Conduct space outreach and awareness campaigns through public engagements, exhibitions and media interviews	Learners, science centre coordinators and the general public	Two space outreach and awareness campaigns conducted by the end of the financial year	Two space outreach and awareness campaigns conducted by the end of the financial year	Two space outreach and awareness campaigns (World Space Week and Science Centre Coordinators Training Workshop) conducted by the end of the financial year

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

Main services	Beneficiaries	Current/actual standard of service	Desired standard of service	Actual achievement
Support uptake of space applications by government departments and agencies	Government departments (national, provincial and local) and agencies	<ul style="list-style-type: none"> National geospatial decision-support tool Base maps for national land use and cover layer (human settlement layer, water bodies layer, disaster management and national vegetation maps) Coordination of national Earth observation activities and promotion of the uptake of Earth observation applications 	<ul style="list-style-type: none"> Up-to-date national geospatial decision support tool Up-to-date base maps for national land use and cover layer (human settlement layer, water bodies layer, disaster management and national vegetation maps) Better coordination and increased uptake of Earth observation applications 	Coordination of national Earth observation activities and promotion of the uptake of Earth observation applications
Postgraduate bursary support	University students (honours, master's, doctoral) and postdoctoral researchers	Support provided to about 8% of total enrolled postgraduate students in universities	To double the percentage of postgraduate students supported	Total of 13 722 postgraduate students supported in 2016/17
Placement of graduates and postgraduate students in SET institutions for workplace experience	Graduates and postgraduate students	Support provided to about 15% of qualifying graduates	To provide support to about 30% of qualifying graduates	Support provided to 962 graduates in 2016/17
Research grants to researchers	Researchers in universities, science councils and other national research facilities	Support provided to about three of every 10 qualifying researchers	To double the support to about six out of 10 qualifying researchers	4 520 researchers supported in 2016/17
Financial and strategic support of R&D initiatives that will lead to publications, patents and prototypes	External: Universities, science councils, public-private partnerships	Ongoing support provided to R&D and demonstration of technology-based solutions with the intention of promoting their commercialisation and use	To facilitate knowledge generation and exploitation through R&D in key priority areas	

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

Main services	Beneficiaries	Current/actual standard of service	Desired standard of service	Actual achievement
Provide the agenda for publicly funded research on a range of topics (agenda setting occurs at different levels)	Science councils, implementing agencies, funders (e.g. National Treasury, donors, partners such as line departments, higher education institutions, industry and SMEs)	Through knowledge, evidence and learning, to inform and influence how science and technology can be used to transform rural and social economic development, government planning and service delivery, and the building of sustainable human settlements	To enhance the growth and development, priorities of government through targeted science and technology interventions and the development of strategic partnerships with other government departments, industry, research institutions and communities	
Improved framework for cooperation with national and provincial government departments	National Planning Commission, implementing agencies, partners such as line departments, DST internal, rural communities, industry, public agencies, higher education sector, clusters and forums	Niche high-potential STI capabilities identified, grown and sustained for sustainable development and the greening of society and the economy	To enhance the growth and development priorities of government through targeted science and technology interventions and the development of strategic partnerships with other government departments, industry, research institutions and communities	

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

Table 2: Batho Pele arrangements with beneficiaries (consultation access)

Current/actual arrangement	Desired arrangement	Actual achievement
Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill	Gather feedback with the widest possible range of views and opinions from interested parties on the proposed Bill and accreditation and certification framework	Public engagement meetings conducted in the nine provinces in response to the publication of the draft Bill in the <i>Government Gazette</i> .
Stakeholders and role players in STI awareness and engagement invited to submit project proposals	Grant funding awarded in response to proposals to organise activities throughout the country	71 organisations awarded grants to conduct the 2016 National Science Week and science festivals
Research and development project proposals and business plans are submitted by institutions and agencies. These are evaluated and approved by the Department and funding transferred once approval is obtained	No change required	R&D project proposals and business plans were submitted by institutions and agencies. These were evaluated and approved by the Department and funding was transferred once approval was obtained.
R&D project proposals and business plans submitted by institutions and agencies, evaluated and approved or rejected by the Department, with funding transferred once approval has been obtained	No change required	R&D project proposals and business plans submitted by institutions and agencies evaluated by the Department, if approved, received funding
Space awareness and advocacy	Public awareness campaigns to attract students, private companies and spin-offs to the benefits of space science and technology	2 public engagement campaigns conducted: Gateway to Space exhibition held in Gauteng and National Space Week activities held in different provinces
The administration process for the R&D tax incentive is being simplified and turnaround times for providing decisions on applications are being improved.	Actions should be reviewed and formulated on the basis of recommendations to improve incentive administration made by the government-industry task team	<ul style="list-style-type: none"> • Actions taken in response to recommendations presented by the government-industry task team to improve the administration of the incentive • Awareness among applicants increased • Staff capacity for administering the incentive expanded • Consultations initiated with the National Treasury on actions that have tax policy implications

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

Table 3: Service delivery information tool

Current/actual information tools	Desired information tools	Actual achievements
Advocacy communication strategy	Implementation plan for dissemination	Strategy approved by the DST Executive Committee (Exco)
Ministerial guidelines on awarding bursaries	A reporting framework on ministerial guidelines	Annual reporting on progress with implementation of ministerial guidelines
Ministerial guidelines on awarding research grants	A reporting framework on ministerial guidelines	Annual reporting on progress with implementation of ministerial guidelines
Communication strategy, including exhibitions and media	Implementation plan for dissemination, including exhibitions and media	<ul style="list-style-type: none"> • Strategy approved by Exco • Exhibitions held at all public participation programmes, and media successfully used

Table 4: Complaints mechanism

Current/actual complaints mechanism	Desired complaints mechanism	Actual achievements
The NRF has an appeal process for postgraduate students who are not awarded bursaries.	Panel of experts	Appeal framework under review by NRF
The NRF does not have an appeal process for applicants who are not selected for internships, as the selection of interns is conducted by host institutions.	No change desired	As per the current/actual arrangement
The NRF has an appeal process for researchers who are not awarded grants.	Panel of experts	Appeal framework under review by NRF
Technology Innovation Agency	Appeals procedure	Appeals procedure developed and in pilot implementation
NIPMO has a dispute mechanism for administrative decisions it takes that may adversely affect a recipient.	Dispute panel	Dispute panel in place, with approved terms of reference and rules of procedure, as mandated by the Intellectual Property Rights from Publicly Financed Research and Development Act

2. OVERVIEW OF DEPARTMENTAL PERFORMANCE (CONTINUED)

2.4 Organisational environment

Changes in the STI policy environment during the period under review include a number of interventions, such as the Nine-Point Plan, which government has embarked on in response to the need for an increased rate of economic growth in South Africa as articulated in the NDP. The DST supports the Nine-Point Plan, which is aimed at diversifying and stimulating the economy through a number of initiatives. This is reflected in the 2016/17 Annual Performance Plan. However, the DST, along with all government departments, is facing fiscal constraints. Given the current low-growth environment, caused principally by a global slow-down in the demand for resources and various domestic factors, the outlook for a significant increase in public and private sector investment in research and development over the medium term remains relatively poor.

2.5 Key policy developments and legislative changes

South Africa adopted the NSI approach in the 1996 White Paper on Science and Technology, and significant progress has been made since then in building and nurturing the NSI. Despite the STI environment paradigm shift and the maturing of the NSI, the country is not reaping the full potential of the NSI to address poverty, unemployment and inequality. South Africa has noted that OECD countries are generally strengthening investment in innovation and fostering business growth, seizing the benefits of the digital economy, investing in and shaping systems of knowledge creation and diffusion, fostering talent and skills, and optimising their use, and improving the governance and implementation of innovation policies. These factors led to a recognition of the necessity of developing a new White Paper on STI for South Africa. The process is well under way.

3. STRATEGIC OUTCOME-ORIENTED GOALS

In order to achieve the DST's overall objectives, the Department has five strategic outcome-oriented goals, set out in the 2015-2020 DST Strategic Plan, that guide all its actions. These include significant achievements with regard to the outcomes directly linked to the DST mandate. In the year under review, the DST played a significant role in either leading or supporting the following Medium Term Strategic Framework outcomes:

- Outcome 2:** A long and healthy life for all South Africans.
- Outcome 4:** Decent employment through inclusive economic growth.
- Outcome 5:** A skilled and capable workforce to support an inclusive growth path.
- Outcome 6:** An efficient, competitive and responsive economic infrastructure network.

Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all.

Outcome 10: Protect and enhance our environmental assets and natural resources.

Goal 1: A responsive, coordinated and efficient national system of innovation

Goal statement: Build on previous gains to create a responsive, coordinated and efficient national system of innovation

The DST recognises that if South Africa's economy is to advance along the trajectory set out in the NDP, a strong, coherent and effective NSI, working in a coordinated manner to achieve national priorities, will be required. Efforts in this regard during the period under review include the development of a Science, Technology and

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

Innovation Institutional Landscape Review Report by a panel appointed by the DST. This has been submitted to the Minister for consideration. Among the other things, the review was intended to establish the DST's governance reach and constraints in the following:

- The translation of STI policy into programmes.
- Instruments and tools to achieve the desired institutional impact and system cohesion.
- Resource allocation.
- Monitoring and evaluation mechanisms.
- Various inter-linkages required to achieve the desired socio-economical/political impact.

The DST initiated a process to improve the coordination of publicly funded R&D and science and technology-based activities. The Cabinet approved that the DST and National Treasury introduce a government research and development budget coordination process. The proposed budget coordination is being phased in over the medium term 2016/17 to 2019/20. Various departments are being consulted on the implementation of process.

During the reporting period, the Department implemented the recommendations of the joint government-industry task team established by the Minister in November 2015 to look into ways of improving the administration of the R&D tax incentive. Among the measures implemented are the publication of new user-friendly and easily accessible versions of information about the R&D tax incentive, guidelines and the online application form. External experts have been appointed to assist with the evaluation of applications, which will assist in reduce the time taken to process applications.

During the period under review the DST submitted two Bills to the Cabinet for publication, namely, the Draft National Research Foundation Amendment Bill and the Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill (IKS Bill). The Bills were gazetted for public comments and, once the comments have been processed, the revised Bills will be presented to the relevant Clusters.

During the period under review, the DST facilitated the approval of the IKS Bill. The Bill puts in place mechanisms to facilitate economic growth through the Bio-economy Strategy in the form of economic spin-offs from the protection of intellectual property related to indigenous cultural heritage. The application of such knowledge can alleviate poverty in communities, ensuring the fair and equitable sharing of economic benefits arising from the use of indigenous knowledge. Various indigenous knowledge projects create business opportunities and uplift communities, especially marginalised communities.

During the period under view, the Department conducted public hearings on the proposed Karoo Central Astronomy Advantage Areas regulations. The public hearings were held in Pretoria on 13 October 2016 and in Carnarvon on 20 October 2016. Vodacom, Eskom and Transnet were among the big companies that made presentations to the Minister. A report on oral public hearings on regulations to be made for the protection of the declared Karoo Central Astronomy Advantage Areas in terms of the Astronomy Geographic Advantage Act, 2007, was published in *Government Gazette* No. 40706 under Notice No. 246 on 22 March 2017.

The regulations will help the Astronomy Management Authority unit in the DST to manage and protect radio astronomy activities from any source of radio interference.

Summary of other initiatives aimed at strengthening the NSI

The First Biennial Report on the State of Climate Change Science and Technology in South Africa was submitted to Cabinet, meeting the target under Outcome 10 of the Medium-Term Strategic Framework. The report was developed by ASSAf scientists on behalf of the DST.

The DST partnered with the Departments of Trade and Industry, Arts and Culture, and International Relations and Cooperation, and the Companies and Intellectual Property Commission, in hosting a South African Exhibition at the World Intellectual Property Organization

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

General Assembly. The core of the exhibition was the Palaeontological Scientific Trust “All from One” exhibition. South African indigenous knowledge innovation products were also showcased.

Given the strategic alignment between the core functions of the National Zoological Gardens (NZG) and the mandate of the South African National Biodiversity Institute (SANBI), the DST and the Department of Environmental Affairs agreed on the transfer of the NZG to SANBI, to complement and enhance SANBI’s portfolio of activities. Significant milestones in this regard were the signing of a withdrawal notice of the status of the NZG as a national facility of the NRF, and the conclusion of a transfer agreement that will guide the completion of the transfer of the NZG to SANBI in the next reporting cycle.

The 4th Indigenous Knowledge Systems Interface Conference, organised by the SARChI chair in Development Education, the National Research Foundation and the DST, took place at the University of Venda. The four-day conference focused on the theme “Towards a science and technology of humility in South Africa”, and was aimed at igniting conversations about the future of indigenous knowledge and at creating space for dialogue towards the generation of new knowledge and the training of new cohorts of researchers. Researchers, indigenous knowledge holders, healers and students discussed progress made and challenges experienced, and shared best practices.

In May 2016, the Minister launched three South Africa-United Kingdom bilateral research chairs at the Going Global conference for leaders in international education. Two of the research chairs are in food security, and are hosted by the University of the Western Cape and Nelson Mandela Metropolitan University. The third is in political theory and is hosted by the University of the Witwatersrand. This brings the total number of research chairs awarded to date to 198. In June 2016, the NRF launched the first call for proposals for support from the newly established Strategic Research Equipment Programme. This programme was introduced to address

the limitations of the National Equipment Programme to deal with funding requests between R10m and R35m, in this way enhancing national scope and impact.

A baseline survey on intellectual property and technology transfer at publicly funded research institutions was published. The survey was the first of its kind in South Africa and extended the current portfolio of instruments that the Department uses to monitor the performance of the NSI into a new space, to cover outputs of public R&D investment. The survey included key indicators to understand capabilities, structure and activities, as well as outputs and outcomes achieved. This was produced through a partnership involving NIPMO, the Southern African Research and Innovation Management Association, and the HSRC’s Centre for Science, Technology and Innovation Indicators.

The DST completed and commissioned several high-level investigations of issues related to the transformation of the postgraduate and researcher cohorts in (mainly) the higher education sector. These studies provide insight into some of the challenges faced in driving the demographic transformation of these cohorts in a quest for sustainability and growth in the research system. In part, these insights enable the Department, the NRF, the Department of Higher Education and Training (DHET) and the university sector to begin developing new policy approaches and programmes that address the shortcomings identified. The studies also indicate that further detail is required before evidence-based policy can be finalised.

Goal 2: Increased knowledge generation

Goal statement: Maintain and increase the relative contribution of South African researchers to global scientific output

The DST acknowledged that without the support of research grants, knowledge generation is not possible. Grants are provided through a number of instruments designed to strengthen research capacity at universities, including the South African Research Chairs Initiative and the Centres of Excellence Programme.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

With regard to the provision of research equipment and infrastructure to universities, science councils, national facilities and museums, DST research infrastructure grants were awarded across the entire science system and in line with requirements across the innovation value chain. These awards made it possible for researchers and students to access world-class research infrastructure and equipment. During the reporting period, the Department continued to provide research support to researchers through the awarding of 4 520 research grants through the NRF.

Significant progress has been made in establishing a national integrated cyberinfrastructure system in which high performance computing and data management services are integrated with one another and with the national research network to support data-intensive research projects, including the computational requirements of big data flagship projects like the MeerKAT/SKA.

The MeerKAT is on track to be the most sensitive radio telescope infrastructure in the world before the completion of the Square Kilometre Array, for which it is a precursor. The test image produced using 32 antennas showed a much better resolution of the sky than the 16-antenna array. This is a significant milestone for South Africa in the construction of the MeerKAT. The first set of 16 integrated antennas, referred to as Array Release 1 (AR1), was launched in July 2016. The MeerKAT “first light” image of the radio sky produced with AR1 showed more than 1 300 radio galaxies in the distant universe. The previous best image obtained with a telescope in Australia showed only 70 radio galaxies. These results demonstrate that the AR1 MeerKAT is already the best radio telescope in the Southern Hemisphere, and confirm that, when completed, the MeerKAT should be the world’s best telescope of its kind.

To promote e-skills and e-research capacity development, and to build e-infrastructure (cyberinfrastructure) capability at the universities, awards were made to two consortiums. One, to develop and host a National e-Science Postgraduate Teaching and Training Platform,

with a focus on the development of a multi-institutional and multidisciplinary master’s degree in e-Science, is led by the University of the Witwatersrand. The other consortium, to host and develop a Regional Tier 2 Data Node, is led by the University of Cape Town.

With respect to the National Integrated Cyberinfrastructure System (NICIS), the installation of the petascale high performance computing system at the Centre for High Performance Computing (CHPC) was completed in 2016/17, and the system was upgraded to a full 1 petaflop during the fourth quarter. The contracts for the implementation of the National e-Science Postgraduate Teaching and Training Platform and the Western Cape Data Intensive Research Initiative for South Africa Tier 2 Data Intensive Research Facility were signed during the fourth quarter. The transfer of funding to these two projects has been effected. By the end of the 2016/17 financial year, the CHPC established the first petaflop supercomputer on the Africa continent. A major highlight for the CHPC was that the SA team of undergraduate students won first prize at the International Supercomputing Student Cluster Competition in Germany in June 2016 for the third time.

During the 2016/17 financial year, the DST provided funding from the research infrastructure budget for the upgrade of the assembly, integration and testing facility at Houwteq in the Western Cape. The facility currently falls under the Department of Public Enterprises and is used by Denel for their space activities. However, the facility is a key node that DST has earmarked for migration to SANSA for the purposes of the national space programme.

The South African Research Infrastructure Roadmap (SARIR) was developed. The roadmap, which includes plans for the establishment of national infrastructure in the scientific domains of humans and society; health, biological and food security; Earth and environment; materials and manufacturing; and energy. Funds were earmarked to begin implementing SARIR in 2016/17, and approval will be sought to begin with at least four of the selected infrastructures in the next financial year. The completion of SARIR to steer and direct the roll-

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

out of national research infrastructures will be a major achievement for the country.

In terms of supporting and promoting research that develops basic sciences through the production of new knowledge and relevant training opportunities, the DST awarded 4 528 research grants through DST/NRF-managed programmes, 35% of which were went to black researchers, and 38% to women. A total of 8 156 research articles were published by DST-NRF-funded researchers and cited in the Thomson Reuters Web of Science Citation Database.

Two SA-UK bilateral research chairs were awarded for research in food security (to the Nelson Mandela Metropolitan University and the University of the Western Cape), and a third one on political theory to the University of the Witwatersrand.

Two peer-reviewed research articles were published on Moringa R&D by the University of the Witwatersrand in 2016. Clinical studies on an anti-wrinkle oil extract from an indigenous plant were completed, with the candidate product proving safe and effective in reducing human skin wrinkles after just two weeks. A benefit-sharing agreement was signed in February 2016 between the CSIR and two indigenous knowledge holding communities, the South African San Council and the National Khoisan Council, to ensure social and economic benefits for knowledge holders.

The Data Science for Impact and Decision Enablement programme's 2016/17 intake was 51 students. The aim of the programme is to support capacity building in the ever-growing field of data science by scheduling recruits to participate in mentor-guided and learn-by-doing problem solving of real-world needs as presented by different stakeholders, including government departments and agencies, and private sector companies. These students were selected through a competitive process and given opportunities during university vacations to work on projects aimed at finding solutions to problems (such as crime; health service delivery; government planning and

monitoring; and logistics and transport), while obtaining advanced skills and competencies in the fields of analytics, data visualisation, machine learning and pattern recognition, among others.

Goal 3: Human capital development

Goal statement: Increase the number of high-level graduates and improve their representivity

Human capital development is a proxy indicator of human development. In a developmental state like South Africa, skills acquisition is the greatest equaliser, reducing inequality, poverty and unemployment. In the 2016/17 financial year the Department has continued to invest in the development of skills needed for economic growth and development through the NRF, an agency mandated with developing high-level human capital in research. To this end, the Department supported a total of 13 722 (5 938 males and 7 784 females) postgraduate students. These comprise 3 454 PhD students, 5 185 master's and 5 083 honours or honours equivalent students. In addition, 883 postdoctoral fellows were supported.

The SKA SA HCD programme recently celebrated its 10th anniversary. Since its inception, it has funded more than 730 university academics, postdoctoral researchers, postgraduates and undergraduate students, as well as artisan trainees. Of these, 52 doctoral students have graduated in the standard period for the degree (85% graduation rate vs a national average of 12%), 116 master's students have graduated (94% graduation rate vs a national average of 20%), 80 honours students have graduated (91% graduation rate) and 101 first degree students have graduated (86% graduation rate vs a national average of 15%).

In addition, this programme has supported 133 students from other countries in Africa, of which 91 are from SKA partner countries. South Africa is playing a leadership role in the establishment of the international treaty organisation that will govern the construction and operational phases of the SKA project.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

The DST-NRF Internship programme is a workplace preparation programme that places students and postgraduates in work environments where they gain work experience, which makes a significant contribution to the absorption of postgraduate students in the job market, while concomitantly attracting them to follow research careers, reducing unemployment levels and inequalities. This programme is complemented by the National Youth Service programme which places students with degrees and diplomas as volunteers operating as science communicators in the network of science centres across the country. During the 2016/17 financial year, the DST through its programmes supported a total of 1 178 graduates and interns.

National Science Week (NSW) is another DST's initiative that takes place annually in August. The primary goal of this campaign is to promote science and technology literacy, as well as their pivotal role in addressing issues affecting people. NSW is an annual countrywide celebration of science, technology, engineering, mathematics and innovation (STEMI), where various stakeholders, role players and interested groups conduct activities that promote general awareness of the value of STEMI to people's daily lives.

In the period under review, a successful NSW was launched by the Minister at the University of the Western Cape. Each year a different theme is chosen for the NSW and activities are offered around the theme to the target audiences. The theme for 2016 was "Science for sustainable development and improved quality of life". The 2016 NSW took place from 8 to 13 August and reached 2 066 134 participants through science awareness and engagement programmes.

Goal 4: Using knowledge and innovation for economic development

Goal statement: Derive a greater share of economic growth from R&D-based opportunities and partnerships

Industry innovation partnerships

The DST continues to encourage industry innovation partnerships as part of a broader government efforts to support industry competitiveness. The main objective is to create an environment in which government can effectively partner with industry and support co-investments in research, development and innovation (RDI) in key strategic sectors of the economy, encouraging the private sector to invest more in RDI.

The development of a concept note for the envisioned sovereign innovation fund was therefore a priority for the DST. The fund is intended to serve as a public-private funding partnership aimed at harvesting and commercialising South African technology innovations for deployment in national and international markets. The concept note is intended to facilitate consensus across government and the private sector on the short to medium-term requirements for the establishment of the fund.

The DST continued supporting seven Sector Innovation Funds in 2016/17. Several supported industry associations held research symposiums during the 2016/17 year, including Forestry South Africa, Citrus Research International and the Fresh Produce Exporters' Forum. The symposiums showcased projects supported by the Sector Innovation Funds.

The DST continues to support the Industry Innovation Partnerships facilities at the Council for Scientific and Industrial Research (CSIR). During the 2016/17 financial year, the DST and the CSIR launched the Biomanufacturing Industry Development Centre (BIDC), a hub for innovation in the biomanufacturing sector. The BIDC is the first of its kind in South Africa and aims to support small and medium enterprises (SMEs) involved in biomanufacturing to meet their customers' needs comparatively quickly and to exploit market opportunities.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

The BIDC's support for SMEs is through the development of bio-based manufacturing processes and products. Companies that are incubated at the BIDC have access to ready-to-use biomanufacturing facilities, support in R&D laboratories, and access to experts in the fields of agroprocessing and bioprocessing product development and scale-up. The BIDC is funded through the DST's Industrial Innovation Partnership Programme and National Treasury's Jobs Fund.

It is envisaged that the initial phase will result in the creation of both temporary and permanent jobs, and the economic impact is projected at about R250 million within the next five years. The BIDC is currently supporting 19 enterprises, 16 of which are owned by black entrepreneurs, including 10 black women.

To date, 50 products with applications in the cosmetics, nutrition and biotechnology industries have been developed and transferred to the enterprises. The programme has resulted in 135 permanent jobs being created, most of which are within the enterprises and their value chains, while an additional 185 temporary jobs have also been created. Over 70 interns have received training in the BIDC vocational learning programme in order to provide the biomanufacturing sector with a skilled workforce. The BIDC was the second facility to be launched – with the Nanomaterials Industry Development Facility launched in 2015/16. A third facility – the Biorefinery Facility, situated in Durban – is planned to be launched during the latter half of 2017/18.

Local production and firm competitiveness initiative

The goal to achieve higher levels of local production (and increased competitiveness) through the provision of technological support to local firms (especially new and transformed firms) continues to deliver excellent outcomes on jobs retained, additional revenue created by firms, and on new products and processes created, often resulting in increased exports. An analysis of support provided to 37 firms, the following outputs were achieved on a DST investment of R41,739 million:

- Jobs created: 257
- Jobs retained: 3 332
- Jobs lost: 104
- Value of 89 new projects secured: R453,782 million

The National Intellectual Property Management Office (NIPMO) continues to play an enabling role in the utilisation of knowledge for economic and social development through support provided to offices of technology transfer (OTTs) for human capacity as well as for costs incurred for the protection and maintenance of intellectual property (IP) rights. NIPMO has received 1 297 actionable disclosures from institutions for IP developed from publicly financed R&D, of which 255 have been granted an IP right. The IP Fund helps with the high costs of obtaining IP protection. This has provided a rebate of over R93 million to a maximum of 24 institutions by 31 March 2017. It is worth noting that 7% of the actionable disclosures have been commercialised (including through the granting of 43 licences to SMEs and BBEE entities), with institutions receiving revenue of over R6,8 million. These statistics are encouraging and show the potential for publicly financed R&D to contribute towards economic development.

The DST's Commercialisation Framework Initiative (CFI) serves as an overarching policy guideline for actions to be taken in respect of the commercialisation activities of the DST. To this end, the CFI, through various implementation protocols, will enable the systematic gathering of relevant evidence to support the DST's decision-making on its R&D investments and particularly the realisation of any commercialisation opportunities in this regard. Following the approval of the CFI by the DST's Executive Committee, a CFI working group, comprising senior representatives and domain experts from various NSI stakeholder organisations was convened to begin drafting the CFI implementation protocols in 2016. These activities were guided by an independent technical coordinator. The group was tasked with designing a transparent process, methodology and advisory structure for the implementation of the CFI.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

Hydrogen fuel cell initiative

Much of the DST's work is towards creating decent work and skills for South Africans. For example, in preparation for HySA's third phase, an independent assessment was completed in 2016/17 to gauge the commercial potential of the technological outputs emanating from the initiative. Several products/services in the HySA portfolio have been independently confirmed as close to market. HyPlat, a spin-out company from HySA Catalysis had successful sales of cell-powered forklifts during 2016/17.

Aeroswift industrialisation and commercialisation

The Aeroswift is a "next generation"¹ additive manufacturing or 3D printing machine. Aeroswift is a collaborative partnership, funded by the DST, between the National Laser Centre at the CSIR, and the Aerosud Innovation and Training Centre.

The development of the Aeroswift machine is currently in the second phase of development, which is the process evaluation and optimisation. The component application and selection phase, and the Aeroswift industrialisation and commercialisation (last) phase are also under way.

A significant milestone was reached in December 2016, with the manufacture of the first real component (a throttle handle for the locally developed AHRLAC aircraft), as depicted in the picture to the right.

Components from the Aeroswift machine, the machine and the team



In an effort to accelerate the Aeroswift technology development and diffusion, an approach of identifying and partnering with lead users² (Airbus and Boeing) has been adopted. This approach ensures that the Aeroswift technology development is accelerated by being aligned with the lead user's requirements, such as the qualification of the Aeroswift manufacturing process control, component material integrity, component qualification and certification requirements, etc. In addition, the respective lead users are exposed to Aeroswift's unique performance characteristics, resulting in early buy-in and incorporation of the Aeroswift technology into future aircraft production schedules.

¹ There are two classes of metal-based additive manufacturing (AM) systems currently available on the market. Powder-bed AM systems can produce very complex parts and at a high resolution or accuracy, but these systems tend to be slow. Wire deposition AM systems can produce large parts fairly quickly, but the complexity of parts is very limited and the resolution is poor, requiring much post-machining work. The Aeroswift project aims to develop a metal powder-bed system that is about five times faster than current machines, with a possible printing volume about 10 times larger than existing machines.

² A concept defined by Eric von Hippel to identify users who are early adopters of a technology (that will become a general market need later), but who are committed to help mature a technology because of the inherent current benefits of the new technology to the lead user.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

Titanium metal powder

The CSIR, funded by the DST, has completed the second pilot test for the direct production of titanium metal powder. The delay in the project against the defined milestones was because of the substantial upgrades that were performed on the bench-scale pilot plant, which is expected to help accelerate the requisite technology maturation. In addition to the efforts to directly manufacture commercially pure titanium powder, substantial progress was also made on the downstream manufacture of titanium alloy powder.

Supported small-scale agroprocessing enterprises

Moringa farm and agroprocessing facility at Limpopo

The Minister launched the Moringa farm and agroprocessing facility on 9 September 2016. The Department has funded the development of a new community-based agroprocessing facility based on indigenous crops and moringa at Makonde village, outside Thohoyandou. This is a partnership between the ARC, the University of Venda and the Limpopo Department of Agriculture.

Furthermore, the Minister launched the Maggi Morogo Noodles product developed in a partnership between the CSIR, the Agricultural Research Council, the Universities of Fort Hare and Venda, communities and Nestlé, during the 2016/17 financial year. The noodles are now being sold in all South African retail stores.



As part of the DST contribution to food security, during the reporting period initiatives were undertaken:

In vitro multiplication of indigenous plants (Strelitzia) with ornamental value

The DST supported the University of Limpopo in a project that involved the development of a novel in vitro propagation method to speed up growth and an increase multiplication rates. This novel technology will allow for mass production of perennial plants over a shorter period than conventional propagation from seeds. This will be highly beneficial for commercial operation, since it increases the sale of products and ensures disease-free plants. There is therefore a need to upscale the technology and test its reproducibility for commercial purposes. The Technology Innovation Agency (TIA) has also continued and extended support to the project until completion.

The Agri-parks initiative

In respect of bioinnovation for agriculture, a new initiative, the Strategic Innovation Partnership for Grain and Oilseeds, was developed. This initiative, currently being implemented and coordinated by Grain South Africa, provides an overarching framework for the contribution of grain and oilseeds to the bioeconomy. It focuses on optimising innovation efforts in the grain and oilseed research through harmonisation, synergies and partnerships on areas of strategic focus in the DST's agricultural bioeconomy and the Grain SA research portfolio. This covers and extends the existing research effort across four priority areas, namely, crop improvement (wheat breeding programme), crop protection (soybean plant improvement programme), climate change adaptation and conservation agriculture (maize breeding), innovation support and support for human capital development.

A wheat-breeding platform was established and funded. It is being developed in partnership with GrainSA and co-funded by the Winter Cereal Trust. The initiative will support the local cultivation of wheat, the bulk of which is currently being imported. The project distributed a

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

significant amount of germplasm to breeding programmes at the ARC, Sensako (Pty) Ltd and Pannar Seed (Pty) Ltd for further evaluation and/or use as crossing parents and inclusion in breeding programmes during 2016/17. The project is in the process of compiling the nursery to be distributed, thereby ensuring that the project contributes to the ongoing development of new (high-yielding and rust resistant) wheat cultivars for the South African cereal producer.

Also under the Strategic Innovation Partnership for Grain and Oilseeds, the DST funded the Soybean Improvement Programme. Implemented by a consortium, the programme focuses on soybean pests and diseases, with the aim of improving the local cultivation of soya to meet demand. Currently, South Africa imports the bulk of the soya it uses. Outputs will include access to new technology, molecular and physiological studies, and monitoring and management through early warning systems. The project is co-funded by GrainSA and Sasol Trust. Other important partners are Stellenbosch University, the Agricultural Research Council, Sensako and Pannar.

Soybean Food and Nutrition Programme

The programme is being implemented by the Oil and Protein Seeds Development Trust and the Protein Research Foundation to focus on the development and/or optimising of appropriate technologies (including processing technologies) to increase the palatability of soybean as an alternate food source, to reduce the salt content of processed soya for health purposes, to make niche or value-added agroprocessed products such as soymilk, and to identify linkages and disseminate information to farmers and communities through development programmes. The direct outputs are the development and training of entry-level soy-consumers with further progression to soy entrepreneur level, addressing food insecurity by supporting economic growth for emerging farmers, promoting the household production and processing of soybean as a major source of quality protein, and supporting farmer development championed by Grain SA. The partners in this programme include Grain South Africa, the Vaal University of Technology, and the Eden Social Development Foundation, a non-profit organisation.

Goal 5: Using knowledge and innovation for inclusive development

Goal statement: Accelerate inclusive development through scientific knowledge, evidence and appropriate technology

Innovation towards a decent standard of living

The DST Strategic Health Innovation Partnerships (SHIP) provided support for a drug discovery flagship programme aimed at the research and development of novel and more effective medicines for malaria. In 2016, this programme led to the development of an additional antimalarial candidate with potential for both treating and preventing malaria. On the basis of the initial results, the candidate was selected by MMV for further clinical development, making it the second such compound to be researched on African soil in partnership with MMV. The research on the compound is conducted by the University of Cape Town and the compound has been found to have potent activity against all stages of the malaria parasite life-cycle. It has the potential to block transmission of the parasite from person to person and could therefore contribute to the eradication of malaria. The next phase of the project would include validation studies in humans. The development of tools to control malaria is of strategic importance to South Africa because sub-Saharan Africa carries a disproportionately high share of the global malaria burden, with 90% of the 212 million malaria cases and 92% of 429 000 malaria deaths occurring in the region.

SHIP is also advancing the development and use of a low-cost Doppler ultrasound device (Umbiflow) to screen low risk pregnancies for placental abnormalities that could lead to stillbirths. Doppler ultrasound equipment is an important tool used worldwide to determine foetal health and the intention with Umbiflow is to increase its impact. Using sound waves, it measures blood flow in the umbilical cord to determine if a foetus is small for gestational age or sick, which usually occurs if the placenta is not providing enough blood flow to maintain the foetus on the standard

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

growth curve. The project has taken conventional, expensive ultrasound technology and customised it in such a way that more pregnant women in South Africa can benefit from it. The device has been tested on patients in Tshwane, and the results show Umbiflow to be as accurate as the conventional equipment. Further work will involve expanding the studies to other areas in South Africa and possibly other low and middle-income countries.

Another groundbreaking initiative for using knowledge and innovation for inclusive development is a Multi-African States Foot-and-Mouth Disease Rapid Response. This programme focuses on livestock disease management through the development of diagnostics and technologies that will support and inform policies to assist in managing notifiable diseases such as foot-and-mouth disease. The programme is implemented by the CSIR and aims to develop a coordinated emergency point-of-care diagnostic that will respond to foot-and-mouth disease outbreaks in livestock, and ultimately build human capacity by giving formal and informal training related to foot-and-mouth disease control and management to South African and non-South African participants. Other partners include the Agricultural Research Council, the Onderstepoort Veterinary Institute, the University of Pretoria and North-West University.

With regard to support for small-scale producers (agriculture, forestry and fisheries), a review of existing information and communication technology (ICT) agricultural platforms was initiated. There has been engagement with the KwaZulu-Natal Provincial Government to secure cooperation and co-funding in the implementation of an ICT-enabled agriculture model.

Targeted decision support

Through innovation for inclusive development initiatives, the DST continued in its endeavours to engage policymakers and relevant stakeholders in advancing the integration of innovation in the inclusive development agenda through policy seminars, including the following:

- On 9 February 2016, the DST and the HSRC partnered to open the debate on innovation and socio-economic inclusion as part of the higher education transformation agenda. The event focused on the role of universities in innovation for inclusive development.
- Specific engagements with science councils to revisit their role in supporting all kinds of innovation as per the 1996 White Paper on Science and Technology.
- The first national grassroots innovation seminar, hosted jointly by the DST and the DTI, focused on the responsiveness of the NSI to support informal and grassroots innovators. The seminar was attended by grassroots innovators who highlighted key concerns and challenges in accessing STI instruments to advance their innovations.

The Department continued to lead the demonstration of targeted decision support through innovative technology solutions to improve the delivery of basic services. Through its various demonstration projects, the Department enabled access to decent sanitation services in rural communities located in distressed priority district municipalities. The Department also advanced its efforts to improve the integration of innovation in the delivery of basic services. One such initiative in this regard was the Municipal Innovation Maturity Index, which is being implemented to diagnose innovation integration challenges and measure the innovation maturity of a municipality. This is critical for municipalities to adopt and employ innovative technology solutions in the delivery of basic services.

During 2016/17, the Bioenergy Atlas of South Africa was launched by the Minister. The DST developed the Bioenergy Atlas to facilitate the transition towards a cleaner, inclusive and sustainable energy system. The Bioenergy Atlas for South Africa is a web-based decision-making support tool that targets both energy policy makers and the potential investors in the energy sector. The decision-support tool was only launched towards the end of March 2017, but it has been instrumental in supporting the Biomass Action

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

Plan for Electricity Production in South Africa (BAPEPSA), an initiative run by a multistakeholder forum to deploy a biomass power plant to generate power in South Africa.

The implementation of the Waste RDI Roadmap is now in its second year of implementation. The initiative, implemented through the CSIR, commissioned a project mapping South Africa's waste electrical and electronic equipment dismantling, pre-processing and processing technology landscape to better understand the technologies available in South Africa to address this issue.

The Waste RDI Roadmap activities continued to enjoy good positioning and marketing among policy and industry stakeholders. The partnership with Pikitup Johannesburg (SOC) Limited has resulted in two research projects; one dealing with separation at source in the domestic bin and the other looking at incentives/disincentives in the management of waste. The DST, through the Waste RDI Portfolio Management Unit at the CSIR, collaborated with the World Wide Fund for Nature to hold a science workshop on food waste management. Presentations made by industry partners like Pick n Pay, Tshwane Fresh Produce Market and RCL Foods, as well as from international partners like the UK-based Waste and Resources Action Programme, and government departments like the Department of Trade and Industry (DTI) and the Department of Environmental Affairs (DEA), provided valuable knowledge with implications for the Waste RDI Roadmap.

The DST-Water Research Commission Water Technologies Demonstration Programme (WADER), with the South Africa Local Government Association, carried out a demonstration project with an innovative water and cost-saving technology at 16 schools in the City of Johannesburg. The technology, Aquatrip, identifies leaks and overuse and has an inbuilt control valve to shut off the water supply automatically if leaks are detected. Two technical and vocational education and training plumbing graduates were given jobs in the SME sector that demonstrated the technology.

The DST conducted roadshows in four provinces to profile WADER. The roadshows were attended by 312 people – researchers, government officials, metropolitan municipality officials, water boards, catchment management agencies, and the private sector, including SMEs. The Water RDI Roadmap also had an increased profile in public media such as the *Water and Sanitation Africa Magazine*, *Plumbing SA*, *Infrastructure News* and the *Daily Dispatch* (East London).

The ICT RDI Roadmap has allowed the DST investment in ICT RDI to grow significantly and to be aligned with national priorities and decision-support mechanisms. One of the notable DST investments in the implementation of the ICT RDI Roadmap was the expansion of the mLab (mobile laboratory) initiative beyond Gauteng and the Western Cape. In addition to being a start-up incubator for mobile application developers, mLab has grown to include a number of additional youth-focused programmes, including coding skills academies and lean innovation and co-creation programmes for students and industry. During 2016/17, the DST and mLab entered into a funding agreement to expand the initiative to the provinces of Limpopo, the Northern Cape and KwaZulu-Natal. During the reporting period mLab strengthened the mobile innovation ecosystem in South Africa by hosting and supporting 26 companies. Exciting mobile applications have emerged from these companies, addressing socio-economic challenges in areas such as transport, health, education, tourism and gaming.

International cooperation and resources

Increasing opportunities for the NSI to access international resources and support, including through sharing the experience and expertise of the DST's global partners, was a significant factor in the achievement of all five of the Department's strategic outcome-oriented goals. The Department succeeded in improving the coordination of participation by different South African organisations, especially in ensuring alignment with strategic national priorities. In this regard, the DST has been implementing strategic frameworks to guide the participation of the NSI

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

in partnership initiatives with other African partners, as well as in efforts to attract STI-orientated foreign investment to South Africa.

The African partnership portfolio has once again been especially active, with 54 research and innovation projects jointly supported by the DST and African partner governments during the financial year. The DST also supported 15 African Union and Southern African Development Community (SADC) STI initiatives, making it possible for these initiatives to progress. The DST enabled an investment of R388 million by several of its internal partners in other African countries' STI capacity.

A diverse portfolio of bilateral and multilateral programmes coordinated by the DST during the financial year afforded South African researchers opportunities to collaborate in joint knowledge-generation activities, with 668 international partner organisations. This collaboration saw an investment of more than R1,2 billion by the DST's international partners in support of collaboration with South Africa. These relationships and investments were invaluable in expanding and enriching South Africa's knowledge-generation outputs.

Support for South African HCD through international partnerships remains a cross-cutting strategic priority and saw, among other things, 210 South African students participating in international postgraduate training programmes, as part of the creation of a dedicated Global Knowledge Partnerships platform to support South African students accessing opportunities abroad. Fifty-one technical exchanges aimed at building and reinforcing South Africa's capacity in key science and technology domains were facilitated with international partners.

In the period under review, the DST ensured a greater focus on achieving socio-economic impact through its international partnerships, with special attention being paid to fostering cooperation with industry partners and developing collaboration with an innovation focus. Many initiatives to bolster the DST's ability to address South Africa's triple challenge of poverty, unemployment and inequality were also supported, especially with development partners.

Focused on the leveraging of global support for the use of knowledge in South Africa, for both economic and inclusive development, the Department facilitated international investment of R689 million in the NSI during the year under review. The DST also secured four tactical leadership positions for South Africa in global science decision and policy-making structures, and influenced four multilateral outcomes, which had the objective of positioning the DST and its key priorities strategically for international support.

Science diplomacy and the promotion of South Africa as a preferred international partner for STI partnership initiatives remained a major aspect of the DST's work, with the outstanding achievements in the reporting period being the American Association for the Advancement of Science (AAAS) Science Diplomacy Award for Minister Pandor, and the second Science Forum South Africa, an international public science event. The forum was attended by over 1 500 participants, including influential decision-makers, from more than 50 countries.

During the year under review, the Minister visited New Zealand, India, China, Italy and Jamaica to provide renewed impetus to bilateral cooperation with these strategic partners. Comprehensive and ambitious cooperation initiatives are being pursued with all BRICS partners in the priority areas of water, youth, oceanography and astronomy. As part of its rapidly growing relationship with China, the Department hosted a South Africa-China Hi-Tech Exhibition and constructive progress was made with the science park initiative. Traditional relationships with countries such as Japan, Russia, Finland, Norway, Switzerland and Germany were consolidated. Cooperation with the United Kingdom (UK) saw the launch of the first trilateral research programme between South Africa, Kenya and the UK, and the extension of the SA-UK Newton Fund collaboration until 2021.

3. STRATEGIC OUTCOME-ORIENTED GOALS (CONTINUED)

Progress was made with South American relationships through engagement with Ecuador and Colombia, and bilateral consultations saw the development of new cooperation programmes with Mexico, India, Sweden and Cuba.

Minister Pandor represented South Africa in the first Science and Technology Ministerial Meeting of the Group of 20, under the 2016 Chinese Presidency of the G20, and participated in the Joint Meeting of SADC Ministers Responsible for Education, Training, Science, Technology and Innovation, in June 2016, at which South Africa recommended that the region adopted the AU target of expenditure on R&D of 1% of GDP.

The DST continued providing leadership with the implementation of the African Union's Science, Technology and Innovation Strategy for Africa (STISA), the development of the AU's African Space Strategy, initiatives such as the SADC Industrialisation Strategy and Roadmap (2015-2063) and the Africa Open Science Platform, and played an instrumental role in the Joint Africa-European Union Strategy.

As it has in the past, the DST continued to pursue an intensive programme to reinforce bilateral STI partnerships with other African governments, including Rwanda, Botswana, Uganda and Senegal, leveraging the Minister's visits to these countries and her participation in the Next Einstein Forum. Cooperation with long-standing partners such as Algeria, Ghana, Kenya, Mauritius, Namibia and Sudan continued to advance through various initiatives.

In the reporting period, the European Union and DST celebrated the 20th anniversary of the Science and Technology Cooperation Agreement and a declaration of intent on marine research and innovation cooperation was signed. In addition, significant resources were leveraged through the European and Developing Countries Clinical Trials Partnership and the Horizon 2020 initiative. Projects approved under the latter included ERAMIN-2 (to strengthen the coordination of national and regional research programmes in the field of non-energy,

non-agricultural raw materials) and LEAP-AGRI (aimed at research and innovation for food and nutrition security, as well as sustainable agriculture).

Despite a reduction in the number of dedicated development assistance programmes for South Africa, the Department remained a partner of choice for the United States Agency for International Development, with which an agreement aimed at consolidating and growing the relationship was signed. The DST also concluded an agreement with the Global Innovation Fund, which could make significant investment available for innovation focused on fighting poverty and social innovation. Furthermore, France, the DST and the Department of Agriculture, Forestry and Fisheries concluded the French South African Institute in Agriculture protocol in June 2016 to foster cooperation in agriculture and veterinary sciences.

Projects with an African regional focus are an important component of the Department's portfolio with development partners, for example, through the Finnish government's support for joint biosciences initiatives in Southern Africa (BIOFISA) and a dedicated Africa-EU partnership on food and nutrition security and sustainable agriculture.

The increased emphasis on cooperation with the international private sector through foreign direct investment resulted in an investment of R110 million towards collaborative initiatives during the 2016/17 financial year.

4. PERFORMANCE INFORMATION BY PROGRAMME

Programme 1: Administration

Purpose

To provide strategic policy and planning alignment, ensure effective governance, risk management, monitoring and evaluation, and provide strategic science communication with stakeholders about the activities of the DST and the NSI.

Chief directorates

The Ministry and Office of the Director-General support the Minister, Deputy Minister and Director-General by providing professional and executive support. The component 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.

Enterprise Risk Management ensures that a risk management culture is embedded 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).

Policy, Planning, Governance, Monitoring and Evaluation supports the DST leadership in steering the NSI.

Internal Audit Activity performs internal appraisal activities to improve the effectiveness of control and governance processes to help the Department achieve its strategic, operational, financial and compliance objectives.

Human Resources 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) attracting and retaining employees who share the same organisational vision; (iii) championing change and transition, with a view to being a catalyst in the transition of people and the organisation to embrace and implement change; (iv) setting performance standards and managing performance against them; and (v) promoting 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, instilling a culture of service excellence.

Finance ensures the effective, efficient and economic use 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, assets and financial transactions.

Information System and Knowledge Management is responsible for the delivery of services that support the Department's strategic plan and individual unit's objectives through the effective use of information technology. Its purpose is to align the Department's Information Technology Strategy with its business strategy to ensure that the organisation achieves optimum use of its resources.

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 component 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.

Legal Services is responsible for providing effective and efficient legal services to the Department in order to ensure that the interests of the Department are protected

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

against any legal risk. The component 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.

Strategic objectives

- 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.
- To develop and maintain good corporate governance systems for the Department and its entities.
- To provide strategic communication for the DST and its entities through marketing, media and branding initiatives, and the Science Engagement Strategy.
- To make the DST an employer of choice and acquire and retain appropriately skilled personnel.
- To provide an efficient and effective information technology service.
- To ensure effective and efficient financial and procurement services.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Table 5: Programme 1 – Administration

Not achieved		Partially achieved			Achieved		
Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
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	Percentage alignment of DST planning documents (APP aligned to Strategic Plan, and ENE aligned to APP) submitted to Parliament	Minimum of 90% alignment of DST 2016/17 planning documents (strategic plan aligned to APP, and APP aligned to DST ENE) submitted to Parliament by 31 March 2016	Minimum of 90% alignment of DST planning documents for 2017/18 (APP aligned to Strategic Plan) submitted to Parliament by 31 March 2017	Minimum of 90% alignment of DST planning documents for 2017/18 (APP aligned to Strategic Plan) submitted to Parliament by 31 March 2017	None	Achieved	None
		90% alignment between the 2016 DST ENE and the 2016/17 APP	90% alignment Between 2016 DST ENE and 2016/17 APP by 31 March 2017	90% alignment in DST strategic priorities and entities' APPs by 31 March 2017	None	Achieved	None
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	DST public entities' strategic and annual performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards	DST public entities' 2016/17 strategic and annual performance plans approved by the Minister, but not all shareholder compacts were signed by the Minister as planned	DST public entities' 2017/18 strategic and annual performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards by 31 March 2017	DST public entities' 2017/18 strategic and annual performance plans approved by the Minister and shareholder compacts signed by the Minister and chairpersons of the boards by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
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	Percentage alignment of the planning documents of entities with those of the Department as an indicator of the contribution of entities towards national imperatives	New indicator	90% alignment in DST strategic priorities and entities' APPs by 31 March 2017	Assessment reports (i.e. feedback reports) on level of 90% alignment were analysed and feedback provided by 28 March 2017	None	Achieved	None
To develop and maintain good corporate governance systems for the Department and its entities	Number of DST performance reports (quarterly reports and annual report) approved by Exco and signed by DG (quarterly reports approved and signed within 60 days after the end of each quarter)	Four DST 2015/16 quarterly performance reports approved by Exco and signed by the Director-General within 60 days of the end of each quarter	Four DST 2016/17 quarterly performance reports approved by Exco and signed by the DG 60 days after the end of each quarter	Four DST 2016/17 quarterly performance reports approved by Exco and signed by the DG 60 days after the end of each quarter	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To develop and maintain good corporate governance systems for the Department and its entities		One DST 2014/15 annual report approved by Exco and signed by the Director-General by 31 May 2015	One DST 2015/16 annual performance report approved by Exco and signed by the DG by 31 May 2016	One DST 2015/16 Annual Performance report approved by Exco and signed by the DG by 31 May 2016	None	Achieved	None
	Number of Exco-approved reports on DST MPAT scores submitted to the Accounting Officer and DPME	New indicator	Two Exco-approved reports on DST MPAT submitted to the Accounting Officer and DPME by 31 March 2017	Two Exco-approved reports on DST MPAT submitted to the Accounting Officer and DPME by 31 March 2017	None	Achieved	None
	Number of combined assurance model performance reports presented to the audit and risk committees	New indicator	Two combined assurance model performance reports presented to the audit and risk committees by 31 March 2017	Two combined assurance model performance report presented to the audit and risk committees by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To provide strategic communication for the DST and its entities through marketing, media and branding initiatives, and the Science Engagement Strategy	Number of public participation programmes held	16 public participation programmes held by 31 March 2016	10 public participation programmes held by 31 March 2017	10 public participation programmes held by 31 March 2017	None	Achieved	None
	Number of media articles written to raise the DST's public profile	21 media articles written to raise the DST's public profile by 30 April 2015	16 media articles written to raise the DST's public profile by 31 March 2017	47 media articles written to raise the DST's public profile as planned	+31	Achieved	Media engagements increased to support the DST profile.
To make the DST an employer of choice and recruit and retain skilled personnel	Turnaround time to fill vacancies	The Department took 85 days to fill vacancies after the date of advertisement	90 days to fill vacancy after date of advertisement by 31 March 2017	No vacancies were filled.	Deviation cannot be estimated since no vacancy was filled in the period under reporting	Not achieved	Implementation of public service wage bill containment measures
	Vacancy rate reduced to a set rate	The vacancy rate was reduced by 5,47%	Vacancy rate retained at 6% by 31 March 2017	Vacancy rate not retained at 6%	Deviation cannot be estimated since vacancy rate was not retained	Not achieved	Implementation of public service wage bill containment measures
To provide an efficient and effective information technology service	Number of enterprise architecture development life-cycle steps developed and implemented	New indicator	Future state enterprise architecture implemented by 31 March 2017	Future state enterprise architecture implemented by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To ensure effective and efficient financial and procurement services	Turnaround time to pay suppliers	Suppliers paid within 30 days' after date of invoice	Suppliers paid within 30 days of receipt of invoice	Suppliers paid within 30 days of receipt of invoice	None	Achieved	None
	Unqualified audit report on financial matters issued by the Auditor-General	Clean 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 2016	Unqualified audit report on financial matters issued by the Auditor-General by 30 September 2016	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Programme 2: Technology Innovation

Purpose

To enable research and development (R&D) in space science and technology (S&T), energy security and the bioeconomy, and in the emerging and converging areas of nanotechnology, robotics, photonics and indigenous knowledge systems (IKS), and to promote the realisation of commercial products, processes and services from these R&D initiatives. In addition, through the implementation of enabling policies and interventions along the entire innovation value chain, to promote the protection and utilisation of intellectual property, technology transfer and technology commercialisation.

Chief directorates

Bioinnovation was previously known as Biotechnology and Health Innovation. The name change is a better reflection of its core mandate, and also factors in the recent incorporation of the Indigenous Knowledge-based Technology Innovation unit into the component. Bioeconomy leads the DST's implementation of the Bioeconomy Strategy, which focuses more on socio-economic outcomes, and the strengthening of research and innovation competencies that form the strategic base of the bio-based NSI, rather than merely on the development of technologies. It is a national strategy, incorporating the innovation needs of other departments and industry.

Hydrogen and Energy provides policy leadership in RDI initiatives in the energy sector that are cross-cutting and have long-term impact. 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 and other key stakeholders. In particular, the Department plays an advisory role in the broader energy landscape, specifically in the Integrated Energy Plan and Integrated Resource Plan, 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 is a cross-cutting and user-driven component that supports the creation of an environment conducive to the implementation of the National Space Strategy and the South African Earth Observation Strategy, under the overarching guidelines of the National Space Policy, an instrument of the DTI. The National Space Strategy was a response to the Ten-Year Innovation Plan, which identified a key outcomes that had to 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) supports and strengthens the innovation policy package (and related interventions) aimed at creating and sustaining an enabling environment for innovation, technology development, and the commercialisation of publicly funded R&D initiatives. This includes 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' focus includes the development of nanotechnology, photonics, synthetic biology and robotics through the roll-out of approved strategies and implementation plans.

The **National Intellectual Property Management Office** is the national implementing agency for the Intellectual Property from Publicly Financed Research and Development Act (IPR Act), and is currently located in the Department as a specialised service delivery unit. It was established to provide for the more effective utilisation of IP emanating from publicly financed R&D. It provides support to offices of technology transfer at universities and science councils, develops capacity in IP management, provides incentives for IP creators to encourage them to disclose, protect and commercialise their creations, provides funding through the IP Fund for

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

the protection and maintenance of IP emanating from publicly financed R&D, and provides incentives, support, capacity development, funding and compliance services. NIPMO also ensures compliance with the IPR Act and Regulations by recipients of publicly financed R&D.

Strategic objectives

- To facilitate and resource investments in space S&T, energy, bioinnovation, nanotechnology, robotics, photonics, indigenous knowledge systems (IKS), intellectual property (IP) management, technology transfer and technology commercialisation.
- To oversee, monitor and regulate key policy initiatives, including institutions/agencies and support interventions in the key strategic areas of space S&T, energy, bioinnovation, nanotechnology, robotics and photonics.
- To coordinate and support high-end skills development in –
 - the strategic and emerging S&T areas of synthetic biology, structural biology, systems biology and functional genomics (collectively the South African Biodesign Initiative), space S&T, energy, bioinnovation, nanotechnology, robotics, photonics and IKS.
 - IP management, technology transfer and technology commercialisation.
- To support, promote and advocate 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.

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Table 6: Programme 2 – Technology Innovation

Not achieved		Partially achieved			Achieved	
Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status
To facilitate resource investments in space science, energy, bioinnovation, nanotechnology, robotics, photonics, IKS, IP management, technology transfer and technology commercialisation	Number of instruments funded in support of knowledge utilisation	New indicator	25 instruments funded in support of knowledge utilisation by 31 March 2017	25 instruments funded in support of knowledge utilisation by 31 March 2017	None	Achieved
	Number of knowledge products generated	156 knowledge products were produced	119 knowledge products generated by 31 March 2017	168 knowledge products generated by 31 March 2017	+49	Achieved
						The setting of targets took into consideration the protracted nature of contract negotiations, the pilot/transitional nature of some initiatives, and the impact of ongoing instability at higher education institutions.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviations
To oversee, monitor and regulate key policy initiatives, including institutions and support interventions in the key strategic areas of space science, energy, bioinnovation, nanotechnology, robotics, and photonics	Number of new disclosures reported by publicly funded institutions	The total number of new disclosures received during the 2015/16 financial year is 279	275 new disclosures reported by publicly funded institutions by 31 March 2017	251 new disclosures reported by publicly-funded institutions by 31 March 2017 bringing the annual total to 251 disclosures	-24	Not achieved	A growing level of discernment of what constitutes a disclosure as well as the "fees must Fall" campaign the number of disclosures received from researchers by OTTs.
	Number of evaluation and assessment reports developed and approved by Exco	10 evaluations and assessment reports developed and approved by Exco by 31 March 2016	12 evaluation and assessment reports developed and approved by Exco by 31 March 2017	12 evaluation and assessment reports developed and approved by Exco by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviations
To oversee, monitor and regulate key policy initiatives, including institutions and support interventions in the key strategic areas of space science, energy, bioinnovation, nanotechnology, robotics, and photonics	Number of regulatory recommendations for decision-support by government	New indicator	27 regulatory recommendations for decision support by government by 31 March 2017	33 regulatory recommendations for decision support by government by 31 March 2017	+6	Achieved	Recommendations are largely about genetically modified crops, and the breaking of the drought in some areas led to more requests for recommendations on agricultural activity and applications.
	Number of decision-support tools developed or maintained	New indicator	Two decision-support interventions maintained by 31 March 2017	Three decision-support interventions maintained by 31 March 2017	+1	Achieved	NIPMO was additionally requested to provide input into Reserve Bank Currency and Exchanges Manual for Authorised Dealers.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviations
To coordinate and support high-end skills development in the strategic and emerging S&T areas of space science, energy, bioinnovation, nanotechnology, robotics, photonics, synthetic biology, structural biology and functional genomics (collectively the South African Biodesign Initiative), IP management, technology transfer and technology commercialisation	Number of policy directives developed and adopted by government	New indicator	Five technology development and innovation policy directives developed and adopted by government by 31 March 2017	Seven technology development and innovation policy directives developed and adopted by government	+2	Achieved	There were more requests made to the Programme for policy advice, and the Programme was able to provide more policy directives.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviations
To coordinate and support high-end skills development in the strategic and emerging S&T areas of space science, energy, bioinnovation, nanotechnology, robotics, photonics, synthetic biology, structural biology and functional genomics (collectively the South African Biodesign Initiative), IP management, technology transfer and technology commercialisation	Number of postgraduate students (master's and doctoral) supported through DST-funded research and development initiatives	New Indicator	392 postgraduate students (master's and doctoral) supported through DST-funded research and development initiatives by 31 March 2017	414 postgraduate students (master's and doctoral) supported through DST-funded research and development initiatives by 31 March 2017	+22	Achieved	The target was set with budget cuts and the possible effects of the higher education instability in mind. These problems are expected to impact negatively on the numbers in the future.
	Number of trainees supported in the strategic and emerging research areas	257 trainees were supported in the strategic and emerging research areas by 31 March 2016	280 trainees supported in the strategic and emerging research areas by 31 March 2017	307 trainees supported in the strategic and emerging research areas by 31 March 2017	27	Achieved	Due to their relevance, training programmes attracted more trainees than anticipated.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviations
To support, promote, and advocate for the development and translation of scientific R&D outputs into commercial products, processes and services that will contribute towards economic growth and a better quality of life	Number of new technology products, processes and/or services developed	10 new technology products, processes and/or services developed	Four new technology products, processes and/or services developed by 31 March 2017	Eight new technology products, processes and/or services developed	+4	Achieved	The target was exceeded owing to the positive impact of prior investments in nanotechnology and health innovation.
	Number of commercial outputs in designated areas	Three new technology products, processes and/or services commercialised by 31 March 2016	Eight commercial outputs in designated areas by 31 March 2017	Eight commercial outputs in designated areas by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Programme 3: International Cooperation and Resources

Purpose

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 also supports South African foreign policy through science diplomacy.

Chief directorates

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.

Strategic objectives

- To secure international funds to complement South Africa's national investments in STI, including resources for DST initiatives requiring external investment.
- To access international knowledge, capacities and resources, to enhance South Africa's national STI capabilities, and to contribute to the attainment of the DST's targets for human capital development, especially for international PhD training.
- 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.
- To maximise South Africa's strategic interests in international cooperation in STI, in support of South Africa's foreign policy objectives, and international trade and investment partnerships, creating a better South Africa, and contributing to a better and safer Africa in a better world.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Table 7: Programme 3 – International Cooperation and Resources

Not achieved			Partially achieved		Achieved		
Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To secure international funds to complement South Africa's national investments in STI, including resources for DST initiatives requiring external investments	Amount (expressed in rand millions) of international funds directly invested in research, innovation and STI HCD programmes as well as research infrastructure investments in South Africa accounted for as part of cooperation initiatives implemented by the DST	R619 533m in international funds directly invested in research, innovation and STI HCD programmes, as well as research infrastructure investments in South Africa accounted for as part of cooperation initiatives implemented by the DST by 31 March 2016	R400m in International funds directly invested in research, innovation and STI HCD programmes as well as research infrastructure investments in South Africa accounted for as part of cooperation initiatives implemented by the DST by 31 March 2017	R689m in international funds directly invested in research, innovation and STI HCD programmes including research infrastructure investment in South Africa as part of cooperation initiatives implemented by the DST by 31 March 2017	+R289m	Achieved	There was an increase in funding from international partners because of the successes of NSI partners in competitive STI initiatives, specifically the EU Horizon 2020 programme, which saw greater South African participation than was anticipated.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To secure international funds to complement South Africa's national investments in STI, including resources for DST initiatives requiring external investments	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 HCD with South African partners as part of cooperation initiatives implemented by the DST	R2 198 725m invested by international partners in their own organisations and initiatives, but targeted at cooperation in research, innovation and STI HCD with South African partners as part of cooperation initiatives implemented by the DST by 31 March 2016	R230m invested by international partners in their own organisations and initiatives, but targeted at cooperation in research, innovation and STI HCD with South African partners as part of cooperation initiatives implemented by the DST by 31 March 2017	Total of R1,253 billion invested by international partners in their own organisations and initiatives but targeted at cooperation in research, innovation and STI HCD with South African partners as part of cooperation initiatives implemented by the DST by 31 March 2017	+R1 023billion	Achieved	The overachievement was due to an increase in funding from international partners because of the successes of NSI partners in competitive STI initiatives, especially the EU Horizon 2020 programme, which saw greater South African participation than anticipated.
To access international knowledge, capacities and resources, to enhance South Africa's national STI capabilities, and to contribute to the attainment of the DST's targets for human capital development, especially for international PhD training	Number of South African students accepted into international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST	169 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	150 South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2017	210 more South African students participating in international training programmes offering a postgraduate qualification as part of cooperation initiatives facilitated by the DST by 31 March 2017	+60	Achieved	International partners responded positively to the Department's efforts to promote access for South African students to international opportunities through the Global Knowledge Partnerships platform.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To access international knowledge, capacities and resources, to enhance South Africa's national STI capabilities, and to contribute to the attainment of the DST's targets for human capital development, especially for international PhD training	Number of international partner organisations (i.e. legal entities) collaborating with South African partners within the framework of formalised collaborative research, innovation or STI HCD projects as part of cooperation initiatives facilitated by the DST	585 international partner organisations (i.e. legal entities) collaborating with South African partners within the framework of formalised collaborative research, innovation or STI HCD projects as part of cooperation initiatives facilitated by the DST by 31 March 2016	450 international partner organisations (i.e. legal entities) collaborating with South African partners within the framework of formalised collaborative research, innovation or STI HCD projects as part of cooperation initiatives facilitated by the DST by 31 March 2017	668 international partner organisations collaborating with South African partners within the formalised framework of collaborative research innovation or STI HCD projects as part of cooperation initiatives facilitated by the DST by 31 March 2017	+218	Achieved	SA participants in the EU Horizon 2020 programme had a higher than anticipated success rate, and there was an increase in cooperation with various bilateral partners.
To access international knowledge, capacities and resources, to enhance South Africa's national STI capabilities, and to contribute to the attainment of the DST's targets for human capital development, especially for international PhD training	Number of dedicated international technical exchanges such as workshops, seminars or training programmes to reinforce South Africa's capacities in key STI domains specifically, referenced in the DST Strategic Plan, undertaken with the support of international partners and facilitated by the DST	63 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	15 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 2017	51 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 and facilitated by the DST by 31 March 2017	+36	Achieved	Activities with bilateral and multilateral partners increased, resulting in a higher than anticipated number of exchanges being recorded.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
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	Number of research, innovation and STI HCD cooperation projects, co-funded or supported in kind, by DST and at least one other African government	61 research, innovation and STI HCD cooperation projects initiatives co-funded or supported in kind by the DST and at least one other African government by 31 March 2016	30 research, innovation and STI HCD cooperation projects co-funded or supported in kind by DST and at least one other African government by 31 March 2017	54 research, innovation and STI HCD cooperation projects co-funded or supported in kind by the DST and at least one other African government	+24	Achieved	There was increased success in the Department's bilateral partnerships with other African countries.
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	Amount (expressed in rand millions) of international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation	R113 748m in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation by 31 March 2016	R70m in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation by 31 March 2017	Total of R388 million in international funds directly invested in African regional and continental research, innovation, STI HCD or research infrastructure programmes as a result of DST facilitation by 31 March 2017	+R318m	Achieved	The participation by other African countries in the EU Horizon 2020 programme was much higher than anticipated owing to the Department's efforts to promote the Programme.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
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	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	13 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	10 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 2017	15 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 31 March 2017	+5	Achieved	There has been intensive AU and SADC engagement, supported by a DST secondment to the SADC Secretariat
To maximise South Africa's strategic interests in international cooperation in STI, in support of South Africa's foreign policy objectives, and international trade and investment partnerships, creating a better South Africa, and contributing to a better and safer Africa in a better world	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	Six 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	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 2017	Four formally recorded decisions made in an intergovernmental STI forum, such as a multilateral organisation, with a direct bearing on resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To maximise South Africa's strategic interests in international cooperation in STI, in support of South Africa's foreign policy objectives, and international trade and investment partnerships, creating a better South Africa, and contributing to a better and safer Africa in a better world	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	Five leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2016	Four leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2017	Four leadership positions occupied by South Africa in international STI governance structures relevant to influencing resource allocation to support priorities of government's Programme of Action following specific DST intervention by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Programme 4: Research Development and Support

Purpose

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

Chief directorates

Human Capital and Science Promotion formulates and implements policies and strategies that address the availability of human capital for STI, and that provide fundamental support for research activities. The component provides strategic direction and support to institutions mandated with HCD and increased knowledge production, as well as interfacing with relevant stakeholders in this regard. It is also responsible for science engagement, including science and youth activities.

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 component also promotes the development and strengthening of basic or foundational sciences, such as physics, chemistry, biological and life sciences, geographic and geological sciences, and human and social sciences.

Science Missions promotes the development of research, the production of scientific knowledge, and human capital in 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, the palaeosciences and IKS.

Astronomy supports the development of astronomical sciences around a new multiwavelength astronomy strategy, and provides guidance and support to relevant astronomy institutions in the implementation of strategic astronomy programmes. Of particular relevance are the Southern African Large Telescope, the MeerKAT, the High Energy Stereoscopic System, and the AVN and SKA projects.

Strategic objectives

- To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities.
- To ensure the availability of and access to internationally comparable research and innovation infrastructure in order to generate new knowledge and train new researchers.
- To support and promote research that develops basic sciences through the production of new knowledge and relevant training opportunities.
- To strategically develop priority science areas in which South Africa enjoys a competitive advantage, by promoting internationally competitive research and training activities and outputs.
- To promote public engagement on STI.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Table 8: Programme 4: Research Development and Support

Not achieved		Partially achieved			Achieved	
Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status
To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities	Total number of PhD students awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports	13 307 postgraduate students (4 225 BTech and honours, 5 120 master's, and 3 404 PhD students) and 796 postdoctoral fellows awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2016	3 136 PhD students awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	3 454 PhD students awarded bursaries as reflected from the NRF through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	+318	Achieved
						The target cannot be set with greater accuracy because it depends on the pool of applicants, and the availability of funds, which cannot be predicted perfectly.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities	Total number of pipeline postgraduate students (B.Tech and honours, and master's students) awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports	New Indicator	10 996 pipeline postgraduate students awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	10 268 pipeline postgraduate students awarded bursaries through NRF and DST-managed programmes as reflected in the NRF and DST project reports by 31 March 2017	-728	Not achieved	The target was missed. The target cannot be set with greater accuracy because it depends on the pool of applicants, which cannot be predicted perfectly. The over-allocation of PhD bursaries by just over 300 may also have affected the available funding for honours and master's students.
	Total number of graduates and students placed in DST-funded work preparation programmes in SETI institutions	1 044 graduates and students (728 interns and 316 volunteers) were placed in SETI institutions as of 31 March 2016	840 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2017	962 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2017	+122	Achieved	The target cannot be set with greater accuracy because it depends on the pool of applicants which cannot be predicted perfectly.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To ensure availability of and access to internationally comparable research and innovation infrastructure in order to generate new knowledge and train new researchers	Number of research infrastructure grants awarded as per award letters	79 research infrastructure grants were awarded as per award letters by 31 March 2016	70 research infrastructure grants awarded as per award letters by 31 March 2017	72 research infrastructure grants awarded as per award letters by 31 March 2017	+2	Achieved	Additional awards were obtained due to smaller grant requests for National Equipment Programme and National Nanotechnology Equipment Programme funds
	Average amount of bandwidth per SANReN site per annum	3 497 Mbps average bandwidth available per SANReN site by 31 March 2016	3 500 Mbps average bandwidth available per SANReN site by 31 March 2017	3 537 Mbps average bandwidth available per SANReN site by 31 March 2017	+37	Achieved	The deviation was due to a combination of upgrading of existing sides and new sites connected.

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To support and promote research that develops basic sciences through the production of new knowledge and relevant training opportunities	Total number of researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports	4 315 researchers were awarded research grants through NRF-managed programmes by 31 March 2016	4 539 researchers awarded research grants through NRF-managed programmes as reflected in the NRF project reports by 31 March 2017	4 520 researchers awarded research grants through NRF-managed programmes as reflected by the NRF project reports	-19	Not achieved	The target was missed. The target cannot be set with more accuracy because it depends on the pool of applicants and grant values, which cannot be predicted perfectly.
	Number of research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science Citation Database as reflected in the NRF project reports	7 158 ISI-accredited research articles published by NRF-funded researchers as reflected in the NRF project reports by 31 March 2016	7 000 research articles published by NRF-funded researchers and cited in the TR database as reflected in the NRF project reports by 31 March 2017	8 156 research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science Citation Database as reflected in the NRF project reports by 31 March 2017	+1156	Achieved	The number of research articles published per researcher was higher than anticipated. This fluctuates slightly from year to year.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To strategically develop priority science areas in which South Africa enjoys a competitive advantage, by promoting internationally competitive research and training activities and outputs	Number of MeerKAT antennas installed	20 antennas installed by 31 March 2016, with 21 pedestals having been erected	64 MeerKAT antennas installed by 31 March 2017	32-antenna single polarization array commissioned by 31 March 2017 (original target was amended from: 64 MeerKAT antennas installed by 31 March 2017)	None	Achieved	On operational grounds, the Minister approved a revision of the original 2016/17 as indicated, and Parliament was informed of this.
	A functional climate change research network in place	New indicator	Submission to the DDG of a report on existing climate change research initiatives and networks by 31 March 2017	A report on existing climate change research networks was submitted to the DDG by 31 March 2017	None	Achieved	None
	Number of biennial reports on the state of climate change S&T in South Africa approved by Cabinet	New indicator	1 (first biennial) report on the state of climate change S&T in South Africa finalised and submitted for Cabinet approval by 31 March 2017	One (first biennial) report on the state of climate change S&T in South Africa was approved by Cabinet by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To promote public engagement on science, technology and innovation	Approximate number of participants in science awareness and engagement programmes as reflected in the NRF project reports and those of other service providers	2 718 078 participants reached through National Science Week 2015, eight DST supported science festivals, the Rand Easter Show, and six events by other stakeholders	Approximately 1 200 000 participants (learners and members of the public) in science awareness and engagement programmes as reflected in the project reports of the NRF and other service providers by 31 March 2017	2 066 134 participants in science awareness and engagement programmes	+8 661 34	Achieved	Increased access to public spaces that provided additional infrastructure for hosting NSW activities led to a significant increase in people drawn into science awareness and engagement initiatives.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Programme 5: Socio-economic Innovation Partnerships

Purpose

To enhance 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.

Chief directorates

Technology Localisation, Beneficiation and Advanced Manufacturing funds technology and innovation development programmes to advance strategic medium and long-term sustainable economic growth and sector development priorities, as well as government service delivery, through the following value-adding functions:

- Investing in the medium and long-term knowledge-generation capabilities of the NSI in targeted innovation areas.
- In partnership with other government departments and economic actors, spearheading focused efforts that exploit knowledge capabilities for economic benefit. Economic benefit includes the development of advanced technologies and industries, improved government service delivery, improved productivity and competitiveness, and technology transfer and support to SMEs and manufacturing firms in the supply chains of large-scale public procurement programmes.

Sector Innovation and Green Economy provides policy, strategy and direction-setting support for the R&D-led growth of strategic sectors of the economy and to enhance S&T capacity to support a transition to a green economy. The component does this through the following:

- Facilitating the implementation of high-impact S&T interventions.

- Identifying and initiating S&T programmes that support the growth of the environmental technologies and services sector in South Africa.
- Facilitating policy and strategy development on R&D interventions that support the growth of the ICT sector (excluding the ICT retail sector).
- Providing innovation policy and planning support to economic actors in priority economic sectors and provincial and local governments.

Innovation for Inclusive Development supports the experimentation of S&T-based innovations for tackling unemployment, poverty and inequality through the creation of sustainable job and wealth opportunities, building sustainable human settlements, and enhancing the delivery of basic services. The component focuses on supporting the widespread adoption and use of S&T-based innovation by supporting the demonstration of promising innovative technologies that do not yet have widespread application, but are seen as having the potential to achieve government's broad development objectives. In its interventions, the component prioritises the generation of practical knowledge and insights to support evidence-based policy and decision making, introducing decision-support tools to enhance service delivery, and building capacity in relevant state institutions and communities.

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. This includes an annual R&D survey, innovation measurement, the development of S&T indicators, the development of databases and information systems such as the Research Information Management System and the national S&T expenditure tables, and the implementation of section 11D of the Income Tax Act, 1962, to promote private-sector R&D investment.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objectives

- Through knowledge, evidence and learning, to inform and influence how S&T can be used to achieve inclusive development.
- To identify, grow and sustain niche high-potential STI capabilities for sustainable development and the greening of society and the economy.
- 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.
- To enhance understanding and analysis that support improvements in the functioning and performance of the NSI.
- To strengthen provincial and rural innovation and production systems through analysis and catalytic interventions.
- To introduce and manage interventions and incentive programmes that increase the level of private-sector investment in scientific or technological research and development.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Table 9: Programme 5: Socio-economic Innovation Partnerships

Not achieved		Partially achieved			Achieved		
Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
Through knowledge, evidence and learning, to inform and influence how science and technology can be used to achieve inclusive development	Number of knowledge products on innovation for inclusive development published	Five knowledge products on innovation for inclusive development published by 31 March 2016	Four knowledge products (two case studies) were completed and published on the DST website by 31 March 2017	Five evaluation/ research reports were developed and published on the DST website by 31 March 2017	+1	Achieved	Additional knowledge product on "promoting an STI policy for inclusive development in South Africa" was derived from a previously funded research project.
	Number of decision-support interventions introduced and maintained	Six decision-support interventions maintained and improved by 31 March 2016	Seven decision-support systems maintained and improved by 31 March 2017	Seven decision-support system maintained and improved throughout the year	None	Achieved	None
	Number of learning interventions (seminars) generated	New indicator	Nine learning interventions (seminars) generated by 31 March 2017	Ten learning interventions generated by 31 March 2017	+1	Achieved	The additional knowledge product on "grassroots innovation" was a new opportunity realised through the South Africa-India bilateral agreement on STI cooperation.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To identify, grow and sustain niche high-potential STI capabilities for sustainable development and the greening of society and the economy	Number of honours, 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	50 masters' and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2016	55 honours, master's and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2017	102 honours, master's and doctoral students fully funded or co-funded in designated niche areas that support the green economy and sustainable development by 31 March 2017	+47	Achieved	The indicator states "funding or co-funding". Bursaries are often used to top-up or to leverage additional bursaries. Although this is desirable, it makes it difficult to predict the number of students.
	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	Four knowledge and innovation products (patents, prototypes, technology demonstrators and technology transfer packages) added to the innovation product portfolio through fully funded or co-funded research by 31 March 2016	Four knowledge and innovation products (patents, prototypes, technology demonstrators and technology transfer packages) added to the innovation product portfolio through fully funded or co-funded research by 31 March 2017	Four knowledge and innovation products added to the innovation product portfolio	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To identify, grow and sustain niche high-potential STI capabilities that improve competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICTs and sector innovation funds; (SIFs) and to facilitate the development of R&D-led new targeted industries	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) by 31 March 2016	338 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	290 masters' and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and SIFs) by 31 March 2017	334 master's and doctoral students fully funded or co-funded in designated niche areas (advanced manufacturing, aerospace, chemicals, mining, advanced metals, ICTs and sector innovation funds) by 31 March 2017	+44	Achieved	Co-funding of students makes forecasting difficult. In addition, at postgraduate level (esp. PhD) the completion rate varies, with students terminating their studies soon after commencement, resulting in them being counted as co-funded (e.g. 1 quarter) and the funds reallocated to another student in the next quarter, resulting in varying numbers per quarter, but an accumulation of the total number of funded/co-funded students.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To identify, grow and sustain niche high-potential STI capabilities that improve competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICTs and sector innovation funds (SIFs); and to facilitate the development of R&D-led new targeted industries	Number of interns fully funded or co-funded in R&D related to design, manufacturing and product development	309 interns fully funded or co-funded in designated niche areas related to design, manufacturing and product development	200 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2017	216 interns fully funded or co-funded in R&D related to design, manufacturing and product development by 31 March 2017	+16	Achieved	Accurate forecast of the target is very difficult because funded/co-funded interns are counted. In addition, some interns secure employment before they complete their internship resulting in the reallocation of the unused funds to a new intern, thereby increasing the total number of funded/co-funded interns.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To identify, grow and sustain niche high-potential STI capabilities that improve competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICTs and sector innovation funds (SIFs); and to facilitate the development of R&D-led new targeted industries	Number of knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the innovation products portfolio through fully funded or co-funded research initiatives	38 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	35 knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the IP portfolio by 31 March 2017	36 knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the IP portfolio	+1	Achieved	Forecasting technology maturation and innovation product is difficult owing to the uncertainty around maturing technologies.
	Number of Instruments funded in support of Increased localisation, competitiveness and R&D-led industry development	Nine 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	Nine instruments funded in support of increased localisation, competitiveness and R&D-led industry development by 31 March 2017	Nine instruments funded in support of increased localisation, competitiveness and R&D-led industry development by 31 March 2017	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To strengthen provincial and rural innovation and production systems through analysis and catalytic interventions	Number of innovation-support interventions funded or co-funded that strengthen provincial or rural innovation systems	Four innovation support interventions funded or co-funded that strengthen provincial or rural innovation systems by 31 March 2016	Two innovation support interventions funded or co-funded that strengthen provincial or rural innovation systems by 31 March 2017	Seven innovation-support intervention implemented by 31 March 2017	+5	Achieved	The Special Economic Zone (SEZ) project is the additional project that the DST were initially uncertain about, but for which DST is now have a draft concept. The Bushbuckridge ADP resulted from our Sector Innovation Fund portfolio and was not planned at the time that the targets for the APP were required, we did not yet know how the Science and High Technology Economic Zone (HTEZ) work would be implemented. There was uncertainty around the continuation of the Western Cape Economic Development Partnership, hence it was initially not included in the plan. However, once this was clarified, the relationship continued.

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To enhance understanding and analysis that support improvements in the functioning and performance of the NSI	Number of reports and policy briefings on the innovation system and innovation policy approved by Exco/published	Two reports/policy briefings approved by Exco/published	6 reports and policy briefings on the innovation system and innovation policy approved by Exco/published by 31 March 2017	2015/16 STA report finalised. Report disseminated to clusters (Social Protection, Community and Human Development; and the Economic Sectors, Employment and Infrastructure Development)	None	Achieved	None
			2015/16 report on government funding for scientific and technological activities.	The 2014/15 R&D survey report finalised and disseminated, Cabinet memorandum tabled, and survey report published	None	Achieved	None
			Produce 2015/16 report on performance of R&D tax incentive	2015/16 R&D tax incentive report finalised and disseminated, Cabinet memorandum tabled, and report published	None	Achieved	None

4. PERFORMANCE INFORMATION BY PROGRAMME

(CONTINUED)

Strategic objective	Performance indicator	Actual achievement 2015/16	Planned target 2016/17	Actual achievement 2016/17	Deviation between planned target and actual achievement for 2016/17	Status	Comment on deviation
To enhance understanding and analysis that support improvements in the functioning and performance of the NSI			Fieldwork for the 2016 Business Innovation Survey (2013-2015 data) begun by March 2017	Fieldwork still to commence	No survey fieldwork commenced	Not achieved	Commencement of survey fieldwork postponed. Fieldwork will commence upon finalisation of survey planning/ methodology documents and sampling.
To introduce and manage interventions and incentive programmes that increase the level of private-sector investment in scientific or technological R&D	Turnaround time in providing preapproval decisions on applications for the R&D tax incentive improved	By 31 March 2016, 255 applications were still to be finalised. Of these, 16 were received before January 2014; 90 were received in 2014; 108 were received in 2015; and 41 were received in 2016	Preapproval decisions provided within 120 days of date of receipt of application for the R&D tax incentive by 31 March 2017	By 31 March 2017, only 13 applications had received decision letters within 120 days. The average number of days for providing decisions was reduced from 266 days (applications received in 2015) to 147 days (applications received in 2016).	Preapproval decisions took an average of 27 more days	Not achieved	Continued to face capacity challenges. Available capacity was used largely for clearing the backlog, which was more time-consuming than initially anticipated due to the complexity of the applications.

4. PERFORMANCE INFORMATION BY PROGRAMME (CONTINUED)

Changes to planned targets

Targets adjusted during the 2016/17 financial year.

Name of Programme: Programme 4

Planned performance indicator	Planned target	Approved adjusted target
Number of MeerKAT antennas installed	64 MeerKAT antennas installed by 31 March 2017	32-antenna single polarisation array commissioned by 31 March 2017

Approval

This is to confirm that the Executive Committee (Exco) of the Department of Science and Technology discussed the Department's performance information report for the 2016/17 financial year at its meetings of 22 May 2017 and 10 July 2017, and that Exco made inputs into the content of the report, which reflects the DST's performance for the period covered in the report.



PHIL MJWARA

Director-General

5. TRANSFER PAYMENTS

The Department transfers funds to various entities in pursuit of its mandate. These entities assisted the Department in achieving its objectives. The table below indicates the entities and the reasons transfers were made. The detailed information regarding the entities to which the transfers were made is disclosed fully in the Annexures to the Annual Financial Statements in Part E.

Programme 1: Administration

Organisation/theme	Budget R'000	Actual expenditure R'000	Reasons for transfer payment
Institutional and programme support	17 460	17 498	Assistance for research activities
Total	17 460	17 498	

Programme 2: Technology Innovation

Organisation/theme	Budget R'000	Actual expenditure R'000	Reasons for transfer payment
Biotechnology Strategy	35 371	35 371	Implementation of the Biotechnology Strategy
Energy Grand Challenge	34 904	33 750	Support R&D in the renewable energy sector
Health Innovation	41 116	41 116	R&D for new health products and services
HIV/Aids prevention and treatment technologies	23 800	23 800	Research into technologies to combat and prevent HIV/Aids
Hydrogen Strategy (Capital)	63 886	63 886	Support research infrastructure in the hydrogen and energy sector
Hydrogen Strategy (Current)	36 192	30 066	Support R&D in the hydrogen and energy sector
Indigenous Knowledge Systems	9 813	9 813	Implementation of IKS initiatives
Innovation projects	20 454	20 454	To promote IP management, regulation and commercialisation
International Centre for Genetic Engineering and Biotechnology	32 186	32 186	R&D of new health products
South African National Space Agency	124 977	124 977	To support the creation of an environment conducive to industrial development and space technology
Space science	29 653	29 653	R&D to support space science initiatives
Technology Innovation Agency	382 364	382 364	To stimulate and intensify technology innovation and commercialisation output
Biofuels	6 137	5 597	Biofuels research
Emerging Research Areas	44 617	44 617	R&D in emerging research areas
National Nanotechnology Centre	50 681	50 681	R&D in nanotechnology initiatives
Offices of technology transfer – support	33 903	31 647	Intellectual Property Fund and capacitating offices of technology transfer
Total	970 054	959 978	

5. TRANSFER PAYMENTS (CONTINUED)

Programme 3: International Cooperation and Resources

Organisation/theme	Budget R'000	Actual expenditure R'000	Reasons for transfer payment
Global science: Bilateral cooperation	13 598	13 598	Growing international partnerships with the aim of leveraging resources for R&D and human development
Global science: International resources	38 959	38 959	Growing international partnerships with the aim of leveraging resources for R&D and human development
Global science: Multilateral cooperation	8 250	8 250	Growing international partnerships with the aim of leveraging resources for R&D and human development
Total	60 807	60 807	

Programme 4: Research Development and Support

Organisation/theme	Budget R'000	Actual expenditure R'000	Reasons for transfer payment
Academy of Science of South Africa	24 106	24 106	To promote innovative and independent scientific thinking
Astronomy	14 069	14 069	Support to radio and optical astronomy
Human and Social Development Dynamics	11 579	10 483	Policy and institution building (10-year plan and centres of excellence)
Human resource development	882 201	881 351	Implementation of human capital development initiatives
National Research Foundation	882 805	882 805	To support and promote research through funding human resource development
Science awareness	69 481	69 481	Research and initiatives towards youth involvement in the science arena
Square Kilometre Array (Capital)	652 756	652 756	Infrastructure for the SKA project
Square Kilometre Array (Current)	13 881	13 881	R&D for the SKA project
South African Research Chairs Initiative	482 243	482 243	To fund research chairs in higher education institutions
Strategic science platforms	197 946	197 016	Support for human capital development, knowledge generation policy implementation and infrastructure development
Cyberinfrastructure	214 546	214 546	Operation and management of CHPC initiatives and connectivity of research institutions
Research and development infrastructure	661 527	661 527	Infrastructure development
Total	4 107 140	4 104 263	

5. TRANSFER PAYMENTS (CONTINUED)

Programme 5: Socio-economic Innovation Partnerships

Organisation/theme	Budget R'000	Actual expenditure R'000	Reasons for transfer payment
Advanced Manufacturing Technology Strategy	43 575	43 575	Implementation of the Advanced Manufacturing Technology Strategy
Council for Scientific and Industrial Research	872 043	872 043	This is a parliamentary grant as per the Estimates of National Expenditure, to be used to provide science and technology services and solutions, and identify opportunities for new technologies to be further developed and exploited in the private and public sectors for commercial and social benefit.
Environmental innovation	23 360	23 360	Identifying and initiating S&T programmes that support the growth of the environmental technologies and services sector in South Africa
Human Sciences Research Council	290 149	290 149	Parliamentary grant as per the Estimates of National Expenditure. To conduct large-scale policy-relevant social science research
Information and communication technology	26 327	26 327	Implementation of the South African ICT RDI Roadmap. Facilitating policy and strategy development on R&D interventions that support the growth of the ICT sector (excluding the ICT retail sector).
Local manufacturing capacity	214 779	214 779	Support for technology localisation. Assistance for local companies to develop their technology capabilities to enable them to leverage procurement opportunities under the infrastructure build programmes of the state-owned enterprises. Funding for technology stations to render technology support to small and medium enterprises.
Local systems of innovation	153 023	153 023	Support for local innovation interventions and science parks. Support for industry innovation partnerships.
Research Information Management System (RIMS)	7 201	7 201	Information access for decision-making – continued development and maintenance of RIMS
Resource-based industries	43 797	43 797	S&T policy, strategy and direction-setting support to harness value from South Africa's natural resources.
Innovation for Inclusive Development	43 082	43 082	Development of indicators and instruments for measuring and monitoring investments in S&T and the performance of the NSI. Supports experimentation with S&T-based innovations for tackling unemployment, poverty and inequality through the creation of sustainable job and wealth opportunities and enhancing the delivery of basic services.
Total	1 717 336	1 717 336	

6. CONDITIONAL GRANTS

None.

7. DONOR FUNDS

7.1. Donor funds received

The DST received official development assistance (ODA) from Argentina, the European Community and the United States Agency for International Development (USAID). Below is a brief summary of the activities supported by these ODA partners in science and technology.

Name of donor	European Union
Full amount of the funding (R'000)	120 000
Period of the commitment	3 years
Purpose of the funding	ICT Innovation programme to support development and government delivery.
Expected outputs	To achieve high-end results in the area of ICT with a focus on the knowledge economy in order to create a better South Africa, a better Africa and a better world.
Actual outputs achieved	The Department participated in the 2016 IST Africa Conference which was held in Durban, South Africa.
Amount received in current period (R'000)	27 221
Amount spent by the Department (R'000)	27 221
Reasons for the funds unspent	-
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

Name of donor	European Union
Full amount of the funding (R'000)	5 000
Period of the commitment	3 years
Purpose of the funding	ESASTAP 2
Expected outputs	Advancement of South Africa European Union collaboration
Actual outputs achieved	<p>Some of the funding was targeted for paying for the ESASTAP 2020 and Science Forum South Africa (SFSA) websites (hosting and maintenance). However, the Directorate was alerted by Supply Chain Management to reissue the terms of reference for the hosting of both websites to appoint a service provider to fulfil the above mentioned services, since the DST could no longer have open ended contracts with service providers. This led to the budgeted funds not being spent within the said financial year.</p> <p>Owing to the cost containment measures of sourcing government-owned venues, some of the project activities had to be hosted within the DST and its entities, which led to the budget reserved for events and venue hire not being spent.</p>
Amount received in current period (R'000)	2 397
Amount spent by the Department (R'000)	1 125
Reasons for the funds unspent	Not applicable
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

7. DONOR FUNDS (CONTINUED)

Name of donor	European Union
Full amount of the funding (R'000)	196
Period of the commitment	3 years
Purpose of the funding	To create a better South Africa, a better Africa and a better world.
Expected outputs	To promote mutual understanding of Africa-EU cooperation on critical science and technology areas of mutual interest.
Actual outputs achieved	The Department hosted the South Atlantic Marine Research Collaboration workshop which was held on 26-27 January 2017 in Pretoria.
Amount received in current period (R'000)	122
Amount spent by the Department (R'000)	31
Reasons for the funds unspent	The invoices were not received from the service providers by year end.
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

Name of donor	European Union
Full amount of the funding (R'000)	2 345
Period of the commitment	3 years
Purpose of the funding	ERAfrica
Expected outputs	Implementing wide dialogue with the aim of reaching consensus among EU and Africa programme owners.
Actual outputs achieved	Funds were used to support South African participants in ERAfrica. 3 consortium meetings were attended in Cape Town (2) and Potchefstroom. A workshop on ERAfrica was also held in the DST in May 2016.
Amount received in current period (R'000)	70
Amount spent by the Department (R'000)	19
Reasons for the funds unspent	The announcement of the LEAP AFRI call was delayed, so funds were not all spent as they were targeted to promote the call.
Monitoring mechanism by the donor	These funds are audited by Auditor-General or external auditors at the request of the donor.

Name of donor	European Union
Full amount of the funding (R'000)	5 483
Period of the commitment	-
Purpose of the funding	Promoting Africa/EU research infrastructure
Expected outputs	To develop a database of African Research Infrastructure and influence policy dialogue in the region.
Actual outputs achieved	Support for European engagements on the South African Science Forum 2016
Amount received in current period (R'000)	986
Amount spent by the Department (R'000)	986
Reasons for the funds unspent	Not applicable
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

7. DONOR FUNDS (CONTINUED)

Name of donor	European Union
Full amount of the funding (R'000)	3 136
Period of the commitment	3 years
Purpose of the funding	RINEA Programme: Create a better South Africa, a better Africa and a better world.
Expected outputs	To provide strategic support to the Africa/EU high level policy dialogue and implement the outcomes of decisions from Senior Officials Meetings.
Actual outputs achieved	<ol style="list-style-type: none"> 1. RINEA Work Package Leaders' Meeting in Brussels, Belgium, to discuss new project orientations and initiatives to support the Africa-EU Roadmap on Food and Nutrition Security and Sustainable Agriculture (June 2016) 2. RINEA Work Package 2 Meeting with French and Finnish partners to conceptualise ERAfrica impact assessments in Cape Town, South Africa (October 2016) 3. RINEA Annual Partners' Meeting in Windhoek, Namibia (November 2016) 4. Dialogue with Non-Traditional Funding Partners during the DST Science Forum (December 2016) 5. Development of South African position on the Africa-EU Research and Innovation Partnership on Climate Change and Energy Efficiency (February 2017) 6. High Level Policy Dialogue Working Group Kick-off Meeting to discuss evaluation of the implementation of the Roadmap on FNSSA (March 2017)
Amount received in current period (R'000)	441
Amount spent by the Department (R'000)	430
Reasons for the funds unspent	Some of the invoices had not been received at year end.
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

Name of donor	USAID
Full amount of the funding (R'000)	1 916
Period of the commitment	1,5 years
Purpose of the funding	Feasibility study for the establishment of a virtual research, development and innovation network for the information society.
Expected outputs	To determine the possibility of the establishment of a virtual network to include rural areas in South Africa and Tanzania
Actual outputs achieved	The final assessment of innovation in SADC region was submitted.
Amount received in current period (R'000)	293
Amount spent by the Department (R'000)	293
Reasons for the funds unspent	Not applicable
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

7. DONOR FUNDS (CONTINUED)

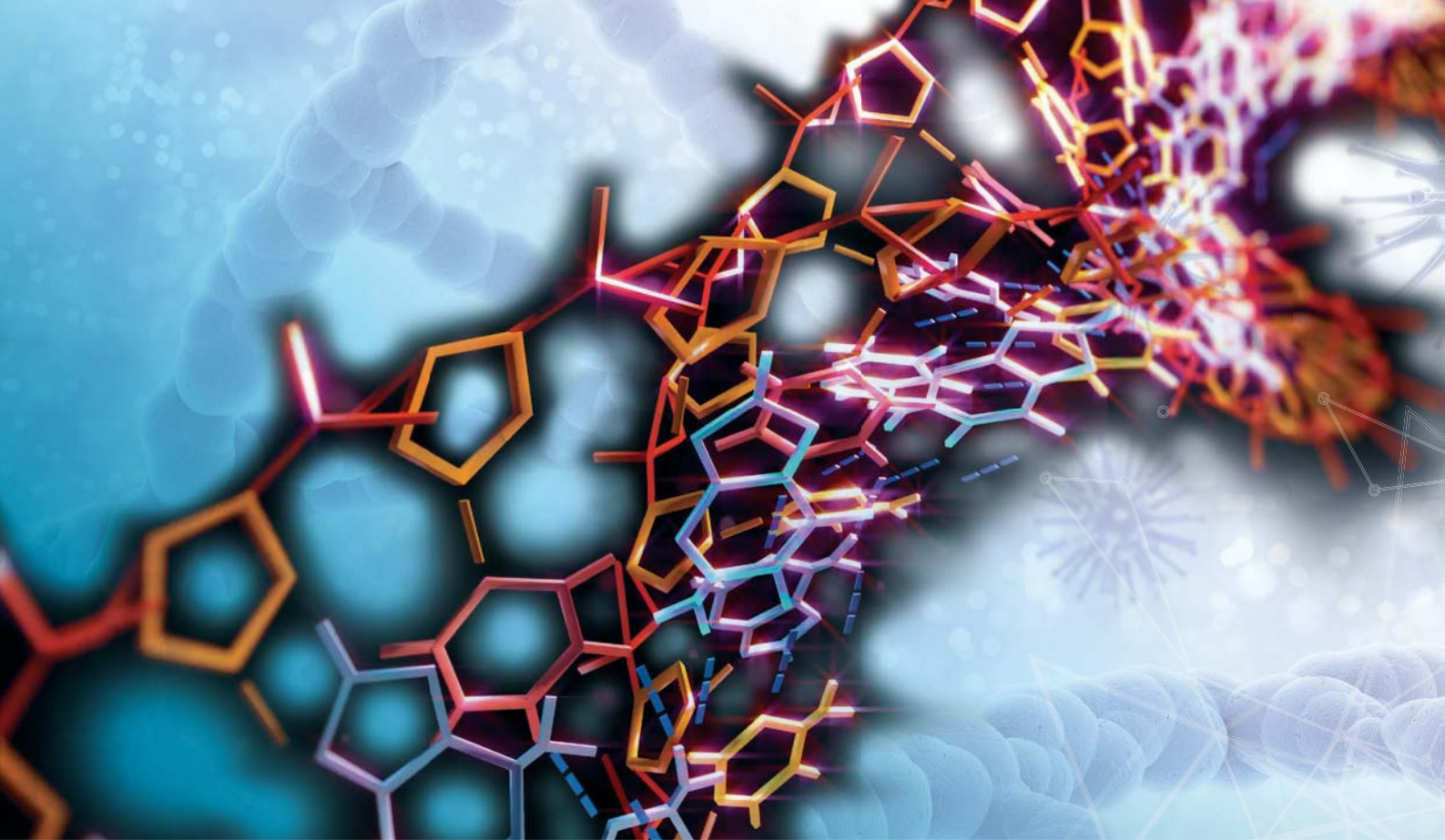
Name of donor	USAID
Full amount of the funding (R'000)	1 168
Period of the commitment	
Purpose of the funding	To protect our environment and natural resources
Expected outputs	To build capacity in the Southern African Development Cooperation (SADC) member states to understand information on climate change impact and risk in the context of an SADC early warning system.
Actual outputs achieved	<ol style="list-style-type: none"> 1. Stakeholder meetings took place to understand climate change management in the region. 2. Development of a revised SADC climate change handbook to provide up-to-date information on climate variability and change.
Amount received in current period (R'000)	815
Amount spent by the Department (R'000)	815
Reasons for the funds unspent	Not applicable
Monitoring mechanism by the donor	These funds are audited by the Auditor-General or external auditors at the request of the donor.

8. CAPITAL INVESTMENT

8.1 Capital investment, maintenance and asset management plan

The Department has asset management policies and procedures in place that assisted in ensuring that the asset register was kept up to date. The Department conducted four asset verifications during the year under review to ensure that all redundant and damaged assets were disposed of and replaced on time.

In addition, the Department replaced old information technology equipment such as laptops and desktops to ensure that its operations continued without interruption. Most of the Department's information technology servers have reached the end of their lifespan; these will be replaced in the 2017/18 financial year.



PART C

GOVERNANCE

1. INTRODUCTION

The Department is committed to maintaining the highest standards of corporate governance, which are fundamental to the management of public finances and resources. The frameworks below are the main pillars of the Department's corporate governance arrangements.

2. RISK MANAGEMENT

The Department views Enterprise Risk Management (ERM) as imperative for the successful delivery of its mandate. The Department believes that identifying, understanding and managing risks in an enterprise-wide context will ensure accountability and sustainability, and that ERM will direct the Department to address possible negative events in a proactive and timely manner, while exploiting opportunities presented by future uncertainties.

There are various processes to ensure the commitment of the entire Department to ERM (e.g. awareness sessions at induction, the definition of clear risk management roles and responsibilities, and ongoing, regular risk assessments and subsequent follow-up).

The Department has a Chief Risk Officer and effective management systems (policy, framework, strategy, guidebooks and an annual implementation plan) for ERM.

To ensure the quality, integrity and reliability of the Department's ERM processes and responses, the Department has an ERM Committee (ERMC) comprising four independent members and four ex officio members. The Audit Committee Chairperson is a standing invitee to the ERMC. The ERMC has played an integral part in ensuring that the Department maintains and enhances its ERM maturity level. The following table indicates the members of the ERMC and the meetings they attended during the period under review:

Name	Member status	Meetings attended	Notes
C Boltman	Independent member (Chairperson)	4 of 4	Appointed as member on 15 May 2014 and as Chairperson on 1 Feb. 2015
L Kaplan	Independent member	4 of 4	Reappointed as member on 1 Feb. 2015
J Fick	Independent member	4 of 4	Appointed as member on 4 Feb. 2014
M Karedi	Independent member	4 of 4	Appointed as member on 1 Feb. 2015
T Makhode	Ex officio member	4 of 4	DDG: Institutional Planning and Support
N Mokoena	Ex officio member	2 of 4	DDG: Corporate Services
N January	Ex officio member	2 of 4	Head: Legal Services
P Makukule	Ex officio member	3 of 3	CFO (appointed as CFO on 1 July 2016)
R Shaku	Ex officio member	1 of 1	Acting CFO (until the appointment of Ms Makukule)
R Marcus	Audit Committee Chairperson – Standing invitee	3 of 4	Appointed as Audit Committee Chairperson on 29 October 2015.

2. RISK MANAGEMENT (CONTINUED)

The Department's Internal Audit Activity and the Audit Committee provide independent assurance of the Department's ERM processes, and advise on the effectiveness of risk management controls and risk mitigation initiatives.

Strategic, operational and functional risk profiles were finalised for the period under review, and risk mitigation was monitored quarterly by the ERM.

In the period under review, risk assessments were conducted for key projects. These include projects that are managed on behalf of the Department by its entities.

The Department has noted that, although improvement in the management of risks has translated into improvement

in performance, there is always room for further improvement. In this regard, the Department developed and approved a five-year strategy and implementation plan for maturing ERM.

In the period under review, the ERM Chairperson briefed the Director-General every quarter, and the Minister on an annual basis, on the effectiveness and adequacy of ERM across the Department. The annual briefing of the Minister is a new measure that was approved and introduced in the 2016/17 financial year.

The Department has developed and approved deputy director-general-level performance standards in respect of ERM for application with effect from the 2017/18 financial year.

3. FRAUD AND CORRUPTION

The Department has an effective management system for fraud risk management, including a framework, a strategy, whistle-blowing policies, and an annual fraud prevention and detection plan.

The fraud risk profile finalised for the period under review was used as the basis for the formulation of the annual fraud prevention and detection plan. The implementation of the plan is driven by the Directorate: ERM and progress is monitored quarterly by the ERM and Audit Committee.

Using various mediums of communication, the Department actively promotes awareness of fraud and corruption, and the use of the National Anti-Corruption Hotline. The Department has designated mid-November to mid-December of each year as Anti-Corruption Month and hosts its annual Anti-Corruption Day within this period.

In the year under review, the Department's programme focused on raising staff awareness of cybercrime.

The veracity of allegations of fraud and corruption are thoroughly investigated using internal and/or external resources. The outcome of an investigation guides the Accounting Officer on the steps to be taken to finalise the matter (disciplinary action, recovery of state resources or criminal investigation). If warranted, the Department will report a matter to the appropriate law enforcement authority (e.g. the South African Police Service, the Special Investigation Unit or the Office of the Public Protector) for further investigation. However, in the period under review, this was not necessary. The progress of investigations is reported on in closed sessions at all ERM meetings.

4. MINIMISING CONFLICT OF INTEREST

Investigations are conducted to establish the nature of any conflict and to determine a course of action.

5. CODE OF CONDUCT

This document seeks to promote and maintain a high standard of professional ethics throughout the Public Service. If an employee breaches the code of conduct he

or she is subjected to a disciplinary process in terms of the Disciplinary Code and Procedures for the Public Service to correct his or her behaviour.

6. HEALTH, SAFETY AND ENVIRONMENTAL ISSUES

The Department's Occupational Health and Safety (OHS) strategy focuses on four objectives which are to (i) create a healthy and safe working environment through the identification, recognition and evaluation of hazards, and the proactive implementation of appropriate risk control measures, (ii) implement OHS risk management strategies in order to manage and reduce OHS risks effectively and efficiently, (iii) reduce the frequency and severity of risks affecting employees' health and safety, (iv) create OHS awareness by providing information and education in order to generate and maintain a vigilant OHS culture, thereby creating a healthy and safe environment, and (v) to comply with OHS legislation and relevant standards.

Inspections, a ventilation assessment and a biological assessment have been conducted and the findings are being addressed. The Department has a functional Health and Safety Committee in place. The Committee has been

educated about OHS legal obligations to equip them to fully execute their responsibilities.

OHS incidents such as injuries and narrowly avoided injuries were analysed and addressed quarterly. Notices were placed at various points in the Department to heighten awareness of OHS risks and the need for compliance with guidelines, including the Department's OHS policy, procedures for working at heights, the incident management guide, the guide on the management of medical emergencies, and the evacuation procedure.

In-house training was provided to the Emergency Response Team and the Health and Safety Committee so that they could respond efficiently and effectively in case of emergency. Emergency evacuation drills were conducted as required.

7. PORTFOLIO COMMITTEE

Information on briefings to the Portfolio Committee on Science and Technology and the Select Committee on Communications and Public Enterprises between 1 April 2016 and 31 March 2017 is set out below:

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
6 April 2016	Briefing by the Academy of Science of South Africa (ASSAf) on its revised 2015/16-2019/20 Strategic Plan to the Select Committee on Communications and Public Enterprises	<p>Members asked how ASSAf engaged with the HSRC.</p> <p>Members asked ASSAf to indicate how it was reversing the legacy of apartheid, and what kinds of outreach programmes it had to reach marginalised communities.</p>	<p>ASSAf participated in the Committee of Heads of Research and Technology (COHORT) with science councils such as the HSRC. ASSAf collaborated with the HSRC on science policy seminars, and would discuss with the HSRC the possibility of using the seminars as a vehicle for disseminating its evidence-based scientific study reports to relevant audiences.</p> <p>ASSAf reached marginalised and rural communities through the DST's National Science Week, its work with district education offices in the provinces (particularly strong in the Western Cape and Gauteng – more work needed to be done in the other provinces) and through the dissemination of its popular science magazine <i>Quest</i>. ASSAf was developing a science engagement policy which would directly address this important issue.</p>
13 April 2016	Briefing by the DST on its performance for the third quarter of 2016/17 against the Annual Performance Plan and budget	Members asked how to change the fact that South Africa was a net importer of technology. Members also asked about the effect of the exchange rate on the work of the Department.	There was a 15-year plan to improve the import-export ratio of technology, but it would take time to get to a point where South Africa was a net exporter of technologies. The Department had been asked by Cabinet to develop a framework for the use of local and cheaper technology performing at the same level. This should promote local innovation.
13 April 2016	Briefing by the National Advisory Council on Innovation on its Annual Performance Plan and budget	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
13 April 2016	Briefing by the South African National Space Agency (SANSA) on its Annual Performance Plan and budget.	<p>Members asked what interventions SANSA was making to lower the risk of satellite funding, which was high.</p> <p>Members asked whether SANSA informed other government departments about SANSA products that could be useful to them.</p> <p>Members asked what strategies were in place for SANSA to increase the number of women bursary recipients in terms of human capital development.</p>	<p>SANSA indicated that, after the development of a full-life costing of the satellite project, it was clear that two-thirds of funding was used for revitalisation. The costing would be discussed with the DST.</p> <p>SANSA indicated that there was a proposed solution to inform government departments about its products.</p> <p>SANSA indicated that the matter of increasing women bursary recipients was a national problem. However, the DST and NRF programme had begun to yield good results.</p>
13 April 2016	Briefing by the National Research Foundation (NRF) on its Annual Performance Plan and budget.	Members asked whether, since most of the budget was spent on postgraduates, there was a way to track the students to ensure that they stayed in the country.	The NRF indicated that there was a mechanism for tracking, but that it was still new. The NRF was collaborating with the Department of Higher Education and Training, which had a system recording details of graduates.
13 April 2016	Briefing by the Technology Innovation Agency (TIA) on its Annual Performance Plan and budget.	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
14 April 2016	Briefing by the Human Sciences Research Council (HSRC) on its Annual Performance Plan and budget	Members asked the HSRC if it was increasingly difficult for them to secure donor funding.	The HSRC indicated that there were challenges in securing funding, but its target of R180 million had been reached within the time frame.

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
14 April 2016	Briefing by the Academy of Science of South Africa (ASSAf) on its Annual Performance Plan and budget	<p>Members asked what ASSAf would consider an adequate budget to fulfil its mandate.</p> <p>Members asked if clarity had been obtained on ASSAf's status as an entity from an audit perspective.</p> <p>Members asked if the ASSAf advisory programme was linked to the advisory services of the National Advisory Council on Innovation.</p>	<p>ASSAf indicated that a 50% increase in the current allocation would enable the organisation to address the concern raised about the budget. This excluded infrastructure costs.</p> <p>ASSAf had been engaging with National Treasury and working with the DST in this regard. It was established that, considering the nature of the entity, National Treasury was unclear how to deal with the matter.</p> <p>ASSAf indicated that there was a memorandum of understanding with NACI, which included an agreement that the two organisations would align their APPs.</p>
14 April 2016	Briefing by the Council for Scientific and Industrial Research (CSIR) on its Annual Performance Plan and budget	<p>Members asked whether the CSIR had business with other African countries or other continents.</p> <p>Members asked whether the CSIR's innovation work on market-ready products did not interfere with the work of the Technology Innovation Agency.</p> <p>Members asked if the CSIR ever invited the Departments of Trade and Industry and Small Business Development to the launch of their products.</p>	<p>The CSIR indicated that 73% of its income was from contracts, of which 12% was from international and African businesses. The 12% was not a large amount and came mostly from oil-producing countries that were currently not doing well economically. This was likely to be a challenge.</p> <p>The CSIR indicated that they did the actual work of developing products and that the Technology Innovation Agency was responsible for finding funds. The CSIR tests the claims of the product and assists with making different ranges of products. Sometimes the two entities did work together.</p> <p>The CSIR responded that the Department of Trade and Industry and the Department of Small Business Development would be invited to the launch of CSIR products, as it was recognised that the products had to get to the market.</p>

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
20 April 2016	Briefing by the DST on progress in implementing the Intellectual Property Rights from Publicly Financed Research and Development Act and on the National Intellectual Property Management Office (NIPMO)	<p>Members asked for clarity in terms of NIPMO's relationship with the Department of Trade and Industry (DTI).</p> <p>Members asked what an "ideal" office of technology transfer (OTT) should look like and what support NIPMO could provide to institutions to make the entire process "easier".</p>	<p>NIPMO indicated that a formal relationship was maintained with the Companies and Intellectual Property Commission via a memorandum of agreement, which included the World Intellectual Property Organization Summer School, the technology innovation and support centres, and broad awareness and education (including formalising intellectual property as part of the school curriculum). A less formal relationship was maintained with the DTI. This included inputs into the Intellectual Property Policy, and several commissioned studies. There was also an initiative to develop broader capacity in intellectual property, including through the introduction of a patent attorney development programme. However, NIPMO acknowledged that more could be done to foster even stronger relations</p> <p>NIPMO indicated that an OTT framework and a technology transfer manual had been developed. Through the OTT Support Fund, NIPMO aimed to provide institutions with the necessary resources to employ individuals in the OTTs, and to give these individuals the skills and training needed to perform their jobs. However, the reality is that currently 75% of individuals in the OTTs had less than five years' experience. In many instances, institutions concentrated only on the identification and protection of their intellectual property and not detailed intellectual property management such as infringement monitoring.</p>

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
20 April 2016	Briefing by the DST on progress in implementing the Intellectual Property Rights from Publicly Financed Research and Development Act and on the National Intellectual Property Management Office (NIPMO)	<p>Members asked about the ideal percentage for the number of disclosures that have been received, are active, have a granted right or have been commercialised.</p> <p>Members asked as to how the legislation currently precluded NIPMO from being a government component, and limited it to being a specialised service delivery unit.</p>	<p>NIPMO indicated that there was no international norm in this regard, and that, as the number of new disclosures continued to increase, the number of granted rights and commercialised technologies would remain a small percentage of the growing pool of disclosures. It would be more appropriate to look at the conversion rate of the number of disclosures commercialised. The international norm in this regard was between 15 and 30%. Currently, the conversion rate in South Africa was about 7%, which was encouraging considering the South African system was formally only five years old and had not yet stabilised.</p> <p>NIPMO explained that the legislation was crafted to allow NIPMO to be set up as an office within the Department of Science and Technology or have its functions assigned to a public entity whose functions were in line with NIPMO's. The Department of Public Service and Administration and the Government Technical Advisory Centre had noted that it would be more appropriate for NIPMO to be a government component, but that this would require legislative amendments, and so NIPMO had been made a specialised service delivery unit until the legislation had been amended.</p>
18 May 2016	Briefing by the DST to the Select Committee on Communications and Public Enterprises on its 2016/17 Annual Performance Plan and Budget	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
16-17 Aug. 2016	<p>Briefing by the DST on the Department's indigenous knowledge systems (IKS) programme and legislative developments</p> <p>Socio Economic Impact Assessment System (SEIAS) report on the Protection, Promotion, Development and Management of Indigenous Knowledge Systems Bill (IKS Bill)</p>	<p>Members asked for a detailed presentation on the IKS Bill, including each of the sections.</p> <p>Members asked that a presentation on the SEIAS report process be made by the Department on 24 August 2016.</p>	<p>The DST indicated that a full presentation of the IKS Bill would be submitted to the Portfolio Committee on Science and Technology by 24 August 2016.</p> <p>The DST responded that the SEIAS process had been done in compliance with Parliamentary processes, leading to the introduction of the IKS Bill to Cabinet. The Portfolio Committee requested that the SEIAS report be sent to the content manager of the Portfolio Committee.</p>
24 Aug. 2016	Briefing by the DST on its financial and non-financial performance for the fourth quarter of the 2015/16 financial year	<p>Members asked about DST collaboration with other government departments considering that other departments and their entities also had R&D mandates.</p> <p>Members asked whether the DST was concerned only with the SKA and "elite" science. What was being done in areas such as sanitation, agriculture, energy and mining, and what was the budget allocation for such initiatives?</p>	<p>DST indicated it had developed a framework for science and technology cooperation with other government departments. Furthermore, collaboration was increasing through government clusters.</p> <p>The DST made a commitment to provide information on funding allocations for areas such as sanitation, agriculture and energy. The Department indicated that the DST-NRF Centre of Excellence at the University of Johannesburg, in collaboration with the University of the Witwatersrand and the University of Limpopo, was conducting research in the areas of energy and mining. The Department explained that projects such as the SKA had indirect economic benefits as small businesses and local communities benefited from the project. Furthermore, the foreign direct investment (FDI) associated with such projects made a positive contribution to the country's economy. The creation of employment opportunities (direct or indirect) was one of the most prominent impacts of FDI, and the SKA was therefore contributing to economic growth in South Africa.</p>

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
21 Sept. 2016	Briefing by the DST on its financial and non-financial performance for the first quarter of the 2016/17 financial year	<p>Members asked who owned the SKA capital assets and land.</p> <p>Members asked about achieved and non-achieved targets, and what impact this had on the Department. The DST was asked not to give percentages, but set out everything.</p> <p>Members asked how many women and young people were in research chairs.</p>	<p>The DST indicated that the money for the infrastructure had moved to the NRF, which managed the programme, and therefore the assets appeared on the NRF register.</p> <p>The DST committed itself to providing more details on what the achieved and unachieved targets were, as well as information on continuous improvements. This information had been provided to the Minister.</p> <p>The DST responded that 198 research chairs had been awarded. Of the incumbents, 40% were women, 74% were white and 26% were black. There was no data currently in terms of age. 70% of the research chairs were from South Africa, and 30% came from abroad.</p>
19 Oct. 2016	Briefing by the DST on its 2015/16 Annual Report	<p>The Committee requested clarification on ASSAf's status in terms of PFMA compliance. The Annual Report indicated that ASSAf was not required to comply with the PFMA. However, later in the presentation, it looked as if ASSAf had to comply.</p> <p>The DST needed to explore the feasibility of entities, especially smaller entities, sharing administrative services</p> <p>Members asked what the selection criteria for the students receiving funding from the Department were.</p>	<p>The Department had written to the National Treasury requesting clarity on ASSAf's status in terms of compliance with the PFMA. Treasury had made a commitment to provide the Department with a response on how the matter should be handled.</p> <p>Given recent experiences with shared services, this might not be feasible.</p> <p>The DST indicated that bursaries were awarded to students through various mechanisms. One of these involved a call for proposals by the National Research Foundation. Students submitted proposals and requests for bursaries to the NRF. Bursaries were also awarded by universities using grants awarded for this purpose and selection criteria provided by the NRF.</p>

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
19 Oct. 2016	Briefing by NACI on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
19 Oct. 2016	Briefing by TIA on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
19 Oct. 2016	Briefing by South African Council for Natural Scientific Profession on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
19 Oct. 2016	Briefing by the NRF on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
20 Oct. 2016	Briefing by the CSIR on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
20 Oct. 2016	Briefing by HSRC on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
20 Oct. 2016	Briefing by SANSA on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
20 Oct. 2016	Briefing by ASSAf on its 2015/16 Annual Report	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
9 Nov. 2016	Briefing by the DST to the Select Committee on Communications and Public Enterprises on projects carried out under the Innovation for Poverty Alleviation Programme, including the number of jobs created and the provinces in which the projects were located	<p>Members asked for a detailed report indicating, among other things, the total investment by the Department, the duration of the project, and the current status of initiatives.</p> <p>Members asked how the DST ensured that its entities made known what was available for commercial exploitation.</p>	<p>The DST made a commitment to provide the additional information in tables by the middle of December.</p> <p>The DST informed the committee about mechanisms currently in use, such as open days, articles in publications like <i>Engineering News</i>, marketing efforts, and engagements with private sector players, including new entrants.</p>

7. PORTFOLIO COMMITTEE (CONTINUED)

Date	Subject	Matters raised by the Portfolio Committee (highlights of high-level issues)	How the matters have been addressed/resolved
30 Nov. 2016	Briefing by the DST on its financial and non-financial performance in the second quarter of the 2016/17 financial year	All questions were addressed.	All questions were addressed satisfactorily and recorded on the Parliamentary Monitoring Group website (www.pmg.org.za/minutes).
1 March 2017	Briefing by the DST on the IKS Bill	It was proposed that a technical team comprising the DST and the Department of Trade and Industry be established as a matter of urgency to look at the concerns around the IKS Bill.	The DST would ensure that its technical team comprised staff from Science Missions and Legal Services.
15 March 2017	Briefing by the DST on its financial and non-financial performance in the third quarter of the 2016/17 financial year	<p>Members asked if the money transferred to entities was tracked and monitored to see if it was well spent.</p> <p>Members asked if the figure for PhD students referred only to South African students.</p> <p>Members asked to what extent other departments and organisations were involved in the beneficiation project.</p>	<p>The DST replied that each transfer was covered by contracts. In terms of the PFMA, the DST was required to monitor the use of funds transferred, and each entity had to provide the Department with annual and quarterly reports. The Department had extensive oversight over the funds. The transfers were made because the Department used institutions to achieve its objectives. It monitored the entities' performance and met with each of them regularly.</p> <p>The DST indicated that the Department funded mainly doctoral students and was able to cover about 18% for doctoral students, 14% for master's and 4% for honours. South Africa adhered to the Southern African Development Community (SADC) Protocol on Education, which allowed 4% of places at South African universities to be awarded to SADC nationals on local terms and conditions.</p> <p>The Minister said that the CSIR, the Oceans Economy Phakisa, the Agri-parks initiative, and a hair product company called Elida were some of the companies and organisations involved in the beneficiation project.</p>

8. SCOPA RESOLUTIONS

There were no Standing Committee on Public Accounts (SCOPA) resolutions.

9. PRIOR MODIFICATIONS TO AUDIT REPORTS

There were no prior modifications to the audit reports of the Department.

10. INTERNAL CONTROL UNIT

There is no internal control unit in the Department. All internal control functions are performed by the Internal Audit Activity.

11. INTERNAL AUDIT AND AUDIT COMMITTEE

Key activities and objectives of the Internal Audit Activity

Senior management and the Audit Committee (AC) rely on Internal Audit for independent objective assurance and insight on the effectiveness and efficiency of the Department's governance, risk management and internal control processes.

The Internal Audit Activity focused primarily on providing professional audit services to management and the Audit Committee, and conducting activities efficiently and effectively in accordance with professional standards for internal auditors.

In assisting the Audit Committee in their oversight role, the Internal Audit Activity developed a three-year risk-based internal audit plan, guided by the Department's strategic documents and risk profile for the committee's approval.

Emerging risks and issues were considered when completing the audit plan. Internal Audit Activity conducted a follow-up of audit recommendations to ensure value is derived from the auditing performed. Internal Audit Activity also evaluated the assurance provided by the various assurance providers in accordance to the approved combined assurance plan.

Summary of audit work done

Internal Audit Activity completed the risk-based audit plan during the year, comprising of internal audits, project audits and consulting engagements. Internal Audit Activity selected and prioritised the audit engagements for the year according to risk exposure, external audit reports, Management Performance Assessment Tool (MPAT) results, the complexity of the area, management priority (which reflects the level of interest in an area expressed during consultation with senior management), and lack of previous coverage, as well as ad hoc audit requests.

Audit work focused on control weaknesses identified in the areas of performance information, procurement processes, IT audits, and reviews of financial statements. The Internal Audit Activity also provided consulting services in the verification of the MPAT evidence, Auditor-General Dashboard and certain performance information focus areas. The DST implements numerous projects and initiatives to ensure the achievement of its planned outcomes, and project audits were a key component of the audit plan.

11. INTERNAL AUDIT AND AUDIT COMMITTEE

(CONTINUED)

Key activities and objectives of the Audit Committee

The Audit Committee is constituted as a statutory committee of the DST to fulfil its statutory duties in terms of section 77 of the Public Finance Management Act (PFMA) Act 1 of 1999 as amended by Act 29 of 1999 and Treasury Regulations issued in terms of the PFMA. The Audit Committee is established as an oversight body, providing independent oversight over the governance, risk management and control processes of the Department. Their mandate and responsibilities are clearly defined in the Audit Committee Charter, and four Audit Committee meetings were convened for the year in accordance with the Charter.

Attendance of audit committee meetings by Audit Committee members

Name	Qualifications	Internal or external	If internal, position in the Department	Date appointed	Date contract ended	Number of meetings attended
Shirley Machaba	CA (SA)	External		1 Oct. 2012	n/a	3
Roy Marcus	MSc (Mechanical Engineering) and PhD	External		1 May 2013	n/a	4
Hendrikus Maritz	B Com	External		1 Oct. 2010	30 Sept 2016	3
Len Konar	DCom, CA (SA), CRMA	External		1 Oct. 2016	n/a	1

12. AUDIT COMMITTEE REPORT

We are pleased to present our report for the financial year ended 31 March 2017.

1. Audit Committee responsibility

The Audit Committee reports that it has complied with its responsibilities arising from section 38(1)(a)(ii) of the Public Finance Management Act and Treasury Regulation 3.1.13. The Audit Committee also reports that it has adopted appropriate formal terms of reference as its Audit Committee Charter, has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein, except that we have not reviewed changes in accounting policies and practices.

2. The effectiveness of the Internal Audit Activity

The Internal Audit Activity reports functionally to the Audit Committee. The Audit Committee approves the internal audit charter and the annual audit plan of the Internal Audit Activity to maintain its independence. A quality assurance and improvement programme is implemented annually and the results are presented to the Audit Committee. Under the guidance of the Audit Committee

and the Enterprise Risk Committee, a combined assurance plan was implemented with the aim of providing a coordinated approach to all assurance activities within the Department. The Audit Committee is satisfied that the Internal Audit Activity is operating effectively and has addressed pertinent risks to the DST through the completion of the annual audit plan.

3. The effectiveness of internal controls

Our review of the significant audit findings, which was informed by the risk assessments conducted in the Department, revealed certain weaknesses, which were then raised with the Department.

Areas selected for audit included –

- performance information;
- procurement processes;
- financial statement reviews;
- IT audits;

12. AUDIT COMMITTEE REPORT (CONTINUED)

- risk management;
- human resource management;
- follow-up of internal and external audit findings;
- projects funded by the Department;
- the Management Performance Assessment Tool.

Areas of concern included –

- regression on the validity and accuracy of performance information reported;
- compliance with legislation in respect of the procurement of goods and services and contract management;
- continuous review of schedules supporting the financial statement disclosure notes.

Overall, the Committee is satisfied with the effectiveness and adequacy of internal controls within the DST.

4. In-year management and monthly/quarterly reporting

The Department is reporting monthly and quarterly to the Treasury as is required by the PFMA. The Audit Committee monitored the monthly and quarterly reports prepared and issued by the Accounting Officer and management during the year under review.

5. Evaluation of financial statements

The Audit Committee –

- reviewed and discussed, with the Auditor-General South Africa (AGSA) and the Accounting Officer, the audited annual financial statements to be included in the annual report;
- reviewed the Department's compliance with legal and regulatory provisions;
- reviewed significant adjustments resulting from the audit;

- reviewed the AGSA's management letter and management's response to it;
- reviewed information on predetermined objectives to be included in the annual report;
- is satisfied with the submission and quality of both the interim and annual financial statements prepared by the Department.

Overall, the Committee is satisfied with the effectiveness of the CFO, the finance function and its staffing.

6. Enterprise risk management

Enterprise risk management is a structured process which focuses on the identification, assessment, management and monitoring of risk. A fully functional Enterprise Risk Management Committee supports the Executive Authority and Accounting Officer by providing oversight, reviewing information presented by management, and reporting on the adequacy and effectiveness of the Department's risk management system. The Committee monitored the significant risks and is satisfied that the risks were reduced to an acceptable level. Comprehensive strategies for enterprise risk management and fraud risk management were developed and implemented. The fraud risk management strategy includes a fraud prevention and detection plan. For the purposes of coordination and fostering relationships, the chairpersons of the Audit and Enterprise Risk Management Committees are standing invitees to the other committees; the same practice is applied by the Chief Audit Executive and the Chief Risk Officer.

7. Annual performance review

The Committee has considered the performance information reports submitted to the AGSA for review and will monitor the measures that management has put in place to improve performance.

12. AUDIT COMMITTEE REPORT (CONTINUED)

8. Auditor-General's Report

We have reviewed the Department's implementation plan for audit issues raised in the previous year and we are satisfied that the matters have been adequately resolved. However, the following areas of concern require management intervention:

- Deficiencies in internal control in respect of performance against predetermined objectives.
- Continuous oversight of compliance to supply chain management prescripts and contract management.

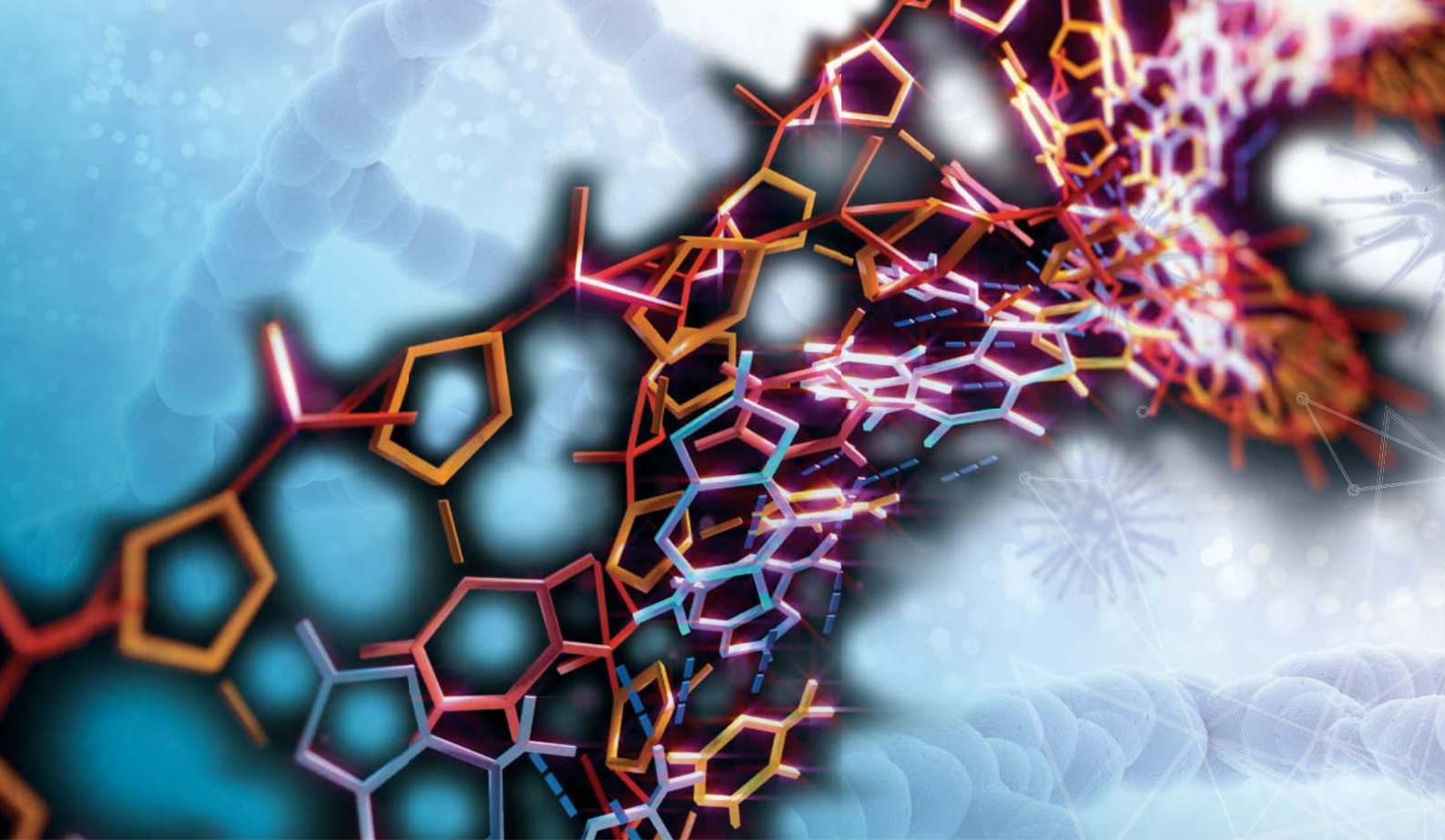
The Audit Committee concurs with and accepts the conclusions of the AGSA on the annual financial

statements and is of the opinion that the audited annual financial statements be accepted and read together with the report of the AGSA.



Prof. Roy Marcus

Chairperson of the Audit Committee
Department of Science and Technology
31 July 2017



PART D

HUMAN RESOURCE MANAGEMENT

1. INTRODUCTION

The Minister of Public Service and Administration has prescribed that all departments in the Public Service provide the information contained in this part of the Annual Report.

2. OVERVIEW OF HUMAN RESOURCES

The objectives of the Strategic Human Resource Plan (HR Plan) for the Department are as follows:

- (a) To ensure that the Department has adequate, appropriate, efficient and sustainable capacity for enhanced performance and service delivery.
- (b) To ensure the effective and appropriate use of human resources in order to achieve the Department's strategic objectives.
- (c) To ensure that the development initiatives (mentoring and coaching, capacity building and shadowing programmes) in the DST are informed by realistic, actual and envisaged capacity needs.
- (d) To ensure that identified health, wellness and safety risks are addressed.
- (e) To ensure the implementation of policies and strategies to drive gender and disability mainstreaming.

Identified human resource priorities are set out in the table below.

Priorities area	Approach to mitigating risks and achieve targets
Recruitment	Address recruitment methods to widen the pool of potential candidates, particularly for scarce skills and mission-critical positions.
Talent management	Develop comprehensive approach to managing and retaining current talent, particularly mission-critical positions and scarce skills.
Employment equity	Addressed targets for race, people with disability, and women at SMS level.
Training and development	Develop comprehensive approach to developing current staff to fill mission-critical and scarce skills positions.
Skills reprioritisation and innovative staffing solutions	Enhance the employee health and wellness initiative to mitigate against workload challenges owing to staff shortages.

Human resource challenges

The following are some of HR challenges faced by the Department:

- (a) The current systems for managing HR planning information are inadequate and Persal is generally seen as a system that is not ideal for the management of HR information. However, it is envisaged that the Department of Public Service and Administration (DPSA) will develop an integrated HR Information Management System that will ease this burden. In the short term, however, not all the data required to execute HR planning effectively is freely available and this may affect the ability of the Department to plan effective interventions.
- (b) The environment in which the Department operates is constantly changing, which means that the Department has to be prepared to effect key strategic changes, including decisions related to human resources, very quickly. The capacity to collect and analyse relevant data and its implications on HR requirements is therefore critical. The Department will thus, in addition to improving its information management

2. OVERVIEW OF HUMAN RESOURCES (CONTINUED)

capability, have to adopt a more robust system for identifying and managing risks, challenges and opportunities that may arise from these environmental changes.

- (c) The Department has challenges in attracting and retaining critical skills (specifically technical skills and financial management skills) for a variety of reasons. The main reason for this may be that skills required to carry out the Department's mandate are scarce and therefore in high demand both locally and globally.
- (d) Employment equity issues (specifically related to race, gender and disability) continue to be addressed by the Department through a number of initiatives, policies and strategies. Creating an enabling environment for women and people living with disability is key to managing diversity.
- (e) Much of the Department's workforce is young, which places particular pressure on the Department to consider and adopt robust institutional knowledge management practices to mitigate the risks associated with a generally young, and therefore more mobile, workforce.
- (f) The compensation budget cuts by National Treasury in the 2016/17 financial year led to a moratorium on the filling of posts. The vacancy rate is growing and staff are increasingly required to perform additional duties. It is important to monitor the impact of this on employees in terms of stress, burnout and managing work-life balance.

Employee health and wellness

As employee wellness issues significantly affect the productivity of the workforce, as well as the retention of potentially critical skills, it is imperative that these are addressed in HR planning interventions. In the year under review, the Department provided a variety of interventions to assist employees manage their health risks, including the following:

- (a) Quarterly health screenings.
- (b) Sport initiatives (zumba, aerobics, soccer, netball, volleyball, walking and running).
- (c) Access to health and wellness information.
- (d) Access to online health professionals.
- (e) Access to legal and financial advisors.
- (f) Executive wellness programmes.
- (g) An employee assistance programme.

3. HUMAN RESOURCES OVERSIGHT STATISTICS

3.1 Personnel-related expenditure

The following tables summarise the final audited personnel-related expenditure by Programme and salary band. In particular, they provide an indication of the following:

- The amount spent on personnel.
- The Amount spent on salaries, overtime, homeowner's allowances and medical aid.

Table 3.1.1: Personnel expenditure by Programme for the period 1 April 2016 to 31 March 2017

Programme	Total expenditure (R'000)	Personnel expenditure (R'000)	Training expenditure (R'000)	Professional and special services expenditure (R'000)	Personnel expenditure as % of total expenditure	Average personnel cost per employee (R'000)
Administration	332 629	161 190	4 908	2 553	48,46%	710
Technology Innovation	1 016 471	42 939	0	0	4,22%	842
International Cooperation and Resources	118 466	43 295	0	0	29,14%	760
Research Development and Support	4 152 019	34 613	0	0	0,83%	752
Socio-economic Innovation Partnerships	1 764 009	37 000	0	0	2,10%	787
Total	7 383 594	319 037	4 908	2 553	4,30%	745

Table 3.1.2: Personnel costs by salary band for the period 1 April 2016 and 31 March 2017

Salary band	Personnel expenditure (R'000)	% of total personnel cost	Number of employees	Average personnel cost per employee (R'000)
Lower skilled (levels 1-2)	0	0,00%	0	0
Skilled (levels 3-5)	3 515	1,10%	12	293
Highly skilled production (levels 6-8)	41 662	13,06%	107	389
Highly skilled supervision (levels 9-12)	139 543	43,74%	200	698
Senior and top management (levels 13-16)	134 317	42,10%	109	1 232
Total	319 037	100,00%	428	745

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

Table 3.1.3: Salaries, overtime, home owner's allowances and medical aid by Programme for the period 1 April 2016 to 31 March 2017

Programme	Salaries		Overtime		Home owner's allowance (HOA)		Medical aid	
	Amount (R'000)	Salaries as % of personnel costs	Amount	Overtime as % of personnel costs	Amount	HOA as % of personnel costs	Amount	Medical aid as % of personnel costs
Administration	161 190	50,52%	561	0,35%	2 513	1,56%	3 856	2,39%
Technology Innovation	42 939	13,46%	0	0,00%	704	1,64%	560	1,30%
International Cooperation and Resources	43 295	13,57%	11	0,03%	470	1,09%	1 014	2,34%
Research Development and Support	34 613	10,85%	22	0,06%	702	2,03%	539	1,56%
Socio-economic Innovation Partnerships	37 000	11,60%	0	0,00%	489	1,32%	548	1,48%
Total	319 037	100,00%	594	0,44%	4 878	7,64%	6 517	9,09%

Table 3.1.4: Salaries, overtime, home owner's allowances and medical aid by salary band for the period 1 April 2016 to 31 March 2017

Salary band	Salaries		Overtime		Home owner's allowance (HOA)		Medical aid	
	Amount (R'000)	Salaries as % of personnel costs	Amount (R'000)	Overtime as % of personnel costs	Amount (R'000)	HOA as % of personnel costs	Amount (R'000)	Medical aid as % of personnel costs
Lower skilled (levels 1-2)	0	0,00%	0	0,00%	0	0,00%	0	0,00%
Skilled (levels 3-5)	3 515	1,10%	55	0,02%	101	0,28%	894	0,28%
Highly skilled production (levels 6-8)	41 662	13,06%	231	0,07%	2 976	1,36%	4 346	1,36%
Highly skilled supervision (levels 9-12)	139 543	43,74%	308	0,10%	1801	0,56%	1 277	0,40%
Senior management (levels 13-16)	134 317	42,10%	0	0	0	0,00%	0	0,00%
Total	319 037	100,00%	594	0,19%	4 878	1,53%	6 517	2,04%

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

3.2 Employment and vacancies

The tables in this section summarise the Department's position with regard to employment and vacancies.

The following tables summarise the number of posts on the establishment, the number of employees, the vacancy rate, and whether there are any staff that are additional to the establishment. This information is presented in terms of three key variables:

- Programme.
- Salary band.
- Critical occupations (see definition in notes below).

Departments have identified critical occupations that need to be monitored. In terms of current regulations, it is possible to create a post on the establishment that can be occupied by more than one employee. The vacancy rate therefore reflects the percentage of posts that are not filled.

Table 3.2.1: Employment and vacancies by Programme as at 31 March 2017

Programme	Number of posts on approved establishment	Number of posts filled	Vacancy rate	Number of employees additional to the establishment
Administration	265	225	15,09%	1
Technology Innovation	58	50	13,79%	0
International Cooperation and Resources	63	57	9,52%	0
Research Development and Support	49	45	8,16%	0
Socio-economic Innovation Partnerships	57	51	10,53%	0
Total	492	428	13,01%	1

Table 3.2.2: Employment and vacancies by salary band as at 31 March 2017

Salary band	Number of posts on approved establishment	Number of posts filled	Vacancy rate	Number of employees additional to the establishment
Lower skilled (levels 1-2)	0	0	0,00%	0
Skilled (levels 3-5)	13	13	0,00%	1
Highly skilled production (levels 6-8)	124	106	14,52%	0
Highly skilled supervision (levels 9-12)	230	200	13,04%	0
Senior management (levels 13-16)	125	109	12,80%	0
Total	492	428	13,01%	1

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.2.3: Employment and vacancies by critical occupation as at 31 March 2017

The Department does not have any CORE employees.

Note:

CORE refers to the DPSA Codes of Remuneration (CORE) classification.

Critical occupations are defined as occupations or subcategories within an occupation –

(a) in which there is a current or anticipated scarcity of qualified and experienced people, either because such skilled people are not available or

they are available but do not meet the relevant employment criteria.

(b) for which people require advanced knowledge in a specified subject area or science or learning field and such knowledge is acquired by a prolonged course of study and/or specialised instruction;

(c) where the inherent nature of the occupation requires consistent exercise of discretion and is predominantly intellectual in nature;

(d) in respect of which a department experiences a high degree of difficulty to recruit or retain the services of employees.

3.3 Filling of Senior Management Service posts

The tables in this section provide information on employment and vacancies as they relate to members of the Senior Management Service (SMS) by salary level. It also provides information on the advertising and filling of SMS posts, reasons for not complying with prescribed time frames, and disciplinary steps taken.

Table 3.3.1: SMS post information as at 31 March 2017

SMS level	Total number of funded SMS posts	Total number of SMS posts filled	% of SMS posts filled	Total number of SMS posts vacant	% of SMS posts vacant
Director-General/ Head of Department	1	1	100,00%	0	0,00%
Salary level 16	0	0	0,00%	0	0,00%
Salary level 15	9	9	100,00%	0	0,00%
Salary level 14	27	24	88,89%	3	11,11%
Salary level 13	88	77	87,50%	11	12,50%
Total	125	111	88,80%	14	11,20%

Table 3.3.2: SMS post information as at 30 September 2016

SMS level	Total number of funded SMS posts	Total number of SMS posts filled	% of SMS posts filled	Total number of SMS posts vacant	% of SMS posts vacant
Director-General/ Head of Department	1	1	100,00%	0	0,00%
Salary level 16	0	0	0,00%	0	0,00%
Salary level 15	9	9	100,00%	0	0,00%
Salary level 14	27	24	88,89%	3	11,11%
Salary level 13	88	79	89,77%	9	10,23%
Total	125	113	90,40%	12	9,60%

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.3.3: Advertising and filling of SMS posts for the period 1 April 2016 to 31 March 2017

SMS level	Total number of funded SMS posts	Total number of SMS posts filled	% of SMS posts filled	Total number of SMS posts vacant	% of SMS posts vacant
Director-General/ Head of Department	1	1	100,00%	0	0,00%
Salary level 16	0	0	0,00%	0	0,00%
Salary level 15	9	9	100,00%	0	0,00%
Salary level 14	27	24	85,19%	4	14,81%
Salary level 13	88	79	87,50%	11	12,50%
Total	125	113	88,00%	15	12,00%

Table 3.3.4: Reasons for not having complied with the time frames for the filling of funded vacant SMS posts – Advertised within 6 months and filled within 12 months after becoming vacant for the period 1 April 2016 to 31 March 2017

Reasons for vacancies not being advertised within six months
National Treasury informed the Department in the 2016/17 financial year that the compensation budget of the DST had been reduced. Exco therefore placed a moratorium on the filling of positions.
Reasons for vacancies not being filled within six months
National Treasury informed the Department in the 2016/17 financial year that the compensation budget of the DST had been reduced. Exco therefore placed a moratorium on the filling of positions.

Note: In terms of the Public Service Regulations Chapter 1, Part VII C.1A.3, departments must indicate good cause or reason for not having complied with the prescribed time frames for filling SMS posts.

Table 3.3.5: Disciplinary steps taken for not complying with the prescribed time frames for filling SMS posts within 12 months for the period 1 April 2016 to 31 March 2017

Reasons for vacancies not being advertised within six months
National Treasury informed the Department in the 2016/17 financial year that the compensation budget of the DST had been reduced. Exco therefore placed a moratorium on the filling of positions.
Reasons for vacancies not being filled within six months
National Treasury informed the Department in the 2016/17 financial year that the compensation budget of the DST had been reduced. Exco therefore placed a moratorium on the filling of positions.

Note: In terms of the Public Service Regulations Chapter 1, Part VII C.1A.2, departments must indicate good cause or reason for not having complied with the filling of SMS posts within the prescribed time frames. In the event of non-compliance with this regulation, the relevant executive authority or head of department must take appropriate disciplinary steps in terms of section 16A(1) or (2) of the Public Service Act.

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

3.4 Job evaluation

Within a nationally determined framework, an executing authority may evaluate or re-evaluate any job in his or her organisation. In terms of the Regulations, all vacancies on salary levels 9 and higher must be evaluated before they are filled. The following table summarises the number of jobs that were evaluated during the year under review. The table also provides statistics on the number of posts that were upgraded or downgraded.

Table 3.4.1: Job evaluation by salary band for the period 1 April 2016 to 31 March 2017

Salary band	Number of posts on approved establishment	Number of jobs evaluated	% of posts evaluated by salary band	Posts upgraded		Posts downgraded	
				Number	% of posts evaluated	Number	% of posts evaluated
Lower skilled (levels 1-2)	0	0	0	0	0	0	0,00%
Skilled (levels 3-5)	13	0	0	0	0	0	0,00%
Highly skilled production (levels 6-8)	126	5	3,96%	0	0	0	0,00%
Highly skilled supervision (levels 9-12)	228	20	8,77%	0	0	0	0,00%
Senior Management Service Band A	88	0	0	0	0	0	0,00%
Senior Management Service Band B	27	0	0	0	0	0	0,00%
Senior Management Service Band C	9	0	0	0	0	0	0,00%
Senior Management Service Band D	1	0	0	0	0	0	0,00%
Total	492	25	5,08%	0	0	0	0,00%

Table 3.4.2: Profile of employees whose positions were upgraded due to their posts being upgraded for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

Table 3.4.3: Employees with salary levels higher than those determined by job evaluation by occupation for the period 1 April 2016 to 31 March 2017

Occupation	Number of employees	Job evaluation level	Remuneration level	Reason for deviation
Deputy-Director-General	1	15	-	Personal notch
Deputy Director	1	11	12	Personal notch
Total number of employees whose salaries exceeded the level determined by job evaluation				2
Percentage of total employed				0,47%

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

Table 3.4.4: Profile of employees with salary levels higher than those determined by job evaluation for the period 1 April 2016 to 31 March 2017

Total number of employees whose salaries exceeded the grade determined by job evaluation	None
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3.5 Employment changes

Table 3.5.1: Annual turnover rates by salary band for the period 1 April 2016 to 31 March 2017

Salary band	Number of employees at beginning of period-1 April 2015	Appointments and transfers into the Department	Terminations and transfers out of the Department	Turnover rate
Lower skilled (levels 1-2)	0	0	0	0,00%
Skilled (levels 3-5)	12	0	0	0,00%
Highly skilled production (levels 6-8)	–	–	–	0,00%
Highly skilled supervision (levels 9-12)	117	6	7	5,98%
Senior Management Service Band A	213	6	13	6,10%
Senior Management Service Band B	78	2	4	5,13%
Senior Management Service Band C	24	2	3	12,50%
Senior Management Service Band D	8	0	0	0,00%
Contracts	1	0	0	0,00%
Total	453	16	27	5,96%

Table 3.5.2: Annual turnover rates by critical occupation for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

See notes on CORE and critical occupation under Table 3.2.3.

Table 3.5.3: Reasons why staff left the Department in the period 1 April 2016 to 31 March 2017

Termination type	Number	% of total employees who left
Death	2	7,41%
Resignation	11	40,74%
Expiry of contract	1	3,70%
Dismissal – operational changes	0	0,00%
Dismissal – misconduct	0	0,00%
Dismissal – inefficiency	0	0,00%
Discharged due to ill-health	0	0,00%
Retirement	0	0,00%
Transfer to another Public Service department	11	40,74%
Other	2	7,41%
Total	27	100,00%
Total number of employees who left as % of total employment		5,96%

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.5.4: Promotions by critical occupation for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

See notes on CORE and critical occupations under Table 3.2.3.

Table 3.5.5: Promotions by salary band for the period 1 April 2016 to 31 March 2017

Salary band	Employees 1 April 2016	Promotions to another salary level	Salary bands promotions as % of employees by salary level	Progressions to another notch within a salary level	Notch progression as % of employees by salary band
Lower skilled (levels 1-2)	0	0	0,00%	0	0,00%
Skilled (levels 3-5)	12	0	0,00%	11	91,67%
Highly skilled production (levels 6-8)	117	0	0,00%	72	61,54%
Highly skilled supervision (levels 9-12)	213	3	1,40%	162	76,06%
Senior Management (level 13-16)	111	1	0,90 %	92	82,88%
Total	453	4	0,88%	337	74,39%

3.6 Employment equity

Table 3.6.1: Total number of employees (including employees with disabilities) in each of the following occupational categories as at 31 March 2017

Occupational category	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Legislators, senior officials and managers	39	4	4	8	34	4	6	10	109
Professionals	79	2	3	5	99	4	2	6	200
Technicians and associate professionals	25	3	0	0	70	5	0	4	107
Clerks	7	0	0	0	5	0	0	0	12
Service and sales workers	0	0	0	0	0	0	0	0	0
Skilled agriculture and fishery workers	0	0	0	0	0	0	0	0	0
Craft and related trades workers	0	0	0	0	0	0	0	0	0
Plant and machine operators and assemblers	0	0	0	0	0	0	0	0	0
Elementary occupations	0	0	0	0	0	0	0	0	0
Total	150	9	7	13	208	13	8	20	428
Employees with disabilities	3			1	6	1		3	14

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

Table 3.6.2: Total number of employees (including employees with disabilities) in each of the following occupational bands as at 31 March 2017

Occupational band	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management	39	4	4	8	34	4	6	10	109
Senior management	79	2	3	5	99	4	2	6	200
Professionally qualified and experienced specialists and middle management	25	3	0	0	70	5	0	4	107
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents	7	0	0	0	5	0	0	0	12
Semi-skilled and discretionary decision making	0	0	0	0	0	0	0	0	0
Unskilled and defined decision making	0	0	0	0	0	0	0	0	0
Total	150	9	7	13	208	13	8	20	428

Table 3.6.3: Recruitment for the period 1 April 2016 to 31 March 2017

Occupational band	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management	3	0	1	3	2	0	0	0	9
Senior management	36	4	3	5	32	4	6	10	100
Professionally qualified and experienced specialists and middle management	79	2	3	5	99	4	2	6	200
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents	25	3	0	0	70	5	0	4	107
Semi-skilled and discretionary decision making	7	0	0	0	5	0	0	0	12
Unskilled and defined decision making	0	0	0	0	0	0			0
Total	150	9	7	13	208	13	8	20	428
Employees with disabilities	0	0	0	0	0	0	0	0	0

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

Table 3.6.4: Promotions for the period 1 April 2016 to 31 March 2017

Occupational band	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management	0	0	0	0	0	0	0	0	0
Senior management	0	0	0	0	1	0	0	0	1
Professionally qualified and experienced specialists and middle management	1	0	0	0	2	0	0	0	3
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents	0	0	0	0	0	0	0	0	0
Semi-skilled and discretionary decision making	0	0	0	0	0	0	0	0	0
Unskilled and defined decision making	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	3	0	0	0	4
Employees with disabilities	0	0	0	0	0	0	0	0	0

Table 3.6.5: Terminations for the period 1 April 2016 to 31 March 2017

Occupational band	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top management	0	0	0	0	0	0	0	0	0
Senior management	3	0	1	0	2	0	0	1	7
Professionally qualified and experienced specialists and middle management	2	0	0	0	9	1	0	2	14
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents	2	0	0	1	2	0	1	0	6
Semi-skilled and discretionary decision making	0	0	0	0	0	0	0	0	0
Unskilled and defined decision making	0	0	0	0	0	0	0	0	0
Total	7	0	1	1	13	1	1	3	27
Employees with disabilities	0	0	0	0	0	0	0	0	0

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.6.6: Disciplinary action for the period 1 April 2016 to 31 March 2017

Disciplinary action	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
	0	0	0	0	2	1	0	0	3

Table 3.6.7: Skills development for the period 1 April 2016 to 31 March 2017

Occupational category	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Legislators, senior officials and managers	15	3	4	1	6	1	1	5	36
Professionals	40	2	1	3	68	3	0	4	121
Technicians and associate professionals	0	0	0	0	2	0	0	0	2
Clerks	4	0	0	0	40	1	0	0	45
Service and sales workers	1	0	0	0	3	0	0	0	4
Skilled agriculture and fishery workers	0	0	0	0	0	0	0	0	0
Craft and related trades workers	0	0	0	0	0	0	0	0	0
Plant and machine operators and assemblers	2	0	0	0	0	0	0	0	2
Elementary occupations	0	0	0	0	0	0	0	0	0
Total	62	5	5	4	119	5	1	9	210
Employees with disabilities	2	0	0	0	1	2	0	0	5

3.7 Signing of performance agreements by SMS members

All members of the SMS must conclude and sign performance agreements within specific time frames. Information regarding the signing of performance agreements by SMS members, the reasons for not complying within the prescribed time frames and disciplinary steps taken.

Table 3.7.1: Signing of performance agreements by SMS members as at 31 May 2016

SMS level	Total number of funded SMS posts	Total number of SMS members	Total number of signed performance agreements	Signed performance agreements as % of total number of SMS members
Director-General/ Head of Department	1	1	1	100%
Salary Level 16	0	0	0	0%
Salary Level 15	9	9	6	66,7%
Salary Level 14	27	27	27	100%
Salary Level 13	88	88	87	98,9%
Total	125	125	121	96,8%

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.7.2 Reasons for not having concluded performance agreements for all SMS members as at 31 May 2016

Reasons
The one employee at Salary Level 13 was still discussing the performance agreement with his or her supervisor, and resigned before concluding it.
The three employees at Salary Level 15 are Minister's advisors, and are not required to submit performance agreements.

Table 3.7.3: Disciplinary steps taken against SMS members for not having concluded performance agreements as at 31 May 2016

Reasons
The one employee at Salary Level 13 was still discussing the performance agreement with his or her supervisor, and resigned before concluding it. No disciplinary steps could therefore be taken.
The three employees at Salary Level 15 are Minister's advisors, and are not required to submit performance agreements.

3.8 Performance rewards

Table 3.8.1: Performance rewards by race, gender and disability for the period 1 April 2015 to 31 March 2016

Race and gender	Beneficiary profile			Cost	
	Number of beneficiaries	Number of employees	% of total within group	Cost (R'000)	Average cost per employee
African					
Male	107	150	71,3	1 496	13,98
Female	160	209	76,6	1 885	11,78
Asian					
Male	6	8	75	170	28,33
Female	7	11	63,6	171	24,43
Coloured					
Male	3	7	42,9	48	16
Female	8	10	80	98	12,25
White					
Male	9	15	60	167	18,56
Female	24	25	96	523	21,79
Total	324	435	74,5	4 558	14,07

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.8.2: Performance rewards by salary band for personnel below Senior Management Service level for the period 1 April 2015 to 31 March 2016

Salary band	Beneficiary profile			Cost		Total cost as % of total personnel expenditure
	Number of beneficiaries	Number of employees	% of total within salary bands	Total cost (R'000)	Average cost per employee	
Lower skilled (Levels 1-2)	0	0	0%	0	0	0%
Skilled (level 3-5)	8	13	61,5%	28	3,5	0,01%
Highly skilled production (level 6-8)	80	108	74,1%	422	5,3	0,14%
Highly skilled supervision (level 9-12)	176	211	83,4%	2 366	13,4	0,77%
Total	264	332	79,52%	2 816	10,67	0,9%

Table 3.8.3: Performance rewards by critical occupation for the period 1 April 2015 to 31 March 2016

This table does not apply to the Department.

See notes on CORE and critical occupations under Table 3.2.3.

Table 3.8.4: Performance-related rewards (cash bonus) by salary band for Senior Management Service for the period 1 April 2015 to 31 March 2016

Salary band	Beneficiary profile			Cost		Total cost as % of total personnel expenditure
	Number of beneficiaries	Number of employees	% of total within salary bands	Total cost (R'000)	Average cost per employee	
Band A	0	1				
Band B	2	6	33,33	80	40	0,03
Band C	11	22	50	352	32	0,11
Band D	47	74	63,5	1 310	28	0,42
Total	60	103	58,3	1 742	29	0,56

3.9 Foreign workers

Table 3.9.1: Foreign workers by salary band for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

Table 3.9.2: Foreign workers by major occupation for the period 1 April 2015 to 31 March 2016

This table does not apply to the Department.

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

3.10 Leave utilisation

Table 3.10.1: Sick leave for the period 1 January 2016 to 31 December 2016

Salary band	Total days	% days with medical certification	Number of employees using sick leave	% of total employees using sick leave	Average days per employee	Estimated cost (R'000)
Lower skilled (levels 1-2)	0	0,00%	0	0,00%	0	0
Skilled (levels 3-5)	64	3,16%	14	100%	5	2 126
Highly skilled production (levels 6-8)	614	30,31%	118	101%	5	6 931
Highly skilled supervision (levels 9 -12)	1 048	51,73%	209	101%	5	1 485
Top and senior management (levels 13-16)	300	14,81%	80	73%	4	7 694
Total	2 026	25,00%	421	94%	5	18 236

Table 3.10.2: Disability leave (temporary and permanent) for the period 1 January 2016 to 31 December 2016

Salary band	Total days	% days with medical certification	Number of employees using sick leave	% of total employees using sick leave	Average days per employee	Estimated cost (R'000)
Lower skilled (levels 1-2)	0	0%	0	0,00%	0	0
Skilled (levels 3-5)	0	100%	0	0,00%	0	0
Highly skilled production (levels 6-8)	220	100%	4	3,48%	55	1 193
Highly skilled supervision (levels 9 -12)	148	100%	3	1,38%	49	22 416
Top and senior management (levels 13-16)	0	100%	0	0,00%	0	0
Total	368	100%	7	1,70%	53	5 902

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.10.3: Annual leave for the period 1 January 2016 to 31 December 2016

Salary band	Total days taken	Number of employees using annual leave	Average per employee
Lower skilled (levels 1-2)	0	0	0
Skilled levels (levels 3-5)	430	16	27
Highly skilled production (levels 6-8)	4 993	133	38
Highly skilled supervision (levels 9-12)	8 024	236	34
Senior management (levels 13-16)	3 416	122	28
Total	16 863	507	33

Table 3.10.4: Capped leave taken in the period 1 January 2016 to 31 December 2016

Salary band	Total days of capped leave taken	Number of employees using capped leave	Average number of days taken per employee	Average capped leave per employee as at 31 March 2017
Lower skilled (levels 1-2)	0	0,00	0	0
Skilled (levels 3-5)	0	0,00	0	0
Highly skilled production (levels 6-8)	0	0,00	0	0
Highly skilled supervision (levels 9-12)	7	1	7	0
Senior management (levels 13-16)	0	0	0,00	0
Total	7	1	7	0

Table 3.10.5: Leave payouts for the period 1 January 2016 to 31 December 2016 (for leave that was not taken)

Reason	Total amount (R'000)	Number of employees	Average per employee (R'000)
Leave payout for 2016/17 due to non-utilisation of leave for the previous cycle	0	0	0
Capped leave payouts on termination of service for 2016/17	138	2	0
Current leave payout on termination of service for 2014/15 [15/16?]	587	22	27
Total	725	24	30

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

3.11 HIV/Aids and health promotion programmes

Table 3.11.1: Steps taken to reduce the risk of occupational exposure

This table does not apply to the Department.

Table 3.11.2 Details of health promotion and HIV/Aids programmes

Question	Yes	No	Details, if yes
1. Has the Department designated a member of the SMS to implement the provisions contained in Part VI E of Chapter 1 of the Public Service Regulations, 2001? If so, provide her/his name and position.	X		The Acting Chief Director: Human Resources and the Director: Gender and Special Programmes, Ms Sphiwe Mthombeni
2. Does the Department have a dedicated unit or has it designated specific staff members to promote the health and well-being of its employees? If so, indicate the number of employees involved in this task and the annual budget available for this purpose.	X		The Directorate: Special Programmes, which has five employees. The budget for the unit is R1,887 million, which also covers the HIV, Aids and TB programme.
3. Has the Department introduced an employee assistance or health promotion programme for its employees? If so, indicate the key elements/services of this programme.	X		The EAP services include counselling, health risk assessments, HIV counselling and testing, TB screenings, distribution of male and female condoms, and education, awareness and sporting activities.
4. Has the Department established one or more committees as contemplated in Part VI E.5(e) of Chapter 1 of the Public Service Regulations, 2001? If so, please provide the names of the members of the committee and the stakeholders that they represent.	X		<ol style="list-style-type: none"> 1. Ms Loretta Pillay (Employee Health and Wellness) 2. Mr Sphiwe Shange (Occupational Health and Safety) 3. Mr Lungisile Mgidi (Employee Health and Wellness) 4. Ms Mary-Ann Mokoena (Employee Health and Wellness) 5. Ms Tumisoang Sebitloane (Programme 2) 6. Mr Siyabonga Ndlovu (Programme 1) 7. Mr Vincent Napo (Programme 1) 8. Mr Wiseman Ndlela (Programme 5) 9. Ms Vivienne Gondwe (Programme 5) 10. Ms Truelove Mnguni (Facilities) 11. Ms Nombulelo Dlalisa (Facilities) 12. Mr Phumelele Yabo (Programme 1) 13. Ms Nontobeko Nkosi (Programme 1) 14. Ms Ncumisa Runeyi (Office of the DG) 15. Ms Martie Spies (Programme 1) 16. Ms Jeanette Masiuana (Programme 1) 17. Ms Caroline Mohlamonyane (Programme 1) 18. Ms Matlhodi Mathebula (Programme 4) 19. Ms Sphiwe Mthombeni (Director: Gender and Special Programmes)

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Question	Yes	No	Details, if yes
5. Has the Department reviewed its employment policies and practices to ensure that they do not unfairly discriminate against employees on the basis of their HIV status? If so, list the employment policies/practices so reviewed.	X		<p>The following policies are in place:</p> <ol style="list-style-type: none"> 1. DST Policy on HIV/Aids and TB in the workplace. 2. DST Policy on Occupational Health and Safety. 3. DST Policy on Reasonable Accommodation. 4. The Health and Wellness Programme Policy. 5. Standard Operating Procedure to Access Employee Assistance Programme Services. 6. The Health and Productivity Policy.
6. Has the Department introduced measures to protect HIV-positive employees or those perceived to be HIV-positive from discrimination? If so, list the key elements of these measures.	X		<ol style="list-style-type: none"> 1. The Department has put in place the HIV, AIDS and TB policy to communicate the Department's commitment to implementing an HIV/AIDS workplace programme. A number of awareness and education initiatives were implemented to address the issue of stigma and discrimination, such as the annual candlelight memorial and Worlds AIDS Day. 2. Provision of information on intranet and diversity awareness workshops were conducted during Women's month and 16 Days of Activism Campaign with employees and management.
7. Does the Department encourage its employees to undergo voluntary counselling and testing? If so, list the results that you have achieved.	X		The Department conducted four quarterly HIV voluntary counselling and testing drives. The average percentage of employees tested over the four quarters is 26,07%.
8. Has the Department developed measures/indicators to monitor and evaluate the impact of its health promotion programme? If so, list these measures/indicators.	X		The Department holds quarterly health screenings and has an exercise programme. Participants are screened quarterly to track progress and the reports are analysed to measure the impact of the interventions. There is a Health Risk Management programme to provide education and support to employees who have been identified as being at high risk.

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

3.12 Labour relations

Table 3.12.1: Collective agreements for the period 1 April 2016 to 31 March 2017

Total number of collective agreements	None
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Table 3.12.2: Misconduct and disciplinary hearings finalised for the period 1 April 2016 to 31 March 2017

Outcomes of disciplinary hearings	Number	% of total
Correctional counselling	0	0%
Verbal warning	0	0%
Written warning	0	0%
Final written warning	0	0%

Total number of disciplinary hearings finalised	1
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Table 3.12.3: Types of misconduct addressed at disciplinary hearings for the period 1 April 2016 to 31 March 2017

Type of misconduct	Number	% of total
Theft	0	0%
Fraud	0	0%
Total	0	0%

Table 3.12.4: Grievances lodged in the period 1 April 2016 to 31 March 2017

Grievances	Number	% of total
Number of grievances resolved	1	66,67%
Number of grievances not resolved	1	33,33%
Total number of grievances lodged	2	100,00%

Table 3.12.5: Disputes logged with councils for the period 1 April 2016 to 31 March 2017

Disputes	Number	% of total
Number of disputes upheld	1	100%
Number of disputes dismissed	1	100%
Total number of disputes lodged	2	100%

Table 3.12.6: Strike actions for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

Table 3.12.7: Precautionary suspensions for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

3. HUMAN RESOURCES OVERSIGHT STATISTICS

(CONTINUED)

3.13 Skills development

Table 3.13.1: Training needs identified for the period 1 April 2016 to 31 March 2017

Occupational category	Gender	Number of employees as at 1 April 2016	Training needs identified at start of the reporting period			
			Learnerships	Skills programmes and other short courses	Other forms of training	Total
Legislators, senior officials and managers	Male	54	9	4	13	54
	Female	62	9	5	14	62
Professionals	Male	126	13	9	22	126
	Female	93	13	9	22	93
Technicians and associate professionals	Male	1	3	0	3	1
	Female	3	3	0	3	3
Clerks	Male	85	5	8	13	85
	Female	16	5	4	9	16
Service and sales workers	Male	4	2	2	4	4
	Female	10	2	1	3	10
Skilled agriculture and fishery workers	Male	0	0	0	0	0
	Female	0	0	0	0	0
Craft and related trades workers	Male	0	0	0	0	0
	Female	0	0	0	0	0
Plant and machine operators and assemblers	Male	0	2	0	2	0
	Female	5	2	1	3	5
Elementary occupations	Male	5	2	0	2	5
	Female	1	2	0	2	1
Subtotal	Male	275	36	23	59	275
	Female	190	36	21	57	190
Total		465	72	43	115	465

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

Table 3.13.2: Training provided for the period 1 April 2016 to 31 March 2017

Occupational category	Gender	Number of employees as at 1 April 2014	Training needs identified at start of the reporting period			
			Learnerships	Skills programmes and other short courses	Other forms of training	Total
Legislators, senior officials and managers	Male	54	0	18	4	22
	Female	62	0	18	6	24
Professionals	Male	126	0	34	9	43
	Female	93	0	28	9	37
Technicians and associate professionals	Male	1	0	2	0	2
	Female	3	0	4	0	4
Clerks	Male	85	0	20	8	28
	Female	16	0	9	4	13
Service and sales workers	Male	4	0	4	2	6
	Female	10	0	3	1	4
Skilled agriculture and fishery workers	Male	0	0	0	0	0
	Female	0	0	0	0	0
Craft and related trades workers	Male	0	0	0	0	0
	Female	0	0	0	0	0
Plant and machine operators and assemblers	Male	0	0	0	0	0
	Female	5	0	4	1	5
Elementary occupations	Male	5	0	1	0	1
	Female	1	0	0	0	0
Subtotal	Male	275	0	79	23	102
	Female	190	0	67	21	88
Total		465	0	146	44	190

3.14 Injury on duty

Table 3.14.1: Injury on duty for the period 1 April 2016 to 31 March 2017

Nature of injury on duty	Number	% of total
Required basic medical attention only	1	0,23%
Temporary total disablement	0	0%
Permanent disablement	0	0%
Fatal	0	0%
Total	1	0,23%

3. HUMAN RESOURCES OVERSIGHT STATISTICS (CONTINUED)

3.15 Utilisation of consultants

In terms of the Public Service Regulations “consultant” means a natural or juristic person or a partnership, excluding an employee of a department, who or which provides, in terms of a specific contract, on an ad hoc basis, any of the following professional services to a department against remuneration received from any source:

- (a) The rendering of expert advice.
- (b) The drafting of proposals for the execution of specific tasks.
- (c) The execution of a specific task which is of a technical or intellectual nature.

Table 3.15.1: Report on consultant appointments using appropriated funds for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

Table 3.15.2: Analysis of consultant appointments using appropriated funds in terms of historically disadvantaged individuals for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

Table 3.15.3: Report on consultant appointments using donor funds for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

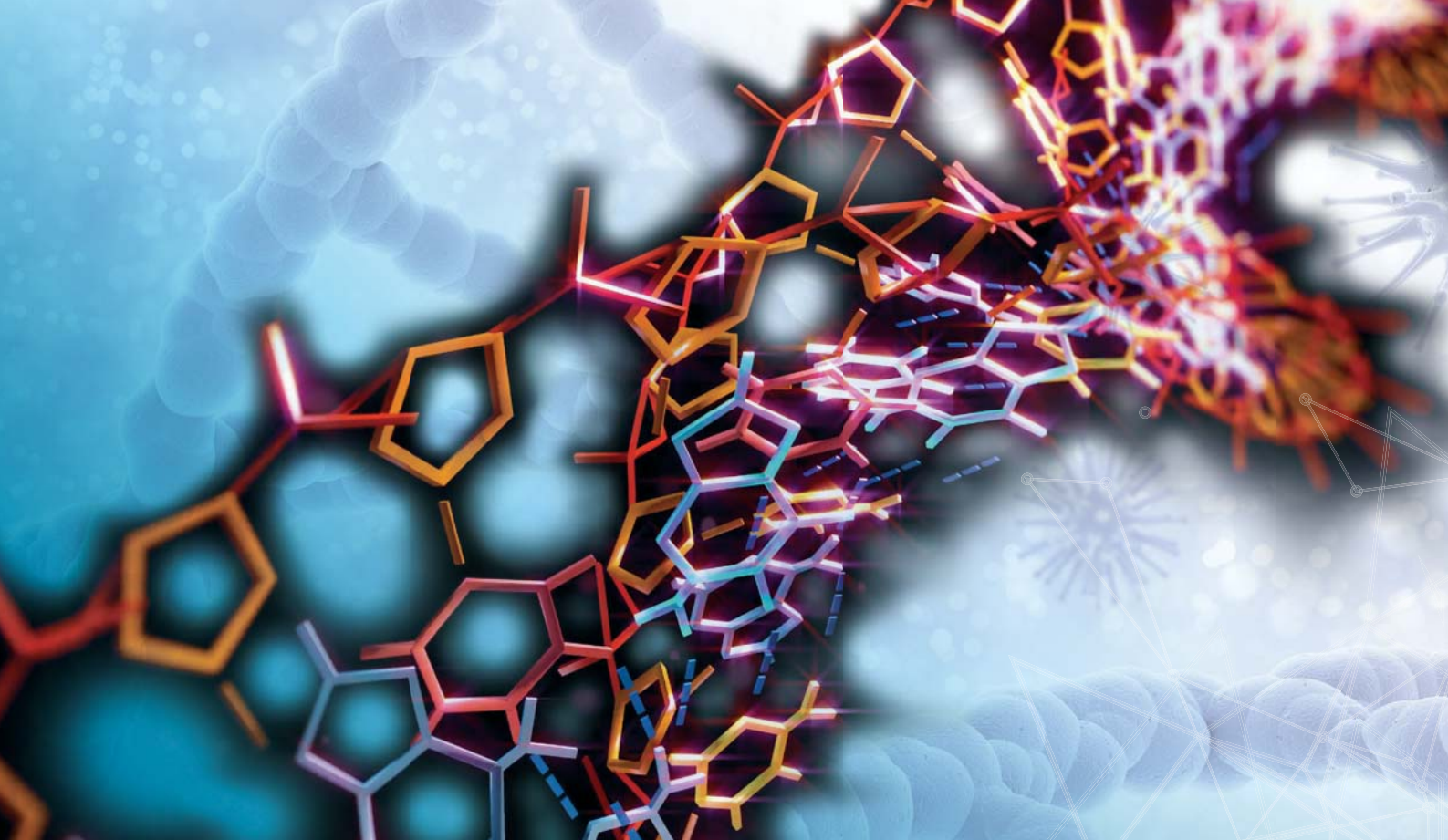
Table 3.15.4: Analysis of consultant appointments using donor funds, in terms of historically disadvantaged Individuals for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.

3.16 Severance packages

Table 3.16.1: Granting of employee-initiated severance packages for the period 1 April 2016 to 31 March 2017

This table does not apply to the Department.



PART E

FINANCIAL INFORMATION

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON VOTE NO. 30: DEPARTMENT OF SCIENCE AND TECHNOLOGY

Report on the audit of the financial statements

Opinion

1. I have audited the financial statements of the Department of Science and Technology (DST) set out on pages 165 to 254, which comprise the appropriation statement, the statement of financial position as at 31 March 2017, the statement of financial performance, the statement of changes in net assets and the cash flow statement for the year then ended, as well as the notes to the financial statements, including a summary of significant accounting policies.
2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the Department of Science and Technology as at 31 March 2017, and its financial performance and cash flows for the year then ended in accordance with Modified Cash Standards (MCS) prescribed by National Treasury and the requirements of Public Management Framework Act of South Africa, 1999 (Act no.1 of 1999) (PFMA).

Basis for opinion

3. I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the auditor-general's responsibilities for the audit of the financial statements section of my report.
4. I am independent of the department in accordance with the International Ethics Standards Board for Accountants' *Code of ethics for professional accountants (IESBA code)* and the ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.
5. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Other matter

6. I draw attention to the matter below. My opinion is not modified in respect of this matter.

Unaudited supplementary schedules

7. The supplementary information set out on pages 255 to 270 does not form part of the financial statements and is presented as additional information. I have not audited these schedules and, accordingly, I do not express an opinion thereon.

Responsibilities of the accounting officer

8. The accounting officer is responsible for the preparation and fair presentation of the financial statements in accordance with the MCS and the requirements of the PFMA and for such internal control as the accounting officer determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.
9. In preparing the financial statements, the accounting officer is responsible for assessing the department's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless there is an intention either liquidate the department or to cease operations, or there is no realistic alternative but to do so.

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON VOTE NO. 30: DEPARTMENT OF SCIENCE AND TECHNOLOGY

Auditor-General's responsibilities for the audit of the financial statements

10. My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.
11. A further description of my responsibilities for the audit of the financial statements is included in the annexure to the auditor's report.

Report on the audit of the annual performance report

Introduction and scope

12. In accordance with the Public Audit Act of South Africa, 2004 (Act No. 25 of 2004) (PAA) and the general notice issued in terms thereof, I have a responsibility to report material findings on the reported performance information against predetermined objectives for selected Programmes presented in the annual performance report. I performed procedures to identify findings but not to gather evidence to express assurance.
13. My procedures address the reported performance information, which must be based on the approved performance planning documents of the entity. I have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. My procedures also did not extend to any disclosures or assertions relating to planned performance strategies and information in respect of future periods that may be included as part of the reported performance information. Accordingly, my findings do not extend to these matters.
14. I evaluated the usefulness and reliability of the reported performance information in accordance with the criteria developed from the performance management and reporting framework, as defined in the general notice, for the following selected Programmes presented in the annual performance report of the entity for the year ended 31 March 2017:

Programmes	Pages in the annual performance report
Programme 2 - Technology Innovation	77 – 84
Programme 4 - Research Development and Support	92 – 98
Programme 5 - Socio-economic Innovations Partnerships	99 – 108

15. I performed procedures to determine whether the reported performance information was properly presented and whether performance was consistent with the approved performance planning documents. I performed further procedures to determine whether the indicators and related targets were measurable and relevant, and assessed the reliability of the reported performance information to determine whether it was valid, accurate and complete.

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON VOTE NO. 30: DEPARTMENT OF SCIENCE AND TECHNOLOGY

16. The material findings in respect of the reliability of **Programme 5 – Socio-economic Innovation Partnerships** are as follows:
17. The reported achievement for various indicators were misstated, the evidence provided indicated that not all products reported should have been included in the reported number as it did not meet the measurability requirements.

Strategic objective	Indicator	Reported achievement	Audited value
Strategic objective 2	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	36	28
Strategic objective 3	Number of knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the innovation products portfolio through fully funded or co-funded research initiatives	4	2

18. I did not identify any material findings on the usefulness and reliability of the reported performance information for the following programmes:
- Programme 2 - Technology Innovation
 - Programme 4 - Research Development and Support

Other matters

19. I draw attention to the matters below.

Achievement of planned targets

20. Refer to the annual performance report on pages 70 to 108 for information on the achievement of planned targets for the year and explanations provided for the under/overachievement of a number of targets. This information should be considered in the context of the material findings on the reliability of the reported performance information in paragraph 17 of this report.

Adjustment of material misstatements

21. I identified material misstatements in the annual performance report submitted for auditing. These material misstatements were on the reported performance information of Technology Innovation, Research Development and Support, and Socio-economic Innovation Partnerships. As management may subsequently correct only some of the misstatements, I raised material findings on the reliability of the reported performance information. Those that were not corrected are included in the material findings reported.

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON VOTE NO. 30: DEPARTMENT OF SCIENCE AND TECHNOLOGY

Report on audit of compliance with legislation

Introduction and scope

22. In accordance with the PAA and the general notice issued in terms thereof, I have a responsibility to report material findings on the compliance of the department with specific matters in key legislation. I performed procedures to identify findings but not to gather evidence to express assurance.
23. I did not identify any instances of material non-compliance with selected specific requirements of applicable legislation, as set out in the general notice issued in terms of the PAA.

Other information

24. The DST's accounting officer is responsible for the other information. The other information comprises the information included in the annual report which includes the audit committee's report. The other information does not include the financial statements, the auditor's report and those selected Programmes presented in the annual performance report that have been specifically reported on in the auditor's report.
25. My opinion on the financial statements and findings on the reported performance information and compliance with legislation do not cover the other information and I do not express an audit opinion or any form of assurance conclusion thereon.
26. In connection with my audit, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and the selected Programmes presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work I have performed on the other information obtained prior to the date of this auditor's report, I conclude that there is a material misstatement of this other information, I am required to report that fact.
27. I have not yet received the entire annual report. When I do receive this information, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the other information be corrected. If the other information is not corrected I may have to re-issue my auditor's report amended as appropriate.

Internal control deficiencies

28. I considered internal control relevant to my audit of financial statements, reported performance information and compliance with applicable legislation; however, my objective was not to express any form of assurance thereon. The matters reported below are limited to the significant internal control deficiencies that resulted in the findings on the annual performance report included in this report.

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON VOTE NO. 30: DEPARTMENT OF SCIENCE AND TECHNOLOGY

Financial and performance management

29. The department's processes and systems to identify, collect, collate and verify that the information in the annual performance report were not regularly and effectively monitored for the number of knowledge and innovation products; as a result they have reported additional products that do not meet the definition as per technical indicator descriptors.

Auditor General

Pretoria

31 July 2017



AUDITOR - GENERAL
SOUTH AFRICA

Auditing to build public confidence

ANNEXURE – AUDITOR-GENERAL’S RESPONSIBILITY FOR THE AUDIT

1. As part of an audit in accordance with the ISAs, I exercise professional judgement and maintain professional scepticism throughout my audit of the financial statements, and the procedures performed on reported performance information for selected objectives and on the department’s compliance with respect to the selected subject matters.

Financial statements

2. In addition to my responsibility for the audit of the financial statements as described in the auditor’s report, I also:
 - Identify and assess the risks of material misstatement of the consolidated and separate financial statements whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
 - Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the department’s internal control.
 - Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors, which constitutes the accounting authority.
 - Conclude on the appropriateness of the accounting officer’s use of the going concern basis of accounting in the preparation of the financial statements. I also conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the department’s ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor’s report to the related disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify the opinion on the financial statements. My conclusions are based on the information available to me at the date of the auditor’s report. However, future events or conditions may cause an entity to cease operating as a going concern.
 - Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Communication with those charged with governance

3. I communicate with the accounting officer regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.
4. I also confirm to the accounting officer that I have complied with relevant ethical requirements regarding independence, and communicate all relationships and other matters that may reasonably be thought to have a bearing on my independence and, where applicable, related safeguards.

ANNUAL FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 2017

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VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Appropriation per Programme									
APPROPRIATION STATEMENT	2016/17						2015/16		
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
1. Administration	345,142	-	10,968	356,110	332,629	23,481	93,4%	309,823	301,996
2. Technology Innovation	1,005,418	-	22,170	1,027,588	1,016,471	11,117	98,9%	1,070,645	1,063,297
3. International Cooperation and Resources	124,463	-	(3,147)	121,316	118,466	2,850	97,7%	116,921	114,968
4. Research Development and Support	4,170,997	-	(13,393)	4,157,604	4,152,019	5,585	99,9%	4,226,922	4,218,854
5. Socio-Economic Innovation Partnerships	1,782,976	-	(16,598)	1,766,378	1,764,009	2,369	99,9%	1,741,795	1,738,347
TOTAL	7,428,996	-	-	7,428,996	7,383,594	45,402	99,4%	7,466,106	7,437,462
Reconciliation with Statement of Financial Performance									
ADD:									
Departmental receipts				8,199				514	
NRF receipts								-	
Aid assistance				32,345				158,253	
Actual amounts per Statement of Financial Performance (Total Revenue)				7,469,540				7,624,873	
ADD:									
Aid assistance					30,920				154,368
Prior year unauthorised expenditure approved without funding					-				-
Actual amounts per Statement of Financial Performance (Total Expenditure)					7,414,514				7,591,830

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

APPROPRIATION STATEMENT	Appropriation per Programme							2015/16	
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Economic classification									
Current payments	532,334	-	(923)	531,411	507,913	23,498	95.6%	474,202	464,810
Compensation of employee	313,793	-	5,485	319,278	319,037	241	99.9%	303,100	301,087
Salaries and wages	278,479	1,939	5,265	285,683	285,876	(193)	100.1%	271,534	269,938
Social contributions	35,314	(1,939)	220	33,595	33,161	434	98.7%	31,566	31,149
Goods and services	218,541	-	(6,408)	212,133	188,876	23,257	89.0%	171,102	163,723
Administrative fees	15,587	(13,404)	(44)	2,139	1,220	919	57.0%	1,979	1,877
Advertising	17,464	12,475	-	29,939	28,711	1,228	95.9%	23,487	22,792
Minor assets	579	10	-	589	249	340	42.3%	542	537
Audit costs: External	6,383	(2,134)	-	4,249	4,249	-	100.0%	5,072	5,061
Bursaries: Employees	2,471	6	-	2,477	1,485	992	60.0%	1,093	1,067
Catering: Departmental activities	2,587	1,556	(27)	4,116	3,500	616	85.0%	5,472	5,138
Communication (G&S)	9,211	1,029	(24)	10,216	8,234	1,982	80.6%	8,097	7,458
Computer services	7,926	13,980	(30)	21,876	21,055	821	96.2%	10,768	10,500
Consultants: Business and advisory services	18,507	(3,457)	(1,422)	13,628	9,867	3,761	72.4%	4,732	3,762
Advertising	778	-	-	778	59	719	7.6%	-	-
Legal services	30	979	(30)	979	977	2	99.8%	627	580
Contractors	8,558	(4,050)	-	4,508	3,523	985	78.1%	7,558	7,547
Agency and support/outsourced Services	14,641	2,326	(300)	16,667	15,304	1,363	91.8%	8,757	8,135
Entertainment	4,662	(1,321)	(1,982)	1,359	658	701	48.4%	1,675	1,021
Fleet services (incl. government motor transport)	-	882	-	882	882	-	100.0%	767	764
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	50	48
Inventory: Fuel, oil and gas	129	-	-	129	-	129	-	102	72
Inventory: Material and supplies	-	-	-	-	-	-	-	108	103
Inventory: Medical Supplies	-	-	-	-	-	-	-	3	1
Inventory: Other supplies	1,104	(120)	(4)	980	-	980	-	238	1
Consumable supplies	-	1,168	1	1,169	1,160	9	99.2%	1,042	993
Consumable: Stationery, printing and office supplies	5,432	168	2	5,602	4,954	648	88.4%	2,702	2,660
Operating leases	3,749	685	-	4,434	4,117	317	92.9%	3,542	2,906
Property payments	11,578	(1,334)	865	11,109	10,455	654	94.1%	6,722	6,657
Travel and subsistence	51,336	4	(2,807)	48,533	46,484	2,049	95.8%	47,406	46,670
Training and development	5,303	42	-	5,345	4,944	401	92.5%	5,004	4,995

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Appropriation per Programme									
APPROPRIATION STATEMENT	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Operating payments	7,801	3,275	(658)	10,418	9,848	570	94.5%	9,109	8,782
Venues and facilities	22,725	(14,067)	52	8,710	5,661	3,049	65.0%	12,920	12,094
Rental and hiring	-	1,302	-	1,302	1,280	22	98.3%	1,528	1,502
Transfers and subsidies	6,872,197	-	792	6,872,989	6,860,077	12,912	99.8%	6,970,342	6,956,058
Departmental agencies and accounts	5,311,421	-	(15,531)	5,295,890	4,696,599	599,291	88.7%	5,405,168	4,762,435
Higher education institutions	115,622	-	18,359	133,981	210,329	(76,348)	157.0%	147,242	230,304
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	1,299,370	-	(3,784)	1,295,586	1,793,985	(498,399)	138.5%	1,246,984	1,833,674
Public corporations	1,299,370	-	(3,784)	1,295,586	1,771,704	(476,118)	136.7%	1,246,984	1,809,904
Subsidies on products	872,043	-	-	872,043	872,043	-	100.0%	820,204	820,204
Other transfers to public corporations	427,327	-	(3,784)	423,543	899,661	(476,118)	212.4%	426,780	1,809,904
Private enterprises	-	-	-	-	22,281	(22,281)	-	-	23,770
Other transfers to private enterprises	-	-	-	-	22,281	(22,281)	-	-	23,770
Non-profit institutions	145,784	-	956	146,740	157,726	(10,986)	107.9%	170,375	128,822
Households	-	-	792	792	1,438	(646)	181.6%	573	823
Social benefits	-	-	489	489	535	(46)	109.4%	573	573
Other transfers to households	-	-	303	303	903	(600)	298.0%	-	250
Payments for capital assets	24,465	-	-	24,465	15,478	8,987	63.3%	21,435	16,467
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	24,465	-	-	24,465	15,478	8,987	63.3%	21,435	16,467
Transport equipment	1,876	-	-	1,876	1,876	-	100.0%	1,572	1,496
Other machinery and equipment	22,589	-	-	22,589	13,602	8,987	60.2%	19,863	14,971
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payments for financial assets	-	-	131	131	126	5	96.2%	127	127
Total	7,428,996	-	-	7,428,996	7,383,594	45,402	99.4%	7,466,106	7,437,462

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
1.1 Ministry	4,369	(100)	-	4,269	4,213	56	98.7%	4,337	4,332
1.2 Management	105,426	(5,600)	4,103	103,929	99,228	4,701	95.5%	91,936	90,072
1.3 Corporate Services	221,479	4,584	6,865	232,928	216,639	16,289	93.0%	205,481	200,057
1.4 Governance	9,307	1,116	-	10,423	8,168	2,255	78.4%	8,069	7,535
1.5 Office accommodation	4,561	-	-	4,561	4,381	180	96.1%	-	-
Total	345,142	-	10,968	356,110	332,629	23,481	93.4%	309,823	301,996

Economic classification	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
Current payments	307,817	-	6,271	314,088	299,587	14,501	95.4%	273,171	270,543
Compensation of employees	154,457	-	6,103	160,560	161,190	(630)	100.4%	152,767	151,744
Salaries and wages	136,759	50	6,103	142,912	143,705	(793)	100.6%	135,987	135,157
Social contributions	17,698	(50)	-	17,648	17,485	163	99.1%	16,780	16,587
Goods and services	153,360	-	168	153,528	138,397	15,131	90.1%	120,404	118,799
Administrative fees	14,827	(13,703)	-	1,124	377	747	33.5%	891	868
Advertising	16,857	12,080	-	28,937	28,018	919	96.8%	23,133	22,785
Minor assets	579	-	-	579	245	334	42.3%	542	537
Audit costs: External	6,383	(2,134)	-	4,249	4,249	-	100.0%	5,072	5,061
Bursaries: Employees	2,471	-	-	2,471	1,479	992	59.9%	1,069	1,067
Catering: Departmental activities	1,466	1,703	-	3,169	2,880	289	90.9%	4,379	4,326
Communication (G&S)	6,161	30	-	6,191	4,741	1,450	76.6%	5,700	5,598
Computer services	7,783	13,877	-	21,660	20,960	700	96.8%	9,854	9,841
Consultants: Business & advisory services	6,547	162	-	6,709	4,017	2,692	59.9%	3,099	3,082
Scientific & technological Services	778	-	-	778	59	719	7.6%	-	-
Legal services	-	866	-	866	866	-	100.0%	444	438
Contractors	8,558	(4,071)	-	4,487	3,513	974	78.3%	7,495	7,489
Agency and support/ outsourced services	8,204	271	-	8,475	8,475	-	100.0%	2,945	2,935
Entertainment	532	86	-	618	396	222	64.1%	700	678
Fleet services (incl. government motor transport)	-	882	-	882	882	-	100.0%	767	764

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
							%	R'000	R'000
Inventory: Clothing, material accessories	-	-	-	-	-	-	-	50	48
Inventory: Fuel, oil and gas	129	-	-	129	-	129	-	102	72
Inventory: Material and supplies	-	-	-	-	-	-	-	105	102
Inventory: Other supplies	878	-	(4)	874	-	874	-	144	-
Consumable supplies	-	1,138	-	1,138	-	-	100.0%	843	833
Consumable: Stationery, printing and office supplies	5,015	167	-	5,182	4,762	420	91.9%	2,670	2,641
Operating leases	3,749	685	-	4,434	4,117	317	92.9%	2,846	2,210
Property payments	10,757	(539)	865	11,083	10,455	628	94.3%	6,180	6,161
Travel and subsistence	23,457	(554)	(693)	22,210	21,338	872	96.1%	20,261	20,244
Training and development	5,303	10	-	5,313	4,918	395	92.6%	5,001	4,995
Operating payments	5,490	1,955	-	7,445	8,072	(627)	108.4%	6,188	6,172
Venues and facilities	17,436	(14,000)	-	3,436	1,351	2,085	39.3%	8,500	8,438
Rental and hiring	-	1,089	-	1,089	1,089	-	100.0%	1,424	1,414
Transfers and subsidies	12,860	-	4,600	17,460	17,498	(38)	100.2%	15,105	14,874
Departmental agencies and accounts	-	-	-	-	1,500	(1,500)	-	-	4,000
Higher education institutions	-	-	-	-	6,000	(6,000)	-	-	4,640
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	191	(191)	-	-	600
Public corporations	-	-	-	-	-	-	-	-	600
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	600
Private enterprises	-	-	-	-	191	(191)	-	-	-
Other transfers to private enterprises	-	-	-	-	191	(191)	-	-	-
Non-profit institutions	12,860	-	4,000	16,860	9,170	7,690	54.4%	14,796	5,325
Households	-	-	600	600	637	(37)	106.2%	309	309
Social benefits	-	-	297	297	334	(37)	112.5%	309	309
Other transfers to households	-	-	303	303	303	-	100.0%	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
Payment for capital assets	24,465	-	-	24,465	15,448	9,017	63.1%	21,435	16,467
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	24,465	-	-	24,465	15,448	9,017	63.1%	21,435	16,467
Transport equipment	1,876	-	-	1,876	1,876	-	100.0%	1,572	1,496
Other machinery and equipment	22,589	-	-	22,589	13,572	9,017	60.1%	19,863	14,971
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	97	97	96	1	99.0%	112	112
Total	345,142	-	10,968	356,110	332,629	23,481	93.4%	309,823	301,996

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme 1.1 Ministry	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
Current payments	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Compensation of employees	4,369	(100)	-	4,269	4,213	56	98.7%	4,337	4,332
Salaries and wages	4,369	(100)	-	4,269	4,213	56	98.7%	4,337	4,332
Social contributions	-	(700)	-	3,669	3,617	52	98.6%	3,742	3,737
Goods and services	-	600	-	600	596	4	99.3%	595	595
Administrative fees	-	-	-	-	-	-	-	-	-
Advertising	-	-	-	-	-	-	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	-	-	-	-	-	-	-	-	-
Communication (G&S)	-	-	-	-	-	-	-	-	-
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	-	-	-	-	-	-	-	-	-
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced services	-	-	-	-	-	-	-	-	-
Entertainment	-	-	-	-	-	-	-	-	-
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	-	-	-	-	-	-	-	-	-
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	-	-	-	-	-	-	-	-	-
Venues and facilities	-	-	-	-	-	-	-	-	-
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme 1.1 Ministry	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000		%	R'000	R'000
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on Products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	4,369	(100)	4,269	4,213	56	98.7%		4,337	4,332

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme: 1.2 Management	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	91,574	(5,600)	(93)	85,881	81,332	4,549	94.7%	76,888	75,255
Compensation of employees	60,988	(5,600)	-	55,388	55,103	285	99.5%	53,057	52,336
Salaries and wages	54,889	(4,700)	-	50,189	49,992	197	99.6%	48,022	47,386
Social contributions	6,099	(900)	-	5,199	5,111	88	98.3%	5,035	4,950
Goods and services	30,586	-	(93)	30,493	26,229	4,264	86.0%	23,831	22,919
Administrative fees	161	-	-	161	135	26	83.9%	445	441
Advertising	173	80	-	253	253	-	100.0%	172	1
Minor assets	173	-	-	173	21	152	12.1%	7	2
Audit costs: External	-	-	-	-	-	-	-	310	305
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	401	-	-	401	141	260	35.2%	219	216
Communication (G&S)	2,191	-	-	2,191	2,019	172	92.1%	1,250	1,233
Computer services	1,806	(1,383)	-	423	423	-	100.0%	7	-
Consultants: Business & advisory services	2,685	-	-	2,685	1,554	1,131	57.9%	1,783	1,780
Legal services	-	-	-	-	-	-	-	-	-
Contractors	546	-	-	546	72	474	13.2%	43	42
Agency and support/outsourced services	1,617	46	-	1,663	1,663	-	100.0%	1,064	1,062
Entertainment	294	-	-	294	83	211	28.2%	73	66
Fleet services (incl. government motor transport)	-	625	-	625	625	-	100.0%	520	517
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	30	-	-	30	-	30	-	3	-
Inventory: Material and supplies	-	-	-	-	-	-	-	5	3
Inventory: Other supplies	64	-	-	64	-	64	-	4	-
Consumable supplies	-	163	-	163	163	-	100.0%	33	31
Consumable: Stationery, printing and office supplies	594	-	-	594	198	396	33.3%	6	4
Operating leases	1,285	(1,000)	-	285	148	137	51.9%	793	157
Property payments	3,212	(3,183)	-	29	29	-	100.0%	61	46
Travel and subsistence	12,448	4,356	(93)	16,711	15,839	872	94.8%	13,481	13,475
Training and development	-	10	-	10	10	-	100.0%	-	-
Operating payments	1,659	286	-	1,945	2,572	(627)	132.2%	761	760
Venues and facilities	1,247	-	-	1,247	281	966	22.5%	2,791	2,778
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme: 1.2 Management	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	12,860	-	4,103	16,963	17,017	(54)	100.3%	14,966	14,735
Departmental agencies and accounts	-	-	-	-	1,500	(1,500)	-	-	4,000
Higher education institutions	-	-	-	-	6,000	(6,000)	-	-	4,640
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	191	(191)	-	-	600
Public corporations	-	-	-	-	-	-	-	-	600
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	600
Private enterprises	-	-	-	-	191	(191)	-	-	-
Other transfers to private enterprises	-	-	-	-	191	(191)	-	-	-
Non-profit institutions	12,860	-	4,000	16,860	9,170	7,690	54.4%	14,796	5,325
Households	-	-	103	103	156	(53)	151.5%	170	170
Social benefits	-	-	103	103	156	(53)	151.5%	170	170
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	992	-	-	992	786	206	79.2%	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	992	-	-	992	786	206	79.2%	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	992	-	-	992	786	206	79.2%	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	105,426	(5,600)	4,103	103,929	99,228	4,701	95.5%	91,936	90,072

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme: 1.3 Corporate Services	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	198,190	4,400	6,364	208,954	201,493	7,461	96.4%	183,877	183,421
Compensation of employees	82,915	4,400	6,103	93,418	94,482	(1,064)	101.1%	88,086	87,953
Salaries and wages	72,739	3,600	6,103	82,442	83,534	(1,092)	101.3%	77,834	77,713
Social contributions	10,176	800	-	10,976	10,948	28	99.7%	10,252	10,240
Goods and services	115,275	-	261	115,536	107,011	8,525	92.6%	95,791	95,468
Administrative fees	14,656	(13,703)	-	953	238	715	25.0%	436	423
Advertising	16,154	12,000	-	28,154	27,711	443	98.4%	22,754	22,749
Minor assets	406	-	-	406	224	182	55.2%	535	535
Audit costs: External	6,383	(2,134)	-	4,249	4,249	-	100.0%	4,762	4,756
Bursaries: Employees	2,471	-	-	2,471	1,479	992	59.9%	1,069	1,067
Catering: Departmental activities	1,007	1,703	-	2,710	2,710	-	100.0%	4,102	4,092
Communication (G&S)	3,829	-	-	3,829	2,551	1,278	66.6%	4,310	4,295
Computer services	5,977	15,260	-	21,237	20,537	700	96.7%	9,847	9,841
Consultants: Business & advisory services	1,892	571	-	2,463	2,463	-	100.0%	1,309	1,302
Scientific & technological services	778	-	-	778	59	719	7.6%	-	-
Legal services	-	866	-	866	866	-	100.0%	444	438
Contractors	8,012	(4,071)	-	3,941	3,441	500	87.3%	7,452	7,447
Agency and support/outsourced services	6,587	225	-	6,812	6,812	-	100.0%	1,881	1,873
Entertainment	226	86	-	312	312	-	100.0%	615	610
Fleet services (incl. government motor transport)	-	257	-	257	257	-	100.0%	247	247
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	50	48
Inventory: Fuel, oil and gas	99	-	-	99	-	99	-	99	72
Inventory: Material and supplies	-	-	-	-	-	-	-	100	99
Inventory: Other supplies	814	-	(4)	810	-	810	-	140	-
Consumable supplies	-	975	-	975	975	-	100.0%	810	802
Consumable: Stationery, printing and office supplies	4,396	167	-	4,563	4,563	-	100.0%	2,639	2,634
Operating leases	2,464	288	-	2,752	2,752	-	100.0%	2,053	2,053
Property payments	2,984	4,041	865	7,890	7,262	628	92.0%	6,119	6,115
Travel and subsistence	10,874	(4,943)	(600)	5,331	5,331	-	100.0%	6,549	6,544
Training and development	5,303	-	-	5,303	4,908	395	92.6%	5,001	4,995
Operating payments	3,829	1,323	-	5,152	5,152	-	100.0%	5,390	5,383
Venues and facilities	16,134	(14,000)	-	2,134	1,070	1,064	50.1%	5,654	5,634
Rental and hiring	-	1,089	-	1,089	1,089	-	100.0%	1,424	1,414

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme: 1.3 Corporate Services	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	-	-	497	497	481	16	96.8%	139	139
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprise	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	497	497	481	16	96.8%	139	139
Social benefits	-	-	194	194	178	16	91.8%	139	139
Other transfers to Households	-	-	303	303	303	-	100.0%	-	-
Payment for capital assets	23,289	184	-	23,473	14,662	8,811	62.5%	21,435	16,467
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	23,289	184	-	23,473	14,662	8,811	62.5%	21,435	16,467
Transport equipment	1,876	-	-	1,876	1,876	-	100.0%	1,572	1,496
Other machinery and equipment	21,413	184	-	21,597	12,786	8,811	59.2%	19,863	14,971
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	4	4	3	1	75.0%	30	30
Total	221,479	4,584	6,865	232,928	216,639	16,289	93.0%	205,481	200,057

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub programme: 1.4 Governance	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
Current payments	9,123	1,300	-	10,423	8,168	2,255	78.4%	8,069	7,535
Compensation of employees	6,185	1,300	-	7,485	7,392	93	98.8%	7,287	7,123
Salaries and wages	4,762	1,850	-	6,612	6,562	50	99.2%	6,389	6,321
Social contributions	1,423	(550)	-	873	830	43	95.1%	898	802
Goods and services	2,938	-	-	2,938	776	2,162	26.4%	782	412
Administration fees	10	-	-	10	4	6	40.0%	10	4
Advertising	530	-	-	530	54	476	10.2%	207	35
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental	-	-	-	-	-	-	-	-	-
activities	58	-	-	58	29	29	50.0%	58	18
Communication (G&S)	141	30	-	171	171	-	100.0%	140	70
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	1,970	(409)	-	1,561	-	1,561	-	7	-
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	-	-	-	-	-	-	-	-	-
Entertainment	12	-	-	12	1	11	8.3%	12	2
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	25	-	-	25	1	24	4.0%	25	3
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	135	33	-	168	168	-	100.0%	231	225
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	2	346	-	348	348	-	100.0%	37	29
Venues and facilities	55	-	-	55	-	55	-	55	26
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub programme: 1.4 Governance	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Social benefits	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	184	(184)	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	184	(184)	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	184	(184)	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	9,307	1,116	-	10,423	8,168	2,255	78.4%	8,069	7,535

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017										
Sub-programme: 1.5 Office Accommodation	Adjusted appropriation	Shifting of funds	2016/17		Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000					R'000	R'000
Current payments	4,561	-	R'000	R'000	4,561	4,381	180	96.1%	R'000	R'000
Compensation of employees	-	-	-	-	-	-	-	-	-	-
Salaries and wages	-	-	-	-	-	-	-	-	-	-
Social contributions	-	-	-	-	-	-	-	-	-	-
Goods and services	4,561	-	-	-	4,561	4,381	180	96.1%	-	-
Administrative fees	-	-	-	-	-	-	-	-	-	-
Advertising	-	-	-	-	-	-	-	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	-	-	-	-	-	-	-	-	-	-
Communication (G&S)	-	-	-	-	-	-	-	-	-	-
Computer services	-	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	-	-	-	-	-	-	-	-	-	-
Legal Services	-	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-	-
Agency and support/outsourced Services	-	-	-	-	-	-	-	-	-	-
Entertainment	-	-	-	-	-	-	-	-	-	-
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-	-
Operating leases	-	1 397	-	-	1 397	1 217	180	87.1%	-	-
Property payments	4,561	(1,397)	-	-	3,164	3,164	-	100.0%	-	-
Travel and subsistence	-	-	-	-	-	-	-	-	-	-
Training and development	-	-	-	-	-	-	-	-	-	-
Operating payments	-	-	-	-	-	-	-	-	-	-
Venues and facilities	-	-	-	-	-	-	-	-	-	-
Rental and hiring	-	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 1 – Administration for the year ended 31 March 2017									
Sub-programme: 1.5 Office Accommodation	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporation	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
households	-	-	-	-	-	-	-	-	-
Other transfers to	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	4,561	-	-	4,561	4,381	180	96.1%	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme	2016/17				2015/16				Actual expenditure
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
2.1 Space Science	166,916	1,050	-	167,966	167,803	163	99.9%	209,167	209,103
2.2 Hydrogen and Energy	152,226	(380)	(300)	151,546	143,594	7,952	94.8%	148,688	147,687
2.3 Bio-economy	138,067	(295)	19,571	157,343	156,905	438	99.7%	136,706	136,051
2.4 Innovation Priorities and Instruments	521,424	(195)	(15,460)	505,769	505,347	422	99.9%	518,548	518,056
2.5 National Intellectual Property Management Office	26,785	(180)	18,359	44,964	42,211	2,753	93.9%	57,536	52,400
Total	1,005,418	-	22,170	1,027,588	1,015,860	11,728	98.9%	1,070,645	1,063,297
Economic classification									
Current payments	64,384	-	(6,905)	57,479	55,666	1,813	96.8%	53,998	51,565
Compensation of employees	43,543	-	(350)	43,193	42,939	254	99.4%	40,195	39,844
Salaries and wages	37,648	1,744	(350)	39,042	38,872	170	99.6%	36,417	36,186
Social contributions	5,895	(1,744)	-	4,151	4,067	84	98.0%	3,778	3,658
Goods and services	20,841	-	(6,555)	14,286	12,727	1,559	89.1%	13,803	11,721
Administrative fees	184	98	(40)	242	208	34	86.0%	483	463
Advertising	196	(75)	-	121	14	107	11.6%	147	1
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	24	-
Catering: Departmental activities	205	7	48	260	142	118	54.6%	95	77
Communication (G&S)	780	442	(24)	1,198	902	296	75.3%	787	681
Computer services	-	78	-	78	78	-	100.0%	-	-
Consultants: Business & advisory services	2,831	743	(1,422)	2,152	2,098	54	97.5%	809	219
Legal services	30	108	(30)	108	108	-	100.0%	175	142
Contractors	-	10	-	10	10	-	100.0%	-	-
Agency and support/outsourced Services	3,856	(2,877)	(300)	679	191	488	28.1%	1,408	975
Entertainment	3,574	(1,500)	(1,982)	92	20	72	21.7%	214	23
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	52	-	-	52	-	52	-	39	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000	R'000			Final appropriation	Actual expenditure
Consumable supplies	-	-	1	1	-	1	-	R'000	R'000
Consumable: Stationery, printing and office supplies	75	86	2	163	90	73	55.2%	3	1
Operating leases	345	(345)	-	-	-	-	-	696	696
Property payments	6,758	1,930	(2,202)	6,486	6,470	16	-	538	496
Travel and subsistence	-	17	-	17	17	-	99.8%	6,704	6,440
Training and development	281	781	(658)	404	355	49	100.0%	-	-
Operating payments	1,674	434	52	2,160	1,961	199	87.9%	504	447
Venues and facilities	-	63	-	63	63	-	90.8%	1,118	1,013
Rental and hiring	-	-	-	-	-	-	100.0%	54	46
Transfers and subsidies	941,034	-	29,075	970,109	960,164	9,945	99.0%	1,016,632	1,011,717
Departmental agencies and accounts	644,199	-	13,905	658,104	656,302	1,802	99.7%	690,390	732,534
Higher education institutions	115,622	-	18,359	133,981	143,626	(9,645)	107.2%	147,242	147,068
Public corporations and private enterprises	96,045	-	(747)	95,298	114,676	(19,378)	120.3%	92,431	99,443
Public corporations	96,045	-	(747)	95,298	111,823	(16,525)	117.3%	92,431	96,543
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	96,045	-	(747)	95,298	111,823	(16,525)	117.3%	92,431	96,543
Private enterprises	-	-	-	-	2,853	(2,853)	-	-	2,900
Other transfers to private enterprises	-	-	-	-	2,853	(2,853)	-	-	2,900
Non-profit institutions	85,168	-	(2,497)	82,671	45,374	37,297	54.9%	86,569	32,672
Households	-	-	55	55	186	(131)	338.2%	-	-
Social benefits	-	-	55	55	51	4	92.7%	-	-
Other transfers to households	-	-	-	-	135	(135)	-	-	-
Payment for capital assets	-	-	-	-	30	(30)	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	30	(30)	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	30	(30)	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	1,005,418	-	22,170	1,027,588	1,015,860	11,728	98.9%	1,070,645	1,063,297

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.1 Space Science	Adjusted appropriation	Shifting of funds	Virement	2016/17			2015/16		
	R'000	R'000	R'000	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
Current payments	12,286	1,050	-	13,336	13,173	R'000	98.8%	12,834	R'000
Compensation of employees	9,961	200	-	10,161	10,129	32	99.7%	9,807	9,757
Salaries and wages	9,026	476	-	9,502	9,470	32	99.7%	9,183	9,165
Social contributions	935	(276)	-	659	659	-	100.0%	624	592
Goods and services	2,325	850	-	3,175	3,044	131	95.9%	3,027	3,013
Administrative fees	38	-	-	38	30	8	78.9%	25	25
Advertising	80	(75)	-	5	-	5	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental	-	-	-	-	-	-	-	-	-
activities	122	(20)	-	102	38	64	37.3%	10	10
Communication (G&S)	157	126	-	283	283	-	100.0%	238	238
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	106	(106)	-	-	-	-	-	-	-
Legal services	-	-	-	-	10	-	100.0%	-	-
Contractors	-	10	-	10	-	-	-	-	-
Agency and support/outsourced Services	428	(424)	-	4	4	-	100.0%	170	167
Entertainment	16	-	-	16	5	11	31.3%	3	3
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	34	-	-	34	-	34	-	3	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	22	-	22	22	-	100.0%	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	464	464
Travel and subsistence	998	409	-	1,407	1,407	-	100.0%	1,719	1,715
Training and development	-	17	-	17	17	-	100.0%	-	-
Operating payments	179	(176)	-	3	3	-	100.0%	73	73
Venues and facilities	167	1,067	-	1,234	1,225	9	99.3%	322	318
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.1 Space Science	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	154,630	-	-	154,630	154,630	-	100.0%	196,333	196,333
Departmental agencies and accounts	154,630	-	-	154,630	154,630	-	100.0%	196,333	196,333
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Social benefit	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	166,916	1,050	-	167,966	167,803	163	99.9%	209,167	209,103

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme	Adjusted appropriation	Shifting of funds	Virement	2016/17			2015/16		
	R'000	R'000	R'000	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
2.2 Hydrogen & Energy	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	11,107	(380)	(300)	10,427	10,161	266	97.4%	8,885	7,884
Compensation of employees	7,172	(380)	-	6,792	6,704	88	98.7%	6,039	5,895
Salaries and wages	6,455	(380)	-	6,075	6,034	41	99.3%	5,404	5,291
Social contributions	717	-	-	717	670	47	93.4%	635	604
Goods and services	3,935	-	(300)	3,635	3,457	178	95.1%	2,846	1,989
Administrative fees	22	10	-	32	32	-	100.0%	32	29
Advertising	67	-	-	67	5	62	7.5%	67	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental	-	-	-	-	-	-	-	-	-
activities	17	-	-	17	12	5	70.6%	17	8
Communication (G&S)	173	-	-	173	118	55	68.2%	172	86
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	536	980	-	1,516	1,516	-	100.0%	453	93
Legal services	-	80	-	80	80	-	100.0%	150	120
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	2,185	(1,800)	(300)	85	65	20	76.5%	277	86
Entertainment	8	-	-	8	3	5	37.5%	7	5
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	18	-	-	18	-	18	-	18	-
Consumable supplies	-	-	-	-	-	-	-	5	1
Consumable: Stationery, printing and office supplies	-	5	-	5	5	-	100.0%	-	-
Operating Leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	536	867	-	1,403	1,403	-	100.0%	1,276	1,263
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	81	79	-	160	160	-	100.0%	296	289
Venues and facilities	292	(221)	-	71	58	13	81.7%	76	9
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	141,119	-	-	141,119	133,433	7,686	94.6%	139,803	139,803
Departmental agencies and accounts	34,904	-	-	34,904	26,323	8,581	75.4%	33,733	49,357
Higher education Institutions	100,078	-	-	100,078	88,688	11,390	88.6%	99,580	87,866
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	15,923	(15,923)	-	-	2,580
Public corporation	-	-	-	-	15,923	(15,923)	-	-	2,580
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	15,923	(15,923)	-	-	2,580
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	6,137	-	-	6,137	2,499	3,638	40.7%	6,490	-
Households	-	-	-	-	-	-	-	-	-
Social benefit	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	152,226	(380)	(300)	151,546	143,594	7,952	94.8%	148,688	147,687

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.3 Bio-economy	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	18,712	(295)	(3,360)	15,057	14,589	468	96.9%	14,596	13,941
Compensation of employees	12,324	(295)	(350)	11,679	11,629	50	99.6%	10,493	10,442
Salaries and wages	11,176	(357)	(350)	10,469	10,419	50	99.5%	9,392	9,348
Social contributions	1,148	62	-	1,210	1,210	-	100.0%	1,101	1,094
Goods and services	6,388	-	(3,010)	3,378	2,960	418	87.6%	4,103	3,499
Administrative fees	112	-	(40)	72	60	12	83.3%	359	348
Advertising	-	-	-	-	-	-	-	30	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	24	-
Catering: Departmental activities	61	-	-	109	64	45	58.7%	28	26
Communication (G&S)	356	-	(24)	332	191	141	57.5%	120	114
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	1,451	-	(1,422)	29	-	29	-	12	-
Legal services	30	-	(30)	-	-	-	-	25	22
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced services	-	122	-	122	122	-	100.0%	225	-
Entertainment	17	-	-	17	4	13	23.5%	27	7
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	18	-
Consumable supplies	-	-	1	1	-	-	-	-	-
Consumable: Stationery, printing and office supplies	75	-	2	77	4	73	5.2%	3	1
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	3,866	(100)	(1,779)	1,987	1,987	-	100.0%	2,602	2,399
Operating payments	15	-	82	97	48	49	49.5%	44	6
Venues and facilities	405	(22)	152	535	480	55	89.7%	536	530
Rental and hiring	-	-	-	-	-	-	-	50	46

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.3 Bio-economy	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	119,355	-	22,931	142,286	142,286	-	100.0%	122,096	122,096
Departmental agencies and accounts	40,324	-	25,428	65,752	70,800	(5,048)	107.7%	45,524	73,443
Higher education institutions	-	-	-	-	15,121	(15,121)	-	-	13,958
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	22,323	(22,323)	-	-	14,485
Public corporations	-	-	-	-	19,470	(19,470)	-	-	11,585
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	19,470	(19,470)	-	-	11,585
Private enterprises	-	-	-	-	2,853	(2,853)	-	-	2,900
Other transfers to private enterprises	-	-	-	-	2,853	(2,853)	-	-	2,900
Non-profit institutions	79,031	-	(2,497)	76,534	34,042	42,492	44.5%	76,572	20,210
Households	-	-	-	-	-	-	-	-	-
Social benefit	-	-	-	-	-	-	-	-	-
Other transfers to Households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	30	(30)	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	30	(30)	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	30	(30)	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	138,067	(295)	19,571	157,343	156,905	438	-	136,706	136,051

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.4 Innovation Priorities and Instrument	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	11,038	(195)	(3,245)	7,598	7,180	418	94.5%	7,810	7,318
Compensation of employees	5,712	655	-	6,367	6,337	30	99.5%	6,262	6,251
Salaries and wages	4,292	1,425	-	5,717	5,706	11	99.8%	5,631	5,625
Social contributions	1,420	(770)	-	650	631	19	97.1%	631	626
Goods and services	5,326	(850)	(3,245)	1,231	843	388	68.5%	1,548	1,067
Administrative fees	-	20	-	20	6	14	30.0%	20	16
Advertising	44	-	-	44	5	39	11.4%	45	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	4	-	-	4	-	4	-	4	4
Communication (G&S)	10	194	-	204	104	100	51.0%	53	46
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	-	475	-	475	450	25	94.7%	210	1
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced services	746	(700)	-	46	-	46	-	732	722
Entertainment	3,521	(1,500)	(1,982)	39	1	38	2.6%	165	1
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	623	60	(423)	260	260	-	100.0%	294	263
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	6	751	(740)	17	17	-	100.0%	6	-
Venues and facilities	372	(150)	(100)	122	-	122	-	19	14
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.4 Innovation Priorities and Instrument	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	510,386	-	(12,215)	498,171	498,167	4	100.0%	510,738	510,738
Departmental agencies and accounts	414,341	-	(11,523)	402,818	403,862	(1,044)	100.3%	414,800	408,990
Higher education institutions	-	-	-	-	16,504	(16,504)	-	-	13,500
Public corporations and private enterprises	96,045	-	(747)	95,298	70,750	24,548	74.2%	92,431	75,786
Public corporations	96,045	-	(747)	95,298	70,750	24,548	74.2%	92,431	75,786
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	96,045	-	(747)	95,298	70,750	24,548	74.2%	92,431	75,786
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	7,000	(7,000)	-	-	12,462
Households	-	-	55	55	51	4	92.7%	3,507	-
Social benefits	-	-	55	55	51	4	92.7%	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	521,424	(195)	(15,460)	505,769	505,347	422	99.9%	518,548	518,056

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme: 2.5 National Intellectual Property Management Office	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	11,241	(180)	-	11,061	10,563	498	95.5%	9,873	9,652
Compensation of Employees	8,374	(180)	-	8,194	8,140	54	99.3%	7,594	7,499
Salaries and wages	6,699	580	-	7,279	7,243	36	99.5%	6,807	6,757
Social contributions	1,675	(760)	-	915	897	18	98.0%	787	742
Goods and services	2,867	-	-	2,867	2,423	444	84.5%	2,279	2,153
Administrative fees	12	68	-	80	80	-	100.0%	47	45
Advertising	5	-	-	5	4	1	80.0%	5	1
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	1	27	-	28	28	-	100.0%	36	29
Communication (G&S)	84	122	-	206	206	-	100.0%	204	197
Computer services	-	78	-	78	78	-	100.0%	-	-
Consultants: Business & advisory services	738	(606)	-	132	132	-	100.0%	134	125
Legal services	-	28	-	28	28	-	100.0%	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	497	(75)	-	422	-	422	-	4	-
Entertainment	12	-	-	12	7	5	58.3%	12	7
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & Accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	59	-	59	59	-	100.0%	-	-
Operating leases	-	(345)	-	-	-	-	-	696	696
Property payments	345	694	-	1,429	1,413	16	98.9%	74	32
Travel and subsistence	735	-	-	-	-	-	-	813	800
Training and development	-	127	-	127	127	-	100.0%	-	-
Operating payments	-	(240)	-	198	198	-	100.0%	165	142
Venues and facilities	438	63	-	63	63	-	100.0%	4	-
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 2 – Technology Innovation for the year ended 31 March 2017									
Sub-programme:	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	2015/16 Actual expenditure
2.5 National Intellectual Property Management Office	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	15,544	-	18,359	33,903	31,648	2,255	93.3%	47,662	42,747
Departmental agencies and accounts	-	-	-	-	687	(687)	-	-	4,411
Higher education institutions	15,544	-	18,359	33,903	23,313	10,590	68.8%	47,662	31,744
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	5,680	(5,680)	-	-	6,592
Public corporations	-	-	-	-	5,680	(5,680)	-	-	6,592
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	5,680	(5,680)	-	-	6,592
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	1,833	(1,833)	-	-	-
Households	-	-	-	-	135	(135)	-	-	-
Social benefits	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	135	(135)	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	26,785	(180)	18,359	44,964	42,211	2,753	93.9%	57,536	52,400

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 3 – International Cooperation and Resources for the year ended 31 March 2017										
Sub-programme	Adjusted appropriation	Shifting of funds	Virement	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
				R'000	R'000	Final appropriation			Actual expenditure	R'000
	R'000	R'000		R'000	R'000	R'000	R'000	%	R'000	R'000
3.3.1 Multilateral Cooperation and Africa	28,697	2,135	(286)		30,546	138	99.5%		26,345	25,668
3.3.2 International Resources	57,459	(765)	(2,161)		54,533	329	99.4%		57,025	56,635
3.3.3 Overseas Bilateral Cooperation	38,307	(1,370)	(700)		36,237	2,383	93.4%		33,551	32,665
Total	124,463	-	(3,147)	121,316	118,466	2,850	97.7%		116,921	114,968
Economic classification										
Current payments	63,109	-	(2,679)	60,430	57,569	2,861	95.3%		57,593	55,641
Compensation of employees	46,150	-	(2,600)	43,550	43,295	255	99.4%		41,627	41,275
Salaries and wages	42,019	(215)	(2,600)	39,204	39,021	183	99.5%		37,635	37,333
Social contributions	4,131	215	-	4,346	4,274	72	98.3%		3,992	3,942
Goods and services	16,959	-	(79)	16,880	14,274	2,606	84.6%		15,966	14,366
Administrative fees	244	15	(4)	255	233	22	91.4%		234	207
Advertising	154	285	(4)	439	413	26	94.1%		75	-
Minor assets	-	10	-	10	4	6	40.0%		-	-
Audit costs: External	-	-	-	-	-	-	-		-	-
Bursaries: Employees	-	-	-	-	-	-	-		-	-
Catering: Departmental activities	384	5	(75)	314	289	25	92.0%		471	438
Communication (G&S)	1,179	75	-	1,254	1,233	21	98.3%		766	690
Computer services	-	25	-	25	17	8	68.0%		93	5
Consultants: Business & advisory services	191	915	-	1,106	1,090	16	98.6%		301	40
Legal services	-	5	-	5	3	2	60.0%		-	-
Contractors	-	-	-	-	-	-	-		63	58
Agency and support/outsourced services	733	35	-	768	142	626	18.5%		751	726
Entertainment	479	80	-	559	208	351	37.2%		690	285
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-		-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-		-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-		-	-
Inventory: Material and supplies	-	-	-	-	-	-	-		3	1
Inventory: Medical supplies	-	-	-	-	-	-	-		3	1
Inventory: Other supplies	169	(120)	-	49	-	49	-		38	1
Consumable supplies	-	30	-	30	22	8	73.3%		30	25

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme	2016/17				2015/16				R'000
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Consumable: Stationery, printing and office supplies	124	(76)	-	48	25	23	52.1%	24	17
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	476	(450)	-	26	-	26	-	4	-
Travel and subsistence	9,506	(470)	-	9,036	8,805	231	97.4%	10,037	10,014
Training and development	-	10	-	10	4	6	40.0%	-	-
Operating payments	1,011	180	-	1,191	375	816	31.5%	674	572
Venues and facilities	2,309	(704)	-	1,605	1,283	322	79.9%	1,659	1,244
Rental and hiring	-	150	-	150	128	22	85.3%	50	42
Transfers and subsidies	61,354	-	(472)	60,882	60,897	(15)	100.0%	59,328	59,327
Departmental agencies and accounts	13,598	-	-	13,598	44,586	(30,988)	327.9%	13,530	36,841
Higher education institutions	-	-	-	-	8,532	(8,532)	-	-	13,124
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	(4,315)	-	-	8,475
Public corporations	-	-	-	-	4,315	(4,315)	-	-	7,802
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporation	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	4,315	(4,315)	-	-	7,802
Other transfers to private enterprises	-	-	-	-	-	-	-	-	673
Non-profit institutions	47,756	-	(547)	47,209	3,374	43,835	7.1%	45,781	673
Households	-	-	75	75	90	(15)	120.0%	17	870
Social benefits	-	-	75	75	90	(15)	120.0%	17	17
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	4	4	-	4	-	-	-
Total	124,463	-	(3,147)	121,316	118,466	2,850	97.7%	116,921	114,968

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.1 Multilateral Co-operation and Africa	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	20,161	2,135	-	22,296	22,158	138	99.4%	19,573	18,896
Compensation of employees	14,147	1,785	-	15,932	15,847	85	99.5%	14,438	14,354
Salaries and wages	12,877	1,385	-	14,262	14,202	60	99.6%	12,947	12,883
Social contributions	1,270	400	-	1,670	1,645	25	98.5%	1,491	1,471
Goods and services	6,014	350	-	6,364	6,311	53	99.2%	5,135	4,542
Administrative fees	104	-	-	104	96	8	92.3%	80	77
Advertising	92	(80)	-	12	5	7	41.7%	3	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	104	55	-	159	155	4	97.5%	120	117
Communication (G&S)	250	115	-	365	365	-	100.0%	241	176
Computer services	-	-	-	-	-	-	-	31	-
Consultants: Business & advisory services	-	1,095	-	1,095	1,090	5	99.5%	45	39
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	-	-	-	-	-	-	-	-	-
Entertainment	130	-	-	130	123	7	94.6%	580	566
Fleet services (incl. government motor transport)	10	-	-	10	6	4	60.0%	105	21
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	3	1
Consumable: Stationery	-	-	-	-	-	-	-	22	-
Printing and office supplies	77	(76)	-	1	1	-	100.0%	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	4,447	(1,110)	-	3,337	3,331	6	99.8%	2,920	2,913
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	110	60	-	170	165	5	97.1%	142	137
Venues and facilities	690	291	-	981	974	7	99.3%	843	495
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.1 Multilateral Co-operation and Africa	Adjusted appropriation	Shifting of funds	2016/17		Variance	Expenditure as % of final appropriation	2015/16		Actual expenditure
			R'000	R'000			R'000	Final appropriation	
Transfers and subsidies	8,536	-	(286)	8,250	-	100.0%	6,772	6,772	6,772
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Higher education institutions	-	-	-	2,900	(2,900)	-	-	-	957
Public corporations and private enterprises	-	-	-	200	(200)	-	-	-	1,938
Public corporations	-	-	-	2,200	(2,200)	-	-	-	3,138
Subsidies on products	-	-	-	2,200	(2,200)	-	-	-	3,138
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	2,200	(2,200)	-	-	-	3,138
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	8,536	-	(286)	8,250	5,300	35.8%	6,756	6,756	723
Households	-	-	-	-	-	-	16	16	16
Social benefit	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	28,697	2,135	(286)	30,546	138	99.5%	26,345	26,345	25,668

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.2 International Resources	Adjusted appropriation	Shifting of funds	Virement	2016/17			2015/16		
				R'000	R'000	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	%
Current payments	18,239	(765)	(1,979)	15,495	15,155	17,999	17,610	340	97.8%
Compensation of employees	15,055	(765)	(1,900)	12,390	12,310	12,761	12,624	80	99.4%
Salaries and wages	13,550	(610)	(1,900)	11,040	10,970	11,427	11,291	70	99.4%
Social contributions	1,505	(155)	-	1,350	1,340	1,334	1,333	10	99.3%
Goods and services	3,184	-	(79)	3,105	2,845	5,238	4,986	260	91.6%
Administrative fees	125	(15)	(4)	106	93	94	73	13	87.7%
Advertising	-	15	-	15	15	9	-	-	100.0%
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	203	(50)	(75)	78	69	274	266	9	88.5%
Communication (G&S)	137	260	-	397	389	337	330	8	98.0%
Computer services	-	10	-	10	8	57	3	2	80.0%
Consultants: Business & advisory services	-	-	-	-	-	66	-	-	-
Legal services	-	5	-	5	3	-	-	2	60.0%
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced Services	-	35	-	35	19	171	160	16	54.3%
Entertainment	10	80	-	90	85	128	121	5	94.4%
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	13	1	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	47	-	-	47	24	15	11	23	51.1%
Operating Leases	-	-	-	-	-	-	-	-	-
Property payments	2,366	(460)	-	1,906	1,772	3,319	3,313	134	93.0%
Travel and subsistence	-	-	-	-	-	-	-	-	-
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	86	120	-	206	201	321	310	5	97.6%
Venues and facilities	210	(100)	-	110	77	414	381	33	70.0%
Rental and hiring	-	100	-	100	90	20	17	10	90.0%

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.2 International Resources	Adjusted appropriation	Shifting of funds	2016/17			Variance	Expenditure as % of final appropriation	2015/16	
			R'000	Virement	Final appropriation			Final appropriation	Actual expenditure
Transfers and subsidies	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Departmental agencies and accounts	39,220	-	(186)	-	39,034	(15)	100.0%	39,026	39,025
Higher education institutions	-	-	-	-	-	(28,088)	-	-	22,354
Foreign governments and international organisations	-	-	-	-	-	(8,332)	-	-	11,186
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	(2,115)	-	-	5,337
Subsidies on products	-	-	-	-	-	(2,115)	-	-	4,664
Other transfers to public corporations	-	-	-	-	-	(2,115)	-	-	4,664
Private enterprises	-	-	-	-	-	-	-	-	673
Other transfers to private Enterprises	-	-	-	-	-	-	-	-	673
Non-profit institutions	39,220	-	(261)	-	38,959	424	1.1%	39,025	147
Households	-	-	75	75	75	(15)	120.0%	1	1
Social benefits	-	-	75	75	75	(15)	120.0%	1	1
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	57,459	(765)	(2,161)	4	54,533	4	99.4%	57,025	56,635

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.3 Overseas Bilateral Cooperation	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	24,709	(1,370)	(700)	22,639	20,256	2,383	89.5%	20,021	19,135
Compensation of employees	16,948	(1,020)	(700)	15,228	15,138	90	99.4%	14,428	14,297
Salaries and wages	15,592	(990)	(700)	13,902	13,849	53	99.6%	13,261	13,159
Social contributions	1,356	(30)	-	1,326	1,289	37	97.2%	1,167	1,138
Goods and services	7,761	(350)	-	7,411	5,118	2,293	69.1%	5,593	4,838
Administrative fees	15	30	-	45	44	1	97.8%	60	57
Advertising	62	350	-	412	393	19	95.4%	63	-
Minor assets	-	10	-	10	4	6	40.0%	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	77	-	-	77	65	12	84.4%	77	55
Communication (G&S)	792	(300)	-	492	479	13	97.4%	188	184
Computer services	-	15	-	15	9	6	60.0%	5	2
Consultants: Business & advisory services	191	(180)	-	11	-	11	-	190	1
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	63	58
Agency and support/outsourced services	603	-	-	603	-	603	-	-	-
Entertainment	459	-	-	459	117	342	25.5%	457	143
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & Accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Medical supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	169	(120)	-	49	-	49	-	3	1
Consumable supplies	-	30	-	30	22	8	73.3%	3	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	30	25
Operating leases	-	-	-	-	-	-	-	9	6
Property payments	476	(450)	-	26	-	26	-	-	-
Travel and subsistence	2,693	1,100	-	3,793	3,702	91	97.6%	3,798	3,788
Training and development	-	10	-	10	4	6	40.0%	-	-
Operating payments	815	-	-	815	9	806	1.1%	211	125
Venues and facilities	1,409	(895)	-	514	232	282	45.1%	402	368
Rental and hiring	-	50	-	50	38	12	76.0%	30	25

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 3 – International Cooperation and Resources for the year ended 31 March 2017									
Sub-programme: 3.3 Overseas Bilateral Cooperation	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	13,598	-	-	13,598	13,598	-	100.0%	13,530	13,530
Departmental agencies and accounts	13,598	-	-	13,598	13,598	-	100.0%	13,530	13,530
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Social benefits	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	38,307	(1,370)	(700)	36,237	33,854	2,383	93.4%	33,551	32,665

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017										
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17		Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
			R'000	R'000					R'000	R'000
4.1 Human Capital and Science Promotion	2,357,414	180	(1,415)	2,356,179	2,354,550	1,629	99.9%	2,332,566	2,331,826	
4.2 Sciences Missions	215,523	100	(1,508)	214,115	213,071	1,044	99.5%	177,516	177,004	
4.3 Basic Science and Infrastructure	906,519	940	(10,470)	896,989	895,536	1,453	99.8%	993,413	986,984	
4.4 Astronomy	691,541	(1,220)	-	690,321	689,473	848	99.9%	723,427	723,040	
Total	4,170,997	-	(13,393)	4,157,604	4,152,630	4,974	99.9%	4,226,922	4,218,854	
Economic Classification										
Current payments	47,332	-	3,102	50,434	48,337	2,097	95.8%	45,518	43,751	
Compensation of employees	31,805	-	2,982	34,787	34,613	174	99.5%	31,232	31,117	
Salaries and wages	28,172	290	2,762	31,224	31,102	122	99.6%	28,061	27,974	
Social contributions	3,633	(290)	220	3,563	3,511	52	98.5%	3,171	3,143	
Goods and services	15,527	-	120	15,647	13,724	1,923	87.7%	14,286	12,634	
Administrative fees	200	160	-	360	315	45	87.5%	245	232	
Advertising	157	191	-	348	261	87	75.0%	39	-	
Minor assets	-	-	-	-	-	-	-	-	-	
Audit costs: External	-	-	-	-	-	-	-	-	-	
Bursaries: Employees	-	-	-	-	-	-	-	-	-	
Catering: Departmental	-	-	-	-	-	-	-	-	-	
activities	325	(141)	-	184	117	67	63.6%	371	163	
Communication (G&S)	507	158	-	665	625	40	94.0%	559	246	
Computer services	74	-	(30)	44	-	44	-	719	572	
Consultants: Business & advisory services	2,922	(202)	-	2,720	2,264	456	83.2%	483	405	
Legal services	-	-	-	-	-	-	-	8	-	
Contractors	-	-	-	-	-	-	-	-	-	
Agency and support/ outsourced services	741	289	-	1,030	822	208	79.8%	1,504	1,467	
Entertainment	43	6	-	49	20	29	40.8%	45	20	
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-	
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-	
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-	
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-	
Inventory: Other supplies	-	-	-	-	-	-	-	17	-	
Consumable supplies	-	-	-	-	-	-	-	155	133	
Consumable: Stationery, printing and office supplies	126	11	-	137	35	102	25.5%	5	1	

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017										
Sub-programme	Adjusted appropriation	Shifting of funds	2016/17			2015/16				
			R'000	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Property payments	-	-	-	-	-	-	-	-	-	-
Travel and subsistence	8,710	(1,158)	150	-	7,702	7,299	403	94.8%	7,381	6,982
Training and development	-	5	-	-	5	5	-	100.0%	-	-
Operating payments	957	293	-	-	1,250	926	324	74.1%	1,219	1,093
Venues and facilities	765	388	-	-	1,153	1,035	118	89.8%	1,536	1,320
Rental and hiring	-	-	-	-	-	-	-	-	-	-
Transfers and subsidies	4,123,665	-	(16,525)	-	4,107,140	4,104,263	2,877	99.9%	4,181,404	4,175,103
Departmental agencies and accounts	3,909,119	-	(16,525)	-	3,892,594	3,550,051	342,543	91.2%	3,944,580	3,564,106
Higher education institutions	-	-	-	-	-	37,047	(37,047)	-	-	50,825
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-	-
Public corporation and private enterprises	214,546	-	-	-	214,546	467,380	(252,834)	217.8%	213,479	526,189
Public corporations	214,546	-	-	-	214,546	467,380	(252,834)	217.8%	213,479	526,189
Subsidies	-	-	-	-	-	-	-	-	-	-
Other transfers to public corporation	214,546	-	-	-	214,546	467,380	(252,834)	217.8%	213,479	526,189
Private enterprises	-	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	48,820	(48,820)	-	23,229	33,617
Households	-	-	-	-	-	465	(465)	-	116	366
Social benefit	-	-	-	-	-	465	(465)	-	116	116
Other transfers to households	-	-	-	-	-	-	-	-	-	250
Payment for capital assets	-	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-	-
Total	4,170,997	-	(13,393)	30	4,157,604	4,152,630	4,974	100.0%	4,226,922	4,218,854

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.4.1 Human Capital and Science Promotion	2016/17			2015/16			Expenditure as % of final appropriation	Variance	Actual expenditure
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Final appropriation			
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	14,457	180	706	15,343	14,565	778	94.9%	12,655	11,916
Compensation of employees	10,192	180	706	11,078	11,036	42	99.6%	8,930	8,884
Salaries and wages	8,691	580	706	9,977	9,956	21	99.8%	8,053	8,011
Social contributions	1,501	(400)	-	1,101	1,080	21	98.1%	877	873
Goods and services	4,265	-	-	4,265	3,529	736	82.7%	3,725	3,032
Administrative fees	77	-	-	77	32	45	41.6%	58	56
Advertising	67	20	-	87	-	87	-	39	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	55	-	-	55	50	5	90.9%	208	64
Communication (G&S)	128	80	-	208	197	11	94.7%	285	85
Computer services	-	-	-	-	-	-	-	70	-
Consultants: Business & advisory services	515	700	-	1,215	1,200	15	98.8%	35	31
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	300	(110)	-	190	-	190	-	307	300
Entertainment	8	-	-	8	2	6	25.0%	14	3
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	17	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	50	40
Operating leases	15	10	-	25	18	7	72.0%	-	-
Property payments	2,391	(620)	-	1,771	1,483	288	83.7%	1,648	1,551
Travel and subsistence	-	-	-	-	-	-	-	-	-
Training and development	516	75	-	591	547	44	92.6%	739	728
Operating payments	193	(155)	-	38	-	38	-	255	174
Venues and facilities									
Rental and hiring									

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.1 Human Capital and Science Promotion	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	2,342,957	-	(2,121)	2,340,836	2,339,085	851	100.0%	2,319,911	2,319,910
Departmental agencies and accounts	2,342,957	-	(2,121)	2,340,836	2,263,931	76,905	96.7%	2,319,878	2,242,276
Higher education institutions	-	-	-	-	3,223	(3,223)	-	-	11,854
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	38,388	(38,388)	-	-	33,505
Public corporations	-	-	-	-	38,388	(38,388)	-	-	33,505
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	38,388	(38,388)	-	-	33,505
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private Enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	34,208	(34,208)	-	23,229	32,117
Social benefits	-	-	-	-	235	(235)	-	33	158
Other transfers to households	-	-	-	-	-	-	-	33	33
Payment for capital assets	-	-	-	-	235	(235)	-	-	125
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	2,357,414	180	(1,415)	2,356,179	2,354,550	1,629	99.9%	2,332,566	2,331,826

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.2 Science Mission	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	13,643	100	2,396	16,139	16,025	114	99.3%	14,777	14,265
Compensation of employees	9,934	-	2,276	12,210	12,167	43	99.6%	11,208	11,188
Salaries and wages	8,875	-	2,056	10,931	10,895	36	99.7%	10,051	10,036
Social contributions	1,059	-	220	1,279	1,272	7	99.5%	1,157	1,152
Goods and services	3,709	100	120	3,929	3,858	71	98.2%	3,569	3,077
Administrative fees	52	22	-	74	74	-	100.0%	71	68
Advertising	-	-	-	-	-	-	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	39	(22)	-	17	10	7	58.8%	77	28
Communication (G&S)	172	46	-	218	218	-	100.0%	181	79
Computer services	38	-	(30)	8	-	8	-	38	-
Consultants: Business & advisory services	773	177	-	950	950	-	100.0%	137	93
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced services	250	26	-	276	276	-	100.0%	701	692
Entertainment	5	-	-	5	5	-	100.0%	20	11
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	2,055	56	150	2,261	2,261	-	100.0%	1,665	1,656
Training and development	163	(82)	-	81	42	39	51.9%	162	56
Venues and facilities	162	(123)	-	39	22	17	56.4%	517	394
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.2 Science Mission	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	201,880	-	(3,934)	197,946	197,016	930	99.5%	162,739	162,739
Departmental agencies and accounts	201,880	-	(3,934)	197,946	181,819	16,127	91.9%	162,739	149,943
Higher education institutions	-	-	-	-	7,244	(7,244)	-	-	6,796
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	4,611	(4,611)	-	-	4,500
Public corporations	-	-	-	-	4,611	(4,611)	-	-	4,500
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	4,611	(4,611)	-	-	4,500
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	3,312	(3,312)	-	-	1,500
Households	-	-	-	-	30	(30)	-	-	-
Other transfers to households	-	-	-	-	30	(30)	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	30	30	30	-	100.0%	-	-
Total	215,523	100	(1,508)	214,115	213,071	1,044	99.5%	177,516	177,004

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.3 Basic Science and Infrastructure	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	8,397	940	-	9,337	8,980	357	96.2%	9,271	9,133
Compensation of employees	6,442	940	-	7,382	7,341	41	99.4%	6,708	6,689
Salaries and wages	5,757	850	-	6,607	6,581	26	99.6%	6,001	5,991
Social contributions	685	90	-	775	760	15	98.1%	707	698
Goods and services	1,955	-	-	1,955	1,639	316	83.8%	2,563	2,444
Administrative fees	11	19	-	30	30	-	100.0%	66	62
Advertising	-	-	-	-	-	-	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	71	-	-	71	19	-	-	-	-
Communication (G&S)	107	32	-	139	139	52	26.8%	64	55
Computer services	36	-	-	36	-	36	100.0%	58	51
Consultants: Business & advisory services	627	(435)	-	192	114	78	59.4%	24	-
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/outsourced services	191	-	-	191	173	18	90.6%	490	475
Entertainment	-	6	-	6	6	6	100.0%	5	2
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & Accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	-	1	-	1	1	-	100.0%	5	1
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	674	372	-	1,046	1,046	-	100.0%	1,602	1,581
Training and development	-	5	-	5	5	-	100.0%	-	-
Operating payments	78	-	-	78	9	69	11.5%	8	5
Venues and facilities	160	-	-	160	97	63	60.6%	215	211
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.3 Basic Science and Infrastructure	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	898,122	-	(10,470)	887,652	886,556	1,096	99.9%	984,142	977,851
Departmental agencies and accounts	683,576	-	(10,470)	673,106	423,595	249,511	62.9%	770,613	459,317
Higher education institutions	-	-	-	-	27,080	(27,080)	-	-	32,175
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	214,546	-	-	214,546	424,381	(209,835)	197.8%	213,479	486,184
Public corporations	214,546	-	-	214,546	424,381	(209,835)	197.5%	213,479	486,184
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	214,546	-	-	214,546	424,381	(209,835)	197.8%	213,479	486,184
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private Enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	11,300	(11,300)	-	-	-
Households	-	-	-	-	200	(200)	-	50	175
Social benefits	-	-	-	-	-	-	-	50	50
Other transfers to households	-	-	-	-	200	(200)	-	-	125
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	906,519	940	(10,470)	896,989	895,536	1,453	99.8%	993,413	986,984

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.4 Astronomy	Adjusted appropriation	Shifting of funds	2016/17		Variance	Expenditure as % of final appropriation	2015/16		
			R'000	R'000			Final appropriation	Actual expenditure	
	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000	
Current payments	10,835	(1,220)	-	9,615	8,767	91.2%	8,815	8,437	
Compensation of employees	5,237	(1,120)	-	4,117	4,069	98.8%	4,386	4,356	
Salaries and wages	4,849	(1,140)	-	3,709	3,670	98.9%	3,956	3,936	
Social contributions	388	20	-	408	399	97.8%	430	420	
Goods and services	5,598	(100)	-	5,498	4,698	85.4%	4,429	4,081	
Administrative fees	60	119	-	179	179	100.0%	50	46	
Advertising	90	171	-	261	261	100.0%	-	-	
Minor assets	-	-	-	-	-	-	-	-	
Audit costs: External	-	-	-	-	-	-	-	-	
Bursaries: Employees	-	-	-	-	-	-	-	-	
Catering: Departmental activities	160	(119)	-	41	38	92.7%	3	22	16
Communication (G&S)	100	-	-	100	71	71.0%	29	35	31
Computer services	-	-	-	-	-	-	-	590	572
Consultants: Business & advisory services	1,007	(644)	-	363	-	-	363	287	281
Legal services	-	-	-	-	-	-	-	8	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	-	373	-	373	373	100.0%	-	6	-
Entertainment	30	-	-	30	7	23.3%	23	6	4
Fleet services (inc government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	100	92
Consumable: Stationery, printing and office supplies	111	-	-	111	16	14.4%	95	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	3,590	(966)	-	2,624	2,509	95.6%	115	2,466	2,194
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	200	300	-	500	328	65.6%	172	310	304
Venues and facilities	250	666	-	916	916	100.0%	-	549	541
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per Programme 4 – Research Development and Support for the year ended 31 March 2017									
Sub-programme: 4.4 Astronomy	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	680,706	-	-	680,706	680,706	-	100.0%	714,612	714,603
Departmental agencies and accounts	680,706	-	-	680,706	680,706	-	100.0%	714,579	712,570
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	2,000
Public corporations	-	-	-	-	-	-	-	-	2,000
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	2,000
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	33	33
Social benefits	-	-	-	-	-	-	-	33	33
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	691,541	(1,220)	-	690,321	689,473	848	99.9%	723,427	723,040

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio – economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
5.1 Sector Innovation and Green Economy	932,662	162	-	932,824	932,049	775	99.9%	874,024	873,866
5.2 Innovation for Inclusive Development	349,513	(1,464)	(3,358)	344,691	344,506	185	99.9%	336,596	334,443
5.3 Science and Technology Investment	28,508	3,354	(9,533)	22,329	22,158	171	99.2%	32,453	32,309
5.4 Technology Localisation, Beneficiation and Advanced Manufacturing	472,293	(2,052)	(3,707)	466,534	465,296	1,238	99.7%	498,722	497,729
Total	1,782,976	-	(16,598)	1,766,378	1,764,009	2,369	99.9%	1,741,795	1,738,347
Economic classification									
Current payments	49,692	-	(712)	48,980	46,754	2,226	95.5%	43,922	43,310
Compensation of employees	37,838	-	(650)	37,188	37,000	188	99.5%	37,279	37,107
Salaries and wages	33,881	70	(650)	33,301	33,176	125	99.6%	33,434	33,288
Social contributions	3,957	(70)	-	3,887	3,824	63	98.4%	3,845	3,819
Goods and services	11,854	-	(62)	11,792	9,754	2,038	82.7%	6,643	6,203
Administrative fees	132	26	-	158	87	71	55.1%	126	107
Advertising	100	(6)	-	94	5	89	5.3%	93	6
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	6	-	6	6	-	100.0%	-	-
Catering: Departmental activities	207	(18)	-	189	72	117	38.1%	156	134
Communication (G&S)	584	324	-	908	733	175	80.7%	285	243
Computer services	69	-	-	69	-	69	-	102	82
Consultants: Business & advisory services	6,016	(5,075)	-	941	398	543	42.3%	40	16
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	11	-	11	-	11	-	-	-
Agency and support/ outsourced services	1,107	4,608	-	5,715	5,674	41	99.3%	2,149	2,032
Entertainment	34	7	-	41	14	27	34.1%	26	15
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing, material accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Consumable supplies	-	-	-	-	-	-	-	9	1
Consumable: Stationery, printing and office supplies	92	(20)	-	72	42	30	58.3%	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	2,905	256	(62)	3,099	2,572	527	83.0%	3,023	2,990
Training and development	-	-	-	-	-	-	-	3	-
Operating payments	62	66	-	128	120	8	93.8%	524	498
Venues and facilities	541	(185)	-	356	31	325	8.7%	107	79
Rental and hiring	-	-	-	-	-	-	-	-	-
Transfers and subsidies	1,733,284	-	(15,886)	1,717,398	1,717,255	143	100.0%	1,697,873	1,695,037
Departmental agencies and accounts	744,505	-	(12,911)	731,594	444,160	287,434	60.7%	756,668	424,954
Higher education institutions	-	-	-	-	14,624	(14,624)	-	-	14,647
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	988,779	-	(3,037)	985,742	1,207,423	(221,681)	122.5%	941,074	1,198,967
Public corporations	988,779	-	(3,037)	985,742	1,188,186	(202,444)	120.5%	941,074	1,178,770
Subsidies on products	872,043	-	-	872,043	872,043	-	100.0%	820,204	-
Other transfers to public corporations	116,736	-	(3,037)	113,699	316,143	(202,444)	278.1%	120,870	1,178,770
Private enterprises	-	-	-	-	19,237	(19,237)	-	-	20,197
Other transfers to private enterprises	-	-	-	-	19,237	(19,237)	-	-	20,197
Non-profit institutions	-	-	-	-	50,988	(50,988)	-	-	56,338
Households	-	-	62	62	60	2	96.8%	131	131
Social benefits	-	-	62	62	62	2	96.8%	131	131
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	1,782,976	-	(16,598)	1,766,378	1,764,009	2,369	99.9%	1,741,795	1,738,347

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme:	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
and Green Economy	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	10,932	162	(62)	11,032	10,259	773	93.0%	11,213	11,055
Compensation of employees	7,227	1,854	-	9,081	9,033	48	99.5%	9,927	9,889
Salaries and wages	6,654	1,404	-	8,058	8,032	26	99.7%	8,816	8,780
Social contributions	573	450	-	1,023	1,001	22	97.8%	1,111	1,109
Goods and services	3,705	(1,692)	(62)	1,951	1,226	725	62.8%	1,286	1,166
Administrative fees	59	-	-	59	17	42	28.8%	59	51
Advertising	73	-	-	73	-	73	-	2	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental activities	86	-	-	86	5	81	5.8%	13	8
Communication (G&S)	322	-	-	322	186	136	57.8%	91	84
Computer services	69	-	-	69	-	69	-	9	-
Consultants: Business & advisory services	1,511	(1,200)	-	311	264	47	84.9%	14	-
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	40	-	-	40	16	24	40.0%	41	-
Entertainment	19	-	-	19	2	17	10.5%	4	3
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & Accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	5	-	-	5	-	5	-	-	-
Consumable supplies	-	-	-	-	-	-	-	5	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	1,282	(523)	(62)	697	657	40	94.3%	977	971
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	17	31	-	48	48	-	100.0%	22	18
Venues and facilities	222	-	-	222	31	191	14.0%	49	31
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.1 Sector Innovation and Green Economy	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	921,730	-	62	921,792	921,790	2	100.0%	862,811	862,811
Departmental agencies and accounts	23,360	-	-	23,360	4,205	19,155	18.0%	16,463	1,473
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	898,370	-	-	898,370	907,545	(9,175)	101.0%	846,348	851,262
Public corporations	898,370	-	-	898,370	907,545	(9,175)	101.0%	846,348	851,262
Subsidies on products	872,043	-	-	872,043	872,043	-	100.0%	820,204	-
Other transfers to public corporations	26,327	-	-	26,327	35,502	(9,175)	134.9%	26,144	851,262
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	9,980	(9,980)	-	-	10,076
Households	62	-	62	62	60	2	96.8%	-	-
Social benefits	-	-	62	62	60	2	96.8%	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	932,662	162	-	932,824	932,049	775	99.9%	874,024	873,866

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017											
Sub-programme: 5.2 Innovation for Inclusive Development	Adjusted appropriation	Shifting of funds	2016/17		Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16		
			R'000	R'000					R'000	R'000	Final appropriation
Current payments	12,924	R'000 (1,464)	R'000	R'000	R'000	11,275	R'000	185	%	R'000	R'000
Compensation of employees											
Salaries and wages	9,221	(2,234)	-	-	6,987	6,927	60	99.1%	99.4%	6,242	6,193
Social contributions	8,081	(1,834)	-	-	6,247	6,207	40	99.4%	99.4%	5,592	5,552
	1,140	(400)	-	-	740	720	20	97.3%	97.3%	650	641
Goods and services	3,703	770	-	-	4,473	4,348	125	97.2%	97.2%	822	717
Administrative fees	39	-	-	-	39	17	22	43.6%	43.6%	19	15
Advertising	7	-	-	-	7	5	2	71.4%	71.4%	3	-
Minor assets	-	-	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-	-	-
Catering: Departmental	-	-	-	-	-	-	-	-	-	-	-
activities	52	(24)	-	-	28	16	12	57.1%	57.1%	32	26
Communication (G&S)	135	-	-	-	135	96	39	71.1%	71.1%	50	45
Computer services	-	-	-	-	-	-	-	-	-	-	-
Consultants: Business &	-	-	-	-	-	-	-	-	-	-	-
advisory services	3,045	(3,015)	-	-	30	-	30	-	-	15	10
Legal services	-	-	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	-	-	-	-	-	-	-	-	-	-	-
Entertainment	147	3,180	-	-	3,327	3,322	5	99.8%	99.8%	67	-
Fleet services (incl. government motor transport)	12	-	-	-	12	2	10	16.7%	16.7%	10	7
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-	-	-
Inventory: Material and supplies	-	-	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-	-	-
Operating leases	-	-	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-	-	-
Travel and subsistence	54	779	-	-	833	833	-	100.0%	100.0%	617	612
Training and development	-	-	-	-	-	-	-	-	-	-	-
Operating payments	22	35	-	-	57	57	-	100.0%	100.0%	7	2
Venues and facilities	190	(185)	-	-	5	-	5	-	-	2	-
Rental and hiring	-	-	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.2 Innovation for Inclusive Development	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	336,589	-	(3,358)	333,231	333,231	-	100.0%	329,532	327,533
Departmental agencies and accounts	336,589	-	(3,358)	333,231	297,015	36,216 (8,001)	89.1%	329,438	302,492
Higher education institutions	-	-	-	-	8,001	-	-	-	4,498
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	19,295	(19,295)	-	-	12,343
Subsidies on products	-	-	-	-	19,295	(19,295)	-	-	12,343
Other transfers to public corporations	-	-	-	-	19,295	(19,295)	-	-	12,343
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	8,920	(8,920)	-	-	8,106
Social benefit	-	-	-	-	-	-	-	94	94
Other transfers to households	-	-	-	-	-	-	-	94	94
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	349,513	(1,464)	(3,358)	344,691	344,506	185	99.9%	336,596	334,443

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.3 Science and Technology Investment	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	2015/16	
								Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	11,774	3,354	-	15,128	14,957	171	98.9%	14,768	14,624
Compensation of employees	10,207	1,662	-	11,869	11,829	40	99.7%	11,858	11,854
Salaries and wages	9,084	1,582	-	10,666	10,634	32	99.7%	10,672	10,670
Social contributions	1,123	80	-	1,203	1,195	8	99.3%	1,186	1,184
Goods and services	1,567	1,692	-	3,259	3,128	131	96.0%	2,910	2,770
Administrative fees	15	-	-	15	8	7	53.3%	23	21
Advertising	20	(6)	-	14	-	14	-	88	6
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	-	-	-	-	-	-	-	-
Catering: Departmental	-	-	-	-	-	-	-	-	-
activities	45	6	-	51	51	-	100.0%	80	76
Communication (G&S)	63	179	-	242	242	-	100.0%	117	114
Computer services	-	-	-	-	-	-	-	-	-
Consultants: Business & advisory services	-	129	-	129	129	-	100.0%	11	6
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	-	-	-	-	-	-	-	-
Agency and support/ outsourced services	-	-	-	-	-	-	-	-	-
Entertainment	920	1,400	-	2,320	2,308	12	99.5%	2,041	2,032
Fleet services (incl. government motor transport)	-	4	-	4	4	-	100.0%	5	1
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery	-	-	-	-	-	-	-	-	-
printing and office supplies	63	(20)	-	43	23	20	53.5%	-	-
Operating leases	-	-	-	-	-	-	-	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	376	-	-	376	358	18	95.2%	425	409
Training and development	-	-	-	-	-	-	-	3	-
Operating payments	7	-	-	7	5	2	71.4%	65	57
Venues and facilities	58	-	-	58	-	58	-	52	48
Rental and hiring	-	-	-	-	-	-	-	-	-

VOTE 30 APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.3 Science and Technology Investment	2016/17				2015/16				
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	16,734	-	(9,533)	7,201	7,201	-	100.0%	17,685	17,685
Departmental agencies and accounts	16,734	-	(9,533)	7,201	7,201	-	100.0%	17,685	17,685
Higher education institutions	-	-	-	-	-	-	-	-	-
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	-	-	-	-	-
Public corporations	-	-	-	-	-	-	-	-	-
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	-	-	-	-	-	-	-	-	-
Private enterprises	-	-	-	-	-	-	-	-	-
Other transfers to private enterprises	-	-	-	-	-	-	-	-	-
Non-profit institutions	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-
Social benefit	-	-	-	-	-	-	-	-	-
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	28,508	3,354	(9,533)	22,329	22,158	171	99.2%	32,453	32,309

NOTES TO THE APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.4 Technology Localisation, Beneficiation and Advanced Manufacturing	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Current payments	14,062	(2,052)		11,360	10,263	1,097	90.3%	10,877	10,721
Compensation of employees	11,183	(1,282)	(650)	9,251	9,211	40	99.6%	9,252	9,171
Salaries and wages	10,062	(1,082)	(650)	8,330	8,303	27	99.7%	8,354	8,286
Social contributions	1,121	(200)	-	921	908	13	98.6%	898	885
Goods and services	2,879	(770)	-	2,109	1,052	1,057	49.9%	1,625	1,550
Administrative fees	19	26	-	45	45	-	100.0%	25	20
Advertising	-	-	-	-	-	-	-	-	-
Minor assets	-	-	-	-	-	-	-	-	-
Audit costs: External	-	-	-	-	-	-	-	-	-
Bursaries: Employees	-	6	-	6	6	-	100.0%	-	-
Catering: Departmental activities	24	-	-	24	-	24	-	31	24
Communication (G&S)	64	145	-	209	209	-	100.0%	27	-
Computer services	-	-	-	-	-	-	-	93	82
Consultants: Business & advisory services	1,460	(989)	-	471	5	466	1.1%	-	-
Legal services	-	-	-	-	-	-	-	-	-
Contractors	-	11	-	11	-	11	-	-	-
Agency and support/ outsourced services	-	28	-	28	28	-	100.0%	-	-
Entertainment	3	3	-	6	6	-	100.0%	7	4
Fleet services (incl. government motor transport)	-	-	-	-	-	-	-	-	-
Inventory: Clothing & accessories	-	-	-	-	-	-	-	-	-
Inventory: Fuel, oil and gas	-	-	-	-	-	-	-	-	-
Inventory: Material and Supplies	-	-	-	-	-	-	-	-	-
Inventory: Other supplies	-	-	-	-	-	-	-	-	-
Consumable supplies	-	-	-	-	-	-	-	-	-
Consumable: Stationery, printing and office supplies	-	-	-	-	-	-	-	-	-
Operating leases	29	-	-	29	19	10	65.5%	-	-
Property payments	-	-	-	-	-	-	-	-	-
Travel and subsistence	1,193	-	-	1,193	724	469	60.7%	1,004	998
Training and development	-	-	-	-	-	-	-	-	-
Operating payments	16	-	-	16	10	6	62.5%	430	421
Venues and facilities	71	-	-	71	-	71	-	4	-
Rental and hiring	-	-	-	-	-	-	-	-	-

NOTES TO THE APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Detail per programme 5 – Socio –economic Innovation Partnerships for the year ended 31 March 2017									
Sub-programme: 5.4 Technology Localisation, Beneficiation and Advanced Manufacturing	2016/17					2015/16			
	Adjusted appropriation	Shifting of funds	Virement	Final appropriation	Actual expenditure	Variance	Expenditure as % of final appropriation	Final appropriation	Actual expenditure
	R'000	R'000	R'000	R'000	R'000	R'000	%	R'000	R'000
Transfers and subsidies	458,231	-	(3,057)	455,174	455,033	141	100.0%	487,845	487,008
Departmental agencies and accounts	367,822	-	(20)	367,802	135,739	232,063	36.9%	393,082	103,304
Higher education institutions	-	-	-	-	6,623	(6,623)	-	-	10,149
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	90,409	-	(3,037)	87,372	280,583	(193,211)	321.1%	94,726	335,362
Public corporations	90,409	-	(3,037)	87,372	261,346	(173,974)	299.1%	94,726	315,165
Subsidies on products	-	-	-	-	-	-	-	-	-
Other transfers to public corporations	90,409	-	(3,037)	87,372	261,346	(173,974)	299.1%	94,726	315,165
Private enterprises	-	-	-	-	19,237	(19,237)	-	-	20,197
Other transfers to private enterprises	-	-	-	-	19,237	(19,237)	-	-	20,197
Non-profit institutions	-	-	-	-	32,088	(32,088)	-	-	38,156
Households	-	-	-	-	-	-	-	37	37
Social benefits	-	-	-	-	-	-	-	37	37
Other transfers to households	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	-	-	-	-	-	-	-	-	-
Transport equipment	-	-	-	-	-	-	-	-	-
Other machinery and equipment	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	472,293	(2,052)	(3,707)	466,534	465,296	1,238	99.7%	498,722	497,729

NOTES TO THE APPROPRIATION STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

Details of transfers and subsidies as per the Appropriation Act (after virement)

Detail of these transactions can be viewed in the note to the Transfers and Subsidies, disclosure notes and Annexure 1 (B, C, E, D, F and G) to the Annual Financial Statements.

Details of specifically and exclusively appropriated amounts voted (after virement)

Detail of these transactions can be viewed in note 1 (Annual Appropriation) to the Annual Financial Statements.

Details of payments for financial assets

The details of these transactions can be viewed in Note 7 to the Annual Financial Statements.

Explanations of material variances from amounts voted (after virement):

4.1 Per Programme:	Final appropriation	Actual expenditure	Variance R'000	Variance as a % of final appropriation
	R'000	R'000	R'000	%

Administration

Payments for capital assets	24,465	15,478	8,987	37%
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The variance was due to the delays in the procurement of Information Technology (IT) infrastructure.

4.2 Per economic classification	Final appropriation	Actual expenditure	Variance	Variance as a % of final appropriation
	R'000	R'000	R'000	%

Current payments

Compensation of employees	319,278	319,037	241	0.1%
Goods and services	212,133	188,876	23,257	11%
Interest and rent on land	-	-	-	-

Transfers and subsidies

Departmental agencies and accounts	5,295,890	4,696,599	599,291	11%
Higher education Institutions	133,981	210,329	(76,348)	-57%
Public corporations and private enterprises	1,295,586	1,793,985	498,399	38%
Non-profit institutions	146,740	157,726	(10,986)	-7%
Households	792	1,438	(646)	-82%

Payments for capital assets

Machinery and equipment	24,465	15,478	8,987	37%
Intangible assets	-	-	-	-

Payments for financial assets	131	126	5	4%
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The variance under transfers and subsidies are due to reclassification of expenditure and the variance under payments for capital assets was due to delays in the procurement of IT infrastructure.

STATEMENT OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED 31 MARCH 2017

PERFORMANCE	Note	2016/17 R'000	2015/16 R'000
REVENUE			
Annual appropriation	1	7,428,996	7,466,106
Departmental revenue	2	8,199	514
Aid assistance	3	32,345	158,253
TOTAL REVENUE		7,469,540	7,624,873
EXPENDITURE			
Current expenditure			
Compensation of employees	4	319,037	301,087
Goods and services	5	188,876	163,723
Aid assistance	3	1,270	2,497
Total current expenditure		509,183	467,307
Transfers and subsidies			
Transfers and subsidies	7	6,860,077	6,956,058
Aid assistance	3	29,650	151,871
Total transfers and subsidies		6,889,727	7,107,929
Expenditure for capital assets			
Tangible capital assets	8	15,478	16,466
Intangible assets	9	-	-
Total expenditure for capital assets		15,478	16,466
Unauthorised expenditure approved without funding		-	-
Payment for financial assets	6	126	128
TOTAL EXPENDITURE		7,414,514	7,591,830
SURPLUS FOR THE YEAR		55,026	33,043
Reconciliation of net surplus for the year			
Voted funds		45,402	28,644
Departmental revenue	14	8,199	514
Aid assistance	3	1,425	3,885
SURPLUS FOR THE YEAR		55,026	33,043

STATEMENT OF FINANCIAL POSITION

FOR THE YEAR ENDED 31 MARCH 2017

POSITION	Note	2016/17 R'000	2015/16 R'000
ASSETS			
Current assets		46,478	32,127
Cash and cash equivalents	9	44,468	31,111
Prepayments and advances	10	638	439
Receivables	11	1,372	577
Non-current assets		415	514
Receivables	11	415	514
TOTAL ASSETS		46,893	32,641
LIABILITIES			
Current liabilities		46,837	32,564
Voted funds to be surrendered to the Revenue Fund	13	45,401	28,644
Departmental revenue to be surrendered to the Revenue Fund	14	6	8
Payables	15	5	27
Aid assistance repayable	3	1,425	3,885
TOTAL LIABILITIES		46,837	32,564
NET ASSETS		56	77
Represented by:			
Recoverable revenue		56	77
TOTAL		56	77

STATEMENT OF CHANGES IN NET ASSETS

FOR THE YEAR ENDED 31 MARCH 2017

NET ASSETS	Note	2016/17 R'000	2015/16 R'000
Recoverable revenue			
Opening balance		77	118
Transfers:		(21)	(41)
Debts revised		3	3
Debts recovered (included in departmental receipts)		(27)	(130)
Debts raised		3	86
Closing balance		56	77
TOTAL		56	77

CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2017

CASH FLOW	Note	2016/17 R'000	2015/16 R'000
CASH FLOWS FROM OPERATING ACTIVITIES			
Receipts		7,469,494	7,624,873
Annual appropriated funds received	1.1	7,428,995	7,466,106
Departmental revenue received	2	8,145	508
Interest received	2.2	9	6
Aid assistance received	3	32,345	158,253
Net (increase) in working capital		(917)	291
Surrendered to Revenue Fund		(36,845)	(91,446)
Surrendered to RDP Fund/Donor		(3,885)	(11,675)
Current payments		(509,183)	(467,307)
Interest paid		-	-
Payments for financial assets		(126)	(128)
Transfers and subsidies paid		(6,889,727)	(7,107,929)
Net cash flow available from operating activities	16	28,811	(53,321)
CASH FLOWS FROM INVESTING ACTIVITIES			
Payments for capital assets	8	(15,478)	(16,466)
Proceeds from sale of capital assets	2.3	45	-
Net cash flows from investing activities		(15,433)	(16,466)
CASH FLOWS FROM FINANCING ACTIVITIES			
Increase/(decrease) in net assets		(21)	(41)
Net cash flows from financing activities		(21)	(41)
Net increase/(decrease) in cash and cash equivalents		13,357	(69,828)
Cash and cash equivalents at the beginning of the period		31,111	100,939
Cash and cash equivalents at end of period	17	44,468	31,111

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

The financial statements have been prepared in accordance with the following policies, which have been applied consistently in all material aspects, unless otherwise indicated. Management has concluded that the financial statements fairly present the Department's primary and secondary information.

The historical cost convention has been used, except where otherwise indicated. Management has used assessments and estimates in preparing the annual financial statements. These are based on the best information available at the time of preparation.

Where appropriate and meaningful, additional information has been disclosed to enhance the usefulness of the Financial statements and to comply with the statutory requirements of the Public Finance Management Act, Act 1 of 1999 (as amended by Act 29 of 1999), and the Treasury Regulations issued in terms of the Act and the Division of Revenue Act.

1. Basis of preparation

The financial statements have been prepared in accordance with the Modified Cash Standard.

2. Going concern

The financial statements have been prepared on a going concern basis for the following reasons, among others:

- (i) The Department was allocated a budget over the Medium Term Expenditure Framework period that includes R7.6 billion that was allocated for the next financial year for its operations. This budget will assist in paying for short-term financial obligations such as personnel and other priority projects.
- (ii) The Department's five-year (2015-2020) strategic plan is still ongoing. The plan is being implemented and will only be reviewed after 2020.

3. Presentation currency

All amounts have been presented in South African rands (R), which is also the functional currency of the Department.

4. Rounding

Unless otherwise stated, all financial figures have been rounded off to the nearest one thousand rand (R'000).

5. Foreign currency translation

Cash flows arising from foreign currency transactions are translated into South African rands using the spot exchange rates prevailing at the date of payment/receipt.

6. Comparative information

6.1 Prior period comparative information

Prior period comparative information has been presented in the current year's financial statements. Where necessary, figures included in the prior period financial statements have been reclassified to ensure that the format in which the information is presented is consistent with the format of the current year's financial statements.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

6.2 Current year comparison with budget

A comparison between the approved, final budget and actual amounts for each Programme and economic classification is included in the appropriation statement.

7. Revenue

7.1 Appropriated funds

Appropriated funds comprise departmental allocations. Appropriated funds are recognised in the statement of financial performance on the date the appropriation becomes effective. Adjustments to the appropriated funds made in terms of the adjustments budget process are recognised in the statement of financial performance on the date the adjustments come into effect.

The net amount of any appropriated funds due to or from the National Revenue Fund at the reporting date is recognised as payable or receivable in the Statement of Financial Position.

7.2 Departmental revenue

The departmental revenue is recognised in the Statement of Financial Performance when received and is subsequently paid into the National Revenue Fund, unless otherwise stated. Any amount owing to the National Revenue Fund at the reporting date is recognised as payable in the Statement of Financial Position.

7.3 Accrued departmental revenue

Accruals in respect of departmental revenue (excluding tax revenue) are recorded in the notes to the financial statements when –

- it is probable that the economic benefits or service potential associated with the transaction will flow to the Department; and
- the amount of revenue can be measured reliably.

The accrued revenue (and related interest and penalties) is measured at amounts receivable.

8. Expenditure

8.1 Compensation of employees

8.1.1 Salaries and wages

Salaries and wages are recognised in the Statement of Financial Performance on the date of payment.

8.1.2 Social contributions

Social contributions made by the Department in respect of current employees are recognised in the Statement of Financial Performance on the date of payment. Social contributions made by the Department in respect of ex-employees are classified as transfers to households in the Statement of Financial Performance on the date of payment.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

8.2. Other expenditure

Other expenditure such as goods and services, transfers and subsidies, and payments for capital assets are recognised in the Statement of Financial Performance on the date of payment. The expense is classified as a capital expense if the total consideration paid is more than the capitalisation threshold.

8.3 Accruals and payables not recognised

Accruals and payables not recognised are recorded in the notes to the financial statements when the goods are received or, in the case of services, when they are rendered to the Department or, in the case of transfers and subsidies, when they are due and payable. Accruals and payables not recognised are measured at cost.

Leases

8.3.1 Operating lease

Operating lease payments made during the reporting period are recognised as current expenditure in the Statement of Financial Performance on the date of payment. The operating lease commitments are recorded in the notes to the financial statements.

8.3.2 Finance leases

Finance lease payments made during the reporting period are recognised as capital expenditure in the Statement of Financial Performance on the date of payment. The finance lease commitments are recorded in the notes to the financial statements and are not apportioned between the capital and interest portions.

Finance leases acquired at the end of the lease term are recorded and measured at the lower of-

- cost, being the fair value of the asset; or
- the sum of the minimum lease payments made, including any payments made to acquire ownership at the end of the lease term, excluding interest.

9. Aid assistance

9.1 Aid assistance received

Aid assistance received in cash is recognised in the statement of financial performance when received. In-kind aid assistance is recorded in the notes to the financial statements on the date of receipt and is measured at fair value.

Aid assistance not spent for the intended purpose and any unutilised funds from aid assistance that are required to be refunded to the donor are recognised as a payable in the Statement of Financial Position.

9.2 Aid assistance paid

Aid assistance paid is recognised in the Statement of Financial Performance on the date of payment. Aid assistance payments made prior to the receipt of funds are recognised as a receivable in the Statement of Financial Position.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

10. Cash and cash equivalents

Cash and cash equivalents are stated at cost in the Statement of Financial Position. Bank overdrafts are shown separately on the face of the Statement of Financial Position. For the purposes of the Cash Flow Statement, cash and cash equivalents comprise cash on hand, deposits held, other short-term highly liquid investments and bank overdrafts.

11. Prepayments and advances

Prepayments and advances are recognised in the Statement of Financial Position when the Department receives or disburses the cash. Prepayments and advances are initially and subsequently measured at cost.

12. Loans and receivables

Loans and receivables are recognised in the Statement of Financial Position at cost plus accrued interest. Where interest is charged, less amounts already settled or written-off. Write-offs are made according to the Department's write-off policy.

13. Investments

Investments are recognised in the Statement of Financial Position at cost.

14. Financial assets

14.1 Financial assets (not covered elsewhere)

A financial asset is recognised initially at its cost plus transaction costs that are directly attributable to the acquisition or issue of the financial. At the reporting date, a department shall measure its financial assets at cost, less amounts already settled or written-off, except for recognised loans and receivables, which are measured at cost plus accrued interest, where interest is charged, less amounts already settled or written-off.

14.2. Impairment of financial assets

Where there is an indication of impairment of a financial asset, an estimation of the reduction is the recorded carrying value, to reflect the best estimate of the amount of the future economic benefits expected to be recovered from that asset. This is recorded in the notes to the financial statements.

15. Payables

Loans and payables are recognised in the Statement of Financial Position at cost.

16. Capital assets

16.1 Immovable capital assets

Immovable capital assets are initially recorded in the notes to the financial statements at cost. Immovable capital assets acquired through a non-exchange transaction are measured at fair value as at the date of acquisition.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

Where the cost of immovable capital assets cannot be determined reliably, the immovable capital assets are measured at R1 unless the fair value of the asset has been reliably estimated, in which case the fair value is used.

All assets acquired prior to 1 April 2002 (or a later date as approved by the OAG) may be recorded at R1.

Immovable capital assets are subsequently carried at cost and are not subject to depreciation or impairment.

Subsequent expenditure that is of a capital nature is added to the cost of the asset at the end of the capital project unless the immovable asset is recorded by another department, in which case the completed project costs are transferred to that department.

16.3 Movable capital assets

Movable capital assets are initially recorded in the notes to the financial statements at cost. Movable capital assets acquired through a non-exchange transaction are measured at fair value as at the date of acquisition.

Where the cost of movable capital assets cannot be determined accurately, the movable capital assets are measured at fair value and, where fair value cannot be determined, the movable assets are measured at R1.

All assets acquired prior to 1 April 2002 (or late as approved by the Office of the Accountant General) are measured at R1.

Movable capital assets are subsequently carried at cost and are not subject to depreciation or impairment.

Subsequent expenditure that is of a capital nature is added to the cost of the asset at the end of the capital project, unless the movable asset is recorded by another department, in which case the completed project costs are transferred to the department.

16.4 Intangible assets

Intangible assets are initially recorded in the notes to the financial statements at cost. Intangible assets acquired through a non-exchange transaction are measured at fair value as at the date of acquisition.

Internally generated intangible assets are recorded in the notes to the financial statements when the Department commences the development phase of the project.

Where the cost of intangible assets cannot be determined accurately, the intangible capital assets are measured at fair value and, where fair value cannot be determined, the intangible assets are measured at R1. All assets acquired prior to 1 April 2002 (or a later date as approved by the OAG) are recorded at R1. Intangible assets are subsequently carried at cost and are not subject to depreciation or impairment.

Subsequent expenditure that is of a capital nature is added to the cost of the asset at the end of the capital project unless the intangible asset is recorded by another department/entity, in which case the completed project costs are transferred to that department.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

17. Provisions and contingents

17.1 Provisions

Provisions are recorded in the notes to the financial statements when there is a present legal or constructive obligation to forfeit economic benefits as a result of events in the past and it is probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation and a reliable estimate of the obligation can be made. The provision is measured as the best estimate of the funds required to settle the present obligation at the reporting date.

17.2 Contingent liabilities

Contingent liabilities are recorded in the notes to the financial statements when there is a possible obligation that arises from past events, and the existence of which will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not within the control of the Department, or when there is a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation or the amount of the obligation cannot be measured reliably.

17.3 Contingent assets

Contingent assets are recorded in the notes to the financial statements when a possible asset arises from past events, the existence of which will be confirmed by the occurrence or non-occurrence of one or more uncertain future events not within the control of the Department.

17.4 Commitments

Commitments are recorded at cost in the notes to the financial statements when there is a contractual arrangement or an approval by management in a manner that raises a valid expectation that the Department will discharge its responsibilities, thereby incurring future expenditure that will result in the outflow of cash.

18. Unauthorised expenditure

Unauthorised expenditure is recognised in the Statement of Financial Position until such time as the expenditure is either –

- approved by Parliament with funding and the related funds are received; or
- approved by Parliament without funding and is written off against the appropriation in the Statement of Financial Performance; or
- transferred to receivables for recovery.

Unauthorised expenditure is measured at the amount of the confirmed unauthorised expenditure.

19. Fruitless and wasteful expenditure

Fruitless and wasteful expenditure is recorded in the notes to the financial statements when confirmed. The amount recorded is equal to the total value of the fruitless and/or wasteful expenditure incurred.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

Fruitless and wasteful expenditure is removed from the notes to the financial statements when it is resolved or transferred to receivables for recovery. Fruitless and wasteful expenditure receivables are measured at the amount that is expected to be recoverable and are de-recognised when settled or subsequently written-off as irrecoverable.

20. Irregular expenditure

Irregular expenditure is recorded in the notes to the financial statements when confirmed. The amount recorded is equal to the value of the irregular expenditure incurred unless it is impracticable to determine, in which case reasons for this are provided in the note.

Irregular expenditure is removed from the note when it is either condoned by the relevant authority, transferred to receivables for recovery, or not condoned, and is not recoverable.

Irregular expenditure receivables are measured at the amount that is expected to be recoverable and are de-recognised when settled or subsequently written-off as irrecoverable.

21. Changes in accounting estimates

Changes in accounting policies that are effected by management have been applied retrospectively in accordance with MCS requirements, except to the extent that it is impracticable to determine the period-specific effects or the cumulative effect of the change in policy. In such instances the Department will restate the opening balances of assets, liabilities and net assets for the earliest period for which retrospective restatement is practicable.

Changes in accounting estimates are applied prospectively in accordance with MCS requirements.

Correction of errors is applied retrospectively in the period in which the error has occurred in accordance with MCS requirements, except to the extent that it is impracticable to determine the period-specific effects or the cumulative effect of the error. In such cases the Department will restate the opening balances of assets, liabilities and net assets for the earliest period for which retrospective restatement is practicable.

22. Events after the reporting date

Events after the reporting date that are classified as adjusting events are accounted for in the financial statements, if occurred. The events after the reporting date that are classified as non-adjusting events after the reporting date are disclosed in the notes to the financial statements, if occurred.

23. Agent – Principal arrangements

The Department is party to a principal-agent arrangement for the South African National Space Agency. In terms of the arrangement the Department is the principal. All related revenues, expenditures, assets and liabilities have been recognised or recorded in terms of the relevant policies listed herein. Additional disclosures have been provided in the notes to the financial statements where appropriate.

ACCOUNTING POLICIES

FOR THE YEAR ENDED 31 MARCH 2017

24. Departures from the MCS requirements

Management has concluded that the financial statements fairly present the Department's primary and secondary information; that the Department complied with the Standard and that there was no departure from any particular requirement to achieve fair presentation.

25. Capitalisation reserve

The capitalisation reserve comprises financial assets and/or liabilities originating in a prior reporting period but which are recognised in the Statement of Financial Position for the first time in the current reporting period. Amounts are recognised in the capitalisation reserves when identified in the current period and are transferred to the National Revenue Fund when the underlying asset is disposed and the related funds are received.

26. Recoverable revenue

Amounts are recognised as recoverable revenue when a payment made in a previous financial year becomes recoverable from a debtor in the current financial year. Amounts are either transferred to the National Revenue Fund when recovered or are transferred to the Statement of Financial Performance when written-off.

27. Related-party transactions

A related-party transaction is a transfer of resources, services or obligations between the reporting entity and a related party. Related-party transactions within the Minister's portfolio are recorded in the notes to the financial statements when the transaction is not at arm's length.

Key management personnel are those persons having the authority and responsibility for planning, directing and controlling the activities of the Department. The number of individuals and their full compensation is recorded in the notes to the financial statements.

28. Inventories

At the date of acquisition, inventories are recorded at cost price in the Statement of Financial Performance. Where inventories are acquired as part of a non-exchange transaction, the cost of inventory is its fair value at the date of acquisition. Inventories are subsequently measured at the lower of cost and net realisable value or the lower of cost and current replacement value. Subsequent measurement of the cost of inventory is determined on the weighted average basis.

29. Public-private partnerships

Public-private partnerships (PPP) are accounted for on the basis of the nature and/or the substance of the partnership. The transaction is accounted for in accordance with the relevant accounting policies. The summary of the significant terms of the PPP agreement, the parties to the agreement, and the date of commencement of the agreement, together with the description and nature of the concession fees received, the unitary fees paid, and the rights and obligations of the Department, are recorded in the notes to the financial statements.

30. Employee benefits

The value of each major class of employee benefit obligation (accruals, payables not recognised and provisions) is disclosed in the employee benefits note.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

1. Annual appropriation

1.1 Annual appropriation

Included are funds appropriated in terms of the Appropriation Act (and the Adjustments Appropriation Act) for National Departments (Voted Funds):

	Final appropriation	Actual funds 2016/2017	Funds not requested/ not received	Final appropriation 2015/2016	Appropriation received 2015/16
	R'000	R'000	R'000	R'000	R'000
Administration	356,110	356,110	-	309,823	309,823
Technology Innovation	1,027,588	1,027,587	1	1,070,645	1,070,645
International Cooperation and Resources	121,316	121,316	-	116,921	116,921
Research Development and Support	4,157,604	4,157,604	-	4,226,922	4,226,922
Socio-economic Innovation Partnerships	1,766,378	1,766,378	-	1,741,795	1,741,795
Total	7,428,996	7,428,995	1	7,466,106	7,466,106

2. Departmental revenue

	Note	2016/17 R'000	2015/16 R'000
Sales of goods and services other than capital assets	2.1	57	51
Interest, dividends and rent on land	2.2	9	6
Sale of capital assets	2.3	45	-
Transactions in financial assets and liabilities	2.4	8,088	457
Departmental revenue collected		8,199	514

2.1 Sales of goods and services other than capital assets

	Note	2016/17 R'000	2015/16 R'000
Other sales	2	57	51
Total		57	51

2.2 Interest, dividends and rent on land

	Note	2016/17 R'000	2015/16 R'000
Interest	2	9	6
Total		9	6

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

2.3 Sale of capital assets

	Note	2016/17 R'000	2015/16 R'000
Machinery and equipment	2	45	-
Total		45	-

2.4 Transactions in financial assets and liabilities

	Note	2016/17 R'000	2015/16 R'000
Other receipts, including recoverable revenue	2	8,088	457
Total		8,088	457

3. Aid assistance

3.1 Aid assistance received in cash from RDP

	Note	2016/17 R'000	2015/16 R'000
Foreign	3		
Opening balance		3,885	11,675
As restated		3,885	11,675
Transferred from Statement of Financial Performance		1,425	3,885
Transferred to/from retained funds		-	-
Paid during the year		(3,885)	(11,675)
Closing balance		1,425	3,885

The note for Aid assistance, Note 3, has been changed in terms of the Modified Cash Standards and Accounting Manual for Departments as instructed by National Treasury.

3.2 Analysis of balance by source

	Note	2016/17 R'000	2015/16 R'000
Aid assistance from RDP	3	1,425	3,885
RDP Fund		1,425	3,885
Closing balance		1,425	3,885

3.3 Analysis of balance

	Note	2016/17 R'000	2015/16 R'000
Aid assistance repayable	3	1,425	3,885
Closing balance		1,425	3,885

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

4. Compensation of employees

4.1 Salaries and wages

	Note	2016/17	2015/16
	4	R'000	R'000
Basic salary		210,762	198,245
Performance award		4,643	4,584
Service-based		55	115
Compensative/circumstantial		2,891	2,649
Periodic payments		-	13
Other non-pensionable allowances		67,522	64,333
Total		285,873	269,939

4.2 Social contributions

	Note	2016/17	2015/16
	4	R'000	R'000
Employer contributions			
Pension		26,612	24,828
Medical		6,518	6,288
Bargaining council		34	32
Total		33,164	31,148
Total compensation of employees		319,037	301,087

The increase of 5,6% on compensation actual expenditure was due to annual salary adjustments and pay progressions for employees during the financial year.

Average number of employees	449	454
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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

5. Goods and services

	Note	2016/17 R'000	2015/16 R'000
Administrative fees		1,222	1,880
Advertising		28,769	23,085
Minor assets	5.1	249	537
Bursaries (employees)		1,479	1,067
Catering		3,507	5,138
Communication		8,693	7,540
Computer services	5.2	20,595	10,417
Consultants: Business and advisory services		9,867	3,470
Legal services		977	580
Contractors		3,523	7,547
Agency and support/outsourced services		15,303	8,132
Entertainment		656	1,021
Audit cost – external	5.3	4,249	5,061
Fleet services		882	765
Inventory	5.4	-	223
Consumables	5.5	6,115	3,655
Operating leases		4,117	2,905
Property payments	5.6	10,455	6,658
Rental and hiring		1,281	1,503
Travel and subsistence	5.7	46,485	46,670
Venues and facilities		5,662	12,094
Training and development		4,944	4,995
Other operating expenditure	5.8	9,846	8,780
Total		188,876	163,723

5.1 Minor assets

	Note	2016/17 R'000	2015/16 R'000
Tangible assets	5	249	537
Machinery and equipment		249	537
Intangible assets			-
Total		249	537

5.2 Computer services

	Note	2016/17 R'000	2015/16 R'000
SITA computer services	5	9,927	6,095
External computer service providers		10,668	4,322
Total		20,595	10,417

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

5.3 Audit cost – External

	Note	2016/17 R'000	2015/16 R'000
Regularity audits	5	4,249	5,061
Total		4,249	5,061

5.4 Inventory

	Note	2016/17 R'000	2015/16 R'000
Clothing, material and accessories	5	-	47
Materials and supplies		-	72
Fuel, oil and gas		-	104
Total		-	223

5.5 Consumables

	Note	2016/17 R'000	2015/16 R'000
Consumables supplies	5	1,281	1,206
Uniform and clothing		10	6
Household supplies		333	153
IT consumables		321	228
Other consumables		617	819
Stationery, printing and office supplies		4,834	2,449
Total		6,115	3,655

5.6 Property payments

	Note	2016/17 R'000	2015/16 R'000
Municipal services	5	3,644	4,080
Property maintenance and repairs		2,181	-
Other		4,630	2,578
Total		10,455	6,658

5.7 Travel and subsistence

	Note	2016/17 R'000	2015/16 R'000
Local	5	27,545	27,899
Foreign		18,940	18,771
Total		46,485	46,670

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

5.8 Other operating expenditure

	Note	2016/17	2015/16
	5	R'000	R'000
Professional bodies, membership and subscription fees		4,546	3,435
Resettlement costs		275	754
Other		5,025	4,591
Total		9,846	8,780

6. Payments for financial assets

	Note	2016/17	2015/16
		R'000	R'000
Other material losses written off	6.1	123	124
Debts written off	6.2	3	4
Total		126	128

6.1 Other material losses written off

	Note	2016/17	2015/16
	6	R'000	R'000
Nature of losses			
Losses in respect of damaged vehicle written off		123	124
Total		123	124

6.2 Debts written off

	Note	2016/17	2015/16
	6	R'000	R'000
Nature of losses			
Irrecoverable debts written off		3	4
Total		3	4

7. Transfers and subsidies

	Note	2016/17	2015/16
		R'000	R'000
Departmental agencies and accounts	Annex 1B	4,696,599	4,762,437
Higher education institutions	Annex 1C	210,329	230,303
Foreign governments and international organisations	Annex 1E	-	-
Public corporations and private enterprises	Annex 1D	1,793,985	1,833,801
Non-profit institutions	Annex 1F	157,726	128,694
Households	Annex 1G	1,438	823
Total		6,860,077	6,956,058

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

8. Expenditure for capital assets

	Note	2016/17 R'000	2015/16 R'000
Tangible assets		15,478	16,466
Machinery and equipment	8.1	15,478	16,466
Intangible assets		-	-
Software	8.1	-	-
Patents, licences, copyright, brand names, trademarks		-	-
Total		15,478	16,466

8.1 Analysis of funds utilised to acquire capital assets – 2016/17

	Voted funds R'000	Aid assistance R'000	Total R'000
Tangible assets		-	-
Machinery and equipment	15,478	-	15,478
Intangible assets		-	-
Software	-	-	-
Patents, licences, copyright, brand names, trademarks	-	-	-
Total	15,478	-	15,478

8.2 Analysis of funds utilised to acquire capital assets – 2015/16

	Voted funds R'000	Aid assistance R'000	Total R'000
Machinery and equipment	16,466	-	16,466
Total assets acquired	16,466	-	16,466
Intangible assets	-	-	-
Software	-	-	-
Patents, licences, copyright, brand names, trademarks	-	-	-
Total	16,466	-	16,466

8.3 Finance lease expenditure included in expenditure for capital assets

	Note	2016/17 R'000	2015/16 R'000
Tangible assets			
Machinery and equipment		1,039	978
Total		1,039	978

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

9. Cash and cash equivalents

	Note	2016/17 R'000	2015/16 R'000
Consolidated Paymaster-General Account		44,435	31,078
Cash on hand		33	33
Disbursements		-	-
Total		44,468	31,111

10. Prepayments and Advances

	Note	2016/17 R'000	2015/16 R'000
Travel and subsistence		95	205
Advances paid		543	234
Total		638	439

10.1 Advances paid

	Note	2016/17 R'000	2015/16 R'000
National departments	Annex 8A	543	234
Total		543	234

11. Receivables

		2016/17			2015/16		
		Current	Non-Current	Total	Current	Non-Current	Total
	Note	R'000	R'000	R'000	R'000	R'000	R'000
Claims recoverable	11.1	1,035	98	1,133	415	88	503
Recoverable expenditure	11.2	164	251	415	31	373	404
Staff debt	11.3	173	66	239	131	53	184
Total		1,372	415	1,787	577	514	1,091

11.1 Claims recoverable

	Note	2016/17 R'000	2015/16 R'000
National departments	11	68	374
Households and non-profit institutions		1,065	129
Total		1,133	503

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

11.2 Recoverable expenditure (disallowance accounts)

	Note	2016/17	2015/16
	<u>11</u>	R'000	R'000
Income tax debt		-	2
Persal salaries and stoppages		-	-
Damages to vehicles		415	401
VAT clearing account		-	1
Total		415	404

11.3 Staff debt

	Note	2016/17	2015/16
	<u>11</u>	R'000	R'000
Salary overpayment		89	64
Cellphone debts		71	70
Previous employees - Resettlement debt		54	50
Other		25	-
Total		239	184

12. Investments

The Department acquired shares for 35% shareholding of the Biological and Vaccines Institute (Biovac) of South Africa valued at R86,123 million (calculated as percentage of retained earnings of Biovac as at 31 December 2016) from the Department of Health at no cost. The value of the shares could not be disclosed in the Statement of Financial Position because they were transferred at no cost.

13. Voted funds to be surrendered to the Revenue Fund

	Note	2016/17	2015/16
		R'000	R'000
Opening balance		28,644	90,846
Prior period error		-	-
As restated		28,644	90,846
Transfer from statement of financial performance		45,402	28,644
Voted funds not requested/not received	1.1	(1)	-
Paid during the year		(28,644)	(90,846)
Closing balance		45,401	28,644

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

14. Departmental revenue to be surrendered to the Revenue Fund

	Note	2016/17 R'000	2015/16 R'000
Opening balance		8	94
Prior period error		-	-
As restated		8	94
Transfer from Statement of Financial Performance		8,199	514
Paid during the year		(8,201)	(600)
Closing balance		6	8

15. Payables – current

	Note	2016/17 R'000	2015/16 R'000
Clearing accounts	14.1	5	27
Total		5	27

15.1 Clearing accounts

	Note	2016/17 R'000	2015/16 R'000
Income tax	14	5	27
Pension Fund		-	-
Total		5	27

16. Net cash flow available from operating activities

	Note	2016/17 R'000	2015/16 R'000
Net surplus as per Statement of Financial Performance		55,026	33,043
Add back non-cash/cash movements not deemed operating activities		(26,215)	(86,364)
(Increase)/Decrease in receivables – current		(696)	171
(Increase)/Decrease in prepayments and advances		(199)	132
Increase/(Decrease) in payables – current		(22)	(12)
Proceeds from sale of capital assets		(45)	-
Expenditure on capital assets		15,478	16,466
Surrenders to Revenue Fund	13	(36,845)	(91,446)
Surrenders to Donor Fund		(3,885)	(11,675)
Voted funds not requested/not received		(1)	-
Net cash flow generated by operating activities		28,811	(53,321)

17. Reconciliation of cash and cash equivalents for cash flow purposes

	Note	2016/17 R'000	2015/16 R'000
Consolidated Paymaster-General Account		44,435	31,078
Cash on hand		33	33
Disbursements		-	-
Total		44,468	31,111

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

18. Contingent liabilities

	Note	2016/17 R'000	2015/16 R'000
Liable to			
Claims against the department	Annex 3B	401	401
Total		401	401

19. Commitments

	Note	2016/17 R'000	2015/16 R'000
Current expenditure			
Approved and contracted		31,454	7,279
Approved but not yet contacted		4	10,432
		31,458	17,711
Capital expenditure			
Approved and contracted		16,815	11,740
Approved but not yet contracted		-	-
		16,815	11,740
Total commitments		48,273	29,451

The department has commitments for more than a year for contracts that are needed for its operations, such as contracts for cleaning, security, hygiene service and others.

20. Accruals and payables not recognised

20.1 Accruals

			2016/17 R'000	2015/16 R'000
Listed by economic classification				
	30 days	30+ days	Total	Total
Goods and services	8,611	-	8,611	13,311
Capital assets	-	-	-	661
Total	8,611	-	8,611	13,972

	Note	2016/17 R'000	2015/16 R'000
Listed by Programme			
Programme 1: Administration		4,370	11,177
Programme 2: Technology Innovation		364	693
Programme 3: International Cooperation and Resources		3,187	1,192
Programme 4: Research Development and Support		509	183
Programme 5: Socio-economic Innovation Partnerships		181	727
Total		8,611	13,972

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

20.2 Payables not recognised

Listed by economic classification	30 days	30 +days	Total	Total
Goods and services	1,252	-	1,252	11,423
Capital assets 16		-	16	-
Total	1,268	-	1,268	11,423

	Note	2016/17 R'000	2015/16 R'000
Listed by Programme			
Programme 1: Administration		551	9,344
Programme 2: Technology Innovation		98	254
Programme 3: International Cooperation and Resources		206	1,061
Programme 4: Research Development and Support		305	331
Programme 5: Socio-economic Innovation Partnerships		108	433
Total		1,268	11,423
Confirmed balances with other departments	Annex 5	3,404	999
Total		3,404	999

21. Employee benefits

	Note	2016/17 R'000	2015/16 R'000
Leave entitlement*		11,938	9,358
Service bonus (thirteenth cheque)		7,281	7,012
Performance awards		4,789	4,547
Capped leave commitments		2,845	2,987
Other (long service awards)		37	9
Total		26,890	23,913

*A negative amount of R 352,848.66 was offset against leave entitlement. The amount was as a result of a pro-rata calculation of leave taken by employees as at the 31 March 2017. In terms of the pro-rata calculation, employees are entitled to 5.49 days leave from 1 January to 31 March. If an employee takes more leave this result in a negative figure for leave taken for the three-month period. This situation will be automatically rectified during the leave period.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

22. Lease commitments

22.1 Operating leases expenditure

2016/17	Land	Buildings and other fixed structures	Machinery and equipment	Total
	R'000	R'000	R'000	R'000
Not later than 1 year	-	1,494	1,114	2,608
Later than 1 year and not later than 5 years	-	1,066	1,857	2,923
Total lease commitments	-	2,560	2,971	5,531

2015/16	Land	Buildings and other fixed structures	Machinery and equipment	Total
	R'000	R'000	R'000	R'000
Not later than 1 year	-	-	704	704
Later than 1 year and not later than 5 years	-	-	-	-
Total lease commitments	-	-	704	704

22.2 Finance leases expenditure

2016/17	Land	Buildings and other fixed structures	Machinery and equipment	Total
	R'000	R'000	R'000	R'000
Not later than 1 year	-	-	1,706	1,706
Later than 1 year and not later than 5 years	-	-	168	168
Total lease commitments	-	-	1,874	1,874

2015/16	Land	Buildings and other fixed structures	Machinery and equipment	Total
	R'000	R'000	R'000	R'000
Not later than 1 year	-	-	1,902	1,902
Later than 1 year and not later than 5 years	-	-	485	485
Total lease commitments	-	-	2,387	2,387

23. Accrued departmental revenue

	Note	2016/17 R'000	2015/16 R'000
Transactions in financial assets and liabilities		146	6,847
Total		146	6,847

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

23.1 Analysis for accrued departmental revenue

	Note	2016/17 R'000	2015/16 R'000
Opening balance		6,847	-
Less: Amounts received		6,701	-
Add: Amounts recognised		-	6,847
Total		146	6,847

The Department has a contract with Pelchem for the Ketlaphela project that ended on 31 March 2017. It is expected that the project will have surplus funds that must be refunded to the Department. The Department could not determine with certainty the surplus amount because not all close-out reports had been received.

24. Irregular expenditure

24.1 Reconciliation of irregular expenditure

	Note	2016/17 R'000	2015/16 R'000
Opening balance		34,942	33,854
As restated		34,942	33,854
Add: Irregular expenditure – relating to prior year		-	-
Add: Irregular expenditure – relating to current year		176	1,088
Less: Prior year amount condoned		-	-
Less: Current year amounts condoned		-	-
Less: Amounts recoverable (not condoned)		-	-
Irregular expenditure awaiting condonation		35,118	34,942

Analysis of awaiting condonation per age classification

Current year	176	1,088
Prior years	34,942	33,854
Total	35,118	34,942

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

24.2 Details of irregular expenditure – current year

Incident	Disciplinary steps taken/criminal proceedings	2016/17 R'000
Non-compliance with SCM processes	Investigating	65
Non-compliance with SCM processes	Investigating	100
Non-compliance with SCM processes	Investigating	11
Total		176

24.3 Details of irregular expenditure – Condoned

Incident	Condoning authority	2016/17 R'000
		-
Total		-

24.4 Matter under investigation

The Department has a mobile communication contract that was acquired through a deviation by requesting a shorter advertising period in the 2014/15 financial year upon approval of the Accounting Officer. Due to the uncertainty around the deviation it was agreed with the auditors that the matter be referred to the National Treasury to determine if it is a non-compliance which could lead to irregular expenditure. The contract will be referred to the National Treasury for guidance.

25. Fruitless and wasteful expenditure

Reconciliation of fruitless and wasteful expenditure

	Note	2016/17 R'000	2015/16 R'000
Opening balance		62	-
Fruitless and wasteful expenditure – relating to prior		-	-
Fruitless and wasteful expenditure – relating to current year		2	62
Less: Amounts resolved		-	-
Fruitless and wasteful expenditure awaiting condonement		64	62

Analysis of current year's fruitless and wasteful expenditure

Incident disciplinary steps taken	2016/17 R'000
Penalty fees charged Under investigation	2
for cancellation of travel	
Bookings	
Total	2

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Related party transactions

26.1 Related party transactions

Payments made	2016/17 R'000	2015/16 R'000
Goods and services	-	-
Total	-	-

26.2 Public entities under ownership control of the Department

There were no transactions that the Department incurred with its related parties. The following is the status as at 31 March 2017.

The following entities are under the ownership control of the Department in terms of Chapter 1 of the Public Finance Management Act, 1999, and report to the Minister of Science and Technology, and as such are related parties to the Department:

Schedule 3A – National public entities

- Human Sciences Research Council
- National Research Foundation
- South African National Space Agency
- Technology Innovation Agency

Schedule 3B – National government business enterprises

- Council for Scientific and Industrial Research

The Department's transactions with these entities are limited to transfer and subsidy payments. Annexure 1C and 1E to the Annual Financial Statements reflect payments to these public entities. Where transactions other than these occur, they occur within a normal supplier/client relationship in terms of the procurement procedures of the Department and the Public Finance Management Act, 1999.

26.3 Related-party relationships with other departments

The Department has a related-party relationship with the Department of Public Works. The Department of Public Works is providing office accommodation free of charge to the Department. The Department of Public Works is claiming fees for maintenance. These are all arm's length transactions

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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27. Key management personnel

	No. of individuals	2016/17 R'000	2015/16 R'000
Political office bearers (provide detail below)	2	4,388	4,034
Officials:			
Level 15 to 16	11	15,107	14,692
Level 14 (incl. CFO if at a lower level)	33	31,360	27,166
Total		50,855	45,892

The key management personnel do not qualify for any remuneration other than the approved remuneration structures for the different classes of key management personnel (political office bearers and officials).

28. Movable tangible capital assets

MOVEMENT IN MOVABLE TANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Opening balance R'000	Curr. year adjustments to prior year balances R'000	Additions R'000	Disposals R'000	Closing balance R'000
MACHINERY AND EQUIPMENT	79,981	-	14,455	(3,718)	90,718
Transport assets	5,579	-	1,876	(156)	7,299
Computer equipment	42,650	-	3,685	(2,890)	43,445
Furniture and office equipment	18,721	-	40	(46)	18,715
Other machinery and equipment	13,031	-	8,854	(626)	21,259
TOTAL MOVABLE TANGIBLE CAPITAL ASSETS	79,981	-	14,455	(3,718)	90,718

28.1 Additions

ADDITIONS TO MOVABLE TANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Cash R'000	Non-cash R'000	(Capital work in progress current costs and finance lease payments) R'000	Received current, not paid(Paid current year, received prior year) R'000	Total R'000
MACHINERY AND EQUIPMENT	15,478	-	(1,039)	16	14,455
Transport assets	1,876	-	-	-	1,876
Computer equipment	3,669	-	-	16	3,685
Furniture and office equipment	40	-	-	-	40
Other machinery and equipment	9,893	-	(1,039)	-	8,854
TOTAL ADDITIONS TO MOVABLE TANGIBLE CAPITAL ASSETS	15,478	-	(1,039)	16	14,455

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

28.2 Disposals

DISPOSAL OF MOVABLE TANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Sold for cash	Transfer out or destroyed or scrapped	Total disposals	Cash received actual
	R'000	R'000	R'000	R'000
MACHINERY AND EQUIPMENT	156	3,562	3,718	45
Transport assets	156	-	156	45
Computer equipment	-	2,890	2,890	-
Furniture and office equipment	-	46	46	-
Other machinery and equipment	-	626	626	-
TOTAL DISPOSAL OF MOVABLE TANGIBLE CAPITAL ASSETS	156	3,562	3,718	45

The two disposed cars to the value of R156,000.00 were sold for an amount of R 45,000 each in cash

28.3 Movement for 2015/16

MOVEMENT IN MOVABLE TANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2016

	Opening balance	Curr. year adjustments to prior year balances	Additions	Disposals	Closing bal- ance
	R'000	R'000	R'000	R'000	R'000
MACHINERY AND EQUIPMENT	66,038	-	15,892	(1,949)	79,981
Transport assets	4,988	-	1,496	(905)	5,579
Computer equipment	33,704	-	9,237	(291)	42,650
Furniture and office equipment	14,315	-	5,159	(753)	18,721
Other machinery and equipment	13,031	-	-	-	13,031
TOTAL MOVABLE TANGIBLE CAPITAL ASSETS	66,038	-	15,892	(1,949)	79,981

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

28.4 Minor assets

MINOR ASSETS OF THE DEPARTMENT FOR THE YEAR ENDED 31 MARCH 2017

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
	R'000	R'000	R'000	R'000	R'000
Opening balance	-	-	6,785	-	6,785
Additions	-	-	249	-	249
Disposals	-	-	(223)	-	(223)
TOTAL MINOR ASSETS	-	-	6,811	-	6,811

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
Number of R1 minor assets	-	-	30	-	30
Number of minor assets at cost	-	-	131	-	131
Total	-	-	161	-	161

Minor assets

MINOR ASSETS OF THE DEPARTMENT FOR THE YEAR ENDED 31 MARCH 2016

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
	R'000	R'000	R'000	R'000	R'000
Opening balance	-	-	5,308	-	5,308
Prior period error	-	-	924	-	924
Additions	-	-	560	-	560
Disposals	-	-	(7)	-	(7)
Total	-	-	6,785	-	6,785

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
Number of R1 minor assets	-	-	1	-	1
Number of minor assets at cost	-	-	1,911	-	1,911
	-	-	1,912	-	1,912

Prior period errors

Nature of prior error

Machinery and Equipment (Library books)

Total

2016/17
R'000

924

924

Machinery and equipment (Library books) were not disclosed as assets in the prior year period

29. Intangible capital assets

MOVEMENT IN INTANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Opening balance	Additions	Disposals	Closing balance
	R'000	R'000	R'000	R'000
Software	5,880	-	-	5,880
Patents, licences, copyright, brand names, trademarks	-	-	-	-
TOTAL INTANGIBLE CAPITAL ASSETS	5,880	-	-	5,880

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

29.1 Additions

ADDITIONS TO INTANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Cash	Non-cash	(Development work in progress current costs)	Received current, not paid(Paid current year, received prior year)	Total
	R'000	R'000	R'000	R'000	R'000
Software	-	-	-	-	-
TOTAL ADDITIONS TO MOVABLE TANGIBLE CAPITAL ASSETS	-	-	-	-	-

29.2 Disposals

DISPOSALS OF INTANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2017

	Sold for cash	Transfer out or destroyed or scrapped	Total disposals	Cash received actual
	R'000	R'000	R'000	R'000
Software	-	-	-	-
TOTAL DISPOSAL OF INTANGIBLE CAPITAL ASSETS	-	-	-	-

29.3 Intangible capital assets

MOVEMENT IN INTANGIBLE CAPITAL ASSETS PER ASSET REGISTER FOR THE YEAR ENDED 31 MARCH 2016

	Opening balance	Prior year error balances	Additions	Disposals	Closing balance
	R'000	R'000	R'000	R'000	R'000
Software	5,880	-	-	-	5,880
Patents, licences, copyright, brand names, trademarks	-	-	-	-	-
TOTAL INTANGIBLE CAPITAL ASSETS	5,880	-	-	-	5,880

30. Prior period errors

Assets	2015/16
	R'000
Total	924
Liabilities	

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1B STATEMENT OF TRANSFERS TO DEPARTMENTAL AGENCIES AND ACCOUNTS

DEPARTMENT/AGENCY/ACCOUNT	TRANSFER ALLOCATION			TRANSFER		2015/16 Appropriation Act
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred
	R'000	R'000	R'000	R'000	R'000	%
Agricultural Research Council	38,683	-	-	38,683	37,683	97%
Council for Geoscience	1,000	-	-	1,000	1,000	100%
Human Sciences Research Council	304,763	-	-	304,763	299,763	98%
National Research Foundation	4,140,283	-	(15,531)	4,124,752	3,542,461	86%
South African Medical Research Council	96,237	-	-	96,237	93,237	97%
South African National Biodiversity Institute	16,077	-	-	16,077	15,577	97%
South African National Energy Development Institution	11,000	-	-	11,000	10,500	95%
South African National Space Agency	224,284	-	-	224,284	222,284	99%
Technology Innovation Agency	479,094	-	-	479,094	474,094	99%
Total	5,311,421	-	(15,531)	4,295,890	4,696,599	89%
						5,433,895

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1C STATEMENT OF TRANSFERS TO UNIVERSITIES AND UNIVERSITIES OF TECHNOLOGY

UNIVERSITY/UNIVERSITY OF TECHNOLOGY	TRANSFER ALLOCATION				TRANSFER		2015/16 Appropriation Act
	Adjusted appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	Amount not transferred	
	R'000	R'000	R'000	R'000	R'000	R'000	%
Cape Peninsula University of Technology	3,229	-	-	3,229	3,229	-	0%
Nelson Mandela Metropolitan University	4,883	-	-	4,883	4,883	-	0%
North West University	4,530	-	-	4,530	54,128	(49,598)	-92%
Durban University of Technology	-	-	-	-	-	-	-
Central University of Technology, Free State	1,914	-	-	1,914	1,914	-	0%
Mangosuthu University of Technology	-	-	-	-	-	-	-
Vaal University of Technology	15	-	-	15	15	-	0%
Tshwane University of Technology	2,990	-	-	2,990	2,990	-	0%
University of Cape Town	-	-	18,359	18,359	45,109	(26,750)	-59%
University of Fort Hare	7,952	-	-	7,952	7,952	-	0%
University of the Free State	3,753	-	-	3,753	3,753	-	0%
University of Johannesburg	2,382	-	-	2,382	2,382	-	0%
University of KwaZulu-Natal	4,336	-	-	4,336	4,336	-	0%
University of Limpopo	14,604	-	-	14,604	14,604	-	0%
University of Pretoria	3,483	-	-	3,483	3,483	-	0%
Rhodes University	375	-	-	375	375	-	0%
University of South Africa	2,561	-	-	2,561	2,561	-	0%
Stellenbosch University	3,300	-	-	3,300	3,300	-	0%
University of Venda	1,608	-	-	1,608	1,608	-	0%
University of the Free State	-	-	-	-	-	-	-
University of the Western Cape	48,799	-	-	48,799	48,799	-	0%
University of the Witwatersrand	3,752	-	-	3,752	3,752	-	0%
University of Zululand	600	-	-	600	600	-	0%
Walter Sisulu University	556	-	-	556	556	-	0%
Total	115,622	-	18,359	133,981	210,329	(76,348)	147,242

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1D STATEMENT OF TRANSFERS/SUBSIDIES TO PUBLIC CORPORATIONS AND PRIVATE ENTERPRISES

NAME OF PUBLIC CORPORATION/ PRIVATE ENTERPRISE	TRANSFER ALLOCATION			EXPENDITURE			2015/16 Appropriation Act
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred	
	R'000	R'000	R'000	R'000	R'000	%	R'000
Public corporations							
Transfers							
Council for Mineral Technology (Mintek)	29,514	-	-	29,514	65,391	221.6%	29,048
Council for Scientific and Industrial Research	363,914	-	(3,784)	360,130	763,914	212.1%	695,157
South African Bureau of Standards	2,000	-	-	2,000	2,000	100.0%	2,000
South African Nuclear Energy Corporation Ltd	31,899	-	-	31,899	67,775	212.5%	10,875
Subtotal	427,327	-	(3,784)	423,543	899,080	212.3%	737,080
Subsidies							
Council for Scientific and Industrial Research	872,043	-	-	872,043	872,043	100%	872,043
Subtotal	872,043	-	-	872,043	872,043	100%	872,043
Total	1,299,370	-	(3,784)	1,295,586	1,771,123	136.7%	1,609,123
							1,249,847

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

NAME OF PUBLIC CORPORATION/ PRIVATE ENTERPRISE	TRANSFER ALLOCATION			EXPENDITURE				2015/16 Appropriation Act	
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred	Capital		Current
	R'000	R'000	R'000	R'000	R'000	%	R'000		R'000
Private enterprises: Transfers									
Advanced Manufacturing (Pty) Ltd	-	-	-	-	100	-	-	100	-
Citrus Research International (Pty) Ltd	-	-	-	-	4,471	-	-	4,470	-
Pelchem	-	-	-	-	16,416	-	-	16,416	-
Siyanda Chrome Smelting Technology	-	-	-	-	231	-	-	231	-
Tosaca Media Group (Pty) Ltd	-	-	-	-	191	-	-	191	-
Western Cape Trade & Investment Promotion Agency	-	-	-	-	1,453	-	-	1,453	-
Subtotal	-	-	-	-	22,862	-	-	22,862	-
Total	1,299,370	-	(3,784)	1,295,586	1,793,985	138.5	162,001	1,631,985	1,249,847

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1F STATEMENT OF TRANSFERS TO NON-PROFIT INSTITUTIONS

NON-PROFIT INSTITUTIONS	TRANSFER ALLOCATION			EXPENDITURE		2015/16 Appropriation Act
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	
	R'000	R'000	R'000	R'000	R'000	% of Available funds transferred %
Transfers						
Aeronautical Society of South Africa	100	-	-	100	100	100%
Africa Teen Geeks	300	-	-	300	300	100%
Africabio	-	-	-	-	-	638
Aluminium Federation of South Africa	-	-	-	-	-	99
ASSAF	6,877	-	-	6,877	6,877	100%
Bakgatla Sports, Arts and Culture	500	-	-	500	500	100%
Centre for Proteomic and Genomic Research	8,000	-	-	8,000	10,000	125%
En-Novate	43	-	-	43	43	100%
Da Vinci TT100 Awards Programme	-	-	-	-	-	3,507
Environmental Affairs	930	-	-	930	930	100%
Forestry South Africa	5,000	-	-	5,000	5,000	100%
Gauteng Department of Sports, Art, Culture and Recreation	500	-	-	500	500	100%
Fresh Produce Exporters' Forum	11,000	-	-	11,000	13,000	118%
Grahamstown Foundation	2,000	-	-	2,000	2,000	100%
Grain South Africa	8,500	-	-	8,500	10,500	124%
Mapungubwe Institute	2,000	-	-	2,000	2,000	100%
Marine Industry Association of South Africa	-	-	-	-	-	578
Melowcabs (Pty) Ltd	-	-	-	-	-	21
Mobile Application Laboratory NP	4,500	-	-	4,500	4,500	100%
Mpilonhle	-	-	-	-	-	2,000
Mpumalanga Tourism and Parks	500	-	-	500	500	100%
National Health Laboratory Service	6,000	-	-	6,000	6,000	100%
Oil & Protein Seeds Development Trust	906	-	-	906	906	100%
National Science and Technology Forum	8,647	-	-	8,647	8,020	93%
Paper Manufacturers' Association of South Africa	2,640	-	-	2,640	2,640	100%

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

NON-PROFIT INSTITUTIONS	TRANSFER ALLOCATION			EXPENDITURE		2015/16 Appropriation Act
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	
	R'000	R'000	R'000	R'000	R'000	
Resonance Bazaar	575	-	-	575	575	500
SEDA Essential Oils Business Incubation (SEOBI)	8,120	-	-	8,120	8,120	2,672
South African Association of Science and Technology Centres	-	-	-	-	-	250
South African Chemical Institute	-	-	-	-	-	120
South African Institute of Physics	1,300	-	-	1,300	1,300	-
South African Council for Natural Scientific Professions	4,200	-	-	4,200	4,200	4,000
South African Mathematics Foundation	1,060	-	-	1,060	1,060	1,060
SARIMA	1,000	-	-	1,000	1,000	2,455
South African San Institute	500	-	-	500	500	500
The SA Institute of Mining and Metallurgy	1,697	-	-	1,697	1,697	1,566
Simodisa Association	-	-	-	-	-	500
Sugar Milling Research Institute	4,651	-	-	4,651	4,651	4,742
The Composites Group (Pty) Ltd	150	-	-	150	150	750
Thermisa	-	-	-	-	-	40
Trade and Industrial Policy Strategy	-	-	-	-	-	70
Western Cape Economic Development Partnership	-	-	-	-	-	391
Winetech	5,000	-	-	5,000	5,000	5,000
Young Water Professionals	500	-	-	500	500	-
Water Research Commission	7,183	-	-	7,183	7,183	9,076
International Centre for Genetic Engineering and Biotechnology	16,799	-	956	17,755	23,368	11,621
Unallocated funds	-	-	-	-	-	40,375
Total	121,678	-	956	122,634	133,620	170,484
Subsidies						
ASSAF	24,106	-	-	24,106	24,106	-
	24,106	-	-	24,106	24,106	-
Total	145,784	-	956	146,740	157,726	170,484

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1G STATEMENT OF TRANSFERS TO HOUSEHOLDS

HOUSEHOLDS	TRANSFER ALLOCATION			EXPENDITURE		2015/16 Appropriation Act
	Adjusted appropriation Act	Rollovers	Adjustments	Actual transfer	% of Available funds transferred	
	R'000	R'000	R'000	R'000	%	
Transfers						
Leave gratuity: Covane TC	-	-	-	-	-	7
Claim against the state: M Melaletsa	303	-	-	303	100%	-
Leave gratuity: Boema T	47	-	-	47	100%	-
Leave gratuity: Covane TC	-	-	-	-	-	(7)
Leave gratuity: Covane TC	-	-	-	-	-	18
Leave gratuity: Dawood R	-	-	-	-	-	17
Leave gratuity: Gantsho, PC	-	-	-	-	-	6
Leave gratuity: Grobler EJ	-	-	-	-	-	115
Leave gratuity: Gule T	-	-	-	-	-	33
Leave gratuity: Ikgopoleng RT	-	-	-	-	-	2
Leave gratuity: Inama	46	-	-	46	100%	-
Leave gratuity: Lehong TM	-	-	-	-	-	27
Leave gratuity: Lethaku KM	8	-	-	8	100%	-
Leave gratuity: Lethoo KA	-	-	-	-	-	17
Leave gratuity: Lethoo KA	-	-	-	-	-	(5)
Leave gratuity: Lethoo KA	-	-	-	-	-	(5)
Leave gratuity: Lethoo KA	-	-	-	-	-	5
Leave gratuity: Lethoo KA	-	-	-	-	-	5
Leave gratuity: Mabuela M	24	-	-	24	100%	-
Leave gratuity: Mabula O	-	-	-	-	-	9
Leave gratuity: Makgoba MM	7	-	-	7	100%	-
Leave gratuity: Makhura F	8	-	-	8	100%	-
Leave gratuity: Malange F	-	-	-	-	-	25
Leave gratuity: Maluleke TS	27	-	-	27	100%	-
Leave gratuity: Maredi ID	56	-	-	56	100%	-
Leave gratuity: Masindi M	-	-	-	-	-	2
Leave gratuity: Matiwane KD	19	-	-	19	100%	-
Leave gratuity: Mathibela TS	-	-	-	-	-	3
Leave gratuity: Matlhakwana SJ	-	-	-	-	-	8

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

HOUSEHOLDS	TRANSFER ALLOCATION				EXPENDITURE		2015/16 Appropriation Act
	Adjusted appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred	
	R'000	R'000	R'000	R'000	R'000	%	R'000
Leave gratuity: Mchunu ZN	-	-	-	-	-	-	47
Leave gratuity: Mkhithika NL	-	-	-	-	-	-	9
Leave gratuity: Modibedi N	41	-	-	41	41	100%	-
Leave gratuity: Mohlala ME	-	-	-	-	-	-	2
Leave gratuity: Molapisi JJ	51	-	-	51	51	100%	-
Leave gratuity: Motau MP	-	-	-	-	-	-	7
Leave gratuity: Muanalo N	54	-	-	54	54	100%	-
Leave gratuity: Mukondeleli N	-	-	-	-	-	-	4
Leave gratuity: Nguna IT	-	-	-	-	-	-	5
Leave gratuity: Muller KJ	28	-	-	28	28	100%	-
Leave gratuity: Nzama BS	-	-	-	-	-	-	37
Leave gratuity: Nienaber S	4	-	-	4	4	100%	-
Leave gratuity: Nqabeni XE	16	-	-	16	16	100%	2
Leave gratuity: Phahle NW	-	-	-	-	-	-	1
Leave gratuity: Phuravhathu AL	-	-	-	-	-	-	16
Leave gratuity: Ramabu MS	5	-	-	5	5	100%	2
Leave gratuity: Rambau N	-	-	-	-	-	-	7
Leave gratuity: Rambau N	-	-	-	-	-	-	(2)
Leave gratuity: Sindane DJ	-	-	-	-	-	-	14
Leave gratuity: Sindane DJ	-	-	-	-	-	-	35
Leave gratuity: Sindane DJ	-	-	-	-	-	-	(14)
Leave gratuity: Thaoge ML	-	-	-	-	-	-	33
Leave gratuity: Thagane MA	62	-	-	62	62	100%	-
Leave gratuity: Tsatsi	32	-	-	32	32	100%	7
Leave gratuity: Tsatsi DM	-	-	-	-	-	-	8
Leave gratuity: Tsatsi DM	-	-	-	-	-	-	(8)
Leave gratuity: Xolo DSN	-	-	-	-	-	-	29
Women in Science Awards	600	-	-	600	600	100%	300
TOTAL	1,438	-	-	1,438	1,438		823

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 11 STATEMENT OF LOCAL AND FOREIGN AID ASSISTANCE RECEIVED

NAME OF DONOR	PURPOSE	OPENING BALANCE	SURRENDERED FUNDS R'000	REVENUE	EXPENDITURE	CLOSING BALANCE
		R'000		R'000	R'000	R'000
Received in cash						
European Union	Innovation for Poverty Alleviation Programme	2,500	2,500	-	-	-
European Union	To develop vibrant and sustainable rural communities that contribute to adequate food security.	65	65	-	-	-
European Union	Strengthening the European South African Science and Advancement Programme (ESASTAP2)	-	-	2,397	1,125	1,272
European Union	ERAFrica: To develop a skilled and capable workforce	22	22	70	19	51
European Union	To improve overall ICT policies and create systems for each African country to ensure a consolidated effective regional impact through information society in Africa	103	103	27,221	27,221	-
European Union	European researchers to access SA innovation programmes and collaborate with SA researchers	410	410	-	-	-
European Union	Promote mutual understanding of Africa/EU cooperation in critical S&T areas of mutual interest	252	252	-	-	-
European Union	To develop database of Africa research infrastructure and influence policy dialogue in the region	332	332	986	986	-
European Union	RINEA Programme	201	201	441	430	11
United States Agency for International Development	The SADC early warning mechanism	-	-	815	815	-
United States of America	To determine the possibility of the establishment of a virtual network to include rural areas in SA and Tanzania	-	-	293	293	-
European Union/ Argentina	To enhance Science technology and innovation Cooperation between Africa and the European Union	-	-	122	31	91
Subtotal		3,885	3,885	32,345	30,920	1,425
Received in kind						
Subtotal		-	-	-	-	-
TOTAL		3,885	3,885	32,345	30,920	1,425

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 1J STATEMENT OF GIFTS, DONATIONS AND SPONSORSHIPS MADE AND REMISSIONS, REFUNDS AND PAYMENTS MADE AS AN ACT OF GRACE

NATURE OF GIFT, DONATION OR SPONSORSHIP	2016/17	2015/16
	R'000	R'000
Paid in cash		
Women in Science Awards	600	300
SUBTOTAL	600	300
TOTAL	600	300

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 2B STATEMENT OF INVESTMENTS IN AND AMOUNTS OWING BY/TO ENTITIES AS AT 31 MARCH 2017

NAME OF ENTITY	Nature of business	Cost of investment R'000		Net asset value of investment R'000		Amount owing to entities R'000		Amount owing by entities R'000	
		2016/2017	2015/2016	2016/2017	2015/2016	2016/2017	2015/2016	2016/2017	2015/2016
Controlled entities									
-		-	-	-	-	-	-	-	-
-		-	-	-	-	-	-	-	-
Non-controlled entities									
	Pharmaceutical Industry (35% shareholding)	-	-	86,123	54,447	-	-	-	-
Biovac									
Total	-	-	-	86,123	54,447	-	-	-	-

The Department of Science and Technology acquired Biovac shares from the Department of Health. The shares were transferred to the DST without any financial implications to the Department. The amount of R86,123 million is the value of shares calculated at 35% of the retained earnings of Biovac as at 31 December 2016.

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 3B STATEMENT OF CONTINGENT LIABILITIES AS AT 31 MARCH 2017

Nature of liability	Opening balance 1 April 2016	Liabilities incurred during the year	Liabilities paid/ cancelled/ reduced during the year	Liabilities recoverable)	Closing balance 31 March 2017
	R'000	R'000	R'000	R'000	R'000
The civil claim against the Department in respect of injuries allegedly sustained when the claimant fell in an open hole in the Pretoria Zoo Gardens.	401	-	-	-	401
Total	401	-	-	-	401

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 4 CLAIMS RECOVERABLE

Government entity	Confirmed balance outstanding		Unconfirmed balance outstanding		Total	
	31/03/2017	31/03/2016	31/03/2017	31/03/2016	31/03/2017	31/03/2016
	R'000	R'000	R'000	R'000	R'000	R'000
Department						
Province of KwaZulu-Natal	-	36	-	-	-	36
Gauteng Department of Education	32	105	-	-	32	105
Department of Transport	-	1	-	-	-	1
Department of Water and Sanitation	22	-	-	-	22	-
Cooperative Governance and Traditional Affairs	7	7	-	-	7	7
Gauteng Infrastructure Development	-	127	-	-	-	127
The Presidency	-	88	-	-	-	88
Department of Correctional Services	-	1	-	-	-	1
Department of Rural Development and Land Reform	9	-	-	-	9	-
ACB Parliament	(2)	-	-	-	(2)	-
Department of Justice and Constitutional Development	-	9	-	-	-	-
Subtotal	68	374	-	-	68	374
Other government entities						
Subtotal	-	-	-	-	-	-
Total	68	374	-	-	68	374

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 5 INTERGOVERNMENT PAYABLES

GOVERNMENT ENTITY	Confirmed balance		Unconfirmed balance		TOTAL	
	31/03/2017	31/03/2016	31/03/2017	31/03/2016	31/03/2017	31/03/2016
	R'000	R'000	R'000	R'000	R'000	R'000
DEPARTMENTS						
Current						
Department of International Relations and Cooperation	2,605	999	-	-	2,605	999
Department of Justice and Constitutional Development	799	-	-	-	799	-
Total	3,404	999	-	-	3,404	999

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 6 INVENTORY

Inventory	Note	Quantity	2016/17 R'000	Quantity	2015/16 R'000
Opening balance		-	-	-	-
Add/(Less): Adjustments to prior year balance		-	-	-	-
Add: Additions/Purchases - Cash		-	-	-	-
Add: Additions - Non-cash		-	-	-	-
(Less): Disposals		-	-	-	-
(Less): Issues		-	-	-	-
Add/(Less): Adjustments		-	-	-	-
Closing balance		-	-	-	-

The inventory was transferred to consumables in terms of the requirements of the Modified Cash Standards and the Accounting Manual for Departments. In terms of the Modified Cash Standards, the disclosure for inventory does not apply in the 2016/17 financial year.

ANNEXURES TO THE ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2017

ANNEXURE 8A INTER-ENTITY ADVANCES PAID (NOTE 17)

GOVERNMENT ENTITY	Confirmed balance		Unconfirmed balance		TOTAL	
	31/03/2017	31/03/2016	31/03/2017	31/03/2016	31/03/2017	31/03/2016
	R'000	R'000	R'000	R'000	R'000	R'000
DEPARTMENTS						
Current						
Department of International Relations and Cooperation	281	234	-	-	281	234
Department of Communications (former GCIS)	262	-	-	-	262	-
Total	543	234	-	-	543	234

APPROVAL

The Annual Financial Statements set out in pages 165 to 270 for the financial year ended 31 March 2017 have been approved



PM MJWARA
Director-General
31 July 2017

NOTES

[illegible]

NOTES

[illegible]

DEPARTMENT OF SCIENCE AND TECHNOLOGY

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