



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

Department of Science and Technology

Annual Report 2010 - 2011

Our Vision

To create a prosperous society that derives enduring and equitable benefits from science and technology.

Our Mission

To develop, coordinate and manage a national system of innovation that will bring about maximum human capital, sustainable economic growth and improved quality of life for all.



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List of Abbreviations

AISA	Africa Institute of South Africa
ARC	Agricultural Research Council
ASSAf	Academy of Science of South Africa
ASWSD	Accelerating Sustainable Water Services Delivery
CAPRISA	Centre for the AIDS Programme of Research in South Africa
CoC	centre of competence
CoE	centre of excellence
CSIR	Council for Scientific and Industrial Research
DST	Department of Science and Technology
ESSA	Employment Services System for South Africa
EU	European Union
EXCO	Executive Committee
FEI	Fluorochemical Expansion Initiative
FET	further education and training
F'SATIE	French South African Technical Institute in Electronics
GERD	gross expenditure on research and development
HCD	human capital development
HSRC	Human Sciences Research Council
ICT	Information and Communication Technology
IKS	indigenous knowledge systems
IP	intellectual property
MTSF	Medium Term Strategic Framework

NEPAD	New Partnership for Africa's Development
NIPMO	National Intellectual Property Management Office
NRDS	National Research and Development Strategy
NRF	National Research Foundation
NSI	National System of Innovation
NSW	National Science Week
ODA	official development assistance
OECD	Organisation for Economic Cooperation and Development
OTT	office of technology transfer
R&D	research and development
RDI	research, development and innovation
RICAD	Regional Initiative for Capacity Development
S&T	science and technology
SADC	Southern African Development Community
SANReN	South African National Research Network
SANSA	South African National Space Agency
SADPD	Secretariat of the African Decade of Persons with Disabilities
SARChI	South African Research Chairs Initiative
SET	science, engineering and technology
SETI	science, engineering, technology and innovation
SMME	small, medium and micro enterprises
STI	science, technology and innovation
TAP	technology assistance package
TBP	technology balance of payments
TIA	Technology Innovation Agency
TYIP	Ten-Year Innovation Plan

Foreword by the Minister



“The SKA will be the largest science-based capital injection into the African economy by far.”

Naledi Pandor

Minister of Science and Technology

The past financial year has been a busy and productive period for the Department of Science and Technology (DST). The Annual Report details the progress we have made in strengthening publicly-funded science, engineering and technology research to meet some of the key challenges facing the nation. The DST is playing a significant role in focusing on knowledge and sustainability as drivers of long-term economic growth.

Astronomy

During the past year we ramped up our bid to host the Square Kilometre Array (SKA) radio telescope. All important milestones related to the South African SKA demonstrator telescope, the MeerKAT, were met, many of them ahead of schedule.

The SKA will be the world's most powerful and technologically advanced research facility in the field of radio astronomy. If we win the bid, the SKA will be the largest science-based capital injection into the African economy by far. This investment will result in a number of immediate

and long-term socio-economic benefits accruing to the entire continent. The importance of the African SKA bid has been acknowledged by the African Union as a vehicle for capacity building across the continent. Winning the SKA bid will consolidate Africa's position as a global astronomy hub.

In preparation for hosting the SKA telescope, we introduced a comprehensive human capital development programme, which supports students studying physics, astronomy, engineering and ICT across the continent. This programme has been extremely successful in attracting young African students into science and engineering.

Space science

South Africa has been actively involved in space science and technology projects for many years. South Africa previously had a space programme which was discontinued in the mid-1990s. Some facilities and industrial capacity remained, spread over various institutions and departments and

from 2003 government began to introduce some order into space science and exploration in order to avoid the duplication of effort and funding. The culmination of this process was reached in the release of the National Space Strategy and the establishment of the South African National Space Agency in December 2010.

In addition, we launched the Space Weather Centre at the Hermanus Magnetic Observatory. The Centre contributes essential information for global space science and technology, as well as forecasts and predictions to protect our growing satellite industry. More specifically, it provides a service to the earth observation, communications, navigation, defence and engineering sectors.

Advanced materials

We have invested over R300 million in the Advanced Manufacturing Technology Strategy in the past seven years, primarily in the form of research grants for flagship programmes and human capital development. These flagship programmes include advanced lightweight materials, advanced electronics and advanced production technologies.

We have also invested in a three-year research and development programme targeted at demonstrating our research and innovation capabilities in biocomposites. During the first phase of the project, an experimental bio-based composite (using a chemical resin), which demonstrated suitable properties for use in aircrafts, was produced by the Council for Scientific and Industrial Research (CSIR). The next phase of the project is to focus on the development of bio-based resins.

In advanced materials, we are funding a project on titanium beneficiation and associated advanced manufacturing technologies. The Titanium Centre of Competence is making good progress in developing new methods for titanium powder production. Downstream technology blocks are being developed in areas such as investment casting, laser additive manufacturing and bespoke medical implants.

In the past year, good progress has been made in an innovative process for the production of low-cost titanium. Two patent applications have been filed on the primary process. Initial success in this research will be supported by the establishment and operational testing of a primary titanium plant in 2011/12.

South Africa has a comparative advantage in zircon, supplying 30% of the world's zircon in an unbeneficiated form. Our advanced metals initiative, in collaboration with the Nuclear Energy Corporation of South Africa, is developing a technology to produce nuclear-grade zirconium metal (zircon sells at \$800 a ton, while the nuclear-grade metal sells at \$2 300 a ton). An innovative plasma technology process has been developed and three patents have been filed.

Many of these promising initiatives will be handed over to the Technology Innovation Agency (TIA) for future funding and commercialisation. We believe that TIA is going to facilitate significant benefits for our economy through research that successfully results in commercial products.

Energy security

We have established renewable energy research programmes focusing on biofuels, wind and solar energy. Specific capabilities being advanced include the development of second-generation biofuels and a project piloting the use of solid municipal waste to generate biogas for use as a source of energy in food processing.

Wind energy has the potential to make a significant contribution to energy security in South Africa and on the continent. Through Stellenbosch University's Centre for Renewable and Sustainable Energy Studies, which serves as a hub for the South African National Energy Research Institute, the Department supports a wind-energy spoke that focuses on small and medium-scale wind-energy conversion systems, power electronic converters, fault diagnosis, network integration, wind resource assessments and load modelling.

South Africa has the potential for large-scale solar energy generation, but we have yet to exploit this potential fully. We have commissioned the CSIR to facilitate the development of a long-term national solar technology roadmap to guide our activities.

In fact, the DST has begun to design long-term, realistic and sustainable technology and innovation roadmaps for other sectors. These will guide our investment decisions, support human capital development, and build government-industry partnerships. High-technology innovations will help employment grow over the long term, as new technology spreads throughout the economy and transforms the various sectors.

Indigenous knowledge

We take indigenous knowledge seriously and support two indigenous-knowledge research chairs.

South Africa has the third-largest biodiversity resource-base in the world. In recent months, several biopiracy cases involving the pelargonium, rooibos and honey bush biological resources have been lodged with the European Patent Office. The DST is supporting the Department of Trade and Industry in its initiative to amend intellectual property laws to broaden the protection that indigenous knowledge enjoys.

To give greater meaning to the legislative framework for the protection of indigenous knowledge and its associated biological resources, our indigenous knowledge is being recorded. The National Recordal System, a large fingerprint initiative of the Department, documents, records and stores indigenous knowledge for the benefit of our communities.

Science for society

One of our biggest challenges is poverty and the joblessness and community neglect that accompany it. The Innovation for Poverty Alleviation Programme is a partnership between the DST and the European Union that pilots small-scale industries in rural areas through the transfer of technologies. Projects focus on demonstration agronomy and the innovative uses of energy technologies to support local development, including rural communities.

The programme will also stimulate sustainable rural economic development through local enterprise development in broadband infrastructure and services, using community wireless mesh networks and free and open source software. The direct social impact of the project will be local capacity creation, improved government service delivery and broader public access to ICT.

Within the biotechnology space, we are proud of the achievements of South African researchers. In the area of tuberculosis research, South African researchers are working closely with the US National Institutes of Health in drug discovery and development for potential new TB drugs.

In the arena of clinical research, the results of the CAPRISA 004 tenofovir gel trial at the University of KwaZulu-Natal offers hope to women in the battle against HIV and Aids. The South African and United States governments are investing in further studies to confirm the results of the CAPRISA 004 trial. Further good news is that the DST has secured a royalty fee for the manufacturing of the tenofovir gel if its efficacy is confirmed. Our researchers are now investigating how the gel can be manufactured locally.

The same group of researchers at University of KwaZulu-Natal also conducted research into the initiation of antiretroviral treatment after starting tuberculosis treatment. The findings from the study will be used to re-evaluate the treatment regimes of patients co-infected with HIV and TB. This work has attracted worldwide acclaim, and the DST will provide an additional R51,2 million over the next three years to support further research.

In addition, we are supporting a consortium of South African Malaria Initiative researchers. According to the World Health Organization's 2010 World Malaria Report, there are more than 225 million cases of malaria each year. Ninety per cent of malaria-related deaths occur in sub-Saharan Africa, the majority of these of young children.

We entered into negotiations to establish a health technology park in the Western Cape to provide physical infrastructure to researchers working on the development of medical products, as well as shared laboratory space for new start-up companies.

International collaboration

During the past year we continued our efforts to maximise African and global collaboration. Our portfolio of over 60 international research and development partnerships is growing. One of these is BioFISA, our biotechnology partnership with the government of Finland. This national and regional collaboration includes 12 SADC member states, with a hub at the CSIR.

The DST accessed over R300 million in international funding support for South African researchers. We have benefited from and led several important initiatives. We are also liaising with Algeria, Kenya and Nigeria on the African satellite project.

In conclusion

In closing, I wish to thank the Deputy Minister, Derek Hanekom, and the Director-General, Dr Phil Mjwara, for their hard work and leadership, as well as all DST and Ministry officials, the board chairs and CEOs of the science councils, and members of the Portfolio Committee on Science and Technology, led by Dr Nqaba Ngcobo.



Naledi Pandor

Minister of Science and Technology

Preface by the Deputy Minister



“We are driven by the pursuit of knowledge and the application of science that makes a difference to people’s lives.”

Derek Hanekom

Deputy Minister of Science and Technology

The Annual Report presents an overview of the Department of Science and Technology’s most significant achievements during the past financial year. These include new inventions, successful clinical trials, groundbreaking research, improved understanding of the impacts of climate change, and the bid for the most powerful radio telescope in the world.

Global change

During the year under review we made a concerted effort to address the issue of global change. Improving the scientific understanding of changes to our global environment is crucial to our country’s responses to the impacts of climate change.

In partnership with the scientific and research community, the Department has finalised the 10-Year Global Change Research Plan, linked to focused initiatives like the Applied Centre for

Climate and Earth Systems Science (ACCESS). As a centre of excellence, ACCESS has a key role to play in the successful implementation of the Department’s Global Change Grand Challenge.

We also initiated the South African Risk and Vulnerability Atlas programme, which is targeted at supporting local-level decision making, and includes capacity-building and support in interpreting the information in the atlas. In addition to a hard-copy version, the atlas project directly supports access to and participation in global change data and information through a geospatial database.

We will use the opportunity of South Africa hosting COP17 in Durban later this year to showcase some of the research, development and innovation activities we have initiated in response to the threat of climate change.

Energy

The Department's Ten-Year Innovation Plan identifies energy security as one of five priority areas, so we support a number of renewable energy initiatives.

We have established renewable energy research programmes focusing on biofuels, wind and solar energy. Specific capabilities being advanced include the development of second-generation biofuels and a project piloting the use of solid municipal waste to generate biogas for use as a source of energy in food processing.

Wind energy has the potential to make a significant contribution to energy security in South Africa and on the continent. Through the Centre for Renewable and Sustainable Energy Studies, which serves as a hub for the South African National Energy Research Institute, the Department supports the wind energy spoke, which focuses on small and medium-scale wind energy conversion systems, power electronic converters, fault diagnosis, network integration, wind resource assessments and load modelling.

South Africa has the potential for large-scale solar energy generation, but we have yet to exploit this potential fully. The Department has embarked on a process of assessing where solar energy technology might play a significant role in our country, and how we can develop and strengthen it to achieve a competitive advantage from which economic benefits can be derived. To this end we have commissioned the Council for Scientific and Industrial Research (CSIR) to facilitate the development of a long-term national solar technology roadmap to guide our activities.

Health

During the year under review the Department played an active part in supporting researchers at the Centre for the AIDS Programme of Research (CAPRISA) in their groundbreaking work into the Tenofovir microbicide gel that protects women against the HIV virus. If the gel is effective in

preventing HIV infection in just one third of the users, it will have an enormously positive impact on the HIV epidemic in our country. Further good news is that the DST has secured a royalty fee for the manufacturing of the product. Our researchers are now investigating how the gel can be manufactured locally.

The same group of researchers also conducted research into the initiation of antiretroviral treatment after starting tuberculosis (TB) treatment. The findings from the study will be used to re-evaluate the treatment regimes of patients co-infected with HIV and TB. Their work has attracted worldwide acclaim and the DST will provide an additional R51,2 million over the next three years to support further research.

In addition, we are supporting a consortium of researchers in the South African Malaria Initiative. According to the World Health Organization's 2010 World Malaria Report there are more than 225 million cases of malaria each year. Ninety per cent of malaria-related deaths occur in sub-Saharan Africa, the majority of these are young children.

Equally promising is an initiative regarding the plant *Artimisia annua* (sweet wormwood). Its extract artemisinin has been demonstrated to be effective in the fight against malaria. The early work has already attracted the interest of the Industrial Development Corporation and pharmaceutical companies.

Palaeontology

The Department initiated a consultative process last year to formulate a strategy for archaeology and palaeontology. Our intention is to empower museums to curate our extraordinary fossil collections, to create capacity in our universities to produce a critical mass of archaeologists and palaeontologists, and to drive knowledge production to make South Africa a world centre of scientific excellence in these disciplines.

We are also looking to palaeontological studies to assist us in understanding how climate change affects the evolution of organisms, and how organisms affect the physical world. Knowledge of past patterns of human life and the implications of population growth could help us develop a more effective approach to safeguarding the future of our planet.

Human capital

Despite our significant progress in science and technology, we have yet to find satisfactory answers to several scientific challenges, but perhaps the biggest challenge is on the human capital front. The reality is that South Africa is not producing enough scientists, and without scientists there can be no science.

Success in our efforts to develop science, engineering and technology human resources that are representative of South Africa's demographics depends largely on having sufficient numbers of school leavers with passes in Mathematics and Science. It is vital to attract South Africa's young people to science and technology studies and careers. Our collaboration with the Department of Basic Education is important in the achievement of this goal.

Under the Youth into Science Strategy, the DST sponsored the participation of over 11 000 Dinaledi school learners in the National Science Olympiad last year. The plan is to increase this to 20 000 learners in 2012. We also hope to assist learners through the Dr Math project, an initiative of the CSIR's Meraka Institute, which gives learners online assistance with their Maths homework.

Fighting poverty through sustainable livelihoods

We are driven by the pursuit of knowledge and the application of science that makes a difference to people's lives. In our drive to apply knowledge and technology in the fight against poverty and unemployment, we have introduced pilot projects to determine the technical, environmental and financial feasibility of technology solutions in the cultivation of medicinal plants, fish, essential oils and new plant cultivars. Successful pilot projects will be converted into commercial ventures and serve as models to stimulate further expansion.

One such successful pilot is the on-shore production of abalone. Working in partnership with Stellenbosch University and the community of Hondeklipbaai, the DST has demonstrated that abalone can be grown successfully on the West Coast, and we are now working with other departments to explore the expansion of the pilot to a 120-ton-per-annum abalone farm, which will create over 120 jobs in the area.

In conclusion

It remains a pleasure working with Minister Naledi Pandor, whose passion drives us to achieve the highest possible standards. The competent and hard-working team at the DST, led by our capable Director-General Dr Mjwara, continues to make us proud.



Derek Hanekom

Deputy Minister of Science and Technology

Introduction by the Director-General



“During the year under review the Department continued its work to ensure that science and technology contributed to social and economic development.”

Dr Phil Mjwara

Director-General of Science and Technology

It is my honour and privilege to present the Department of Science and Technology’s annual report for the 2010/11 financial year. I am pleased to report that the Department maintained its high standards of financial performance, spending 98% of its annual budget and receiving another unqualified report from the Auditor-General.

During the year under review the Department continued its work to ensure that science and technology contributed to social and economic development, and that South Africa is increasingly seen as a strategic international partner in research, development and innovation. With over 60 international agreements in place, the Department has focused on relations with key partners and emerging economies.

On the African continent there is an increasing appreciation of the catalytic and transformative role of science and technology. South Africa has been called upon to play a role in strengthening

science and technology on the continent and we are doing this in many different ways – in areas such as aerospace, palaeoanthropology, stem-cell research and nanotechnology.

Work on the Square Kilometre Array is proceeding well. Our partner countries are fully committed to the project and we are working to fulfill all the readiness report requirements of the global committee. This megascience project offers immense opportunities for advancing technological development, engineering and innovation, and for bringing enhanced high-speed connectivity and computing capability to Africa.

Since the South African National Space Agency (SANSA) was launched, it has been pulling out all stops to facilitate the migration of space-related entities to the agency. SANSA has also been tasked to assist the DST in ensuring the provision of support to SunSpace in our effort to convert it into a viable satellite manufacturing company. We remain convinced that we have

the technological capability in South Africa to develop a medium-sized satellite industry and we look forward to SunSpace and SANSA producing plans for Sumbandila2, based on the prototype SumbandilaSat.

The Technology Innovation Agency (TIA) is now fully operational and has begun to add value to several investment opportunities and a number of strategic projects, particularly those that address social needs such as the HIV/TB pandemic, education challenges and rural development. We believe that the existence of TIA is going to give rise to significant benefits for our economy through research that successfully results in commercial products.

The interim structure of the National Intellectual Property Management Office was also established during the past year. The structure is partly funding the establishment of offices of technology transfer (OTTs) in the Eastern Cape and KwaZulu-Natal, to ensure that intellectual property created from publicly financed research and development is identified. Furthermore, it has been supporting staffing costs of OTTs at the Agricultural Research Council and at the Universities of Johannesburg, the Witwatersrand and Cape Town.

Job creation has been identified as a major priority for government. The Department continues to provide support to initiatives aimed at demonstrating how sustainable livelihoods can be created through the innovative use of new technology. The approach used by the Department played a major role in developing the partnership with the European Union known as the Innovation for Poverty Alleviation Programme.

In addition to working closely with the Western Cape on the development of a Cape Health Technology Park, the Department has further reinforced its efforts in strengthening innovation within provinces. This includes technical support in the establishment of Science Parks, the development of innovation strategies and plans, and building stronger links between government, industry, and universities through regional innovation forums.

The achievements of the Department are underpinned by its senior managers' commitment to good corporate governance and strategic planning, the dedicated efforts of the public entities and other stakeholders in the National System of Innovation, and the leadership and support of Minister Naledi Pandor and Deputy Minister Derek Hanekom, to whom I would like to express my sincere gratitude.



Dr Phil Mjwara

Director-General of Science and Technology

Structure



Naledi Pandor

Minister of Science and Technology



Derek Hanekom

Deputy Minister of Science and Technology



Dr Phil Mjwara

Director-General



Lerato Gumbi

*Programme 1: Acting Deputy Director-General
Corporate Services and Governance*



Dr Valanathan Munsamy

*Programme 2: Deputy Director-General
Research, Development and Innovation*



Dr Thomas Auf der Heyde

*Programme 3: Deputy Director-General
International Cooperation and Resources*



Dr Molapo Qhobela

*Programme 4: Deputy Director-General
Human Capital and Knowledge Systems*



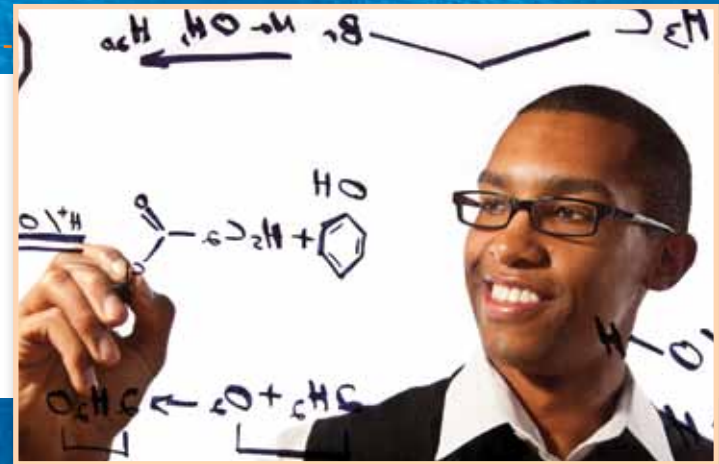
Imraan Patel

*Programme 5: Acting Deputy Director-General
Socio-Economic Partnerships*

Chief Operations Officer: Vacant

Performance Overview

“The Department successfully developed strategies that guide priorities for socio-economic development.”



Performance Overview

The Department of Science and Technology (DST) continued with the implementation of the National Research and Development Strategy and the Ten-Year Innovation Plan (TYIP) in the 2010/11 financial year. The DST identified a number of key factors to guide its efforts through targeted investments in specific areas, and substantial financial resources were committed towards the attainment of key objectives. The DST's performance was noteworthy in many areas and important achievements were made.

The Minister launched the South African-designed hydrogen-powered tricycle, Ahi Fambeni (which means "Let's go" in Xitsonga) at a technology conference in August 2010. The tricycle frame, made up of cutting-edge light and strong materials, was built by students at the Tshwane University of Technology.

A Centre of Competence on Hydrogen Systems Integration and Technology Validation, hosted by the University of the Western Cape, was established under the National Hydrogen and Fuel Cell Technologies Research, Development and Innovation Strategy (HySA).

During the financial year the Department continued to make breakthroughs in metal hydride technology. The metal hydride technology will find application for hydrogen storage in mobile applications such as in public transport and mine locomotives. In line with the implementation of HySA, a public-private partnership was established with Anglo Platinum. The partnership identified a company in the United States of America as an ideal partner to leapfrog the development of a hydrogen and fuel cell technologies industry within South Africa. The partnership resulted in the establishment of a fuel cell manufacturing company, to manufacture under licence and supply fuel cells to the telecommunications market in sub-Saharan Africa.

The Department successfully developed strategies that guided priorities for socio-economic development. Working towards a knowledge-based economy, three bodies were established, namely, the Technology Innovation Agency (TIA), National Intellectual Property Office (NIPMO) and South African National Space Agency (SANSA).

TIA, which was established to address the challenge of commercialising scientific results and the fragmentation of funding instruments, has incorporated the following DST innovation instruments: the Innovation Fund, Tshumisano Trust, the implementation unit of the Advanced Manufacturing Technology Strategy, and the biotechnology innovation centres (LIFElab, BioPAD, Cape Biotech and PlantBio). Regional offices have been established in Gauteng, KwaZulu-Natal, the Western Cape and the Eastern Cape.

As an interim arrangement, NIPMO has been established as a programme within the DST, and work is in progress towards establishing NIPMO as a stand-alone government component. The operationalisation of NIPMO is a major step in stimulating innovation and economic growth for the country. The objective is to ensure that intellectual property (IP) created from publicly financed research and development (R&D) is identified, protected and used for socio-economic benefits, as well as IP management training.

SANSA was launched in December 2010, and will implement the national space programme.

Since the announcement of South Africa and Australia as potential candidates to host the Square Kilometre Array (SKA) radio telescope, a number of initiatives have been undertaken to demonstrate South Africa's readiness. The South African demonstration telescope, MeerKAT is being constructed in two phases. The first phase, a seven-dish array prototype (KAT-7) was completed in January 2010. The complete MeerKAT telescope is expected to be fully assembled by 2014. In addition, the Centre for High-Performance Computing and the South African National Research Network (SANReN), which are large research, development and innovation (RDI) infrastructure projects that provide cyberinfrastructure for the National System of Innovation (NSI) have been developed. These centres will cater for the generation of data emanating from the SKA radio telescope and the National Bioinformatics Network, and provide support to individual researchers and institutions to enhance research performance and productivity.

Targeted partnerships with both regional and international partners are an integral part of the DST's strategy in leveraging resources through collaborations. The DST successfully leveraged R184 million in official development assistance funding from partners like Canada, the EU, Finland, Germany, Japan and the United States of America. Other significant regional and global participation highlights include co-chairing the steering group for the OECD Global Science Forum project on science and technology (S&T) cooperation between developed and developing countries, and serving on the OECD Committee for Scientific and Technological Policy steering group on STI cooperation to address global challenges.

The DST is working to conceptualise, formulate and implement programmes that address the availability of human capital or STI. In the 2010/11 financial year, 2 359 students were supported.

Science awareness is an important component of the DST's human capital drive and is aimed at garnering interest in S&T among learners, educators and the public. The DST's Youth into Science Strategy is aligned to the National Mathematics, Science and Technology Education Strategy of the former Department of Education. The DST and the Department of Basic Education work in tandem to address the current low rates of academic achievement in Mathematics and Science in the country. It is particularly necessary to increase the number of African learners studying and performing well in these subjects. To this end, the DST has invested in science awareness and engagement activities which form one of the anchors of the Youth into Science Strategy. The main infrastructure drivers for such activities are largely the science centres.

National Science Week (NSW), a countrywide campaign to increase public awareness of science, reached 252 776 people through the participation of 89 institutions (including 11 science councils) and approximately 30 million South Africans through the media.

The R&D Tax Incentive Programme seeks to promote private sector investment in R&D to complement government expenditure. The DST has prepared a draft strategy for increasing

R&D expenditure in South Africa, which identifies specific opportunities for enhancing research capacity and increasing R&D investment in order to contribute to economic growth and development.

I. Introduction

The DST focused primarily on implementing the TYIP, while continuing with the implementation of the National Research and Development Strategy. The aim of the TYIP is to help establish a knowledge-based economy for South Africa, in which the production and dissemination of knowledge lead to economic benefits and enrich all fields of human endeavour. Its success will be measured by the degree to which S&T play a leading role in enhancing productivity, economic growth and socio-economic development. The framework of the TYIP will be used in the medium and long-term to guide the achievement of the strategic goals of DST, which are to –

- develop the innovation capacity of the NSI, thereby contributing to socio-economic development;
- enhance South Africa's knowledge-generation capacity in order to produce world-class research papers and turn some advanced findings into innovative products and processes;
- develop appropriate science, technology and innovation (STI) human capital to meet the needs of society;
- build world-class STI infrastructure to extend the frontiers of knowledge, train the next generation of researchers, and enable technology development and transfer, as well as knowledge interchange; and
- position South Africa as a strategic international RDI partner and destination through the exchange of knowledge, capacity and resources between South Africa, the region and other international partners, thereby steering the NSI.

The DST annual review report presents progress made from 1 April 2010 to 31 March 2011.

2. Performance under selected generic indicators

The DST-selected generic ENE indicators with actual performance for 2010/11 financial year are set out in the table below.

Table 2: DST selected ENE indicators for the 2010/11 financial year

Indicator	Programme	Outcomes	ENE target for the 2010/11 financial year	Revised ENE Target for the 2010/11 financial year (reflecting in Corporate Strategy)	Actual progress to date	Reasons for variance	Status
Size of the portfolio of intellectual property (IP), including the number of patents, patent applications and trademarks resulting from publicly-funded research.	Research, Development and Innovation (RDI)	Support an efficient, competitive and responsive economic infrastructure network.	9	2	13 patents/ demonstrators filed: 3 patents for titanium; 2 patents for zirconium; 1 patent for tantalum and niobium separation; 1 patent under the Fluorochemical Expansion Initiative (FEI); 2 demonstrators through the Inkaba ye Africa initiative; 4 demonstrators through ICT.	The target was revised to reflect the target in the DST Corporate Strategy.	Achieved.
	Socio-Economic Partnerships (SEP)		11	11			
Number of companies provided with technology assistance packages (TAPs). To facilitate successful participation in infrastructure public procurement processes.	SEP	Support an efficient, competitive and responsive economic infrastructure network.	24	24	26 companies provided with TAPs.		Achieved.
Total number of research chairs established at higher education institutions.	Human Capital and Knowledge Systems (HCKS)	Develop a skilled and capable workforce.	102 cumulative	20	0	Review of the research chair framework.	Not achieved.
Total number of peer-reviewed scientific and technical papers published.	HCKS	Develop a skilled and capable workforce.	550	550	102	Awaiting implementation of the approved new research chairs framework.	Partially achieved.
	SEP		70	70	109 scientific and technical papers were published.		Achieved.

Performance Overview (Continued)

Indicator	Programme	Outcomes	ENE target for the 2010/11 financial year	Revised ENE Target for the 2010/11 financial year (reflecting in Corporate Strategy)	Actual progress to date	Reasons for variance	Status
Total number of internships awarded.	SEP	Create decent employment through inclusive economic growth.	121	19	121 interns placed in industry and various technology stations. 7 interns placed through the FEI.	The target was revised to reflect the target in the DST Corporate Strategy	Achieved.
Number of students registered for master's and PhDs per year and supported by targeted human capital development (HCD) instruments.	HCKS and RDI	Develop a skilled and capable workforce.	1 400	1 413	2 359 students supported.	The target was revised to reflect the target in the DST Corporate Strategy.	Achieved.
	SEP		60	66	99 students funded for research degrees through S&T for Economic Impact and 34 master's/ PhD students funded in the social sciences and humanities.		Achieved.
Amount of foreign funds leveraged in support of STI cooperation.	ICR		R196,3m	R196,3m	Total of R231,1m. R184,5 m funding and in-kind assistance leveraged. R53,1m foreign funds spent in support of South African STI cooperation.		Achieved.

Indicator	Programme	Outcomes	ENE target for the 2010/11 financial year	Revised ENE Target for the 2010/11 financial year (reflecting in Corporate Strategy)	Actual progress to date	Reasons for variance	Status
Total number of functional centres of excellence (CoEs) and research initiatives.	RDI	Research initiatives.	1	1 research initiative	Centre for the AIDS Programme of Research in South Africa (CAPRISA) 008 Phase IIIb clinical studies followed CAPRISA 004 phase IIb clinical studies conducted.		Achieved.
	HCKS	Develop a skilled and capable workforce.	8 (formed)	1	8 functional CoEs and research initiatives have been formed.	The target was revised to reflect the target in the DST Corporate Strategy.	Achieved.
Number of learners benefiting per year from targeted mathematics, science, English, engineering and technology capacity-building programmes.	HCKS		2 700	2 700	2 700 were supported by the end of the 2010 academic year.		Achieved.
Number of joint STI initiatives with African partners.	International Cooperation and Resources (ICR).	Create a better South Africa, a better Africa and a better world.	8	8	15 joint STI initiatives with African partners.		Achieved.

Performance Overview (Continued)

Indicator	Programme	Outcomes	ENE target for the 2010/11 financial year	Revised ENE Target for the 2010/11 financial year (reflecting in Corporate Strategy)	Actual progress to date	Reasons for variance	Status
Number of new technologies under development.	RDI	Support an efficient, competitive and responsive economic infrastructure network.	20	11	7 technologies and 1 service: Sutherlandia Phase IIb Trials to develop phototherapy for early HIV infection; Eucalyptus genome sequenced and annotated; Technology for new-born screening for metabolic disorders; Developed technologies for acid mine drainage with specific reference to treatment of soil and water; Developed three novel drug delivery technologies that are under consideration for commercialisation by Sanofi; Developed guidelines for biosafety assessment for regulators and innovators (service); Microbicide gel.	The target was revised to reflect the target in the DST Corporate.	Partially achieved.
	HCKS		1	1	4		Achieved.
	SEP		1	1	A geospatial information platform providing spatial and temporal maps on current patterns and trends between 1995 and 2007 was completed.		Achieved.

Indicator	Programme	Outcomes	ENE target for the 2010/11 financial year	Revised ENE Target for the 2010/11 financial year (reflecting in Corporate Strategy)	Actual progress to date	Reasons for variance	Status
Number of new technology-based companies established as a result of products developed through funded R&D programmes.	RDI		12	7	Continued support to 7 community-based enterprises.	As a result of a strategic reorientation of the social impacts portfolio of the DST, the performance focus shifted from “new companies established” to more appropriate measures.	Partially achieved.
	SEP		5	5			
Number of households benefiting from technology-based interventions per year.	SEP		2 800	2 800	<p>1 640 households benefited from the introduction of communal water stations in the Eastern Cape</p> <p>Approximately 9 840 people (not households) benefited from an intervention undertaken as part of the Accelerating Sustainable Water Services Delivery (ASWSD) initiative.</p>	Difficulty in defining appropriate performance measures for the efforts of the DST in using S&T to influence how poverty is addressed, combined with difficulties in introducing an effective measurement system.	Partially achieved.

3. Summary of Programme Performance

Programme 1: Corporate Services and Governance

This Programme is responsible for the overall management of the Department. It provides centralised support services to ensure that funded organisations comply with good corporate governance practices and are aligned with the strategic focus of the National System of Innovation (NSI), as well as monitoring and evaluating the science councils.

It has the following components:

- The offices of the Minister, Deputy Minister and Executive Committee.
- Corporate Services, which is responsible for finance, strategy and planning, communications, human resources, legal services, information technology systems and support, as well as internal auditing.
- Property Management, which covers functions and funds that have been devolved from the Department of Public Works.

Programme 2: Research, Development and Innovation

The overall strategic purpose of the Programme is as follows:

- To deliver new technology-based industries to the South African economy through the development of appropriate strategic roadmaps for chosen sectors of the economy, including energy, space, health and biotechnology.
- To create the appropriate policy and institutional implementation instruments in order to deliver technology products and services for the economy.
- To develop and implement appropriate policies to promote and protect IP that results from publicly financed R&D in South Africa.

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

- Space Science and Technology.
- Hydrogen and Energy.
- Biotechnology and Health Innovation.
- Innovation Planning and Instruments.

In the 2010/11 financial year, the Programme envisioned South African communities that are prospering through enhanced employment prospects, the creation and retention of local wealth, and an enriched cultural and social environment. To realise this vision, the Programme strove to foster and promote South African innovation and high-technology development in a manner that enhances and adds value to the country's technology products and services, including exports.

Progress against service delivery objectives and indicators

Innovation Planning and Instruments (IPI) continued to drive strategic interventions that will enable South Africa to translate a greater proportion of its scientific knowledge outputs into commercial technology products and services. This was done by designing and creating policy and institutional structures to facilitate technology development and the use of technology to penetrate national and international markets.

- (a) Establish TIA to provide support (financial and non-financial) and stimulate and intensify the commercialisation of IP, leading to new patents, products, services and high-tech industries.**

IPI has successfully implemented strategies aimed at transforming the South African economy into a knowledge-based economy. So far, all the targets on the road to a knowledge-based economy have been met through the establishment of institutional instruments and policy, namely, TIA, the Intellectual Property Rights from Publicly Financed

Research and Development Act, which has given effect to NIPMO. To date, the following DST innovation instruments have been successfully incorporated into TIA: the Innovation Fund, Tshumisano Trust, the implementation unit of the Advanced Manufacturing Technology Strategy (AMTS), and the biotechnology innovation centres (LIFElab, BioPAD, Cape Biotech and PlantBio).

Following the revision of the TIA business case, the agency was listed in Schedule 3A of the Public Finance Management Act. A CEO was appointed in September 2010 and seven entities were migrated to TIA by 31 October 2010. Regional offices were established in Gauteng, KwaZulu-Natal and the Western Cape by November 2010. One additional regional office was established in the Eastern Cape, bringing the total to four regional offices.

In addressing the innovation chasm, NIPMO has been established as a unit within the DST as an interim arrangement until it has been established as a stand-alone government component and is operational. This should be done by 31 March 2013.

SANSA was launched on 9 December 2010.

Hydrogen and Energy provides policy leadership in long-term and cross-cutting RDI in the energy sector. The subprogramme plays a key role in developing a sustainable and globally competitive South African energy knowledge-base and industry that will ensure broader socio-economic benefits for the country from the nascent global hydrogen economy.

(a) To commercialise alternative energy technologies through spin-off companies in order to diversify the energy industry and the economy

The objective was set in response to international calls for green energy resources to minimise the impacts of climate change. More work has been done in relation to the technology and innovation areas that support the development of green industries and the green economy. This work includes the promotion of fuel cells and hydrogen energy.

The target for the establishment of one alternative technology company was met. One South African-designed hydrogen-powered tricycle was officially launched by the Minister at a technology conference in the North West in August 2010.

In line with the implementation of the Cabinet-approved HySA, a public-private partnership (PPP) was established with Anglo Platinum. In support of platinum group metal beneficiation, Anglo Platinum launched a R100 million for Platinum Group Metal Development Fund. The PPP identified a company in the United States of America as an ideal partner to leapfrog the development of a hydrogen and fuel cell technologies industry in South Africa. The partnership resulted in the establishment of a fuel cell manufacturing company, to manufacture under licence and supply fuel cells to the telecommunications market in sub-Saharan Africa.

The company established has since been marketing products within the telecommunications industry in South Africa as part of the market development strategy. The next phase will be the establishment of a factory in South Africa. This will provide employment mainly to postgraduate students who have the high skills required. There will be other employment and new industry opportunities along the hydrogen and fuel cell technologies value chain.

(b) Increase energy-related publications in order to enhance the knowledge-based economy

The target for this objective (two energy-related publications by the end of the reporting period) was exceeded with the publication of a book chapter and 12 papers in peer-reviewed journals. Furthermore, in relation to work that relates to patents exploited from publicly-funded energy research in South Africa, the DST made good progress. The performance target of two patent applications was achieved with the master funding agreements completed and signed. The memorandum of agreement that deals with the leveraging of local global partnerships for commercialisation through IP transactions that include licensing agreements, inbound IP and technology transfer agreements was signed in August 2010.

Space Sciences focuses on creating the necessary strategic and institutional regimes for creating and developing a viable space programme and an Earth observation system. This includes providing strategic direction on key aspects linked to the construction of the SKA demonstrator telescope (MeerKAT) and related activities to ensure that Africa is well positioned to host the SKA. Targeted national space initiatives are intended to harness the benefits of space S&T for socio-economic growth and sustainable development.

(a) Strengthening our international engagements by mobilising our local community to leverage international opportunities and to build upon our local space capacity

The Space Science awareness campaign in the North West afforded learners and people from many organisations an opportunity to explore space science and get a global perspective on space technology, and to realise the role played by South Africa in this field.

(b) Attract investment in the knowledge economy through winning the bid to host the SKA

The MeerKAT precursor array in the form of the seven-dish Karoo Array Telescope was erected at the SKA site in Carnarvon. The project has created 600 Expanded Public Works Programme jobs (jobs linked to power supply, road construction and building support facilities). The SKA project also supports the development of mathematics and science education in the towns of Carnarvon and Williston.

Service delivery achievements

The delivery achievements of the Programme are depicted below.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Establish TIA to provide support (financial and non-financial), stimulate and intensify the commercialisation of IP which will lead to new patents, products, services and new high-tech industries.	Fully operational TIA.	A fully operational TIA organisation with governance and management structures as well as operational processes, systems and procedures.	Appoint full-time TIA CEO by 30 Nov. 2010 and migrate 7 entities to TIA by 31 March 2011.	A full-time TIA CEO was appointed in September 2010. All 7 entities were migrated to TIA by 31 Oct. 2010.		Achieved.
	Number of TIA regional offices established.	TIA regional offices established.	3 regional offices established (in Gauteng, KwaZulu-Natal and the Western Cape) by 30 Nov. 2010.	Regional offices were established in Gauteng, KwaZulu-Natal and the Western Cape by 30 Nov. 2010. One additional regional office was established in the Eastern Cape, bringing the total to 4 regional offices.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Provide support towards the creation of new companies to ensure the commercialisation of products, processes and services that address socio-economic challenges.	Number of high-tech companies with commercial activity established.	New technology-based companies with commercial activity supported.	Creation of 5 new technology-based companies by 31 March 2011.	No technology-based companies were established.	TIA has established its management capabilities and has just closed a call for proposals to be evaluated. The outcome of that call will influence the achievement of this goal.	Not achieved.
To provide support towards the creation of formalised industry partnerships to ensure technology uptake and commercialisation.	Number of technology commercialisation partnerships entered into with the private sector, including foreign direct investment.	Formalised industry partnerships through the centres of competence (CoCs).	Provide financial support towards the creation of 3 formalised industry partnerships by 31 March 2011.	3 partnerships were established, with Tongaat Hulett, GlaxoSmithKline and iThemba Pharmaceuticals.		Achieved.
Establish NIPMO and offices of technology transfer (OTTs) to ensure that IP created from publicly financed R&D is identified, protected and utilised for socio-economic benefits as well as IP management training.	Fully operational NIPMO.	NIPMO established.	Establish an interim administrative NIPMO office within the DST and work towards establishing NIPMO as a stand-alone government component by 31 March 2011.	The interim NIPMO has moved into its own offices. Interviews for the interim head of NIPMO have been concluded.		Achieved.
	Number of new OTTs established and capacitated to fulfill the required functions stipulated in section 7 of the Intellectual Property from Publicly Financed Research and Development (IPR) Act.	OTTs with required functions as stipulated in section 7 of the Intellectual Property from Publicly Financed Research and Development Act.	Establish and capacitate 2 OTTs by 31 March 2011	4 new OTTs established by January 2011 (1 in each of the following provinces: Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape). Payments transferred in support of OTT establishments have been made.		Achieved.
Develop human capital in IP management to promote technology transfer.	Number of people trained in IP management and technology transfer.	Capacity developed in IP management and technology transfer.	Train 30 people in IP management by 31 March 2011.	59 people were trained in IP management.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Create a NIPMO fund to support IP protection and enforcement.	Total amount provided to NIPMO.	Established NIPMO fund to support IP protection and enforcement.	Provide R3 million to the NIPMO fund by 31 Mar. 2011.	R3 million for NIPMO fund has been provided and managed by TIA. Money disbursed by TIA to the relevant institutions for the rebate on patent-related costs. In the new financial year the fund will be managed internally by the interim NIPMO.		Achieved.
To commercialise alternative energy technologies through spin-off companies in order to diversify the energy industry and the economy.	Number of alternative energy technologies demonstrated and taken up by industry.	Companies established.	1 alternative technology showcased at a conference by 31 March 2011.	A hydrogen-powered tricycle was officially unveiled by the Minister at a technology conference in August. TIA approved funding for an algal biofuel project and is preparing contracts for NMMU.		Achieved.
Development of human capital for the alternative energy and nuclear power industries in order to bolster sustainable and globally competitive technological capabilities.	Number of graduates and research chairs.	Human capital for the alternative energy and nuclear power industries.	15 graduates including master's and PhDs by 31 March 2011.	A total of 24 students have completed their studies (including master's and PhDs). 13 students completed their fourth year, 5 students completed honours, 4 students completed master's and 2 students completed PhDs.		Achieved.
Increase energy-related publications in order to enhance the knowledge-based economy.	Number of publications.	Peer-reviewed publications.	2 energy-related publications by 31 March 2011.	12 papers published in peer-reviewed journals and a book chapter written.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Facilitate patent registrations in energy-related research and technologies to ensure exploitation of know-how for commercial and economic benefit.	Number of patents exploited from publicly-funded energy research.	Registered South African patents exploited.	2 patent applications by 31 March 2011.	2 patent applications. All the master funding agreements have been signed and the project funding has been transferred.		Achieved.
Leverage local and global partnerships for commercialisation purposes for the benefit of South Africa, and take advantage of available know-how.	Number of IP transactions through commercialisation partnerships leading to the commercialisation of energy technologies.	IP transactions, such as licensing agreements, in-bound IP, and technology transfer agreements.	1 memorandum of agreement with potential partners signed by 31 March 2011.	Agreement was signed in June 2010. The Minister announced this at a press conference in August.		Achieved.
Attract investment in the knowledge economy by winning the bid to host the SKA.	Successful SKA bid.	Demonstration of S&T capacities through the construction of the MeerKAT, which is the prototype of the SKA.	Initial construction of MeerKAT by 31 March 2011.	The construction of the MeerKAT precursor array, which is the seven-dish Karoo Array Telescope (KAT-7), was completed at the SKA site near Carnarvon. KAT-7 is being commissioned to conduct astronomy research operations. The completed KAT-7 provided information that led to the redesign of MeerKAT from 80 centrefed dishes to 64 offset dishes based on the final SKA design.	The MeerKAT dish structure, a Gregorian offset design, is significantly different from the KAT-7 prototype array.	Not achieved.
HCD in astronomy and space engineering to create a critical mass of experts for the ICT, engineering and research sectors.	Number of students and postdoctoral fellowships funded.	Students and postdoctoral fellows that are funded in astronomy, ICT and engineering.	50 students and postdoctoral fellows by 31 March 2011.	A total of 62 new bursaries have been awarded to students and postdoctoral fellows.		Achieved.
Creating the required human capital and technology incubators to support meeting socio-economic challenges and promoting these benefits to the broader public.	Number of students that graduate, and number of research chairs and CoCs established.	Graduates at bachelor, honours, MSc and PhD level.	30 graduates by 31 Mar. 2011.	31 students graduated from the CPUT Cubesat project.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
<p>Creating the required human capital and technology incubators to support meeting socio-economic challenges and promoting these benefits to the broader public.</p> <p>(Continued)</p>	<p>Number of students that graduate, and number of research chairs and CoCs established.</p>	<p>Formal research chairs and CoCs.</p>	<p>3 research chairs in each of the following areas: Earth observation, navigation and positioning, and space exploration.</p>	<p>Research chairs have been identified, but are on hold until funding is finalised.</p>	<p>Lack of new funding from National Treasury for space science. Research chairs might be funded from a general South African Research Chairs Initiative (SARChI) call.</p>	<p>Not achieved.</p>
			<p>1 CoC in optronics/ synthetic aperture radar by 31 Mar. 2011.</p>	<p>The CoC core team operational and funded. Core team planning and implementing a feasibility study. Core team developing the business plan.</p>	<p>The process of establishing the CoC was delayed because of realignment to CoC framework, which was approved by EXCO later than anticipated, and because the CoC business plan was not approved in time.</p>	<p>Not achieved.</p>
<p>Building platforms that support user needs in terms of both direct services and products and critical infrastructure that supports the national space programme.</p>	<p>Number of space platforms developed.</p>	<p>Space platforms that support the national space programme.</p>	<p>2 platforms built by 31 Mar. 2011.</p>	<p>2 platforms developed. Last phase of Earth Observation Data Centre implementation funded. South African Earth Observation Strategy portal development is in the Beta version. This version was demonstrated during Group on Earth Observation symposiums in South Africa and China.</p>		<p>Achieved.</p>
<p>Development of space applications, products and services that will respond to the needs of end users across all spheres of government.</p>	<p>Total number of space-related technology services launched by South African-based companies.</p>	<p>Space applications, products and services launched.</p>	<p>8 additional products and services developed by 31 Mar. 2011.</p>	<p>No products and services produced to date.</p>	<p>There was a delay in the planning process.</p>	<p>Not achieved.</p>

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
SANSA, which will be the implementing arm of the national space programme, established.	SANSA Board in place, with CEO appointed and agency fully operational.	A fully operational SANSA, with governance and management structures, as well as operational processes, and systems and procedures.	Operationalisation of SANSA through the appointment of a board of directors, a CEO and skeleton staff by 31 March 2011.	Public launch of SANSA was held on 9 Dec 2010. The CEO and Board have been appointed.		Achieved.
Strengthening South Africa's international engagements by mobilising the local community to leverage international opportunities and to build on local space capacity.	Number of international engagements.	Bilateral, multilateral and regional international engagements.	2 bilateral agreements formalised by 31 March 2011.	2 African bilateral engagements: GMES-Africa, and an inter-agency agreement between South Africa, China and Brazil for CBERS-3 data receipt and distribution. (African Resource Management Satellite Constellation mission analysis and definition completed.)		Achieved.
Grow the bioeconomy through an increase in new biotechnology-based products and services, thereby contributing to economic growth in South Africa.	Number of new biotechnology-based products and services funded through biotechnology innovation instruments.	New biotechnology-based products and new services.	2 new products or services by 31 March 2011.	1 service developed and 7 technologies developed.		Achieved.
Grow the bioeconomy through an increase in the number of spin-off biotechnology companies from established technology platforms, thereby contributing to economic growth in South Africa.	Number of companies established.	New companies established based on biotechnology or health innovation activities.	2 companies established by 31 Mar. 2011.	No companies were established.	TIA decided not to establish new companies but to consolidate the existing ones.	Not achieved.
Develop the required human capital to grow the knowledge-based bioeconomy.	The number of funded doctoral and masters students.	10 additional doctoral and 14 additional masters students funded.	33 doctoral and masters students funded by 31 Mar. 2011.	33 doctoral and masters students were funded.		Achieved.
Create an enabling environment for health innovation.	Number of health-related research and innovation initiatives established.	Health innovation initiatives.	1 new health innovation initiative by 31 Mar. 2011.	Nuclear Technologies for Medicine and Biosciences Initiative projects approved and funded.	Alignment and consolidation of existing health initiatives currently ongoing.	Not achieved.

Programme 3: International Cooperation and Resources

This Programme aims to develop, promote and manage strategic 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 other international partners.

It has three subprogrammes:

- Overseas Bilateral Cooperation
- Multilateral Cooperation and Africa
- International Resources

Measurable objectives and highlights

The Programme increases flows of scientific knowledge and resources to South Africa by participating in joint programmes. The achievements below are noteworthy.

Overseas Bilateral Cooperation

Joint research projects have been completed with several partners during the period under review, including those within the India-Brazil-South Africa (IBSA) framework in areas such as nanotechnology, biotechnology and polar and oceanographic research. Bilateral engagements in areas such as space, energy, ICT, advanced manufacturing and science for sustainability have been completed or adapted to be in support of the TYIP. An example of one of the flagship projects falling in this joint research category is Inkaba ye Africa, a multidisciplinary project that surveys a cone-shaped sector of the earth from core to space, gathering data that will facilitate future planning. This partnership has built human capital by providing opportunities through postgraduate studies for 88 students. With a South African investment of R7,5 million, an amount of R8,3 million was leveraged from the bilateral partner. Discussions to establish the possible reconfiguration of these projects in support of both the TYIP and the NRDS have been initiated.

Multilateral Cooperation and Africa

South Africa increased its participation in multilateral organisations and enhanced its impact in the region and globally. For example, it co-chaired the steering group for the OECD's Global Science Forum project on "S&T cooperation between developed and developing countries", and served on the OECD's Committee for Scientific and Technological Policy Steering Group on Science, Technology, and Innovation cooperation to address global challenges.

Since South Africa's chairing of the Southern African Development Community (SADC) in 2009, and following the secondment of an official and the launch of the SADC STI Desk, South Africa was mandated to lead four regional projects, namely, SADC STI policy management, training and capacity building, the SADC Women in Science, Engineering and Technology (SET) programme in consultation with member states, hosting a workshop on IP rights, and developing modalities for the implementation of the SADC SET Week initiatives. South Africa's bilateral relations in Africa were enhanced through the funding of joint bilateral projects with Kenya, Namibia and Mozambique.

International Resources

After Russia, China and India, South Africa receives the largest amount of European Union (EU) research funding of all non-EU countries, testimony to the key importance of South Africa as an EU partner in S&T. The EU and South Africa have also established policy dialogues on space science, energy and social sciences and humanities, which resulted in specific EU Framework Programme (FP) calls for proposals aimed at addressing joint South African-EU and African-EU challenges. The ongoing dialogue under the African Union-EU partnership resulted in the first EU FP7 Africa call, where significant research funds were allocated to S&T research on the continent. This call was preceded by an African, Caribbean and Pacific Group of States call, aimed at building STI capacity in these regions. Lastly, South Africa is the first recipient of Sector Budget Support funds from the EU specifically dedicated to the S&T sector, and the DST has

already invested a significant portion of the R300m allocated by the EU in a range of poverty-relief and quality-of-life-improvement projects.

The implementation of the Finnish-South Africa innovation partnership programmes is ongoing, having already supported emerging entrepreneurs and built innovation capacity in South Africa, including in poor provinces and rural areas. The implementation of the Finnish-Southern African partnership programme to strengthen the Southern African Network for Biosciences is supporting the advancement of life sciences research central to addressing the challenge of HIV/Aids, food security and environmental protection. Funds were also mobilised from donor organisations in support of food security and climate change initiatives in South Africa and the SADC region.

Progress against service delivery objectives and indicators

(a) Increase access to international STI and development resources that will contribute to national and regional development

The DST managed to exceed the target for increasing access to international STI and development resources through the value of funding and in-kind leverage, successfully leveraging R184 487 000 (26% more than the envisaged target of R146 350 000). The target of R50 million of expenditure to leverage foreign funds aimed at supporting South African STI cooperation was exceeded, with R53,1 million spent.

(b) Promote and manage South Africa's international STI cooperation in support of national priorities articulated in the NRDS, TYIP and MTSF

Since the SADC Summit of 2009, at which the DST secured SADC support for the SKA project, a number of high-level SKA bid events have been organised. The SKA was profiled at five events in the reporting period, exceeding the two planned. An SKA press reception was held with science journalists and participants at the annual meeting of the American Association for the Advancement of Science (AAAS) in the US. The SKA was featured in several international news articles as a result of the event. SKA presentations were made to industry in Italy (Telespazio, Finmeccania, Ansaldo Energia and Space Italia) and

government stakeholders (the National Institute of Astrophysics and the Institute for Foreign Trade) to lobby for support for MeerKAT and the SKA.

Furthermore, engagements with three additional SKA partners took place during the period under review, and there are now nine African SKA bid countries, including South Africa. A presentation on the SKA was made to the Corporate Council on Africa (which represents 85% of US private sector investing in Africa) and a meeting was attended by representatives of US Congress, the US National Radio Astronomy Observatory and the National Society of Black Physicists. Another promotional event was an SKA breakfast meeting hosted by the South African Ambassador in Washington together with the ambassadors of five African SKA partner countries and the African Union (AU) Ambassador to the US. The SKA was discussed at the SA-EU Interparliamentary meeting in Cape Town. The SKA briefing was done to the UK High Commissioner and to G8+5 science attachés stationed in London. There were also SKA engagements with Blackberry and IBM to lobby for their support.

(c) Enhance the impact of South Africa and the region on the international STI environment, in order to make the country and the region important international STI partners

During the 2010/11 financial year the DST implemented initiatives that led to the enhancement of South-South cooperation. The DST's leadership role in South-South cooperation was recognised in its hosting of the SADC High-Performance Computing workshop in February 2011 and the 2nd SADC Climate Change Workshop in Botswana in March 2011. Three SADC STI initiatives have been implemented, on women in science, climate change and high-performance computing.

(d) Increase access to international STI and development resources that will contribute to national and regional development

A total of 70 members of the Shanghai S&T community participated in DST seminars on climate/global change and African scholarships. Four hundred and sixteen experts engaged in international STI cooperation through the call for project proposals with countries such as Argentina, Norway, Switzerland and Germany.

(e) Enhance the impact of South Africa and the region on the international STI environment in order to make the country and the region an important international STI partner

Only three initiatives were implemented under this objective. The planned IBSA biotechnology, health (HIV/Aids) and satellite workshops have not taken place as planned for the following reasons:

- Owing to elections in Brazil, the country could not confirm participation in the biotechnology workshop or launch a call. The new government has not prioritised the call.

- The IBSA satellite workshop was delayed because of a breakdown in communication between the DST and the Department of Space in India. An invitation from India is still awaited.

Service delivery achievements

The delivery achievements of the Programme are depicted below.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Increase access to international STI and development resources that will contribute to national and regional development.	Value of funding and in-kind assistance leveraged.	Funding and in-kind assistance leveraged.	R146 350 000 by 31 March 2011.	A total of R184 487 000 was received by the DST (R104,222m in actual funding, R27,765m in in-kind contributions through official development assistance, and R52,5m through the FP7).		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Promote and manage South Africa's international STI cooperation in support of national priorities articulated in the NRDS, TYIP and MTSE.	Number of high-level SKA bid events organised.	High-level SKA bid events organised.	2 high-level SKA bid events organised by 31 March 2011.	SKA profiled at 5 events. SKA press reception with science journalists and participants at the annual meeting of the AAAS in the US. The SKA was featured in several international news articles as a result of this event. SKA presentations were made to Italian industry (Telespazio, Finmeccania, Ansaldo Energia and Space Italia) and government stakeholders (the National Institute of Astrophysics and the Institute for Foreign Trade) to lobby for support for MeerKAT and SKA.		Achieved.
	Number of international partners engaged in supporting the SKA bid.	International partners engaged in supporting the SKA bid.	6 international partners engaged in supporting the SKA bid by 31 March 2011.	A total of 8 partners engaged this year. SKA presentation made to the Corporate Council on Africa (which represents 85% of US private sector investing in Africa) and meeting was attended by the representative of US Congress, the US National Radio Astronomy Observatory and the National Society of Black Physicists. An SKA breakfast meeting hosted by the South African Ambassador in Washington together with the ambassadors of 5 African SKA partner countries and the AU Ambassador to the US.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Promote and manage South Africa's international STI cooperation in support of national priorities articulated in the NRDS, TYIP and MTSF. (Continued)	Number of international partners engaged in supporting the SKA bid.	International partners engaged in supporting the SKA bid.	6 international partners engaged in supporting the SKA bid by 31 March 2011.	The SKA was discussed at the SA-EU Interparliamentary meeting in Cape Town. A briefing on the SKA made to the UK High Commissioner and to G8+5 science attachés stationed in London. SKA engagements held with Blackberry and IBM to lobby for their support.		Achieved.
	Number of international facilities accessed through partnerships.	International facilities accessed through partnerships.	2 international facilities accessed through partnerships by 31 March 2011.	2 international facilities accessed (CERN and the Joint Institute for Nuclear Research).		Achieved.
	Number of African SKA partners engaged.	African SKA partners engaged.	8 existing African SKA partners engaged by 31 March 2011.	The 8 existing African SKA partners engaged at the fifth working group and second steering committee meeting on 1 and 2 Sept. 2010.		Achieved.
	Number of new joint STI projects with African partners.	New joint STI projects with African partners.	8 new joint STI projects with African partners by 31 March 2011.	25 new STI projects with African partners (9 with Namibia, 6 with Mozambique and 10 with Kenya).		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
<p>Promote and manage South Africa's international STI cooperation in support of national priorities articulated in the NRDS, TYIP and MTSE.</p> <p>(Continued)</p>	Number of OECD initiatives that the South African NSI led/implemented locally.	OECD initiatives led or implemented locally.	2 OECD initiatives led or implemented locally by 31 March 2011.	DST continues to lead two OECD projects: (1) Committee for Scientific and Technological Policy project on "New approaches and governance mechanisms for multilateral cooperation in STI to address global challenges". (2) Global Science Forum project on "Opportunities, challenges and best practice in international research cooperation between developed and developing countries". The DST will lead the process towards the implementation of the recommendations made at a workshop held in collaboration with Japan in September 2010.		Achieved.
Enhance the impact of South Africa and the region on the international STI environment, in order to make the country and the region international STI partners.	Number of SA-led SADC initiatives successfully implemented.	SA-led SADC initiatives successfully implemented.	3 SA-led SADC initiatives successfully implemented by 31 March 2011.	Three SADC STI initiatives have been implemented, on women in science, climate change and high performance computing.		Achieved.
Increase access to international STI and development resources that will contribute to national and regional development.	Value of foreign funds spent in support of South African STI cooperation.	Foreign funds spent in support of South African STI cooperation.	R50 million.	The amount spent for the year is R53,1m (Argentina R4,7m, China R3,2m, Flanders R5,2m, French R5,1m, Germany R7,1m, Hungary R3,2m, IBSA R5,5m, India R1,2m, Inkaba ye Afrika R8,7m, Italy R4,3m, Japan R2,3m, Poland R2,2m, Russia R0,4m).		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
<p>Increase access to international STI and development resources that will contribute to national and regional development.</p> <p>(Continued)</p>	Number of participants (postgraduate students and principal investigators) in international STI cooperation.	Participants (postgraduate students and principal investigators) in international STI cooperation.	30 participants in international STI cooperation by 31 March 2011.	A total of 70 members of the Shanghai S&T community participated in DST seminars on climate/global change and African scholarships. 416 experts engaged in international STI cooperation through the call for project proposals with countries such as Argentina, Norway, Switzerland and Germany.	The final number for the year, 416, is high owing to participation in the Shanghai Expo.	Achieved.
Enhance the impact of South Africa and the region on the international STI environment in order to make the country and the region an important international STI partner.	Number of initiatives in which South Africa actively participates under IBSA.	Initiatives in which South Africa actively participates under IBSA	5 initiatives in which South Africa actively participates under IBSA by 31 March 2011.	3 initiatives have been achieved	<p>The biotechnology, health (HIV/Aids) and IBSA satellite workshops have not taken place as planned for the following reasons:</p> <ul style="list-style-type: none"> • Owing to elections in Brazil, the country could not confirm participation in the biotechnology workshop or launch a call. The new government has not prioritised the call. • The IBSA satellite workshop was delayed because of a breakdown in communication between the DST and the Department of Space in India. An invitation from India is still awaited. 	Partially achieved.

Programme 4: Human Capital and Knowledge Systems

The Programme aims to develop and implement national programmes to produce knowledge, human capital and the associated infrastructure, equipment and public research services to sustain the national system of innovation. It has the following three subprogrammes:

- **Human Capital and Science Platforms** focuses on developing and renewing SET human capital to promote knowledge generation, protection and exploitation; developing science platforms that leverage off South Africa's geographical advantages, and promoting science, technology, engineering, mathematics and innovation literacy and awareness. Funding is provided to the National Research Foundation (NRF) for programmes to develop research and human capital.
- **Indigenous Knowledge Systems** promotes the role of indigenous knowledge systems (IKS) in national R&D programmes to strengthen their contribution to STI.
- **Emerging Research Areas and Infrastructure** facilitates the strategic implementation of research equipment and infrastructure to promote knowledge production in areas of national priority and sustain R&D-led innovation. The subprogramme promotes new and emerging research areas by supporting the required research and infrastructure capacity.

Progress against service delivery objectives and indicators

(a) Develop high-level human capital for the NSI

Human Capital and Science Platforms conceptualises, formulates and implements programmes that address the availability of human capital for STI. For the 2010/11 financial year, the DST exceeded the target by supporting 2 359 students. The breakdown of the students awarded financial support is 964 through the comprehensive bursary scheme (462 honours, 268 master's, 234 PhDs), 476 through CoEs, 67 through the Palaeontological Scientific Trust (PAST), and 852 through SARChI.

(b) Enhance youth access to science, technology, engineering and mathematics in order to improve their participation in SET-based careers

The NSW, which is the biggest countrywide science awareness campaign, was a resounding success. A total of 252 776 participants were reached during the NSW campaign, exceeding

the target of 250 000. The NSW was launched in the Eastern Cape at an event attended by 5 000 people. A total of 89 institutions (including 11 science councils) participated in the NSW through grants. The campaign's reach was broad, with 39 of the 50 municipal districts countrywide reached. Combined circulation and listenership figures of local print and electronic media confirmed that NSW messages reached approximately 30 million South Africans in different walks of life (approximately five times the target).

(c) Promote and enhance research productivity to increase South Africa's world share of knowledge output

The DST envisaged supporting 20 new research chairs (bringing the number of chairs from 82 in 2008/09 to 102 in the 2010/11), but in the year under review the research chairs were not awarded. A three-year framework for allocating research chairs over the entire 2010/11 MTEF with priority themes for government was approved by the Minister. The DST also prioritised the development of supervisory capacity in the higher education system by increasing support for both emerging and established researchers.

(d) Identify and support the development of new and emerging research areas and technologies

Emerging Research Areas and Infrastructure steers the advancement of novel and cross-cutting research areas and the establishment of world-class research infrastructure in the NSI. They drive the DST's strategic direction to synergise opportunities for emerging research areas, infrastructure, large-scale facilities and the development of a critical mass of human capital. Complementary initiatives among stakeholders in the public sector are facilitated to develop a competitive research nucleus.

The target to develop one product prototype in one of the new and emerging research areas and technologies was met with the development of a prototype paint that contains modified nano-clay powder by the Council for Scientific and Industrial Research (CSIR) Nanotechnology Innovation Centre. This new form of paint has improved strength and better protection against ultraviolet light, as well as increased resistance to fire.

(e) Ensure the availability of appropriate infrastructure for RDI

According to the Corporate Strategy, 39 academic and research sites were to be connected to SANReN by March 2011 to increase the availability of broadband for RDI. This target was exceeded, with 50 sites connected.

With the SANReN backbone in operation and increased international connectivity obtained by the Tertiary Education Network (TENET), the costs of international connectivity have been reduced by a factor of 12. Furthermore, the presence of SANReN has enabled the Hartebeesthoek Radio Astronomy Observatory to participate in an international electronic Very Long Baseline Interferometry experiment. SANReN is also allowing researchers working on the SumbandilaSat project to send and receive data from the satellite much faster than conventional networks.

(f) Promote and develop RDI and innovation in IKS

The draft framework for the identification and establishment of CoEs in IKS has been developed and is awaiting approval. The first phase of the project includes a functional first version of the National IKS Management System (NIKMAS), which includes a digital library, GIS and a catalogue register. Extra features were added to include a semantic search function and a mobile platform prototype which is capable of messaging an IKS holder. In addition, 896 IKS holders have been registered in the IKS catalogue and the IKS information harvesting process is being conducted in 15 communities (in KwaZulu-Natal, Limpopo, the North West and the Namaqualand area). The completion of the first phase of the National Recordal System makes South Africa a global leader in the development of a model for indigenous knowledge recording.

(g) Development of policy and legislation to protect IKS innovations and products from unfair exploitation

The draft framework for the protection, promotion, preservation and management of IKS legislation was completed in the year under review. The first phase of the development of the framework entailed a desktop study on international best practice in IKS protection. The following additional milestones were achieved: a feasibility study on the development of sui generis legislation; a public awareness campaign in identified communities; and presentations on the development of the legislation that were made to the Science and Technology and Trade and Industry Portfolio Committees as well as the Department of Cooperative Governance and Traditional Affairs. While the target was to have a framework by the end of the financial year, a draft Bill was also developed and workshopped with the legal unit of the Department.

(h) Ensure the development of knowledge management systems in IKS

The National IKS Office worked in collaboration with the NRF in facilitating the review and approval of the CoE in African IKS. The CoE team from the Universities of the North-West, Limpopo and Venda, together with the South African Qualification Authority (SAQA), completed the CoE proposal which was submitted to the NRF. An independent team reviewed the proposal, conducted site visits to the three universities and made presentations to the CoE team. The recommendation of the panel is currently awaiting approval by the NRF.

Service delivery achievements

The delivery achievements of the Programme are depicted below.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Develop high-level human capital for the NSI.	Number of postgraduate students awarded bursaries.	Increased support for postgraduate research students.	1 300 students awarded bursaries.	2 359 students were supported (964 through the comprehensive bursary scheme [462 honours, 268 master's, 234 PhDs], 476 through CoEs, 67 through PAST, and 852 through SARChI).		Achieved.
	Number of postdoctoral fellows supported.	Postdoctoral fellows funded.	20 new postdoctoral fellows funded by 31 March 2011.	235 postdoctoral fellows were supported (97 through the Postdoctoral Fellowship Programme [44 new + 53 second/third year] + 10 [4 through the African Origins Platform + 1 from PAST + 5 through the African Coelacanth Ecosystem Programme] + 128 through SARChI).		Achieved.
	Appropriate policy and regulatory environment to support HCD.	Science, engineering, technology and innovation (SETI) HCD strategy and implementation plan.	Approval of the SETI HCD strategy by 31 March 2011.	Strategy not yet approved.	Presentation on the principles, priorities and policy options of the strategy was made to the Minister, Deputy Minister and Director-General.	Partially achieved.
		Palaeoscience strategy and implementation plan.	Approval of strategy and implementation plan by 31 March 2011.	Draft strategy developed.	DST is incorporating inputs from stakeholders. The route for approval was changed from the DST to the Cabinet.	Partially achieved.
		Antarctic research strategy and research plan.	Approval of strategy and research plan by 31 March 2011.	Research plan not approved.	The process was halted to prioritise the work of the Astronomy Desk appointed by the Minister in Oct. 2010.	Not achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Enhance youth access to science, technology, engineering, and mathematics in order to improve their participation in SET-based careers.	Number of learners supported.	Increased support to learners in 18 adopted Dinaledi schools.	2 700 learners provided with supplementary tuition in Mathematics, Physical Sciences and English by 31 March 2011.	2 700 learners were supported by the end of the 2010 academic year.		Achieved.
	Number of people participating in SET awareness programmes.	People participating in NSW programmes and initiatives.	250 000 people visit NSW sites and 5 million reached through media by 31 March 2013.	252 776 people visited NSW in 2010 and it is estimated on the basis of readership and circulation figures of electronic and print media that up to 30m people were reached through the media.		Achieved.
	Number of science centres supported.	Increased support to science centres.	20 science centres across the country supported by development grants by 31 March 2011.	23 science centres awarded development grants.		Achieved.
Promote and enhance research productivity to increase South Africa's world share of knowledge outputs.	Number of research chairs supported.	Increased support to research chairs.	20 new research chairs supported by 31 March 2011.	0	Review of the research chair framework.	Not achieved.
	Number of peer-reviewed research papers.	Increased research productivity by researchers.	550 reviewed papers published by 31 March 2011.	102 peer-reviewed publications.	Awaiting implementation of the approved new Framework for Allocating Research Chairs.	Partially achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Identify and support the development of new and emerging research areas and technologies.	Number of prototype products developed.	3 prototype products developed.	1 product prototype developed by 31 March 2011.	A prototype in the form of a paint that contains modified nano-clay powder was developed by the CSIR Nanotechnology Innovation Centre. The new paint has improved strength and better protection against ultraviolet light.		Achieved.
To ensure the availability of appropriate infrastructure for RDI.	Approve 10-year infrastructure strategy and implementation plan.	10-year strategic research infrastructure strategy and implementation plan.	Approval of strategic research infrastructure strategy by 31 March 2011.	A strategy was not developed by the end of the 2010/11 financial year.	Stakeholders' inputs were not received in time.	Not achieved.
	Operational broadband network for all research and academic institutions.	Increased availability of broadband connectivity for RDI.	Connection of 39 academic and research sites to SANReN by March 2011.	50 sites have been connected to SANReN and are operational.		Achieved.
Promote and develop RDI and innovation in IKS.	Establishment of an IKS CoE.	Increased support for RDI for IKS.	Develop a framework for the identification and establishment of a CoE in IKS by 31 March 2011.	NRF review process finalised and submissions made to the NRF President (by the NRF) and the Director-General (by the DST).	Finalisation is awaiting management decision.	Partially achieved.
	Number of people attending IKS public awareness programmes.	Participation by people in IKS awareness and advocacy activities.	5 000 people attend IKS expo (KwaZulu-Natal) and 20 000 reached through media by 31 March 2011.	5 700 people attended the IKS expo (KwaZulu-Natal) and 34 million people were reached through the media by 31 March 2011.		Achieved.
Development of policy and legislation to protect IKS innovations and products from unfair exploitation.	Sui generis Bill.	Sui generis Bill.	Drafting of the legislative framework to inform legislation by 31 March 2011.	While the target was to have a framework by the end of the financial year, a draft Bill was also developed and workshopped with the legal unit of the Department.	The refined draft Bill is in the process of being approved by the Minister for widespread consultation with key stakeholders.	Partially achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Ensure IKS knowledge management systems.	Improved management of indigenous knowledge.	Establishment of the IKS National Recordal System.	Finalisation of system architecture for NIKMAS and establishment of I IKS centre by 31 March 2011.	Functional National Recordal System/NIKMAS version 1 with digital library, GIS capability, register and remote server at IKS data centre at the University of Zululand and central server in Pretoria successfully linked and operational. Indigenous knowledge data updated in the remote server is synchronised on a 24-hour basis.		Achieved.
Establishment of a certification and accreditation system for the recognition and affirmation of IKS practitioners and holders.	Approved accreditation and certification framework.	Development of an institutional accreditation framework for certification of IKS knowledge holders.	Drafting and approval of policy framework for an accreditation and certification system by 31 March 2011.	Draft framework, completed and approved by steering committee.	Policy framework is en route to Minister for approval.	Partially achieved.

Programme 5: Socio-Economic Partnerships

This Programme aims to provide policy, strategy and direction-setting support for R&D-led growth. Its strategic focus is informed by government's Microeconomic Reform Strategy, the National Industrial Policy Framework, the Ten-Year Innovation Plan and the National Framework for Sustainable Development.

Interventions are aimed at promoting growth in public and private investments in R&D, advancing national growth objectives through sustainable, value-added exploitation of the natural resources and by supporting the greater use of ICT applications in government and society. The national objectives of growing the base of small, medium and micro enterprises (SMMEs), black-owned businesses (particularly engineering companies), pilots for creating jobs, and poverty reduction are key considerations in the design and implementation of interventions. Programme 5 has the following three subprogrammes:

- **Science and Technology for Economic Impact** strengthens the achievement of government's strategic economic growth and sector-development objectives through four major interventions, described as technology missions in the 2002 NRDS, in the areas of ICT, advanced manufacturing, resource-based industries and climate change. Key activities of the subprogramme include providing policy direction, oversight and management of the implementation of R&D and innovation strategies and programmes with regard to technology mission areas.
- **Science and Technology for Social Impact** leads and supports knowledge generation in human and social dynamics in development, and promotes technology transfer for poverty reduction to support the creation of sustainable job and wealth opportunities, and to contribute to creating sustainable human settlements in areas of deprivation. It focuses on mature technologies that do not have widespread applications, but are seen to have the potential to achieve government's broad development objectives. It does this by building partnerships with other government departments focusing on research and technology transfer.
- **Science and Technology Investments** leads and supports the development of S&T indicators, monitors national S&T expenditure and planning, and implements section 11D of the Income Tax Act. This involves administration of reporting by private companies on

R&D claims against the tax allowance. Transfers and subsidies within the subprogramme are for the implementation of the Research Information Management System and for the development of new S&T indicators.

Progress against service delivery objectives and indicators

(a) To increase human capital for competitiveness in advanced manufacturing, light metals, chemical engineering, ICT and climate science

The target performance for HCD initiatives was doubled during the 2010/11 financial year. A total of 99 students were supported in advanced manufacturing, light metals, chemical sciences, chemical engineering, ICT and climate science. One hundred and twenty-one interns were placed in industry and at various technology stations, and a further seven interns were placed through the FEI.

(b) To increase the extent of new knowledge generated for economic and social benefit

The DST increased the extent of new knowledge generated for economic and social benefit through an increase in IP portfolios, with 13 patents/demonstrators filed (the target was 11): Three patents for titanium, two patents for zirconium, one patent for tantalum and niobium separation, one patent under the FEI, two demonstrators through the Inkaba ye Africa initiative, and four demonstrators through ICT. In addition 109 scientific and technical papers were published.

(c) Provide support to targeted research networks to advance the DST priorities

The DST's support towards the establishment of NSI research networks includes organising stakeholders into consultative learning bodies and communities of practice. The performance target was achieved, with the following 11 NSI research networks supported by the Programme:

- Light Metals Development Network.
- New Metals Development Network.

- Precious Metals Development Network.
- Biocomposites.
- Titanium CoC.
- Ferrous and Base Metals Development Network.
- Green Chemistry Network.
- FEI Network.
- Post-Harvest Innovations Research Network.
- Green Economy/Environmental Technologies Network.
- Unmanned Aerial Systems (UAS).

(d) To enable growth in advanced industries through support to companies and investing in new developments

The DST supports efforts directed at technology localisation in specific sectors. To date, two innovation strategies that support localisation have been developed for the Nuclear Manufacturing and Foundry Industry Innovation Strategies. Moreover, 26 companies were provided with TAPs to invest in new developments.

(e) To increase the extent of knowledge generated for economic and social benefit

The target includes the development of human capital through increased funding support for the number of research graduates (honours and PhD), studentships and internships awarded to expand the social sciences and humanities. During the 2010/11 financial year 34 master's/PhD students received funding in the social sciences and humanities. Furthermore, four policy and social dialogues were undertaken as part of the Human and Social Dynamics in Development (HSDD) Grand Challenge.

(f) To increase the impact on households through providing decision-support interventions for sustainable development

Development patterns and approaches in the 21st Century need to take into account a range of drivers, factors, and pressures including migration patterns, changes in the environment, and patterns of human behaviour. Internationally, better geo-spatial planning has been identified as a crucial requirement for the sustainable development of communities and households. Understanding the range of drivers and pressures requires the effective use of various sources and scientific models. Two major efforts supported by the Department include the Integrated Planning and Development Modelling (IPDM) programme and the Risk and Vulnerability Atlas. Both tools are designed for decision-makers at local levels. Significant progress was made on both tools in the year under review.

(g) To increase the number of households benefiting from technology-based interventions

Over the MTEF period the DST began to explore ways in which innovation could support sustainable economic development and social upliftment in rural areas. A number of projects were initiated. To date, eight essential oil sites have been established, creating 255 job opportunities (with women occupying 48% of the jobs created and the youth 24%). Despite increased sales of some essential oils products, none of the eight community-owned enterprises was ready for incubation by the end of the financial year.

(h) To provide decision support for growing gross expenditure on R&D as a percentage of GDP

The DST has prepared a draft strategy for increasing R&D expenditure in South Africa. The draft strategy recognises that the growth in gross expenditure on R&D (GERD) as

a percentage of GDP tapered off between 2006 and 2008 following a decade of steady increase in this indicator, and that this indicator is still yet to reach a target of 1% set for 2008 and match some global benchmarks. The strategy is in line with the delivery outcomes adopted by Cabinet in 2010, and identified specific opportunities for enhancing research capacity and increasing R&D investment in order to contribute to economic growth and development. The strategy will be refined and presented to Cabinet for approval once the process of consultations with science councils, relevant government departments and other stakeholders has been completed.

Service delivery achievements

The delivery achievements of the Programme are depicted below.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
To increase human capital for competitiveness in advanced manufacturing, light metals, chemical sciences, chemical engineering, ICT and climate science.	Number of students funded for research degrees (honours and PhDs) and work-based learnerships.	Bursary awards to honours, master's and PhD students and work-based learnerships	45 students funded for research degrees (honours, master's and PhDs) by 31 Dec. 2010.	99 students funded for research degrees.		Achieved.
			12 funded work-based learnerships by 31 Dec. 2010.	121 interns have been placed in industry and at various technology stations. They are at levels from undergraduates doing practical training to MTech.		Achieved.
To increase the extent of new knowledge generated for economic and social benefit.	Size of IP portfolio (patents, patent applications, licences and trademarks).	IP portfolios (patents, patent applications, licences and trademarks).	11 IP portfolios by 31 March 2011.	13 patents/demonstrators filed: 3 patents for titanium; 2 patents for zirconium; 1 patent for tantalum and niobium separation; 1 patent under the FEI; 2 demonstrators through the Inkaba ye Africa initiative; 4 demonstrators through ICT.		Achieved.
	Number of published scientific and technical papers.	Published scientific and technical papers.	70 published scientific and technical papers by 31 March 2011.	109 scientific and technical papers were published.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Provide support to targeted research networks to advance DST priorities.	Number of NSI research networks supported (organising stakeholders into consultative and learning bodies and communities of practice).	Supported NSI research networks.	11 NSI research networks by 31 March 2011.	The following 11 networks are currently supported: Light Metals Development Network, New Metals Development Network, Precious Metals Development Network, Biocomposites, Titanium CoC, Ferrous and Base Metals Development Network, Green Chemistry Network, FEI, Post-Harvest Innovations Research Network, Green Economy/Environmental Technologies Network, and the UAV Research Network.		Achieved.
To enable growth in advanced industries through support to companies and investing in new developments.	Number of companies provided with TAPs.	Companies provided with TAPs.	24 companies provided with TAPs by 31 March 2011.	26 companies received TAPs.		Achieved.
	Number of innovation strategies developed that support technology localisation in the specific sectors (transport and energy).	Innovation strategies that support technology localisation in the nuclear industry and foundry industry.	2 innovation strategies that support localisation developed by 31 Dec. 2011.	Both the Nuclear Manufacturing and Foundry Industry Innovation Strategies have been completed. The CSIR (Meraka) has been contracted to develop the MeerKAT innovation strategy. The innovation strategies for firms linked to Eskom industry hubs (boilers, transformers, electric motors and pumps) are being finalised.	Nuclear Manufacturing and Foundry Innovation strategies completed.	Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
To develop human capital through increasing funding support for the number of research graduates (honours and PhDs), studentships and internships awarded to expand the social sciences and humanities.	Number of master's/PhD students funded per year and linked to the seven SARCHI chairs established in the social sciences and humanities.	Bursary awards to master's/PhD students in the social sciences and humanities.	21 funded master's/PhD students in the social sciences and humanities by 31 March 2011.	34 master's/PhD students funded in the social sciences and humanities.		Achieved.
	Number of Integrated Planning and Development Modelling internships and studentships.	Studentships and internships awarded.	5 studentships and 2 internships awarded by 31 March 2011.	5 studentships and 2 internships awarded.		Achieved.
To increase the extent of knowledge generated for economic and social benefit.	Number of HSDD Grand Challenge policy interventions for social developments.	Policy and social dialogues undertaken.	4 policy and social dialogues undertaken by 31 March 2011.	2 policy and 2 science seminars were facilitated.		Achieved.
	Number of policy briefs/ policy papers per year generated by the Human Sciences Research Council targeted at policy and decision-making in government.	Published policy briefs and policy papers.	5 published policy briefs/ policy papers by 31 March 2011.	5 policy briefs published.		Achieved.
To increase the impact on households through providing decision-support interventions for sustainable development.	Number of decision support interventions for sustainable development.	Finalised geo-spatial decision support intervention for Phase I(b) of the Toolkit for Integrated Planning and Development.	1 finalised geo-spatial decision support intervention for Phase I(b) of the Toolkit for Integrated Planning and Development by 31 March 2011.	A geo-spatial information platform providing spatial and temporal maps on current patterns and trends between 1995-2007 was completed on 31 March 2011.		Achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
To increase the number of households benefiting from technology-based interventions.	Number of households benefiting from technology-based interventions.	Households benefiting from technology-based interventions.	2 800 households benefiting from technology-based interventions by 31 March 2011.	1 640 households have benefited from the introduction of communal water stations in the Eastern Cape. However, approximately 9 840 people have benefited from an intervention undertaken as part of the ASWSD initiative. In addition, through the Wireless Mesh Network, more than 60 000 people could benefit from broadband Internet connectivity.	Difficulty in defining appropriate performance measures for the efforts of the DST in using S&T to influence how poverty is addressed, combined with difficulties in introducing an effective measurement system.	Partially achieved.
To increase support for agroprocessing and aquaculture to enhance sustainable economic opportunities.	Number of new businesses created.	New businesses created.	5 new businesses created by 31 March 2011.	Continued support to 7 community-based enterprises provided in the 2010/11 financial year.	The performance measure was newly introduced and a more appropriate measure was jobs created and maintained/sustained. The refined measure now informs the 2011 Corporate Strategy. The implementing agency for the product needed to reduce the number of employees in several of the projects that were being incubated. Delays were experienced in starting new projects at new sites.	Not achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
To increase support for agroprocessing and aquaculture to enhance sustainable economic opportunities. (Continued)	Number of new businesses created.	New businesses created.	5 new businesses created by 31 March 2011.	Continued support to 7 community-based enterprises provided in the 2010/11 financial year.	The planning and information basis used for determining how to sequence the MTEF target was new and therefore not entirely optimal.	Not achieved.
	Number of jobs created.	Job creation.	600 jobs to be created by 31 March 2011.	255 job opportunities at existing projects were maintained and 212 were created at new projects by implementing agencies. The target was therefore 78% achieved.	The number of employees in several projects supported by the department needed to be reduced due to delays experienced in starting new projects at new sites. The sequencing of the MTEF target of 1 200 job opportunities (into 600 in 2010/11, 400 in 2011/12 and 200 in 2012/13) was arbitrary and possibly the wrong way around.	Partially achieved.
Contribute to improving government decision making on S&T investments.	Number of decision support interventions.	Statistical and analytical reports published for the Minister, Cabinet and public information.	2009/10 report on publicly funded science and technology activities published by 31 Oct. 2010.	Report finalised and cabinet memorandum prepared to present recommendations.		Achieved.
			2009/10 Technology Balance of Payments (TBP) report published by 31 March 2011.	The framework document for the production of the TBP baseline report has been developed. Follow-up meetings will be held in 2011/12 to structure the baseline report.	The data has been collected, but reconciliation and cleaning up are still under way.	Partially achieved.

Objective	Indicator	Corporate Strategy output	Target	Actual performance against target		
				Actual progress to date	Reasons for variance	Status
Contribute to improving government decision making on S&T investments. (Continued)	Number of decision support interventions.	Statistical and analytical reports published for the Minister, Cabinet and public information.	2009/10 report on South Africa as a knowledge economy published by 31 March 2011.	The initial list of indicators has been proposed. The process of reviewing the proposed indicators to create a more precise list for the purposes of drafting a baseline report is under way.	Delays in consultation processes.	Partially achieved.
			2009/10 tax incentives report published by 31 March 2011.	Report finalised and cabinet memorandum prepared to present recommendations.	Approval process.	Partially achieved.
			One report on the review of Type 3 S&T infrastructure published by 31 March 2011.	One report on the review of Type 3 S&T infrastructure finalised; recommendations included in cabinet memorandum on science and technology activities report.		Achieved.
To provide decision support for growing government expenditure on R&D as a percentage of GDP.	The number of national R&D survey reports published.	Published national R&D survey reports.	2008/09 R&D survey report published by 31 October 2010.	2008/09 R&D survey report published.		Achieved.

Case Studies



*“The Department is piloting a range of technologies
as a way to bring down the cost of living.”*

Case Studies

Kleinmond-Overstrand Housing Development Project, Western Cape

The DST is piloting a range of technologies as a way to bring down the cost of living, particularly among people occupying low-cost houses.

One such project is a low-cost housing flagship project in Kleinmond-Overstrand in the Western Cape, which is set to demonstrate the creative application of science and technology to improve on typical low-cost housing without increasing the costs. For example, the project will demonstrate how better architectural design and construction methods can improve the thermal efficiency of a building, use internal space to achieve optimal functionality and comfort, provide a roof design that allows for rain-water collection and the future enlargement of the house, and substantially reduce waste materials and the carbon footprint through a modular design and pre-manufactured plumbing.

Through this project the DST addresses critical challenges facing South Africa, especially the anticipated energy and water shortages, and aims to lessen the dependency of the settlement on municipal services (electricity and water).

When completed in June 2011, 410 smartly designed houses, equipped with solar water heaters (geysers), rainwater-harvesting tanks, and a photovoltaic lighting system with battery back-up for up to two days, will be ready for handing over to the targeted beneficiaries.

Although delayed for reasons beyond the Department's control (for example, the prolonged environmental impact assessment process), the project has met the DST's strategic objective to alleviate poverty through science and technology.

Accelerating Sustainable Water Service Delivery (ASWSD) through Technology Innovation

Through this flagship project, launched in February 2009 in the Amathole and OR Tambo District Municipalities of the Eastern Cape, the DST is demonstrating the sustainable delivery of clean water using a selection of appropriate technologies.

The project was developed to increase access to safe drinking water in the remote areas of Amathole (Cwebe, Mbelu and Ntilini villages) and OR Tambo (Jali/Bakhuba, Kwenxure/Khalalu and Mnxekazi villages).

The project in Amathole is nearing completion, and in OR Tambo drinkable water is already flowing from communal water stations designed to produce 3 m³ of potable water per hour.

Besides accelerating water delivery, this has helped raise awareness in the communities about the importance of protecting water resources, and helped residents better understand the "off-grid" technology solutions designed for a particular environment.

The ASWSD project has ensured the distribution of 1 643 household filters in six villages and 280 filters donated to the local clinic. In addition, communal water pumps have been constructed close to traditional water collection points. One of the pump stations will be based on solar energy and will be the first of its kind in the country, pumping water to a height of more than 200 metres.

The reticulation networks have been extended to ensure that drinkable water reaches as many households as possible.

Groundwater protection plans were discussed with the municipalities, and water quality testing kits have been assembled for use by community leaders.

Technology transfer was supported through lectures, and intensive training was provided to all – from community leaders to households. Most importantly, a health and hygienic lifestyle was promoted at community meetings and at schools, which was enthusiastically received and supported.

The project has provided 37 jobs in community mobilisation activities and 5 200 workdays in construction activities, with total remuneration at almost R500 000. An additional benefit was that people who worked on the project were able to enter the formal banking system.

This initiative provided many valuable insights and lessons for government departments and public entities supporting the project, in particular the Department of Water and Environmental Affairs (DWEA), the Water Research Council, the Department of Cooperative Governance and Traditional Affairs, the Department of Rural Development and Land Affairs, as well as the DST itself.

Integrated Planning and Development Modelling

Integrated Planning and Development Modelling (IPDM) is a multi-year, phased programme that was initiated by the DST in response to an identified need for rigorous spatial and temporal evidence to promote a shared understanding of past, current and possible future infrastructure development patterns and trends.

The DST commissioned the Council for Scientific and Industrial Research (CSIR) and the Human Sciences Research Council to harness spatial information and communication technology to develop an integrated information and modelling platform to support integrated planning, development and service delivery for South Africa.

A web-based toolkit has since been developed to enhance integrated development planning and accelerate community infrastructure planning and service delivery. The Toolkit for Integrated Planning provides capabilities for integrating the profiling of past and current development needs and the simulation of future development needs.

The current phase of the project, which commenced on 4 February 2009 and will end at the end of August 2011, undertakes the expansion and further development of the information and

modelling platform. It does this by strengthening its breadth, depth and functionality, and by developing three evidence-based technology platforms to support planning. These are as follows:

- The **Regional Spatial Profiler** contains a collection of maps and tables that users can view and download freely from a web-based portal. It is aimed at strengthening regional-scale spatial planning by providing accessible and comparable spatial information (current and past trends) to planning practitioners in government.
- The **Urban Simulation Platform** is an open-source urban simulation platform for the modelling of a series of possible spatial urban growth patterns over a 30-year period within the context of a range of economic, demographic and spatial-planning policy scenarios. The implications of these will be assessed for long-term planning, policy-making and infrastructure investment decisions in the major metropolitan regions of South Africa.
- The **Delivery Demand Guide Charts** aim to support the preparation of the housing and transport chapters of integrated development plans. The guide charts use household survey-based estimates of local housing and transport demand, and analyse patterns of national population flow, within and between regions, and within the major migration corridors of South Africa.

The evidence generated by the three platforms will be distributed via an updated and user-friendly web-based portal (<http://stepSA.org>) to ensure that users can easily find and download relevant information to better inform their planning processes. The IPDM initiative also consists of (i) a series of dissemination, technology-transfer and capacity-building initiatives, designed to facilitate the uptake, use and application of the evidence in planning processes; (ii) an internship programme; and (iii) a study programme that provides opportunities for relevant master's course-work students to develop their skills and align their research topics with the IPDM initiative.

A “living laboratory” approach, comprising a series of interactive work sessions with end-users in real-life contexts, was adopted to ensure the participation and collaboration of relevant municipal officials in the process of developing, testing and applying the (i) urban simulation platform in some parts of the Johannesburg Metropolitan Municipality, the eThekweni Metropolitan Municipality and the Nelson Mandela Bay Metropolitan Municipality; and (ii) the regional spatial profiler in the context of specific municipalities, including Ugu, Cape Winelands, Amathole and Mangaung.

Poverty Alleviation through Sustainable Livelihoods

The DST is rapidly expanding work on the “early commercialisation” of scientifically-proven medicinal plants, essential oils, food crops and aquaculture in support of the Ten-Year Innovation Plan.

In the year under review, it was able to sustain 467 job opportunities for community beneficiaries in projects around the country, half of these being new job opportunities.

Under the “Demonstration Agronomy Science” banner of activities, and in support of the Bioeconomy Grand Challenge, the DST, in partnership with the CSIR and the Agricultural Research Council (ARC) is undertaking demonstration grow-outs of scientifically proven medicinal plants on research farms owned by the ARC and rural based universities.

For this reason, trials on 11 medicinal plants are under way, and it is expected that this area will be expanded in the future. The CSIR is also engaged in product development, ranging from teas to nutritional supplements, to expand the value chain.

In Rhodes in the Eastern Cape, 10 ha of *Pelargonium sidoides*, an indigenous plant with proven efficacy in treating upper-throat infection, are being propagated. At this site a nursery is also being completed in partnership with the University of Fort Hare, with a view to establishing research opportunities for young horticulturalists and chemists at the university to study *Pelargonium sidoides*.

Another medicinal plant under trial is *Artemisia annua*, an extract from which is useful in the fight against malaria. A British variety of the plant has been planted at various altitudes across the country and, so far, seems to be adapting well to South African conditions. The trial plots will

lead to the selection of a site that produces high levels of artemisinin, which will be expanded into a possible enterprise. This early work has already attracted the interest of the Industrial Development Corporation and Afriplex, a pharmaceutical company.

In partnership with Sasol Chemcity, the DST has been undertaking trials to develop plant oils and extracts as replacements for synthetic oils and moisturisers in cosmetic products. One processing centre is being completed in Tzaneen, Limpopo, to focus on marula and other natural oils and plant extracts.

The project includes collaboration with the Vaal University of Technology (VUT) to support human capital development in various fields of study. So far, three master's and three doctoral students have been recruited, and VUT's engineering faculty provides specialised engineering and testing of the equipment for the centre.

Twelve people have been employed at the Tzaneen processing centre and 97 local entrepreneurs have been recruited to sell the products. These entrepreneurs have received enterprise-development training and initial starter kits have been supplied.

In partnership with the CSIR, the DST is searching for essential oils herbs for colder climates. *Rosa damascena*, an expensive rose oil fetching approximately R80 000 to R100 000 a kilogram, was identified as suitable. Demonstration agronomy and distillation in 2009 proved the viability of the oil in South Africa. In this regard, a 17 ha site for the oil is being cultivated in the Free State.

In Marble Hall in Limpopo, a waste-beneficiation project has been started in partnership with Mintek to process fly ash and sewage sludge to produce a soil ameliorant that is suitable for use in reclaiming land for productive use.

Natural Fibre-Reinforced Composites Project

The use of natural materials is gaining prominence globally, after having been almost completely replaced by an upsurge in synthetic products in the 1970s. One of the main reasons for this growth is increased environmental-protection awareness, reflected in protocols and laws on the protection of resources and recycling.

The development and commercialisation of advanced materials based on natural resources (advanced biocomposites) has been identified as a key industry development cluster in the Industrial Policy Action Plan (IPAP 2) of the Department of Trade and Industry.

However, inadequate investment into appropriate industry-scale equipment and infrastructure to prototype, test and accredit the commercial applications of biocomposite products and technologies limits the commercial exploitation of advanced biocomposites. The South African Biocomposites Strategy Framework has been developed to address this.

The DST has since funded the Natural Fibre-reinforced Composites (Natfibio) project undertaken in collaboration with Airbus. The project deals with the manufacture of natural-fibre composites for use as panel structures in aircraft cabin and cargo areas.

The project is carried out by the Composites Research Group at the CSIR in Port Elizabeth under the leadership of Professor Rajesh Anandjiwala. Airbus provides the aerospace specifications and testing of the samples, with regular meetings being held to discuss results and progress.

The task involves producing lightweight biodegradable panel structures for aircraft cabins that have heat-retardant properties and smooth surfaces, and are biodegradable, flammable and toxicity compliant.

The research group managed to produce a preliminary panel that was acceptable to Airbus specifications using a fibre and a resin. The project relating to phenolic matrices tests (Phase 1) has been completed. The final sets of samples were submitted to Airbus for testing, and the results were presented at the DST on 28 May 2010. The research group is currently in the process of registering a patent jointly with Airbus.

The Phase 2 work on biopolymers has already begun, with progress towards achieving a 100% bioplastic product with potential extended application in electronics and automotives. The CSIR is researching the use of biopolymers, in particular an alternative polyfurfuryl alcohol which can be locally produced from sugar-cane waste and is available at reasonable prices.

As a way forward, the DST, in partnership with the CSIR, is working towards commercial production. The two institutions are putting together a project-management team comprising the Technology Innovation Agency, the Industrial Development Corporation, and legal and intellectual property personnel of the DST to look at the Airbus collaboration and supply agreement commitments, as well as involving local aerospace manufacturers like Aerosud.

The intention is for the CSIR to set up a special-purpose medium to manufacture the products. The project team is thus expected to develop a 20 to 30-year plan looking at the requirements for a demonstrator plant, infrastructure for scaling up, modelling and marketing.

The challenge facing the project is the low availability of high-quality natural fibres. At this stage initiatives to involve the Department of Agriculture and the ARC are in progress. It is anticipated that ARC research activities will focus on fibre quality improvement, propagation techniques of different fibres and optimal conditions for the production of different products.

There are several existing initiatives and activities taking place in South Africa, funded under the Advanced Manufacturing and Technology Strategy, which are relevant for the biocomposites research programme. Examples include the development of natural fibre-based composites for aerospace applications, natural fibre-based composites for packaging, a biopolymer (polyfurfuryl alcohol) and soybean-based resins for application in low-cost bio-based housing, and natural fibre-based composites for construction and automotive applications.

The associated employment requirement is estimated at 11 000 to 15 000 jobs in upstream plant cultivation and fibre extraction/processing, and an additional 2 500 to 3 000 jobs in downstream manufacturing industries.

Public Entities Reporting to the Department



Public Entities Reporting to the Department



Africa Institute of South Africa

Mandate

The Africa Institute of South Africa (AISA), established in terms of the AISA Act, 2001, is mandated to provide research and policy development support in its pursuit of programmes that contribute to the development of the African continent, conduct research and embark on training programmes that foster continental patriotism and that promote increased awareness and understanding of the African continent among the peoples of South Africa and across the globe, and establish, participate in and maintain networks in Africa and globally that will contribute to the peace, development and prosperity of the continent.

2010/11 highlights

On 7 April 2010, AISA turned 50. This milestone coincided with the institute's re-branding exercise. A new logo was adopted and registered. Restructuring and realigning the organisation to be geared towards meeting its objectives was key, and proved cost-effective.

The Publications Division brought out a number of publications in 2010/11, including *Africa Insight*, which is listed in the *International Bibliography of Social Sciences* and accredited by the Department of Higher Education and Training. Volume 40 (1-4) of *Africa Insight* included 57

articles from various authors on African developments, social challenges and politics. The journal is distributed internationally and articles are available on the African Journals Online website.

The following books were published: *The State of Africa 2010/11: Parameters and Legacies of Governance and Issue Areas* by Korwa G Adar, Monica K Juma and Katabaro N Miti, *Natural Resource Governance in Southern Africa*, edited by Emmanuel Kisiangani and Lesley Masters, *The Coming African Hour: Dialectics of Opportunities and Constraints*, edited by Luc Sindjoun, and *Africa's new public policy: Imperatives for globalisation and nation-building in Nigeria* by Edwin Ijeoma.

Thirteen occasional papers, two monographs and 30 policy briefs were published.

The Publications Division, in conjunction with the Research Division, held a colloquium in Nairobi on "Co-operative diplomacy, regional stability and national interests: The Nile River and the Riparian states". The ambassadorial forum on investment opportunities in Rwanda and the Time of the Writer Festival provided opportunities to showcase AISA's publications, and to network and foster relationships with the purpose of commissioning and co-publishing future projects.

AISA and the University of Limpopo co-hosted a conference themed *Our Identity, Diversity and Culture* on 21 August 2010. The celebration of cultural diversity offered an opportunity for AISA to raise the issues of Africanness, ubuntu, African scholarship, ethics, tolerance and unity in diversity.

AISA collaborated with the HSRC, Freedom Park, the University of South Africa, the South African Democracy Education Trust, the NRF, the DST and the Intellectual Heritage Project spearheaded by Rhodes University in holding a conference to celebrate the life of Professor Ben Magubane and the contribution he made towards building an African scholarly community.



Academy of Science of South Africa

Mandate

The Academy of Science of South Africa (ASSAf), is mandated by the Academy of Science of South Africa Act, 2001, 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 development of the intellectual capacity of all people; to provide effective advice and facilitate appropriate action in relation to the collective needs, opportunities and challenges of all South Africans; and to link South Africa with scientific communities of the highest levels, within the SADC, the rest Africa and globally.

2010/11 highlights

Policy Advisory Programme

ASSAf launched its widely anticipated consensus study report entitled “PhD Study: Enhancing the Production of Postgraduates in South Africa” in October 2010. Key stakeholders, including the Ministers of Higher Education and Training and Science and Technology, were briefed on the recommendations.

The clinical research consensus study published early in 2010 was aimed at contributing to building a national culture in which clinical research was seen as essential, and clinical trials were

widely accepted and promoted. The report was widely disseminated and a committee will look into the implementation of the recommendations contained in the report.

A workshop proceedings report entitled “Mind the Gap: the Interface between Schools and Higher Education in South Africa” was published, focusing on how tertiary science and engineering programmes could respond to the gap that has been shown to exist between school and higher education in South Africa.

A workshop proceedings report on “GMOs in African Agriculture: Challenges and Opportunities” was published in July 2010 and was formally launched in Uganda, in collaboration with the Uganda National Academy of Science in October 2010. The report was also converted into a series of articles for Quest magazine.

Scholarly Publishing Programme

The Scholarly Publishing Programme aims to enhance the national capacity to produce and publish research, and to increase the quality and visibility of South African research publications.

The peer review process of South African scholarly journals continued. Reports on the first two discipline groups (Social Sciences and Agriculture) were completed. Four additional discipline groups (Law, Health Sciences, Humanities, Theology and Religious Studies) were identified, panels established and peer reviewers appointed.

As of March 2011, there were 16 journals published on the national platform for the open access publishing of high-quality South African scholarly journals (SciELO-SA). On average, one new journal title and 100 journal articles are added to the platform each month. The SciELO-SA site is visited on average 875 times a day, contributing substantially to the visibility of South African journals.

The annual National Scholarly Editors' Forum has become an entrenched event in the annual calendar and attendance has risen markedly since its inception. The fourth annual forum, held in July 2010, was attended by 150 delegates (approximately 50% of the total number of scholarly editors).

Liaison activities

ASSAf hosted the sixth African Science Academy Development Initiative conference from 7 to 10 November 2010. The conference focused on improving access to energy in sub-Saharan Africa. The topics that were discussed included traditional versus modern forms of energy, regional aspects of energy access, bridging the gap between rural and urban areas in terms of energy access, affordable and sustainable access to energy, and the role of energy access in economic development. The conference was attended by representatives of all 18 African science academies (with the exception of Madagascar), energy experts from South Africa and abroad, and African policymakers.

ASSAf, in collaboration with the DST and the NRF, held the first annual South African Young Scientists Conference in Pretoria in October 2010. The conference was aimed at attracting

young scientists under the age of 40 who possessed at least a master's degree. Conference participants represented eight science councils and 13 higher education institutions, as well as young scientists based in government departments and the private sector.

Academy publications

The bi-monthly *South African Journal of Science*, now in its 107th year of publication, continues to provide an important outlet for South African research with a multidisciplinary focus. The journal has expanded its news and views section and is serving as an important forum for debate on recent developments in research and higher education.

Quest: Science for South Africa is a full-colour, quarterly, popular science magazine targeted at high school learners, educators and the general public through retail sales in bookstores and by subscription. It aims to present the country's foremost scientific work in an accessible form. The magazine is widely distributed at national science events such as SciFest Africa, science Olympiads, National Science Week, and the National Science and Technology Forum Awards functions.



Council for Scientific and Industrial Research

Mandate

The Council for Scientific and Industrial Research (CSIR) is mandated by the Scientific Research Council Act, 1988, to foster, through directed and particularly multidisciplinary research and technological innovation, in the national interest and in fields which in its opinion should receive preference, industrial and scientific development, either by itself or in cooperation with principals from the private or public sectors, thereby contributing to the improvement of the quality of life of the people of South Africa.

2010/11 highlights

Space science and technology

The Square Kilometre Array (SKA) telescope is set to revolutionise radio astronomy. CSIR materials scientists, information and communications technology specialists, and high performance computing experts have contributed to the Karoo Array Telescope (MeerKAT), the precursor instrument for the SKA, and to the requisite connectivity for the project.

The task of testing the composite materials used in the construction of the MeerKAT antennae dishes was assigned to the CSIR's metals and metals processes researchers.

As part of a Centre for High Performance Computing flagship project, Stellenbosch University undertook the simulation of the electromagnetic behaviour of both the receiving array and the dish to improve the design and performance.

In October 2010, the CSIR announced the selection of a Neotel/Broadband Infraco partnership to install a 10 Gigabit per second network to the South African Large Telescope and SKA sites in the Northern Cape. This network is a component of SANReN, which is supported by the CSIR and funded by the DST as another part of its national cyberinfrastructure initiative.

As part of the CSIR effort to drive for greater focus and increased impact, the organisation has developed an R&D strategy which is underpinned by priority research impact areas in energy, health, built environment, natural environment, defence and security and industry. These areas of impact are aligned with the priorities of the Department of Science and Technology and the needs of South Africa.

R&D-led industrial development

New high technology and knowledge-based industries are a key component in supporting a high growth and high employment economy. The CSIR continued to make good gains in taking forward a high-value portfolio of R&D-led industrial development initiatives. In supporting the development of a vibrant bioeconomy, the CSIR has developed a strong technology and skills base as reflected in the patents, publications, human capital development (MScs and PhDs) as well as a nationally unique bioprocess platform in South Africa in terms of skilled bioprocess engineers and a functional infrastructure.

In support of new energy solutions, a lightweight, low-cost second-generation heliostat mirror panel design for a 25m² heliostat that has passed stringent storm vibration and hail testing has been developed. A second-generation lower-cost 13m² heliostat design is under development.

The CSIR has continued to enhance its capabilities in improved manufacturing processes such as laser-based additive manufacturing. Additive manufacturing is regarded as an important future manufacturing technology as it offers considerable cost advantages by reducing the level of waste as well as enabling the production of more complex parts, particularly for aerospace applications.

Biotechnology and health

The South African government's commitment to fight Aids and TB received a massive boost with the establishment of a state-of-the-art HIV and TB laboratory facility at the CSIR in Pretoria. The facility is a controlled access laboratory for experiments involving HIV and TB pathogens and is designed to minimise occupational infection to researchers by pathogens while conducting life-saving work. Research includes discovering and developing new drugs against HIV and TB from South African indigenous plants, discovering and developing novel chemical entities into HIV and TB drugs, and developing a reliable and affordable point-of-care diagnostic tool. The facility will also contribute to human capital development as it will be used to train postgraduate students and postdoctoral researchers.

Improvement to water quality management and treatment technologies

The CSIR released a special report on South Africa's water problems, *A CSIR Perspective on Water in South Africa – 2010*. The report highlights the fact that shortages of skills and funds, institutional ineffectiveness at many levels and a lack of specific water treatment technologies have made it extremely difficult to resolve problems and achieve developmental goals.

Compiled by water quality researchers and engineers in various disciplines, the report draws attention to some of the specific causes of water quality problems in different parts of South Africa and describes the social, economic and health risks that these pose for society.

R&D solutions for pothole problem

The CSIR published appropriate R&D solutions for South Africa's pothole challenges in a technical guideline in December 2010. The guide deals with the causes of potholes, their identification and the various repair methods for different categories of potholes. The guide is the only one of its kind in South Africa and includes an innovative pothole classification system developed by the CSIR.

Since February 2011, CSIR researchers have been training scores of road inspection and maintenance teams nationally to ensure the appropriate and effective fixing of potholes. The national Department of Public Works has already sent more than 300 people for the training, with the South African Road Federation and the Asphalt Academy partnering with the CSIR to present training sessions nationally. Metropolitan municipalities have started to take up the opportunity for training.

The CSIR is also developing new construction methods that are labour intensive. One such example is the development of the thin concrete technology for road construction which has been implemented in three communities in Gauteng and one in the Eastern Cape.

Enhancing surveillance capabilities

Work continued on the development of the AwareNet Technology Demonstrator. The main objective of AwareNet Radar is to validate the functions identified as required in a modern persistent ubiquitous surveillance system that provides real-time, recognised air and sea situation pictures to commanders of national level security operations. Typical threats to be countered include crime syndicates, illegal border crossings and asymmetric military threats. It is postulated that such pictures will significantly enhance the situation awareness of commanders using them. This should, in turn, lead to enhanced decision making as a result of which deployed forces should be able to conduct their missions significantly more effectively and efficiently.



Human Sciences Research Council

Mandate

The Human Sciences Research Council (HSRC) is mandated by the Human Sciences Research Act, 1968, to undertake, promote and coordinate policy-relevant, problem-oriented research in the human and social sciences. The Act mandates the HSRC to undertake contract research on any subject in the field of the human sciences and to charge fees for research conducted or services rendered, as well as publish the research results.

2010/11 highlights

Democracy, governance and society

A groundbreaking study, commissioned by the KwaZulu-Natal Department of Cooperative Governance and Traditional Affairs, is documenting the history of various traditional governance systems and the cultural practices associated with each *ubukhosi* (traditional area) in the province. When completed in the 2011/12 financial year, the study will provide information to assist the provincial government to play a more meaningful role in supporting traditional leaders, giving rise to an extensive knowledge base that will be invaluable in solving succession and boundary disputes.

A flagship publication, the *2011 State of South African Cities Report*, of which Professor Ivan Turok of the HSRC is the main author, innovatively applied the analytical framework of resilience to cities for the first time. It argued that resilience is particularly relevant to the profound transition taking place in South Africa, with questions being raised about the nature and pace of spatial, social, economic and political transformation, and about the durability of these changes. One of the key findings was that public institutions have struggled to keep pace with urbanisation, partly because they have not worked together well, or shown sufficient creativity in land, housing and infrastructure policies. Another finding was that local government remains one of the least trusted public institutions, criticised for being remote and unresponsive. The publication made several recommendations for national and local decision-makers on tackling systematic failures in local governance and reconfiguring the current exclusionary and unsustainable spatial development trajectory of cities.

Education and training

A study on teachers and the leave they take was the first to produce comprehensive information from many different sources about educator leave trends in South Africa and abroad. The study found that the estimated overall time educators were absent from school was about 10% to 12% of teaching time, which translates into a loss of an average of 20 to 24 days of regular instruction time per educator in a year. The negative impact is higher in small, under-resourced schools. Illness and being away from class for official duties (mainly curriculum workshops) were the two main reasons for educator absence. Elevated absence rates on Mondays and Fridays suggested some measure of abuse of discretionary leave types (not requiring documentary proof). The greatest concern was with the almost one-third of schools with leave rates greater than 10%.

The first comprehensive assessment of the further education and training (FET) college sector in almost a decade was undertaken. The last audit was conducted by the National Business Initiative on behalf of the Department of Education in 2002. Since then, there have been major

policy changes within the sector, i.e. the promulgation of the Further Education and Training Colleges Act, 2006, which transferred powers from the provincial departments of education to the governing councils of the colleges, notably the power to appoint all college staff other than the management (principals and deputy principals).

The study found that there was unevenness in the FET college sector across a range of indicators. The main conclusion was that there was room for improvement in gender equity in college council composition and the breadth of competence of councillors in terms of the requirements of the Act. The study made recommendations for the sector as a whole and for individual college performance on a number of indicators, which if implemented, will have a direct impact on staff appointments and development in the colleges.

Health care and health systems

The success of antiretroviral therapy (ART) treatment depends largely on adherence to treatment protocols. A qualitative study, which included in-depth, face-to-face interviews with selected HIV-positive patients on ART in Mpumalanga, revealed that less than half of the participants adhered to their treatment regimes, with 30% somewhat adherent and 22% non-adherent. The study pinpointed various reasons for adherence and non-adherence, and found that very few participants knew what drug resistance meant. It was strongly recommended that patients should be educated in this regard.

There was further analysis of data gathered for the three national HIV household surveys conducted in South Africa, led by the HSRC, the first in 2002, followed by surveys in 2005 and 2008. The 2008 HIV survey, which included adults and children, was the first study to capture the health of children in the age group 0-2 years. The nationally represented survey sample for this report comprised 8 966 children in the age group 0-18. The report found that the majority of pregnant women use antenatal care clinics (97%), while nearly three-quarters had received antenatal services five times during their pregnancy (71,4%). There was also a high utilisation of public primary health care services for children in South Africa, although this did not always mean that services such as immunisation services were used.

Groundbreaking research on evidence for a shift in the epidemic and a decline in the rate of new HIV infections in South Africa was published on 14 June 2010 in the journal PLoS ONE, an interactive open-access journal for the communication of all peer-reviewed scientific and medical research.

Prevalence data from the national household HIV surveys conducted in 2002, 2005 and 2008 were used to derive estimates of HIV incidence. The availability of survey data collected in the three population-based surveys allowed, for the first time, a comparison of incidence estimates for two inter-survey intervals (2002 to 2005 and 2005 to 2008).

The study found that incidence among adults aged 15 to 49 had declined by 35% between the two inter-survey periods. The estimate of the average annual HIV incidence rate for the 15 to 49 years age group was 2% in the period 2002-2005 and declined to 1,3% in the 2005-2008 period. The research implied that 1,3% of all uninfected South African adults aged 15 to 49 became newly infected in 2007. This incidence level in the general population needed to be halved in order to meet the 2011 target of the current National Strategic Plan.

The study also quantified the impact of treatment provision on the estimates of HIV, showing that the “excess” prevalence due to antiretroviral treatment was 1,7 percentage points in the 15 to 49 age group. This meant that about 440 000 HIV-infected South African individuals were alive in 2008 because they were on ART and would have died otherwise.

Survey on diet and food security

The HSRC conducted the first national survey measuring diversity in diets and food security among a representative national sample of 3 287 adults. The subjects were interviewed at their homes during the survey. The findings were a cause for great concern: dietary variety is low overall and certainly not in line with the food-based dietary guidelines promoted by the Department of Health. Dietary variety was particularly low in the low living standards measure groups and in black South Africans.

The results of the current national survey indicate that environmental factors, such as proximity to a water source, are important determinants associated with household food security. However, it is also important to realise that improving the environment is not necessarily going to lead to better household food security if people do not have access to food. Furthermore, it is known that nutrition security cannot be achieved without food security, knowledge and skills to improve dietary intake and access to health services.

Hate crimes against black lesbians

The Country We Want to Live in: Hate Crimes and Homophobia in the Lives of Black Lesbian South Africans (HSRC Press, 2010) provides a set of positions on issues that will have relevance for stakeholders nationally, continentally and globally. The report offers an analysis of the state of affairs concerning lesbian lives in South Africa, but does not speak on behalf of lesbians. The report addresses some of the activism surrounding the campaign to end violence against lesbians, and offers recommendations relevant for ongoing policy and advocacy development.

Science for Society

A study of how the media reports on biotechnology, the first to focus on the policy implications of the reporting of biotechnology in the media, sought to determine how biotechnology was reported in the South African media, how biotechnology was understood by members of the media, and whether these factors were advancing or impeding the development of biotechnology in South Africa. The study found that biotechnology was generally under-reported in the South African print media, but well reported in the online media. The dominant thematic focus was on genetically modified plants, animals for human consumption, and the health applications of biotechnology. Reporting on genetically modified plants was unfavourable, while health applications tended to be reported on favourably. Also, debates about genetic modification were usually related to events in South Africa, while news about the health applications

of biotechnology was generally about scientific progress in other countries. The study recommended that the scale of biotechnology reporting in the media should be expanded, and that a greater proportion of South Africans should have access to this reporting.

The INGENEUS project on the impact of networks, globalisation and their interaction with EU strategies maps the new geography of knowledge-intensive activities by focusing on the emergence and dynamics of global innovation networks. This large scale, multi-year project is funded by the EU under the FP7. The HSRC's contribution included investigations of regional advantages, firm strategies and university interaction with firms. A key focus was the role of competencies and capabilities in the emergence and evolution of global innovation networks, exploring how a pool of local skills acted as a pull factor for investment and offshoring, and in turn, how offshoring of knowledge-intensive activities influenced the development of local capabilities, at all skills levels. The project thus inserts a global dimension that is missing from local debates on human resources and skills development. The research will ultimately inform the EU how it can position itself to benefit and create synergies with new international flows of knowledge, but equally, it informs policy makers and governments in the emerging economies how to enhance their position.

Protection of indigenous knowledge databases

In 2009 the DST awarded a tender to the HSRC to facilitate the process of developing a policy for the protection of IKS databases in South Africa. The IKS database protection policy project is among the first of its kind in the developing countries.

The purpose of the project was to formulate policy that addressed issues such as standards for documentation, licence agreements and informed consent procedures, and to develop mechanisms for the security and confidentiality of indigenous knowledge information and protect the IKS intellectual property contained in the database. A literature review report was

tabled at a workshop and participants developed a “drafting ideas” document that would give insight to the drafting team on proceeding with the draft IKS database protection policy.

National survey of research and experimental development

STI indicators play a crucial role in policy debates about the impact of STI on the economy, society and development issues. One of the key measures of STI is the national survey of research and experimental development (national R&D survey) which collects input data on R&D expenditure, activities and employment.

The seventh national R&D survey reported GERD of R21,041 billion in 2008/09. This represents a nominal annual increase of about 13,0%, up from R18,624 billion, and an increase of 1,3% in real terms.

Expenditure on experimental development research was highest, accounting for 46,5% of total GERD, followed by applied research at 33,3% and basic research at 20,2%. The number of full-time equivalent researchers reached 19 320 in 2007/08 and remained relatively unchanged in 2008/09 at 19 384.

The results of the ninth R&D survey (2009/10) will be released in June 2011. The results of the 2008/09 survey are already informing policy decisions. The DST has initiated a process to increase R&D performance by increasing funding to key research performers in South Africa.

World of work

An HSRC study located the operational challenges faced by the Department of Labour in implementing the Employment Services System for South Africa (ESSA) within their economic, historical and regulatory context, and was therefore able to formulate realistic recommendations pertaining to solutions to pursue.

Findings indicate that fewer than 20% of the unemployed are currently registered as work seekers on the ESSA. However, the number of opportunities available is limited and the mismatch of

skills levels on offer by work seekers is a concern. Integrated skills development solutions are urgently required.

The findings and recommendations provide integrated legislative, regulatory, conceptual, managerial and operational insights that will help the government, through the Department of Labour, to implement interventions at all levels towards enhanced skills development and job placement.

Non-medical factors that influence children's welfare

Two projects investigated non-medical factors that have a bearing on children's well-being, both in collaboration with the World Health Organization's Department of Violence and Injury Prevention and Disability.

The first, the Childhood Experience Questionnaire Pilot: Western Cape Province, forms part of a larger project to develop a questionnaire for measuring the occurrence of adverse childhood experiences in low and middle-income settings. Findings from six pilot studies, each based on a sample of about 120 male and female respondents aged 20 to 75, drawn from China, Macedonia, Philippines, Saudi Arabia, South Africa and Thailand, have been used to finalise an international questionnaire on adverse childhood experiences. The questionnaire, with accompanying training materials, will be available as a module for integration into national health surveys.

The second project, the Child Maltreatment Prevention Readiness assessment, also implemented in Brazil, China, Macedonia, Malaysia and Saudi Arabia, aimed to assess how prepared South Africa was to implement large-scale evidence-based child maltreatment prevention programmes. Once this has been established, the next step will be to increase readiness in those areas where this may be necessary and then to implement evidence-based child maltreatment programmes on a scale commensurate with the magnitude of the problem in South Africa.

Findings from both these projects will help towards prioritisation of child maltreatment prevention programmes and the improvement of child protection as envisaged in the Children's Act, 2005.



National Research Foundation

Mandate

The National Research Foundation (NRF) is mandated through the National Research Foundation Act, 1998, to promote and support research through funding, human resource development and the provision of the necessary facilities in order to facilitate the creation of knowledge, innovation and development in all fields of science and technology, including indigenous knowledge, thereby contributing to the improvement of the quality of life of all the people of South Africa.

Research and Innovation Support and Advancement (RISA)

In terms of human capacity development, the NRF invested R1,3b in research grants (including bursaries and scholarships), which constitutes 86% of its total resources. Of this, 4 493 grants were expensed to the value of R1b. Targets for students supported through RISA scholarships and bursaries were all exceeded largely due to R205,4m in additional funding from the DST, which was received late in the financial year. The NRF received top-up funding of R52m from the DST for bursaries and assistance to needy students. R19,5m was used to increase the bursary values for honours, master's and doctoral degrees, R5,6 m was used for needs-based top-up to existing bursaries, and R27,4m was allocated to new free-standing bursaries for 2010/11. The NRF ensures that South African researchers are benchmarked internationally. In this regard

2 285 of its grantholders have an NRF rating (of which 433 are black and 634 women). PhDs registered in South Africa total 9 992. Of these, 1 973 (20%) are NRF-funded PhDs. RISA funded 2 927 grantholders, of which 29% were black and 34% were women.

RISA-supported research outputs through RISA's core grant allocation from the DST include 3 935 peer-reviewed articles, 61 books, 221 chapters in books and 47 patents.

The NRF invested R115,6m or 11% of the RISA grant budget (excluding scholarships) on providing research equipment to the national research facilities and other research institutions.

South African Agency for Science and Technology Advancement (SAASTA)

SAASTA activities reached 420 467 learners and 15 151 educators.

Following the successful partnering with the National Advisory Council on Innovation in developing a booklet profiling successful women in science, engineering and technology, an interactive touch-screen exhibit was developed to inspire young female students at tertiary institutions by showing audio-visual interviews with these successful women, their careers in SETI, and providing information on career paths and the institutions that offer such courses.

SAASTA has been appointed as the lead agency for the outreach and communication portfolio for the International Astronomical Union Conference for 2011.

National research facilities

The NRF invested R28,5m (27% of its total investment) to provide science advancement platforms at the national research facilities. Through interaction between the national research facilities and schools, 197 646 learners were reached, and 6 135 educators were reached through

facility awareness programmes. An estimated 627 171 members of the public visited the research infrastructure at the national research facilities as part of science awareness activities.

In 2010/11 523 postgraduate students made use of the facilities for training. An increased number of research staff at the facilities were involved in supervision or co-supervision of postgraduate students, with 40 honours and BTech students, 93 masters' students and 61 doctoral students supervised.

National research facility researchers produced 220 journal articles, 109 research reports (including technical and policy reports), 61 full-length conference proceedings, 16 chapters in books and 5 books.

The national research facilities spent 55% (R402m) of their total investment of R728m on providing research platforms.

Project highlights

The Emerging Researcher Network was launched. This is primarily an online researcher community platform that provides emerging researchers with online resources in respect of funding and job opportunities, toolkits and a structured collaboration environment. It is also a portal pointing South African researchers to various national and international online resources.

The South African Centre for Epidemiological Modelling and Analysis (SACEMA) conducted a project on male circumcision. Medical male circumcision has the potential to reduce HIV transmission in South Africa substantially. The first demonstration of this was a trial carried out in Orange Farm, which showed that male circumcision reduced sexual transmission of HIV from women to men by 60%. SACEMA scientists published the first mathematical model of the impact of male circumcision, showing that, in South Africa, male circumcision could prevent 6 million new infections and 3 million deaths in the next two decades.



South African National Space Agency

Mandate

The South African National Space Agency (SANSA) is mandated by the South African National Space Agency Act, 2008, to promote the peaceful use of space, foster international cooperation in space-related activities and create an environment conducive to industrial development in space technology through research, human capital development, outreach programmes and infrastructure development.

2010/11 highlights

Establishment of SANSA as an organisation

SANSA was successfully launched to media and stakeholders on 9 December 2010. Subsequent to the launch, Dr Sandile Malinga, who had been the agency's caretaker and had demonstrated his efficiency and capability, was appointed as CEO of SANSA. The SANSA Board was appointed by the Minister of Science and Technology on 1 June 2010. Corporate brochures were developed and distributed to inform the public and stakeholders of the vision, mission, and key objectives of SANSA.

Institutional migration and integration

The establishment of SANSA resulted in a merger and amalgamation of the CSIR Satellite Applications Centre (SAC) and the NRF's Hermanus Magnetic Observatory. By the end of March 2011 all the requirements of the migration process had been accomplished (including transfer agreements with the CSIR and NRF), providing for the official establishment of SANSA on 1 April 2011.



Technology Innovation Agency

Mandate

The Technology Innovation Agency (TIA) was established as a public entity in terms of the Technology Innovation Agency Act, 2008, to stimulate and intensify technological innovation in order to improve economic growth and the quality of life of all South Africans by developing and exploiting technological innovations.

TIA aims to enhance the country's capacity to translate a greater proportion of local research and development into commercial technology products and services. It is tasked with exploiting the existing body of knowledge at universities and public research institutions and channelling it effectively towards the development of technology-based industries.

2010/11 highlights

Operationalising TIA

In April 2010, the Innovation Fund, Tshumisano Trust, Cape Biotech Trust, PlantBio Trust, LIFElab, BioPAD Trust and the Advanced Manufacturing Technology Strategy implementation unit were

migrated into TIA. These seven entities were combined to form a fully operational unit within a year. Four regional offices were established (in KwaZulu-Natal, the Western Cape, Gauteng and the Eastern Cape) and the groundwork for the establishment of five more regional offices in the remaining provinces has been initiated.

TIA was initially led by interim CEOs, Dr Nhlanhla Msomi (also a Board member) and Ms Barbara Kortjass (the CFO), but in September 2010 Mr Simphiwe Duma was appointed CEO. He has been joined by an experienced executive management team, experts in their various fields, who will help guide the organisation towards delivering on its mandate.

TIA investment policy, processes and framework

The Investment Policy and the Investment Framework Policy were approved by the TIA Board. These will guide TIA's investment decision making process, ensuring integrity and transparency.

Strategic partnerships

TIA engaged stakeholders in various fields, including institutions that focus on technology innovations, finance and incubation, like the Industrial Development Corporation, Coega, the Automotive Industry Development Centre, municipalities and institutions of higher learning.

Memoranda of understanding will be signed to assist with knowledge transfer, capacity building and development, as well as the commercialisation of new products and services.

Impact

A number of investments were inherited from the migrated entities taken over by TIA. An analysis conducted on the performance of these identified investments showed that, among

Public Entities *(Continued)*

other things, they had created hundreds of jobs, provided training for scores of previously disadvantaged people, established products that are on the market, and generated revenue-paying royalties.

The 15 technology stations and institutions of advanced tooling located at higher education institutions across the country made significant contributions towards helping TIA fulfill its mandate. They incubated and cultivated many promising ideas, and equipped many innovators (including SMMEs) with the skills and expertise to produce and commercialise their products and services.

The Technology Stations Programme assisted 1 791 clients to produce over 323 prototypes, with pilot manufacturing resulting in 619 new and/or improved products and processes ready for commercialisation. TIA helped 647 SMMEs become internationally competitive, and thus able to export their products and services.

TIA is continuing to manage the inherited investments and is in the process of investing in new projects.

Annual Financial Statements

for the year ended 31 March 2011



Annual Financial Statements

for the year ended 31 March 2011

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Report of the Accounting Officer

for the year ended 31 March 2011

I. General Overview of the State of Financial Affairs

The Department of Science and Technology (DST) manages policies that support research, development and innovation (RDI), human capital development, science and technology (S&T) activities, and international relationships for the enhancement of S&T opportunities. These policies emanate from the White Paper on Science and Technology (1996), the National Research and Development Strategy (NRDS) (2002), and the Ten-Year Innovation Plan for South Africa (2008-2018) (TYIP) (2007).

The management of the above policies is undertaken by the five DST Programmes that are playing complementary roles in ensuring that the objectives of the Department are accomplished.

The financial support availed for the Department during the year under review was R4,6 billion, which was, during the course of the year, reduced by the National Treasury to R4,1 billion. The reduction pertains to the Square Kilometre Array (SKA) budget of R508 million from Programme 2. At the same time, National Treasury approved the rollover of R15 million in Programme 5, and gave the Department inflation related salary adjustment of R5,6 million.

The table below elucidates the budget appropriated to each Programme and the manner in which it was expended in the 2010/11 financial year:

Programme	Final Budget R'000	Actual Spending R'000	Surplus/ Deficit R'000	% of Surplus vs Final Budget %
Administration	190,131	188,858	1,273	1
Research, Development and Innovation	826,848	802,774	24,074	3
International Cooperation and Resources	138,478	131,384	7,094	5
Human Capital and Knowledge Systems	1 763,964	1 754,144	9,820	1
Socio-Economic Partnerships	1 208,562	1 174,742	33,820	3
Total	4,127,983	4,051,902	76,081	2

The final deviation or under-expenditure of 2% falls within the required National Treasury parameters.

1.1 Important policy decisions and strategic issues facing the Department

Following the 2007 Organisation for Economic Cooperation and Development (OECD) review of the National System of Innovation (NSI), South Africa is said to be a world leader in the top 1% of all universities in several fields, including the environment/ecology, social science, engineering, plant and animal sciences (OECD Innovation Review, 2007, pp 213-214). Furthermore, South Africa is certainly the leading research performer on the African continent.

Internationally, the concept of the NSI has been crafted around attempts to understand the interaction between a nation's S&T base and its socio-economic system. The concept has evolved into an organising principle comprising public and private institutions involved in S&T, as well as a suite of relevant funding instruments and policy frameworks aimed at maximising the contribution of S&T to socio-economic development.

In South Africa the NSI concept was introduced into DST planning through policy frameworks such as the White Paper on Science and Technology, NRDS and TYIP. Although the importance of the NSI in the modernisation of the economy is acknowledged, it has not been fully realised. The NSI extends beyond the Department's science councils and it requires extensive partnerships with other government departments, science councils reporting to other line departments, business organisations and universities. The OECD review suggested an urgent need to extend the policy framework's applicability to the private sector in order to ensure a seamless flow of innovations from research and development (R&D), through technology transfer, to commercialisation. The Minister is initiating a conceptual review of the role of the Department in promoting RDI across all socio-economic sectors and constituent organisations. This should make considerable progress in the coming year and prompt the Department to reconsider its high-level purpose.

1.2 Significant events that took place and major projects undertaken or completed during the period under review

In August 2009, a decision was taken during the Southern African Development Community (SADC) Senior Officials Meeting that South Africa should host a regional workshop on climate change. In partnership with the SADC Secretariat and the Ministry of Education in Namibia, three delegates from each SADC member state were invited to participate. This workshop took place on 23 and 24 August 2010, and its aim was to provide a coordinated multi-stakeholder platform for policy-makers from various sectors, as well as academics who are involved in climate change-related activities, to share information towards the joint development of a SADC S&T Implementation Plan to support climate change responses.

A second workshop was hosted in Botswana from 28 to 31 March 2011, at which the SADC S&T Climate Change Implementation Plan was communicated. The total number of participants, including the South African delegates, was 55. The DST was represented by six officials, each with a different role to play in the workshop. Fifty per cent of the financial support for the workshop came from AusAID.

Following Cabinet approval in July 2007 for the country to participate in the Shanghai World Expo, the DST exhibited during the opening month (May), as well as in September and October 2010. The purpose of the Department's participation was to strengthen and create long-term bilateral R&D cooperative relationships with the People's Republic of China.

Furthermore, the Expo was used to promote South African science, technology and innovation with the aim of marketing South Africa as a preferred destination for RDI. Bilateral workshops were held focusing on innovation, astronomy, palaeoscience, traditional medicines and climate change. It was also aimed at showcasing South Africa's advancements and achievements in science, technology and innovation as contributors to building a modern economy.

An agricultural biotechnology workshop was conducted on 23 June 2010 as part of growing the bioeconomy through the implementation of the National Biotechnology Strategy (2001). Subsequent to the operationalisation of the Technology Innovation Agency (TIA), it had been realised that various institutions core to the biotechnology innovation system were, in most cases, competing rather than working together to develop and grow the sector. This was seen as delaying the growth of the sector, in spite of the fact that these institutions were getting most of their resources from the DST.

The workshop, “Agricultural Biotech: Investigating the roles and responsibilities of various institutions in the biotechnology innovation system”, was therefore planned in order to bring together these entities and see what could be done to remedy the situation. The workshop therefore discussed the potential roles and offerings (e.g. infrastructure, equipment, technologies and platforms) of the various entities (TIA, the Council for Scientific and Industrial Research (CSIR), the Agricultural Research Council, academia) in building the biotechnology sector, in order to strengthen links and collaboration opportunities. The different approaches applied by each of the institutions in building the sector were also perused.

Significant improvements in scientific productivity seem to be emerging from the South African Research Chairs Initiative (SARChI) and the Centres of Excellence (CoE) Programme. Under SARChI, for example, the number of publications by research chairs in peer-reviewed journals rose from 162 in 2008/09 to 477 in 2009/10. In the same period, the number of books published by research chairs increased from four to 10, and the number of book chapters from 13 to 62. The CoEs supported 371 postgraduate students and published 409 articles in peer-reviewed journals in 2009/10.

The Department has increased its support for postgraduate students through its bursary programme. The total number of postgraduate students supported through the National Research Foundation increased from 5 131 in 2009 to 5 644 in 2010. This increase has been coupled with significant increases in bursary values for all levels of postgraduate studies. Support for researchers also increased, with 2 519 researchers receiving research grants in 2010, compared to 2 422 in 2009.

The Department, through LifeLAB (now part of TIA), co-funded the Centre for the AIDS Programme of Research in South Africa (CAPRISA) 004 Phase II clinical trials. This trial studied the safety and effectiveness of an antiretroviral (Tenofovir, which forms part of existing treatment for HIV and Aids) as a preventative microbicide. The groundbreaking results of the clinical trials revealed that not only is Tenofovir effective for HIV treatment, but that a 1% Tenofovir microbicide gel reduces HIV infections in women by 39%.

1.3 Virement

The virements for the year were made in accordance with the regulations, that is, the Public Finance Management Act and the Treasury Regulations. The virements effected after the Adjustment Estimates amount to R24, 951 million (or 0, 6% of the total adjusted budget), comprising R11, 9 million approved by the National Treasury and R13,051 million approved by the Director-General. Out of the total approved virements, R15,551 million was moved between major items; R6,948 million was moved between Programmes and R2,452 million was moved within major items – the Administration programme moved R13,051 million from “Compensation of employees” to augment “Goods and Services”.

At Programme level, Socio-Economic Partnerships is the only Programme that relinquished funds for virements. The receiving programmes were Administration (R4, 448 million) and International Cooperation and Resources (R2, 5 million). The funds redirected to and within the Administration programme were used mainly to fund activities such as Ministerial participation programmes, marketing, information services and maintenance of the building, while International Cooperation and Resources funded the International Council for Science and the European Molecular Biology Conference.

2. Services rendered by the Department

The Department’s core business is to develop R&D policies in line with the NRDS and facilitate and monitor their implementation. The Department therefore does not provide any services to any institution or people on a recoverable basis.

3. Capacity Constraints

The Department has had difficulty in filling the position of Chief Operating Officer. The position was advertised and it is envisaged it will be filled in the 2011/12 financial year. The position of Deputy Director-General: Corporate Services became vacant in the reporting period and it is envisaged that it will also be filled in the 2011/12 financial year.

4. Utilisation of Donor Funding

The Department received official development assistance (ODA) from Australia, Canada, the European Community, Finland, France, Germany and the United States of America. Below is a brief summary of the activities supported by these ODA partners:

4.1 Donor funding received in cash

Australia

In the Science Centre Manager Training project, AusAID provided financial and technical expertise to assist South Africa to expand the pool of science centre managers, which is critical for successful roll-out of the national plan for establishment of additional centres. The funding amounted to R170,000.

Canada

The initiative, Epidemiological Modelling and Analysis in South Africa that was initiated in November 2008, includes financial support to the South African Centre of Excellence in Epidemiological Modelling and Analysis of approximately R20 million over five years. This project, which is in partnership with Statistics Canada and the World Health Organization, aims to develop innovative quantitative methods to support a more integrated, evidence-based

national response to the HIV/Aids epidemic and major related diseases such as tuberculosis. The total amount expended in 2010/11 was R3,4 million.

European Union

The DST received R348,000 in the 2010/11 financial year for transnational cooperation among National Contact Points for International Cooperation (INCONTACT Programme). Furthermore R82,000 was received for pilot implementation of the DST Technology Localisation Programme.

Sector Budget Support Programme

The EU has allocated a total of €30 million to support the DST in its poverty alleviation initiatives over a period of three years. This allocation will see the Department supporting, among other things, the use of scientific innovation to provide sustained water service delivery in rural areas, and the use of Information and Communication Technology (ICT) to develop and empower rural communities through employment creation and human capacity development. The total funding received in 2010/11 was R73,3 million, and R72,810 was utilised.

Finland

- **Biotechnology Agreement between South Africa and Finland**
BioFISA is a three-year programme that is jointly funded by the Finnish government and the DST to build bioscience research capacity in Southern Africa. The programme is managed by the Southern Africa Network for Biosciences, which manages the funded projects in all biosciences nodes in Southern Africa. The programme office based at the CSIR is also supported by the New Partnership for Africa's Development. The total amount expended in 2010/11 was R15,3 million.
- **S&T in ICT Framework Programme (SAFIPA)**
The aim of the South Africa-Finland ICT Knowledge Partnership (SAFIPA) is to narrow

the digital divide by introducing interventions that will help South Africa become an inclusive knowledge society with a strong ICT brand, reflecting research excellence and demonstrating improvements in quality of life and economic competitiveness. The total amount expended for this project in 2010/11 was R8, 1 million.

United States of America

The total amount of R143, 000 was received from USAID for a partnership project with the Malawian Government on a potato pathogen as well as providing technical assistance to the Malawian Government and their higher education sector to increase the production of good quality seed for high-yielding potato varieties in Malawi.

The Department also received R657, 000, of which R476, 000 was spent on a Risk and Vulnerability Project.

4.2 Donor funding received in kind

France

France has committed another R14,850 million over three years (R4,95 million per annum) for the extension of the French South African Technical Institute in Electronics (F'SATIE) Scientific Director contract.

Japan

- A programme providing productivity training to increase the employability level of S&T graduates received an additional in-kind commitment to the value of R400,000 for training sessions in the 2010/11 financial year.
- A technical assistant was placed at the DST to assist in improving the management of the bilateral relationship between the two countries. This in-kind support is valued at R1,7 million.
- Volunteers were placed in the North West and Limpopo to assist science centres with developing teaching material for science and mathematics education and exhibitions. This assistance is valued at R3,5 million.
- Hitachi Scholarships valued at R900, 000 were secured for South African electrical engineers.

- An in-kind donation of R10 million for climatic simulation and projections for adaptation impact in the southern African region was secured. Furthermore, in-kind donations for observational study to mitigate seismic risks in mines valued at R3, 2 million and an intellectual property rights training programme valued at R383, 000 were received.

5. Public Entities

The public entities that were funded through the DST's vote in 2010/11 are as follows:

5.1 Human Sciences Research Council (R194,2 million 2010/11 and R166,2 million 2009/10)

The Human Science Research Council (HSRC) was established in terms of the Human Sciences Research Act, 1968. It supports development in South Africa and Africa by coordinating and conducting applied social science research projects. Its research structures and activities are aligned to South Africa's national development priorities, notably, poverty reduction through economic development, skills enhancement, job creation, the elimination of discrimination and inequalities, and effective service delivery. The HSRC will play a key role in the implementation of the TYIP, particularly in relation to the Human and Social Dynamics in Development Grand Challenge.

5.2 National Research Foundation (R749,1 million 2010/11 and R692,1 million 2009/10)

The National Research Foundation (NRF) was established by the National Research Foundation Act, 1998. The NRF supports and promotes research through funding human resource development, and the provision of the necessary research facilities for the creation of knowledge, innovation and development in all fields of S&T, including indigenous knowledge. In addition to the agency function it performs for the DST, the NRF acts as a service provider for the Departments of Water Affairs and Environmental Affairs in the area of marine research, the Department of Trade and Industry in respect of the Technology and Human Resources for Industry Programme, and the Department of Labour in respect of the Scarce Skills Development Fund.

5.3 Africa Institute of South Africa (R30, 5 million 2010/11 and R29, 3 million 2009/10)

The Africa Institute of South Africa was established in terms of the Africa Institute of South Africa Act, 2001. It conducts research to support policy development, provides training programmes, and participates in and maintains networks for peace, development and prosperity in Africa. Its primary focus is on political, socio-economic, international and development issues in contemporary Africa. It contributes to the goals of the NSI through research programmes that affect knowledge production and human resource development in African studies.

5.4 Council for Scientific and Industrial Research (R685, 7 million 2010/11 and R599, 4 million 2009/10)

The CSIR was established in terms of the Scientific Research Council Act, 1988. The objectives of the CSIR are to foster industrial and scientific developments in the national interest, through directed and particularly multidisciplinary research and technological innovation, either by itself or in cooperation with principals from the private or public sectors.

5.5 Technology Innovation Agency (R410, 6 million 2010/11)

TIA was established in terms of the Technology Innovation Agency Act, 2008. TIA's objective is to support the state in stimulating and intensifying technological innovation in order to improve economic growth and the quality of life of all South Africans by developing and exploiting technological innovations.

5.6 Academy of Science of South Africa (R10, 5 million 2010/11 and R4, 6 million 2009/10)

The Academy of Science of South Africa (ASSAf) was established in terms of the Academy of Science of South Africa Act, 2001. ASSAf promotes common ground for scientific thinking across all disciplines, encourages and promotes innovative and independent scientific thinking, promotes the optimum development of the intellectual capacity of all people, and links South Africa with scientific communities at the highest levels, and in particular within the African continent. In addition, it investigates matters of public interest concerning science and manages the *South African Journal of Science*.

6. Organisations to which transfer payments have been made

6.1 Programme 1: Administration

Organisation/theme	R'000	Reason for transfer payment
Institution and Programme support	1,000	Assistance for research into science activities
Total	1,000	

6.2 Programme 2: Research, Development and Innovation

Organisation/theme	R'000	Reason for transfer payment
HIV/Aids prevention and treatment technologies	18,206	Research into technologies to combat and prevent HIV/Aids
Space Science	63,923	R&D into space science initiatives
Square Kilometre Array	12,624	R&D into SKA priorities
International Centre for Genetic Engineering and Biotechnology	9,900	R&D into biotechnology initiatives
Hydrogen Strategy	76,998	Research in hydrogen and energy sector
Health Innovation	37,872	Research into health initiatives
Biotechnology Strategy	75,984	Implementation of the Biotechnology Strategy
Biofuels	5,000	Research into the biofuels arena
Energy Security Grand Challenge	41,947	Research into the energy sector
Innovation Projects	10,743	Research into innovation
Total	353,197	

6.3 Programme 3: International Cooperation and Resources

Organisation/theme	R'000	Reason for transfer payment
Global Science: Bilateral Cooperation	11,200	Growing international partnerships with the aim of leveraging resources for R&D and human capital.
Global Science: International Resources	24,905	Growing international partnerships with the aim of leveraging resources for R&D and human capital.
Global Science: Multilateral Cooperation	13,072	Growing international partnerships with the aim of leveraging resources for R&D and human capital.
Total	49,177	

6.4 Programme 4: Human Capital and Knowledge Systems

Organisation/theme	R'000	Reason for transfer payment
Human Resource Development	352,629	Implementation of human resource development initiatives
Learnerships	3,029	Implementation of learnership activities
Emerging Research Areas	48,925	R&D into emerging research areas
Indigenous Knowledge Systems (IKS)	16,972	Implementation of IKS Strategy
Science and Youth	54,354	Research and initiatives towards youth involvement in the science arena
Science Themes	59,709	R&D into science initiatives
Women in Science	450	Continuation of women in science activities
Technology Top 100	270	To promote technological advancement for SMMEs
Centre for High Performance Computing	72,020	R&D into science initiatives
R&D Infrastructure	219,128	Infrastructure development
South African National Research Network	98,783	Connectivity of research institutions
National Nanotechnology Centres	38,337	R&D into nanotechnology initiatives
Total	964,606	

6.5 Programme 5: Socio-Economic Partnerships

Organisation/theme	R'000	Reason for transfer payment
Advanced Manufacturing Technology Strategy	45,415	Implementation of the Advanced Manufacturing Technology Strategy
Global Change S&T	19,196	Implementation of Global Change Grand Challenge – Planning support and 10-year research plan
Human and Social Development Dynamics	28,206	Policy and institution building (10-year plan and centres of excellence)
Local Manufacturing Capacity	13,480	Cold-Chain Technologies Project (Fresh Produce Exporters' Forum and Agricultural Research Council); COFISA-DST partnership; advocacy in provinces
Local Systems of Innovation	7,335	Cold-Chain Technologies Project (FPEF and ARC); COFISA-DST partnership; advocacy in provinces
Natural Resources and Public Assets	50,521	Maintain and grow gene banks (ARC), South African Biosystematics Initiative, South African Biodiversity Information Facility, Biobank
Quality of Life Nuclear Technologies	660	Promote uptake of nuclear technologies
Resource-Based Industries	37,497	R&D of resource-based industries initiatives
S&T Indicators	7,900	Development of S&T indicators
Technology for Poverty Alleviation	10,140	Poverty alleviation initiatives
Technology for Sustainable Livelihoods	13,662	Poverty alleviation initiatives
Information Communication Technology	12,200	Implementation of the ICT strategy
Research Information Management Systems	13,870	Information access for decision making
Total	260,082	

7. Public Private Partnerships

No public-private partnership agreements were entered into.

8. Corporate Governance Arrangements

The corporate governance frameworks/ procedures below form the main pillars of the Department's corporate governance arrangements, which are based on legislation as well as best practice:

- Risk management.
- Internal audit.

- Audit Committee.
- Risk and Fraud Management Committee.
- Fraud Prevention Strategy.
- Various operational committees.
- Procedures and policies guiding the operational activities of the Department.

During the year under review Mr Leon Kaplan's term came to an end as Audit Committee member and Chairperson, and Mr M Mohohlo was appointed Chairperson. Ms R Gaesale and Mr H Maritz were appointed as new Audit Committee members. These appointments meet PFMA requirements, and the Committee operates in terms of its Charter.

The following table indicates the members' term of office and the number of meetings attended:

Name of member	Date appointed	Date resigned	No of meetings attended
Leon Kaplan	September 2006 – 31 August 2009 (appointed as Chairperson till 31 August 2010)	31 August 2010	3 out of 3
Mike Mohohlo (Chairperson)	August 2008 – 31 July 2011. Appointed as Chairperson (1 November 2010)		5 out of 5
Bothale O Tema	May 2009 – 30 April 2012		5 out of 5
Hendrikus Maritz (new member)	1 October 2010 – 30 September 2012		2 out of 2
Khumoetsile Gaesale (new member)	1 October 2010 – 30 September 2011		1 out of 2
Dr Phil Mjwara	Ex-officio member		1 out of 5

The Risk Management Committee was established independently of the Audit Committee in January 2011, and the following independent members were appointed to the committee: Mr M Zakwe (Chairperson), Mr Z Fihlani, Mr L Kaplan and Mr B Gutshwa.

9. Activities discontinued or to be discontinued

No activities were or are to be discontinued.

10. New/Proposed Activities

The National Intellectual Property Management Office (NIPMO) will be operational with effect from 1 April 2011. The South African National Space Agency will also be operational with effect from 1 April 2011.

11. Asset Management

Asset policies and procedures are in place. Assets are verified twice a year to ensure accountability and proper management of the DST's assets. There are stringent measures in the Asset Management and Security units to ensure control over the management of assets.

12. Inventories

The costing method used for inventory valuation by the DST is the weighted cost method. For replenishing purposes, the DST, through its Supply Chain Management (SCM) unit, uses the Logistical Information System (LOGIS), which utilises an analytical technique for SCM (provisioning). The system assists the Department to maintain and manage inventory at the lowest levels.

Low levels of inventory are ideal for the DST's operations, as its inventory is not used for reselling. The benefits of this are that cash is rarely locked up in inventory. Incidences of obsolescence are rare, and losses due to theft are limited.

13. Events after the reporting date

No events arose after the reporting date.

14. Information on predetermined objectives

The DST has a planning cycle framework which ensures that strategic planning is systematised and synchronised with budgeting, reporting, and the monitoring and evaluation of DST's deliverables. The framework provides for performance reporting to occur quarterly and annually. The quarterly reports are compiled and presented to the Executive Committee for approval, after which a submission is sent to the Minister. The annual performance review is

done in accordance with National Treasury regulations, follows an internal approval process, and is then submitted to the Auditor-General.

15. SCOPA Resolutions

No issues were raised by SCOPA regarding the DST.

16. Prior Modifications to Audit Reports

The Auditor-General found no matters of significance regarding the DST's administration.

17. Exemptions and Deviations received from the National Treasury

No exemptions or deviations were received from the National Treasury.

18. Other

During 2009/10, Internal Audit Services did performance audits on the Regional Initiative for Capacity Development (RICAD). This matter is not yet finalised.

18.1 RICAD

During September 2009, the DST cancelled its contract with Brentlana for the management of the RICAD project as a result of Brentlana's alleged failure to perform. The DST also claimed a refund of all monies (amounting to R2 391 226) already paid to Brentlana under the contract. Brentlana disputed the cancellation of the contract and referred the matter to arbitration. The arbitration proceedings commenced, but have not been finalised, and a contingent liability cannot be determined yet.

19. Approval

The Annual Financial Statements set out on pages 88 to 161 have been approved by the Accounting Officer.



Dr PM Mjwara

Accounting Officer

Date: 31 July 2011

Report of the Auditor-General

for the year ended 31 March 2011

Report of the Auditor-General to Parliament on the financial statements of Vote No 31: Department of Science and Technology for the year ended 31 March 2011

Report on the Financial Statements

Introduction

I have audited the accompanying financial statements of the Department of Science and Technology, which comprise the appropriation statement, the statement of financial position as at 31 March 2011, and the statement of financial performance, statement of changes in net assets and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory information, as set out on pages 88 to 161.

Accounting officer's responsibility for the financial statements

The accounting officer is responsible for the preparation of these financial statements in accordance with The Departmental Financial Reporting Framework prescribed by the National Treasury and the requirements of the Public Finance Management Act of South Africa, 1999 (Act No. 1 of 1999) (PFMA), and for such internal control as management determines necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor-General's responsibility

As required by section 188 of the Constitution of the Republic of South Africa, 1995 (Act No. 108 of 1996) and, section 4 of the Public Audit Act of South Africa, 2004 (Act No. 25 of 2004) (PAA), my responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with International Standards on Auditing and General Notice 1111 of 2010 issued in Government Gazette 33872 of 15 December 2010. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial statements 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 entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Opinion

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 2011, and its financial performance and cash flows for the year then ended in accordance with The Departmental Financial Reporting Framework prescribed by the National Treasury and the requirements of the Public Finance Management Act of South Africa, 1999 (Act No. 1 of 1999) (PFMA).

Additional matters

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

Financial reporting framework

The financial reporting framework prescribed by the National Treasury and applied by the department is a compliance framework. Thus my opinion would have reflected that the financial statements had been properly prepared instead of fairly presented as required by section 20(2) (a) of the PAA, which requires me to express an opinion on the fair presentation of the financial statements of the department.

Report on Other Legal and Regulatory Requirements

In accordance with the PAA and in terms of General notice 1111 of 2010, issued in Government Gazette 33872 of 15 December 2010, I include below my findings on the annual performance report as set out on pages 14 to 50 and material non-compliance with laws and regulations applicable to the department.

Predetermined objectives

There are no material findings on the annual performance report.

Compliance with laws and regulations

There are no findings concerning material non-compliance with laws and regulations applicable to the department.

Internal Control

In accordance with the PAA and in terms of General notice 1111 of 2010, issued in Government Gazette 33872 of 15 December 2010, I considered internal control relevant to my audit, but not for the purpose of expressing an opinion on the effectiveness of internal control. There are no significant deficiencies in internal control that resulted in a qualification of the auditor's opinion on the financial statements or findings on predetermined objectives or material non-compliance with laws and regulations.

Auditor-General

Pretoria
31 July 2011



Report of the Audit Committee

for the year ended 31 March 2011

1. Overview

We are pleased to present our final report for the financial year ended 31 March 2011.

Attendance of the meetings was as follows:

Name of member	Position	Date appointed	Number of meetings attended
Mr Leon Kaplan	Chairperson until 31 August 2010	31 September 2006	3 out of 3
Mr Mike Mohohlo	External member and Chairperson	31 August 2008	5 out of 5
Dr Phil Mjwara	Ex-officio member (Accounting Officer)		1 out of 5 (2 representatives attended 2 meetings)
Dr Bothlale Tema	External member	1 May 2009	5 out of 5
Mr Hendrikus Maritz	External member	1 October 2010	2 out of 2
Ms Khumoetsile Gaesale	External member	1 October 2010	1 out of 2

3. Audit Committee responsibility

The Audit Committee reports that it has complied with all its responsibilities in terms of section 38(1)(a) read with sections 76 and 77 of the Public Finance Management Act (PFMA) as well as with Treasury Regulation 3.1. It has adopted appropriate formal terms of reference as the Audit Committee Charter, has regulated its affairs in compliance with this, and has discharged its responsibilities as set out in the Charter.

2. Audit Committee members and attendance

The Audit Committee consists of the members listed below. It meets as frequently as mandated by its approved Charter and as often as it deems necessary. During the period under review, five meetings were held.

4. The effectiveness of internal control

In line with the PFMA, the Internal Audit Activity (IAA) provides the Committee and management with assurance that the Department's internal controls are appropriate and effective. This is achieved by means of the Department's risk management process, as well as the identification of corrective actions and suggested enhancements to the controls and processes.

The Committee is satisfied that the IAA operates efficiently and effectively.

5. Governance

5.1 Risk Management

An updated formal risk assessment was undertaken by the Department for the year ended 31 March 2011. IAA used the results of this assessment to prepare its three-year rolling strategic plan and its annual operating audit plan. The Committee monitored the significant risks faced by the Department and is satisfied that these risks were reduced to an acceptable level. The Department implements a risk management strategy, which includes a fraud prevention plan.

6. Submission of in-year management and monthly/quarterly reports in terms of the PFMA and the Division of Revenue Act

The Audit Committee is satisfied with the content and quality of monthly and quarterly reports prepared and issued by the Accounting Officer and management during the year under review.

7. Evaluation of annual financial statements

7.1 The Audit Committee

- (a) reviewed and discussed, with the Auditor-General of South Africa and the Accounting Officer, the audited annual financial statements to be included in the annual report;
- (b) reviewed the Auditor-General of South Africa's management letter and management's response to it;
- (c) reviewed significant adjustments resulting from the audit.

7.2 The Audit Committee concurs with and accepts the Auditor-General of South Africa's conclusions on the annual financial statements and is of the opinion that the audited statements should be accepted and read together with the report of the Auditor-General of South Africa.

8. Annual performance review

The Committee has considered the performance information reports submitted to the Auditor-General of South Africa for review. It is unable to express an opinion as to whether the Department will achieve its performance objectives.

9. Appreciation

The Audit Committee expresses its appreciation to the Accounting Officer, the senior management team and the Auditor-General for their contributions during the year under review.



Mr M Mohohlo

Chairperson of the Audit Committee

Date: 29 July 2011

Appropriation Statement

for the year ended 31 March 2011

Appropriation per Programme

2010/11							2009/10		
Appropriation Statement	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
I. Administration									
Current payment	181,138	-	(454)	180,684	179,480	1,204	99.3%	172,124	151,660
Transfers and subsidies	1,000	-	426	1,426	1,426	-	100.0%	1,000	1,005
Payment for capital assets	3,545	-	4,476	8,021	7,940	81	99.0%	6,490	6,458
Payment for financial assets	-	-	-	-	12	(12)		-	-
	185,683	-	4,448	190,131	188,858	1,273		179,614	159,123
2. Research, Development and Innovation									
Current payment	46,623	-	(1,314)	45,309	37,232	8,077	82.2%	37,729	32,509
Transfers and subsidies	779,851	-	-	779,851	763,848	16,003	97.9%	1,110,427	1,108,500
Payment for capital assets	374	-	1,314	1,688	1,688	-	100.0%	392	340
Payment for financial assets	-	-	-	-	6	(6)		-	-
	826,848	-		826,848	802,774	24,074		1,148,548	1,141,349
3. International Cooperation and Resources									
Current payment	58,194	-	(57)	58,137	51,118	7,019	87.9%	55,745	41,596
Transfers and subsidies	77,272	-	2,515	79,787	79,786	1	100.0%	76,417	75,641
Payment for capital assets	512	-	42	554	480	74	86.6%	301	237
Payment for financial assets	-	-	-	-	-	-		-	-
	135,978	-	2,500	138,478	131,384	7,094		132,463	117,474

2010/11							2009/10		
Appropriation Statement	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
4. Human Capital and Knowledge Systems									
Current payment	36,837	-	(13)	36,824	29,633	7,191	80.5%	32,739	25,688
Transfers and subsidies	1,726,892	-	-	1,726,892	1,724,332	2,560	99.9%	1,565,997	1,565,430
Payment for capital assets	235	-	13	248	179	69	72.2%	238	238
Payment for financial assets	-	-	-	-	-	-		-	-
	1,763,964	-	-	1,763,964	1,754,144	9,820		1,598,974	1,591,356
5. Socio-Economic Partnerships									
Current payment	47,297	-	(7,010)	40,287	34,234	6,053	85.0%	42,187	32,870
Transfers and subsidies	1,167,807	-	32	1,167,839	1,140,192	27,647	97.6%	1,159,479	1,141,297
Payment for capital assets	406	-	30	436	316	120	72.5%	430	388
Payment for financial assets	-	-	-	-	-	-		-	-
	1,215,510	-	(6,948)	1,208,562	1,174,742	33,820		1,202,096	1,174,555
Subtotal	4,127,983	-	-	4,127,983	4,051,902	76,081	98.2%	4,261,695	4,183,857
Statutory appropriation									
Current payment	-	-	-	-	-	-		-	-
Transfers and subsidies	-	-	-	-	-	-		-	-
Payment for capital assets	-	-	-	-	-	-		-	-
Total	4,127,983	-	-	4,127,983	4,051,902	76,081	98.2%	4,261,695	4,183,857

Appropriation Statement (Continued)

	2010/11		2009/10	
	Final Appropriation	Actual Expenditure	Final Appropriation	Actual Expenditure
Total (brought forward)				
Reconciliation with Statement of Financial Performance				
ADD				
Departmental receipts	468		1,585	
Direct Exchequer receipts	-		-	
Aid assistance	129,864		56,837	
Actual amounts per Statement of Financial Performance (Total Revenue)	4,258,315		4,320,117	
ADD				
Aid assistance		100,945		51,526
Direct Exchequer payments		-		-
Prior year unauthorised expenditure approved without funding		-		-
Actual amounts per Statement of Financial Performance (Total Expenditure)		4,152,847		4,235,383

Appropriation per Economic Classification

	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	223,691	-	(16,064)	207,627	190,629	16,998	91.8%	195,160	167,487
Goods and services	146,398	-	6,909	153,307	140,736	12,571	91.8%	145,458	116,754
Interest and rent on land	-	-	333	333	333	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	2,266,593	-	6,862	2,273,455	2,233,154	40,301	98.2%	2,228,099	2,310,883
Universities and universities of technology	32,880	-	-	32,880	173,199	(140,319)	526.8%	119,875	113,447
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	1,002,445	-	5,000	1,007,445	1,246,280	(238,835)	123.7%	1,205,231	1,183,335
Non-profit institutions	450,904	-	(9,362)	441,542	55,971	385,571	12.7%	360,115	283,507
Households	-	-	528	528	978	(450)	185.2%	-	702
Gifts and donations	-	-	-	-	-	-	-	-	-
Payments for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	5,072	-	5,794	10,866	10,603	263	97.6%	7,757	7,662
Heritage assets	-	-	-	-	-	-	-	-	-
Specialised military assets	-	-	-	-	-	-	-	-	-

Appropriation Statement (Continued)

Appropriation per Economic Classification (Continued)

2010/11							2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payments for capital assets									
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payments for financial assets	-	-	-	-	19	(19)	-	-	80
Total	4,127,983	-	-	4,127,983	4,051,902	76,081	98.2%	4,261,695	4,183,857

Detail per subprogramme

Detail per subprogramme	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
I.1 Minister									
Current payment	1,816	-	-	1,816	1,811	5	99.7%	1,772	1,772
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
I.2 Deputy Minister									
Current payment	1,496	-	-	1,496	1,492	4	99.7%	1,420	1,421
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
I.3 Management									
Current payment	64,791	-	(3,061)	61,730	61,730	-	100.0%	54,134	54,169
Transfers and subsidies	1,000	-	95	1,095	1,095	-	100.0%	1,000	1,005
Payment for capital assets	1,770	-	211	1,981	1,981	-	100.0%	3,014	3,033
Payment for financial assets	-	-	-	-	6	(6)	-	-	-
I.4 Corporate Services									
Current payment	100,195	-	7,317	107,512	107,229	283	99.7%	101,990	86,968
Transfers and subsidies	-	-	78	78	78	-	100.0%	-	-
Payment for capital assets	1,633	-	4,258	5,891	5,891	-	100.0%	3,336	3,317
Payment for financial assets	-	-	-	-	6	(6)	-	-	-

Appropriation Statement (Continued)

Detail per subprogramme (Continued)

Detail per subprogramme	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
I.5 Governance									
Current payment	9,031	-	(3,015)	6,016	5,104	912	84.8%	9,513	5,664
Transfers and subsidies	-	-	253	253	253	-	100.0%	-	-
Payment for capital assets	142	-	7	149	68	81	45.6%	140	108
Payment for financial assets	-	-	-	-	-	-	-	-	-
I.6 Office Accommodation									
Current payment	3,809	-	(1,695)	2,114	2,114	-	100.0%	3,295	1,666
Transfers and subsidies	-	-	-	-	-	-	-	-	-
Payment for capital assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	185,683	-	4,448	190,131	188,858	1,273	99.3%	179,614	159,123

Programme I per economic classification

Programme I per economic classification	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	108,351	-	(13,476)	94,875	94,254	621	99.3%	95,810	82,638
Goods and services	72,787	-	12,893	85,680	85,016	664	99.2%	76,346	68,945
Interest and rent on land	-	-	211	211	211	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	-	-	-	-	-	-	-	-	-
Universities and universities of technology	-	-	-	-	80	(80)	-	55	135
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	-	-	-	-	284	(284)	-	-	-
Non-profit institutions	1,000	-	-	1,000	636	364	63.6%	945	418
Households	-	-	425	425	425	-	100.0%	-	452
Gifts and donations	-	-	-	-	-	-	-	-	-
Payment for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	3,545	-	4,395	7,940	7,940	-	100.0%	6,458	6,458
Biological assets	-	-	-	-	-	-	-	-	-

Appropriation Statement (Continued)

Programme I per economic classification (Continued)

Programme I per economic classification	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payment for capital assets									
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	12	(12)	-	-	77
Total	185,683	-	4,448	190,131	188,858	1,273	99.3%	179,614	159,123

Detail per subprogramme

Detail per subprogramme	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
2.1 Space Science									
Current payment	10,316	-	1,557	11,873	11,873	-	100.0%	10,442	10,442
Transfers and subsidies	92,505	-	-	92,505	76,547	15,958	82.7%	565,815	564,564
Payment for capital assets	26	-	155	181	181	-	100.0%	160	160
Payment for financial assets	-	-	-	-	6	(6)	-	-	-
2.2 Hydrogen and Energy									
Current payment	8,267	-	(36)	8,231	6,773	1,458	82.3%	8,924	6,656
Transfers and subsidies	123,975	-	-	123,975	123,956	19	100.0%	140,225	139,997
Payment for capital assets	79	-	36	115	115	-	100.0%	102	102
Payment for financial assets	-	-	-	-	-	-	-	-	-
2.3 Biotechnology and Health									
Current payment	13,152	-	(99)	13,053	11,834	1,219	90.7%	13,741	11,173
Transfers and subsidies	141,962	-	-	141,962	141,962	-	100.0%	243,158	242,710
Payment for capital assets	79	-	99	178	178	-	100.0%	75	23
Payment for financial assets	-	-	-	-	-	-	-	-	-
2.4 Innovation Planning and Instruments									
Current payment	14,888	-	(2,736)	12,152	6,752	5,400	55.6%	4,622	4,238
Transfers and subsidies	421,409	-	-	421,409	421,383	26	100.0%	161,229	161,229
Payment for capital assets	190	-	1,024	1,214	1,214	-	100.0%	55	55
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	826,848	-	-	826,848	802,774	24,074	97.1%	1,148,548	1,141,349

Appropriation Statement (Continued)

Programme 2 per economic classification

Programme 2 per economic classification	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	25,713	-	(12)	25,701	21,156	4,545	82.3%	20,339	17,137
Goods and services	20,910	-	(1,354)	19,556	16,036	3,520	82.0%	17,441	15,371
Interest and rent on land	-	-	40	40	40	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	485,215	-	4,362	489,577	503,649	(14,072)	102.9%	705,248	739,015
Universities and universities of technology	27,900	-	-	27,900	124,774	(96,874)	447.2%	87,347	82,853
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	12,773	-	5,000	17,773	124,754	(106,981)	701.9%	74,825	103,423
Non-profit institutions	253,963	-	(9,362)	244,601	10,659	233,942	4.4%	243,007	183,209
Households	-	-	12	12	12	-	100.0%	-	-
Gifts and donations	-	-	-	-	-	-	-	-	-

2010/11							2009/10		
Programme 2 per economic classification	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payment for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	374	-	1,314	1,688	1,688	-	100.0%	341	341
Heritage assets	-	-	-	-	-	-	-	-	-
Specialised military assets	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	6	(6)	-	-	-
Total	826,848	-	-	826,848	802,774	24,074	97.1%	1,148,548	1,141,349

Appropriation Statement (Continued)

Detail per subprogramme

Detail per subprogramme	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
3.1 Multilateral Cooperation and Africa									
Current payment	15,446	-	(26)	15,420	14,434	986	93.6%	18,330	14,906
Transfers and subsidies	41,166	-	2,512	43,678	43,678	-	100.0%	39,630	39,630
Payment for capital assets	168	-	14	182	124	58	68.1%	65	65
Payment for financial assets	-	-	-	-	-	-	-	-	-
3.2 International Resources									
Current payment	24,161	-	(3,362)	20,799	14,766	6,033	71.0%	20,560	12,151
Transfers and subsidies	24,906	-	-	24,906	24,905	1	100.0%	27,787	27,011
Payment for capital assets	193	-	5	198	182	16	91.9%	140	76
Payment for financial assets	-	-	-	-	-	-	-	-	-
3.3 Overseas Bilateral Cooperation									
Current payment	18,587	-	3,331	21,918	21,918	-	100.0%	16,855	14,539
Transfers and subsidies	11,200	-	3	11,203	11,203	-	100.0%	9,000	9,000
Payment for capital assets	151	-	23	174	174	-	100.0%	96	96
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	135,978	-	2,500	138,478	131,384	7,094	94.9%	132,463	117,474

Programme 3 per economic classification

Programme 3 per economic classification	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	34,145	-	-	34,145	31,154	2,991	91.2%	30,028	27,914
Goods and services	24,049	-	(96)	23,953	19,924	4,029	83.2%	25,728	13,681
Interest and rent on land	-	-	40	40	40	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	33,771	-	2,500	36,271	50,868	(14,597)	140.2%	38,729	42,791
Universities and universities of technology	3,580	-	-	3,580	6,417	(2,837)	179.2%	2,980	3,805
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	6,702	-	-	6,702	18,235	(11,533)	272.1%	21,512	26,938
Non-profit institutions	33,219	-	-	33,219	4,251	28,968	12.8%	13,196	2,108
Households	-	-	15	15	15	-	100.0%	-	-
Gifts and donations	-	-	-	-	-	-	-	-	-
Payment for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	512	-	41	553	480	73	86.8%	290	237
Heritage assets	-	-	-	-	-	-	-	-	-

Appropriation Statement (Continued)

Programme 3 per economic classification (Continued)

Programme 3 per economic classification	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payment for capital assets									
Specialised military assets	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	135,978	-	2,500	138,478	131,384	7,094	94.9%	132,463	117,474

Detail per subprogramme

Detail per subprogramme	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
4.1 Human Capital and Science Platforms									
Current payment	16,092	-	(2)	16,090	13,437	2,653	83.5%	14,971	11,794
Transfers and subsidies	1,232,592	-	-	1,232,592	1,230,167	2,425	99.8%	1,107,280	1,107,245
Payment for capital assets	130	-	2	132	118	14	89.4%	97	97
Payment for financial assets	-	-	-	-	-	-	-	-	-
4.2 Indigenous Knowledge Systems									
Current payment	10,339	-	(4)	10,335	8,233	2,102	79.7%	9,360	7,490
Transfers and subsidies	17,107	-	-	17,107	16,972	135	99.2%	15,938	15,929
Payment for capital assets	105	-	4	109	54	55	49.5%	106	106
Payment for financial assets	-	-	-	-	-	-	-	-	-
4.3 Emerging Research Areas and Infrastructure									
Current payment	10,406	-	(7)	10,399	7,963	2,436	76.6%	8,408	6,404
Transfers and subsidies	477,193	-	-	477,193	477,193	-	100.0%	442,779	442,256
Payment for capital assets	-	-	7	7	7	-	100.0%	35	35
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	1,763,964	-	-	1,763,964	1,754,144	9,820	99.4%	1,598,974	1,591,356

Appropriation Statement (Continued)

Programme 4 per economic classification

Programme 4 per economic classification	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	23,390	-	(44)	23,346	19,369	3,977	83.0%	21,457	18,111
Goods and services	13,447	-	(27)	13,420	10,251	3,169	76.4%	11,282	7,577
Interest and rent on land	-	-	13	13	13	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	1,376,654	-	-	1,376,654	1,341,912	34,742	97.5%	1,181,089	1,239,527
Universities and universities of technology	1,400	-	-	1,400	34,688	(33,288)	2477.7%	22,728	18,524
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	186,116	-	-	186,116	315,037	(128,921)	169.3%	302,400	260,020
Non-profit institutions	162,722	-	-	162,722	32,401	130,321	19.9%	59,780	47,109
Households	-	-	44	44	294	(250)	668.2%	-	250
Gifts and donations	-	-	-	-	-	-	-	-	-

2010/11							2009/10		
Programme 4 per economic classification	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payment for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	235	-	14	249	179	70	71.9%	238	238
Heritage assets	-	-	-	-	-	-	-	-	-
Specialised military assets	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	1,763,964	-	-	1,763,964	1,754,144	9,820	99.4%	1,598,974	1,591,356

Appropriation Statement (Continued)

Detail per subprogramme

Detail per subprogramme	2010/11							2009/10	
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
5.1 S&T for Economic Impact									
Current payment	25,661	-	(6,972)	18,689	15,960	2,729	85.4%	24,060	17,145
Transfers and subsidies	895,860	-	-	895,860	872,088	23,772	97.3%	889,264	881,936
Payment for capital assets	210	-	24	234	224	10	95.7%	150	129
Payment for financial assets	-	-	-	-	-	-	-	-	-
5.2 S&T for Social Impact									
Current payment	10,658	-	(4)	10,654	7,929	2,725	74.4%	8,619	7,439
Transfers and subsidies	250,177	-	-	250,177	246,302	3,875	98.5%	257,813	257,361
Payment for capital assets	143	-	4	147	43	104	29.3%	130	109
Payment for financial assets	-	-	-	-	-	-	-	-	-
5.3 S&T Investment									
Current payment	10,978	-	(34)	10,944	10,345	599	94.5%	9,508	8,286
Transfers and subsidies	21,770	-	32	21,802	21,802	-	100.0%	12,402	2,000
Payment for capital assets	53	-	2	55	49	6	89.1%	150	150
Payment for financial assets	-	-	-	-	-	-	-	-	-
Total	1,215,510	-	(6,948)	1,208,562	1,174,742	33,820	97.2%	1,202,096	1,174,555

Programme 5 per economic classification

Programme 5 per economic classification	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Current payments									
Compensation of employees	32,092	-	(2,532)	29,560	24,696	4,864	83.5%	27,526	21,687
Goods and services	15,205	-	(4,507)	10,698	9,509	1,189	88.9%	14,661	11,180
Interest and rent on land	-	-	29	29	29	-	100.0%	-	-
Transfers and subsidies									
Provinces and municipalities	-	-	-	-	-	-	-	-	-
Departmental agencies and accounts	370,953	-	-	370,953	336,725	34,228	90.8%	303,033	289,550
Universities and universities of technology	-	-	-	-	7,240	(7,240)	-	6,765	8,130
Foreign governments and international organisations	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	796,854	-	-	796,854	787,970	8,884	98.9%	806,494	792,954
Non-profit institutions	-	-	-	-	8,024	(8,024)	-	43,187	50,663
Households	-	-	32	32	232	(200)	725.0%	-	-
Gifts and donations	-	-	-	-	-	-	-	-	-
Payment for capital assets									
Buildings and other fixed structures	-	-	-	-	-	-	-	-	-
Machinery and equipment	406	-	30	436	316	120	72.5%	430	388
Heritage assets	-	-	-	-	-	-	-	-	-

Appropriation Statement (Continued)

Programme 5 per economic classification (Continued)

Programme 5 per economic classification	2010/11						2009/10		
	Adjusted appropriation R'000	Shifting of funds R'000	Virement R'000	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Expenditure as % of final appropriation %	Final appropriation R'000	Actual expenditure R'000
Payment for capital assets									
Specialised military assets	-	-	-	-	-	-	-	-	-
Biological assets	-	-	-	-	-	-	-	-	-
Land and subsoil assets	-	-	-	-	-	-	-	-	-
Software and other intangible assets	-	-	-	-	-	-	-	-	-
Payment for financial assets	-	-	-	-	1	(1)	-	-	3
Total	1,215,510	-	(6,948)	1,208,562	1,174,742	33,820	97.2%	1,202,096	1,174,555

Notes to the Appropriation Statement

for the year ended 31 March 2011

1. Detail of transfers and subsidies as per Appropriation Act (after virement):

Detail of these transactions can be viewed in the note Transfers and subsidies, disclosure notes and Annexure I (C, D, E, G, H and K) to the Annual Financial Statements.

2. Detail of specifically and exclusively appropriated amounts voted (after virement):

Detail of these transactions can be viewed in note I (Annual Appropriation) to the Annual Financial Statements.

3. Detail on financial transactions in assets and liabilities

Detail of these transactions per programme can be viewed in the note to financial transactions in assets and liabilities to the Annual Financial Statements.

4. Explanations of material variances from amounts voted (after virement):

4.1 Per Programme	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Variance as a % of final appropriation %
Research, Development and Innovation				
Compensation of employees	25,701	21,156	4,545	18%
Goods and services	19,556	16,036	3,520	18%
The underspending in Programme 2: Research, Development and Innovation is due to staff turnover and resultant administrative costs.				
International Cooperation and Resources				
Goods and services	23,953	19,924	4,029	17%
Payment for capital assets	553	480	73	13%

The underspending in Programme 3: International Cooperation and Resources is due to staff turnover; resulting administrative costs and delays in procuring office equipment.

Notes to the Appropriation Statement *(Continued)*

4. Explanations of material variances from amounts voted (after virement): *(Continued)*

4.1 Per Programme	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Variance as a % of final appropriation %
Human Capital and Knowledge Systems				
Compensation of employees	23,346	19,369	3,977	17%
Goods and services	13,420	10,251	3,169	24%
Payment for capital assets	249	179	70	28%
The underspending in Programme 4: Human Capital and Knowledge is due to staff turnover, resulting administrative costs and delays in procuring office equipment.				
Socio-Economic Partnerships				
Compensation of employees	29,560	24,696	4,864	16%
Goods and services	10,698	9,509	1,189	11%
Payments for capital assets	436	316	120	28%
The underspending in Programme 5: Socio-Economic Partnerships is due to staff turnover, resultant administrative costs and delays in procuring equipment.				

4.2 Per economic classification	Final appropriation R'000	Actual expenditure R'000	Variance R'000	Variance as a % of final appropriation %
Current payments				
Compensation of employees	207,627	190,629	16,998	8%
Goods and services	153,307	140,736	12,571	8%
Interest and rent on land	333	333	-	-
Unauthorised expenditure approved	-	-	-	-
Transfers and subsidies				
Departmental agencies and accounts	2,273,455	2,233,154	40,301	2%
Universities and universities of technology	32,880	173,198	(140,318)	(427%)
Public corporations and private enterprises	1,007,445	1,246,280	(238,835)	(24%)
Non-profit institutions	441,542	55,971	385,571	87%
Households	528	978	(450)	(85%)
Payments for capital assets				
Machinery and equipment	10,866	10,603	263	2%
Payments for financial assets	-	19	(19)	

Statement of Financial Performance

for the year ended 31 March 2011

	Note	2010/11	2009/10
Performance		R'000	R'000
Revenue			
Annual appropriation	1	4,127,983	4,261,695
Departmental revenue	2	468	1,585
Aid assistance	3	129,864	56,837
Total Revenue		4,258,315	4,320,117
Expenditure			
<i>Current expenditure</i>			
Compensation of employees	4	190,629	167,487
Goods and services	5	140,736	116,754
Interest and rent on land	6	333	-
Aid assistance	3	4,451	2,597
Total current expenditure		336,149	286,838
<i>Transfers and subsidies</i>			
Transfers and subsidies	8	3,709,582	3,891,874
Aid assistance	3	96,431	48,736
Total transfers and subsidies		3,806,013	3,940,610
<i>Expenditure for capital assets</i>			
Tangible capital assets	9	10,666	7,855
Total expenditure for capital assets		10,666	7,855

	Note	2010/11	2009/10
Performance		R'000	R'000
<i>Payment for financial assets</i>	7	19	80
Direct Exchequer payments		-	-
Total Expenditure		4,152,847	4,235,383
Surplus for the year		105,468	84,734
<i>Reconciliation of net surplus for the year</i>			
Voted funds		76,081	77,838
Departmental revenue	14	468	1,585
Aid assistance	3	28,919	5,311
Surplus for the year		105,468	84,734

Statement of Financial Position

at 31 March 2011

	Note	2010/11	2009/10
Position		R'000	R'000
Assets			
<i>Current assets</i>		104,849	83,303
Cash and cash equivalents	10	103,977	82,655
Prepayments and advances	11	387	121
Receivables	12	485	527
Total Assets		104,849	83,303
Liabilities			
<i>Current liabilities</i>		104,799	83,239
Voted funds to be surrendered to the Revenue Fund	13	75,854	77,838
Departmental revenue to be surrendered to the Revenue Fund	14	6	82
Payables	15	20	8
Aid assistance repayable	3	28,919	5,311
Total Liabilities		104,799	83,239
Net Assets		50	64
<i>Represented by:</i>			
Recoverable revenue		50	64
Total		50	64

Statement of Changes in Net Assets

for the year ended 31 March 2011

	Note	2010/11	2009/10
Net Assets		R'000	R'000
Recoverable revenue			
Opening balance		64	93
Transfers:		(14)	(29)
Debts revised		3	4
Debts recovered (included in departmental receipts)		(17)	(34)
Debts raised		-	1
Closing balance		50	64
TOTAL		50	64

Cash Flow Statement

for the year ended 31 March 2011

	Note	2010/11	2009/10
Cash Flow		R'000	R'000
Cash Flows from Operating Activities			
Receipts		4,258,088	4,320,117
Annual appropriated funds received	1.1	4,127,756	4,261,695
Departmental revenue received	2	468	1,585
Aid assistance received	3	129,864	56,837
Net decrease in working capital		(212)	709
Surrendered to Revenue Fund		(78,382)	(19,754)
Surrendered to RDP Fund/Donor		(5,311)	(7,173)
Current payments		(336,149)	(286,838)
Payments for financial assets		(19)	(80)
Transfers and subsidies paid		(3,806,013)	(3,940,610)
Net cash flow available from operating activities	16	32,002	66,371
Cash Flows from Investing Activities			
Payments for capital assets	9	(10,666)	(7,855)
Net cash flows from investing activities		(10,666)	(7,855)
Cash Flows from Financing Activities			
Increase/(decrease) in net assets		(14)	(29)
Net cash flows from financing activities		(14)	(29)
Net increase in cash and cash equivalents		21,322	58,487
Cash and cash equivalents at the beginning of the period		82,655	24,168
Cash and cash equivalents at end of period	17	103,977	82,655

Accounting Policies

for the year ended 31 March 2011

The Financial Statements have been prepared in accordance with the following policies, which have been applied consistently in all material aspects, unless otherwise indicated. However, 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, 1999, and the Treasury Regulations issued in terms of the Act and the Division of Revenue Act, 2010.

1. Presentation of the Financial Statements

1.1 Basis of preparation

The Financial Statements have been prepared on a modified cash basis of accounting, except where stated otherwise. The modified cash basis constitutes the cash basis of accounting supplemented with additional disclosure items. Under the cash basis of accounting transactions, other events are recognised when cash is received or paid.

1.2 Presentation currency

All amounts have been presented in South African Rand (R), which is also the functional currency of the Department.

1.3 Rounding

Unless otherwise stated all financial figures have been rounded to the nearest one thousand Rand (R'000).

1.4 Comparative figures

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.

1.5 Comparative figures - Appropriation Statement

A comparison between actual amounts and final appropriation per major classification of expenditure is included in the Appropriation Statement.

2. Revenue

2.1 Appropriated funds

Appropriated funds are recognised in the financial records on the date the appropriation becomes effective. Adjustments to the appropriated funds made in terms of the adjustments budget process are recognised in the financial records on the date the adjustments become effective.

Total appropriated funds are presented in the Statement of Financial Performance.

Unexpended appropriated funds are surrendered to the National Revenue Fund. Amounts owing to the National Revenue Fund at the end of the financial year are recognised in the Statement of Financial Position.

2.2 Departmental revenue

All departmental revenue is recognised in the Statement of Financial Performance when received and is subsequently paid into the National Revenue Fund when received, unless otherwise stated.

Any amount owing to the National Revenue Fund at the end of the financial year is recognised as payable in the Statement of Financial Position.

No accrual is made for receivables from the last receipt date to the end of the reporting period. These amounts are, however, disclosed in the disclosure note to the Annual Financial Statements.

2.2.1 Sales of goods and services other than capital assets

The proceeds received from the sale of goods and/or the provision of services is recognised in the Statement of Financial Performance when the cash is received.

2.2.2 Interest, dividends and rent on land

Interest, dividends and rent on land is recognised in the Statement of Financial Performance when the cash is received.

2.2.3 Sale of capital assets

The proceeds received on sale of capital assets are recognised in the Statement of Financial Performance when the cash is received.

2.2.4 Financial transactions in assets and liabilities

Repayments of loans and advances previously extended to employees and public corporations for policy purposes are recognised as revenue in the Statement of Financial Performance on receipt of the funds.

Cheques issued in previous accounting periods that expire before being banked are recognised as revenue in the Statement of Financial Performance when the cheque becomes stale. When the cheque is reissued the payment is made from Revenue.

2.3 Direct Exchequer receipts/payments

All direct exchequer receipts are recognised in the Statement of Financial Performance when cash is received and subsequently paid into the National Revenue Fund, unless otherwise stated.

2.4 Aid assistance

Aid assistance is recognised as revenue when received.

All in-kind aid assistance is disclosed at fair value on the date of receipt in the annexures to the Annual Financial Statements.

The cash payments made during the year relating to aid assistance projects are recognised as expenditure in the Statement of Financial Performance when final authorisation for payments is effected on the system (by no later than 31 March of each year).

The value of the assistance expensed prior to the receipt of the funds is recognised as a receivable in the Statement of Financial Position.

Inappropriately expensed amounts using aid assistance and any unutilised amounts are recognised as payables in the Statement of Financial Position.

3. Expenditure

3.1 Compensation of employees

3.1.1 Short-term employee benefits

The costs of short-term employee benefits are expensed in the Statement of Financial Performance when final authorisation for payment is effected on the system (by no later than 31 March of each year).

Short-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the Financial Statements. These amounts are not recognised in the Statement of Financial Performance or Position.

Employee costs are capitalised to the cost of a capital project when an employee spends more than 50% of his/her time in the project.

3.1.2 Post-retirement benefits

The Department provides retirement benefits (pension benefits) for certain of its employees through a defined benefit plan for government employees. These benefits are funded by both employer and employee contributions.

Employer contributions (i.e. social contributions) to the fund are expensed when the final authorisation for payment to the fund is effected on the system (by no later than 31 March of each year).

No provision is made for retirement benefits in the Financial Statements of the Department. Any potential liabilities are disclosed in the financial statements of the National Revenue Fund and not in the financial statements of the employer department.

Social contributions (such as medical benefits) made by the Department for certain of its employees are classified as transfers to households in the Statement of Financial Performance.

3.1.3 Termination benefits

Termination benefits (such as severance packages) are recognised as an expense in the Statement of Financial Performance as a transfer (to households) when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

3.1.4 Other long-term employee benefits

Other long-term employee benefits (such as capped leave) are recognised as an expense in the Statement of Financial Performance as a transfer (to households) when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

Long-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the Financial Statements. These amounts are not recognised in the Statement of Financial Performance or Position.

3.2 Goods and services

Payments made for goods and/or services are recognised as an expense in the Statement of Financial Performance when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

The expense is classified as capital if the goods and services were used for a capital project or when an asset of R5 000 or more is purchased. All other expenditures are classified as current.

3.3 Interest and rent on land

Interest and rental payments are recognised as an expense in the Statement of Financial Performance when the final authorisation for payment is effected on the system (by no later than 31 March of each year). This item excludes rental for use of building or other fixed structures.

3.4 Financial transactions in assets and liabilities

Debts are written off when identified as irrecoverable. Debts written off are limited to the amount of savings and/or underspending of appropriated funds. The write-off occurs at year-end

or when funds are available. No provision is made for irrecoverable amounts, but amounts are disclosed as a disclosure note.

All other losses are recognised when authorisation has been granted for the recognition thereof.

3.5 Transfers and subsidies

Transfers and subsidies are recognised as an expense when the final authorisation for payment is effected on the system (by no later than 31 March of each year).

3.6 Unauthorised expenditure

When confirmed, unauthorised expenditure is recognised as an asset in the Statement of Financial Position until such time as the expenditure is either approved by the relevant authority, recovered from the responsible person or written off as irrecoverable in the Statement of Financial Performance.

Unauthorised expenditure approved with funding is derecognised from the Statement of Financial Position when the unauthorised expenditure is approved and the related funds are received.

Where the amount is approved without funding, it is recognised as expenditure in the Statement of Financial Performance on the date of approval.

3.7 Fruitless and wasteful expenditure

Fruitless and wasteful expenditure is recognised as expenditure in the Statement of Financial Performance according to the nature of the payment and not as a separate line item on the face of the statement. If the expenditure is recoverable, it is treated as an asset until recovered from the responsible person, or written off as irrecoverable in the Statement of Financial Performance.

3.8 Irregular expenditure

Irregular expenditure is recognised as expenditure in the Statement of Financial Performance. If the expenditure is not condoned by the relevant authority it is treated as an asset until it is recovered or written off as irrecoverable.

4. Assets

4.1 Cash and cash equivalents

Cash and cash equivalents are carried in the Statement of Financial Position at cost.

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.

4.2 Other financial assets

Other financial assets are carried in the Statement of Financial Position at cost.

4.3 Prepayments and advances

Amounts prepaid or advanced are recognised in the Statement of Financial Position when the payments are made and where goods and services have not been received by the year-end.

Pre-payments and advances outstanding at the end of the year are carried in the Statement of Financial Position at cost.

4.4 Receivables

Receivables included in the Statement of Financial Position arise from cash payments made that are recoverable from another party or from the sale of goods/rendering of services.

Receivables outstanding at year-end are carried in the Statement of Financial Position at cost. Amounts that are potentially irrecoverable are included in the disclosure notes.

4.5 Loans

Loans are recognised in the Statement of Financial Position when the cash is paid to the beneficiary. Loans that are outstanding at year-end are carried in the Statement of Financial Position at cost plus accrued interest.

4.6 Inventory

Inventories that qualify for recognition must be initially reflected at cost. When inventories are acquired at no cost, or no nominal consideration, their cost will be their fair value at the date of acquisition.

All inventory items at year-end are reflected using the weighted average cost formula.

4.7 Capital assets

4.7.1 Movable assets

Initial recognition

A capital asset is recorded, on receipt of the item, at cost. Cost of an asset is defined as the total cost of acquisition. Where the cost cannot be determined accurately, the movable capital asset is stated at fair value. Where fair value cannot be determined, the capital asset is included in the asset register at R1.

All assets acquired prior to 1 April 2002 are included in the asset register at R1.

Subsequent recognition

Subsequent expenditure of a capital nature is recorded in the Statement of Financial Performance as “expenditure for capital asset” and is capitalised in the asset register of the Department on completion of the project.

Repairs and maintenance is expensed as current “goods and services” in the Statement of Financial Performance.

4.8.2 Immovable assets

Initial recognition

A capital asset is recorded, on receipt of the item, at cost. Cost of an asset is defined as the total cost of acquisition. Where the cost cannot be determined accurately, the immovable capital asset is stated at R1 unless the fair value for the asset has been reliably estimated.

Subsequent recognition

Work-in-progress of a capital nature is recorded in the Statement of Financial Performance as “expenditure for capital asset”. On completion, the total cost of the project is included in the asset register of the department that legally owns the asset or the National Department of Public Works.

Repairs and maintenance is expensed as current “goods and services” in the Statement of Financial Performance.

5. Liabilities

5.1 Payables

Recognised payables mainly comprise amounts owing to other governmental entities. These payables are recognised at cost in the Statement of Financial Position.

5.2 Contingent liabilities

Contingent liabilities are included in the disclosure notes to the Financial Statements when it is possible that economic benefits will flow from the Department, or when an outflow of economic benefits or service potential is probable but cannot be measured reliably.

5.3 Commitments

Commitments are not recognised in the Statement of Financial Position as a liability or as expenditure in the Statement of Financial Performance, but are included in the disclosure notes.

5.4 Accruals

Accruals are not recognised in the Statement of Financial Position as a liability or as expenditure in the Statement of Financial Performance, but are included in the disclosure notes.

5.5 Employee benefits

Short-term employee benefits that give rise to a present legal or constructive obligation are disclosed in the disclosure notes to the Financial Statements. These amounts are not recognised in the Statement of Financial Performance or the Statement of Financial Position.

5.6 Lease commitments

Finance leases

Finance leases are not recognised as assets and liabilities in the Statement of Financial Position. Finance lease payments are recognised as an expense in the Statement of Financial Performance and are apportioned between the capital and interest portions. The finance lease liability is disclosed in the disclosure notes to the Financial Statements.

Operating leases

Operating lease payments are recognised as an expense in the Statement of Financial Performance. The operating lease commitments are disclosed in the disclosure notes to the Financial Statements.

5.7 Provisions

Provisions are disclosed when there is a present legal obligation 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 will be required to settle the obligation and so that a reliable estimate of the obligation can be made.

6. Receivables for Departmental Revenue

Receivables for departmental revenue are disclosed in the disclosure notes to the Financial Statements.

7. Net Assets

7.1 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 reserve when identified in the current period and are transferred to the National Revenue Fund when the underlining asset is disposed of and the related funds are received.

The Department did not have a capitalised reserve in the current reporting period.

7.2 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 transferred to the Statement of Financial Performance when written-off.

8. Related Party Transactions

Specific information with regard to related party transactions is included in the disclosure notes.

9. Key Management Personnel

Compensation paid to key management personnel, including their family members where relevant, is included in the disclosure notes.

10. Public-Private Partnerships

The Department did not have any public-private partnerships in the current reporting period.

Notes to the Annual Financial Statements

for the year ended 31 March 2011

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	2010/2011 Actual funds Received	Funds not requested/ not received	Appropriation received 2009/10
	R'000	R'000	R'000	R'000
Administration	190,131	190,131	-	179,614
Research, Development and Innovation	826,848	826,848	-	1,148,548
International Cooperation and Resources	138,478	138,478	-	132,463
Human Capital and Knowledge systems	1,763,964	1,763,964	-	1,598,974
Socio-Economic Partnerships	1,208,562	1,208,335	227	1,202,096
Total	4,127,983	4,127,756	227	4,261,695

2. Departmental Revenue

	Note	2010/11	2009/10
		R'000	R'000
Sales of goods and services other than capital assets	2.1	35	30
Interest, dividends and rent on land	2.2	8	3
Transactions in financial assets and liabilities	2.3	425	1,552
Departmental revenue collected		468	1,585

2.1 Sales of goods and services other than capital assets

	Note	2010/11	2009/10
		R'000	R'000
Other sales	2	35	30
Total		35	30

2.2 Interest, dividends and rent on land

Interest	2	8	3
Total		8	3

2.3 Transactions in financial assets and liabilities

Receivables	2	17	35
Other receipts, including recoverable revenue		408	1,517
Total		425	1,552

3. Aid Assistance

3.1 Aid assistance received in cash from RDP

Foreign

Opening balance	5,311	7,173
Revenue	129,864	56,837
Expenditure	(100,945)	(51,526)
Current	(4,451)	(2,597)
Capital	(63)	(193)
Transfers	(96,431)	(48,736)
Surrender to RDP	(5,311)	(7,173)
Closing balance	28,919	5,311

3.2 Analysis of balance

	Note	2010/11	2009/10
		R'000	R'000
Aid assistance repayable		28,919	5,311
RDP		28,919	5,311
Closing balance		28,919	5,311

4. Compensation of Employees

4.1 Salaries and wages

Basic salary	116,440	101,054
Performance award	9,846	10,265
Service-based	149	574
Compensative/ circumstantial	2,319	2,213
Periodic payments	395	14
Other non-pensionable allowances	42,696	36,991
Total	171,845	151,111

4.2 Social contributions

	Note	2010/11	2009/10
		R'000	R'000
Employer contributions			
Pension		14,623	12,964
Medical		4,139	3,401
Bargaining council		22	11
Total		18,784	16,376
Total compensation of employees		190,629	167,487
Average number of employees		373	357

5. Goods and Services

Administrative fees		3,078	903
Advertising		14,198	4,995
Assets less than R5,000	5.1	407	523
Bursaries (employees)		1,156	967
Catering		1,356	1,678
Communication		8,028	8,385
Computer services	5.2	5,265	9,306
Consultants, contractors and agency/ outsourced services	5.3	34,891	33,040
Entertainment		463	638
Audit cost – external	5.4	3,010	2,414
Inventory	5.5	7,173	4,742
Operating leases		2,159	3,112
Owned and leasehold property expenditure	5.6	3,250	3,263
Travel and subsistence	5.7	38,681	27,864
Venues and facilities		9,735	5,131
Training and staff development		2,792	5,712
Other operating expenditure	5.8	5,094	4,081
Total		140,736	116,754

5.1 Assets less than R5,000

	Note	2010/11 R'000	2009/10 R'000
Tangible assets	5	407	523
Machinery and equipment		407	523
Total		407	523

5.2 Computer services

SITA computer services	5	3,639	3,975
External computer service providers		1,626	5,331
Total		5,265	9,306

5.3 Consultants, contractors and agency/outsourced services

Business and advisory services	5	9,686	7,260
Legal costs		1,937	188
Contractors		6,445	6,248
Agency and support/outsourced services		16,823	19,344
Total		34,891	33,040

5.4 Audit cost – External

Regularity audits	5	3,010	2,414
Total		3,010	2,414

5.5 Inventory

	Note	2010/11	2009/10
		R'000	R'000
Fuel, oil and gas	5	9	-
Other consumable materials		556	225
Maintenance material		11	-
Stationery and printing		6,597	4,517
Total		7,173	4,742

5.6 Property payments

Municipal services	5	145	1,666
Property maintenance and repairs		1,545	506
Other		1,560	1,091
Total		3,250	3,263

5.7 Travel and subsistence

Local	5	20,861	15,579
Foreign		17,820	12,285
Total		38,681	27,864

5.8 Other operating expenditure

Professional bodies, membership and subscription fees	5	2,546	1,072
Resettlement costs		228	1,535
Other		2,320	1,474
Total		5,094	4,081

6. Interest and Rent on Land

	Note	2010/11 R'000	2009/10 R'000
Interest paid		333	-
		333	-

7. Payments for Financial Assets

Other material losses written off	7.1	19	80
Total		19	80

7.1 Other material losses written off

Nature of losses	7		
Damages to hired vehicles		4	50
Damages to private vehicles		2	17
Petty cash		-	4
Damage to Deputy Minister's vehicle		-	1
Other losses		13	8
Total		19	80

8. Transfers and Subsidies

	Note	2010/11	2009/10
		R'000	R'000
Departmental agencies and accounts	Annex IC	2,233,154	2,310,883
Universities and universities of technology	Annex ID	173,199	113,447
Public corporations and private enterprises	Annex IE	1,246,280	1,183,335
Non-profit institutions	Annex IG	55,971	283,507
Households	Annex IH	528	452
Gifts, donations and sponsorships made	Annex IK	450	250
Total		3,709,582	3,891,874

9. Expenditure for Capital Assets

Tangible assets

Machinery and equipment	9.1	10,666	7,855
Total		10,666	7,855

9.1 Analysis of funds utilised to acquire capital assets – 2010/11

	Voted funds	Aid assistance	Total
	R'000	R'000	R'000
Tangible assets			
Machinery and equipment	10,603	63	10,666
Total	10,603	63	10,666

The amount of R63 000 is in respect of the donor fund project "Innovation for Poverty Alleviation Programme" [Note 3.1 and Annexure 1J] funded by the European Union and is accounted for under a different fund of the Department. This amount is, however, not included in the Departmental Asset Register and the additions in Disclosure Note 25.1

9.2 Analysis of funds utilised to acquire capital assets – 2009/10

	Voted funds	Aid assistance	Total
	R'000	R'000	R'000
Machinery and equipment	7,662	193	7,855
Total assets acquired	7,662	193	7,855

10. Cash and Cash Equivalents

	Note	2010/11	2009/10
		R'000	R'000
Consolidated Paymaster-General Account		103,944	82,622
Cash on hand		33	33
Total		103,977	82,655

11. Prepayments and Advances

Travel and subsistence	57	51
Advances paid to other entities	330	70
Total	387	121

12. Receivables

	Note	2010/11				2009/10
		R'000	R'000	R'000	R'000	R'000
		Less than one year	One to three years	Older than three years	Total	Total
Claims recoverable	12.1		(7)		(7)	105
Recoverable expenditure	12.2	224	198		422	307
Staff debt	12.3	16	15	39	70	115
Total		240	206	39	485	527

12.1 Claims recoverable

	Note	2010/11	2009/10
		R'000	R'000
National departments	12	(49)	79
Households and non-profit institutions		42	26
Total		(7)	105

12.2 Recoverable expenditure (disallowance accounts)

Income tax debt	12	4	6
Persal salaries and stoppages		-	1
Damages to vehicles		418	200
Value-Added Tax (VAT) in respect of the Donor Fund Project "Innovation for Poverty Alleviation"		-	100
Total		422	307

12.3 Staff debt

	Note	2010/11	2009/10
		R'000	R'000
Bursary debt	12	12	22
Salary overpayment		8	38
Telephone debt		1	10
Performance bonus – Overpayment		1	9
Previous employees - Resettlement debt		38	36
Foreign special privilege debt		5	-
Current employees – Resettlement debt		5	-
Total		70	115

13. Voted funds to be surrendered to the Revenue Fund

Opening balance		77,838	18,247
Transfer from statement of financial performance		76,081	77,838
Voted funds not requested/not received	1.1	(227)	-
Paid during the year		(77,838)	(18,247)
Closing balance		75,854	77,838

14. Departmental Revenue to be Surrendered to the Revenue Fund

	Note	2010/11	2009/10
		R'000	R'000
Opening balance		82	4
Transfer from Statement of Financial Performance		468	1,585
Paid during the year		(544)	(1,507)
Closing balance		6	82

15. Payables – Current

Clearing accounts	15.1	20	8
Total		20	8

15.1 Clearing accounts

Persal salaries and stoppages	15	-	1
Income tax		20	7
Total		20	8

16. Net Cash Flow Available from Operating Activities

	Note	2010/11 R'000	2009/10 R'000
Net surplus as per Statement of Financial Performance		105,468	84,734
Add back non-cash/cash movements not deemed operating activities		(73,466)	(18,363)
(Increase)/Decrease in receivables – current		42	492
(Increase)/Decrease in prepayments and advances		(266)	246
Increase/(Decrease) in payables – current		12	(29)
Expenditure on capital assets		10,666	7,855
Surrenders to Revenue Fund	14	(78,382)	(19,754)
Surrenders to Donor Fund		(5,311)	(7,173)
Voted funds not requested/not received		(227)	-
Net cash flow generated by operating activities		32,002	66,371

17. Reconciliation of Cash and Cash Equivalents for Cash Flow Purposes

Consolidated Paymaster-General Account	103,944	82,622
Cash on hand	33	33
Total	103,977	82,655

Disclosure Notes to the Annual Financial Statements

for the year ended 31 March 2011

18. Contingent Liabilities

		Note	2010/11 R'000	2009/10 R'000
Liable to	Nature			
Housing loan guarantees	Employees	Annex 3A	60	192
Total			60	192

19. Commitments

Current expenditure

Approved and contracted

Approved but not yet contracted

10,222	7,618
301	-
10,523	7,618

Capital expenditure

Approved and contracted

1,078	133
1,078	133
11,601	7,751

Total commitments

20. Accruals

			2010/11	2009/10
Listed by economic classification	30 days	30+ days	R'000 Total	R'000 Total
Goods and services	262	1	263	44
Interest on rent and land	55	-	-	-
Machinery and equipment	68	-	123	333
Total	385	1	386	377

	Note	2010/11	2009/10
Listed by Programme		R'000	R'000
Programme 1: Administration		130	253
Programme 2: Research, Development and Innovation		9	-
Programme 3: International Cooperation and Resources		-	83
Programme 4: Human Capital and Knowledge Systems		-	41
Programme 5: Socio-Economic Partnerships		247	-
Total		386	377
Confirmed balances with other departments	Annex 5	67	73
Total		67	73

21. Employee Benefits

	Note	2010/11	2009/10
		R'000	R'000
Leave entitlement*		5,901	5,479
Service bonus (Thirteenth cheque)		4,083	3,664
Performance awards		3,114	-
Capped leave commitments		2,709	3,108
Total		15,807	12,251

*A negative amount of R311,406.22 was offset against leave entitlement. The amount was as a result of pro-rata calculation of leave taken by employees as at 31 March 2011. 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 results in a negative leave taken for the three-month period. This situation will be automatically rectified during the leave period.

22. Lease Commitments

22.1 Operating leases expenditure

	Land	Buildings and other fixed structures	Machinery and equipment	Total
2010/11	R'000	R'000	R'000	R'000
Not later than 1 year	-	632	-	632
Later than 1 year and not later than 5 years	-	161	-	161
Total lease commitments	-	793	-	793

	Land	Buildings and other fixed structures	Machinery and equipment	Total
2009/10	R'000	R'000	R'000	R'000
Not later than 1 year	-	-	1,460	1,460
Later than 1 year and not later than 5 years	-	-	733	733
Total lease commitments	-	-	2,193	2,193

22.2 Finance leases expenditure

	Specialised military equipment	Land	Buildings and other fixed structures	Machinery and equipment	Total
2010/11	R'000	R'000	R'000	R'000	R'000
Not later than 1 year	-	-	-	926	926
Later than 1 year and not later than 5 years	-	-	-	1,753	1,753
Later than five years	-	-	-	-	-
Total lease commitments	-	-	-	2,679	2,679
Less: finance costs				878	878
Total present value of lease liabilities				1,801	1,801

23. Irregular Expenditure

23.1 Reconciliation of irregular expenditure

	Note	2010/11	2009/10
		R'000	R'000
Opening balance		-	-
Add: Irregular expenditure – relating to prior year		-	-
Add: Irregular expenditure – relating to current year		1,366	-
Less: Amounts recoverable (not condoned)		-	-
Less: Amounts not recoverable (not condoned)		(1,366)	-
Irregular expenditure awaiting condonation		-	-

23.2 Details of irregular expenditure – current year

	Note	2010/11	2009/10
		R'000	R'000
Incident	Disciplinary steps taken/criminal proceedings		
Payment exceeded bid requirements	None	641	
Non-compliance with secondment processes		725	
Total		1,366	

23.3 Details of irregular expenditure not recoverable (not condoned)

Incident	
Payment exceeded bid requirements	641
Officials were seconded without following secondment prescripts	725
Total	1,366

24. Fruitless and Wasteful Expenditure

24.1 Reconciliation of fruitless and wasteful expenditure

Opening balance	-	-
Fruitless and wasteful expenditure – relating to current year	110	-
Fruitless and wasteful expenditure awaiting condonation	110	-

24.2 Analysis of awaiting condonation per economic classification

Current	110	-
Total	110	-

24.3 Analysis of current year's fruitless and wasteful expenditure

		Note	2010/11	2009/10
			R'000	R'000
Incident	Disciplinary steps taken/criminal proceedings			
Breach of departmental bursary policy	Investigating		110	
Total			110	

25. Related Party Transactions

The following entities are under the ownership control of the Department in terms of Chapter 1 of the Public Finance Management Act, 1999, report to the Minister of Science and Technology, and as such are related parties to the Department:

Schedule 3A – National public entities

- Africa Institute of South Africa
- Human Sciences Research Council
- National Research Foundation
- South African National Space Agency, which is envisaged to be operational in the 2011/2012 financial year
- Technology Innovation Agency, which became operational on 1 April 2010

Schedule 3B – National government business enterprises

- Council for Scientific and Industrial Research

The departmental transactions with these entities are limited to transfer and subsidy payments. Annexures IC and IE 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. Key Management Personnel

	No. of individuals	2010/11 R'000	2009/10 R'000
Political office bearers (provide detail below)	2	3,303	3,650
Officials:			
Level 15 to 16	9	8,421	6,080
Level 14 (incl. CFO if at a lower level)	1	940	915
Total		12,664	10,645

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).

27. Movable Tangible Capital Assets

Movement in movable tangible capital assets per asset register for the year ended 31 March 2011

	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	38,538	-	10,603	(683)	48,458
Transport assets	3,983	-	1,466	(268)	5,181
Computer equipment	16,058	-	4,832	(415)	20,475
Furniture and office equipment	10,728	-	750	-	11,478
Other machinery and equipment	7,769	-	3,555	-	11,324
Total movable tangible capital assets	38,538	-	10,603	(683)	48,458

27.1 Additions

Additions to movable tangible capital assets per asset register for the year ended 31 March 2011

	Cash	Non-cash	(Capital work in progress current costs and finance lease payments)	Received current, not paid (Paid current year, received prior year)	Total
	R'000	R'000	R'000	R'000	R'000
Machinery and equipment	10,603	-	-	-	10,603
Transport assets	1,466	-	-	-	1,466
Computer equipment	4,832	-	-	-	4,832
Furniture and office equipment	750	-	-	-	750
Other machinery and equipment	3,555	-	-	-	3,555
Total additions to movable tangible capital assets	10,603	-	-	-	10,603

27.2 Disposals

Disposals of movable tangible capital assets per asset register for the year ended 31 March 2011

	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	-	683	683	-
Transport assets	-	268	268	-
Computer equipment	-	415	415	-
Furniture and office equipment	-	-	-	-
Other machinery and equipment	-	-	-	-
Total disposal of movable tangible capital assets	-	683	683	-

27.3 Movement for 2009/10

Movement in movable tangible capital assets per asset register for the year ended 31 March 2010

	Opening balance	Additions	Disposals	Closing balance
	R'000	R'000	R'000	R'000
Machinery and equipment	32,794	7,662	(1,918)	38,538
Transport assets	3,051	2,105	(1,173)	3,983
Computer equipment	12,664	4,006	(612)	16,058
Furniture and office equipment	9,661	1,197	(130)	10,728
Other machinery and equipment	7,418	354	(3)	7,769
Total movable tangible assets	32,794	7,662	(1,918)	38,538

27.4 Minor assets

Minor assets of the department for the year ended 31 March 2011

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
	R'000	R'000	R'000	R'000	R'000
Opening balance	-	-	523	-	523
Current year adjustments to prior year balances	-	-	490	-	490
Additions	-	-	407	-	407
Disposals	-	-	(8)	-	(8)
Total minor assets	-	-	1,412	-	1,412
Number of RI minor assets	-	-	19	-	19
Number of minor assets at cost	-	-	167	-	167
Total	-	-	186	-	186

27.5 Minor assets

Minor assets of the department for the year ended 31 March 2010

	Intangible assets	Heritage assets	Machinery and equipment	Biological assets	Total
	R'000	R'000	R'000	R'000	R'000
Minor assets	-	-	523	-	523
Total	-	-	523	-	523
Number of RI minor assets	-	-	176	-	176
Number of minor assets at cost	-	-	255	-	255
Total	-	-	431	-	431

Annexures to the Annual Financial Statements

for the year ended 31 March 2011

28 World Cup Expenditure

	2010/11		2009/10
Distribution of tickets	Quantity	R'000	R'000
Senior management	8	17	-
Other	-	-	-
Guest speakers/monitors	4	8	-
Total	12	25	-

	2010/11		2009/10
Purchase of World Cup apparel	Quantity	R'000	R'000
SA branded beanies for staff	550	34	-
Bafana Bafana official jersey for frontline staff	22	16	-
Total	572	50	-

Total World Cup expenditure		75	-
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Annexure IC

Statement of Transfers to Departmental Agencies and Accounts

Department/Agency/Account	Transfer Allocation				Transfer		2009/10
	Adjusted Appropriation Act R'000	Rollovers R'000	Adjustments R'000	Total available R'000	Actual transfer R'000	% of Available funds transferred %	Appropriation Act R'000
Africa Institute of South Africa	30,594	-	-	30,594	30,594	100%	29,280
Agricultural Research Council	58,653	-	-	58,653	53,653	91%	-
Council for Geoscience	4,221	-	-	4,221	4,221	100%	1,666
Human Sciences Research Council	210,313	-	-	210,313	210,313	100%	166,185
National Research Foundation	1,469,944	15,717	6,862	1,492,523	1,457,222	98%	2,033,511
South African Medical Research Council	700	-	-	700	700	100%	2,957
South African National Biodiversity Institute	-	-	-	-	-	-	2,700
Technology Innovation Agency	476,451	-	-	476,451	476,451	100%	-
Total	2,250,876	15,717	6,862	2,273,455	2,233,154		2,236,299

Annexure ID

Statement of transfers to Universities and Universities of Technology

University/University of Technology	Transfer Allocation				Transfer		% of Available funds transferred	2009/10 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	%	R'000
Cape Peninsula University of Technology	2,680	-	-	2,680	2,680	-	-	120
Nelson Mandela Metropolitan University	2,750	-	-	2,750	2,750	-	-	120
North-West University	-	-	-	-	51,780	(51,780)	(100%)	8,950
FS Central University of Technology	-	-	-	-	-	-	-	470
Vaal University of Technology	150	-	-	150	150	-	-	-
Tshwane University of Technology	30	-	-	30	30	-	-	57
University of Cape Town	11,814	-	-	11,814	11,814	-	-	41,045
University of Fort Hare	1,000	-	-	1,000	1,000	-	-	200
University of Johannesburg	2,440	-	-	2,440	2,440	-	-	100
University of KwaZulu-Natal	-	-	-	-	13,625	(13,625)	(100%)	1,300
University of Limpopo	50	-	-	50	50	-	-	-
University of Pretoria	8,444	-	-	8,444	8,444	-	-	4,869
Stellenbosch University	-	-	-	-	16,774	(16,774)	(100%)	9,144
University of Venda	-	-	-	-	150	(150)	(100%)	120
University of the Western Cape	-	-	-	-	50,858	(50,858)	(100%)	38,350
University of the Witwatersrand	3,522	-	-	3,522	10,654	(7,132)	(67%)	14,530
University of Zululand	-	-	-	-	-	-	-	500
Total	32,880	-	-	32,880	173,199	(140,319)		119,875

Annexure IE

Statement of Transfers/ Subsidies to Public Corporations and Private Enterprises

Name of Public Corporation/ Private Enterprise	Transfer Allocation			Expenditure			2009/10		
	Adjusted Appropriation Act R'000	Rollovers R'000	Adjust- ments R'000	Total available R'000	Actual transfer R'000	% of Available funds transferred %	Capital R'000	Current R'000	Appropriation Act R'000
Public corporations									
<i>Transfers</i>									
Council for Minerals Technology (MINTEK)	38,837	-	-	38,837	38,837	100%	25,337	13,500	36,611
Council for Scientific and Industrial Research	267,041	-	-	267,041	410,890	154%	242,524	168,366	509,672
Nuclear Energy Corporation of South Africa	10,783	-	-	10,783	10,783	100%	-	10,783	7,146
Subtotal									
<i>Subsidies</i>									
Council for Scientific and Industrial Research	685,784	-	-	685,784	685,784	100%	-	685,784	599,384
Subtotal									599,384
Total	1,002,445	-	-	1,002,445	1,146,294		267,861	878,433	1,152,813

Name of Public Corporation/ Private Enterprise	Transfer Allocation				Expenditure			2009/10	
	Adjusted Appropriation Act R'000	Rollovers R'000	Adjust- ments R'000	Total available R'000	Actual transfer R'000	% of Available funds transferred %	Capital R'000	Current R'000	Appropriation Act R'000
Private enterprises:Transfers									
Aerosud Innovation and Training	-	-	-	-	-	-	-	-	55
Bansha Investment (Pty) Ltd	-	-	-	-	-	-	-	-	19
Beyond 2000 Publishers	-	-	-	-	1,200	-	-	1,200	-
Boipelo Strategic Management Service	-	-	-	-	142	-	-	142	250
East London Industrial Development	-	-	-	-	650	-	-	650	-
Icteam Consulting CC	-	-	-	-	22	-	-	22	-
Morcom Aeronautics and Space (Pty) Ltd	-	-	-	-	1,314	-	1,314	-	-
Multimedia Innovation (Pty) Ltd	-	-	-	-	1,435	-	-	1,435	-
National Science and Technology Forum	-	-	-	-	12,314	-	-	12,314	-
OAO Makeyev GRTs	-	-	-	-	-	-	-	-	2,090
Page Automation (Pty) Ltd	-	-	-	-	438	-	438	-	-
Pelchem (Pty) Ltd	-	-	-	-	21,980	-	11,285	10,695	8,879
South African National Energy Research Institute (Pty) Ltd	-	-	5,000	5,000	28,000	560%	-	28,000	34,119
System Application Products	-	-	-	-	-	-	-	-	100
SunSpace and Information Systems (Pty) Ltd	-	-	-	-	8,065	-	8,065	-	-
Telkom SA Ltd	-	-	-	-	3,674	-	3,674	-	2,000
The Da Vinci Institute	-	-	-	-	270	-	-	270	3,979
The Innovation Hub Management Co	-	-	-	-	-	-	-	-	406
Umvoto Africa (Pty) Ltd	-	-	-	-	109	-	-	109	111
Wits Commercial Enterprise Pty (Ltd)	-	-	-	-	1,573	-	-	1,573	410
Wits Health Consortium (Pty) Ltd	-	-	-	-	18,800	-	-	18,800	-
Subtotal	-	-	5,000	-	99,986	-	24,776	75,210	52,418
Total	1,002,445	-	5,000	1,007,445	1,246,280	-	292,637	95,643	1,205,231

Annexure IG

Statement of Transfers to Non-Profit Institutions

2009/10							
Transfer Allocation				Expenditure		2009/10	
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred	Appropriation Act
Non-Profit Institutions	R'000	R'000	R'000	R'000	R'000	%	R'000
Transfers							
Academy of Science of South Africa	17,457	-	(9,362)	8,095	2,457	30%	13,793
Aurum Institute for Health Research	5,500	-	-	5,500	500	9%	-
Beyond 2000 Publishers	-	-	-	-	-	-	1,200
BioPAD Trust	-	-	-	-	-	-	48,033
Black Science,Technology and Engineering Professionals	8,029	-	-	8,029	3,029	38%	-
Cape Biotech Trust	-	-	-	-	-	-	58,533
Department of Environmental Affairs	4,000	-	-	4,000	4,000	100%	-
Dr K Parker	-	-	-	-	-	-	1
East Coast Biotechnology Innovation Centre Trust	-	-	-	-	-	-	85,975
Fresh Produce Exporters' Forum	30,000	-	-	30,000	5,000	17%	-
Future Leaders	3,396	-	-	3,396	396	12%	-
Genetic Engineering and Biotechnology	-	-	-	-	-	-	10,000
International Council for Genetic Engineering and Biotechnology	75,419	-	-	75,419	9,900	13%	-
ARC	3,021	-	-	3,021	21	1%	-
Natal Museum	3,022	-	-	3,022	22	1%	-
National Bioinformatics Network	-	-	-	-	-	-	513

	Transfer Allocation				Expenditure		2009/10
	Adjusted Appropriation Act R'000	Rollovers R'000	Adjustments R'000	Total available R'000	Actual transfer R'000	% of Available funds transferred %	Appropriation Act R'000
Non-Profit Institutions							
Transfers							
National Flagship Institution	-	-	-	-	-	-	11
National Institute of Higher Education	-	-	-	-	-	-	120
National Health Laboratory Service	75,842	-	-	75,842	6,842	-	-
National Science and Technology Forum	-	-	-	-	-	-	5,946
National Youth Service Programme	65,314	-	-	65,314	-	-	10,000
Plantbio Trust	-	-	-	-	-	-	52,539
Pretoria High School for Girls	1,060	-	-	1,060	60	6%	-
SAHA International	15,800	-	-	15,800	800	5%	-
Sci-Bono Discovery Centre	-	-	-	-	-	-	70
Secretariat of the African Decade of Persons with Disabilities (SADPD)	1,158	-	-	1,158	58	5%	-
South African Association of Science and Technology Centres	25,730	-	-	25,730	730	3%	5,138
South African Agency for Science and Technology Advancement	-	-	-	-	-	-	420
South African Astronomical Observatory	3,018	-	-	3,018	18	1%	-
South African Chemical Institute	3,080	-	-	3,080	80	3%	40
South African Institute for Electrical Engineers	-	-	-	-	-	-	20
South African Institute of Mining and Metallurgy	5,956	-	-	5,956	956	16%	-
South African Institute of Physics	15,832	-	-	15,832	1,832	12%	1,181
South African Institute of Tribology	-	-	-	-	-	-	800
South African Mathematics Foundation	38,500	-	-	38,500	3,500	9%	2,865
Southern African Research and Innovation Management Association	14,566	-	-	14,566	1,566	11%	2,092
The National Institute of High Learning	6,150	-	-	6,150	150	2%	-
The Thuthuka Education Upliftment Fund	-	-	-	-	-	-	9,788
The Water Research Commission	-	-	-	-	-	-	100
Tshumisano Trust	-	-	-	-	-	-	49,937

Annexure IG (Continued)

Statement of Transfers to Non-Profit Institutions

Transfer Allocation							Expenditure	2009/10
	Adjusted Appropriation Act	Rollovers	Adjustments	Total available	Actual transfer	% of Available funds transferred	Appropriation Act	
Non-Profit Institutions	R'000	R'000	R'000	R'000	R'000	%	R'000	
Transfers								
WIPO Voluntary Fund	5,100	-	-	5,100	100	2%	-	
World Meteorological Organisation	13,400	-	-	13,400	3,400	25%	1,000	
Total	440,350	-	(9,362)	430,988	45,417		360,115	
Subsidies								
Academy of Science of South Africa	10,554	-	-	10,554	10,554	100%	-	
	10,554	-	-	10,554	10,554		-	
Total	450,904	-	(9,362)	441,542	55,971		360,115	

Annexure IH

Statement of Transfers to Households

Households	Transfer Allocation				Expenditure		2009/10
	Adjusted Appropriation Act R'000	Rollovers R'000	Adjustments R'000	Total available R'000	Actual transfer R'000	% of Available funds transferred %	Appropriation Act R'000
Transfers							
Leave gratuity: Dlamini TC	-	-	69	69	69	100%	-
Leave gratuity: Friedental J	-	-	3	3	3	100%	-
Leave gratuity: Kgampe TL	-	-	6	6	6	100%	-
Leave gratuity: Kgarume G	-	-	252	252	252	100%	-
Leave gratuity: Lebona LM	-	-	5	5	5	100%	-
Leave gratuity: Letaba TP	-	-	32	32	32	100%	-
Leave gratuity: Madiba J	-	-	29	29	29	100%	-
Leave gratuity: Mafahla MP	-	-	12	12	12	100%	-
Leave gratuity: Maisela A	-	-	63	63	63	100%	-
Leave gratuity: Malewa MR	-	-	12	12	12	100%	-
Leave gratuity: Mathibela MM	-	-	5	5	5	100%	-
Leave gratuity: Matjila D	-	-	21	21	21	100%	-
Leave gratuity: Rabalao RT	-	-	15	15	15	100%	-
Leave gratuity: Segodi D	-	-	4	4	4	100%	-
	-	-	-	-	-		-
Total	-	-	528	528	528		-

Annexure IJ

Statement of Local and Foreign Aid Assistance Received

Name of Donor	Purpose	Opening Balance	Revenue	Expenditure	Closing Balance
		R'000	R'000	R'000	R'000
Received in cash					
Australia	Science Centre Managers Training Programme	-	170	75	95
Canada	Epidemiological Model for HIV/Aids Programme	-	3,436	3,436	-
European Union	Innovation for Poverty Alleviation Programme	-	73,362	72,810	552
European Union	Coordination and Advancement of Sub-Saharan Africa – EU Science and Technology Network (CAAST-Net)	-	178	142	36
European Union	Strengthening the European – South African Science and Advancement Programme (ESASTAP2)	-	2,060	94	1,966
European Union	Transnational Cooperation among NCOs for International Cooperation (INCONTACT Programme)	-	348	5	343
European Union	Pilot the Implementation of the DST Localisation Programme	-	26,000	-	26,000
European Union	European Code of Conduct for Nanosciences and Nanotechnologies (N&N) research (NANOCODE Programme)	-	82	-	82
United States Agency for International Development	Malawi Pathogen-free Potato	-	143	479	(336)
United States Agency for International Development	Risk and Vulnerability Atlas	-	657	476	181
Finland	The Finnish-Southern African Partnership Programme to Strengthen the NEPAD/SANBIO NETWORK (BioFISA)	-	15,312	15,312	-
Finland	The Knowledge Partnership on Information and Communications Technology (SAFIPA)	-	8,116	8,116	-
Subtotal		-	129,864	100,945	28,919

Name of Donor	Purpose	Opening Balance	Revenue	Expenditure	Closing Balance
		R'000	R'000	R'000	R'000
Received in kind					
Government of France	The extension of F'SATIE Scientific Director contract	-	9,900	4,950	4,950
Japan	An observational study to mitigate seismic risks in mines	-	3,200	8,487	(5,287)
Japan	Climate Simulation and Projections for Adaptation Impact in Southern African Region	-	10,000	8,322	1,678
Japan	Intellectual Property Rights Training Programme	-	383	383	-
Japan	Productivity training	-	400	523	(123)
Japan	Science Centre Senior Volunteers in Limpopo – To support science centres with developing teaching material for science and mathematics education and development exhibitions	-	1,500	1,500	-
Japan	Science Centre Senior Volunteers in North West – To support science centres with developing teaching material for science and mathematics education and development exhibitions	-	1,000	1,000	-
Japan	Technical Assistant – Improved Bilateral Relationships with the Japanese National System of Innovation	-	1,700	1,700	-
Japan	The Hitachi Scholarship for South African engineers	-	900	900	-
Subtotal		-	28,983	27,765	1,218
Total		-	158,847	128,710	30,137

Annexure IK

Statement of gifts, donations and sponsorships made and remissions, refunds and payments made as an act of grace

	2010/11	2009/10
Nature of Gift, Donation or Sponsorship	R'000	R'000
Paid in cash		
South African Women in Science Awards	450	250
Subtotal	450	250
Paid in kind		
MeerKat - South African Square Kilometre Array Schools Competition Awards	52	-
Subtotal	52	-
Total	502	250

Annexure 3A

Statement of financial guarantees issued as at 31 March 2011 – Local

		Original guaranteed capital amount	Opening balance 1 April 2010	Guarantees draw downs during the year	Guarantees repayments/ cancelled/ reduced/ released during the year	Revaluations	Closing balance 31 March 2011	Guaranteed interest for year ended 31 March 2010	Realised losses not recoverable, i.e. claims paid out
Guarantor institution	Guarantee in respect of	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
ABSA Bank	Housing	97	97	-	(76)	-	21	-	-
Standard Bank	Housing	-	-	-	-	-	-	-	-
First National Bank	Housing	28	28	-	(28)	-	-	-	-
Nedbank	Housing	67	67	-	(28)	-	39	-	-
Total		192	192	-	(132)	-	60	-	-

Annexure 4

Claims Recoverable

	Confirmed balance outstanding		Unconfirmed balance outstanding		Total	
	31/03/2011 R'000	31/03/2010 R'000	31/03/2011 R'000	31/03/2010 R'000	31/03/2011 R'000	31/03/2010 R'000
Government Entity						
Department						
Department of Defence	-	34	-	-	-	34
The Presidency	-	44	-	-	-	44
Subtotal	-	78	-	-	-	78
Other government entities						
Government Employee Pension Fund	-	-	1	1	1	1
Subtotal	-	-	1	1	1	1
Total	-	78	1	1	1	79

Annexure 5

Intergovernment Payables

	Confirmed balance outstanding		Unconfirmed balance outstanding		Total	
	31/03/2011 R'000	31/03/2010 R'000	31/03/2011 R'000	31/03/2010 R'000	31/03/2011 R'000	31/03/2010 R'000
Government Entity						
Departments						
Current						
Gauteng Provincial Government: Department of Education	-	72	-	-	-	72
Office of the Premier: Free State	-	1	-	-	-	1
The Presidency	67	-	-	-	67	-
Total	67	73	-	-	67	73

Annexure 6

Inventory

	Quantity	2010/11	Quantity	2009/10
Inventory	R'000	R'000	R'000	R'000
Opening balance	14,628	381	13,456	451
Add/(Less): Adjustments to prior year balance	-	-	-	-
Add: Additions/Purchases - Cash	85,232	4,514	25,998	2,445
Add: Additions - Non-cash	-	-	368	3
(Less): Disposals	-	-	-	-
(Less): Issues	(83,133)	(4,432)	(25,438)	(2,519)
Add/(Less): Adjustments	(6,954)	(15)	244	1
Closing balance	9,773	448	14,628	381

Total cash additions in the goods and services note includes the purchase of consumables that are not recorded in the inventory management system of the Department. Hence the additions for the year in the inventory annexure will not tie up with the total cash additions in the goods and services note (note 5.5).

Human Resources

“Staff members are guided by the DST’s corporate values of professionalism, competence, integrity and transparency.”



Human Resources

for the year ended 31 March 2011

1.1 Personnel costs by programme, 2010/2011

	Total expenditure	Personnel expenditure	Training expenditure	Professional and special services	Personnel cost as a % of total expenditure	Average personnel cost per employee
Programme	R'000	R'000	R'000	R'000	%	R'000
Corporate Services and Governance	188857	94254	3945	5908	49.91%	460
Research, Development and Innovation	797774	21156	0	141	2.65%	492
International Cooperation and Resources	100790	31154	0	25	30.91%	547
Human Capital and Knowledge Systems	684664	19369	0	259	2.83%	510
Socio-Economic Partnerships	294688	24681	0	113	8.38%	537
Total	2066773	190614	3945	6446	9.22%	490

1.2 Personnel costs by salary bands, 2010/2011

	Personnel expenditure	% of total personnel cost	Average personnel cost per employee
Salary bands	R'000	%	R'000
Lower skilled (Levels 1-2)	0	0.00%	0
Skilled (Levels 3-5)	1690	0.89%	188
Highly skilled production (Levels 6-8)	17334	9.09%	177
Highly skilled supervision (Levels 9-12)	85348	44.78%	454
Senior management (Levels 13-16)	86242	45.24%	917
Total	190614	100.00%	490

I.3 Salaries, overtime, home owners allowance and medical assistance by programme, 2010/2011

Programme	Salaries		Overtime		Home Owners Allowance		Medical Assistance	
	Amount R'000	Salaries as a % of personnel cost %	Amount R'000	Overtime as a % of personnel cost %	Amount R'000	HOA as a % of personnel cost %	Amount R'000	Medical assistance as a % of personnel cost %
Corporate Services and Governance	94254	49.45%	132	0.14%	62	0.07%	2402	2.55%
Research, Development and Innovation	21156	11.10%	3	0.01%	5	0.02%	289	1.37%
International Cooperation and Resources	31154	16.34%	157	0.50%	9	0.03%	545	1.75%
Human Capital and Knowledge Systems	19369	10.16%	30	0.15%	2	0.01%	1605	8.29%
Socio-Economic Partnerships	24681	12.95%	10	0.04%	5	0.02%	493	2.00%

1.4 Salaries, overtime, home owners allowance and medical assistance by salary bands, 2010/2011

Salary bands	Salaries		Overtime		Home Owners Allowance		Medical Assistance	
	Amount R'000	Salaries as a % of personnel cost %	Amount R'000	Overtime as a % of personnel cost %	Amount R'000	HOA as a % of personnel cost %	Amount R'000	Medical assistance as a % of personnel cost %
Lower skilled (Levels 1-2)	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Skilled (Levels 3-5)	1690	0.89%	36	0.02%	3	0.00%	200	0.10%
Highly skilled production (Levels 6-8)	17334	9.09%	93	0.05%	51	0.03%	4100	2.15%
Highly skilled supervision (Levels 9-12)	85348	44.78%	203	0.11%	29	0.02%	1034	0.54%
Senior management (Levels 13-16)	86242	45.24%	0	0	0	0.00%	0	0
Total	190614	100.00%	332	0.17%	83	0.04%	5334	2.80%

2 Employment and vacancies

The vacancy rate reflects the percentage of posts that are not filled.

2.1 Employment and vacancies by programme, 31 March 2011

Programme	Number of posts	Number of posts filled	Vacancy Rate	Number of posts filled additional to the establishment
Corporate Services and Governance	213	205	3.76%	
Research, Development and Innovation	45	43	4.44%	
International Cooperation and Resources	61	57	6.56%	
Human Capital and Knowledge Systems	43	38	11.63%	
Socio-Economic Partnerships	59	46	22.03%	
Total	421	389	7.60%	0

2.2 Employment and vacancies by salary bands, 31 March 2011

	Number of posts	Number of posts filled	Vacancy rate	Number of posts filled additional to the establishment
Salary band				
Lower skilled (Levels 1-2)	0	0	0.00%	
Skilled (Levels 3-5)	9	9	0.00%	
Highly skilled production (Levels 6-8)	101	98	2.97%	
Highly skilled supervision (Levels 9-12)	199	188	5.53%	
Senior management (Levels 13-16)	112	94	16.07%	
Total	421	389	7.60%	

3.1 Job evaluation, 1 April 2010 to 31 March 2011

Salary band	Number of posts	Number of jobs evaluated	% of posts evaluated by salary bands	Posts upgraded		Posts downgraded	
				Number	% of posts evaluated	Number	% of posts evaluated
Lower skilled (Levels 1-2)	0	0	0.00%	0	0.00%	0	-
Skilled (Levels 3-5)	9	0	0.00%	0	0.00%	0	-
Highly skilled production (Levels 6-8)	101	9	8.91%	1	11.11%	0	-
Highly skilled supervision (Levels 9-12)	199	14	7.04%		0.00%	0	-
Senior Management Service Band A	77	8	10.39%	1	12.50%	0	-
Senior Management Service Band B	25	1	4.00%		0.00%	0	-
Senior Management Service Band C	9	0	0.00%	0	0.00%	0	-
Senior Management Service Band D	1	0	0.00%	0	0.00%	0	-
Total	421	32	7.60%	2	0.48%	0	-

3.2 Profile of employees whose salary positions were upgraded due to their posts being upgraded, 1 April 2010 to 31 March 2011

	African	Asian	Coloured	White	Total
Beneficiaries					
Female	1	0	0	0	1
Male	0	0	0	0	0
Total	1	0	0	0	1

4 Employment changes

4.1 Annual turnover rates by salary band for the period 1 April 2010 to 31 March 2011

	Number of employees per band as on 1 April 2009	Appointments and transfers into the department	Terminations and transfers out of the department	Turnover rate
Salary band				
Lower skilled (Levels 1-2)	0	0	0	0.00%
Skilled (Levels 3-5)	9	3	1	11.11%
Highly skilled production (Levels 6-8)	98	15	6	6.12%
Highly skilled supervision (Levels 9-12)	188	29	9	4.79%
Senior Management Service Band A	59	4	4	6.78%
Senior Management Service Band B	25	3	2	8.00%
Senior Management Service Band C	9	1	2	22.22%
Senior Management Service Band D	1	0	0	0.00%
Total	389	55	24	6.17%

4.2 Reasons why staff are leaving the department

	Number	% of total
Termination type		
Death		0.00%
Resignation	8	33.33%
Expiry of contract	7	29.17%
Dismissal – operational changes	0	0.00%
Dismissal – misconduct	0	0.00%
Dismissal – inefficiency	1	4.17%
Discharged due to ill-health	0	0.00%
Retirement	2	8.33%
Transfers to other public service departments	6	25.00%
Other	0	0.00%
Total	24	
Total number of employees who left as a % of the total employment		6.17%

4.3 Promotions by salary band

	Employees 1 April 2009	Promotions to another salary level	Salary bands promotions as a % of employees by salary level	Progressions to another notch within a salary level	Notch progressions as a % of employees by salary band
Salary band					
Lower skilled (Levels 1-2)	0	0	0.00%	0	0.00%
Skilled (Levels 3-5)	10	0	0.00%	9	90.00%
Highly skilled production (Levels 6-8)	90	1	1.11%	80	88.89%
Highly skilled supervision (Levels 9-12)	174	1	0.57%	155	89.08%
Senior management (Levels 13-16)	92	5	5.43%	72	78.26%
Total	366	7	1.91%	316	86.34%

5. Employment equity

The tables in this section are based on the formats prescribed by the Employment Equity Act, 55 of 1998.

5.1 Total number of employees (including employees with disabilities) in each of the following occupational categories as on 31 March 2011

Occupational categories	Male				Female			
	African	Coloured	Indian	White	African	Coloured	Indian	White
Management (Levels 13-16)	37	3	6	10	22	2	6	8
Middle management (Levels 9-12)	75	5	1	6	85	6	4	6
Administrative (Levels 6-8)	18	2	0	1	62	6	2	7
Clerical (Levels 3-5)	5	1	0	0	3	0	0	0
Elementary occupations (Levels 1-2)	0	0	0	0	0	0	0	0
Total	135	11	7	17	172	14	12	21
Employees with disabilities	1	0	1	2	2	0	0	2

5.2 Total number of employees (including employees with disabilities) in each of the following occupational bands as on 31 March 2011

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top Management (Levels 15-16)	3	0	1	2	0	1	1	0	8
Senior Management (Levels 13-14)	34	3	5	8	22	1	5	8	86
Professionally qualified and experienced specialists and mid-management (Levels 9-12)	75	5	1	6	85	6	4	6	188
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents (Levels 6-8)	18	2	0	1	62	6	2	7	98
Semi-skilled and discretionary decision making (Levels 3-5)	5	1	0	0	3	0	0	0	9
Unskilled and defined decision making (Levels 1-2)	0	0	0	0	0	0	0	0	0
Total	135	11	7	17	172	14	12	21	389

5.3 Recruitment for the period 1 April 2010 to 31 March 2011

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top Management (Levels 15-16)	1	0	0	0	0	0	0	0	1
Senior Management (Levels 13-14)	2	0	1	1	1	0	2	0	7
Professionally qualified and experienced specialists and mid-management (Levels 9-12)	19	1	0	2	5	1	0	1	29
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents (Levels 6-8)	1	0	0	0	12	1	1	0	15
Semi-skilled and discretionary decision making (Levels 3-5)	3	0	0	0	0	0	0	0	3
Unskilled and defined decision making (Levels 1-2)	0	0	0	0	0	0	0	0	0
Total	26	1	1	3	18	2	3	1	55

5.4 Promotions for the period 1 April 2009 to 31 March 2011

Occupational bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top Management (Levels 15-16)	0	0	1	0	0	0	0	0	1
Senior Management (Levels 13-14)	1	0	0	0	2	0	1	0	4
Professionally qualified and experienced specialists and mid-management (Levels 9-12)	1	0	0	0	0	0	0	0	1
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents (Levels 6-8)	1	0	0	0	0	0	0	0	1
Semi-skilled and discretionary decision making (Levels 3-5)	0	0	0	0	0	0	0	0	0
Unskilled and defined decision making (Levels 1-2)	0	0	0	0	0	0	0	0	0
Total	3	0	1	0	2	0	1	0	7

5.5 Terminations for the period 1 April 2010 to 31 March 2011

Occupational Bands	Male				Female				Total
	African	Coloured	Indian	White	African	Coloured	Indian	White	
Top Management (Levels 15-16)	1	0	0	0	0	1	0	0	2
Senior Management (Levels 13-14)	3	0	0	0	2	0	0	1	6
Professionally qualified and experienced specialists and mid-management (Levels 9-12)	4	0	1	0	3	0	0	1	9
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents (Levels 6-8)	4	0	0	0	2	0	0	0	6
Semi-skilled and discretionary decision making (Levels 3-5)	1	0	0	0	0	0	0	0	1
Unskilled and defined decision making (Levels 1-2)									0
Total	13	0	1	0	7	1	0	2	24

6 Performance rewards

6.1 Performance rewards by race, gender, and disability

	Beneficiary profile			Cost	
	Number of beneficiaries	Total number of employees in group	% of total within group	Cost ('000)	Average cost per employee ('000)
African					
Male	92	126	73.02%	3242	35
Female	141	160	88.13%	4091	29
Asian					
Male	3	6	50.00%	178	59
Female	7	9	77.78%	320	46
Coloured					
Male	7	9	77.78%	200	29
Female	9	12	75.00%	250	28
White					
Male	11	13	84.62%	477	43
Female	20	23	86.96%	877	44
Employees with a disability	6	6	100.00%	277	46
Total	296	364	81.32%	9840	33

Performance agreements submitted: 30 May 2010			
Number of employees	Number submitted	Number not submitted	Reasons for non-compliance
89	87	2	Non-compliance

6.2 Performance rewards by salary bands for personnel below senior management service as at 31 March 2010

Salary band	Beneficiary profile			Cost		
	Number of beneficiaries	Number of employees	% of total within salary bands	Total cost (R'000)	Average cost per employee	Total cost as a % of the total personnel expenditure
Lower skilled (Levels 1-2)	0	0	0.00%	0	0.00	0.00%
Skilled (Levels 3-5)	9	10	90.00%	84	9.33	0.04%
Highly skilled production (Levels 6-8)	80	90	88.89%	122	1.53	0.06%
Highly skilled supervision (Levels 9-12)	155	176	88.07%	5065	32.68	2.66%
Total	244	276	88.41%	5271	21.60	2.77%

6.3 Performance related rewards (cash bonus), by salary band, for senior management service as at 31 March 2010

Salary band	Beneficiary profile			Cost		
	Number of beneficiaries	Number of employees	% of total within band	Total cost (R'000)	Average cost per employee	Total cost as a % of the total personnel expenditure
Band A	35	59	59.32%	1967	56.20	1.03%
Band B	14	22	63.64%	1203	85.93	0.63%
Band C	2	6	33.33%	186	93.00	0.10%
Band D	1	1	100.00%	114	114.00	0.06%
Total	52	88	59.09%	3470	66.73	1.82%

The following table summarises payments made to employees as a result of leave that was not taken.

7.1 Sick leave, 1 April 2010 to 31 March 2011

	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)
Salary band						
Lower skilled (Levels 1-2)	0	0.00%	0	0.00%	0.00	0
Skilled (Levels 3-5)	37	53.00%	7	87.50%	5.29	13
Highly skilled production (Levels 6-8)	659	59.00%	82	90.11%	8.04	355
Highly skilled supervision (Levels 9-12)	1079	63.00%	142	97.26%	7.60	1286
Senior management (Levels 13-16)	336	72.00%	45	56.96%	7.47	554
Total	2111	61.75%	276	85.19%	7.65	2208

7.2 Disability leave (temporary and permanent), 1 April 2010 to 31 March 2011

	Total days taken	% days with medical certification	Number of employees using disability leave	% of total employees using disability leave	Average days per employee	Estimated cost (R'000)
Salary band						
Lower skilled (Levels 1-2)	0	0%	0	0.00%	0	0
Skilled (Levels 3-5)	0	0%	0	0.00%	0	0
Highly skilled production (Levels 6-8)	88	100%	3	0.55%	29.33	1478
Highly skilled supervision (Levels 9-12)	36	100%	2	0.55%	18.00	1949
Senior management (Levels 13-16)	42	0%	1	0.00%	42.00	0
Total	166	100%	6	1.10%	27.67	3427

Table 7.3 summarises the utilisation of annual leave. The wage agreement concluded with trade unions in the PSCBC in 2000 requires management of annual leave to prevent high levels of accrued leave being paid at the time of termination of service.

7.3 Annual leave, 1 April 2010 to 31 March 2010

	Number of days	Average days per employee
Salary band		
Lower skilled (Levels 1-2)	0	0.00
Skilled (Levels 3-5)	20	2.00
Highly skilled production (Levels 6-8)	360	3.96
Highly skilled supervision (Levels 9-12)	1084	6.16
Senior management (Levels 13-16)	504	5.73
Total	1968	5.98

7.4 Capped leave, 1 April 2010 to 31 March 2011

	Total days of capped leave taken	Average number of days taken per employee	Average capped leave per employee as at 31 March 2006
Salary band			
Lower skilled (Levels 1-2)	0	0.00	0.00
Skilled (Levels 3-5)	0	0.00	35.00
Highly skilled production (Levels 6-8)	2	0.50	12.36
Highly skilled supervision (Levels 9-12)	1	0.20	10.90
Senior management (Levels 13-16)	47	11.75	6.19
Total	50	4.15	11.84

7.5 Leave payouts for the period 1 April 2010 to 31 March 2011

The following table summarises payments made to employees as a result of leave that was not taken.

	Total amount (R'000)	Number of Employees	Average payment per employee ('000)
Reason			
Leave payout for 2010/11 due to non-utilisation of leave for the previous cycle	25	4	6.25
Capped leave payouts on termination of service for 2009/010	46	2	11.50
Current leave payouts on termination of service for 2010/11	26	14	6.50
Total	97	20	24.25

Occupational categories	Number of employees as at 2009/10	Gender	Beneficiaries of skills/short programmes per occupational categories
Legislators, senior officials	94	Female	10
		Male	20
Professional	188	Female	38
		Male	48
Technicians	98	Female	0
		Male	2
Clerks	9	Female	50
		Male	8
Elementary occupation	0	Female	5
		Male	5
Subtotal		Female	103
		Male	83
Total	389		186

8 HIV, Aids and health promotion programmes

8.1 Details of health promotion and HIV and Aids programmes (tick the applicable boxes and provide the required information)

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 I of the Public Service Regulations, 2001? If so, provide her/his name and position.	✓		Chief Director: Human Resource - Mrs Lerato Gumbi. Director: Gender and Special Programmes - Ms Sipiwe Mngomezulu-Mthombeni.
2. Does the department have a dedicated unit or has it designated specific staff members to promote the health and well-being of your employees? If so, indicate the number of employees who are involved in this task and the annual budget that is available for this purpose.	✓		Special Programmes Unit: Four employees and intern. The budget for the HIV and Aids programme is located within the Special Programmes Unit budget of R1.605 million.
3. Has the department introduced an Employee Assistance or Health Promotion Programme for your employees? If so, indicate the key elements/services of this Programme.	✓		The Employee Health and Wellness Programme focuses on Wellness management, Health management and Occupational Health and Safety. The department has also appointed a service provider for Employee Wellness Programme services.
4. Has the department established (a) committee(s) as contemplated in Part VI E.5 (e) of Chapter I of the Public Service Regulations, 2001? If so, please provide the names of the members of the committee and the stakeholder(s) that they represent.	✓		The Healthcare Wellness and Support committee was active until February 2011 when its term came to an end. The process of appointing a new committee will be finalised end May 2011. Members of the committee: Chairperson - Ms V Gondwe, Deputy Chairperson - Ms M Mohapi, PSA Rep - Ms S van Stryp, Nehawu Rep - Ms D Majoko, Secretariat - Ms F Mashila, ICAS Rep - Ms M Mokgabudi, Mr A Phuravhathu, Ms S Mngomezulu-Mthombeni, Mr Y Ndaba, Ms N Lekubu, Ms L Pillay, Ms J Moima, Mr N Makondo, Ms K Sithole, Ms M Moabi, Ms M Mafokoane, Ms M Maponya, Ms S Soomaroo, Ms P Magubane, Ms L Phasha, Mr G Seokane.
5. Has the department reviewed its employment policies and practices to ensure that these do not unfairly discriminate against employees on the basis of their HIV status? If so, list the employment policies/practices so reviewed.	✓		The department engaged in a process of reviewing the HIV and Aids policy to incorporate aspects of TB and the Employee Health and Wellness Programme policy. Both policies still need to be consulted for approval.

Question	Yes	No	Details, if yes
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.	✓		The department conducted information sessions on HIV and Aids, behaviour change, male circumcision, multiple concurrent sexual partners and HIV and TB. The department conducted three Voluntary Counselling and Testing (VCT) drives in the last financial year which amounted to 274 tests done. This allowed the department to assess HIV risk levels and to come up with interventions to mitigate the impact of HIV in the organisation.
7. Does the department encourage its employees to undergo Voluntary Counselling and Testing? If so, list the results that you have achieved.	✓		The department conducted three HIV counselling and testing drives to provide employees with an opportunity to test for HIV within the department. Altogether 274 tests were done.
8. Has the department developed measures/indicators to monitor & evaluate the impact of its health promotion programme? If so, list these measures/indicators.	✓		Quarterly reports were generated from the health screenings conducted to identify health risks. A number of health and wellness interventions were implemented to address identified health risks. The department focused on increasing the participation of employees during the health screenings and in the health and wellness intervention. The department will be developing an organisational wellness metrics to measure the impact of the health programme.

DST Corporate Information

for the year ended 31 March 2011

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