



**VOTE
30**

SCIENCE AND TECHNOLOGY



**BUDGET
2017**
ESTIMATES
OF NATIONAL
EXPENDITURE



national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA



Estimates of National Expenditure

2017

National Treasury

Republic of South Africa

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The Estimates of National Expenditure 2017 is compiled with the latest available information from departmental and other sources. Some of this information is unaudited or subject to revision.

The Estimates of National Expenditure e-publications for individual votes are available on www.treasury.gov.za. Compared to the Estimates of National Expenditure publication, the e-publications for each vote contain more comprehensive coverage of all public entities. Also included are tables containing information on programme specific personnel expenditure, conditional grants to provinces and municipalities, public private partnerships and information on donor funding. Expenditure information at the level of site service delivery is included, where appropriate.

Foreword

The 2017 Budget is presented at a time when indications are that the global economy could grow moderately better than the last forecast. Global GDP is expected to grow at 3.4 per cent in 2017, 0.3 percentage points higher than 2016. But uncertainty persists. The trade policies that the United States of America will pursue are unclear. The exact nature of Britain's exit from the European Union and economic impact are unknown. There is also evidence that globalisation is losing favour in some parts of the world and protectionism is growing. The global economy could be very different in future, depending on how these trends evolve.

Given the uncertainty, we have revised down South Africa's GDP growth projections and expect that tax revenue will be lower over the MTEF period as a result. We have also reduced the expenditure ceiling by R10.3 billion in 2017/18 and R15.9 billion in 2018/19, in line with government's fiscal objective of reducing the deficit, achieving a primary surplus and stabilising debt. Since its introduction in 2012, the expenditure ceiling in each financial year has never been breached.

Government is committed to delivering on its priorities despite the lowered revenue forecast and expenditure ceiling. It is critical that we allocate our limited resources wisely and use them effectively. In the 2017 Budget process, measures were taken to free-up resources and baselines were reduced across all departments by R7.5 billion in 2017/18, R7 billion in 2018/19 and R6.7 billion in 2019/20. The contingency reserve was also drawn down, and provisionally reserved funds were reallocated. However, the bulk of the funds allocated to priority areas within and across functions were reprioritised from lower-priority budget areas.

To ensure that funding remains focused on frontline service delivery, efforts have been intensified to improve efficiency in expenditure. Budget limits on compensation of employees introduced in the 2016 Appropriation Act are carried over to 2017. Departments will manage personnel headcount and employee earnings in line with these budget allocations.

Overall non-interest expenditure is still set to grow by an annual average of 1.4 per cent in real terms, from R1.24 trillion in 2017/18 to R1.43 trillion in 2019/20. Proposals in the budget include net increases in funding for the Post-School Education and Training, Basic Education, Economic Affairs and Health functions. The Post-School Education and Training function is the fastest growing, at 9.4 per cent over the medium term. The funding is mainly for universities to subsidise fee increases and for the National Student Financial Aid Scheme.

The publication is a concrete expression of the collaborative effort of highly dedicated civil servants across government throughout the process to prepare the Budget. We are particularly appreciative of this, as well as the contributions from the Ministers' Committee on the Budget and the Directors-General in central government. We are also thankful to all National Treasury staff who, under the expert guidance and leadership of the Minister of Finance, Pravin Gordhan, and his Deputy, Mcebisi Jonas, worked tirelessly to produce this crucial document.

The wide-ranging coverage of the Estimates of National Expenditure provides a coherent and summarised account of the prioritisation, spending plans and service delivery commitments of all 40 national votes and of government agencies. These plans constitute an important mechanism through which Parliament and the public hold institutions, including the National Treasury and its entities, to account.

Within the current difficult fiscal context not everything we believe would be beneficial to do, can be done now. Thus it is imperative that activities planned on budget be done effectively and efficiently.



Lungisa Fuzile
Director-General: National Treasury

Introduction

The Estimates of National Expenditure publications

The Estimates of National Expenditure (ENE) publications describe in detail government's expenditure plans over the next three financial years, also known as the medium-term expenditure framework (MTEF) period. The 2017 MTEF period is from 2017/18 to 2019/20.

The ENE publications contain information on: what government institutions aim to achieve over the medium term, and why; how they plan to spend their budget allocations in support of this; and what outputs and outcomes the spending is intended to produce. The publications also provide information on how institutions have spent their budgets in previous years, tables with performance data and targets, personnel data and detailed expenditure trends and estimates by programme, subprogramme and economic classification for each department and the entities that report to the vote's executive authority. Explanatory narratives detail the institution's mandate, purpose (and that of its programmes), together with programme-level objectives and descriptions of subprogrammes. Summary data tables at the end of each vote contain data on infrastructure, provincial and municipal conditional grants, departmental public private partnerships, donor funding, and expenditure at the level of site service delivery, where applicable.

A separate 2017 ENE Overview publication is also available on www.treasury.gov.za and summarises the ENE information across all votes. The 2017 ENE Overview contains a narrative explanation and budget-wide summary tables; a description of the budgeting approach; and it also has a write-up on how to interpret the information that is contained in each section of the publications.

Science and Technology

**National Treasury
Republic of South Africa**



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Vote 30

Science and Technology

Budget summary

R million	2017/18				2018/19	2019/20
	Total	Current payments	Transfers and subsidies	Payments for capital assets	Total	Total
MTEF allocation						
Administration	383.7	349.2	13.5	21.0	401.6	349.3
Technology Innovation	1 073.6	65.9	1 007.8	–	1 129.4	1 195.0
International Cooperation and Resources	128.7	64.9	63.8	–	135.2	144.4
Research, Development and Support	4 348.9	48.0	4 300.9	–	4 467.1	4 757.0
Socioeconomic Innovation Partnerships	1 622.3	47.8	1 574.5	–	1 782.8	1 745.7
Total expenditure estimates	7 557.2	575.8	6 960.5	21.0	7 916.0	8 191.4
Executive authority	Minister of Science and Technology					
Accounting officer	Director General of Science and Technology					
Website address	www.dst.gov.za					

The Estimates of National Expenditure e-publications for individual votes are available on www.treasury.gov.za. These publications provide more comprehensive coverage of vote specific information, particularly about goods and services, transfers and subsidies, personnel, entities, donor funding, public private partnerships, conditional grants to provinces and municipalities, and expenditure information at the level of site service delivery, where appropriate.

Vote purpose

Realise the full potential of science and technology in social and economic development by developing human resources, research and innovation.

Mandate

The Department of Science and Technology executes its mandate through the implementation of the 1996 White Paper on Science and Technology, the national research and development strategy, and the 10-year innovation plan. The plan aims to make science and technology a driving force in enhancing productivity, economic growth and socioeconomic development.

Selected performance indicators

Table 30.1 Performance indicators by programme and related outcome

Indicator	Programme	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of instruments funded in support of knowledge utilisation per year ¹	Technology Innovation	Outcome 4: Decent employment through inclusive growth	–	3	6	25	19	21	19
Number of commercial outputs in designated areas per year	Technology Innovation		15	1	3	8	4	3	3
Amount of international funds directly invested in research, science, technology and innovation human capital development programmes, as well as research infrastructure investments in South Africa, accounted for as part of cooperation initiatives implemented by the department, per year	International Cooperation and Resources		–	–	R619m	R400m	R420m	R440m	R480m
Number of PhD students awarded bursaries, as reflected in National Research Foundation and relevant entities project reports per year	Research, Development and Support	Outcome 5: A skilled and capable workforce to support an inclusive growth path	2 265	2 845	3 404	3 136	3 100	3 100	3 100
Number of pipeline postgraduate (BTech, honours and masters) students awarded bursaries through programmes managed by the National Research Foundation and relevant entities per year	Research, Development and Support		6 853	7 711	10 996	10 996	10 800	10 800	10 800

Table 30.1 Performance indicators by programme and related outcome

Indicator	Programme	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of researchers awarded research grants through programme managed by the National Research Foundation as reflected in the foundation's project reports per year	Research, Development and Support	Outcome 5: A skilled and capable workforce to support an inclusive growth path	3 569	4 064	4 315	4 539	4 500	4 500	4 500
Number of knowledge and innovation products added to the intellectual property portfolio through fully funded or co-funded research initiatives per year ²	Socioeconomic Innovation Partnerships	Outcome 4: Decent employment through inclusive growth	16	29	38	35	15	18	20

1. Instruments include space science, energy, bio-innovation, nanotechnology, robotics, photonics, indigenous knowledge systems, intellectual property management, and technology transfer and commercialisation.

2. Knowledge and innovation products include patents, prototypes, technology demonstrators or technology transfer packages.

Expenditure analysis

To build an economy that grows at a sustainable rate and contributes significantly to socioeconomic development, as envisaged in the National Development Plan (NDP), South Africa needs a better skilled and more innovative population. The Department of Science and Technology is pivotal to realising this goal, particularly as it relates to innovation for energy and food security, poverty alleviation, and health care. The department plans to direct most of its allocation of R23.7 billion over the medium term to investment in producing new knowledge, developing human capital, and building infrastructure for research and innovation. The bulk of these funds are to be transferred to the Council for Industrial and Scientific Research and the National Research Foundation, which foster, promote and support industrial and scientific research and technology innovation.

Following a Cabinet-approved reduction of R11 million over the medium term to expenditure on compensation of employees, the department expects to fill only critical vacant posts in the period ahead.

Investing in new knowledge

The *Technology Innovation* programme is allocated R3.4 billion over the medium term, or 14.2 per cent of the department's total budget, to invest in the production of new knowledge. Of this amount, R1.3 billion will be transferred to the Technology Innovation Agency, which funds strategic technological innovation, emerging technologies and knowledge innovation products, including nanotechnology research, with the aim of commercialising them. The agency has allocated R719 million of this transfer to technology innovation funding for small and medium enterprises to help them commercialise new technological products and services. The department also plans to transfer R150.4 million over the medium term to the National Intellectual Property Management Office to ensure that publicly funded intellectual property is protected and used to create products, processes and services that improve the quality of life in South Africa. This transfer is projected to grow at an average annual rate of 25.8 per cent over the medium term to fund an estimated 18 additional posts at the entity.

The department seeks to use bio-innovation to contribute to the achievement of government's industrial, health and social development goals, as well as to the development of indigenous knowledge applications. Spending on bio-innovation in the *Bioeconomy* subprogramme is projected to amount to R527 million over the medium term. This will allow the department to strengthen the research and innovation competencies that form the strategic foundation for the bio-based scientific innovation, and develop and support strategic research and innovation programmes.

A further R27 million in 2017/18, R60 million in 2018/19 and R63 million in 2019/20 is allocated to mining research and development for technological solutions that improve safety, profitability and competitiveness.

Developing human capital

The department plans to increase the number of high-quality researchers produced by the national research system. This will allow the country to compete globally, and attract international research and development funding. It will also improve the country's position in global innovation value chains, which should help to address low growth, and pressing social and environmental problems. Over the medium term, a projected R8.1 billion will be transferred to the National Research Foundation for this purpose and will be used to provide

research grants or bursaries to at least 55 200 researchers and students. The department is set to receive additional allocations of R215.2 million in 2017/18 and R165 million in 2018/19 to support new programmes at the Council for Scientific and Industrial Research that aim to improve the employability of science, engineering and technology graduates and postgraduates by providing them with accelerated work experience, and encouraging the private sector to co-invest with government in research and development innovation.

An amount of R1.5 billion over the medium term in the *Human Capital and Science Promotion* subprogramme in the *Research, Development and Support* programme is allocated to the research chairs initiative. The initiative currently supports 200 research chairs and 6 more are to be added in 2017/18 through support from the Department of Higher Education and Training.

Funding research, innovation and infrastructure

Over the medium term, the Council for Scientific and Industrial Research plans to spend R9.3 billion on relevant research and development in health, energy, industry (advanced manufacturing and mining), the built environment, defence and security, the natural environment, scientific equipment and infrastructure. The source of funding for this includes revenue the entity generates itself in addition to transfers received from the department. The council's planned expenditure will support these areas and activities. This will ensure an increase in new technology and patents, and create decent employment.

A key contributor to future research and development is the department's main infrastructure project, the Square Kilometre Array, which will be the world's largest and most sensitive radio telescope. Construction is set to begin in 2018 and end in 2023. The department has an allocation of R2.2 billion over the medium term for the project.

Expenditure trends

Table 30.2 Vote expenditure trends by programme and economic classification

Programmes														
1. Administration														
2. Technology Innovation														
3. International Cooperation and Resources														
4. Research, Development and Support														
5. Socioeconomic Innovation Partnerships														
Programme	Annual budget	Adjusted appropriation	Audited outcome	Annual budget	Adjusted appropriation	Audited outcome	Annual budget	Adjusted appropriation	Audited outcome	Annual budget	Adjusted appropriation	Revised estimate	Average: Outcome/Annual budget (%)	Average: Outcome/Adjusted appropriation (%)
R million	2013/14			2014/15			2015/16			2016/17			2013/14 - 2016/17	
Programme 1	268.2	245.7	257.5	291.0	291.9	278.4	299.8	300.5	302.0	304.0	345.1	345.1	101.7%	100.0%
Programme 2	1 627.1	1 653.6	1 150.4	991.6	1 008.9	974.0	1 008.8	1 008.5	1 063.3	1 007.1	1 005.4	1 005.4	90.5%	89.7%
Programme 3	148.4	145.4	104.5	119.7	119.3	107.6	122.0	121.4	115.0	124.5	124.5	124.5	87.8%	88.4%
Programme 4	2 476.8	2 475.8	3 198.8	3 503.8	3 496.9	3 489.8	4 247.1	4 238.8	4 218.9	4 200.6	4 171.0	4 171.0	104.5%	104.8%
Programme 5	1 677.6	1 677.6	1 458.2	1 564.1	1 562.8	1 539.2	1 804.5	1 796.9	1 738.3	1 792.9	1 783.0	1 783.0	95.3%	95.6%
Total	6 198.2	6 198.2	6 169.5	6 470.2	6 479.9	6 389.0	7 482.1	7 466.1	7 437.5	7 429.0	7 429.0	7 429.0	99.4%	99.5%
Change to 2016 Budget estimate														
Economic classification														
Current payments	454.1	414.1	402.6	486.7	494.5	445.9	496.4	495.0	464.8	509.7	532.3	532.3	94.8%	95.3%
Compensation of employees	260.7	251.4	241.6	283.8	284.9	276.0	291.3	295.3	301.1	309.2	313.8	313.8	98.9%	98.9%
Goods and services	193.3	162.7	161.0	202.9	209.6	169.8	205.1	199.7	163.7	200.5	218.5	218.5	88.9%	90.2%
Transfers and subsidies	5 741.9	5 754.4	5 703.9	5 981.2	5 983.1	5 936.9	6 983.4	6 968.8	6 956.1	6 917.0	6 872.2	6 872.2	99.4%	99.6%
Departmental agencies and accounts	4 174.9	4 179.4	3 762.9	4 409.3	4 393.7	4 032.6	5 466.0	5 457.1	5 040.3	5 344.7	5 311.4	5 311.4	-	-
Higher education institutions	-	-	88.6	21.4	38.9	167.3	114.6	114.6	68.6	-	-	-	238.7%	211.5%
Foreign governments and international organisations	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-
Public corporations and private enterprises	1 034.2	1 034.2	1 698.0	1 140.8	1 145.5	1 573.1	1 253.3	1 249.8	1 577.6	1 307.4	1 299.4	1 299.4	129.8%	130.0%
Non-profit institutions	532.8	540.8	152.2	409.7	405.0	159.5	149.6	147.3	268.7	264.9	261.4	261.4	62.0%	62.2%
Households	-	-	1.7	-	-	4.4	-	-	0.8	-	-	-	-	-
Payments for capital assets	2.2	29.7	63.0	2.3	2.3	6.2	2.3	2.3	16.5	2.3	24.5	24.5	1 210.1%	187.5%
Machinery and equipment	2.2	2.2	8.2	2.3	2.3	6.2	2.3	2.3	16.5	2.3	24.5	24.5	607.6%	177.0%
Software and other intangible assets	-	27.5	54.9	-	-	-	-	-	-	-	-	-	-	199.5%
Payments for financial assets	-	-	-	-	-	0.1	-	-	0.1	-	-	-	-	-
Total	6 198.2	6 198.2	6 169.5	6 470.2	6 479.9	6 389.0	7 482.1	7 466.1	7 437.5	7 429.0	7 429.0	7 429.0	99.4%	99.5%

Expenditure estimates

Table 30.3 Vote expenditure estimates by programme and economic classification

Programmes									
1. Administration									
2. Technology Innovation									
3. International Cooperation and Resources									
4. Research, Development and Support									
5. Socioeconomic Innovation Partnerships									
Programme	Revised estimate	Average growth rate (%)	Average Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average Expenditure/ Total (%)	
R million	2016/17	2013/14 - 2016/17		2017/18	2018/19	2019/20	2016/17 - 2019/20		
Programme 1	345.1	12.0%	4.3%	383.7	401.6	349.3	0.4%	4.8%	
Programme 2	1 005.4	-15.3%	15.3%	1 073.6	1 129.4	1 195.0	5.9%	14.2%	
Programme 3	124.5	-5.1%	1.6%	128.7	135.2	144.4	5.1%	1.7%	
Programme 4	4 171.0	19.0%	55.0%	4 348.9	4 467.1	4 757.0	4.5%	57.1%	
Programme 5	1 783.0	2.1%	23.8%	1 622.3	1 782.8	1 745.7	-0.7%	22.3%	
Total	7 429.0	6.2%	100.0%	7 557.2	7 916.0	8 191.4	3.3%	100.0%	
Change to 2016				(5.3)	159.7	(6.0)			
Budget estimate									
Economic classification									
Current payments	532.3	8.7%	6.7%	575.8	611.3	584.3	3.2%	7.4%	
Compensation of employees	313.8	7.7%	4.1%	315.5	327.7	352.7	4.0%	4.2%	
Goods and services	218.5	10.3%	2.6%	260.2	283.6	231.6	2.0%	3.2%	
Transfers and subsidies	6 872.2	6.1%	92.9%	6 960.5	7 292.5	7 604.4	3.4%	92.4%	
Departmental agencies and accounts	5 311.4	8.3%	66.2%	5 204.3	5 424.2	5 639.4	2.0%	69.4%	
Public corporations and private enterprises	1 299.4	7.9%	22.4%	1 420.1	1 462.4	1 539.1	5.8%	18.4%	
Non-profit institutions	261.4	-21.5%	3.1%	336.1	405.8	426.0	17.7%	4.6%	
Payments for capital assets	24.5	-6.2%	0.4%	21.0	12.2	2.7	-52.2%	0.2%	
Machinery and equipment	24.5	124.0%	0.2%	21.0	12.2	2.7	-52.2%	0.2%	
Total	7 429.0	6.2%	100.0%	7 557.2	7 916.0	8 191.4	3.3%	100.0%	

Goods and services expenditure trends and estimates

Table 30.4 Vote goods and services expenditure trends and estimates

	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
R thousand					2013/14 - 2016/17		2017/18	2018/19	2019/20	2016/17 - 2019/20	
Administrative fees	6 427	3 826	1 877	20 282	46.7%	4.5%	6 254	6 586	6 955	-30.0%	4.0%
Advertising	16 467	23 223	22 792	17 707	2.4%	11.2%	20 308	21 397	20 949	5.8%	8.1%
Minor assets	293	630	537	579	25.5%	0.3%	608	644	680	5.5%	0.3%
Audit costs: External	4 548	4 761	5 061	6 383	12.0%	2.9%	8 702	10 869	7 488	5.5%	3.4%
Bursaries: Employees	1 201	1 256	1 067	2 495	27.6%	0.8%	2 620	5 540	2 927	5.5%	1.4%
Catering: Departmental activities	2 755	3 221	5 138	2 800	0.5%	2.0%	3 069	3 246	3 426	7.0%	1.3%
Communication	5 364	5 064	7 540	9 630	21.5%	3.9%	13 051	14 666	11 545	6.2%	4.9%
Computer services	7 398	12 728	10 418	8 162	3.3%	5.4%	8 571	9 067	9 573	5.5%	3.6%
Consultants: Business and advisory services	7 281	5 603	3 762	16 534	31.4%	4.7%	20 618	21 512	15 137	-2.9%	7.4%
Legal services	2 707	-	-	949	-29.5%	0.5%	997	1 054	1 113	5.5%	0.4%
Science and technological services	-	2 801	580	-	-	0.5%	-	-	-	-	-
Contractors	4 446	6 771	7 547	8 558	24.4%	3.8%	14 640	14 544	9 560	3.8%	4.8%
Agency and support/outsourced services	13 539	8 053	8 135	16 243	6.3%	6.4%	16 702	17 639	18 593	4.6%	7.0%
Entertainment	707	735	1 021	5 148	93.8%	1.1%	5 332	5 608	5 923	4.8%	2.2%
Fleet services (including government motor transport)	541	978	764	-	-100.0%	0.3%	-	-	-	-	-
Inventory: Clothing material and accessories	286	1 028	48	-	-100.0%	0.2%	-	-	-	-	-
Inventory: Fuel, oil and gas	-	10	72	129	-	-	136	144	152	5.6%	0.1%
Inventory: Materials and supplies	31	319	103	-	-100.0%	0.1%	-	-	-	-	-
Inventory: Medical supplies	-	-	1	-	-	-	-	-	-	-	-
Inventory: Other supplies	2	-	1	1 175	737.5%	0.2%	1 270	1 343	1 417	6.4%	0.5%
Consumable supplies	2 710	1 940	993	-	-100.0%	0.8%	-	-	-	-	-
Consumables: Stationery, printing and office supplies	4 434	3 244	2 660	5 015	4.2%	2.2%	8 792	10 098	5 885	5.5%	3.0%
Operating leases	5 176	5 488	2 906	3 749	-10.2%	2.4%	7 534	9 762	4 397	5.5%	2.6%
Rental and hiring	1 004	8 368	6 657	-	-100.0%	2.2%	-	-	-	-	-
Property payments	2 658	-	-	7 017	38.2%	1.4%	18 207	18 853	8 164	5.2%	5.3%
Transport provided: Departmental activity	-	41 566	38 249	-	-	11.2%	-	-	-	-	-
Travel and subsistence	40 418	3 411	13 416	47 697	5.7%	14.7%	54 224	60 126	52 631	3.3%	21.6%
Training and development	6 075	11 438	7 919	5 303	-4.4%	4.3%	7 968	8 291	6 221	5.5%	2.8%
Operating payments	9 873	12 141	11 311	7 325	-9.5%	5.7%	7 691	8 138	8 593	5.5%	3.2%
Venues and facilities	14 635	1 246	3 148	25 661	20.6%	6.3%	32 948	34 520	30 257	5.6%	12.4%
Total	160 976	169 849	163 723	218 541	10.7%	100.0%	260 242	283 647	231 586	2.0%	100.0%

Transfers and subsidies expenditure trends and estimates

Table 30.5 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	2 944 267	3 041 163	3 903 856	3 985 572	10.6%	54.5%	3 791 656	4 026 074	4 129 545	1.2%	55.5%
Various institutions: Institutional and programme support research	11 231	3 500	4 000	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Biofuels	-	6 000	-	-	-	-	-	-	-	-	-
Various institutions: Technology transfer offices (support of research units)	4 657	2 199	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Implementation of biotechnology strategy	11 613	13 290	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Energy grand challenge research	32 500	24 396	33 733	34 904	2.4%	0.5%	35 149	37 049	40 946	5.5%	0.5%
Various institutions: Health innovation research	36 909	36 000	-	-	-100.0%	0.3%	-	-	-	-	-
HIV treatment and prevention technologies	1 817	22 596	24 535	23 753	135.6%	0.3%	23 711	24 588	27 866	5.5%	0.3%
Various institutions: Hydrogen strategy research	16 800	16 005	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Innovation projects research	-	1 122	29 612	31 977	-	0.2%	27 911	29 529	35 318	3.4%	0.4%
International Centre for Genetic Engineering and Biotechnology	-	-	12 125	12 186	-	0.1%	12 795	13 537	14 295	5.5%	0.2%
Various institutions: Space science research (Economic competitiveness and support package)	30 500	40 000	71 978	29 653	-0.9%	0.7%	28 860	9 200	-	-100.0%	0.2%
National Research Foundation: Indigenous knowledge systems	10 000	-	-	-	-100.0%	-	-	-	-	-	-
Technology Innovation Agency	481 081	338 386	385 188	382 364	-7.4%	6.2%	396 732	420 322	443 860	5.1%	5.7%
South African National Space Agency	123 708	118 298	124 355	124 977	0.3%	1.9%	131 226	138 837	146 612	5.5%	1.9%
Various institutions: Emerging research areas	21 000	-	-	-	-100.0%	0.1%	-	-	-	-	-
National Research Foundation: Research and development in indigenous knowledge systems	-	2 896	-	4 385	-	-	4 604	4 871	5 144	5.5%	0.1%
National Research Foundation: Global science (bilateral cooperation)	12 203	12 935	13 530	13 598	3.7%	0.2%	14 130	14 948	15 952	5.5%	0.2%
Various institutions: Global science (international multilateral agreements)	1 622	1 656	22 354	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Global science (African multilateral agreements)	3 800	-	958	-	-100.0%	-	-	-	-	-	-
Academy of Science of South Africa	-	21 577	-	24 106	-	0.2%	25 261	25 668	27 105	4.0%	0.4%
Various institutions: Astronomy research and development	25 129	19 107	25 155	27 950	3.6%	0.4%	29 348	31 050	32 789	5.5%	0.4%
Various institutions: Policy development on human and social development dynamics	11 098	9 838	10 283	10 483	-1.9%	0.2%	26 012	27 409	28 896	40.2%	0.3%
National Research Foundation: Human resources development for science and engineering	410 034	465 658	835 665	884 262	29.2%	10.2%	833 804	889 172	950 582	2.4%	12.4%
National Research Foundation	1 112 879	851 286	878 399	882 805	-7.4%	14.6%	925 964	979 670	1 034 532	5.4%	13.3%
Various institutions: Science awareness, research and initiatives to encourage youth participation in science	40 332	53 103	57 766	69 541	19.9%	0.9%	73 018	77 253	81 579	5.5%	1.0%
National Research Foundation: South African research chairs initiative to develop human resources in science	74 045	451 779	470 446	482 243	86.7%	5.8%	500 875	530 274	566 305	5.5%	7.2%
Various institutions: Strategic science platforms for research and development	125 105	138 044	149 943	201 880	17.3%	2.4%	199 572	208 325	220 176	2.9%	2.9%
Various institutions: Local manufacturing capacity research and technical support (Economic competitiveness and support package)	-	-	-	-	-	-	80 000	80 000	-	-	0.6%
Various institutions: Local systems of innovation for the cold chain technologies project (Economic competitiveness and support package)	-	-	-	-	-	-	-	62 000	-	-	0.2%
Various institutions: Innovative research and development	8 330	16 678	38 731	46 440	77.3%	0.4%	41 823	39 890	44 249	-1.6%	0.6%
Human Sciences Research Council	258 867	276 010	288 706	290 149	3.9%	4.4%	304 656	305 495	322 603	3.6%	4.3%
Various institutions: Local manufacturing capacity research and technical support	40 000	43 712	187 508	214 779	75.1%	1.9%	3 311	25 864	28 689	-48.9%	0.9%
Various institutions: Local systems of innovation for the cold chain technologies project	25 000	33 000	204 737	153 043	82.9%	1.6%	35 781	10 632	11 793	-57.4%	0.7%

Table 30.5 Vote transfers and subsidies trends and estimates

	Audited outcome			Adjusted appropriation	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16		2013/14	2016/17	2017/18	2018/19	2019/20		
R thousand											
Various institutions: Resource-based industries research and development	-	1 000	-	-	-	-	-	-	-	-	-
National Research Foundation: Research information management system	4 519	6 850	12 240	7 201	16.8%	0.1%	3 781	4 000	8 448	5.5%	0.1%
Human Science Research Council: Develop and monitor science and technology indicators	9 488	9 657	5 446	9 533	0.2%	0.1%	9 437	9 984	12 404	9.2%	0.1%
Various institutions: Environmental innovation	-	4 585	16 463	23 360	-	0.2%	23 895	26 507	29 402	8.0%	0.4%
Capital	818 658	991 450	1 136 449	1 325 849	17.4%	16.8%	1 412 632	1 398 133	1 509 816	4.4%	19.7%
Various institutions: National nanotechnology research	-	2 500	-	-	-	-	-	-	-	-	-
Various institutions: Infrastructure projects for research and development	398 551	343 751	449 034	673 093	19.1%	7.3%	718 701	688 721	740 016	3.2%	9.8%
National Research Foundation: Square Kilometre Array (capital contribution to research)	420 107	645 199	687 415	652 756	15.8%	9.4%	693 931	709 412	769 800	5.7%	9.8%
Higher education institutions											
Current	73 030	134 455	36 413	-	-100.0%	1.0%	-	-	-	-	-
Various institutions: Institutional and programme support research	1 324	410	4 640	-	-100.0%	-	-	-	-	-	-
Various institutions: Technology transfer offices (support of research units)	-	36 560	-	-	-	0.1%	-	-	-	-	-
Various institutions: Implementation of biotechnology strategy	7 524	8 006	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Energy grand challenge research	3 100	5 550	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Health innovation research	1 865	700	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Hydrogen strategy research	14 839	15 923	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Indigenous knowledge systems	-	894	-	-	-	-	-	-	-	-	-
Various institutions: Innovation projects research	-	5 884	-	-	-	-	-	-	-	-	-
National Research Foundation: Indigenous knowledge systems	1 932	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Emerging research areas	5 604	12 806	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Global science (international multilateral agreements)	13 133	15 666	11 186	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Global science (African multilateral agreements)	3 900	4 320	1 937	-	-100.0%	-	-	-	-	-	-
National Research Foundation: Human resources development for science and engineering	551	4 940	3 736	-	-100.0%	-	-	-	-	-	-
Various institutions: Science awareness	8 805	9 652	8 118	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Strategic science platforms for research and development	6 069	5 467	6 796	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Astronomy research and development	-	612	-	-	-	-	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	169	2 321	-	-	-100.0%	-	-	-	-	-	-
Council for Scientific and Industrial Research	1 001	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Innovative research and development	-	631	-	-	-	-	-	-	-	-	-
Various institutions: Local manufacturing capacity research and technical support	549	747	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	1 150	2 366	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Resource-based industries research and development	1 515	1 000	-	-	-100.0%	-	-	-	-	-	-
Capital	15 600	32 806	32 175	-	-100.0%	0.3%	-	-	-	-	-
Various institutions: Infrastructure projects for research and development	15 600	32 806	32 175	-	-100.0%	0.3%	-	-	-	-	-

Table 30.5 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Foreign governments and international organisations											
Current	452	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Institutional and programme support research	452	-	-	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises											
Subsidies on products and production (pc)											
Current	781 996	825 740	820 204	872 043	3.7%	13.0%	915 645	968 752	1 023 002	5.5%	13.2%
Council for Scientific and Industrial Research	781 996	825 740	820 204	872 043	3.7%	13.0%	915 645	968 752	1 023 002	5.5%	13.2%
Public corporations and private enterprises											
Other transfers to public corporations											
Current	347 750	322 642	220 817	162 100	-22.5%	4.1%	217 688	190 169	193 450	6.1%	2.7%
Various institutions: Institutional and programme support research	300	1 425	600	-	-100.0%	-	-	-	-	-	-
Various institutions: Implementation of biotechnology strategy	10 378	7 822	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Energy grand challenge research	2 179	1 500	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Health innovation research	4 750	5 000	-	-	-100.0%	-	-	-	-	-	-
South African Medical Research Council	19 500	-	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Hydrogen strategy research	800	1 500	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Indigenous knowledge systems	-	1 000	8 864	-	-	-	-	-	-	-	-
Various institutions: Innovation projects research	-	100	-	-	-	-	-	-	-	-	-
Various institutions: Space science research	12 824	-	-	-	-100.0%	0.1%	-	-	-	-	-
National Research Foundation: Indigenous knowledge systems	2 000	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Emerging research areas	25 600	33 130	42 002	45 364	21.0%	0.6%	37 344	39 510	41 723	-2.8%	0.6%
Various institutions: Technology transfer offices for support of research units	6 485	14 647	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Global science (international multilateral agreements)	9 382	16 198	5 338	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Global science (African multilateral agreements)	-	-	3 138	-	-	-	-	-	-	-	-
National Research Foundation: Human resources development for science and engineering	-	-	33 505	-	-	0.1%	-	-	-	-	-
National Research Foundation: Human resources development for science and engineering (Economic competitiveness and support package)	-	-	-	-	-	-	51 140	13 800	-	-	0.2%
National Research Foundation: Square Kilometre Array (research and development)	-	723	2 000	-	-	-	-	-	-	-	-
Various institutions: Strategic science platforms for research and development	4 688	700	4 500	-	-100.0%	-	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	22 642	25 649	45 219	43 575	24.4%	0.5%	51 215	53 678	59 542	11.0%	0.7%
Council for Scientific and Industrial Research	20 167	24 208	26 144	26 327	9.3%	0.4%	31 960	34 738	38 533	13.5%	0.5%
Various institutions: Innovative research and development	37 835	20 827	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Local manufacturing capacity research and technical support	71 398	68 034	-	-	-100.0%	0.5%	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	57 688	51 422	-	-	-100.0%	0.4%	-	-	-	-	-
Various institutions: Resource-based industries research and development	39 134	38 494	49 507	46 834	6.2%	0.7%	46 029	48 443	53 652	4.6%	0.7%
Various institutions: Environmental innovation	-	10 263	-	-	-	-	-	-	-	-	-
Capital	520 672	421 331	536 613	265 227	-20.1%	6.8%	286 777	303 526	322 635	6.7%	4.1%
Various institutions: National nanotechnology research	45 835	32 215	50 429	50 681	3.4%	0.7%	63 504	67 187	70 949	11.9%	0.9%
Council for Scientific and Industrial Research: Cyber infrastructure research and development	192 382	204 045	213 479	214 546	3.7%	3.2%	223 273	236 339	251 686	5.5%	3.2%
Various institutions: Infrastructure projects for research and development	74 455	185 071	272 705	-	-100.0%	2.1%	-	-	-	-	-
Square Kilometre Array	208 000	-	-	-	-100.0%	0.8%	-	-	-	-	-

Table 30.5 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16		2013/14	2016/17	2017/18	2018/19	2019/20		
Public corporations and private enterprises											
Other transfers to private enterprises											
Current	47 556	3 353	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Technology transfer offices (support of research units)	255	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Innovation projects research	7 000	-	-	-	-100.0%	-	-	-	-	-	-
South African Association of Science and Technology Centres: Technology Top 100 Awards	3 163	3 353	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Global science (international multilateral agreements)	6 935	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Strategic science platforms for research and development	2 780	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	15 142	-	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Innovative research and development	12 281	-	-	-	-100.0%	-	-	-	-	-	-
Non-profit institutions											
Current	83 902	98 712	205 140	197 520	33.0%	2.3%	269 004	334 869	351 028	21.1%	4.0%
Various institutions: Institutional and programme support research	228	4 356	5 325	12 860	283.5%	0.1%	13 503	14 286	15 086	5.5%	0.2%
Various institutions: Biofuels	-	-	6 490	6 137	-	-	5 348	7 245	7 651	7.6%	0.1%
Various institutions: Technology transfer offices (support of research units)	10 234	-	42 747	15 544	14.9%	0.3%	36 000	39 000	41 184	38.4%	0.5%
Various institutions: Implementation of biotechnology strategy	6 805	3 810	32 954	36 321	74.8%	0.3%	36 112	37 742	41 651	4.7%	0.5%
Various institutions: Energy grand challenge research	3 720	2 350	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Health innovation research	200	-	43 618	42 710	497.7%	0.3%	44 691	46 947	51 160	6.2%	0.6%
Various institutions: Hydrogen strategy research	-	-	36 012	36 192	-	0.3%	38 002	40 206	42 458	5.5%	0.5%
Various institutions: Innovation projects research	8 380	2 755	-	-	-100.0%	-	-	-	-	-	-
International Centre for Genetic Engineering and Biotechnology	10 936	36 280	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Space science research	1 676	-	-	-	-100.0%	-	-	-	-	-	-
South African Association of Science and Technology Centres: Technology Top 100 Awards	-	-	3 507	-	-	-	3 701	3 916	4 135	-	-
South African National AIDS Council	-	-	-	-	-	-	15 000	30 000	31 680	-	0.3%
Various institutions: Emerging research areas	4 500	5 800	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Global science (international multilateral agreements)	272	28	147	39 220	424.4%	0.2%	40 775	43 139	46 009	5.5%	0.6%
Various institutions: Global science (African multilateral agreements)	-	-	723	8 536	-	-	8 872	9 388	10 014	5.5%	0.1%
Academy of Science of South Africa	20 744	-	23 229	-	-100.0%	0.2%	-	-	-	-	-
National Research Foundation: Human resources development for science and engineering	-	80	5 578	-	-	-	-	-	-	-	-
Various institutions: Science awareness	2 200	3 200	3 310	-	-100.0%	-	-	-	-	-	-
Square Kilometre Array	-	2 000	-	-	-	-	-	-	-	-	-
Various institutions: Strategic science platforms for research and development	1 300	3 000	1 500	-	-100.0%	-	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	-	100	-	-	-	-	-	-	-	-	-
Various institutions: Innovative research and development	2 502	19 644	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	10 000	13 397	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Resource-based industries research and development	205	1 222	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Environmental innovation	-	690	-	-	-	-	-	-	-	-	-
Council for Scientific and Industrial Research: Mining research and development	-	-	-	-	-	-	27 000	63 000	60 000	-	0.5%

Table 30.5 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Capital	68 332	60 772	63 568	63 886	-2.2%	1.0%	67 080	70 971	74 945	5.5%	1.0%
Various institutions: Hydrogen strategy research - capital	57 332	60 772	63 568	63 886	3.7%	1.0%	67 080	70 971	74 945	5.5%	1.0%
Various institutions: Infrastructure projects for research and development	11 000	-	-	-	-100.0%	-	-	-	-	-	-
Households											
Social benefits											
Current	670	830	573	-	-100.0%	-	-	-	-	-	-
Households	670	830	573	-	-100.0%	-	-	-	-	-	-
Households											
Other transfers to households											
Current	988	3 618	250	-	-100.0%	-	-	-	-	-	-
Households	433	3 293	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Policy development on human and social development dynamics	125	125	125	-	-100.0%	-	-	-	-	-	-
National Research Foundation: Human resources development for science and engineering	-	-	125	-	-	-	-	-	-	-	-
Various institutions: Science awareness	430	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Strategic science platforms for research and development	-	200	-	-	-	-	-	-	-	-	-
Total	5 703 873	5 936 872	6 956 058	6 872 197	6.4%	100.0%	6 960 482	7 292 494	7 604 421	3.4%	100.0%

Personnel information

Table 30.6 Vote personnel numbers and cost by salary level and programme¹

Number of posts estimated for 31 March 2017		Number and cost ² of personnel posts filled / planned for on funded establishment												Number		
Number of funded posts	Number of posts additional to the establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%) 2016/17 - 2019/20	Average: Salary level/Total (%)	
		2015/16	2016/17	2017/18	2018/19	2019/20	2016/17	2017/18	2018/19	2019/20						
		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost
Science and Technology																
Salary level	-	493	301.1	0.6	478	313.8	0.7	449	315.5	0.7	432	327.7	0.8	416	352.7	0.8
1 - 6	-	103	18.7	0.2	101	19.5	0.2	97	19.8	0.2	94	20.6	0.2	91	22.2	0.2
7 - 10	-	137	54.0	0.4	132	56.8	0.4	122	56.6	0.5	117	59.5	0.5	112	64.9	0.6
11 - 12	-	139	101.2	0.7	135	108.0	0.8	127	109.4	0.9	124	116.3	0.9	121	127.4	1.1
13 - 16	-	114	127.3	1.1	110	129.5	1.2	103	129.7	1.3	97	131.3	1.4	92	138.2	1.5
Programme	-	493	301.1	0.6	478	313.8	0.7	449	315.5	0.7	432	327.7	0.8	416	352.7	0.8
Programme 1	-	282	151.7	0.5	275	154.5	0.6	260	152.7	0.6	249	158.6	0.6	238	170.7	0.7
Programme 2	-	55	39.8	0.7	54	43.5	0.8	53	44.4	0.8	52	46.2	0.9	51	49.7	1.0
Programme 3	-	59	41.3	0.7	56	46.2	0.8	51	47.3	0.9	49	49.1	1.0	47	52.9	1.1
Programme 4	-	47	31.1	0.7	45	31.8	0.7	43	32.4	0.8	41	33.7	0.8	40	36.3	0.9
Programme 5	-	50	37.1	0.7	48	37.8	0.8	42	38.6	0.9	41	40.1	1.0	40	43.2	1.1

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Departmental receipts

Table 30.7 Departmental receipts by economic classification

R thousand	Audited outcome				Adjusted estimate	Revised estimate	Average growth rate (%) 2013/14 - 2016/17	Average: Receipt item/ Total (%) 2013/14 - 2016/17	Medium-term receipts estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Receipt item/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16	2016/17					2017/18	2018/19	2019/20		
Departmental receipts	1 658	1 602	514	7 000	7 000	61.6%	100.0%	242	248	254	-66.9%	100.0%	
Sales of goods and services produced by department	47	50	51	29	29	-14.9%	1.6%	29	29	29	-	1.5%	
Other sales	47	50	51	29	29	-14.9%	1.6%	29	29	29	-	1.5%	
of which:													
Services rendered: Commission on insurance	47	50	51	29	29	-14.9%	1.6%	28	28	28	-1.2%	1.5%	
Replacement of security cards	-	-	-	-	-	-	-	1	1	1	-	-	

Table 30.7 Departmental receipts by economic classification

R thousand	Audited outcome			Adjusted estimate	Revised estimate	Average growth rate (%)	Average: Receipt item/ Total (%)	Medium-term receipts estimate			Average growth rate (%)	Average: Receipt item/ Total (%)
	2013/14	2014/15	2015/16					2016/17	2017/18	2018/19		
Interest, dividends and rent on land	8	3	6	8	8	-	0.2%	8	8	8	-	0.4%
Interest	8	3	6	8	8	-	0.2%	8	8	8	-	0.4%
Sales of capital assets	-	-	-	-	-	-	-	121	127	133	-	4.9%
Transactions in financial assets and liabilities	1 603	1 549	457	6 963	6 963	63.2%	98.1%	84	84	84	-77.1%	93.2%
Total	1 658	1 602	514	7 000	7 000	61.6%	100.0%	242	248	254	-66.9%	100.0%

Programme 1: Administration

Programme purpose

Provide strategic leadership, management and support services to the department.

Expenditure trends and estimates

Table 30.8 Administration expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
R thousand											
Ministry	3 403	3 972	4 332	4 369	8.7%	1.4%	4 461	4 634	4 988	4.5%	1.2%
Management	78 510	81 736	90 072	105 426	10.3%	30.1%	108 623	113 566	121 170	4.7%	30.3%
Corporate Services	164 571	183 897	200 057	221 479	10.4%	65.1%	256 278	268 388	207 115	-2.2%	64.4%
Governance	7 828	7 550	7 535	9 307	5.9%	2.7%	9 574	9 992	10 679	4.7%	2.7%
Office Accommodation	3 160	1 257	-	4 561	13.0%	0.8%	4 784	5 033	5 315	5.2%	1.3%
Total	257 472	278 412	301 996	345 142	10.3%	100.0%	383 720	401 613	349 267	0.4%	100.0%
Change to 2016 Budget estimate				41 154			67 365	70 743	(3 340)		
Economic classification	235 147	262 193	270 543	307 817	9.4%	90.9%	349 239	375 133	331 508	2.5%	92.2%
Current payments											
Compensation of employees	122 972	140 072	151 744	154 457	7.9%	48.1%	152 729	158 621	170 709	3.4%	43.0%
Goods and services ¹	112 175	122 121	118 799	153 360	11.0%	42.8%	196 510	216 512	160 799	1.6%	49.1%
of which:											
Advertising	15 573	23 075	22 785	16 857	2.7%	6.6%	19 194	20 217	19 703	5.3%	5.1%
Consultants: Business and advisory services	3 952	3 312	3 082	6 547	18.3%	1.4%	13 849	14 389	7 631	5.2%	2.9%
Contractors	4 267	6 762	7 489	8 558	26.1%	2.3%	14 640	14 544	9 560	3.8%	3.2%
Property payments	2 508	-	-	6 196	35.2%	0.7%	17 407	18 007	7 270	5.5%	3.3%
Travel and subsistence	17 169	3 350	4 995	23 457	11.0%	4.1%	30 044	34 751	25 892	3.3%	7.7%
Venues and facilities	7 659	881	1 414	17 436	31.6%	2.3%	24 177	25 239	20 455	5.5%	5.9%
Transfers and subsidies¹	14 287	10 222	14 874	12 860	-3.4%	4.4%	13 503	14 286	15 086	5.5%	3.8%
Departmental agencies and accounts	11 231	3 500	4 000	-	-100.0%	1.6%	-	-	-	-	-
Higher education institutions	1 324	410	4 640	-	-100.0%	0.5%	-	-	-	-	-
Foreign governments and international organisations	452	-	-	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises	300	1 425	600	-	-100.0%	0.2%	-	-	-	-	-
Non-profit institutions	228	4 356	5 325	12 860	283.5%	1.9%	13 503	14 286	15 086	5.5%	3.8%
Households	752	531	309	-	-100.0%	0.1%	-	-	-	-	-
Payments for capital assets	8 038	5 964	16 467	24 465	44.9%	4.6%	20 978	12 194	2 673	-52.2%	4.1%
Machinery and equipment	8 038	5 964	16 467	24 465	44.9%	4.6%	20 978	12 194	2 673	-52.2%	4.1%
Payments for financial assets	-	33	112	-	-	-	-	-	-	-	-
Total	257 472	278 412	301 996	345 142	10.3%	100.0%	383 720	401 613	349 267	0.4%	100.0%
Proportion of total programme expenditure to vote expenditure	4.2%	4.4%	4.1%	4.6%	-	-	5.1%	5.1%	4.3%	-	-

Table 30.8 Administration expenditure trends and estimates by subprogramme and economic classification

Details of transfers and subsidies	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average Expenditure/Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average Expenditure/Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
	R thousand										
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	11 231	3 500	4 000	-	-100.0%	1.6%	-	-	-	-	-
Various institutions: Institutional and programme support research	11 231	3 500	4 000	-	-100.0%	1.6%	-	-	-	-	-
Foreign governments and international organisations											
Current	452	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Institutional and programme support research	452	-	-	-	-100.0%	-	-	-	-	-	-
Non-profit institutions											
Current	228	4 356	5 325	12 860	283.5%	1.9%	13 503	14 286	15 086	5.5%	3.8%
Various institutions: Institutional and programme support research	228	4 356	5 325	12 860	283.5%	1.9%	13 503	14 286	15 086	5.5%	3.8%
Households											
Social benefits											
Current	352	531	309	-	-100.0%	0.1%	-	-	-	-	-
Households	352	531	309	-	-100.0%	0.1%	-	-	-	-	-
Other transfers to households											
Current	400	-	-	-	-100.0%	-	-	-	-	-	-
Households	400	-	-	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises											
Public corporations											
Other transfers to public corporations											
Current	300	1 425	600	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Institutional and programme support research	300	1 425	600	-	-100.0%	0.2%	-	-	-	-	-
Higher education institutions											
Current	1 324	410	4 640	-	-100.0%	0.5%	-	-	-	-	-
Various institutions: Institutional and programme support research	1 324	410	4 640	-	-100.0%	0.5%	-	-	-	-	-

1. Estimates of National Expenditure data tables are available and can be downloaded from www.treasury.gov.za. These data tables contain detailed information by goods and services, and transfers and subsidies item by programme.

Personnel information

Table 30.9 Administration personnel numbers and cost by salary level¹

Administration	Salary level	Number of posts estimated for 31 March 2017	Number and cost ² of personnel posts filled / planned for on funded establishment												Number				
			Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average Salary level/Total (%)			
			2015/16		Unit cost	2016/17		Unit cost	2017/18		2018/19		2019/20						
			Number	Cost		Number	Cost		Number	Cost	Number	Cost	Number	Cost	Number	Cost			
			282	151.7	0.5	275	154.5	0.6	260	152.7	0.6	249	158.6	0.6	238	170.7	0.7	-4.7%	100.0%
	1-6		84	13.7	0.2	82	14.0	0.2	78	13.8	0.2	75	14.2	0.2	72	15.0	0.2	-4.2%	30.0%
	7-10		88	35.4	0.4	85	36.2	0.4	80	36.2	0.5	76	37.8	0.5	72	40.8	0.6	-5.4%	30.6%
	11-12		60	43.4	0.7	59	45.2	0.8	57	45.9	0.8	56	49.3	0.9	55	55.0	1.0	-2.3%	22.2%
	13-16		50	59.2	1.2	49	59.0	1.2	45	56.8	1.3	42	57.4	1.4	39	59.9	1.5	-7.3%	17.1%

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Programme 2: Technology Innovation

Programme purpose

Enable research and development in space science and technology, energy security and the bioeconomy, and in the emerging and converging areas of nanotechnology, robotics, photonics and indigenous knowledge systems, to promote the realisation of commercial products, processes and services. Promote the protection and utilisation of intellectual property, technology transfer and technology commercialisation through the implementation of enabling policies and interventions along the entire innovation value chain.

Objectives

- Facilitate and resource strategic investments in space science and technology, energy, the bioeconomy, nanotechnology, robotics, photonics, indigenous knowledge systems, intellectual property management, technology transfer and technology commercialisation, by 31 March 2020, by:
 - funding 59 instruments to support the use of knowledge
 - generating 446 knowledge products (including peer-reviewed scientific articles published in scientific publications, and filings/applications or the registration/granting of intellectual property rights)
 - developing and approving 17 science, technology and innovation strategic policy directives to enhance understanding and analyses that support the implementation of relevant interventions
 - developing 6 decision support interventions to improve the delivery of government services or functions
 - making 81 regulatory recommendations for decision support by government.
- Oversee, monitor and regulate key policy initiatives in the strategic areas of space science and technology, energy, bio-innovation, nanotechnology, robotics and photonics, including the oversight of agencies, by 31 March 2020, by:
 - developing 36 evaluation and assessment reports in the area of strategic and emerging science and technology
 - overseeing 855 new disclosures reported by publicly funded institutions.
- Coordinate and support high-end skills development by supporting 1 040 masters and doctoral students and 720 trainees through department-funded research and development initiatives by 31 March 2020.
- Support, promote and advocate the development and translation of scientific research and development outputs into commercial products, processes and services that will contribute towards economic growth and better quality of life by 31 March 2020, by:
 - supporting 17 knowledge application products, including prototypes, technology demonstrators and pilots
 - supporting 10 commercial outputs, including licences, assignments, options, new companies, products, processes and services.

Subprogrammes

- *Space Science* supports the creation of an environment conducive to the implementation of the national space strategy and South African earth observation strategy, and that addresses the development of innovative applications and human capital to respond to national priorities and support socioeconomic development.
- *Hydrogen and Energy* provides policy leadership in research, development and innovation initiatives in the energy sector. This subprogramme plays a key role in developing a sustainable and globally competitive South African energy knowledge base and industry.
- *Bioeconomy* leads the implementation of the national bioeconomy strategy approved by Cabinet in 2013.
- *Innovation Priorities and Instruments* supports and strengthens the innovation policy package aimed at creating and sustaining an enabling environment for innovation, technology and development, and the commercialisation of publicly funded research and development initiatives.
- *National Intellectual Property Management Office* is the implementing agency established to provide for the more effective utilisation of intellectual property emanating from publicly financed research and development.

Expenditure trends and estimates

Table 30.10 Technology Innovation expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
R thousand					2013/14 - 2016/17					2016/17 - 2019/20	
Space Science	230 621	168 464	209 103	166 916	-10.2%	18.5%	173 402	161 911	161 466	-1.1%	15.1%
Hydrogen and Energy	139 861	143 848	156 551	152 226	2.9%	14.1%	156 785	167 187	178 491	5.4%	14.9%
Bioeconomy	139 439	150 109	127 187	138 067	-0.3%	13.2%	156 088	177 690	193 194	11.8%	15.1%
Innovation Priorities and Instruments	608 776	447 412	518 056	521 424	-5.0%	50.0%	540 522	572 305	608 613	5.3%	50.9%
National Intellectual Property Management Office	31 699	64 207	52 400	26 785	-5.5%	4.2%	46 824	50 271	53 266	25.8%	4.0%
Total	1 150 396	974 040	1 063 297	1 005 418	-4.4%	100.0%	1 073 621	1 129 364	1 195 030	5.9%	100.0%
Change to 2016				(1 655)			(10 874)	(2 129)	(760)		
Budget estimate											

Table 30.10 Technology Innovation expenditure trends and estimates by subprogramme and economic classification

Economic classification	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2013/14 - 2016/17	2017/18		
R thousand											
Current payments	45 274	51 754	51 565	64 384	12.5%	5.1%	65 851	68 707	73 453	4.5%	6.2%
Compensation of employees	30 940	35 571	39 844	43 543	12.1%	3.6%	44 443	46 157	49 676	4.5%	4.2%
Goods and services ¹	14 334	16 183	11 721	20 841	13.3%	1.5%	21 408	22 550	23 777	4.5%	2.0%
of which:											
Communication	788	427	681	692	-4.2%	0.1%	862	912	964	11.7%	0.1%
Consultants: Business and advisory services	1 543	1 257	219	1 643	2.1%	0.1%	1 638	1 733	1 830	3.7%	0.2%
Agency and support/outsourced services	889	1 885	975	6 392	93.0%	0.2%	6 358	6 717	7 058	3.4%	0.6%
Entertainment	24	15	23	3 587	430.7%	0.1%	3 692	3 873	4 090	4.5%	0.3%
Travel and subsistence	5 541	-	-	5 479	-0.4%	0.3%	5 172	5 416	5 719	1.4%	0.5%
Venues and facilities	1 516	-	46	1 769	5.3%	0.1%	1 995	2 110	2 228	8.0%	0.2%
Transfers and subsidies¹	1 050 141	922 205	1 011 717	941 034	-3.6%	93.6%	1 007 770	1 060 657	1 121 577	6.0%	93.8%
Departmental agencies and accounts	770 585	623 688	681 526	644 199	-5.8%	64.9%	660 988	677 933	714 041	3.5%	61.3%
Higher education institutions	34 864	86 323	-	-	-100.0%	2.9%	-	-	-	-	-
Public corporations and private enterprises	140 769	100 267	101 295	96 045	-12.0%	10.5%	100 848	106 697	112 672	5.5%	9.5%
Non-profit institutions	103 783	111 767	228 896	200 790	24.6%	15.4%	245 934	276 027	294 864	13.7%	23.1%
Households	140	160	-	-	-100.0%	-	-	-	-	-	-
Payments for capital assets	54 981	81	-	-	-100.0%	1.3%	-	-	-	-	-
Machinery and equipment	118	81	-	-	-100.0%	-	-	-	-	-	-
Software and other intangible assets	54 863	-	-	-	-100.0%	1.3%	-	-	-	-	-
Payments for financial assets	-	-	15	-	-	-	-	-	-	-	-
Total	1 150 396	974 040	1 063 297	1 005 418	-4.4%	100.0%	1 073 621	1 129 364	1 195 030	5.9%	100.0%
Proportion of total programme expenditure to vote expenditure	18.6%	15.2%	14.3%	13.5%	-	-	14.2%	14.3%	14.6%	-	-
Details of transfers and subsidies											
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	770 585	621 188	681 526	644 199	-5.8%	64.8%	660 988	677 933	714 041	3.5%	61.3%
Various institutions: Biofuels	-	6 000	-	-	-	0.1%	-	-	-	-	-
Various institutions: Technology transfer offices (support of research units)	4 657	2 199	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Implementation of biotechnology strategy	11 613	13 290	-	-	-100.0%	0.6%	-	-	-	-	-
Various institutions: Energy grand challenge research	32 500	24 396	33 733	34 904	2.4%	3.0%	35 149	37 049	40 946	5.5%	3.4%
Various institutions: Health innovation research	36 909	36 000	-	-	-100.0%	1.7%	-	-	-	-	-
HIV treatment and prevention technologies	1 817	22 596	24 535	23 753	135.6%	1.7%	23 711	24 588	27 866	5.5%	2.3%
Various institutions: Hydrogen strategy research	16 800	16 005	-	-	-100.0%	0.8%	-	-	-	-	-
Various institutions: Innovation projects research	-	1 122	29 612	31 977	-	1.5%	27 911	29 529	35 318	3.4%	2.8%
International Centre for Genetic Engineering and Biotechnology	-	-	12 125	12 186	-	0.6%	12 795	13 537	14 295	5.5%	1.2%
Various institutions: Space science research (Economic competitiveness and support package)	30 500	40 000	71 978	29 653	-0.9%	4.1%	28 860	9 200	-	-100.0%	1.5%
National Research Foundation: Indigenous knowledge systems	10 000	-	-	-	-100.0%	0.2%	-	-	-	-	-
Technology Innovation Agency	481 081	338 386	385 188	382 364	-7.4%	37.8%	396 732	420 322	443 860	5.1%	37.3%
South African National Space Agency	123 708	118 298	124 355	124 977	0.3%	11.7%	131 226	138 837	146 612	5.5%	12.3%
Various institutions: Emerging research areas	21 000	-	-	-	-100.0%	0.5%	-	-	-	-	-
National Research Foundation: Research and development in indigenous knowledge systems	-	2 896	-	4 385	-	0.2%	4 604	4 871	5 144	5.5%	0.4%
Capital	-	2 500	-	-	-	0.1%	-	-	-	-	-
Various institutions: National nanotechnology research	-	2 500	-	-	-	0.1%	-	-	-	-	-

Table 30.10 Technology Innovation expenditure trends and estimates by subprogramme and economic classification

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Non-profit institutions											
Current	46 451	50 995	165 328	136 904	43.4%	9.5%	178 854	205 056	219 919	17.1%	16.8%
Various institutions: Biofuels	–	–	6 490	6 137	–	0.3%	5 348	7 245	7 651	7.6%	0.6%
Various institutions: Technology transfer offices (support of research units)	10 234	–	42 747	15 544	14.9%	1.6%	36 000	39 000	41 184	38.4%	3.0%
Various institutions: Implementation of biotechnology strategy	6 805	3 810	32 954	36 321	74.8%	1.9%	36 112	37 742	41 651	4.7%	3.4%
Various institutions: Energy grand challenge research	3 720	2 350	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Health innovation research	200	–	43 618	42 710	497.7%	2.1%	44 691	46 947	51 160	6.2%	4.2%
Various institutions: Hydrogen strategy research	–	–	36 012	36 192	–	1.7%	38 002	40 206	42 458	5.5%	3.6%
Various institutions: Innovation projects research	8 380	2 755	–	–	-100.0%	0.3%	–	–	–	–	–
International Centre for Genetic Engineering and Biotechnology	10 936	36 280	–	–	-100.0%	1.1%	–	–	–	–	–
Various institutions: Space science research	1 676	–	–	–	-100.0%	–	–	–	–	–	–
South African Association of Science and Technology Centres: Technology Top 100 Awards	–	–	3 507	–	–	0.1%	3 701	3 916	4 135	–	0.3%
South African National AIDS Council	–	–	–	–	–	–	15 000	30 000	31 680	–	1.7%
Various institutions: Emerging research areas	4 500	5 800	–	–	-100.0%	0.2%	–	–	–	–	–
Capital	57 332	60 772	63 568	63 886	3.7%	5.9%	67 080	70 971	74 945	5.5%	6.3%
Various institutions: Hydrogen strategy research - capital	57 332	60 772	63 568	63 886	3.7%	5.9%	67 080	70 971	74 945	5.5%	6.3%
Households											
Social benefits											
Current	140	160	–	–	-100.0%	–	–	–	–	–	–
Households	140	160	–	–	-100.0%	–	–	–	–	–	–
Public corporations and private enterprises											
Public corporations											
Other transfers to public corporations											
Current	84 516	64 699	50 866	45 364	-18.7%	5.9%	37 344	39 510	41 723	-2.8%	3.7%
Various institutions: Implementation of biotechnology strategy	10 378	7 822	–	–	-100.0%	0.4%	–	–	–	–	–
Various institutions: Energy grand challenge research	2 179	1 500	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Health innovation research	4 750	5 000	–	–	-100.0%	0.2%	–	–	–	–	–
South African Medical Research Council	19 500	–	–	–	-100.0%	0.5%	–	–	–	–	–
Various institutions: Hydrogen strategy research	800	1 500	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Indigenous knowledge systems	–	1 000	8 864	–	–	0.2%	–	–	–	–	–
Various institutions: Innovation projects research	–	100	–	–	–	–	–	–	–	–	–
Various institutions: Space science research	12 824	–	–	–	-100.0%	0.3%	–	–	–	–	–
National Research Foundation: Indigenous knowledge systems	2 000	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Emerging research areas	25 600	33 130	42 002	45 364	21.0%	3.5%	37 344	39 510	41 723	-2.8%	3.7%
Various institutions: Technology transfer offices for support of research units	6 485	14 647	–	–	-100.0%	0.5%	–	–	–	–	–
Capital	45 835	32 215	50 429	50 681	3.4%	4.3%	63 504	67 187	70 949	11.9%	5.7%
Various institutions: National nanotechnology research	45 835	32 215	50 429	50 681	3.4%	4.3%	63 504	67 187	70 949	11.9%	5.7%

Table 30.10 Technology Innovation expenditure trends and estimates by subprogramme and economic classification

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/Total (%)
	2013/14	2014/15	2015/16		2013/14 - 2016/17	2016/17	2017/18	2018/19	2019/20		
Higher education institutions											
Current											
Various institutions: Technology transfer offices (support of research units)	34 864	86 323	-	-	-100.0%	2.9%	-	-	-	-	-
Various institutions: Implementation of biotechnology strategy	-	36 560	-	-	-	0.9%	-	-	-	-	-
Various institutions: Energy grand challenge research	7 524	8 006	-	-	-100.0%	0.4%	-	-	-	-	-
Various institutions: Health innovation research	3 100	5 550	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Hydrogen strategy research	1 865	700	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Indigenous knowledge systems	14 839	15 923	-	-	-100.0%	0.7%	-	-	-	-	-
Various institutions: Innovation projects research	-	894	-	-	-	-	-	-	-	-	-
National Research Foundation: Indigenous knowledge systems	-	5 884	-	-	-	0.1%	-	-	-	-	-
Various institutions: Emerging research areas	1 932	-	-	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises											
Private enterprises											
Other transfers to private enterprises											
Current											
Various institutions: Technology transfer offices (support of research units)	10 418	3 353	-	-	-100.0%	0.3%	-	-	-	-	-
Various institutions: Innovation projects research	255	-	-	-	-100.0%	-	-	-	-	-	-
South African Association of Science and Technology Centres: Technology Top 100 Awards	7 000	-	-	-	-100.0%	0.2%	-	-	-	-	-
	3 163	3 353	-	-	-100.0%	0.2%	-	-	-	-	-

1. Estimates of National Expenditure data tables are available and can be downloaded from www.treasury.gov.za. These data tables contain detailed information by goods and services, and transfers and subsidies item by programme.

Personnel information

Table 30.11 Technology Innovation personnel numbers and cost by salary level¹

Technology Innovation	Salary level	Number of posts estimated for 31 March 2017		Number and cost ² of personnel posts filled / planned for on funded establishment												Number				
		Number of funded posts	Number of posts additional to the establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%) 2016/17 - 2019/20	Average: Salary level/Total (%)			
				2015/16			2016/17			2017/18		2018/19		2019/20						
				Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			Number	Cost	Unit cost
		-	-	55	39.8	0.7	54	43.5	0.8	53	44.4	0.8	52	46.2	0.9	51	49.7	1.0	-1.9%	100.0%
1-6		-	-	7	1.8	0.3	7	2.0	0.3	7	2.1	0.3	7	2.2	0.3	7	2.4	0.3	-	13.3%
7-10		-	-	7	2.6	0.4	6	2.6	0.4	5	2.2	0.4	4	1.9	0.5	3	1.7	0.6	-20.6%	8.6%
11-12		-	-	21	14.6	0.7	21	16.5	0.8	21	17.1	0.8	21	18.0	0.9	21	19.6	0.9	-	40.0%
13-16		-	-	20	20.8	1.0	20	22.5	1.1	20	23.0	1.2	20	24.0	1.2	20	26.0	1.3	-	38.1%

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Programme 3: International Cooperation and Resources

Programme purpose

Strategically develop, promote and manage international partnerships that strengthen the national system of innovation. Enable an exchange of knowledge, capacity and resources between South Africa and its international partners, with a focus on supporting science, technology and innovation capacity building in Africa. Support South African foreign policy through science diplomacy.

Objectives

- Complement South Africa's national investments in science, technology and innovation, including access to resources for departmental initiatives that require external investment, by securing international funding of R1.3 billion over the medium term.

- Enhance South Africa's national science, technology and innovation capabilities to contribute to the attainment of the department's targets for human capital development by accessing international knowledge and resources through securing the participation of 1 680 South African researchers in international postgraduate training programmes by 31 March 2020.
- Build capacity in and support initiatives for the Southern African Development Community (SADC) and African Union (AU) to advance Africa's growth and development agenda by strengthening cooperation in science, technology and innovation in Africa through technical and financial support for 53 approved SADC and AU science, technology and innovation initiatives and programmes by 31 March 2020.
- Support South Africa's foreign policy objectives of creating a better South Africa and contributing to a better Africa and a better world by maximising South Africa's strategic interests in international science, technology and innovation cooperation through interventions that ensure South Africa occupies 16 new leadership positions in international science, technology and innovation governance structures by 31 March 2020.

Subprogrammes

- *Multilateral Cooperation and Africa* advances and facilitates South Africa's participation in: bilateral science, technology and innovation cooperation initiatives with other African partners; African multilateral programmes, especially SADC and AU programmes; and broader multilateral science, technology and innovation partnerships with a strategic focus on South-South cooperation.
- *International Resources* works to increase the flow of international funding into South African science, technology and innovation initiatives, and African regional and continental programmes, through concerted efforts to promote foreign investment, and the fostering of strategic partnerships with partners such as the European Union, philanthropic foundations and organisations, and the multinational private sector.
- *Overseas Bilateral Cooperation* promotes and facilitates South Africa's bilateral science, technology and innovation cooperation with partners in Europe, the Americas, Asia and Australasia, especially for human capital development, and collaborative research and innovation; and secures partner support for joint cooperation with other African partners.

Expenditure trends and estimates

Table 30.12 International Cooperation and Resources expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
R thousand											
Multilateral Cooperation and Africa	25 281	22 167	25 668	28 697	4.3%	22.5%	29 617	31 017	33 159	4.9%	23.0%
International Resources	50 402	54 021	56 635	57 459	4.5%	48.4%	59 481	62 613	66 896	5.2%	46.3%
Overseas Bilateral Cooperation	28 863	31 401	32 665	38 307	9.9%	29.1%	39 607	41 539	44 370	5.0%	30.7%
Total	104 546	107 589	114 968	124 463	6.0%	100.0%	128 705	135 169	144 425	5.1%	100.0%
Change to 2016				-			(1 321)	(1 374)	(758)		
Budget estimate											
Economic classification											
Current payments	53 233	53 349	55 641	63 109	5.8%	49.9%	64 928	67 694	72 450	4.7%	50.3%
Compensation of employees	33 205	36 762	41 275	46 150	11.6%	34.9%	47 300	49 122	52 866	4.6%	36.7%
Goods and services ¹	20 028	16 587	14 366	16 959	-5.4%	15.0%	17 628	18 572	19 584	4.9%	13.7%
of which:											
Communication	620	494	690	1 299	28.0%	0.7%	1 376	1 455	1 537	5.8%	1.1%
Agency and support/outsourced services	662	327	726	624	-2.0%	0.5%	655	693	732	5.5%	0.5%
Entertainment	182	218	285	744	59.9%	0.3%	781	826	873	5.5%	0.6%
Travel and subsistence	11 164	-	-	7 509	-12.4%	4.1%	7 688	8 054	8 475	4.1%	6.0%
Operating payments	955	3 891	1 244	1 055	3.4%	1.6%	1 108	1 173	1 239	5.5%	0.9%
Venues and facilities	3 847	365	42	3 733	-1.0%	1.8%	3 917	4 145	4 378	5.5%	3.0%
Transfers and subsidies¹	51 313	54 127	59 327	61 354	6.1%	50.1%	63 777	67 475	71 975	5.5%	49.7%
Departmental agencies and accounts	17 625	14 591	36 842	13 598	-8.3%	18.3%	14 130	14 948	15 952	5.5%	11.0%
Higher education institutions	17 033	19 986	13 123	-	-100.0%	11.1%	-	-	-	-	-
Public corporations and private enterprises	16 317	16 198	8 476	-	-100.0%	9.1%	-	-	-	-	-
Non-profit institutions	272	28	870	47 756	460.0%	10.8%	49 647	52 527	56 023	5.5%	38.7%
Households	66	3 324	16	-	-100.0%	0.8%	-	-	-	-	-

Table 30.12 International Cooperation and Resources expenditure trends and estimates by subprogramme and economic classification

	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
R thousand											
Payments for capital assets	–	113	–	–	–	–	–	–	–	–	–
Machinery and equipment	–	113	–	–	–	–	–	–	–	–	–
Total	104 546	107 589	114 968	124 463	6.0%	100.0%	128 705	135 169	144 425	5.1%	100.0%
Proportion of total programme expenditure to vote expenditure	1.7%	1.7%	1.5%	1.7%	–	–	1.7%	1.7%	1.8%	–	–
Details of transfers and subsidies											
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	17 625	14 591	36 842	13 598	-8.3%	18.3%	14 130	14 948	15 952	5.5%	11.0%
National Research Foundation: Global science (bilateral cooperation)	12 203	12 935	13 530	13 598	3.7%	11.6%	14 130	14 948	15 952	5.5%	11.0%
Various institutions: Global science (international multilateral agreements)	1 622	1 656	22 354	–	-100.0%	5.7%	–	–	–	–	–
Various institutions: Global science (African multilateral agreements)	3 800	–	958	–	-100.0%	1.1%	–	–	–	–	–
Non-profit institutions	272	28	870	47 756	460.0%	10.8%	49 647	52 527	56 023	5.5%	38.7%
Various institutions: Global science (international multilateral agreements)	272	28	147	39 220	424.4%	8.8%	40 775	43 139	46 009	5.5%	31.7%
Various institutions: Global science (African multilateral agreements)	–	–	723	8 536	–	2.1%	8 872	9 388	10 014	5.5%	6.9%
Households											
Social benefits											
Current	33	31	16	–	-100.0%	–	–	–	–	–	–
Households	33	31	16	–	-100.0%	–	–	–	–	–	–
Other transfers to households											
Current	33	3 293	–	–	-100.0%	0.7%	–	–	–	–	–
Households	33	3 293	–	–	-100.0%	0.7%	–	–	–	–	–
Public corporations and private enterprises											
Public corporations											
Other transfers to public corporations											
Current	9 382	16 198	8 476	–	-100.0%	7.5%	–	–	–	–	–
Various institutions: Global science (international multilateral agreements)	9 382	16 198	5 338	–	-100.0%	6.8%	–	–	–	–	–
Various institutions: Global science (African multilateral agreements)	–	–	3 138	–	–	0.7%	–	–	–	–	–
Higher education institutions											
Current	17 033	19 986	13 123	–	-100.0%	11.1%	–	–	–	–	–
Various institutions: Global science (international multilateral agreements)	13 133	15 666	11 186	–	-100.0%	8.9%	–	–	–	–	–
Various institutions: Global science (African multilateral agreements)	3 900	4 320	1 937	–	-100.0%	2.2%	–	–	–	–	–
Private enterprises											
Other transfers to private enterprises											
Current	6 935	–	–	–	-100.0%	1.5%	–	–	–	–	–
Various institutions: Global science (international multilateral agreements)	6 935	–	–	–	-100.0%	1.5%	–	–	–	–	–

1. Estimates of National Expenditure data tables are available and can be downloaded from www.treasury.gov.za. These data tables contain detailed information by goods and services, and transfers and subsidies item by programme.

Personnel information

Table 30.13 International Cooperation and Resources personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2017		Number and cost ² of personnel posts filled / planned for on funded establishment												Number				
Number of funded posts	Number of posts additional to the establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average: Salary level/Total (%)			
		2015/16			2016/17			2017/18		2018/19		2019/20				2016/17 - 2019/20		
International Cooperation and Resources		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost		Unit cost	
Salary level	-	59	41.3	0.7	56	46.2	0.8	51	47.3	0.9	49	49.1	1.0	47	52.9	1.1	-5.7%	100.0%
1 – 6	-	3	0.9	0.3	3	1.0	0.3	3	1.2	0.4	3	1.3	0.4	3	1.5	0.5	-	5.9%
7 – 10	-	24	10.4	0.4	23	12.0	0.5	21	12.4	0.6	21	13.6	0.6	21	15.4	0.7	-3.0%	42.4%
11 – 12	-	17	12.6	0.7	16	14.3	0.9	14	14.0	1.0	13	14.4	1.1	12	15.2	1.3	-9.1%	27.1%
13 – 16	-	15	17.5	1.2	14	18.9	1.3	13	19.7	1.5	12	19.9	1.7	11	20.8	1.9	-7.7%	24.6%

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Programme 4: Research, Development and Support

Programme purpose

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

Objectives

- Contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities over the medium term by:
 - awarding 9 300 bursaries to PhD students
 - awarding 32 400 bursaries to postgraduate (BTech, honours and masters) students
 - placing 1 700 graduates and students in department-funded work preparation programmes in science, engineering and technology institutions.
- Ensure the availability of and access to internationally comparable research and innovation infrastructure in order to generate new knowledge and train new researchers by:
 - maintaining the number of research infrastructure grants at 60 per year over the MTEF period
 - increasing the total available broadband capacity provided by the South African National Research Network site from 3 200 Gbps in 2017/18 to 3 500 Gbps in 2019/20, which will assist in providing more efficient transmission of data to all research and academic institutions and national projects.
- Support and promote research that develops basic sciences through the production of new knowledge and relevant training opportunities over the medium term by:
 - maintaining the total number of researchers awarded research grants through programmes managed by the National Research Foundation at above 13 500
 - maintaining the number of Web of Science accredited research articles published by researched funded by the National Research Foundation at 21 000.
- Strategically develop priority science areas in which South Africa enjoys a competitive advantage by promoting internationally competitive research and training activities and outputs by:
 - maintaining the total number of commissioned single-polarisation array antennas at 64 in 2017/18
 - ensuring that a functional climate change research network is in place and two reports on the state of climate change in South Africa are approved by Cabinet by 2018/19.
- Promote public engagement on science, technology and innovation by increasing the total number of participants in science awareness and engagement programmes to 6 million over the medium term.

Subprogrammes

- *Human Capital and Science Promotions* formulates and implements policies and strategies that address the availability of human capital for science, technology and innovation, and fundamental support for research activities.
- *Science Missions* promotes the development of research, the production of scientific knowledge, and the development of human capital within scientific areas in which South Africa enjoys a geographic advantage. These areas include the dynamics of climate change and its impact on Earth systems, Antarctic and marine research, the palaeosciences, and indigenous knowledge systems.
- *Basic Science and Infrastructure* facilitates the strategic implementation of research and innovation equipment and facilities to promote knowledge production in areas of national priority, and sustain research and development-led innovation.
- *Astronomy* supports the development of astronomical sciences around a multi-wavelength research strategy, and provides strategic guidance and support to relevant astronomy institutions in the implementation of strategic astronomy programmes.

Expenditure trends and estimates

Table 30.14 Research, Development and Support expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%)	
	2013/14	2014/15	2015/16		2013/14 - 2016/17	Average: Expenditure/ Total (%)	2017/18	2018/19	2019/20	2016/17 - 2019/20	Average: Expenditure/ Total (%)
R thousand											
Human Capital and Science Promotions	1 683 088	1 872 787	2 331 826	2 357 414	11.9%	54.7%	2 424 804	2 531 227	2 676 546	4.3%	56.3%
Science Missions	151 318	159 549	177 004	215 523	12.5%	4.7%	212 967	222 281	235 126	2.9%	5.0%
Basic Science and Infrastructure	710 235	783 727	986 984	906 519	8.5%	22.5%	976 604	961 440	1 030 214	4.4%	21.8%
Astronomy	654 192	673 774	723 040	691 541	1.9%	18.2%	734 484	752 178	815 073	5.6%	16.9%
Total	3 198 833	3 489 837	4 218 854	4 170 997	9.2%	100.0%	4 348 859	4 467 126	4 756 959	4.5%	100.0%
Change to 2016 Budget estimate				(29 599)			(71 020)	(94 269)	(60 555)		
Economic classification											
Current payments	32 424	37 696	43 751	47 332	13.4%	1.1%	47 960	50 033	53 493	4.2%	1.1%
Compensation of employees	24 516	29 438	31 117	31 805	9.1%	0.8%	32 435	33 679	36 250	4.5%	0.8%
Goods and services ¹	7 908	8 258	12 634	15 527	25.2%	0.3%	15 525	16 354	17 243	3.6%	0.4%
of which:											
Catering: Departmental activities	76	96	163	541	92.4%	–	570	602	635	5.5%	–
Communication	429	339	246	563	9.5%	–	646	684	723	8.7%	–
Consultants: Business and advisory services	688	385	405	1 648	33.8%	–	1 365	1 445	1 526	-2.5%	–
Agency and support/outourced services	1 124	919	1 467	836	-9.4%	–	879	930	983	5.6%	–
Travel and subsistence	3 925	61	5 431	8 527	29.5%	0.1%	8 481	8 902	9 374	3.2%	0.2%
Venues and facilities	432	–	1 146	1 915	64.3%	–	2 010	2 127	2 246	5.5%	–
Transfers and subsidies¹	3 166 409	3 452 010	4 175 103	4 123 665	9.2%	98.9%	4 300 899	4 417 093	4 703 466	4.5%	98.9%
Departmental agencies and accounts	2 617 280	2 999 342	3 564 106	3 909 119	14.3%	86.8%	4 026 486	4 166 954	4 451 780	4.4%	93.3%
Higher education institutions	31 025	53 477	50 825	–	-100.0%	0.9%	–	–	–	–	–
Public corporations and private enterprises	482 305	390 539	526 189	214 546	-23.7%	10.7%	274 413	250 139	251 686	5.5%	5.6%
Non-profit institutions	35 244	8 280	33 617	–	-100.0%	0.5%	–	–	–	–	–
Households	555	372	366	–	-100.0%	–	–	–	–	–	–
Payments for capital assets	–	72	–	–	–	–	–	–	–	–	–
Machinery and equipment	–	72	–	–	–	–	–	–	–	–	–
Payments for financial assets	–	59	–	–	–	–	–	–	–	–	–
Total	3 198 833	3 489 837	4 218 854	4 170 997	9.2%	100.0%	4 348 859	4 467 126	4 756 959	4.5%	100.0%
Proportion of total programme expenditure to vote expenditure	51.8%	54.6%	56.7%	56.1%	–	–	57.5%	56.4%	58.1%	–	–

Table 30.14 Research, Development and Support expenditure trends and estimates by subprogramme and economic classification

Details of transfers and subsidies	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
R thousand											
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	1 798 622	2 010 392	2 427 657	2 583 270	12.8%	58.5%	2 613 854	2 768 821	2 941 964	4.4%	61.5%
Academy of Science of South Africa	–	21 577	–	24 106	–	0.3%	25 261	25 668	27 105	4.0%	0.6%
Various institutions: Astronomy research and development	25 129	19 107	25 155	27 950	3.6%	0.6%	29 348	31 050	32 789	5.5%	0.7%
Various institutions: Policy development on human and social development dynamics	11 098	9 838	10 283	10 483	-1.9%	0.3%	26 012	27 409	28 896	40.2%	0.5%
National Research Foundation: Human resources development for science and engineering	410 034	465 658	835 665	884 262	29.2%	17.2%	833 804	889 172	950 582	2.4%	20.1%
National Research Foundation	1 112 879	851 286	878 399	882 805	-7.4%	24.7%	925 964	979 670	1 034 532	5.4%	21.5%
Various institutions: Science awareness, research and initiatives to encourage youth participation in science	40 332	53 103	57 766	69 541	19.9%	1.5%	73 018	77 253	81 579	5.5%	1.7%
National Research Foundation: South African research chairs initiative to develop human resources in science	74 045	451 779	470 446	482 243	86.7%	9.8%	500 875	530 274	566 305	5.5%	11.7%
Various institutions: Strategic science platforms for research and development	125 105	138 044	149 943	201 880	17.3%	4.1%	199 572	208 325	220 176	2.9%	4.7%
Capital	818 658	988 950	1 136 449	1 325 849	17.4%	28.3%	1 412 632	1 398 133	1 509 816	4.4%	31.8%
Various institutions: Infrastructure projects for research and development	398 551	343 751	449 034	673 093	19.1%	12.4%	718 701	688 721	740 016	3.2%	15.9%
National Research Foundation: Square Kilometre Array (capital contribution to research)	420 107	645 199	687 415	652 756	15.8%	16.0%	693 931	709 412	769 800	5.7%	15.9%
Non-profit institutions											
Current	24 244	8 280	33 617	–	-100.0%	0.4%	–	–	–	–	–
Academy of Science of South Africa	20 744	–	23 229	–	-100.0%	0.3%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	–	80	5 578	–	–	–	–	–	–	–	–
Various institutions: Science awareness	2 200	3 200	3 310	–	-100.0%	0.1%	–	–	–	–	–
Square Kilometre Array	–	2 000	–	–	–	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	1 300	3 000	1 500	–	-100.0%	–	–	–	–	–	–
Capital	11 000	–	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Infrastructure projects for research and development	11 000	–	–	–	-100.0%	0.1%	–	–	–	–	–
Households											
Social benefits											
Current	–	47	116	–	–	–	–	–	–	–	–
Households	–	47	116	–	–	–	–	–	–	–	–
Households											
Other transfers to households											
Current	555	325	250	–	-100.0%	–	–	–	–	–	–
Various institutions: Policy development on human and social development dynamics	125	125	125	–	-100.0%	–	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	–	–	125	–	–	–	–	–	–	–	–
Various institutions: Science awareness	430	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	–	200	–	–	–	–	–	–	–	–	–

Table 30.14 Research, Development and Support expenditure trends and estimates by subprogramme and economic classification

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/Total (%) 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Public corporations											
Other transfers to public corporations											
Current	4 688	1 423	40 005	–	-100.0%	0.3%	51 140	13 800	–	–	0.4%
National Research Foundation: Human resources development for science and engineering	–	–	33 505	–	–	0.2%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering (Economic competitiveness and support package)	–	–	–	–	–	–	51 140	13 800	–	–	0.4%
National Research Foundation: Square Kilometre Array (research and development)	–	723	2 000	–	–	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	4 688	700	4 500	–	-100.0%	0.1%	–	–	–	–	–
Capital	474 837	389 116	486 184	214 546	-23.3%	10.4%	223 273	236 339	251 686	5.5%	5.2%
Council for Scientific and Industrial Research: Cyber infrastructure research and development	192 382	204 045	213 479	214 546	3.7%	5.5%	223 273	236 339	251 686	5.5%	5.2%
Various institutions: Infrastructure projects for research and development	74 455	185 071	272 705	–	-100.0%	3.5%	–	–	–	–	–
Square Kilometre Array	208 000	–	–	–	-100.0%	1.4%	–	–	–	–	–
Higher education institutions											
Current	15 425	20 671	18 650	–	-100.0%	0.4%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	551	4 940	3 736	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Science awareness	8 805	9 652	8 118	–	-100.0%	0.2%	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	6 069	5 467	6 796	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Astronomy research and development	–	612	–	–	–	–	–	–	–	–	–
Capital	15 600	32 806	32 175	–	-100.0%	0.5%	–	–	–	–	–
Various institutions: Infrastructure projects for research and development	15 600	32 806	32 175	–	-100.0%	0.5%	–	–	–	–	–
Public corporations and private enterprises											
Private enterprises											
Other transfers to private enterprises											
Current	2 780	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	2 780	–	–	–	-100.0%	–	–	–	–	–	–

1. Estimates of National Expenditure data tables are available and can be downloaded from www.treasury.gov.za. These data tables contain detailed information by goods and services, and transfers and subsidies item by programme.

Personnel information

Table 30.15 Research, Development and Support personnel numbers and cost by salary level¹

Research, Development and Support	Salary level	Number of posts estimated for 31 March 2017	Number and cost ² of personnel posts filled / planned for on funded establishment												Number				
			Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average: Salary level/Total (%)			
			2015/16			2016/17			2017/18		2018/19		2019/20						
			Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost		
		–	47	31.1	0.7	45	31.8	0.7	43	32.4	0.8	41	33.7	0.8	40	36.3	0.9	-3.9%	100.0%
	1–6	–	4	0.9	0.2	4	1.0	0.3	4	1.1	0.3	4	1.2	0.3	4	1.4	0.3	–	9.5%
	7–10	–	8	1.4	0.2	8	1.6	0.2	8	1.7	0.2	8	1.9	0.2	8	2.1	0.3	–	18.9%
	11–12	–	21	14.9	0.7	20	15.7	0.8	19	16.3	0.9	18	17.3	1.0	17	18.3	1.1	-5.3%	43.8%
	13–16	–	14	13.9	1.0	13	13.5	1.0	12	13.3	1.1	11	13.2	1.2	11	14.5	1.3	-5.4%	27.8%

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Programme 5: Socioeconomic Innovation Partnerships

Programme purpose

Enhance the growth and development priority areas of government through targeted science and technology-based innovation interventions, and the development of strategic partnerships with other government departments, industry, research institutions and communities.

Objectives

- Inform and influence how science and technology can be used to achieve inclusive development through knowledge, evidence and learning over the medium term by:
 - publishing 18 knowledge products on innovation for inclusive development
 - maintaining and improving 10 decision support systems
 - generating 27 learning interventions.
- Identify, grow and sustain niche high-potential science, technology and innovation capabilities for sustainable development and the greening of society and the economy by fully funding and co-funding 233 honours, masters and doctoral students, and adding 12 knowledge and innovation products to the intellectual property portfolio over the medium term.
- Identify, grow and sustain niche, high-potential science, technology and innovation capabilities that improve the competitiveness of existing industries with growth potential in aerospace, advanced manufacturing, chemicals, advanced metals, mining, ICT and sector innovation funds, and facilitate the development of new targeted industries over the medium term by:
 - fully funding or co-funding 870 masters and doctoral students, and 360 interns
 - adding 53 knowledge and innovation products to the intellectual property portfolio
 - funding 9 instruments in support of increased localisation, competitiveness, and research and development-led industry development.
- Strengthen provincial and rural innovation and production systems through analysis and catalytic interventions over the medium term by funding or co-funding six interventions that strengthen provincial or rural innovation systems.
- Enhance understanding and analysis that support improvements in the functioning and performance of the national system of innovation through executive committee approval by publishing 18 reports and policy briefings on the national system of innovation and innovation policy over the medium term.
- Introduce and manage interventions and incentive programmes that increase the level of private-sector investment in scientific or technological research and development by providing pre-approval decisions within 90 days of the date of receipt of applications for the research and development tax incentive over the medium term.

Subprogrammes

- *Sector Innovation and Green Economy* provides policy, strategy and direction for research and the development-led growth of strategic sectors of the economy; and supports the transition to a green economy.
- *Innovation for Inclusive Development* supports the development of science and technology-based innovations for tackling poverty, including the creation of sustainable jobs and human settlements, and the enhanced delivery of basic services.
- *Science and Technology Investment* leads and supports the development of indicators and instruments for monitoring investments in science and technology, as well as the performance of the national system of innovation, and ways of strengthening policy in relation to the national system of innovation.
- *Technology Localisation, Beneficiation and Advanced Manufacturing* funds technology and innovation development programmes to advance strategic medium- and long-term sustainable economic growth and sector development priorities, as well as public service delivery.

Expenditure trends and estimates

Table 30.16 Socioeconomic Innovation Partnerships expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
R thousand											
Sector Innovation and Green Economy	812 750	875 737	873 866	932 662	4.7%	53.6%	982 683	1 041 673	1 103 406	5.8%	58.6%
Innovation for Inclusive Development	325 125	340 095	334 479	349 513	2.4%	20.7%	356 598	355 906	378 160	2.7%	20.8%
Science and Technology Investment	25 377	29 864	32 310	28 508	4.0%	1.8%	25 276	26 528	34 318	6.4%	1.7%
Technology Localisation, Beneficiation and Advanced Manufacturing	294 990	293 470	497 692	472 293	17.0%	23.9%	257 767	358 646	229 786	-21.3%	19.0%
Total	1 458 242	1 539 166	1 738 347	1 782 976	6.9%	100.0%	1 622 324	1 782 753	1 745 670	-0.7%	100.0%
Change to 2016 Budget estimate				(9 900)			10 558	186 703	59 430		
Economic classification											
Current payments	36 519	40 858	43 310	49 692	10.8%	2.6%	47 791	49 770	53 353	2.4%	2.9%
Compensation of employees	29 988	34 158	37 107	37 838	8.1%	2.1%	38 620	40 111	43 170	4.5%	2.3%
Goods and services ¹	6 531	6 700	6 203	11 854	22.0%	0.5%	9 171	9 659	10 183	-4.9%	0.6%
of which:											
Advertising	239	40	6	189	-7.5%	-	206	219	232	7.1%	-
Catering: Departmental activities	185	87	134	267	13.0%	-	281	297	313	5.4%	-
Communication	438	293	325	915	27.8%	-	963	1 036	1 094	6.1%	0.1%
Consultants: Business and advisory services	829	486	16	6 439	98.0%	0.1%	3 497	3 660	3 849	-15.8%	0.3%
Travel and subsistence	2 619	-	2 990	2 725	1.3%	0.1%	2 839	3 003	3 171	5.2%	0.2%
Venues and facilities	1 181	-	500	808	-11.9%	-	849	899	950	5.5%	0.1%
Transfers and subsidies¹	1 421 723	1 498 308	1 695 037	1 733 284	6.8%	97.4%	1 574 533	1 732 983	1 692 317	-0.8%	97.1%
Departmental agencies and accounts	346 204	391 492	753 831	744 505	29.1%	34.3%	502 684	564 372	457 588	-15.0%	32.7%
Higher education institutions	4 384	7 065	-	-	-100.0%	0.2%	-	-	-	-	-
Public corporations and private enterprises	1 058 283	1 064 637	941 074	988 779	-2.2%	62.2%	1 044 849	1 105 611	1 174 729	5.9%	62.2%
Non-profit institutions	12 707	35 053	-	-	-100.0%	0.7%	27 000	63 000	60 000	-	2.2%
Households	145	61	132	-	-100.0%	-	-	-	-	-	-
Total	1 458 242	1 539 166	1 738 347	1 782 976	6.9%	100.0%	1 622 324	1 782 753	1 745 670	-0.7%	100.0%
Proportion of total programme expenditure to vote expenditure	23.6%	24.1%	23.4%	24.0%	-	-	21.5%	22.5%	21.3%	-	-
Details of transfers and subsidies											
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	346 204	391 492	753 831	744 505	29.1%	34.3%	502 684	564 372	457 588	-15.0%	32.7%
Various institutions: Local manufacturing capacity research and technical support (Economic competitiveness and support package)	-	-	-	-	-	-	80 000	80 000	-	-	2.3%
Various institutions: Local systems of innovation for the cold chain technologies project (Economic competitiveness and support package)	-	-	-	-	-	-	-	62 000	-	-	0.9%
Various institutions: Innovative research and development	8 330	16 678	38 731	46 440	77.3%	1.7%	41 823	39 890	44 249	-1.6%	2.5%
Human Sciences Research Council	258 867	276 010	288 706	290 149	3.9%	17.1%	304 656	305 495	322 603	3.6%	17.6%
Various institutions: Local manufacturing capacity research and technical support	40 000	43 712	187 508	214 779	75.1%	7.5%	3 311	25 864	28 689	-48.9%	3.9%
Various institutions: Local systems of innovation for the cold chain technologies project	25 000	33 000	204 737	153 043	82.9%	6.4%	35 781	10 632	11 793	-57.4%	3.0%
Various institutions: Resource-based industries research and development	-	1 000	-	-	-	-	-	-	-	-	-
National Research Foundation: Research information management system	4 519	6 850	12 240	7 201	16.8%	0.5%	3 781	4 000	8 448	5.5%	0.3%
Human Science Research Council: Develop and monitor science and technology indicators	9 488	9 657	5 446	9 533	0.2%	0.5%	9 437	9 984	12 404	9.2%	0.6%
Various institutions: Environmental innovation	-	4 585	16 463	23 360	-	0.7%	23 895	26 507	29 402	8.0%	1.5%

Table 30.16 Socioeconomic Innovation Partnerships expenditure trends and estimates by subprogramme and economic classification

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Non-profit institutions											
Current	12 707	35 053	-	-	-100.0%	0.7%	27 000	63 000	60 000	-	2.2%
Various institutions: Advanced manufacturing technology strategy implementation	-	100	-	-	-	-	-	-	-	-	-
Various institutions: Innovative research and development	2 502	19 644	-	-	-100.0%	0.3%	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	10 000	13 397	-	-	-100.0%	0.4%	-	-	-	-	-
Various institutions: Resource-based industries research and development	205	1 222	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Environmental innovation	-	690	-	-	-	-	-	-	-	-	-
Council for Scientific and Industrial Research: Mining research and development	-	-	-	-	-	-	27 000	63 000	60 000	-	2.2%
Households											
Social benefits											
Current	145	61	132	-	-100.0%	-	-	-	-	-	-
Households	145	61	132	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises											
Public corporations											
Other transfers to public corporations											
Current	248 864	238 897	120 870	116 736	-22.3%	11.1%	129 204	136 859	151 727	9.1%	7.7%
Various institutions: Advanced manufacturing technology strategy implementation	22 642	25 649	45 219	43 575	24.4%	2.1%	51 215	53 678	59 542	11.0%	3.0%
Council for Scientific and Industrial Research	20 167	24 208	26 144	26 327	9.3%	1.5%	31 960	34 738	38 533	13.5%	1.9%
Various institutions: Innovative research and development	37 835	20 827	-	-	-100.0%	0.9%	-	-	-	-	-
Various institutions: Local manufacturing capacity research and technical support	71 398	68 034	-	-	-100.0%	2.1%	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	57 688	51 422	-	-	-100.0%	1.7%	-	-	-	-	-
Various institutions: Resource-based industries research and development	39 134	38 494	49 507	46 834	6.2%	2.7%	46 029	48 443	53 652	4.6%	2.8%
Various institutions: Environmental innovation	-	10 263	-	-	-	0.2%	-	-	-	-	-
Higher education institutions											
Current	4 384	7 065	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	169	2 321	-	-	-100.0%	-	-	-	-	-	-
Council for Scientific and Industrial Research	1 001	-	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Innovative research and development	-	631	-	-	-	-	-	-	-	-	-
Various institutions: Local manufacturing capacity research and technical support	549	747	-	-	-100.0%	-	-	-	-	-	-
Various institutions: Local systems of innovation for the cold chain technologies project	1 150	2 366	-	-	-100.0%	0.1%	-	-	-	-	-
Various institutions: Resource-based industries research and development	1 515	1 000	-	-	-100.0%	-	-	-	-	-	-
Public corporations and private enterprises											
Private enterprises											
Other transfers to private enterprises											
Current	27 423	-	-	-	-100.0%	0.4%	-	-	-	-	-
Various institutions: Advanced manufacturing technology strategy implementation	15 142	-	-	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Innovative research and development	12 281	-	-	-	-100.0%	0.2%	-	-	-	-	-

Table 30.16 Socioeconomic Innovation Partnerships expenditure trends and estimates by subprogramme and economic classification

R thousand	Audited outcome			Adjusted appropriation 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Public corporations											
Public corporations (subsidies on products and production)											
Current	781 996	825 740	820 204	872 043	3.7%	50.6%	915 645	968 752	1 023 002	5.5%	54.5%
Council for Scientific and Industrial Research	781 996	825 740	820 204	872 043	3.7%	50.6%	915 645	968 752	1 023 002	5.5%	54.5%

1. Estimates of National Expenditure data tables are available and can be downloaded from www.treasury.gov.za. These data tables contain detailed information by goods and services, and transfers and subsidies item by programme.

Personnel information

Table 30.17 Socio-Economic Innovation Partnerships personnel numbers and cost by salary level¹

Socio-Economic Innovation Partnerships	Number of posts estimated for 31 March 2017		Number and cost ² of personnel posts filled / planned for on funded establishment												Number				
	Number of funded posts	Number of posts additional to the establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%) 2016/17 - 2019/20	Average: Salary level/Total (%) 2016/17 - 2019/20			
			2015/16			2016/17			2017/18		2018/19		2019/20						
			Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost		
Salary level	-	-	50	37.1	0.7	48	37.8	0.8	42	38.6	0.9	41	40.1	1.0	40	43.2	1.1	-5.9%	100.0%
1 – 6	-	-	5	1.3	0.3	5	1.4	0.3	5	1.6	0.3	5	1.7	0.3	5	1.9	0.4	-	11.7%
7 – 10	-	-	10	4.1	0.4	10	4.5	0.4	8	4.1	0.5	8	4.4	0.5	8	4.9	0.6	-7.2%	19.9%
11 – 12	-	-	20	15.7	0.8	19	16.3	0.9	16	16.1	1.0	16	17.3	1.1	16	19.3	1.2	-5.6%	39.2%
13 – 16	-	-	15	15.9	1.1	14	15.6	1.1	13	16.8	1.3	12	16.7	1.4	11	17.0	1.5	-7.7%	29.2%

1. Data has been provided by the department and may not necessarily reconcile with official government personnel data.

2. Rand million.

Entities¹

Academy of Science of South Africa

Mandate

The Academy of Science of South Africa was established under the Academy of Science of South Africa Act (2001). The academy's mandate is to promote outstanding achievements in all fields of scientific enquiry, recognise excellence through providing grants, and provide evidence-based scientific advice to government and other stakeholders.

Selected performance indicators

Table 30.18 Academy of Science of South Africa performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of media releases per year	Administration	Outcome 12: An efficient, effective and development-oriented public service	- ¹	27	20	20	20	20	20
Number of issues of electronic Science for Society newsletter per year	Administration		4	4	4	4	4	4	4
Number of Science for Society gold medals awarded per year	Liaison	Outcome 5: A skilled and capable workforce to support an inclusive growth path	2	2	2	2	2	2	2
Number of distinguished visiting scholars hosted per year	Liaison	Outcome 11: Create a better South Africa and contribute to a better Africa and a better world	2	2	2	2	2	2	2
Number of workshop reports published per year	Science advisory programme	Outcome 10: Protect and enhance our environmental assets and natural resources	2	2	2	2	2	2	2
Number of consensus study reports published per year	Science advisory programme		- ¹	4	2	2	2	2	2
Number of national scholarly publishers' programme forums hosted per year	Scholarly publishing programme	Outcome 12: An efficient, effective and development-oriented public service	1	1	1	1	1	1	1

¹ This section has been compiled with the latest available information from the entities concerned.

Table 30.18 Academy of Science of South Africa performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of South African Journal of Science publications per year	Scholarly publishing programme	Outcome 12: An efficient, effective and development-oriented public service	6	6	6	6	6	6	6
Number of Quest: Science for South Africa editions produced per year	Scholarly publishing programme		4	4	4	4	4	4	4

1. No historical data available.

Expenditure analysis

The Academy of Science of South Africa's focus over the medium term will be on producing and publishing quality research documents, and improving the quality and visibility of South African research publications. This will allow the academy to contribute to the realisation of outcome 5 (a skilled and capable workforce to support an inclusive growth path) of government's 2014-2019 medium-term strategic framework.

Over the period ahead, the academy plans to publish 8 evidence-based scientific reports, 18 issues of the *South African Journal of Science*, and 12 issues of the magazine *Quest: Science for South Africa*. It also plans to award 6 Science for Society gold medals; and host 3 national scholarly publishers' forums, 3 national scholarly editors' forums, and 6 distinguished visiting scholars. A total of R37.4 million over the medium term is allocated to the scholarly publishing programme to enhance the academy's capacity to reach these targets. The programme is expected to account for 36.4 per cent of the academy's total budget of R98.6 million over the medium term.

Transfers from the department constitute a projected 96.2 per cent, or R95 million, of the academy's revenue over the medium term. The academy expects to generate further revenue of R3.6 million over the period from its publications (mostly through advertising revenue), membership fees, interest received from short-term investments, secretariat services and workshop fees.

Programmes/objectives/activities

Table 30.19 Academy of Science of South Africa expenditure trends and estimates by programme/objective/activity

R thousand	Audited outcome				Revised estimate	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
Administration	5 947	4 562	6 665	8 086		10.8%	21.6%	8 045	8 417	8 888	3.2%	26.6%
Communication	1 429	1 576	1 381	-		-100.0%	3.6%	-	-	-	-	-
Liaison	3 503	7 314	7 930	5 684		17.5%	19.6%	5 425	6 584	6 953	6.9%	19.5%
Science advisory programme	2 607	8 615	8 054	5 249		26.3%	19.3%	4 773	5 907	6 238	5.9%	17.5%
Publications	3 661	3 613	4 389	-		-100.0%	9.6%	-	-	-	-	-
Scholarly publishing programme	6 000	10 349	6 570	8 845		13.8%	26.3%	11 466	12 594	13 299	14.6%	36.4%
Total	23 147	36 029	34 989	27 864		6.4%	100.0%	29 709	33 502	35 378	8.3%	100.0%

Statements of historical financial performance and position

Table 30.20 Academy of Science of South Africa statements of historical financial performance and position

Statement of financial performance									
R thousand	Budget		Audited outcome		Budget		Audited outcome		Average: Outcome/ Budget (%)
	2013/14	2014/15	2014/15	2015/16	2015/16	2016/17	2016/17		
Revenue									
Non-tax revenue	728	1 406	750	2 272	1 176	1 176	1 178	1 178	157.4%
Sale of goods and services other than capital assets	328	608	332	511	586	586	588	588	125.0%
of which:									
Administrative fees	78	65	82	90	86	86	88	88	98.5%
Sales by market establishment	250	543	250	421	500	500	500	500	130.9%
Other non-tax revenue	400	798	418	1 761	590	590	590	590	187.1%
Transfers received	20 982	23 190	21 797	35 714	33 813	33 813	26 686	26 686	115.6%
Total revenue	21 710	24 596	22 547	37 986	34 989	34 989	27 864	27 864	117.1%
Expenses									
Current expenses	21 710	23 147	22 547	36 029	34 989	34 989	27 864	27 864	113.9%
Compensation of employees	9 559	9 425	10 090	13 499	16 876	16 876	17 567	17 567	106.1%
Goods and services	12 151	13 463	12 457	22 310	17 893	17 893	10 077	10 077	121.2%
Depreciation	-	259	-	220	220	220	220	220	208.9%
Total expenses	21 710	23 147	22 547	36 029	34 989	34 989	27 864	27 864	113.9%
Surplus/(Deficit)	-	1 449	-	1 957	-	-	-	-	

Table 30.20 Academy of Science of South Africa statements of historical financial performance and position

Statement of financial position	2013/14		2014/15		2015/16		2016/17		Average: Outcome/Budget (%)
	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	
R thousand									
Carrying value of assets	525	651	304	760	1 100	1 100	960	960	120.1%
of which:									
Acquisition of assets	(23)	(308)	(80)	(434)	(150)	(150)	(145)	(145)	260.6%
Investments	-	6 332	-	6 675	-	-	7 200	7 200	280.7%
Accrued investment interest	32	-	32	-	-	-	-	-	-
Receivables and prepayments	-	1 249	-	3 315	500	500	1 800	1 800	298.4%
Cash and cash equivalents	9 792	9 281	9 792	5 856	19 200	19 200	7 000	7 000	90.3%
Total assets	10 349	17 513	10 128	16 606	20 800	20 800	16 960	16 960	123.4%
Capital and reserves	9 624	11 846	9 403	13 804	20 000	20 000	16 210	16 210	112.0%
Capital reserve fund	-	3 020	-	-	-	-	-	-	-
Deferred income	-	870	-	-	-	-	-	-	-
Trade and other payables	-	1 404	-	2 184	100	100	110	110	1 808.6%
Provisions	725	373	725	618	700	700	640	640	83.5%
Total equity and liabilities	10 349	17 513	10 128	16 606	20 800	20 800	16 960	16 960	123.4%

Statements of estimates of financial performance and position

Table 30.21 Academy of Science of South Africa statements of estimates of financial performance and position

Statement of financial performance	Revised estimate	Average growth rate (%)	Average: Expenditure/Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/Total (%)
				2016/17	2017/18	2018/19		
R thousand								
Revenue								
Non-tax revenue	1 178	-5.7%	4.8%	1 230	1 234	1 148	-0.9%	3.8%
Sale of goods and services other than capital assets	588	-1.1%	1.9%	590	594	499	-5.3%	1.8%
of which:								
Administrative fees	88	10.6%	0.3%	90	94	99	4.0%	0.3%
Sales by market establishment	500	-2.7%	1.6%	500	500	400	-7.2%	1.5%
Other non-tax revenue	590	-9.6%	2.9%	640	640	649	3.2%	2.0%
Transfers received	26 686	4.8%	95.2%	28 479	32 268	34 230	8.7%	96.2%
Total revenue	27 864	4.2%	100.0%	29 709	33 502	35 378	8.3%	100.0%
Expenses								
Current expenses	27 864	6.4%	100.0%	29 709	33 502	35 378	8.3%	101.9%
Compensation of employees	17 567	23.1%	47.4%	18 498	19 820	20 930	6.0%	60.9%
Goods and services	10 077	-9.2%	51.8%	11 001	13 682	14 448	12.8%	38.7%
Depreciation	220	-5.3%	0.8%	210	-	-	-100.0%	0.4%
Total expenses	27 864	6.4%	100.0%	29 709	33 502	35 378	8.3%	100.0%
Surplus/(Deficit)	-	(1)		-	-	-	-	-
Statement of financial position								
Carrying value of assets	960	13.8%	4.8%	1 060	1 160	1 000	1.4%	5.8%
of which:								
Acquisition of assets	(145)	-22.2%	-1.5%	(180)	(210)	(222)	15.2%	-1.0%
Investments	7 200	4.4%	29.7%	7 500	7 800	8 190	4.4%	42.5%
Receivables and prepayments	1 800	13.0%	10.0%	1 500	1 790	1 300	-10.3%	8.9%
Cash and cash equivalents	7 000	-9.0%	55.5%	8 000	8 500	7 500	2.3%	42.9%
Total assets	16 960	-1.1%	100.0%	18 060	19 250	17 990	2.0%	100.0%
Capital and reserves	16 210	11.0%	85.6%	17 310	18 500	17 198	2.0%	95.8%
Trade and other payables	110	-57.2%	5.6%	110	110	116	1.8%	0.6%
Provisions	640	19.7%	3.2%	640	640	676	1.8%	3.6%
Total equity and liabilities	16 960	-1.1%	100.0%	18 060	19 250	17 990	2.0%	100.0%

Personnel information

Table 30.22 Academy of Science of South Africa personnel numbers and cost by salary level

Academy of Science of South Africa	Number of posts estimated for 31 March 2017		Number and cost of personnel posts filled / planned for on funded establishment												Number				
	Number of funded posts	Number of posts on approved establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average: Salary level/Total (%)			
			2015/16		Unit cost	2016/17		Unit cost	2017/18		Unit cost	2018/19		Unit cost			2019/20		Unit cost
			Number	Cost		Number	Cost		Number	Cost		Number	Cost				Number	Cost	
Salary level	35	35	35	16.9	0.5	35	17.6	0.5	35	18.5	0.5	35	19.8	0.6	35	20.9	0.6	6.0%	100.0%
1-6	1	1	1	0.2	0.2	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	5.9%	2.9%
7-10	26	26	26	9.8	0.4	26	10.2	0.4	25	10.7	0.4	27	11.6	0.4	27	12.3	0.5	6.3%	75.0%
11-12	5	5	5	3.2	0.6	5	3.4	0.7	6	3.6	0.6	4	3.7	0.9	4	3.9	1.0	5.3%	13.6%
13-16	3	3	3	3.7	1.2	3	3.9	1.3	3	4.1	1.4	3	4.4	1.5	3	4.6	1.5	5.8%	8.6%

1. Rand million.

Council for Scientific and Industrial Research

Mandate

The Council of Scientific and Industrial Research was established in 1945 and is governed in terms of the Scientific Research Council Act (1988). The council fosters industrial and scientific development in the national interest through multidisciplinary research and technological innovation.

Selected performance indicators

Table 30.23 Council for Scientific and Industrial Research performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of journal articles published per year	Science, engineering and technology operating units and centres	Outcome 5: A skilled and capable workforce to support an inclusive growth path	-1	275	300	300	320	330	340
Number of conference papers delivered per year	Science, engineering and technology operating units and centres		-1	280	290	315	325	335	340
Number of new technology demonstrators per year	Science, engineering and technology operating units and centres	Outcome 4: Decent employment through inclusive growth	48	25	> 30	> 25	> 25	> 30	> 30
Amount of contract research and development income per year	Science, engineering and technology operating units and centres		R1.5bn	R1.6bn	R1.8bn	R1.9bn	R2bn	R2.2bn	R2.4bn
Total number of science, engineering and technology staff	Science, engineering and technology operating units and centres	Outcome 5: A skilled and capable workforce to support an inclusive growth path	1 691	1 753	1 850	2 100	1 807	2 210	2 290
Percentage of black science, engineering and technology staff per year	Science, engineering and technology operating units and centres		49% (829/ 1 691)	53% (929/ 1 753)	57% (1 054/ 1 850)	48% (1 002/ 2 100)	59% (1 058/ 1 807)	52% (1 152/ 2 210)	63% (1 443/ 2 290)
Total number of science, engineering and technology staff with doctorates per year	Science, engineering and technology operating units and centres		310	320	330	375	343	400	418
Number of new patents granted per year	Science, engineering and technology operating units and centres	Outcome 4: Decent employment through inclusive growth	15	> 15	> 15	> 15	> 15	> 15	> 15

Expenditure analysis

The focus of the Council for Scientific and Industrial Research over the medium term will remain on strengthening the science, engineering and technology base. This entails performing relevant research and development in health, energy, advanced manufacturing and mining, the built environment, defence and security, the natural environment, scientific equipment and infrastructure investment. The council's work contributes to outcome 5 (a skilled and capable workforce to support an inclusive growth path) and outcome 6 (an efficient, competitive and responsive economic infrastructure network) of government's 2014-2019 medium-term strategic framework.

The council will invest in research and development facilities to support bio-manufacturing, bio-refineries, advanced manufacturing, nanopolymer upscale facilities, and the modernisation of laboratories. This investment is expected to provide resources for research and development activities to increase the number of new technology demonstrators from 25 in 2016/17 to a projected 30 in 2019/20, and grant 45 new patents over the medium term. The council will continue to establish the South African National Research Network on behalf of the department to provide low-cost broadband to all tertiary education institutions and research organisations in the country. The total available broadband capacity per year provided through the network is set to increase from 3 200 Gbps in 2017/18 to 3 500 Gbps in 2019/20. These core research and development activities will account for 68 per cent, or R1.8 billion, of the council's allocation from the department over the period. Subject to the availability of funds, the council will also aim to upgrade some of the buildings on its campuses.

The council's expenditure on compensation of employees constitutes 56.6 per cent, or R5.3 billion, of total projected spending over the period, with expenditure on goods and services accounting for 41.3 per cent, or R3.8 billion. The council derives its revenue from grants from the department; contract research and development income from local, international, public and private sectors; and intellectual property and technology transfer. Contract income is expected to increase from R1.8 billion in 2017/18 to R2 billion in 2019/20 due to an expected increase in research and development work. Similarly, transfers from the department are expected to increase from R831.5 million in 2017/18 to R929 million in 2019/20, accounting for 28.1 per cent of total projected revenue.

Programmes/objectives/activities**Table 30.24 Council for Scientific and Industrial Research expenditure trends and estimates by programme/objective/activity**

R thousand	Audited outcome			Revised estimate 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Administration	262 657	362 578	372 747	389 244	14.0%	13.8%	408 823	437 314	466 766	6.2%	14.1%
Council for Scientific and Industrial Research science, engineering and technology operating units and centres	1 892 408	2 036 497	2 323 569	2 403 885	8.3%	86.2%	2 478 751	2 648 005	2 819 160	5.5%	85.9%
Total	2 155 065	2 399 075	2 696 316	2 793 129	9.0%	100.0%	2 887 574	3 085 319	3 285 926	5.6%	100.0%

Statements of historical financial performance and position**Table 30.25 Council for Scientific and Industrial Research statements of historical financial performance and position**

Statement of financial performance									
R thousand	Audited outcome		Audited outcome		Audited outcome		Budget estimate	Revised estimate	Average: Outcome/ Budget (%) 2013/14 - 2016/17
	Budget	2013/14	Budget	2014/15	Budget	2015/16			
Revenue									
Non-tax revenue	1 503 004	1 590 355	1 662 780	1 776 555	1 878 606	2 067 191	1 993 282	2 039 565	106.2%
Sale of goods and services other than capital assets	1 453 444	1 509 305	1 625 768	1 686 836	1 832 438	1 970 256	1 946 748	1 998 568	104.5%
<i>of which:</i>									
<i>Sales by market establishment</i>	1 453 444	1 509 305	1 625 768	1 686 836	1 832 438	1 970 256	1 946 748	1 998 568	104.5%
Other non-tax revenue	49 560	81 050	37 012	89 719	46 168	96 935	46 534	40 997	172.2%
Transfers received	781 996	618 849	825 740	675 340	794 968	680 485	792 103	815 629	87.3%
Total revenue	2 285 000	2 209 204	2 488 520	2 451 895	2 673 575	2 747 676	2 785 385	2 855 194	100.3%
Expenses									
Current expenses	2 238 288	2 155 065	2 437 876	2 399 075	2 610 365	2 694 762	2 726 604	2 793 129	100.3%
Compensation of employees	1 220 671	1 231 173	1 284 173	1 341 617	1 455 036	1 468 201	1 558 024	1 541 195	101.2%
Goods and services	965 413	872 017	1 099 411	1 001 854	1 103 758	1 163 676	1 113 915	1 194 162	98.8%
Depreciation	52 204	47 240	54 292	48 652	51 571	54 514	54 665	57 772	97.9%
Interest, dividends and rent on land	-	4 635	-	6 952	-	8 371	-	-	-
Total expenses	2 238 288	2 155 065	2 437 876	2 399 075	2 610 365	2 696 316	2 726 604	2 793 129	100.3%
Surplus/(Deficit)	46 712	54 139	50 644	52 820	63 210	51 360	58 781	62 065	
Statement of financial position									
Carrying value of assets	501 485	654 676	532 598	736 032	784 370	753 737	813 420	813 420	112.4%
<i>of which:</i>									
<i>Acquisition of assets</i>	(71 682)	(81 981)	(85 405)	(130 635)	(99 909)	(100 543)	(83 716)	(117 455)	126.4%
Investments	5 372	9 175	5 372	15 883	16 489	7 615	8 029	18 142	144.1%
Inventory	79 390	85 031	94 569	102 901	103 589	105 966	106 856	106 856	104.3%
Receivables and prepayments	195 841	323 745	207 592	264 325	247 944	252 455	262 647	264 397	120.9%
Cash and cash equivalents	760 372	1 066 082	756 539	983 915	810 721	1 012 879	827 811	793 673	122.2%
Non-current assets held for sale	-	-	-	-	-	27 550	-	-	-
Total assets	1 542 460	2 138 709	1 596 670	2 103 056	1 963 113	2 160 202	2 018 763	1 996 488	117.9%
Accumulated surplus/(deficit)	669 500	826 327	729 716	879 147	942 357	930 507	1 001 138	992 572	108.6%
Deferred income	-	71 828	-	54 307	-	23 526	-	-	-
Trade and other payables	863 713	1 230 782	856 967	1 158 988	1 009 146	1 195 474	1 004 970	991 261	122.5%
Provisions	9 247	9 772	9 987	10 614	11 610	10 695	12 655	12 655	100.5%
Total equity and liabilities	1 542 460	2 138 709	1 596 670	2 103 056	1 963 113	2 160 202	2 018 763	1 996 488	117.9%

Statements of estimates of financial performance and position**Table 30.26 Council for Scientific and Industrial Research statements of estimates of financial performance and position**

Statement of financial performance									
R thousand	Revised estimate 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%) 2013/14 - 2016/17	Medium-term estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%) 2016/17 - 2019/20	
				2017/18	2018/19	2019/20			
Revenue									
Non-tax revenue	2 039 565	8.6%	72.8%	2 118 158	2 272 249	2 427 922	6.0%	71.9%	
Sale of goods and services other than capital assets	1 998 568	9.8%	69.7%	2 076 665	2 229 501	2 384 319	6.1%	70.5%	
<i>of which:</i>									
<i>Sales by market establishment</i>	1 998 568	9.8%	69.7%	2 076 665	2 229 501	2 384 319	6.1%	70.5%	
Other non-tax revenue	40 997	-20.3%	3.1%	41 493	42 748	43 603	2.1%	1.4%	
Transfers received	815 629	9.6%	27.2%	831 468	879 694	928 956	4.4%	28.1%	
Total revenue	2 855 194	8.9%	100.0%	2 949 626	3 151 942	3 356 879	5.5%	100.0%	

Table 30.26 Council for Scientific and Industrial Research statements of estimates of financial performance and position

R thousand	Revised estimate	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
				2016/17	2013/14 - 2016/17	2017/18		
Expenses	2 793 129	9.0%	100.0%	2 887 574	3 085 319	3 285 926	5.6%	121.3%
Current expenses								
Compensation of employees	1 541 195	7.8%	55.7%	1 643 162	1 760 338	1 883 562	6.9%	56.6%
Goods and services	1 194 162	11.0%	42.0%	1 183 187	1 260 096	1 333 599	3.7%	41.3%
Depreciation	57 772	6.9%	2.1%	61 225	64 885	68 765	6.0%	2.1%
Total expenses	2 793 129	9.0%	100.0%	2 887 574	3 085 319	3 285 926	5.6%	100.0%
Surplus/(Deficit)	62 065	0		62 052	66 623	70 953	4.6%	
Statement of financial position								
Carrying value of assets	813 420	7.5%	35.3%	843 778	875 910	909 982	3.8%	41.1%
of which:								
Acquisition of assets	(117 455)	12.7%	-5.1%	(91 582)	(97 017)	(102 838)	-4.3%	-4.9%
Investments	18 142	25.5%	0.6%	18 142	18 142	18 142	-	0.9%
Inventory	106 856	7.9%	4.8%	110 426	118 156	126 427	5.8%	5.5%
Receivables and prepayments	264 397	-6.5%	13.2%	281 318	300 345	320 746	6.7%	13.9%
Cash and cash equivalents	793 673	-9.4%	45.8%	797 565	808 583	825 642	1.3%	38.6%
Total assets	1 996 488	-2.3%	100.0%	2 051 229	2 121 136	2 200 939	3.3%	100.0%
Accumulated surplus/(deficit)	992 572	6.3%	43.3%	1 054 624	1 121 247	1 192 200	6.3%	52.0%
Trade and other payables	991 261	-7.0%	54.4%	982 812	985 130	995 524	0.1%	47.3%
Provisions	12 655	9.0%	0.5%	13 793	14 759	13 215	1.5%	0.7%
Total equity and liabilities	1 996 488	-2.3%	100.0%	2 051 229	2 121 136	2 200 939	3.3%	100.0%

Personnel information

Table 30.27 Council for Scientific and Industrial Research personnel numbers and cost by salary level

Council for Scientific and Industrial Research	Number of posts estimated for 31 March 2017		Number and cost ¹ of personnel posts filled / planned for on funded establishment												Number				
	Number of funded posts	Number of posts on approved establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average: Salary level/Total (%)			
			2015/16	2016/17	2017/18	2018/19	2019/20	2016/17 - 2019/20											
Salary level	3 396	3 396	3 248	1 468.2	0.5	3 396	1 541.2	0.5	3 635	1 643.2	0.5	3 894	1 760.3	0.5	4 167	1 883.6	0.5	6.9%	100.0%
1 – 6	682	682	652	43.3	0.1	682	45.4	0.1	730	48.4	0.1	782	51.9	0.1	836	55.5	0.1	6.9%	20.1%
7 – 10	1 691	1 691	1 617	530.4	0.3	1 691	556.8	0.3	1 810	593.6	0.3	1 939	635.9	0.3	2 074	680.4	0.3	6.9%	49.8%
11 – 12	612	612	585	411.7	0.7	612	432.1	0.7	655	460.7	0.7	701	493.6	0.7	750	528.1	0.7	6.9%	18.0%
13 – 16	396	396	379	440.4	1.2	396	462.3	1.2	424	492.9	1.2	454	528.0	1.2	486	565.0	1.2	6.9%	11.7%
17 – 22	16	16	15	42.5	2.8	16	44.6	2.8	17	47.5	2.8	18	50.9	2.8	19	54.5	2.8	6.9%	0.5%

1. Rand million.

Human Sciences Research Council

Mandate

The Human Sciences Research Council was established in 1968 to undertake, promote and coordinate research in the human and social sciences. The council operates in terms of the Human Sciences Research Council Act (2008). In terms of the act, the council is mandated to:

- initiate, undertake and foster strategic, basic and applied research in human sciences
- address developmental challenges in South Africa, elsewhere in Africa and in the rest of the world by gathering, analysing and publishing data relevant to such challenges, especially by means of projects linked to public-sector oriented collaborative programmes
- inform the effective formulation and monitoring of policy, and evaluate how it is implemented
- stimulate public debate through the effective dissemination of fact-based research results
- help build research capacity and infrastructure for the human sciences
- foster research collaboration, networks and institutional linkages

- respond to the needs of vulnerable and marginalised groups in society through research on and analysis of developmental issues, thus contributing to the improvement of their quality of life
- develop and make available data underpinning research, policy development and public discussion on developmental issues
- develop new and improved methodologies for use in the development of such data.

Selected performance indicators

Table 30.28 Human Sciences Research Council performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of interns (research trainees) enrolled in a master's programme, appointed by the council per year	Research, development and innovation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	37	42	42	47	50	53	53
Number of interns (research trainees) enrolled in a PhD programme, appointed by the council per year	Research, development and innovation		43	45	49	51	53	55	55
Percentage of female researchers at senior level (senior research specialist/senior research manager and higher)	Research, development and innovation		48% (31/65)	36% (24/66)	49% (33/68)	49% (34/70)	49% (35/72)	50% (36/72)	100% (70/70)
Rating of peer reviewed publications in an internationally accredited scientific journal per senior researcher (senior research specialist/senior research manager and higher) ¹	Research, development and innovation		1.75 (114/65)	1.9 (121/65)	1.9 (129/68)	1.4 (98/70)	1.4 (101/72)	1.4 (101/72)	1.4 (101/72)
Number of recognised books with at least one council researcher listed as author or co-author per year	Research, development and innovation		13	13	16	19	18	20	20
Number of Human Sciences Research Council Review publications produced per year	Research, development and innovation		5	6	6	4	4	4	4
Number of policy briefs produced by council researchers and published by the council per year	Research, development and innovation		Outcome 12: An efficient, effective and development-oriented public service	8	19	23	15	15	15
Number of research fellows from elsewhere in Africa employed by the council per year	Research, development and innovation	Outcome 11: Create a better South Africa and contribute to a better Africa and a better world	11	15	14	11	11	11	11
Percentage of black researchers at senior level (senior research specialist/senior research manager and higher) employed by the council per year	Research, development and innovation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	45% (29/65)	54% (28/66)	42% (28/66)	56% (39/70)	56% (40/72)	56% (40/72)	56% (40/72)

1. Figure is determined by using the number of accredited scientific journal articles published, divided by the number of senior researchers within the council.

2. No historical data available.

Expenditure analysis

The focus of the Human Sciences Research Council over the medium term will be on producing research that serves the public; contributes to good governance and public service delivery; helps to address the challenges of poverty, inequality and inclusive development; and builds the capacity of scholars and researchers. This is aligned with outcome 5 (a skilled and capable workforce to support an inclusive growth path), outcome 11 (create a better South Africa and contribute to a better Africa and a better world) and outcome 12 (an efficient, effective and development-oriented public service) of government's 2014-2019 medium-term strategic framework.

The council is funded by a government grant, which makes up just less than 60 per cent of its total projected income over the period ahead. The sources of the remainder of its research revenue include research contracts and other grants from national and international funding agencies, and private-sector foundations. The outputs of the council are widely disseminated and play a vital role in producing evidence that supports policy development by decision-makers at national, provincial and local levels.

Expenditure amounting to R949.5 million, or 55.1 per cent of total projected spending over the medium term, is allocated to support larger-scale, longitudinal and cross-sectional studies in support of government's monitoring and evaluation mandate; conduct more innovative and collaborative work to disseminate research; build infrastructure, including staff, for data curation and dissemination; and conduct activities aimed at enhancing inter-institutional collaboration and capacity enhancement nationally and globally. Spending will also be

allocated to the maintenance of the council's infrastructure, and research facilities.

As a research institute, human capital plays a central role in the council's work, and expenditure on compensation of employees accounts for 50.9 per cent, or R883.2 million, of total projected expenditure over the medium term. The council's staff complement is set to remain at 548 over the medium term, with salary adjustments being effected annually in line with inflation. Expenditure on goods and services constitutes a projected 39.6 per cent, or R676.3 million, of total expenditure.

Programmes/objectives/activities

Table 30.29 Human Sciences Research Council expenditure trends and estimates by programme/objective/activity

R thousand	Audited outcome			Revised estimate	Average growth rate (%)	Average: Expenditure/Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/Total (%)
	2013/14	2014/15	2015/16				2016/17	2017/18	2018/19		
					2013/14 - 2016/17		2016/17 - 2019/20				
Administration	144 850	151 094	148 434	187 612	9.0%	37.7%	198 274	209 977	223 576	6.0%	36.7%
Research, development and innovation	203 532	212 349	262 937	281 428	11.4%	57.0%	297 900	315 488	336 081	6.1%	55.1%
Africa Institute of South Africa	–	26 579	26 068	41 484	–	5.2%	43 942	46 545	49 676	6.2%	8.1%
Total	348 382	390 022	437 440	510 524	13.6%	100.0%	540 115	572 011	609 333	6.1%	100.0%

Statements of historical financial performance and position

Table 30.30 Human Sciences Research Council statements of historical financial performance and position

Statement of financial performance									
R thousand	Budget		Audited outcome		Budget		Audited outcome		Average: Outcome/Budget (%)
	2013/14	2014/15	2015/16	2016/17	2013/14 - 2016/17				
Revenue									
Non-tax revenue	178 258	154 388	188 652	161 986	193 168	198 401	220 375	220 375	94.2%
Sale of goods and services other than capital assets	156 289	128 019	160 359	131 191	163 239	164 159	186 290	186 290	91.5%
<i>of which:</i>									
Administrative fees	–	–	181	–	192	–	204	204	35.3%
Sales by market establishment	152 971	125 404	156 545	128 826	159 247	161 246	182 051	182 051	91.8%
Other sales	3 318	2 615	3 633	2 365	3 800	2 913	4 036	4 036	80.7%
Other non-tax revenue	21 969	26 369	28 293	30 796	29 929	34 242	34 084	34 084	109.8%
Transfers received	223 630	197 473	276 010	245 872	288 706	270 611	290 149	290 149	93.1%
Total revenue	401 888	351 861	464 662	407 858	481 874	469 012	510 524	510 524	93.6%
Expenses									
Current expenses	374 425	348 382	435 370	390 022	446 419	437 439	473 360	473 360	95.4%
Compensation of employees	192 716	208 098	225 394	230 800	253 535	237 045	268 292	254 546	99.0%
Goods and services	175 630	129 848	197 561	149 257	182 462	192 490	193 775	207 520	90.6%
Depreciation	4 413	9 403	10 665	8 695	9 270	6 685	10 070	10 070	101.3%
Interest, dividends and rent on land	1 666	1 033	1 750	1 270	1 152	1 218	1 223	1 223	81.9%
Transfers and subsidies	27 463	–	29 293	–	35 455	–	37 164	37 164	28.7%
Total expenses	401 888	348 382	464 663	390 022	481 874	437 439	510 524	510 523	90.7%
Surplus/(Deficit)	–	3 479	(1)	17 837	–	31 572	–	–	–
Statement of financial position									
Carrying value of assets	177 024	181 404	194 997	208 297	198 926	198 926	211 259	211 259	102.3%
<i>of which:</i>									
Acquisition of assets	(712)	(2 662)	(5 565)	(5 634)	(2 968)	(20 155)	(3 132)	(3 132)	255.2%
Investments	–	–	111	1 319	–	–	–	–	1 185.1%
Inventory	5 828	5 300	6 325	8 013	5 910	5 910	6 277	6 277	104.8%
Receivables and prepayments	44 561	41 855	47 699	43 284	45 104	45 104	47 900	47 900	96.2%
Cash and cash equivalents	30 601	50 681	42 768	80 324	56 516	56 516	60 020	60 020	130.3%
Taxation	–	615	–	842	879	879	933	933	180.4%
Total assets	258 014	279 855	291 901	342 078	307 335	307 335	326 390	326 390	106.1%
Accumulated surplus/(deficit)	19 693	20 242	24 082	51 282	17 832	17 832	18 938	18 938	134.5%
Capital and reserves	154 925	154 925	154 925	184 282	172 762	172 762	183 474	183 474	104.4%
Finance lease	–	514	573	–	573	573	609	609	96.6%
Deferred income	42 809	54 912	54 244	55 903	61 249	61 249	65 046	65 046	106.2%
Trade and other payables	29 352	24 266	29 784	21 516	27 044	27 044	28 721	28 721	88.4%
Taxation	–	–	932	–	–	–	–	–	–
Provisions	11 236	24 996	27 361	29 096	27 874	27 874	29 602	29 602	116.1%
Total equity and liabilities	258 015	279 855	291 901	342 079	307 335	307 335	326 390	326 390	106.1%

Statements of estimates of financial performance and position

Table 30.31 Human Sciences Research Council statements of estimates of financial performance and position

Statement of financial performance		Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
Revised estimate	2016/17	2013/14 - 2016/17	2017/18	2018/19	2019/20	2016/17 - 2019/20	2016/17 - 2019/20	
R thousand								
Revenue								
Non-tax revenue	220 375	12.6%	42.3%	235 459	266 515	286 731	9.2%	45.1%
Sale of goods and services other than capital assets of which:	186 290	13.3%	35.0%	196 633	222 258	234 704	8.0%	37.6%
Administrative fees	204	–	0.0%	216	228	241	5.7%	0.0%
Sales by market establishment	182 051	13.2%	34.3%	192 148	217 512	229 693	8.1%	36.7%
Other sales	4 036	15.6%	0.7%	4 270	4 517	4 770	5.7%	0.8%
Other non-tax revenue	34 084	8.9%	7.3%	38 826	44 257	52 026	15.1%	7.5%
Transfers received	290 149	13.7%	57.7%	304 656	305 495	322 603	3.6%	54.9%
Total revenue	510 524	13.2%	100.0%	540 115	572 010	609 333	6.1%	100.0%
Expenses								
Current expenses	473 360	10.8%	98.2%	501 052	530 682	565 690	6.1%	121.4%
Compensation of employees	254 546	6.9%	55.7%	274 259	293 608	315 340	7.4%	50.9%
Goods and services	207 520	16.9%	40.0%	214 863	224 452	237 021	4.5%	39.6%
Depreciation	10 070	2.3%	2.1%	10 654	11 272	11 904	5.7%	2.0%
Interest, dividends and rent on land	1 223	5.8%	0.3%	1 276	1 350	1 426	5.2%	0.2%
Transfers and subsidies	37 164	–	1.8%	39 063	41 328	43 643	5.5%	7.2%
Total expenses	510 523	13.6%	100.0%	540 115	572 011	609 333	6.1%	100.0%
Surplus/(Deficit)	–	(1)		–	(1)	–	–	
Statement of financial position								
Carrying value of assets of which:	211 259	5.2%	63.8%	223 512	236 476	249 719	5.7%	64.7%
Acquisition of assets of which:	(3 132)	5.6%	-2.5%	(3 288)	(3 479)	(3 674)	5.5%	-1.0%
Inventory	6 277	5.8%	2.0%	6 641	7 026	7 419	5.7%	1.9%
Receivables and prepayments	47 900	4.6%	14.2%	50 679	53 618	56 621	5.7%	14.7%
Cash and cash equivalents	60 020	5.8%	19.6%	63 501	67 184	70 947	5.7%	18.4%
Taxation	933	14.9%	0.3%	987	1 045	1 103	5.7%	0.3%
Total assets	326 390	5.3%	100.0%	345 320	365 349	385 808	5.7%	100.0%
Accumulated surplus/(deficit)	18 938	-2.2%	8.5%	20 036	21 198	22 385	5.7%	5.8%
Capital and reserves	183 474	5.8%	55.4%	194 115	205 374	216 875	5.7%	56.2%
Finance lease	609	5.8%	0.1%	644	681	720	5.7%	0.2%
Deferred income	65 046	5.8%	19.0%	68 819	72 810	76 888	5.7%	19.9%
Trade and other payables	28 721	5.8%	8.1%	30 387	32 149	33 950	5.7%	8.8%
Provisions	29 602	5.8%	8.9%	31 319	33 136	34 991	5.7%	9.1%
Total equity and liabilities	326 390	5.3%	100.0%	345 320	365 349	385 808	5.7%	100.0%

Personnel information

Table 30.32 Human Sciences Research Council personnel numbers and cost by salary level

Number of posts estimated for 31 March 2017		Number and cost ¹ of personnel posts filled / planned for on funded establishment												Number					
Number of funded posts	Number of posts on approved establishment	Actual			Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average: Salary level/Total (%)				
		2015/16		Unit cost	2016/17		Unit cost	2017/18		Unit cost	2018/19		Unit cost			2019/20		Unit cost	
Human Sciences Research Council		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	650	650	547	237.0	0.4	548	254.5	0.5	548	274.3	0.5	548	293.6	0.5	548	315.3	0.6	7.4%	100.0%
1 – 6	198	198	167	22.4	0.1	167	24.0	0.1	167	25.8	0.2	167	27.7	0.2	167	29.8	0.2	7.4%	30.5%
7 – 10	305	305	257	100.7	0.4	257	108.1	0.4	257	116.7	0.5	257	124.7	0.5	257	134.0	0.5	7.4%	46.9%
11 – 12	106	106	89	66.8	0.8	89	71.7	0.8	89	77.3	0.9	89	82.7	0.9	89	88.9	1.0	7.4%	16.2%
13 – 16	40	40	33	44.6	1.4	34	47.8	1.4	34	51.4	1.5	34	55.2	1.6	34	59.3	1.7	7.4%	6.2%
17 – 22	1	1	1	2.6	2.6	1	2.8	2.8	1	3.0	3.0	1	3.3	3.3	1	3.5	3.5	7.4%	0.2%

1. Rand million.

National Research Foundation

Mandate

The National Research Foundation was established in terms of the National Research Foundation Act (1998). In terms of the act, the foundation is mandated to promote and support research in all fields of humanities, the social and natural sciences, engineering and technology, and indigenous knowledge. The foundation provides research funding and platforms through national facilities and science engagement activities. It also performs an agency function on behalf of the Department of Science and Technology, and is a service provider to several other government departments in matters related to research.

Selected performance indicators

Table 30.33 National Research Foundation performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of members of the public reached through interactions focusing on science awareness activities per year	Science engagement and corporate relations	Entity mandate	502 186	972 547	1 013 716	1 040 000	1 080 000	1 080 000	1 090 000
Number of black researchers funded per year	Research and innovation support and advancement		1 008	1 235	1 355	1 739	1 960	2 193	2 438
Number of female researchers funded per year	Research and innovation support and advancement		1 285	1 514	1 610	2 209	2 450	2 550	2 650
Number of black postgraduate students funded per year	Research and innovation support and advancement	Outcome 5: A skilled and capable workforce to support an inclusive growth path	6 110	7 057	8 980	9 715	10 350	10 850	11 360
Number of female postgraduate students funded per year	Research and innovation support and advancement		5 186	5 976	7 032	8 265	8 700	8 990	9 280
Total number of researchers rated through the National Research Foundation system	Research and innovation support and advancement		2 959	3 161	3 369	3 400	3 600	3 800	4 000
Number of active grants provided emanating from binational, multinational and agency-to-agency agreements per year	Research and innovation support and advancement	Entity mandate	858	1 055	1 161	1 277	1 404	1 545	1 699
Number of users of equipment funded by the national equipment and national nanotechnology equipment programmes per year	Research and innovation support and advancement	Outcome 6: An efficient, competitive and responsive economic infrastructure network	1 682	1 700	2 181	2 000	2 100	2 200	2 300
Number of publications emanating from the use of equipment funded by the national equipment and national nanotechnology equipment programmes per year	Research and innovation support and advancement		1 546	1 700	809	2 300	2 600	2 800	2 900
Number of Web of Science publications produced per year in nuclear sciences, biodiversity, conservation and environmental studies at national research facilities per year	National research facilities: Nuclear, biodiversity, conservation and environment	Entity mandate	187	234	278	210	220	232	244
Number of Web of Science publications produced in astronomy at national research facilities per year	National research facilities: Astronomy		118	135	136	140	157	165	174

Expenditure analysis

The National Research Foundation aims to facilitate the creation of knowledge, innovation and development in all fields of science and technology, and thereby contribute to an improved quality of life for all. To enable this, the foundation's focus over the medium term will be on providing funding for human resource development and required research facilities, as access to adequate and relevant research infrastructure is a key enabler of globally competitive research, development and innovation. The foundation's funding and initiatives for the provision of infrastructure give effect to outcome 5 (a skilled and capable workforce to support an inclusive growth path) and outcome 6 (an efficient, competitive and responsive economic infrastructure network) of government's 2014-2019 medium-term strategic framework. To ensure that South Africa meets the framework's target of 1.5 per cent of GDP to be spent on research and development, the foundation's total expenditure is estimated at R12.7 billion over the medium term.

The foundation expects to provide funding to at least 55 200 researchers, PhD students and other postgraduate students, through either research grants or bursaries, in the research and innovation support and advancement programme, which has a budget of R8 billion, or 63.8 per cent of the foundation's total budget, over the medium term. A further R1.5 billion is allocated to the South African research chairs initiative programme to support 200 existing research chairs, with an additional 6 research chairs envisaged for 2017/18 through support from the Department of Higher Education and Training. This programme has been developed for students and researchers to access global infrastructure such as the Large Hadron Collider at the European Organisation for Nuclear Research in Switzerland, the Joint Institute for Nuclear Research in Russia, and the European Synchrotron Radiation Facility in France.

Construction on the Square Kilometre Array project, set to be the world's largest and most sensitive radio telescope, will begin over the medium term and is estimated to be finished in 2023. The department has an

allocation of R2.2 billion over the period ahead to fund commitments for the Square Kilometre Array project, such as the construction of a 64-dish demonstrator telescope known as MeerKAT, as well as a further 133 dishes. The target is to erect and commission MeerKAT's full 64-antenna array by the end of 2017/18, with R200 million allocated for the operations of MeerKAT once it becomes operational in 2018/19.

The foundation's projected investment in research infrastructure is R4.8 billion over the medium term. This will allow an estimated 6 600 researchers to use equipment funded by infrastructure programmes, and lead to 8 300 publications. The foundation's facilities provide a critical mass of equipment, cutting-edge platforms, unique technologies and researchers in support of domain-specific research, human capacity development, knowledge generation, nuclear sciences, biodiversity, environmental and conservation research, and optical and radio astronomy. The estimated budget for these facilities amounts to R1.8 billion over the medium term, and includes the commissioning of MeerKAT's 64 satellite dishes. Expenditure on infrastructure at national facilities, such as iThemba Labs and the South African Astronomical Observatory, is expected to amount to R176 million over the period.

Programmes/objectives/activities

Table 30.34 National Research Foundation expenditure trends and estimates by programme/objective/activity

R thousand	Audited outcome			Revised estimate	Average growth rate (%)	Average: Expenditure/Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/Total (%)
	2013/14	2014/15	2015/16				2016/17	2013/14 - 2016/17	2017/18		
Administration	64 321	67 291	74 810	95 306	14.0%	2.3%	102 735	103 248	106 862	3.9%	2.5%
Science engagement and corporate relations	126 378	135 010	164 171	176 658	11.8%	4.6%	173 612	179 728	164 139	-2.4%	4.2%
Research and innovation support and advancement	1 931 679	1 877 740	2 648 019	2 520 726	9.3%	67.9%	2 595 350	2 685 698	2 746 625	2.9%	63.8%
National research facilities: Nuclear, biodiversity, conservation and environment	342 773	381 370	394 476	402 574	5.5%	11.7%	486 142	493 121	514 179	8.5%	11.4%
National research facilities: Astronomy	306 662	371 843	517 952	627 379	26.9%	13.6%	632 161	815 431	950 192	14.8%	18.1%
Total	2 771 813	2 833 254	3 799 428	3 822 643	11.3%	100.0%	3 990 000	4 277 226	4 481 997	5.4%	100.0%

Statements of historical financial performance and position

Table 30.35 National Research Foundation statements of historical financial performance and position

Statement of financial performance	Budget		Audited outcome		Budget		Audited outcome		Budget		Audited outcome		Average: Outcome/Budget (%)
	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15	2013/14	2014/15	2015/16	2016/17	2015/16	2016/17	
R thousand	2013/14		2014/15		2015/16		2016/17		2013/14 - 2016/17				
Revenue													
Non-tax revenue	1 961 729	1 747 657	1 604 110	1 528 905	1 307 477	1 548 511	1 195 965	1 241 612					100.0%
Sale of goods and services other than capital assets	1 526 733	86 169	1 523 607	99 522	121 969	110 164	130 500	130 500					12.9%
of which:													
Sales by market establishment	32 198	55 793	53 330	71 699	69 143	70 389	76 577	76 577					118.7%
Other sales	1 494 535	30 376	1 470 277	27 823	52 826	39 775	53 923	53 923					4.9%
Other non-tax revenue	434 996	1 661 488	80 503	1 429 383	1 185 508	1 438 347	1 065 465	1 111 112					203.9%
Transfers received	1 112 879	1 412 879	1 565 365	1 568 756	2 877 081	2 614 086	3 154 232	3 197 817					101.0%
Total revenue	3 074 608	3 160 536	3 169 475	3 097 661	4 184 558	4 162 597	4 350 197	4 439 429					100.6%
Expenses													
Current expenses	950 285	907 887	1 131 565	1 044 219	1 308 607	1 242 700	1 337 133	1 362 159					96.4%
Compensation of employees	516 789	482 874	612 608	541 632	666 440	577 905	679 003	678 757					92.2%
Goods and services	387 176	366 241	460 693	420 930	563 093	573 798	561 555	585 517					98.7%
Depreciation	46 228	58 633	58 232	81 283	79 039	90 856	96 544	97 854					117.3%
Interest, dividends and rent on land	92	139	32	374	35	141	31	31					360.5%
Transfers and subsidies	1 703 788	1 863 926	1 952 887	1 789 035	2 394 538	2 556 728	2 440 800	2 460 484					102.1%
Total expenses	2 654 073	2 771 813	3 084 452	2 833 254	3 703 145	3 799 428	3 777 933	3 822 643					100.1%
Surplus/(Deficit)	420 535	388 723	85 023	264 407	481 413	363 169	572 264	616 786					
Statement of financial position													
Carrying value of assets	1 342 124	1 130 890	1 641 876	1 364 478	1 862 028	1 709 680	2 690 105	2 353 563					87.0%
of which:													
Acquisition of assets	(522 975)	(426 595)	(480 048)	(321 231)	(565 884)	(440 047)	(683 216)	(741 738)					85.7%
Investments	29 054	29 915	32 650	25 763	25 763	22 795	25 763	20 000					87.0%
Inventory	7 000	4 800	6 000	5 816	6 500	6 180	6 500	6 500					89.6%
Receivables and prepayments	710 528	1 001 163	704 528	1 323 626	1 000 832	1 500 380	966 418	986 418					142.3%
Cash and cash equivalents	280 000	424 035	473 404	704 558	648 404	671 475	300 000	589 069					140.4%
Defined benefit plan assets	-	-	-	459	500	1 459	-	1 300					643.6%
Total assets	2 368 706	2 590 803	2 858 458	3 424 700	3 544 027	3 911 969	3 988 786	3 956 850					108.8%

Table 30.35 National Research Foundation statements of historical financial performance and position

	2013/14		2014/15		2015/16		2016/17		Average: Outcome/ Budget (%)
	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	
R thousand									
Accumulated surplus/(deficit)	(38 056)	4 363	2 467	2 537	-	4 110	-	-	-30.9%
Capital and reserves	38 947	59 567	52 357	87 721	97 721	104 112	39 245	78 329	144.4%
Capital reserve fund	1 341 024	1 129 791	1 640 776	1 364 477	1 862 028	1 709 682	2 690 105	2 353 563	87.0%
Finance lease	878	1 015	1 308	649	600	220	570	240	63.3%
Deferred income	947 786	1 281 019	1 084 770	1 840 779	1 478 805	1 972 022	1 154 578	1 420 430	139.6%
Trade and other payables	78 127	111 812	76 780	120 164	95 998	103 728	94 862	94 862	124.5%
Provisions	-	3 236	-	8 373	8 875	18 095	9 426	9 426	213.8%
Total equity and liabilities	2 368 706	2 590 803	2 858 458	3 424 700	3 544 027	3 911 969	3 988 786	3 956 850	108.8%

Statements of estimates of financial performance and position

Table 30.36 National Research Foundation statements of estimates of financial performance and position

Statement of financial performance		Average growth rate (%)	Average: Expen- diture/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expen- diture/ Total (%)
Revised estimate	2013/14 - 2016/17			2017/18	2018/19	2019/20		
R thousand								
Revenue								
Non-tax revenue	1 241 612	-10.8%	42.5%	1 313 542	1 207 421	1 211 556	-0.8%	28.1%
Sale of goods and services other than capital assets	130 500	14.8%	2.9%	129 746	134 823	140 459	2.5%	3.0%
<i>of which:</i>								
<i>Sales by market establishment</i>	76 577	11.1%	1.9%	81 748	84 018	86 664	4.2%	1.9%
<i>Other sales</i>	53 923	21.1%	1.0%	47 998	50 805	53 795	-0.1%	1.2%
Other non-tax revenue	1 111 112	-12.6%	39.6%	1 183 796	1 072 598	1 071 097	-1.2%	25.1%
Transfers received	3 197 817	31.3%	57.5%	3 115 177	3 153 566	3 268 827	0.7%	71.9%
Total revenue	4 439 429	12.0%	100.0%	4 428 719	4 360 987	4 480 383	0.3%	100.0%
Expenses								
Current expenses	1 362 159	14.5%	34.5%	1 446 881	1 635 665	1 792 788	9.6%	48.4%
Compensation of employees	678 757	12.0%	17.4%	749 310	791 205	843 195	7.5%	18.5%
Goods and services	585 517	16.9%	14.6%	584 852	724 504	823 634	12.0%	16.3%
Depreciation	97 854	18.6%	2.5%	112 686	119 923	125 926	8.8%	2.7%
Interest, dividends and rent on land	31	-39.4%	0.0%	33	33	33	2.1%	0.0%
Transfers and subsidies	2 460 484	9.7%	65.5%	2 543 119	2 641 561	2 689 209	3.0%	62.5%
Total expenses	3 822 643	11.3%	100.0%	3 990 000	4 277 226	4 481 997	5.4%	100.0%
Surplus/(Deficit)	616 786	0		438 719	83 761	(1 614)	-113.8%	
Statement of financial position								
Carrying value of assets	2 353 563	27.7%	46.7%	2 792 283	2 876 044	2 874 429	6.9%	65.3%
<i>of which:</i>								
<i>Acquisition of assets</i>	(741 738)	20.2%	-14.0%	(551 405)	(203 684)	(124 312)	-44.9%	-9.9%
Investments	20 000	-12.6%	0.7%	19 000	18 000	17 000	-5.3%	0.4%
Inventory	6 500	10.6%	0.2%	6 300	6 350	6 300	-1.0%	0.2%
Receivables and prepayments	986 418	-0.5%	35.1%	900 000	880 000	850 000	-4.8%	21.8%
Cash and cash equivalents	589 069	11.6%	17.2%	550 000	500 000	400 000	-12.1%	12.3%
Defined benefit plan assets	1 300	-	0.0%	1 150	1 000	900	-11.5%	0.0%
Total assets	3 956 850	15.2%	100.0%	4 268 733	4 281 394	4 148 629	1.6%	100.0%
Capital and reserves	78 329	9.6%	2.4%	77 329	65 044	64 044	-6.5%	1.7%
Capital reserve fund	2 353 563	27.7%	46.7%	2 792 283	2 876 044	2 874 429	6.9%	65.3%
Finance lease	240	-38.2%	0.0%	210	190	150	-14.5%	0.0%
Deferred income	1 420 430	3.5%	47.4%	1 294 439	1 239 566	1 110 866	-7.9%	30.5%
Trade and other payables	94 862	-5.3%	3.2%	94 500	90 000	88 000	-2.5%	2.2%
Provisions	9 426	42.8%	0.3%	9 972	10 550	11 140	5.7%	0.2%
Total equity and liabilities	3 956 850	15.2%	100.0%	4 268 733	4 281 394	4 148 629	1.6%	100.0%

Personnel information

Table 30.37 National Research Foundation personnel numbers and cost by salary level

Number of posts estimated for 31 March 2017		Number and cost ¹ of personnel posts filled / planned for on funded establishment															Number			
Number of funded posts	Number of posts on approved establishment	Actual 2015/16			Revised estimate 2016/17			2017/18			2018/19			2019/20			Average growth rate (%)	Average Salary level/Total (%)		
		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost				
National Research Foundation		1 595	1 595	1 400	561.4	0.4	1 595	671.6	0.4	1 557	742.5	0.5	1 557	784.2	0.5	1 557	835.8	0.5	7.6%	100.0%
Salary level																				
1 – 6	466	466	290	36.2	0.1	466	94.7	0.2	395	104.7	0.3	395	110.6	0.3	395	117.9	0.3	7.6%	26.3%	
7 – 10	897	897	794	266.8	0.3	897	384.5	0.4	922	425.1	0.5	922	449.0	0.5	922	478.6	0.5	7.6%	58.5%	
11 – 12	197	197	220	149.2	0.7	197	145.4	0.7	205	160.8	0.8	205	169.8	0.8	205	181.0	0.9	7.6%	13.0%	
13 – 16	34	34	89	93.3	1.0	34	44.4	1.3	34	49.1	1.4	34	51.9	1.5	34	55.3	1.6	7.6%	2.2%	
17 – 22	1	1	7	16.0	2.3	1	2.4	2.4	1	2.7	2.7	1	2.8	2.8	1	3.0	3.0	7.6%	0.1%	

1. Rand million.

South African National Space Agency

Mandate

The South African National Space Agency was established in terms of the South African National Space Agency Act (2008). The agency became operational in 2010, and is broadly required to promote the peaceful use of space, foster international cooperation in space related activities, and facilitate the creation of an environment that is conducive to space technology and industrial development.

Selected performance indicators

Table 30.38 South African National Space Agency performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of national high-impact products and services per year	Earth observation	Outcome 10: Protect and enhance our environmental assets and natural resources	-1	-1	4	5	5	5	5
Number of supported students and interns receiving formalised training per year	Earth observation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	-1	-1	53	50	70	90	90
Total income generated from activities related to space operations	Space operation	Outcome 4: Decent employment through inclusive growth	-1	-1	R77m	R60m	R44m	R50m	R55m
Number of direct jobs supported externally through agency programme contracting per year	Space engineering	Outcome 4: Decent employment through inclusive growth	-1	-1	53	50	55	55	55
Total contract expenditure to small, medium and micro enterprises for core space projects	Space engineering		-1	-1	R8m	R12m	R13m	R15m	R15m
Total contract expenditure to the broad space-related industry for core space projects	Space engineering	Outcome 6: An efficient, competitive and responsive economic infrastructure network	-1	-1	R98m	R55m	R65m	R69m	R73m

1. No historical data available.

Expenditure analysis

The South African National Space Agency creates high-technology jobs; maps rural areas using satellites to improve geospatial patterns and foster the development of marginalised communities; plans and monitors national infrastructure through the space system; monitors health surveillance and intelligence through satellites; improves space-based service delivery and performance monitoring to assist in the eradication of corruption; and provides tools for geospatial decision-making. These activities are aligned with the strategic goals of the Department of Science and Technology to accelerate inclusive development through scientific knowledge, evidence and appropriate technology; and contribute to outcome 4 (decent employment through inclusive growth) and outcome 6 (an efficient, competitive and responsive economic infrastructure network) of government's 2014-2019 medium-term strategic framework.

The agency's focus over the medium term will be on activities that ensure that space services are integrated into service delivery, as they provide an indispensable tool for the formulation of government's decisions and policies. These activities provide knowledge and address industry challenges in agriculture, water, energy, health, and safety and security through the centralised acquisition and archiving of satellite data from a number of international satellites. These activities are expected to contribute to the number of national high-impact products and services provided to 15 government departments and entities over the medium term at a projected cost of R241 million in the earth observation programme.

The agency will aim to expand and transform research capacity and productivity over the medium term by increasing the number of publications and graduates, as well as research funding and researcher ratings. Expenditure in this regard is estimated at R42.8 million over the medium term, mostly in the space science programme. The agency will continue to develop research capacity through an allocation of R15 million over the medium term to fund postgraduate bursaries and internship programmes for between 70 and 90 students.

Compensation of employees remains one of the significant drivers of expenditure, contributing an estimated 46.5 per cent, or R388.4 million, of total expenditure over the period ahead to enable the agency to source scientists, engineers and researchers. Expenditure on goods and services, including capital acquisitions, contributes 52 per cent of the total budget of R774 million, and noticeably decreases by 27 per cent over the medium term. This expected decrease is mainly due to total transfers decreasing by 11 per cent due to fiscus constraints, and a projected decrease of 6.8 per cent in contract revenue as a result.

Programmes/objectives/activities

Table 30.39 South African National Space Agency expenditure trends and estimates by programme/objective/activity

R thousand	Audited outcome			Revised estimate 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/ Total (%)
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
Administration	35 336	47 419	42 073	54 816	15.8%	18.6%	40 525	41 840	44 794	-6.5%	16.4%
Earth observation	52 053	64 009	82 625	80 194	15.5%	28.9%	76 514	80 309	84 185	1.6%	29.5%
Space operation	66 358	59 805	62 493	90 246	10.8%	28.6%	48 285	52 008	55 503	-15.0%	21.8%
Space science	30 548	33 972	36 211	34 684	4.3%	14.3%	35 059	36 661	37 599	2.7%	13.3%
Space engineering	15 400	2 837	1 930	102 653	88.2%	9.6%	114 681	12 657	13 366	-49.3%	19.0%
Total	199 695	208 042	225 331	362 593	22.0%	100.0%	315 065	223 475	235 447	-13.4%	100.0%

Statements of historical financial performance and position

Table 30.40 South African National Space Agency statements of historical financial performance and position

Statement of financial performance									
R thousand	Audited outcome		Audited outcome		Audited outcome		Revised estimate		Average: Outcome/ Budget (%) 2013/14 - 2016/17
	Budget	2013/14	Budget	2014/15	Budget	2015/16	Budget estimate	2016/17	
Revenue									
Non-tax revenue	66 706	77 136	59 576	76 108	63 270	106 163	67 316	131 478	152.2%
Sale of goods and services other than capital assets	62 368	71 272	59 396	67 681	62 820	96 829	66 590	90 816	130.0%
<i>of which:</i>									
<i>Sales by market establishment</i>	62 368	71 272	59 396	67 681	62 820	96 829	66 590	90 816	130.0%
Other non-tax revenue	4 338	5 864	180	8 427	449	9 334	726	40 662	1 129.2%
Transfers received	148 908	137 604	272 604	163 586	217 741	232 442	228 651	231 115	88.1%
Total revenue	215 614	214 740	332 180	239 694	281 011	338 605	295 967	362 593	102.7%
Expenses									
Current expenses	215 613	193 913	345 380	205 941	277 684	221 707	293 111	359 889	86.7%
Compensation of employees	83 597	85 124	87 366	93 020	104 545	96 046	111 703	111 986	99.7%
Goods and services	132 016	92 542	258 014	90 019	150 047	100 564	162 345	247 903	75.6%
Depreciation	-	16 247	-	22 903	23 092	25 097	19 063	-	152.4%
Transfers and subsidies	-	5 781	-	2 100	3 327	3 624	2 856	2 704	229.8%
Total expenses	215 613	199 694	345 380	208 041	281 011	225 331	295 967	362 593	87.5%
Surplus/(Deficit)	-	15 046	(13 200)	31 653	-	113 273	-	-	
Statement of financial position									
Carrying value of assets	214 169	130 019	366 658	192 881	142 809	279 597	150 663	150 663	86.1%
<i>of which:</i>									
<i>Acquisition of assets</i>	(52 053)	(46 578)	(110 729)	(87 461)	(56 988)	(113 533)	(57 543)	(50 523)	107.5%
Inventory	326	407	345	335	453	352	478	478	98.1%
Receivables and prepayments	5 800	22 008	5 927	22 434	24 519	20 587	25 867	25 867	146.3%
Cash and cash equivalents	-	120 642	-	123 229	134 405	178 459	141 797	141 797	204.2%
Total assets	220 295	273 076	372 930	338 879	302 186	478 994	318 806	318 806	116.1%

Table 30.40 South African National Space Agency statements of historical financial performance and position

R thousand	2013/14		2014/15		2015/16		2016/17		Average: Outcome/ Budget (%)
	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	
Accumulated surplus/(deficit)	185 466	172 623	303 703	204 276	188 214	317 549	198 566	198 566	101.9%
Finance lease	105	654	–	14 101	729	11 784	769	769	1 703.3%
Deferred income	–	75 051	–	89 146	85 896	82 336	90 620	90 620	191.0%
Trade and other payables	29 492	19 625	63 657	25 195	21 639	38 281	22 829	22 829	77.0%
Provisions	5 232	5 123	5 570	6 161	5 708	6 962	6 022	6 022	107.7%
Derivatives financial instruments	–	–	–	–	–	22 083	–	–	–
Total equity and liabilities	220 295	273 076	372 930	338 879	302 186	478 994	318 806	318 806	116.1%

Statements of estimates of financial performance and position

Table 30.41 South African National Space Agency statements of estimates of financial performance and position

Statement of financial performance								
R thousand	Revised estimate	Average growth rate (%)	Average: Expen- diture/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expen- diture/ Total (%)
				2016/17	2013/14 - 2016/17	2017/18		
Revenue								
Non-tax revenue	131 478	19.5%	33.8%	67 157	69 980	73 469	-17.6%	30.0%
Sale of goods and services other than capital assets of which:	90 816	8.4%	28.8%	67 157	69 980	73 469	-6.8%	27.2%
<i>Sales by market establishment</i>	<i>90 816</i>	<i>8.4%</i>	<i>28.8%</i>	<i>67 157</i>	<i>69 980</i>	<i>73 469</i>	<i>-6.8%</i>	<i>27.2%</i>
Other non-tax revenue	40 662	90.7%	5.1%	–	–	–	-100.0%	2.8%
Transfers received	231 115	18.9%	66.2%	247 907	153 494	161 978	-11.2%	70.0%
Total revenue	362 593	19.1%	100.0%	315 064	223 474	235 447	-13.4%	100.0%
Expenses								
Current expenses	359 889	22.9%	98.4%	310 927	220 711	232 365	-13.6%	124.5%
Compensation of employees	111 986	9.6%	40.2%	120 516	129 433	138 455	7.3%	46.5%
Goods and services	247 903	38.9%	50.7%	190 411	91 278	93 910	-27.6%	52.4%
Transfers and subsidies	2 704	-22.4%	1.6%	4 137	2 763	3 082	4.5%	1.2%
Total expenses	362 593	22.0%	100.0%	315 064	223 474	235 447	-13.4%	100.0%
Surplus/(Deficit)	–	(1)		–	–	–	–	–
Statement of financial position								
Carrying value of assets of which:	150 663	5.0%	52.5%	158 196	167 372	167 372	3.6%	47.3%
<i>Acquisition of assets</i>	<i>(50 523)</i>	<i>2.7%</i>	<i>-20.6%</i>	<i>(62 970)</i>	<i>(69 052)</i>	<i>(69 052)</i>	<i>11.0%</i>	<i>-18.4%</i>
Inventory	478	5.5%	0.1%	502	531	531	3.6%	0.2%
Receivables and prepayments	25 867	5.5%	6.8%	27 161	28 736	28 736	3.6%	8.1%
Cash and cash equivalents	141 797	5.5%	40.6%	148 887	157 522	157 522	3.6%	44.5%
Total assets	318 806	5.3%	100.0%	334 746	354 161	354 161	3.6%	100.0%
Accumulated surplus/(deficit)	198 566	4.8%	63.0%	208 494	220 385	220 385	3.5%	62.3%
Finance lease	769	5.5%	1.8%	808	1 055	1 055	11.1%	0.3%
Deferred income	90 620	6.5%	24.9%	95 151	100 670	100 670	3.6%	28.4%
Trade and other payables	22 829	5.2%	7.4%	23 971	25 361	25 361	3.6%	7.2%
Provisions	6 022	5.5%	1.8%	6 323	6 690	6 690	3.6%	1.9%
Total equity and liabilities	318 806	5.3%	100.0%	334 746	354 161	354 161	3.6%	100.0%

Personnel information

Table 30.42 South African National Space Agency personnel numbers and cost by salary level

Number of posts estimated for 31 March 2017			Number and cost ¹ of personnel posts filled / planned for on funded establishment												Number				
Number of funded posts	Number of posts on approved establishment		Actual		Revised estimate			Medium-term expenditure estimate						Average growth rate (%)	Average Salary level/Total (%)				
			2015/16		2016/17			2017/18		2018/19		2019/20				2016/17 - 2019/20			
Agency			Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost		
South African National Space Agency	190	190	188	96.0	0.5	190	112.0	0.6	192	120.5	0.6	192	129.4	0.7	192	138.5	0.7	7.3%	100.0%
Salary level	190	190	188	96.0	0.5	190	112.0	0.6	192	120.5	0.6	192	129.4	0.7	192	138.5	0.7	7.3%	100.0%
1 – 6	18	18	17	2.2	0.1	18	2.6	0.1	18	2.8	0.2	18	3.0	0.2	18	3.2	0.2	6.7%	9.4%
7 – 10	99	99	98	34.6	0.4	99	40.7	0.4	101	43.7	0.4	101	47.0	0.5	101	49.9	0.5	7.1%	52.5%
11 – 12	43	43	43	26.3	0.6	43	31.8	0.7	43	34.3	0.8	43	36.8	0.9	43	39.6	0.9	7.5%	22.5%
13 – 16	29	29	29	30.9	1.1	29	34.7	1.2	29	37.4	1.3	29	40.1	1.4	29	43.1	1.5	7.5%	15.1%
17 – 22	1	1	1	2.0	2.0	1	2.2	2.2	1	2.3	2.3	1	2.5	2.5	1	2.7	2.7	7.4%	0.5%

1. Rand million.

Technology Innovation Agency

Mandate

The Technology Innovation Agency was established in terms of the Technology Innovation Agency Act (2008). The agency serves as the key institutional intervention to bridge the innovation gap between research and development outcomes from higher education institutions, science councils, public entities and private companies, thus intensifying the effect of technological innovation in the economy.

Selected performance indicators

Table 30.43 Technology Innovation Agency performance indicators by programme/objective/activity and related outcome

Indicator	Programme/objective/activity	Outcome	Past			Current	Projections		
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Number of technologies, products, processes and services reaching the demonstration stage per year	Provide customer-centric early stage commercialisation for technology development	Outcome 5: A skilled and capable workforce to support an inclusive growth path	-1	8	6	12	13	14	15
Number of technologies, products, processes and services taken up in the market per year	Provide customer-centric early stage commercialisation for technology development		8	6	4	14	10	11	12
Amount of third-party funding received in the agency's portfolio per year	Provide customer-centric early stage commercialisation for technology development		R74.4m	R30m	R75m	R59m	R66m	R94m	R105m
Amount of external income raised per year	Provide customer-centric early stage commercialisation for technology development		-1	-1	R98m	R124m	R141.8m	R146.2m	R150.2m
Number of knowledge innovation products (prototypes developed, patents registered) receiving follow-on funding per year	Provide an enabling environment for technology innovation	Outcome 6: An efficient, competitive and responsive infrastructure network	-1	38	30	45	54	65	72
Number of third-party funding opportunities (follow-on funding, co-funding, co-development) secured as a result of knowledge innovation interventions and initiatives per year	Provide an enabling environment for technology innovation		-1	8	7	25	25	25	25
Number of small and medium enterprises receiving technology support from the technology stations and institute for advanced tooling per year	Provide an enabling environment for technology innovation		-1	2 188	2 000	2 200	2 200	2 200	2 200
Number of small to medium enterprises owned by previously disadvantaged individuals receiving funding, support and/or technology services from the agency per year	Provide an enabling environment for technology innovation		-1	-1	-1	35	40	45	50
Number of technology innovations undertaken by the agency per year	Provide an enabling environment for technology innovation		-1	-1	-1	10	12	14	16

1. No historical data available.

Expenditure analysis

The NDP identifies science, technology and innovation as key elements in South Africa's long-term development, and recognises their potential to accelerate growth and transformation in the economy to create decent employment and sustainable livelihoods. This informs the Technology Innovation Agency's goal to position itself as a leading, world-class, technology innovation institute that stimulates and supports technological innovation. The agency contributes to the realisation of outcome 5 (a skilled and capable workforce to support an inclusive growth path) and outcome 6 (an efficient, competitive and responsive economic infrastructure network) of government's 2014-2019 medium-term strategic framework.

The agency derives its revenue mainly from transfers of R1.3 billion over the medium term from the department, accounting for an estimated 73 per cent of its total revenue. Other sources of income include co-funding partnerships, income from interest on bank funds, and royalties and dividends received on investments. These funds will be used to ensure that at least 47 technologies, products, and/or processes and services are taken up in the market by 2019/20.

Over the medium term, the focus of the agency will be on supporting strategic technology innovation, emerging technologies and knowledge innovation products (prototypes, patents, technology demonstrators and technology transfers); commercialising technology-based services, processes and products, for which R719.2 million has been set aside; providing support through funding of R491.9 million to small and medium enterprises through the technology station and technology platform programmes; and supporting young innovators. These initiatives are expected to produce 151 innovation products and assist 6 600 small and medium enterprises with product development, and in the process support the creation of an estimated 900 sustainable jobs. To ensure that the number of knowledge innovation products increases from 54 in 2017/18 to 72 in 2019/20, R673 million is allocated over the medium term. The development of these technologies will lead to increased efficiency and market access for new innovations in IT, biological sciences, material sciences and energy.

The agency has also identified the need for innovators to have access to an environment that is conducive for knowledge sharing and networking. To service this need, the agency aims to reach entrepreneurs from different backgrounds to identify new innovations. As a result, the number of small and medium enterprises receiving support from technology stations and the institute is expected to be maintained at 2 200 through an allocation of R234 million over the medium term. In recognising the importance of investing in the youth, the youth technology innovation programme, with an allocation of R15 million over the medium term, will assist young innovators with funding, mentorship and business support.

Programmes/objectives/activities

Table 30.44 Technology Innovation Agency expenditure trends and estimates by programme/objective/activity

	Audited outcome			Revised estimate 2016/17	Average growth rate (%) 2013/14 - 2016/17	Average: Expenditure/Total (%) 2013/14 - 2016/17	Medium-term expenditure estimate			Average growth rate (%) 2016/17 - 2019/20	Average: Expenditure/Total (%) 2016/17 - 2019/20
	2013/14	2014/15	2015/16				2017/18	2018/19	2019/20		
R thousand											
Administration	251 543	160 783	132 187	146 675	-16.5%	30.6%	166 851	175 194	186 987	8.4%	28.8%
To provide customer-centric early stage commercialisation for technology development	192 756	171 750	124 834	108 942	-17.3%	26.7%	153 769	164 641	173 500	16.8%	25.7%
To provide an enabling environment for technology innovation	152 679	199 780	253 923	354 091	32.4%	42.7%	227 901	238 770	252 502	-10.7%	45.5%
Total	596 978	532 313	510 944	609 708	0.7%	100.0%	548 521	578 605	612 989	0.2%	100.0%

Statements of historical financial performance and position

Table 30.45 Technology Innovation Agency statements of historical financial performance and position

Statement of financial performance									
R thousand	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	Average: Outcome/Budget (%)
	2013/14		2014/15		2015/16		2016/17		2013/14 - 2016/17
Revenue									
Non-tax revenue	49 812	96 591	73 948	80 070	51 122	79 458	134 044	114 044	119.8%
Sale of goods and services other than capital assets	40 123	61 992	58 948	13 491	6 150	44 122	-	-	113.7%
<i>of which:</i>									
Administrative fees	123	-	45 000	-	6 150	-	-	-	-
Sales by market establishment	40 000	61 992	13 948	13 491	-	44 122	-	-	221.7%
Other non-tax revenue	9 689	34 599	15 000	66 579	44 972	35 336	134 044	114 044	123.0%
Transfers received	481 081	481 761	380 717	380 588	385 188	385 188	382 364	382 364	100.0%
Total revenue	530 893	578 352	454 665	460 658	436 310	464 646	516 408	496 408	103.2%
Expenses									
Current expenses	197 189	251 543	255 146	160 783	141 659	132 187	161 175	146 675	91.5%
Compensation of employees	93 725	125 307	130 198	110 512	92 729	83 557	101 569	90 569	98.0%
Goods and services	94 564	115 412	113 806	39 800	42 957	42 298	51 836	48 336	81.1%
Depreciation	8 900	10 711	11 037	10 471	5 973	6 332	7 770	7 770	104.8%
Interest, dividends and rent on land	-	113	105	-	-	-	-	-	107.6%
Transfers and subsidies	319 110	345 435	266 634	371 530	371 651	378 757	355 233	463 033	118.8%
Total expenses	516 299	596 978	521 780	532 313	513 310	510 944	516 408	609 708	108.8%
Surplus/(Deficit)	14 594	(18 626)	(67 115)	(71 655)	(77 000)	(46 298)	-	(113 300)	
Statement of financial position									
Carrying value of assets	26 888	22 451	23 473	13 244	19 178	13 346	19 078	13 346	70.4%
<i>of which:</i>									
Acquisition of assets	(8 929)	(7 727)	(11 037)	(1 740)	(8 000)	(7 317)	(7 000)	(7 000)	68.0%
Investments	46 900	81 240	66 342	61 814	45 068	29 313	45 068	29 313	99.2%
Loans	55 700	26 729	28 164	44 374	34 081	19 226	28 954	18 362	74.0%
Receivables and prepayments	2 425	11 277	2 236	65 214	3 607	16 118	4 503	4 080	757.1%
Cash and cash equivalents	180 900	170 518	-	74 798	11 176	132 333	12 176	12 176	190.9%
Total assets	312 813	312 215	120 215	259 444	113 110	210 336	109 779	77 277	131.0%
Accumulated surplus/(deficit)	269 663	277 588	73 000	206 273	21 572	144 865	18 961	24 708	170.5%
Capital reserve fund	15 800	9 387	13 948	16 222	13 431	44 086	15 000	20 000	154.2%
Borrowings	-	2 618	-	2 762	-	-	-	-	-
Finance lease	-	458	547	188	188	194	250	194	105.0%
Trade and other payables	17 500	13 259	30 178	25 031	74 749	18 947	74 868	30 131	44.3%
Taxation	-	-	2 170	-	2 169	2 169	-	2 169	100.0%
Provisions	8 200	7 244	-	7 480	-	-	-	-	179.6%
Derivatives financial instruments	1 650	1 661	372	1 488	1 001	75	700	75	88.6%
Total equity and liabilities	312 813	312 215	120 215	259 444	113 110	210 336	109 779	77 277	131.0%

Statements of estimates of financial performance and position

Table 30.46 Technology Innovation Agency statements of estimates of financial performance and position

Statement of financial performance									
R thousand	Revised estimate	Average growth rate (%)	Average: Expenditure/Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/Total (%)	
	2016/17	2013/14 - 2016/17		2017/18	2018/19	2019/20	2016/17 - 2019/20		
Revenue									
Non-tax revenue	114 044	5.7%	18.5%	151 789	158 283	169 129	14.0%	26.4%	
Other non-tax revenue	114 044	48.8%	12.8%	151 789	158 283	169 129	14.0%	26.4%	
Transfers received	382 364	-7.4%	81.5%	396 732	420 322	443 860	5.1%	73.6%	
Total revenue	496 408	-5.0%	100.0%	548 521	578 605	612 989	7.3%	100.0%	
Expenses									
Current expenses	146 675	-16.5%	30.6%	166 851	175 194	186 987	8.4%	32.6%	
Compensation of employees	90 569	-10.3%	18.2%	104 899	110 144	118 295	9.3%	18.1%	
Goods and services	48 336	-25.2%	10.8%	55 252	57 680	60 585	7.8%	9.5%	
Depreciation	7 770	-10.1%	1.6%	6 700	7 370	8 107	1.4%	1.3%	
Transfers and subsidies	463 033	10.3%	69.4%	381 670	403 411	426 002	-2.7%	71.2%	
Total expenses	609 708	0.7%	100.0%	548 521	578 605	612 989	0.2%	100.0%	
Surplus/(Deficit)	(113 300)	1		-	-	-	-100.0%		

Table 30.46 Technology Innovation Agency statements of estimates of financial performance and position

Statement of financial position	Revised estimate	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
				2016/17	2013/14 - 2016/17	2017/18		
R thousand								
Carrying value of assets	13 346	-15.9%	9.0%	13 346	13 346	13 346	-	17.7%
of which:								
Acquisition of assets	(7 000)	-3.2%	-3.9%	(7 000)	(7 000)	(7 000)	-	-9.3%
Investments	29 313	-28.8%	25.4%	29 313	29 313	29 313	-	38.8%
Loans	18 362	-11.8%	14.6%	17 310	16 132	14 809	-6.9%	22.0%
Receivables and prepayments	4 080	-28.7%	10.4%	4 080	4 080	4 080	-	5.4%
Cash and cash equivalents	12 176	-58.5%	40.5%	12 176	12 176	12 176	-	16.1%
Total assets	77 277	-37.2%	100.0%	76 225	75 047	73 724	-1.6%	100.0%
Accumulated surplus/(deficit)	24 708	-55.4%	67.3%	24 708	24 708	24 708	-	32.7%
Capital reserve fund	20 000	28.7%	14.0%	20 000	20 000	20 000	-	26.5%
Finance lease	194	-24.9%	0.1%	194	194	194	-	0.3%
Trade and other payables	30 131	31.5%	15.5%	29 079	27 901	28 747	-1.6%	38.3%
Taxation	2 169	-	1.0%	2 169	2 169	-	-100.0%	2.1%
Derivatives financial instruments	75	-64.4%	0.3%	75	75	75	-	0.1%
Total equity and liabilities	77 277	-37.2%	100.0%	76 225	75 047	73 724	-1.6%	100.0%

Personnel information**Table 30.47 Technology Innovation Agency personnel numbers and cost by salary level**

Technology Innovation Agency	Number of posts estimated for 31 March 2017		Number and cost ¹ of personnel posts filled / planned for on funded establishment															Number		
	Number of funded posts	Number of posts on approved establishment	Actual			Revised estimate			Medium-term expenditure estimate									Average growth rate (%)	Average: Salary level/Total (%)	
			2015/16			2016/17			2017/18			2018/19			2019/20					2016/17 - 2019/20
			Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	155	155	142	83.6	0.6	153	90.6	0.6	155	104.9	0.7	155	110.1	0.7	155	118.3	0.8	9.3%	100.0%	
1 - 6	14	14	12	1.2	0.1	14	1.8	0.1	12	1.5	0.1	12	1.5	0.1	10	1.2	0.1	-11.7%	7.8%	
7 - 10	85	85	76	28.7	0.4	85	30.2	0.4	67	26.0	0.4	59	21.9	0.4	60	23.3	0.4	-8.3%	43.9%	
11 - 12	27	27	30	20.3	0.7	26	18.2	0.7	44	29.7	0.7	50	35.0	0.7	48	35.3	0.7	24.8%	27.2%	
13 - 16	27	27	23	26.9	1.2	26	30.7	1.2	30	37.3	1.2	32	40.7	1.3	35	46.6	1.3	14.9%	19.9%	
17 - 22	2	2	1	6.5	6.5	2	9.7	4.9	2	10.4	5.2	2	11.0	5.5	2	11.8	5.9	6.7%	1.3%	

1. Rand million.

Additional tables

Table 30.A Summary of expenditure on infrastructure

Project name	Service delivery outputs	Current project stage	Total project cost	Audited outcome			Adjusted appropriation 2016/17	Medium-term expenditure estimate		
				2013/14	2014/15	2015/16		2017/18	2018/19	2019/20
R thousand										
Infrastructure transfers to other spheres, agencies and departments										
Mega projects (total project cost of at least R1 billion over the project life cycle)										
Square Kilometre Array	Construction of telescopes	Construction	1 649 195	328 107	645 199	-	652 756	709 412	769 800	
Large projects (total project cost of at least R250 million but less than R1 billion over the project life cycle)										
Space infrastructure	Construction of a satellite	Construction	290 791	45 000	40 000	31 386	29 653	28 860	9 200	
Hydrogen strategy	Purchasing of equipment	Various	440 714	57 223	60 772	63 568	63 886	67 080	70 971	
National nanotechnology centres	Equipping of centres	Various	309 954	46 835	34 715	50 429	50 681	63 504	67 187	
Cyber infrastructure	Creation of broadband network connectivity and high performance computing	Various	833 190	101 943	204 045	213 479	214 546	223 273	251 686	
Total			3 523 844	579 108	984 731	358 862	1 011 522	1 076 648	1 083 909	1 176 580

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome			Estimate 2016/17	Medium-term expenditure estimate	
							2013/14	2014/15	2015/16		2017/18	2018/19
R thousand												
Foreign In cash												
Canadian International Development Agency	Epidemiological modelling for HIV and AIDS policy in South Africa	Technology Innovation	5 years	20 000	Foreign governments and international organisations	Improve region, age and gender specific epidemiological measures incorporated into routine surveillance. Increase the capacity of young South Africans to perform gender sensitive, policy impacting epidemiological research	4 777	-	-	-	-	-
European Union	General Budget Support: ICT Innovation programme to support development and government delivery	Socioeconomic Innovation Partnerships	3 years	120 000	Departmental agencies and accounts	Contribute to South Africa's sustainable economic and social development through programmes and measures designed to reduce poverty and encourage economic growth that benefits the poor	-	42 788	42 392	-	-	-

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome			Medium-term expenditure estimate		
							2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
R thousand European Union	ERA Africa	International Cooperation and Resources	2 years	2 346	Foreign governments and international organisations	Strengthen the Southern Africa Biosciences Network secretariat; develop the operating environment; develop capacity, create and dissemination network; and identify, develop and implement projects	250	354	85	70	-	-
European Union	In Contact One World	Socioeconomic Innovation Partnerships	4 years	2 735	Departmental agencies and accounts	Build capacity in the SADC member states in understanding information on climate change impact and risk in the context of SADC early warning mechanisms	-	200	-	-	-	-
European Union	CAAST-Net Plus	Technology Innovation	4 years	2 055	Departmental agencies and accounts	Provide technical assistance to the Malawi government and higher education sector in the proposed project that aims at increased production of good quality seed of high yielding potato varieties in Malawi	480	150	252	128	-	-
European Union	Sector Budget Support: Science and Technology for Poverty eradication	Socioeconomic Innovation Partnerships	3 years	300 000	Goods and services	Provide regional support for science and technology policy training and the development of a science and technology climate change framework	61 371	69 409	24 941	-	-	-
European Union	RINEA Programme	International Cooperation and Resources	3 years	3 136	Goods and services	Provide technical assistance to the Mozambique government and higher education sector in the proposed project that aims at sustainable and competitive aquaculture in Mozambique	-	-	350	-	1 500	486
Finland	Biofisa II	Technology Innovation	4 years	80 000	Goods and services	Determine the extent to which water and air pollution might impact on the health of two communities in the Lower Olifants water catchment area	-	-	17 145	-	20 000	20 000
United States of America	OECD DAC Triilateral Brainstorming	International Cooperation and Resources	1 years	54	Goods and services	Develop a database of African research infrastructure and influence policy dialogue in the region	54	-	-	-	-	-
Ireland	Potato Tissue Culture Project in Lesotho	Socioeconomic Innovation Partnerships	1.5 years	1 932	Goods and services	Cooperate with EU associated member states and developing countries on science and technology innovation	500	340	-	-	-	-
United States of America	IKS Standards	International Cooperation and Resources	3 years	3 600	Goods and services	Promote mutual understanding of Africa-EU cooperation in critical science and technology areas of mutual interest	-	660	1 585	-	-	-

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome		Estimate	Medium-term expenditure estimate			
							2013/14	2014/15		2015/16	2017/18	2018/19	2019/20
R thousand							2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
European Union	Europe research area: Africa	International Cooperation and Resources	3 years	2 345	Goods and services	Implement wide dialogue with the aim of reaching consensus among EU and African programme owners	782	-	-	-	-	-	-
European Union	Science and technology opportunities for practical public policy	Socioeconomic Innovation Partnerships	3 years	143 500	Foreign governments and international organisations	Establish the link between science and technology opportunities for practical policy influence	47 800	59 800	-	-	-	-	-
European Union	Network for the Coordination and Advancement of Sub-Saharan Africa-EU Science and Technology Cooperation (phase 2)	International Cooperation and Resources	3 years	1 300	Goods and services	Promote mutual understanding of Africa-EU cooperation in critical science and technology areas of mutual interest	450	450	400	-	-	-	-
World Wide Fund for Nature South Africa	Energy access to rural communities	Socioeconomic Innovation Partnerships	3 years	1 700	Goods and services	Develop a social infrastructure lead approach to addressing lack of access to energy through renewable or clean technologies	485	485	486	-	-	-	-
European Union	EU-South Africa science and technology advancement programme (phase 2)	International Cooperation and Resources	3 year	2 500	Goods and services	Extend the advancement of South Africa-EU collaboration	833	833	-	-	-	-	-
European Union	ICT innovation to support government service delivery	Socioeconomic Innovation Partnerships	3 years	120 000	Departmental agencies and accounts	Demonstrate newly developed local technologies and implement them with the aim of improving service delivery	-	42 700	48 100	29 200	-	-	-
Foreign In kind													
European Union	BoCidris2	International Cooperation and Resources	2	419 440	Foreign governments and international organisations	To define and develop a framework for a code of conduct in Nanoscience	23 357	-	-	-	-	-	-
European Union	Promoting Africa/EU Research infrastructure	Research, Development and Support	2 years	5 483	Goods and services	3 Hitachi scholarships for South African engineers in the area of electricity generation and transmission	75	-	954	-	-	-	-
Portugal	Bridging Actions for GAMES & Africa- BRAGMA	Technology Innovation	3 years	231 656	Foreign governments and international organisations	FACTS 001 study: Confirmation of the results of the Centre for the AIDS Programme of Research in South Africa through a phase 3 clinical trial	232	617	-	-	-	-	-
United States of America	SADC capacity building in relation to the risk and vulnerability atlas	Technology Innovation	2 years	1 168	Higher education institutions	To build capacity in the SADC member states in understanding information on climate change impact and risk in the context of the SADC early warning mechanism	157	456	815	-	-	-	-
Bill and Melinda Gates Foundation	Training of the next generation of African researchers in legume sciences	Technology Innovation	5 years	10 000	Higher education institutions	Train the next generation of African researchers in legume sciences	2 000	2 000	2 000	-	-	-	-
Japan	Observational study to mitigate seismic risks in mines	Socioeconomic Innovation Partnerships	5 years	16 000	Foreign governments and international organisations	Improve the accuracy of predicting and control of seismicity and earthquakes	3 200	3 200	-	-	-	-	-
Total				1 490 950			146 803	224 442	139 505	29 398	21 500	20 486	20 000

BUDGET 2017

ESTIMATES OF NATIONAL EXPENDITURE

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national treasury

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