



2018 BUDGET

ESTIMATES OF NATIONAL
EXPENDITURE

VOTE 30

SCIENCE AND TECHNOLOGY



national treasury

Department:
National Treasury
REPUBLIC OF SOUTH AFRICA



Estimates of National Expenditure 2018

National Treasury

Republic of South Africa



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The 2018 Estimates of National Expenditure 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 this 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

When the Estimates of National Expenditure (ENE) publication was launched in 2001, we referred to it as “a significant step forward in national budget transparency”. Since then, even though the national budget has undergone many reforms, the ENE publications remain a key indicator and embodiment of the candour of the budgeting process.

The publications provide the media, civil society, the public, Parliament, departments, public entities and ministers with information about how taxpayers’ money is being spent: what it buys and for what purpose. Do not be concerned by the magnitude of this publication. Instead, let us use it as a reference to keep government institutions accountable and ensure that the expenditure of public funds achieves its intended policy outcomes to improve the welfare of citizens.

In the current economic climate, spending priorities and the sequencing of programme implementation are subject to a number of trade-offs. The focus of the 2018 Budget has solely been on the reprioritisation of existing baseline funding. The abridged ENE provides a coherent and summarised account of the priorities, spending plans and service delivery commitments of all 40 national votes and of government agencies. The e-publications for each vote contain more detail on, for example, goods and services, transfers and subsidies, donor funding, public entities, and lower-level spending information on service delivery.

The ENE’s presentation of the detailed expenditure estimates of departments are the result of a lengthy executive and administrative process involving wide-ranging intergovernmental consultation. This process is led by a committee of senior officials in central government departments, under the political guidance of the Ministers’ Committee on the Budget. A special word of thanks is due to all our colleagues from other departments for their contributions. I also wish to express my appreciation to the National Treasury team that worked tirelessly to produce a document of which we are rightly proud.

The independent Open Budget Survey assessment of budget transparency commenced in 2006. It is conducted every two years to measure the accessibility and comprehensiveness of key budget documents and information across the world. In 2010, South Africa was ranked first out of 94 countries surveyed, scoring 92 per cent. In the latest iteration of the survey, which measured 115 countries, South Africa was ranked first again, tied with New Zealand, with a score of 89 per cent. Our country is one of only 11 that publish comprehensive, timely information in all the required budget documents.

Budgets link the outcomes targeted by government with the services that are ultimately delivered. In addition to South African budgets having become more transparent, recent efforts to increase public participation in budgeting are gaining momentum. South Africans are invited to scrutinise budget information and provide opinions on government service delivery. We rely on this participation to strengthen our budgeting system and make it even more reliable.



Dondo Mogajane
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 2018 MTEF period is from 2018/19 to 2020/21.

The ENE publications contain information on how government institutions have spent their budgets in previous years. They explain how these institutions intend to use their allocations over the medium term to achieve their goals, and the outputs and outcomes their spending is expected to lead to. The publications include tables depicting non-financial performance indicators and targets, departmental receipts, personnel, significant as well as detailed expenditure trends and estimates by programme, subprogramme and economic classification for each department and for 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. A more in-depth narrative analyses the institution's expected expenditure over the MTEF period. Summary data tables at the end of each vote contain data on provincial and municipal conditional grants, public private partnerships, donor funding, infrastructure, and expenditure at the level of site service delivery, where applicable.

A separate 2018 ENE Overview publication is also available on www.treasury.gov.za and summarises the ENE information across all votes. The 2018 ENE Overview contains a narrative explanation and budget-wide summary tables; 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	2018/19				2019/20	2020/21
	Total	Current payments	Transfers and subsidies	Payments for capital assets	Total	Total
MTEF allocation						
Administration	383.8	357.3	14.3	12.2	340.4	362.1
Technology Innovation	1 131.7	71.9	1 059.9	–	1 224.4	1 292.8
International Cooperation and Resources	136.4	68.9	67.5	–	143.4	152.4
Research, Development and Support	4 360.3	52.6	4 307.7	–	4 661.4	4 918.6
Socioeconomic Innovation Partnerships	1 778.3	52.6	1 725.6	–	1 878.9	1 983.2
Total expenditure estimates	7 790.5	603.3	7 175.0	12.2	8 248.4	8 709.2
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 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 derives its mandate from the 1996 White Paper on Science and Technology, which introduced the concept of the national system of innovation, a set of interacting organisations and policies through which the country creates, acquires, diffuses and puts into practice new knowledge to help achieve individual and collective goals. A coordinated and efficient national system of innovation will help the country achieve its national development priorities by promoting change through innovation, enabling all South Africans to enjoy the economic, sociopolitical and intellectual benefits of science, technology and innovation.

Selected performance indicators

Table 30.1 Performance indicators by programme and related outcome

Indicator	Programme	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of instruments funded in support of knowledge utilisation per year	Technology Innovation		3	6	25	19	21	19	19
Number of commercial outputs in designated areas per year	Technology Innovation		1	3	8	4	3	3	3
Amount of international funds directly invested in research, innovation, and 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	Outcome 4: Decent employment through inclusive growth	– ¹	R619m	R689m	R420m	R440m	R480m	R500m

Table 30.1 Performance indicators by programme and related outcome

Indicator	Programme	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Amount of funds invested by international partners in their own organisations and initiatives, but targeted at cooperation in research, innovation, and science, technology and innovation human capital development with South African partners as part of cooperation initiatives implemented by the department per year ²	International Cooperation and Resources	Outcome 4: Decent employment through inclusive growth	– ¹	R2.2m	R1.3bn ³	R250m	R280m	R300m	R320m
Number of PhD students awarded bursaries annually as reflected in the reports from the National Research Foundation and relevant entities per year	Research, Development and Support	Outcome 5: A skilled and capable workforce to support an inclusive growth path	2 845	3 404	3 454	3 100	3 100	3 100	3 100
Number of pipeline postgraduate students (BTech and honours, and masters students) awarded bursaries annually as reflected in the reports from the National Research Foundation and relevant entities per year	Research, Development and Support		7 711	10 996	10 268	10 800	10 800	10 800	10 800
Number of researchers awarded research grants through programmes managed by the National Research Foundation as reflected in the foundation's project reports per year	Research, Development and Support		4 064	4 315	4 520	4 500	4 500	4 500	4 500
Number of knowledge and innovation products (patents, prototypes, technology demonstrators or technology transfer packages) added to the intellectual property portfolio through fully funded or co-funded research initiatives per year	Socioeconomic Innovation Partnerships	Outcome 4: Decent employment through inclusive growth	29	38	36	17	26	34	34

1. No historical data available.

2. Old indicator selected for publication in the Estimates of National Expenditure.

3. Actual figure higher than target due to an increased funding from international partners, especially the European Union Horizon 2020 programme.

Expenditure analysis

The National Development Plan (NDP) acknowledges that science, technology and innovation are crucial to enabling broad-based socioeconomic development through a skilled and innovative population. This is expressed in terms 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 work of the Department of Science and Technology is closely aligned with these outcomes. As such, over the medium term, the department plans to focus on: producing new knowledge; generating and exploiting knowledge and innovation for inclusive economic development; developing human capital; and funding research, innovation and infrastructure.

The department's total budget is expected to increase at an average annual rate of 4.8 per cent, from R7.6 billion in 2017/18 to R8.7 billion in 2020/21, 92.5 per cent (R22.9 billion) of which is set aside for transfers to its entities. As part of government's decision to lower the national aggregate expenditure ceiling, Cabinet has approved budget reductions on the department's budget amounting to R186.1 million over the MTEF period. These reductions will be effected on spending on goods and services, and on the baseline budgets of entities.

Producing new knowledge

Over the medium term, the department intends to carry out various activities that enable the production of new knowledge, and the development and commercialisation of technology. Funding for these activities is provided in the *Technology Innovation* programme, which has a total allocation of R3.6 billion (14.6 per cent of the department's total budget) over the medium term. Of this, R1.3 billion is set aside specifically to fund technological innovation with the ultimate aim of commercialisation.

The department seeks to use bio-innovation to strengthen research and innovation competencies to contribute to the achievement of government's industrial, health and social development goals, as well as to develop indigenous knowledge applications. This will allow the department to strengthen research and innovation competencies that form the strategic foundation for bio-based scientific innovation, and develop and support strategic research and innovation programmes. R500 million is allocated over the MTEF period to the *Bioinnovation* subprogramme for spending on these activities.

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, the department plans to spend R123.6 million over the medium term in the *Technology Innovation* programme. R27.3 million has been set aside over the MTEF period for the implementation of the national space strategy, which is intended to ensure that South Africa captures a reasonable share of the global space market, which involves economic activities related to manufacturing components that go into the earth's orbit or beyond.

Exploiting knowledge and innovation for inclusive economic development

The department has earmarked R433.8 million in the *Socioeconomic Innovation Partnerships* programme over the MTEF period to advance a set of technology-based interventions to enhance South Africa's economic competitiveness. This includes the sector innovation funds, a partnership between industry and government, to co-fund research, development and innovation. The key focus of sector innovation funds is to incentivise the private sector to invest more into research development and innovation, thereby increasing exports and improving the competitiveness of existing sectors such as agriculture, forestry and manufacturing.

The *Socioeconomic Innovation Partnerships* programme is allocated R130.8 million over the MTEF period for activities related to generating and exploiting knowledge and innovation that aligns with government's priorities for inclusive economic development. The department expects to invest R113.9 million over the medium term on a range of ICT initiatives such as the ICT-enabled agriculture model to support small-scale producers in the agriculture, forestry and fisheries sector.

Other knowledge generation initiatives include strengthening a network of technology stations and technology upgrading support to companies within supply chains that are linked to large government procurement projects, and advancing a mining research and development hub supported by both industry and government. This will be done under the *Technology Localisation, Beneficiation and Advanced Manufacturing* subprogramme, which has a total allocation of R1.1 billion over the MTEF period.

Developing human capital

Human capital is key in the development of a national system of innovation that is globally competitive and responsive to South Africa's developmental needs. Accordingly, R4.6 billion is allocated over the medium term to the *Research, Development and Support* programme for the development of human capital through postgraduate bursaries and scholarships; internships; and support for emerging and established researchers, which includes support for the South African research chairs initiative, centres of excellence, and the human and social development dynamics programme. To date, the department has established 211 research chairs and 15 centres of excellence. Research chairs are designed to attract and retain excellence in research and innovation at South African public universities by expanding scientific research and innovation capacity, while centres of excellence act as hubs that draw together a range of universities and science councils in partnerships to tackle challenges in health care and food security, among others.

Funding research, innovation and infrastructure

The availability of adequate infrastructure is vital in the development of a robust and competitive national system of innovation. To this end, the department has allocated R2.2 billion over the MTEF period to the *Research, Development and Support* programme to provide for research and development infrastructure across the national system of innovation. These funds will be used specifically for the acquisition of research equipment, and the development of pilot plants (small production plants that are operated to test processes before using them on a large scale), technology demonstrators (proof concepts with the primary purpose of

showcasing the possible applications, feasibility, performance and method of an idea for a new technology), and specialised facilities such as aerospace.

The *Basic Science and Infrastructure* subprogramme receives R747 million over the medium term for the implementation of the national integrated cyber infrastructure system by the Council for Scientific and Industrial Research. The system is expected to enable the successful and sustainable implementation of national projects such as MeerKAT and the Square Kilometre Array, as well as large research infrastructure that is dependent on the presence of a robust cyber infrastructure system. In addition, through funds allocated to the subprogramme, continued support will be provided to students and researchers to access global and international infrastructure such as the Large Hadron Collider in Switzerland, the Joint Institute for Nuclear Research in Russia, and the European Synchrotron Radiation Facility in France.

Scientific research in strategic research areas defined by South Africa's geographic advantage, such as palaeosciences, astronomy, climate change, marine and polar research, and indigenous knowledge will be supported by an allocation of R660.8 million over the MTEF period to the *Science Missions* subprogramme. The department plans to invest R244.9 million over the medium term to promote science, which, in addition to implementing initiatives that promote science awareness, will strengthen the coordination of department-led science engagements such as festivals and exhibitions through the South African Agency for Science and Technology Advancement. The aim and mandate of the agency is to advance public awareness, appreciation and engagement of science, engineering and technology in South Africa.

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			Average: Outcome/Annual budget (%)			Average: Outcome/Adjusted appropriation (%)		
R million	2014/15			2015/16			2016/17			2017/18			2014/15 - 2017/18			2014/15 - 2017/18			2014/15 - 2017/18			2014/15 - 2017/18			2014/15 - 2017/18			2014/15 - 2017/18					
Programme 1	291.0	291.9	278.4	299.8	300.5	302.0	304.0	345.1	332.6	383.7	376.0	378.0	101.0%	98.3%																			
Programme 2	991.6	1 008.9	974.0	1 008.8	1 008.5	1 063.3	1 007.1	1 005.4	1 015.9	1 073.6	1 075.1	1 075.1	101.2%	100.7%																			
Programme 3	119.7	119.3	107.6	122.0	121.4	115.0	124.5	124.5	118.5	128.7	132.4	130.4	95.3%	94.7%																			
Programme 4	3 436.2	3 429.4	3 489.8	4 247.1	4 238.8	4 218.9	4 200.6	4 171.0	4 152.6	4 348.9	4 350.1	4 350.1	99.9%	100.1%																			
Programme 5	1 631.7	1 630.3	1 539.2	1 804.5	1 796.9	1 738.3	1 792.9	1 783.0	1 764.0	1 622.3	1 623.6	1 623.7	97.3%	97.5%																			
Total	6 470.2	6 479.9	6 389.0	7 482.1	7 466.1	7 437.5	7 429.0	7 429.0	7 383.6	7 557.2	7 557.2	7 557.2	99.4%	99.4%																			
Change to 2017																																	
Budget estimate																																	
Economic classification																																	
Current payments	486.7	494.5	445.9	496.4	495.0	464.8	509.7	532.3	507.9	575.8	570.7	570.7	96.2%	95.1%																			
Compensation of employees	283.8	284.9	276.0	291.3	295.3	301.1	309.2	313.8	319.0	315.5	326.8	326.8	101.9%	100.2%																			
Goods and services	202.9	209.6	169.8	205.1	199.7	163.7	200.5	218.5	188.9	260.2	243.9	243.9	88.2%	87.9%																			
Transfers and subsidies	5 981.2	5 983.1	5 936.9	6 983.4	6 968.8	6 956.1	6 917.0	6 872.2	6 860.1	6 960.5	6 964.5	6 964.5	99.5%	99.7%																			
Departmental agencies and accounts	4 409.3	4 393.7	4 011.0	5 466.0	5 457.1	4 762.4	5 344.7	5 311.4	4 696.6	5 204.3	5 204.3	5 204.3																					
Higher education institutions	21.4	38.9	228.0	114.6	114.6	230.3			210.3				491.9%	435.8%																			
Public corporations and private enterprises	1 140.8	1 145.5	1 573.1	1 253.3	1 249.8	1 833.7	1 307.4	1 299.4	1 794.0	1 447.1	1 447.1	1 447.1	129.1%	129.3%																			
Non-profit institutions	409.7	405.0	120.3	149.6	147.3	128.8	264.9	261.4	157.7	309.1	313.1	313.1	63.5%	63.9%																			
Households			4.4			0.8			1.4																								
Payments for capital assets	2.3	2.3	6.2	2.3	2.3	16.5	2.3	24.5	15.5	21.0	22.0	22.0	215.7%	117.8%																			
Machinery and equipment	2.3	2.3	6.2	2.3	2.3	16.5	2.3	24.5	15.5	21.0	22.0	22.0	215.7%	117.8%																			
Payments for financial assets			0.1			0.1			0.1																								
Total	6 470.2	6 479.9	6 389.0	7 482.1	7 466.1	7 437.5	7 429.0	7 429.0	7 383.6	7 557.2	7 557.2	7 557.2	99.4%	99.4%																			

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	2017/18	2014/15 - 2017/18	2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	
Programme 1	378.0	9.0%	4.5%	383.8	340.4	362.1	-1.4%	4.5%
Programme 2	1 075.1	2.1%	14.4%	1 131.7	1 224.4	1 292.8	6.3%	14.6%
Programme 3	130.4	3.0%	1.6%	136.4	143.4	152.4	5.4%	1.7%
Programme 4	4 350.1	8.3%	56.4%	4 360.3	4 661.4	4 918.6	4.2%	56.6%
Programme 5	1 623.7	-0.1%	23.2%	1 778.3	1 878.9	1 983.2	6.9%	22.5%
Total	7 557.2	5.3%	100.0%	7 790.5	8 248.4	8 709.2	4.8%	100.0%
Change to 2017 Budget estimate				(125.5)	57.1	60.2		
Economic classification								
Current payments	570.7	4.9%	6.9%	603.3	577.3	616.1	2.6%	7.3%
Compensation of employees	326.8	4.7%	4.3%	352.9	380.5	408.4	7.7%	4.5%
Goods and services	243.9	5.2%	2.7%	250.4	196.8	207.6	-5.2%	2.8%
Transfers and subsidies	6 964.5	5.2%	92.9%	7 175.0	7 668.5	8 090.3	5.1%	92.5%
Departmental agencies and accounts	5 204.3	5.8%	64.9%	5 312.3	5 689.5	6 002.4	4.9%	68.7%
Public corporations and private enterprises	1 447.1	8.1%	23.1%	1 519.9	1 613.0	1 701.7	5.6%	19.4%
Non-profit institutions	313.1	-8.2%	2.5%	342.8	366.0	386.1	7.2%	4.4%
Payments for capital assets	22.0	112.1%	0.2%	12.2	2.7	2.8	-49.6%	0.1%
Machinery and equipment	22.0	112.1%	0.2%	12.2	2.7	2.8	-49.6%	0.1%
Total	7 557.2	5.3%	100.0%	7 790.5	8 248.4	8 709.2	4.8%	100.0%

Expenditure trends and estimates for significant spending items

Table 30.4 Expenditure trends and estimates for significant spending items

	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total Vote (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total Vote (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
R thousand											
Research and development, including research institutions	2 268 652	2 755 781	2 694 140	2 671 437	5.6%	36.1%	2 745 048	2 882 500	3 048 091	4.5%	35.1%
National Research Foundation	2 442 346	2 942 514	2 904 025	2 977 089	6.8%	39.2%	3 062 678	3 277 193	3 457 439	5.1%	39.5%
Human Sciences Research Council	285 667	294 152	290 149	314 093	3.2%	4.1%	315 479	335 007	353 432	4.0%	4.1%
Council for Scientific and Industrial Research	1 053 993	1 059 827	1 112 916	1 197 878	4.4%	15.4%	1 302 829	1 373 221	1 448 748	6.5%	16.5%
Technology Innovation Agency	338 386	385 188	382 364	396 732	5.4%	5.2%	420 322	443 860	468 272	5.7%	5.4%
Total	6 389 044	7 437 462	7 383 594	7 557 229	25.4%	100.0%	7 846 356	8 311 781	8 775 982	25.8%	100.6%

Goods and services expenditure trends and estimates

Table 30.5 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 (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
R thousand											
Administrative fees	3 826	1 877	1 220	6 234	17.7%	1.7%	6 586	6 955	7 344	5.6%	3.0%
Advertising	23 223	22 792	28 711	9 008	-27.1%	10.9%	10 397	10 849	12 001	10.0%	4.7%
Minor assets	630	537	249	608	-1.2%	0.3%	644	680	717	5.7%	0.3%
Audit costs: External	4 761	5 061	4 249	8 702	22.3%	3.0%	9 869	6 488	6 900	-7.4%	3.6%
Bursaries: Employees	1 256	1 067	1 485	2 620	27.8%	0.8%	3 540	2 927	3 088	5.6%	1.4%
Catering: Departmental activities	3 221	5 138	3 500	2 049	-14.0%	1.8%	3 246	3 426	3 613	20.8%	1.4%
Communication	5 064	7 540	8 234	13 031	37.0%	4.4%	13 666	11 545	12 178	-2.2%	5.6%

Table 30.5 Vote goods and services expenditure trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
Computer services	12 728	10 418	21 055	8 571	-12.3%	6.9%	9 067	9 082	9 777	4.5%	4.1%
Consultants: Business and advisory services	5 603	3 762	9 870	19 098	50.5%	5.0%	21 512	13 261	14 124	-9.6%	7.6%
Legal services	–	–	167	997	–	0.2%	1 054	1 113	1 174	5.6%	0.5%
Science and technological services	2 801	580	866	–	-100.0%	0.6%	–	–	–	–	–
Contractors	6 771	7 547	3 523	9 508	12.0%	3.6%	10 544	9 560	10 086	2.0%	4.4%
Agency and support/outsourced services	8 053	8 135	15 304	16 702	27.5%	6.3%	17 639	17 873	18 702	3.8%	7.9%
Entertainment	735	1 021	658	5 332	93.6%	1.0%	5 608	5 190	5 475	0.9%	2.4%
Fleet services (including government motor transport)	978	764	882	–	-100.0%	0.3%	–	–	–	–	–
Inventory: Clothing material and accessories	1 028	48	–	–	-100.0%	0.1%	–	–	–	–	–
Inventory: Fuel, oil and gas	10	72	–	136	138.7%	–	144	152	160	5.6%	0.1%
Inventory: Materials and supplies	319	103	–	–	-100.0%	0.1%	–	–	–	–	–
Inventory: Medical supplies	–	1	–	–	–	–	–	–	–	–	–
Inventory: Other supplies	–	1	–	1 270	–	0.2%	1 343	1 417	1 494	5.6%	0.6%
Consumable supplies	1 940	993	1 160	–	-100.0%	0.5%	–	–	–	–	–
Consumables: Stationery, printing and office supplies	3 244	2 660	4 954	8 792	39.4%	2.6%	9 098	5 885	6 209	-10.9%	3.3%
Operating leases	5 488	2 906	4 117	7 534	11.1%	2.6%	7 762	4 397	4 639	-14.9%	2.7%
Rental and hiring	8 368	6 657	1 280	–	-100.0%	2.1%	–	–	–	–	–
Property payments	–	–	10 455	18 207	–	3.7%	18 853	8 164	8 613	-22.1%	6.0%
Transport provided: Departmental activity	41 566	38 249	–	–	-100.0%	10.4%	–	–	–	–	–
Travel and subsistence	3 411	13 416	46 484	56 563	155.0%	15.6%	58 126	42 399	44 754	-7.5%	22.5%
Training and development	11 438	7 919	4 944	7 968	-11.4%	4.2%	8 101	6 221	6 563	-6.3%	3.2%
Operating payments	12 141	11 311	9 848	7 691	-14.1%	5.3%	8 138	8 593	9 065	5.6%	3.7%
Venues and facilities	1 246	3 148	5 661	33 281	198.9%	5.7%	25 488	20 628	20 955	-14.3%	11.2%
Total	169 849	163 723	188 876	243 902	12.8%	100.0%	250 425	196 805	207 631	-5.2%	100.0%

Transfers and subsidies expenditure trends and estimates

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
Households											
Social benefits											
Current	4 123	573	845	–	-100.0%	–	–	–	–	–	–
Households	4 123	573	845	–	-100.0%	–	–	–	–	–	–
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	3 019 586	3 625 986	3 616 650	3 791 656	7.9%	52.6%	3 948 593	4 216 669	4 448 585	5.5%	54.9%
Various institutions: Institutional and programme support research	3 500	4 000	1 500	–	-100.0%	–	–	–	–	–	–
Various institutions: Biofuels	6 000	6 000	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Technology transfer offices: Support of research units	2 199	4 411	687	–	-100.0%	–	–	–	–	–	–
Various institutions: Implementation of bioeconomy strategy	13 290	9 500	9 500	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Energy grand challenge research	24 396	26 373	22 316	35 149	12.9%	0.4%	37 049	40 946	43 198	7.1%	0.5%
Various institutions: Health innovation research	36 000	37 568	37 500	–	-100.0%	0.4%	–	–	–	–	–
Various institutions: Research in HIV and AIDS prevention and treatment technologies	22 596	24 535	23 800	23 711	1.6%	0.4%	24 588	27 866	29 399	7.4%	0.4%
Various institutions: Hydrogen strategy research	16 005	16 984	4 007	–	-100.0%	0.1%	–	–	–	–	–

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
Various institutions: Innovation projects research	1 122	12 000	10 000	27 911	191.9%	0.2%	29 529	35 318	37 260	10.1%	0.4%
International Centre for Genetic Engineering and Biotechnology	-	-	-	12 795	-	-	13 537	14 295	15 081	5.6%	0.2%
Various institutions: Space science research – economic competitiveness and support package	40 000	71 978	-	28 860	-10.3%	0.5%	9 200	30 000	31 650	3.1%	0.3%
National Research Foundation: Indigenous knowledge systems	-	1 840	-	-	-	-	-	-	-	-	-
Technology Innovation Agency	338 386	385 188	382 364	396 732	5.4%	5.6%	420 322	443 860	468 272	5.7%	5.8%
South African National Space Agency	118 298	124 355	154 630	131 226	3.5%	2.0%	138 036	145 453	153 453	5.4%	1.9%
Various institutions: Emerging research areas	-	11 802	11 498	-	-	0.1%	-	-	-	-	-
National Research Foundation: Research and development in indigenous knowledge systems	2 896	-	-	4 604	16.7%	-	4 871	5 144	5 427	5.6%	0.1%
National Research Foundation: Bilateral cooperation for global science development	12 935	13 530	13 598	14 130	3.0%	0.2%	14 948	15 952	16 829	6.0%	0.2%
Various institutions: Global science: International multilateral agreements	1 656	22 353	28 088	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Global science: African multilateral agreements	-	958	2 900	-	-	-	-	-	-	-	-
Academy of Science of South Africa	21 577	-	-	25 261	5.4%	0.2%	25 668	27 105	28 596	4.2%	0.4%
Various institutions: Astronomy research and development	12 707	25 155	14 069	29 348	32.2%	0.3%	31 050	32 789	34 592	5.6%	0.4%
Various institutions: Policy development on human and social development dynamics	9 838	10 283	10 283	26 012	38.3%	0.2%	27 409	28 896	30 485	5.4%	0.4%
National Research Foundation: Human resources development for science and engineering	465 658	835 665	832 662	833 804	21.4%	11.1%	889 172	950 582	1 002 864	6.3%	12.3%
National Research Foundation	851 286	878 399	882 805	925 964	2.8%	13.2%	904 752	953 365	1 005 799	2.8%	12.7%
Various institutions: Science awareness, research and initiatives to encourage youth participation in science	37 926	57 766	66 221	73 018	24.4%	0.9%	77 253	81 579	86 066	5.6%	1.1%
National Research Foundation: South African research chairs initiative to develop human resources in science	451 779	470 446	482 243	500 875	3.5%	7.1%	530 274	566 305	597 452	6.1%	7.3%
Various institutions: Strategic science platforms for research and development	138 044	149 943	181 819	199 572	13.1%	2.5%	208 325	220 176	232 286	5.2%	2.9%
Various institutions: Economic competitiveness and support package: Local manufacturing capacity research and technical support	-	-	-	80 000	-	0.3%	80 000	80 000	84 400	1.8%	1.1%
Various institutions: Economic competitiveness and support package: Local systems of innovation for the cold chain technologies project	-	-	-	-	-	-	62 000	62 000	65 410	-	0.6%
Various institutions: Innovative research and development	16 678	13 786	6 866	41 823	35.9%	0.3%	39 890	44 249	46 683	3.7%	0.6%
Human Sciences Research Council	276 010	288 706	290 149	304 656	3.3%	4.3%	303 733	320 053	337 656	3.5%	4.2%
Various institutions: Local manufacturing capacity research and technical support	43 712	42 000	70 739	3 311	-57.7%	0.6%	25 864	28 689	30 267	109.1%	0.3%
Various institutions: Local systems of innovation for the cold chain technologies project	33 000	60 000	64 000	35 781	2.7%	0.7%	10 632	11 793	12 442	-29.7%	0.2%
Various institutions: Resource-based industries research and development	1 000	1 304	1 000	-	-100.0%	-	-	-	-	-	-

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
National Research Foundation: Research information management system	6 850	12 240	7 201	3 781	-18.0%	0.1%	4 000	8 448	8 913	33.1%	0.1%
Human Science Research Council: Develop and monitor science and technology indicators	9 657	5 445	–	9 437	-0.8%	0.1%	9 984	12 404	13 086	11.5%	0.2%
Various institutions: Environmental innovation	4 585	1 473	4 205	23 895	73.4%	0.1%	26 507	29 402	31 019	9.1%	0.4%
Capital	988 950	1 136 449	1 079 949	1 412 632	12.6%	17.3%	1 363 697	1 472 815	1 553 856	3.2%	19.4%
Various institutions: Infrastructure projects for research and development	343 751	449 034	413 312	718 701	27.9%	7.2%	654 285	703 015	741 717	1.1%	9.4%
National Research Foundation: Square Kilometre Array: Capital contribution to research	645 199	687 415	666 637	693 931	2.5%	10.1%	709 412	769 800	812 139	5.4%	10.0%
Households											
Other transfers to households											
Current	325	250	533	–	-100.0%	–	–	–	–	–	–
Households	–	–	303	–	–	–	–	–	–	–	–
Various institutions: Policy development on human and social development dynamics	125	125	200	–	-100.0%	–	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	–	125	–	–	–	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	200	–	30	–	-100.0%	–	–	–	–	–	–
Public corporations and private enterprises											
Subsidies on products and production											
Current	825 740	820 204	872 043	915 645	3.5%	12.9%	963 164	1 014 914	1 070 735	5.4%	13.3%
Council for Scientific and Industrial Research	825 740	820 204	872 043	915 645	3.5%	12.9%	963 164	1 014 914	1 070 735	5.4%	13.3%
Higher education institutions											
Current	134 455	134 561	183 249	–	-100.0%	1.7%	–	–	–	–	–
Various institutions: Institutional and programme support research	410	4 640	6 000	–	-100.0%	–	–	–	–	–	–
Various institutions: Biofuels	–	490	2 000	–	–	–	–	–	–	–	–
Various institutions: Technology transfer offices: Support of research units	36 560	31 744	23 313	–	-100.0%	0.3%	–	–	–	–	–
Various institutions: Implementation of bioeconomy strategy	8 006	8 515	995	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Energy grand challenge research	5 550	7 360	5 250	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Health innovation research	700	150	463	–	-100.0%	–	–	–	–	–	–
Various institutions: Hydrogen strategy research	15 923	16 448	81 438	–	-100.0%	0.4%	–	–	–	–	–
Various institutions: Indigenous knowledge systems	894	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Innovation projects research	5 884	–	2 004	–	-100.0%	–	–	–	–	–	–
International Centre for Genetic Engineering and Biotechnology	–	504	10 000	–	–	–	–	–	–	–	–
National Research Foundation: Indigenous knowledge systems	–	4 789	3 663	–	–	–	–	–	–	–	–
Various institutions: Emerging research areas	12 806	13 500	14 500	–	-100.0%	0.2%	–	–	–	–	–
Various institutions: Global science: International multilateral agreements	15 666	11 187	8 332	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Global science: African multilateral agreements	4 320	1 937	200	–	-100.0%	–	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	4 940	3 736	3 024	–	-100.0%	–	–	–	–	–	–
Various institutions: Science awareness	9 652	8 118	200	–	-100.0%	0.1%	–	–	–	–	–

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
Various institutions: Strategic science platforms for research and development	5 467	6 796	7 244	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Astronomy research and development	612	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	2 321	2 892	330	–	-100.0%	–	–	–	–	–	–
Various institutions: Innovative research and development	631	4 498	8 000	–	-100.0%	–	–	–	–	–	–
Various institutions: Local manufacturing capacity research and technical support	747	2 407	1 974	–	-100.0%	–	–	–	–	–	–
Various institutions: Local systems of innovation for the cold chain technologies project	2 366	3 545	4 319	–	-100.0%	–	–	–	–	–	–
Various institutions: Resource-based industries research and development	1 000	1 305	–	–	-100.0%	–	–	–	–	–	–
Capital	93 578	95 743	27 080	–	-100.0%	0.8%	–	–	–	–	–
Various institutions: Hydrogen strategy – capital	60 772	63 568	–	–	-100.0%	0.5%	–	–	–	–	–
Various institutions: Infrastructure projects for research and development	32 806	32 175	27 080	–	-100.0%	0.3%	–	–	–	–	–
Non-profit institutions	120 289	128 822	146 425	246 004	26.9%	2.4%	271 869	291 028	307 034	7.7%	3.7%
Current											
Various institutions: Institutional and programme support research	4 356	5 325	9 170	17 503	59.0%	0.1%	14 286	15 086	15 916	-3.1%	0.2%
Various institutions: Biofuels research	–	–	1 799	5 348	–	–	7 245	7 651	8 072	14.7%	0.1%
Various institutions: Implementation of the Biotechnology strategy	3 810	8 089	11 556	36 112	111.6%	0.2%	37 742	41 651	43 942	6.8%	0.5%
Various institutions: Energy grand challenge research	2 350	–	700	–	-100.0%	–	–	–	–	–	–
Various institutions: Health innovation research	–	–	300	44 691	–	0.2%	46 947	51 160	53 974	6.5%	0.7%
Various institutions: Hydrogen strategy – research	–	–	–	38 002	–	0.1%	40 206	42 458	44 793	5.6%	0.6%
Various institutions: Innovation projects research	2 755	2 955	1 000	–	-100.0%	–	–	–	–	–	–
International Centre for Genetic Engineering and Biotechnology	36 280	11 621	22 186	–	-100.0%	0.3%	–	–	–	–	–
Various institutions: Technology transfer offices: Support for research units	–	–	1 833	36 000	–	0.1%	39 000	41 184	43 449	6.5%	0.5%
National Research Foundation: Indigenous knowledge systems	–	500	–	–	–	–	–	–	–	–	–
South African Association of Science and Technology Centres: Technology top 100 awards	–	3 507	–	3 701	–	–	3 916	4 135	4 362	5.6%	0.1%
South African National AIDS Council	–	–	–	15 000	–	0.1%	30 000	31 680	33 422	30.6%	0.4%
Various institutions: Emerging research areas	5 800	6 000	6 000	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Global science: International multilateral agreements	28	147	424	40 775	1033.5%	0.2%	43 139	46 009	48 539	6.0%	0.6%
Various institutions: Global science: African multilateral agreements	–	723	2 950	8 872	–	–	9 388	10 014	10 565	6.0%	0.1%
Academy of Science of South Africa	–	23 229	25 106	–	–	0.2%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	80	5 578	6 042	–	-100.0%	–	–	–	–	–	–
Various institutions: Science awareness	18 377	3 310	3 060	–	-100.0%	0.1%	–	–	–	–	–
Square Kilometre Array	8 400	–	–	–	-100.0%	–	–	–	–	–	–

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
Various institutions: Strategic science platforms for research and development	3 000	1 500	3 311	–	-100.0%	–	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	100	100	100	–	-100.0%	–	–	–	–	–	–
Various institutions: Innovative research and development	19 644	8 105	8 920	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Local systems of innovation for the cold chain technologies project	13 397	36 351	30 291	–	-100.0%	0.3%	–	–	–	–	–
Various institutions: Resource-based industries research and development	1 222	1 706	1 697	–	-100.0%	–	–	–	–	–	–
Various institutions: Environmental innovation	690	10 076	9 980	–	-100.0%	0.1%	–	–	–	–	–
Capital	–	–	11 301	67 080	–	0.3%	70 971	74 945	79 067	5.6%	1.0%
Various institutions: Hydrogen strategy – capital	–	–	–	67 080	–	0.3%	70 971	74 945	79 067	5.6%	1.0%
Various institutions: Infrastructure projects for research and development	–	–	11 301	–	–	–	–	–	–	–	–
Public corporations and private enterprises											
Other transfers to public corporations											
Current	354 857	485 059	497 562	308 192	-4.6%	6.2%	320 356	346 399	365 451	5.8%	4.5%
Various institutions: Institutional and programme support research	1 425	600	191	–	-100.0%	–	–	–	–	–	–
Households	32 215	–	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Technology transfer offices: Support of research units	–	6 592	5 680	–	–	–	–	–	–	–	–
Various institutions: Implementation of bioeconomy strategy	7 822	6 850	76 620	–	-100.0%	0.3%	–	–	–	–	–
Various institutions: Energy grand challenge research	1 500	–	15 923	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Health innovation research	5 000	5 900	2 853	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Hydrogen strategy research	1 500	2 580	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Indigenous knowledge systems	1 000	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Innovation projects research	100	14 657	7 450	–	-100.0%	0.1%	–	–	–	–	–
National Research Foundation: Indigenous knowledge systems	–	1 735	6 150	–	–	–	–	–	–	–	–
Various institutions: Emerging research areas	33 130	61 129	–	100 848	44.9%	0.7%	106 697	112 672	118 869	5.6%	1.5%
Various institutions: Technology transfer offices for support of research units	14 647	–	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Global science: International multilateral agreements	16 198	5 338	2 115	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Global science: African multilateral agreements	–	3 138	2 200	–	–	–	–	–	–	–	–
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	–	–	38 388	51 140	–	0.3%	13 800	22 000	23 210	-23.2%	0.4%
National Research Foundation: Square Kilometre Array: Research and development	723	2 000	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	700	4 500	4 611	–	-100.0%	–	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	25 649	–	43 146	51 215	25.9%	0.4%	53 678	59 542	62 817	7.0%	0.8%

Table 30.6 Vote transfers and subsidies trends and estimates

R thousand	Audited outcome			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
Council for Scientific and Industrial Research	24 208	26 144	21 827	31 960	9.7%	0.4%	34 738	38 533	40 652	8.3%	0.5%
Various institutions: Innovative research and development	20 827	12 343	19 295	–	-100.0%	0.2%	–	–	–	–	–
Various institutions: Local manufacturing capacity research and technical support	68 034	143 101	141 925	–	-100.0%	1.3%	–	–	–	–	–
Council for Scientific and Industrial Research: Mining research and development	–	–	–	27 000	–	0.1%	63 000	60 000	63 300	32.8%	0.7%
Various institutions: Local systems of innovation for the cold chain technologies project	51 422	104 840	54 413	–	-100.0%	0.8%	–	–	–	–	–
Various institutions: Resource-based industries research and development	38 494	45 193	41 100	46 029	6.1%	0.6%	48 443	53 652	56 603	7.1%	0.7%
Various institutions: Environmental innovation	10 263	4 914	13 675	–	-100.0%	0.1%	–	–	–	–	–
Capital	389 116	486 184	424 380	223 273	-16.9%	5.7%	236 339	251 686	265 529	5.9%	3.3%
Council for Scientific and Industrial Research: Cyber infrastructure research and development	204 045	213 479	214 546	223 273	3.0%	3.2%	236 339	251 686	265 529	5.9%	3.3%
Various institutions: Infrastructure projects for research and development	185 071	272 705	209 834	–	-100.0%	2.5%	–	–	–	–	–
Public corporations and private enterprises											
Other transfers to private enterprises											
Current	3 353	42 227	–	–	-100.0%	0.2%	–	–	–	–	–
South African Association of Science and Technology Centres: Innovation projects	3 353	–	–	–	-100.0%	–	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	–	42 227	–	–	–	0.2%	–	–	–	–	–
Total	5 934 372	6 956 058	6 860 017	6 964 482	5.5%	100.0%	7 174 989	7 668 456	8 090 257	5.1%	100.0%

Personnel information

Table 30.7 Vote personnel numbers and cost by salary level and programme¹

Programmes																			
1. Administration																			
2. Technology Innovation																			
3. International Cooperation and Resources																			
4. Research, Development and Support																			
5. Socio-Economic Innovation Partnerships																			
Number of posts estimated for 31 March 2018		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 (%)							
		2016/17	2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21												
		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost							
Science and Technology		492	–	–	428 319.0	0.7	408 326.8	0.8	410 352.9	0.9	411 380.5	0.9	410 408.4	1.0	0.2%	100.0%			
Salary level																			
1 – 6	70	–	62	15.0	0.2	61	16.0	0.3	62	17.5	0.3	62	18.9	0.3	62	20.4	0.3	0.5%	15.1%
7 – 10	141	–	129	57.3	0.4	124	60.2	0.5	124	65.1	0.5	124	70.2	0.6	123	75.2	0.6	-0.3%	30.2%
11 – 12	155	–	122	108.0	0.9	114	110.0	1.0	115	119.8	1.0	116	130.5	1.1	116	140.9	1.2	0.6%	28.1%
13 – 16	124	–	113	134.5	1.2	107	136.2	1.3	107	145.7	1.4	107	155.7	1.5	107	166.5	1.6	–	26.1%
Other	2	–	2	4.2	2.1	2	4.5	2.3	2	4.8	2.4	2	5.2	2.6	2	5.5	2.8	–	0.5%
Programme	492	–	428 319.0	0.7	408 326.8	0.8	410 352.9	0.9	411 380.5	0.9	410 408.4	1.0	0.2%	100.0%					
Programme 1	265	–	225	161.2	0.7	210	160.4	0.8	212	174.0	0.8	213	188.1	0.9	212	201.5	1.0	0.3%	51.7%
Programme 2	58	–	50	42.9	0.9	49	45.9	0.9	49	49.3	1.0	49	53.0	1.1	49	57.0	1.2	–	12.0%
Programme 3	63	–	57	43.3	0.8	57	46.8	0.8	57	50.4	0.9	57	54.2	1.0	57	58.3	1.0	–	13.9%
Programme 4	49	–	45	34.6	0.8	41	33.7	0.8	41	36.2	0.9	41	38.9	0.9	41	41.9	1.0	–	10.0%
Programme 5	57	–	51	37.0	0.7	51	40.0	0.8	51	43.0	0.8	51	46.2	0.9	51	49.7	1.0	–	12.4%

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

2. Rand million.

Departmental receipts

Table 30.8 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 (%)
	2014/15	2015/16	2016/17					2018/19	2019/20	2020/21		
Departmental receipts	1 602	514	8 199	8 189	8 440	74.0%	100.0%	555	545	545	-59.9%	100.0%
Sales of goods and services produced by department	50	51	57	58	58	5.1%	1.2%	35	35	35	-15.5%	1.6%
Other sales	50	51	57	58	58	5.1%	1.2%	35	35	35	-15.5%	1.6%
of which:												
Services rendered: Commission on insurance	50	51	57	58	58	5.1%	1.2%	35	35	35	-15.5%	1.6%
Sales of scrap, waste, arms and other used current goods	-	-	-	3	4	-	-	-	-	-	-100.0%	-
of which:												
Sales: scrap, waste and other goods	-	-	-	3	4	-	-	-	-	-	-100.0%	-
Interest, dividends and rent on land	3	6	9	56	56	165.3%	0.4%	20	10	10	-43.7%	1.0%
Interest	3	6	9	56	56	165.3%	0.4%	20	10	10	-43.7%	1.0%
Sales of capital assets	-	-	45	-	250	-	1.6%	-	-	-	-100.0%	2.5%
Transactions in financial assets and liabilities	1 549	457	8 088	8 072	8 072	73.4%	96.9%	500	500	500	-60.4%	94.9%
Total	1 602	514	8 199	8 189	8 440	74.0%	100.0%	555	545	545	-59.9%	100.0%

Programme 1: Administration

Programme purpose

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

Expenditure trends and estimates

Table 30.9 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 (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand											
Ministry	3 972	4 332	4 213	4 461	3.9%	1.3%	5 145	5 496	5 886	9.7%	1.4%
Management	81 736	90 072	99 228	115 873	12.3%	30.0%	119 616	123 867	131 919	4.4%	33.6%
Corporate Services	183 897	200 057	216 639	242 517	9.7%	65.4%	243 293	194 706	206 984	-5.1%	60.7%
Governance	7 550	7 535	8 168	8 325	3.3%	2.4%	10 715	10 974	11 703	12.0%	2.9%
Office Accommodation	1 257	-	4 381	4 784	56.1%	0.8%	5 033	5 315	5 607	5.4%	1.4%
Total	278 412	301 996	332 629	375 960	10.5%	100.0%	383 802	340 358	362 099	-1.2%	100.0%
Change to 2017				-			(17 811)	(8 909)	(9 792)		
Budget estimate											
Economic classification											
Current payments	262 193	270 543	299 587	336 439	8.7%	90.7%	357 322	322 599	343 363	0.7%	93.0%
Compensation of employees	140 072	151 744	161 190	158 401	4.2%	47.4%	174 032	188 085	201 495	8.4%	49.4%
Goods and services ¹	122 121	118 799	138 397	178 038	13.4%	43.2%	183 290	134 514	141 868	-7.3%	43.6%
of which:											
Advertising	23 075	22 785	28 018	7 894	-30.1%	6.3%	9 217	9 703	10 786	11.0%	2.6%
Consultants: Business and advisory services	3 312	3 082	4 017	12 329	55.0%	1.8%	14 389	7 208	7 604	-14.9%	2.8%
Contractors	6 762	7 489	3 513	9 508	12.0%	2.1%	10 544	9 560	10 086	2.0%	2.7%
Property payments	-	-	10 455	17 407	-	2.2%	18 007	7 270	7 670	-23.9%	3.4%
Travel and subsistence	3 350	4 995	21 338	30 544	108.9%	4.7%	32 751	20 506	21 678	-10.8%	7.2%
Venues and facilities	881	1 414	1 351	24 177	201.6%	2.2%	16 207	11 470	11 211	-22.6%	4.3%
Transfers and subsidies¹	10 222	14 874	17 498	17 503	19.6%	4.7%	14 286	15 086	15 916	-3.1%	4.3%
Departmental agencies and accounts	3 500	4 000	1 500	-	-100.0%	0.7%	-	-	-	-	-
Higher education institutions	410	4 640	6 000	-	-100.0%	0.9%	-	-	-	-	-
Public corporations and private enterprises	1 425	600	191	-	-100.0%	0.2%	-	-	-	-	-
Non-profit institutions	4 356	5 325	9 170	17 503	59.0%	2.8%	14 286	15 086	15 916	-3.1%	4.3%
Households	531	309	637	-	-100.0%	0.1%	-	-	-	-	-

Table 30.9 Administration 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 (%)		
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20			2020/21	2017/18 - 2020/21
	R thousand						2017/18	2014/15 - 2017/18				2017/18 - 2020/21	
Payments for capital assets	5 964	16 467	15 448	22 018	54.6%	4.6%	12 194	2 673	2 820	-49.6%	2.7%		
Machinery and equipment	5 964	16 467	15 448	22 018	54.6%	4.6%	12 194	2 673	2 820	-49.6%	2.7%		
Payments for financial assets	33	112	96	-	-100.0%	-	-	-	-	-	-		
Total	278 412	301 996	332 629	375 960	10.5%	100.0%	383 802	340 358	362 099	-1.2%	100.0%		
Proportion of total programme expenditure to vote expenditure	4.4%	4.1%	4.5%	5.0%	-	-	4.9%	4.1%	4.2%	-	-		
Details of transfers and subsidies													
Households													
Social benefits													
Current	531	309	334	-	-100.0%	0.1%	-	-	-	-	-		
Households	531	309	334	-	-100.0%	0.1%	-	-	-	-	-		
Other transfers to households													
Current	-	-	303	-	-	-	-	-	-	-	-		
Households	-	-	303	-	-	-	-	-	-	-	-		
Departmental agencies and accounts													
Departmental agencies (non-business entities)													
Current	3 500	4 000	1 500	-	-100.0%	0.7%	-	-	-	-	-		
Various institutions: Institutional and programme support research	3 500	4 000	1 500	-	-100.0%	0.7%	-	-	-	-	-		
Non-profit institutions													
Current	4 356	5 325	9 170	17 503	59.0%	2.8%	14 286	15 086	15 916	-3.1%	4.3%		
Various institutions: Institutional and programme support research	4 356	5 325	9 170	17 503	59.0%	2.8%	14 286	15 086	15 916	-3.1%	4.3%		
Higher education institutions													
Current	410	4 640	6 000	-	-100.0%	0.9%	-	-	-	-	-		
Various institutions: Institutional and programme support research	410	4 640	6 000	-	-100.0%	0.9%	-	-	-	-	-		
Public corporations and private enterprises													
Public corporations													
Other transfers to public corporations	1 425	600	191	-	-100.0%	0.2%	-	-	-	-	-		
Various institutions: Institutional and programme support research	1 425	600	191	-	-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 30.10 Administration personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2018		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 (%)						
		2016/17		2017/18		2018/19		2019/20		2020/21				2017/18 - 2020/21					
		Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost								
Administration																			
Salary level	265	-	225	161.2	0.7	210	160.4	0.8	212	174.0	0.8	213	188.1	0.9	212	201.5	1.0	0.3%	100.0%
1-6	50	-	42	10.3	0.2	41	10.9	0.3	42	12.0	0.3	42	12.9	0.3	42	14.0	0.3	0.8%	19.7%
7-10	91	-	83	37.7	0.5	79	39.3	0.5	79	42.5	0.5	79	45.9	0.6	78	48.9	0.6	-0.4%	37.2%
11-12	66	-	44	41.1	0.9	39	39.6	1.0	40	43.9	1.1	41	48.5	1.2	41	52.4	1.3	1.7%	19.0%
13-16	56	-	54	67.8	1.3	49	66.0	1.3	49	70.7	1.4	49	75.6	1.5	49	80.8	1.6	-	23.1%
Other	2	-	2	4.2	2.1	2	4.5	2.3	2	4.8	2.4	2	5.2	2.6	2	5.5	2.8	-	0.9%

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 March 2021, by:
 - funding and/or maintaining 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 15 science, technology and innovation strategic policy directives to enhance understanding and analyses that support the implementation of relevant interventions
 - developing and/or maintaining 6 decision support interventions to improve the delivery of government services or functions
 - converting 100 per cent of the requests for regulations into 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 by March 2021 by overseeing 630 new disclosures reported by publicly funded institutions.
- Coordinate and support high-end skills development by supporting 830 masters and doctoral students, and 720 trainees through department funded research and development initiatives by March 2021.
- 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 March 2021, by:
 - supporting 16 knowledge application products, including prototypes, technology demonstrators and pilots
 - supporting 9 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.
- *Bioinnovation* 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 use of intellectual property emanating from publicly financed research and development.

Expenditure trends and estimates

Table 30.11 Technology Innovation expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/Total (%)	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/Total (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand											
Space Science	168 464	209 103	167 803	174 897	1.3%	17.4%	161 875	190 651	201 380	4.8%	15.4%
Hydrogen and Energy	143 848	147 687	143 594	156 785	2.9%	14.3%	167 813	178 525	188 520	6.3%	14.6%
Bioinnovation	150 109	136 051	220 205	156 088	1.3%	16.0%	178 423	193 262	204 194	9.4%	15.5%
Innovation Priorities and Instruments	415 197	518 056	442 047	540 522	9.2%	46.4%	572 744	608 319	641 916	5.9%	50.0%
National Intellectual Property Management Office	96 422	52 400	42 211	46 824	-21.4%	5.8%	50 868	53 607	56 762	6.6%	4.4%
Total	974 040	1 063 297	1 015 860	1 075 116	3.3%	100.0%	1 131 723	1 224 365	1 292 772	6.3%	100.0%
Change to 2017				-			11 559	29 335	31 022		
Budget estimate											
Economic classification											
Current payments	51 754	51 565	55 666	67 346	9.2%	5.5%	71 867	73 947	79 082	5.5%	6.2%
Compensation of employees	35 571	39 844	42 939	45 938	8.9%	4.0%	49 317	53 024	57 014	7.5%	4.3%
Goods and services ¹	16 183	11 721	12 727	21 408	9.8%	1.5%	22 550	20 923	22 068	1.0%	1.8%
<i>of which:</i>											
<i>Communication</i>	427	681	902	862	26.4%	0.1%	912	964	1 016	5.6%	0.1%
<i>Consultants: Business and advisory services</i>	1 257	219	2 098	1 638	9.2%	0.1%	1 733	1 659	1 831	3.8%	0.1%
<i>Agency and support/outsourced services</i>	1 885	975	191	6 358	50.0%	0.2%	6 717	6 338	6 534	0.9%	0.5%
<i>Entertainment</i>	15	23	20	3 692	526.7%	0.1%	3 873	3 357	3 540	-1.4%	0.3%
<i>Travel and subsistence</i>	-	-	6 470	5 172	-	0.3%	5 416	4 639	4 903	-1.8%	0.4%
<i>Venues and facilities</i>	-	46	1 961	1 995	-	0.1%	2 110	2 178	2 351	5.6%	0.2%
Transfers and subsidies¹	922 205	1 011 717	960 164	1 007 770	3.0%	94.5%	1 059 856	1 150 418	1 213 690	6.4%	93.8%
Departmental agencies and accounts	623 688	732 534	656 302	660 988	2.0%	64.8%	677 132	742 882	783 740	5.8%	60.6%
Higher education institutions	147 095	147 068	143 626	-	-100.0%	10.6%	-	-	-	-	-
Public corporations and private enterprises	100 267	99 443	114 676	100 848	0.2%	10.1%	106 697	112 672	118 869	5.6%	9.3%
Non-profit institutions	50 995	32 672	45 374	245 934	69.0%	9.1%	276 027	294 864	311 081	8.1%	23.9%
Households	160	-	186	-	-100.0%	-	-	-	-	-	-
Payments for capital assets	81	-	30	-	-100.0%	-	-	-	-	-	-
Machinery and equipment	81	-	30	-	-100.0%	-	-	-	-	-	-
Payments for financial assets	-	15	-	-	-	-	-	-	-	-	-
Total	974 040	1 063 297	1 015 860	1 075 116	3.3%	100.0%	1 131 723	1 224 365	1 292 772	6.3%	100.0%
Proportion of total programme expenditure to vote expenditure	15.2%	14.3%	13.8%	14.2%	-	-	14.5%	14.8%	14.8%	-	-
Details of transfers and subsidies											
Households											
Social benefits											
Current	160	-	186	-	-100.0%	-	-	-	-	-	-
Households	160	-	186	-	-100.0%	-	-	-	-	-	-
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	621 188	732 534	656 302	660 988	2.1%	64.7%	677 132	742 882	783 740	5.8%	60.6%
Various institutions: Biofuels	6 000	6 000	-	-	-100.0%	0.3%	-	-	-	-	-
Various institutions: Technology transfer offices: Support of research units	2 199	4 411	687	-	-100.0%	0.2%	-	-	-	-	-
Various institutions: Implementation of bioeconomy strategy	13 290	9 500	9 500	-	-100.0%	0.8%	-	-	-	-	-
Various institutions: Energy grand challenge research	24 396	26 373	22 316	35 149	12.9%	2.6%	37 049	40 946	43 198	7.1%	3.3%
Various institutions: Health innovation research	36 000	37 568	37 500	-	-100.0%	2.7%	-	-	-	-	-
Various institutions: Research in HIV and AIDS prevention and treatment technologies	22 596	24 535	23 800	23 711	1.6%	2.3%	24 588	27 866	29 399	7.4%	2.2%
Various institutions: Hydrogen strategy research	16 005	16 984	4 007	-	-100.0%	0.9%	-	-	-	-	-

Table 30.11 Technology Innovation 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 (%)		
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20			2020/21	2017/18 - 2020/21
	R thousand												
Various institutions: Innovation projects research	1 122	12 000	10 000	27 911	191.9%	1.2%	29 529	35 318	37 260	10.1%	2.8%		
International Centre for Genetic Engineering and Biotechnology	–	–	–	12 795	–	0.3%	13 537	14 295	15 081	5.6%	1.2%		
Various institutions: Space science research – economic competitiveness and support package	40 000	71 978	–	28 860	-10.3%	3.4%	9 200	30 000	31 650	3.1%	2.1%		
National Research Foundation: Indigenous knowledge systems	–	1 840	–	–	–	–	–	–	–	–	–		
Technology Innovation Agency	338 386	385 188	382 364	396 732	5.4%	36.4%	420 322	443 860	468 272	5.7%	36.6%		
South African National Space Agency	118 298	124 355	154 630	131 226	3.5%	12.8%	138 036	145 453	153 453	5.4%	12.0%		
Various institutions: Emerging research areas	–	11 802	11 498	–	–	0.6%	–	–	–	–	–		
National Research Foundation: Research and development in indigenous knowledge systems	2 896	–	–	4 604	16.7%	0.2%	4 871	5 144	5 427	5.6%	0.4%		
Non-profit institutions													
Current	50 995	32 672	45 374	178 854	51.9%	7.5%	205 056	219 919	232 014	9.1%	17.7%		
Various institutions: Biofuels research	–	–	1 799	5 348	–	0.2%	7 245	7 651	8 072	14.7%	0.6%		
Various institutions: Implementation of the Biotechnology strategy	3 810	8 089	11 556	36 112	111.6%	1.4%	37 742	41 651	43 942	6.8%	3.4%		
Various institutions: Energy grand challenge research	2 350	–	700	–	-100.0%	0.1%	–	–	–	–	–		
Various institutions: Health innovation research	–	–	300	44 691	–	1.1%	46 947	51 160	53 974	6.5%	4.2%		
Various institutions: Hydrogen strategy – research	–	–	–	38 002	–	0.9%	40 206	42 458	44 793	5.6%	3.5%		
Various institutions: Innovation projects research	2 755	2 955	1 000	–	-100.0%	0.2%	–	–	–	–	–		
International Centre for Genetic Engineering and Biotechnology	36 280	11 621	22 186	–	-100.0%	1.7%	–	–	–	–	–		
Various institutions: Technology transfer offices: Support for research units	–	–	1 833	36 000	–	0.9%	39 000	41 184	43 449	6.5%	3.4%		
National Research Foundation: Indigenous knowledge systems	–	500	–	–	–	–	–	–	–	–	–		
South African Association of Science and Technology Centres: Technology top 100 awards	–	3 507	–	3 701	–	0.2%	3 916	4 135	4 362	5.6%	0.3%		
South African National AIDS Council	–	–	–	15 000	–	0.4%	30 000	31 680	33 422	30.6%	2.3%		
Various institutions: Emerging research areas	5 800	6 000	6 000	–	-100.0%	0.4%	–	–	–	–	–		
Capital	–	–	–	67 080	–	1.6%	70 971	74 945	79 067	5.6%	6.2%		
Various institutions: Hydrogen strategy – capital	–	–	–	67 080	–	1.6%	70 971	74 945	79 067	5.6%	6.2%		
Higher education institutions													
Current	86 323	83 500	143 626	–	-100.0%	7.6%	–	–	–	–	–		
Various institutions: Biofuels	–	490	2 000	–	–	0.1%	–	–	–	–	–		
Various institutions: Technology transfer offices: Support of research units	36 560	31 744	23 313	–	-100.0%	2.2%	–	–	–	–	–		
Various institutions: Implementation of bioeconomy strategy	8 006	8 515	995	–	-100.0%	0.4%	–	–	–	–	–		
Various institutions: Energy grand challenge research	5 550	7 360	5 250	–	-100.0%	0.4%	–	–	–	–	–		
Various institutions: Health innovation research	700	150	463	–	-100.0%	–	–	–	–	–	–		
Various institutions: Hydrogen strategy research	15 923	16 448	81 438	–	-100.0%	2.8%	–	–	–	–	–		
Various institutions: Indigenous knowledge systems	894	–	–	–	-100.0%	–	–	–	–	–	–		
Various institutions: Innovation projects research	5 884	–	2 004	–	-100.0%	0.2%	–	–	–	–	–		
International Centre for Genetic Engineering and Biotechnology	–	504	10 000	–	–	0.3%	–	–	–	–	–		
National Research Foundation: Indigenous knowledge systems	–	4 789	3 663	–	–	0.2%	–	–	–	–	–		
Various institutions: Emerging research areas	12 806	13 500	14 500	–	-100.0%	1.0%	–	–	–	–	–		
Capital	60 772	63 568	–	–	-100.0%	3.0%	–	–	–	–	–		
Various institutions: Hydrogen strategy - capital	60 772	63 568	–	–	-100.0%	3.0%	–	–	–	–	–		
Public corporations and private enterprises													
Public corporations													
Other transfers to public corporations													
Current	96 914	99 443	114 676	100 848	1.3%	10.0%	106 697	112 672	118 869	5.6%	9.3%		
Households	32 215	–	–	–	-100.0%	0.8%	–	–	–	–	–		
Various institutions: Technology transfer offices: Support of research units	–	6 592	5 680	–	–	0.3%	–	–	–	–	–		
Various institutions: Implementation of bioeconomy strategy	7 822	6 850	76 620	–	-100.0%	2.2%	–	–	–	–	–		
Various institutions: Energy grand challenge research	1 500	–	15 923	–	-100.0%	0.4%	–	–	–	–	–		
Various institutions: Health innovation research	5 000	5 900	2 853	–	-100.0%	0.3%	–	–	–	–	–		
Various institutions: Hydrogen strategy research	1 500	2 580	–	–	-100.0%	0.1%	–	–	–	–	–		

Table 30.11 Technology Innovation 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 (%)		
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20			2020/21	2017/18 - 2020/21
	R thousand						2014/15 - 2017/18	2018/19	2019/20			2020/21	2017/18 - 2020/21
Various institutions: Indigenous knowledge systems	1 000	–	–	–	-100.0%	–	–	–	–	–	–		
Various institutions: Innovation projects research	100	14 657	7 450	–	-100.0%	0.5%	–	–	–	–	–		
National Research Foundation: Indigenous knowledge systems	–	1 735	6 150	–	–	0.2%	–	–	–	–	–		
Various institutions: Emerging research areas	33 130	61 129	–	100 848	44.9%	4.7%	106 697	112 672	118 869	5.6%	9.3%		
Various institutions: Technology transfer offices for support of research units	14 647	–	–	–	-100.0%	0.4%	–	–	–	–	–		
Public corporations and private enterprises													
Private enterprises													
Other transfers to private enterprises													
Current	3 353	–	–	–	-100.0%	0.1%	–	–	–	–	–		
South African Association of Science and Technology Centres: Innovation projects	3 353	–	–	–	-100.0%	0.1%	–	–	–	–	–		

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 30.12 Technology Innovation personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2018		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 (%)						
		2016/17		2017/18			2018/19		2019/20		2020/21			2017/18 - 2020/21					
		Number	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost				Unit cost				
Technology Innovation																			
Salary level	58	–	50	42.9	0.9	49	45.9	0.9	49	49.3	1.0	49	53.0	1.1	49	57.0	1.2	–	100.0%
1–6	6	–	7	1.8	0.3	7	2.0	0.3	7	2.2	0.3	7	2.3	0.3	7	2.5	0.4	–	14.3%
7–10	8	–	7	2.9	0.4	6	2.7	0.4	6	2.9	0.5	6	3.1	0.5	6	3.4	0.6	–	12.2%
11–12	24	–	19	18.0	0.9	19	19.6	1.0	19	21.1	1.1	19	22.8	1.2	19	24.6	1.3	–	38.8%
13–16	20	–	17	20.2	1.2	17	21.7	1.3	17	23.1	1.4	17	24.8	1.5	17	26.5	1.6	–	34.7%

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 R1.4 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 2 030 South African researchers in international postgraduate training programmes by March 2021.
- Build capacity in and support initiatives for the Southern African Development Community (SADC) and African Union (AU) to advance Africa's growth and development by strengthening cooperation in science,

technology and innovation in Africa through technical and financial support for 60 approved SADC and AU science, technology and innovation initiatives and programmes by March 2021.

- 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 12 new leadership positions in international science, technology and innovation governance structures by March 2021.

Subprogrammes

- *Multilateral Cooperation and Africa* advances and facilitates South Africa's participation in bilateral science, technology and innovation cooperation initiatives with other African partners; in African multilateral programmes, especially SADC and AU programmes; and in 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, as well as 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 support for joint cooperation with other African partners.

Expenditure trends and estimates

Table 30.13 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 (%)
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand					2014/15 - 2017/18					2017/18 - 2020/21	
Multilateral Cooperation and Africa	22 167	25 668	30 408	31 160	12.0%	23.1%	31 367	32 724	34 875	3.8%	23.0%
International Resources	54 021	56 635	54 204	60 495	3.8%	47.6%	63 005	66 883	70 937	5.5%	46.3%
Overseas Bilateral Cooperation	31 401	32 665	33 854	40 725	9.1%	29.3%	42 027	43 798	46 633	4.6%	30.7%
Total	107 589	114 968	118 466	132 380	7.2%	100.0%	136 399	143 405	152 445	4.8%	100.0%
Change to 2017 Budget estimate				-			1 230	(1 020)	(980)		
Economic classification											
Current payments	53 349	55 641	57 569	68 603	8.7%	49.7%	68 924	71 430	76 512	3.7%	50.6%
Compensation of employees	36 762	41 275	43 295	48 843	9.9%	35.9%	50 352	54 196	58 336	6.1%	37.5%
Goods and services ¹	16 587	14 366	14 274	19 760	6.0%	13.7%	18 572	17 234	18 176	-2.7%	13.1%
of which:											
Communication	494	690	1 233	1 376	40.7%	0.8%	1 455	1 537	1 621	5.6%	1.1%
Agency and support/outsourced services	327	726	142	655	26.1%	0.4%	693	732	772	5.6%	0.5%
Entertainment	218	285	208	781	53.0%	0.3%	826	873	922	5.7%	0.6%
Travel and subsistence	-	-	8 805	9 527	-	3.9%	8 054	6 625	6 956	-10.0%	5.5%
Operating payments	3 891	1 244	375	1 108	-34.2%	1.4%	1 173	1 239	1 307	5.7%	0.9%
Venues and facilities	365	42	1 283	4 250	126.7%	1.3%	4 145	3 878	4 119	-1.0%	2.9%

Table 30.13 International Cooperation and Resources expenditure trends and estimates by subprogramme and economic classification

Economic classification	Audited outcome			Adjusted appropriation	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%)		
	2014/15	2015/16	2016/17		2017/18	2014/15 - 2017/18	2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	2020/21
R thousand												
Transfers and subsidies¹	54 127	59 327	60 897	63 777	5.6%	50.3%	67 475	71 975	75 933	6.0%	49.4%	
Departmental agencies and accounts	14 591	36 841	44 586	14 130	-1.1%	23.3%	14 948	15 952	16 829	6.0%	11.0%	
Higher education institutions	19 986	13 124	8 532	-	-100.0%	8.8%	-	-	-	-	-	
Public corporations and private enterprises	16 198	8 476	4 315	-	-100.0%	6.1%	-	-	-	-	-	
Non-profit institutions	28	870	3 374	49 647	1110.4%	11.4%	52 527	56 023	59 104	6.0%	38.5%	
Households	3 324	16	90	-	-100.0%	0.7%	-	-	-	-	-	
Payments for capital assets	113	-	-	-	-100.0%	-	-	-	-	-	-	
Machinery and equipment	113	-	-	-	-100.0%	-	-	-	-	-	-	
Total	107 589	114 968	118 466	132 380	7.2%	100.0%	136 399	143 405	152 445	4.8%	100.0%	
Proportion of total programme expenditure to vote expenditure	1.7%	1.5%	1.6%	1.8%	-	-	1.8%	1.7%	1.8%	-	-	
Details of transfers and subsidies												
Households												
Social benefits												
Current	3 324	16	90	-	-100.0%	0.7%	-	-	-	-	-	
Households	3 324	16	90	-	-100.0%	0.7%	-	-	-	-	-	
Departmental agencies and accounts												
Departmental agencies (non-business entities)												
Current	14 591	36 841	44 586	14 130	-1.1%	23.3%	14 948	15 952	16 829	6.0%	11.0%	
National Research Foundation:	12 935	13 530	13 598	14 130	3.0%	11.4%	14 948	15 952	16 829	6.0%	11.0%	
Bilateral cooperation for global science development												
Various institutions: Global science: International	1 656	22 353	28 088	-	-100.0%	11.0%	-	-	-	-	-	
multilateral agreements												
Various institutions: Global science: African multilateral agreements	-	958	2 900	-	-	0.8%	-	-	-	-	-	
Non-profit institutions												
Current	28	870	3 374	49 647	1110.4%	11.4%	52 527	56 023	59 104	6.0%	38.5%	
Various institutions: Global science: International	28	147	424	40 775	1033.5%	8.7%	43 139	46 009	48 539	6.0%	31.6%	
multilateral agreements												
Various institutions: Global science: African multilateral agreements	-	723	2 950	8 872	-	2.6%	9 388	10 014	10 565	6.0%	6.9%	
Higher education institutions												
Current	19 986	13 124	8 532	-	-100.0%	8.8%	-	-	-	-	-	
Various institutions: Global science: International	15 666	11 187	8 332	-	-100.0%	7.4%	-	-	-	-	-	
multilateral agreements												
Various institutions: Global science: African multilateral agreements	4 320	1 937	200	-	-100.0%	1.4%	-	-	-	-	-	
Public corporations and private enterprises												
Public corporations												
Other transfers to public corporations												
Current	16 198	8 476	4 315	-	-100.0%	6.1%	-	-	-	-	-	
Various institutions: Global science: International	16 198	5 338	2 115	-	-100.0%	5.0%	-	-	-	-	-	
multilateral agreements												
Various institutions: Global science: African multilateral agreements	-	3 138	2 200	-	-	1.1%	-	-	-	-	-	

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 30.14 International Cooperation and Resources personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		2017/18		2018/19		2019/20		2020/21		2017/18 - 2020/21							
		Num-ber	Cost	Unit cost	Num-ber	Cost	Unit cost	Num-ber	Cost	Unit cost	Num-ber	Cost	Unit cost	Num-ber	Cost	Unit cost			
International Cooperation and Resources																			
Salary level	63	–	57	43.3	0.8	57	46.8	0.8	57	50.4	0.9	57	54.2	1.0	57	58.3	1.0	–	100.0%
1 – 6	4	–	4	1.1	0.3	4	1.1	0.3	4	1.2	0.3	4	1.3	0.3	4	1.4	0.4	–	7.0%
7 – 10	25	–	23	11.0	0.5	23	12.0	0.5	23	13.0	0.6	23	14.0	0.6	23	15.1	0.7	–	40.4%
11 – 12	18	–	17	15.7	0.9	17	17.1	1.0	17	18.5	1.1	17	19.9	1.2	17	21.5	1.3	–	29.8%
13 – 16	16	–	13	15.5	1.2	13	16.6	1.3	13	17.7	1.4	13	18.9	1.5	13	20.3	1.6	–	22.8%

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 1 350 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 30 per year over the MTEF period
 - increasing the total available broadband capacity provided by the South African National Research Network from 3 400 Gbps in 2018/19 to 3 500 Gbps in 2020/21.
- 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 research articles published by researchers funded by the National Research Foundation and cited in the Thomson Reuters Web of Science citation database 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:
 - installing 64 ultra high frequency science mode receivers in 2018/19, 8 large survey project correlators in 2019/20, and 64 s-band receivers on MeerKAT by 2018/19
 - ensuring that 2 reports on the state of climate change in South Africa are submitted to Cabinet by 2018/19.

- Promote public engagement on science, technology and innovation by creating an environment that enables up to 9 million people to participate in the science engagement programme 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; provide fundamental support for research activities; and contribute to the development of a society that is knowledgeable about science, and is critically engaged and scientifically literate.
- Science Missions* promotes the development of research, the production of scientific knowledge, and human capital in science areas in which South Africa enjoys a geographic advantage.
- Basic Sciences and Infrastructure* facilitates the strategic implementation of research and innovation equipment and facilities to promote knowledge production in areas of national priority, and sustain innovation led by research and development.
- Astronomy* supports the development of astronomical sciences around a new multi-wavelength astronomy strategy, and provides strategic guidance and support to relevant astronomy institutions in the implementation of strategic astronomy programmes.

Expenditure trends and estimates

Table 30.15 Research, Development and Support expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/Total (%) 2017/18	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/Total (%) 2020/21
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand											
Human Capital and Science Promotions	1 872 787	2 331 826	2 354 551	2 424 804	9.0%	55.4%	2 457 111	2 617 663	2 761 886	4.4%	56.1%
Science Missions	159 549	177 004	213 070	214 244	10.3%	4.7%	222 967	235 532	248 733	5.1%	5.0%
Basic Science and Infrastructure	783 727	986 984	895 536	976 604	7.6%	22.5%	927 584	993 485	1 048 323	2.4%	21.6%
Astronomy	673 774	723 040	689 473	734 484	2.9%	17.4%	752 642	814 729	859 666	5.4%	17.3%
Total	3 489 837	4 218 854	4 152 630	4 350 136	7.6%	100.0%	4 360 304	4 661 409	4 918 608	4.2%	100.0%
Change to 2017 Budget estimate				-			(116 022)	(95 550)	(100 710)		
Economic classification											
Current payments	37 696	43 751	48 337	49 237	9.3%	1.1%	52 565	54 111	57 873	5.5%	1.2%
Compensation of employees	29 438	31 117	34 613	33 712	4.6%	0.8%	36 211	38 938	41 869	7.5%	0.8%
Goods and services ¹	8 258	12 634	13 724	15 525	23.4%	0.3%	16 354	15 173	16 004	1.0%	0.3%
of which:											
Catering: Departmental activities	96	163	117	570	81.1%	-	602	635	670	5.6%	-
Communication	339	246	625	646	24.0%	-	684	723	762	5.7%	-
Consultants: Business and advisory services	385	405	2 264	1 365	52.5%	-	1 445	1 253	1 322	-1.1%	-
Agency and support/outsourced services	919	1 467	822	879	-1.5%	-	930	983	1 036	5.6%	-
Travel and subsistence	61	5 431	7 299	8 481	418.1%	0.1%	8 902	7 577	7 990	-2.0%	0.2%
Venues and facilities	-	1 146	1 035	2 010	-	-	2 127	2 246	2 369	5.6%	-
Transfers and subsidies¹	3 452 010	4 175 103	4 104 263	4 300 899	7.6%	98.9%	4 307 739	4 607 298	4 860 735	4.2%	98.8%
Departmental agencies and accounts	2 977 765	3 564 106	3 550 051	4 026 486	10.6%	87.1%	4 057 600	4 333 612	4 571 996	4.3%	92.9%
Higher education institutions	53 477	50 825	37 548	-	-100.0%	0.9%	-	-	-	-	-
Public corporations and private enterprises	390 539	526 189	467 379	274 413	-11.1%	10.2%	250 139	273 686	288 739	1.7%	5.9%
Non-profit institutions	29 857	33 617	48 820	-	-100.0%	0.7%	-	-	-	-	-
Households	372	366	465	-	-100.0%	-	-	-	-	-	-
Payments for capital assets	72	-	-	-	-100.0%	-	-	-	-	-	-
Machinery and equipment	72	-	-	-	-100.0%	-	-	-	-	-	-
Payments for financial assets	59	-	30	-	-100.0%	-	-	-	-	-	-
Total	3 489 837	4 218 854	4 152 630	4 350 136	7.6%	100.0%	4 360 304	4 661 409	4 918 608	4.2%	100.0%
Proportion of total programme expenditure to vote expenditure	54.6%	56.7%	56.2%	57.6%	-	-	56.0%	56.5%	56.5%	-	-

Table 30.15 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 (%)		Medium-term expenditure estimate			Average growth rate (%)	
	2014/15	2015/16	2016/17		2017/18	2014/15 - 2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	2017/18 - 2020/21
R thousand											
Households											
Social benefits											
Current	47	116	235	–	-100.0%	–	–	–	–	–	–
Households	47	116	235	–	-100.0%	–	–	–	–	–	–
Households											
Other transfers to households											
Current	325	250	230	–	-100.0%	–	–	–	–	–	–
Various institutions: Policy development on human and social development dynamics	125	125	200	–	-100.0%	–	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	–	125	–	–	–	–	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	200	–	30	–	-100.0%	–	–	–	–	–	–
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	1 988 815	2 427 657	2 470 102	2 613 854	9.5%	58.6%	2 693 903	2 860 797	3 018 140	4.9%	61.2%
Academy of Science of South Africa	21 577	–	–	25 261	5.4%	0.3%	25 668	27 105	28 596	4.2%	0.6%
Various institutions: Astronomy research and development	12 707	25 155	14 069	29 348	32.2%	0.5%	31 050	32 789	34 592	5.6%	0.7%
Various institutions: Policy development on human and social development dynamics	9 838	10 283	10 283	26 012	38.3%	0.3%	27 409	28 896	30 485	5.4%	0.6%
National Research Foundation: Human resources development for science and engineering	465 658	835 665	832 662	833 804	21.4%	18.3%	889 172	950 582	1 002 864	6.3%	20.1%
National Research Foundation: Human resources development for science and engineering	851 286	878 399	882 805	925 964	2.8%	21.8%	904 752	953 365	1 005 799	2.8%	20.7%
Various institutions: Science awareness, research and initiatives to encourage youth participation in science	37 926	57 766	66 221	73 018	24.4%	1.4%	77 253	81 579	86 066	5.6%	1.7%
National Research Foundation: South African research chairs initiative to develop human resources in science	451 779	470 446	482 243	500 875	3.5%	11.8%	530 274	566 305	597 452	6.1%	12.0%
Various institutions: Strategic science platforms for research and development	138 044	149 943	181 819	199 572	13.1%	4.1%	208 325	220 176	232 286	5.2%	4.7%
Capital	988 950	1 136 449	1 079 949	1 412 632	12.6%	28.5%	1 363 697	1 472 815	1 553 856	3.2%	31.7%
Various institutions: Infrastructure projects for research and development	343 751	449 034	413 312	718 701	27.9%	11.9%	654 285	703 015	741 717	1.1%	15.4%
National Research Foundation: Square Kilometre Array: Capital contribution to research	645 199	687 415	666 637	693 931	2.5%	16.6%	709 412	769 800	812 139	5.4%	16.3%
Non-profit institutions											
Current	29 857	33 617	37 519	–	-100.0%	0.6%	–	–	–	–	–
Academy of Science of South Africa	–	23 229	25 106	–	–	0.3%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	80	5 578	6 042	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Science awareness	18 377	3 310	3 060	–	-100.0%	0.2%	–	–	–	–	–
Square Kilometre Array	8 400	–	–	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	3 000	1 500	3 311	–	-100.0%	–	–	–	–	–	–

Table 30.15 Research, Development and Support expenditure trends and estimates by subprogramme and economic classification

Details of transfers and subsidies			Adjusted appropriation	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
Audited outcome						2017/18	2014/15 - 2017/18	2018/19		
R thousand	2014/15	2015/16	2016/17	2017/18	2014/15 - 2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	2017/18 - 2020/21
Capital	–	–	11 301	–	–	–	–	–	–	–
Various institutions: Infrastructure projects for research and development	–	–	11 301	–	–	–	–	–	–	–
Higher education institutions										
Current	20 671	18 650	10 468	–	-100.0%	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering	4 940	3 736	3 024	–	-100.0%	–	–	–	–	–
Various institutions: Science awareness	9 652	8 118	200	–	-100.0%	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	5 467	6 796	7 244	–	-100.0%	–	–	–	–	–
Various institutions: Astronomy research and development	612	–	–	–	-100.0%	–	–	–	–	–
Capital	32 806	32 175	27 080	–	-100.0%	–	–	–	–	–
Various institutions: Infrastructure projects for research and development	32 806	32 175	27 080	–	-100.0%	–	–	–	–	–
Public corporations and private enterprises										
Public corporations										
Other transfers to public corporations										
Current	1 423	40 005	42 999	51 140	230.0%	13 800	22 000	23 210	-23.2%	0.6%
National Research Foundation: Human resources development for science and engineering	–	33 505	–	–	–	–	–	–	–	–
National Research Foundation: Human resources development for science and engineering: Economic competitiveness and support package	–	–	38 388	51 140	–	13 800	22 000	23 210	-23.2%	0.6%
National Research Foundation: Square Kilometre Array: Research and development	723	2 000	–	–	-100.0%	–	–	–	–	–
Various institutions: Strategic science platforms for research and development	700	4 500	4 611	–	-100.0%	–	–	–	–	–
Capital	389 116	486 184	424 380	223 273	-16.9%	236 339	251 686	265 529	5.9%	5.3%
Council for Scientific and Industrial Research: Cyber infrastructure research and development	204 045	213 479	214 546	223 273	3.0%	236 339	251 686	265 529	5.9%	5.3%
Various institutions: Infrastructure projects for research and development	185 071	272 705	209 834	–	-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 30.16 Research, Development and Support personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17			2017/18			2018/19		2019/20		2020/21				2017/18 - 2020/21			
Research, Development and Support		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	49	–	45	34.6	0.8	41	33.7	0.8	41	36.2	0.9	41	38.9	0.9	41	41.9	1.0	–	100.0%
1–6	4	–	4	0.8	0.2	4	0.9	0.2	4	1.0	0.2	4	1.1	0.3	4	1.1	0.3	–	9.8%
7–10	7	–	7	2.5	0.4	7	2.7	0.4	7	2.9	0.4	7	3.2	0.5	7	3.4	0.5	–	17.1%
11–12	23	–	20	15.6	0.8	17	14.5	0.9	17	15.7	0.9	17	16.9	1.0	17	18.3	1.1	–	41.5%
13–16	15	–	14	15.6	1.1	13	15.6	1.2	13	16.6	1.3	13	17.8	1.4	13	19.0	1.5	–	31.7%

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 180 honours, masters and doctoral students, and adding 14 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 744 masters and doctoral students, and 110 interns
 - adding 94 knowledge and innovation products to the intellectual property portfolio
 - funding 9 instruments in support of increased localisation, competitiveness
 - researching and developing the development-led industry.
- Strengthen provincial and rural innovation and production systems through analysis and catalytic interventions over the medium term by funding or co-funding 12 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 development programmes for technology and innovation to advance strategic medium-term and long-term sustainable economic growth and sector development priorities, as well as public service delivery.

Expenditure trends and estimates

Table 30.17 Socioeconomic Innovation Partnerships expenditure trends and estimates by subprogramme and economic classification

Subprogramme	Audited outcome			Adjusted appropriation 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/Total (%) 2017/18	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/Total (%) 2020/21
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand											
Sector Innovation and Green Economy	875 737	873 866	932 049	983 996	4.0%	55.0%	1 036 797	1 095 394	1 155 852	5.5%	58.8%
Innovation for Inclusive Development	340 095	334 480	344 505	356 598	1.6%	20.6%	354 814	376 260	397 193	3.7%	20.4%
Science and Technology Investment	29 864	32 309	22 158	25 276	-5.4%	1.6%	27 327	34 923	37 115	13.7%	1.7%
Technology Localisation, Beneficiation and Advanced Manufacturing	293 470	497 692	465 297	257 767	-4.2%	22.7%	359 322	372 287	393 068	15.1%	19.0%
Total	1 539 166	1 738 347	1 764 009	1 623 637	1.8%	100.0%	1 778 260	1 878 864	1 983 228	6.9%	100.0%
Change to 2017 Budget estimate				-			(4 493)	133 194	140 684		
Economic classification											
Current payments	40 858	43 310	46 754	49 104	6.3%	2.7%	52 627	55 185	59 245	6.5%	3.0%
Compensation of employees	34 158	37 107	37 000	39 933	5.3%	2.2%	42 968	46 224	49 730	7.6%	2.5%
Goods and services ¹	6 700	6 203	9 754	9 171	11.0%	0.5%	9 659	8 961	9 515	1.2%	0.5%
<i>of which:</i>											
Advertising	40	6	5	206	72.7%	-	219	232	245	5.9%	-
Catering: Departmental activities	87	134	72	281	47.8%	-	297	313	329	5.4%	-
Communication	293	325	733	963	48.7%	-	1 036	1 094	1 155	6.2%	0.1%
Consultants: Business and advisory services	486	16	398	3 497	93.1%	0.1%	3 660	2 840	3 050	-4.5%	0.2%
Travel and subsistence	-	2 990	2 572	2 839	-	0.1%	3 003	3 052	3 227	4.4%	0.2%
Venues and facilities	-	500	31	849	-	-	899	856	905	2.2%	-
Transfers and subsidies¹	1 498 308	1 695 037	1 717 255	1 574 533	1.7%	97.3%	1 725 633	1 823 679	1 923 983	6.9%	97.0%
Departmental agencies and accounts	391 492	424 954	444 160	502 684	8.7%	26.5%	562 610	597 038	629 876	7.8%	31.6%
Higher education institutions	7 065	14 647	14 623	-	-100.0%	0.5%	-	-	-	-	-
Public corporations and private enterprises	1 064 637	1 198 966	1 207 424	1 071 849	0.2%	68.2%	1 163 023	1 226 641	1 294 107	6.5%	65.5%
Non-profit institutions	35 053	56 338	50 988	-	-100.0%	2.1%	-	-	-	-	-
Households	61	132	60	-	-100.0%	-	-	-	-	-	-
Total	1 539 166	1 738 347	1 764 009	1 623 637	1.8%	100.0%	1 778 260	1 878 864	1 983 228	6.9%	100.0%
Proportion of total programme expenditure to vote expenditure	24.1%	23.4%	23.9%	21.5%	-	-	22.8%	22.8%	22.8%	-	-
Details of transfers and subsidies											
Households											
Social benefits											
Current	61	132	-	-	-100.0%	-	-	-	-	-	-
Households	61	132	-	-	-100.0%	-	-	-	-	-	-
Departmental agencies and accounts											
Departmental agencies (non-business entities)											
Current	391 492	424 954	444 160	502 684	8.7%	26.5%	562 610	597 038	629 876	7.8%	31.6%
Various institutions: Economic competitiveness and support package: Local manufacturing capacity research and technical support	-	-	-	80 000	-	1.2%	80 000	80 000	84 400	1.8%	4.5%
Various institutions: Economic competitiveness and support package: Local systems of innovation for the cold chain technologies project	-	-	-	-	-	-	62 000	62 000	65 410	-	2.6%
Various institutions: Innovative research and development	16 678	13 786	6 866	41 823	35.9%	1.2%	39 890	44 249	46 683	3.7%	2.4%
Human Sciences Research Council	276 010	288 706	290 149	304 656	3.3%	17.4%	303 733	320 053	337 656	3.5%	17.4%

Table 30.17 Socioeconomic Innovation Partnerships 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 (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
R thousand											
Various institutions: Local manufacturing capacity research and technical support	43 712	42 000	70 739	3 311	-57.7%	2.4%	25 864	28 689	30 267	109.1%	1.2%
Various institutions: Local systems of innovation for the cold chain technologies project	33 000	60 000	64 000	35 781	2.7%	2.9%	10 632	11 793	12 442	-29.7%	1.0%
Various institutions: Resource-based industries research and development	1 000	1 304	1 000	–	-100.0%	–	–	–	–	–	–
National Research Foundation: Research information management system	6 850	12 240	7 201	3 781	-18.0%	0.5%	4 000	8 448	8 913	33.1%	0.3%
Human Science Research Council: Develop and monitor science and technology indicators	9 657	5 445	–	9 437	-0.8%	0.4%	9 984	12 404	13 086	11.5%	0.6%
Various institutions: Environmental innovation	4 585	1 473	4 205	23 895	73.4%	0.5%	26 507	29 402	31 019	9.1%	1.5%
Non-profit institutions											
Current	35 053	56 338	50 988	–	-100.0%	2.1%	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	100	100	100	–	-100.0%	–	–	–	–	–	–
Various institutions: Innovative research and development	19 644	8 105	8 920	–	-100.0%	0.6%	–	–	–	–	–
Various institutions: Local systems of innovation for the cold chain technologies project	13 397	36 351	30 291	–	-100.0%	1.2%	–	–	–	–	–
Various institutions: Resource-based industries research and development	1 222	1 706	1 697	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Environmental innovation	690	10 076	9 980	–	-100.0%	0.3%	–	–	–	–	–
Higher education institutions											
Current	7 065	14 647	14 623	–	-100.0%	0.5%	–	–	–	–	–
Various institutions: Advanced manufacturing technology strategy implementation	2 321	2 892	330	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Innovative research and development	631	4 498	8 000	–	-100.0%	0.2%	–	–	–	–	–
Various institutions: Local manufacturing capacity research and technical support	747	2 407	1 974	–	-100.0%	0.1%	–	–	–	–	–
Various institutions: Local systems of innovation for the cold chain technologies project	2 366	3 545	4 319	–	-100.0%	0.2%	–	–	–	–	–
Various institutions: Resource-based industries research and development	1 000	1 305	–	–	-100.0%	–	–	–	–	–	–
Public corporations and private enterprises											
Public corporations											
Other transfers to public corporations											
Current	238 897	336 535	335 381	156 204	-13.2%	16.0%	199 859	211 727	223 372	12.7%	10.9%
Various institutions: Advanced manufacturing technology strategy implementation	25 649	–	43 146	51 215	25.9%	1.8%	53 678	59 542	62 817	7.0%	3.1%
Council for Scientific and Industrial Research	24 208	26 144	21 827	31 960	9.7%	1.6%	34 738	38 533	40 652	8.3%	2.0%
Various institutions: Innovative research and development	20 827	12 343	19 295	–	-100.0%	0.8%	–	–	–	–	–
Various institutions: Local manufacturing capacity research and technical support	68 034	143 101	141 925	–	-100.0%	5.3%	–	–	–	–	–
Council for Scientific and Industrial Research: Mining research and development	–	–	–	27 000	–	0.4%	63 000	60 000	63 300	32.8%	2.9%
Various institutions: Local systems of innovation for the cold chain technologies project	51 422	104 840	54 413	–	-100.0%	3.2%	–	–	–	–	–
Various institutions: Resource-based industries research and development	38 494	45 193	41 100	46 029	6.1%	2.6%	48 443	53 652	56 603	7.1%	2.8%
Various institutions: Environmental innovation	10 263	4 914	13 675	–	-100.0%	0.4%	–	–	–	–	–
Public corporations and private enterprises											
Private enterprises											
Other transfers to private enterprises											
Current	–	42 227	–	–	–	0.6%	–	–	–	–	–

Table 30.17 Socioeconomic Innovation Partnerships 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 (%)	
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20			2020/21
	R thousand											
Various institutions: Advanced manufacturing technology strategy implementation	-	42 227	-	-	-	0.6%	-	-	-	-	-	
Public corporations and private enterprises												
Public corporations												
Public corporations (subsidies on products and production)												
Current	825 740	820 204	872 043	915 645	3.5%	51.5%	963 164	1 014 914	1 070 735	5.4%	54.6%	
Council for Scientific and Industrial Research	825 740	820 204	872 043	915 645	3.5%	51.5%	963 164	1 014 914	1 070 735	5.4%	54.6%	

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 30.18 Socioeconomic Innovation Partnerships personnel numbers and cost by salary level¹

Number of posts estimated for 31 March 2018		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 (%)		
		2016/17	2017/18	2017/18	2018/19		2019/20		2020/21		2017/18 - 2020/21				
Socioeconomic Innovation Partnerships		Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost	Number	Unit Cost cost		
Salary level	57	-	51 37.0 0.7	51 40.0 0.8	51 43.0 0.8	51 46.2 0.9	51 49.7 1.0	-	-	-	-	-	-	-	100.0%
1-6	6	-	5 1.0 0.2	5 1.0 0.2	5 1.1 0.2	5 1.2 0.2	5 1.3 0.3	-	-	-	-	-	-	-	9.8%
7-10	10	-	9 3.2 0.4	9 3.5 0.4	9 3.8 0.4	9 4.1 0.5	9 4.4 0.5	-	-	-	-	-	-	-	17.6%
11-12	24	-	22 17.6 0.8	22 19.1 0.9	22 20.6 0.9	22 22.3 1.0	22 24.1 1.1	-	-	-	-	-	-	-	43.1%
13-16	17	-	15 15.3 1.0	15 16.3 1.1	15 17.5 1.2	15 18.7 1.2	15 20.0 1.3	-	-	-	-	-	-	-	29.4%

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 in terms of the Academy of Science of South Africa Act (2001), as amended. The academy's mandate is to promote outstanding achievement in all fields of scientific enquiry, recognise excellence by providing grants, and provide evidence-based scientific advice to government and other stakeholders.

Selected performance indicators

Table 30.19 Academy of Science of South Africa performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			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	27	29	39	20	20	20	20
Number of issues of the electronic Science for Society newsletter per year	Administration		4	4	4	4	4	4	4
Number of new journal titles on Scientific Electronic Library Online South Africa open access platform per year	Scholarly publishing programme		10	11	3	0 ¹	7	7	7
Number of issues of the South African Journal of Science published per year	Scholarly publishing programme		6	6	6	6	6	6	6
Number of Quest: Science for South Africa magazines produced per year	Scholarly publishing programme		4	4	4	4	4	4	4

1. Due to funding constraints in 2017/18, no new journal titles were made available on the Scientific Electronic Library Online South Africa open access platform.

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

Expenditure analysis

Over the medium term, the Academy of Science of South Africa intends to deliver on its mandate by playing an advisory role in support of policy development, as informed by the NDP. Through its work, the academy aims to contribute to outcome 5 (a skilled and capable workforce to support an inclusive growth path) of government's 2014-2019 medium-term strategic framework.

In 2018/19, the academy plans to publish 6 evidence-based scientific reports to support policy development. Over the MTEF period, it plans to publish 18 issues of the South African Journal of Science to promote visibility and broaden the influence of South African research, and 12 issues of Quest: Science for South Africa magazine to promote awareness of science among the youth. It also plans to award 6 Science for Society gold medals; host 3 distinguished visiting scholars and 6 regional public lectures; and add 21 new journal articles to the Scientific Electronic Library Online South Africa, an open access electronic science library.

Over the medium term, R12.5 million is allocated to the science advisory programme; R31.9 million to the scholarly publishing programme; and R18.3 million to the liaison programme. The administration programme is central to the efficient functioning of the academy. Accordingly, R30.8 million is allocated to the programme for activities related to human resources management, communication, knowledge management and governance. The academy's expenditure is expected to be R93.4 million over the MTEF period, while its staff complement is expected to remain constant. However, spending on compensation of employees is expected to increase at an average annual rate of 6.1 per cent, from R21 million in 2018/19 to R23.3 million in 2020/21, due to annual salary increases.

Transfers from the department account for a projected 94.8 per cent of the academy's revenue, decreasing at an average annual rate of 12.4 per cent, from R42.5 million in 2017/18 to R28.6 million in 2020/21.

Programmes/objectives/activities

Table 30.20 Academy of Science of South Africa expenditure trends and estimates by programme/objective/activity

	Audited outcome			Revised estimate	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
R thousand											
Administration	4 562	14 213	18 067	9 696	28.6%	26.7%	10 004	10 290	10 492	2.7%	30.1%
Communication	1 576	1 381	—	—	-100.0%	1.9%	—	—	—	—	—
Liaison	7 314	7 930	10 511	13 486	22.6%	22.9%	6 972	5 789	5 504	-25.8%	22.1%
Science advisory programme	8 615	8 054	5 975	9 003	1.5%	18.9%	4 156	4 182	4 128	-22.9%	15.0%
Publications	3 613	4 389	—	—	-100.0%	5.1%	—	—	—	—	—
Scholarly publishing programme	10 349	6 570	11 525	12 911	7.7%	24.5%	11 063	11 046	9 813	-8.7%	32.8%
Total	36 029	42 537	46 078	45 096	7.8%	100.0%	32 195	31 307	29 937	-12.8%	100.0%

Statements of historical financial performance and position

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

Statement of financial performance										
	Audited outcome		Audited outcome		Audited outcome		Budget estimate	Revised estimate	Average: Outcome/ Budget (%)	
	Budget	2014/15	Budget	2015/16	Budget	2016/17	2017/18	2017/18		
R thousand										
Revenue										
Non-tax revenue		750	2 272	1 176	1 388	1 178	2 871	1 230	2 594	210.5%
Sale of goods and services other than capital assets		332	511	586	468	588	1 326	590	1 354	174.6%
<i>of which:</i>										
Administrative fees		82	90	86	85	88	90	90	92	103.2%
Sales by market establishment		250	421	500	383	500	1 236	500	1 262	188.7%
Other non-tax revenue		418	1 761	590	920	590	1 545	640	1 240	244.2%
Transfers received		21 797	35 714	33 813	34 899	26 686	43 841	28 479	42 502	141.7%
Total revenue		22 547	37 986	34 989	36 287	27 864	46 712	29 709	45 096	144.3%

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

Statement of financial performance									Average: Outcome/ Budget (%)
	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	
R thousand	2014/15		2015/16		2016/17		2017/18		2014/15 - 2017/18
Expenses									
Current expenses	22 547	36 029	34 989	42 537	27 864	46 078	29 709	45 096	147.5%
Compensation of employees	10 090	13 499	16 876	17 393	17 567	25 181	18 498	19 472	119.9%
Goods and services	12 457	22 310	17 893	24 722	10 077	20 511	11 001	25 414	180.8%
Depreciation	–	220	220	422	220	386	210	210	190.5%
Total expenses	22 547	36 029	34 989	42 537	27 864	46 078	29 709	45 096	147.5%
Surplus/(Deficit)	–	1 957	–	(6 250)	–	634	–	–	
Statement of financial position									
Carrying value of assets	304	760	1 100	870	960	526	1 060	1 060	93.9%
<i>of which:</i>									
<i>Acquisition of assets</i>	<i>(80)</i>	<i>(434)</i>	<i>(150)</i>	<i>(523)</i>	<i>(145)</i>	<i>(45)</i>	<i>(180)</i>	<i>(180)</i>	<i>213.0%</i>
Investments	–	6 675	–	7 154	7 200	7 886	7 500	7 500	198.7%
Accrued investment interest	32	–	–	–	–	–	–	–	–
Receivables and prepayments	–	3 315	500	1 551	1 800	1 895	1 500	1 500	217.4%
Cash and cash equivalents	9 792	5 856	19 200	8 007	7 000	18 660	8 000	8 000	92.1%
Total assets	10 128	16 606	20 800	17 582	16 960	28 967	18 060	18 060	123.2%
Capital and reserves	9 403	13 804	20 000	8 818	16 210	9 452	17 310	17 310	78.5%
Capital reserve fund	–	–	–	6 668	–	15 563	–	–	–
Accrued interest	–	–	–	486	–	–	–	–	–
Trade and other payables	–	2 184	100	503	110	1 134	110	110	1 228.4%
Provisions	725	618	700	1 107	640	2 818	640	640	191.6%
Total equity and liabilities	10 128	16 606	20 800	17 582	16 960	28 967	18 060	18 060	123.2%

Statements of estimates of financial performance and position**Table 30.22 Academy of Science of South Africa statements of estimates of financial performance and position**

Statement of financial performance									Average: Expen- diture/ Total (%)
	Revised estimate	Average growth rate (%)		Medium-term estimate			Average growth rate (%)	Average: Expen- diture/ Total (%)	
R thousand	2017/18	2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21		
Revenue									
Non-tax revenue	2 594	4.5%	5.4%	1 586	1 590	1 590	-15.1%	5.2%	
Sale of goods and services other than capital assets	1 354	38.4%	2.1%	346	350	350	-36.3%	1.6%	
<i>of which:</i>									
<i>Administrative fees</i>	<i>92</i>	<i>0.7%</i>	<i>0.2%</i>	<i>96</i>	<i>100</i>	<i>100</i>	<i>2.8%</i>	<i>0.3%</i>	
<i>Sales by market establishment</i>	<i>1 262</i>	<i>44.2%</i>	<i>1.9%</i>	<i>250</i>	<i>250</i>	<i>250</i>	<i>-41.7%</i>	<i>1.3%</i>	
Other non-tax revenue	1 240	-11.0%	3.3%	1 240	1 240	1 240	–	3.7%	
Transfers received	42 502	6.0%	94.6%	30 858	29 968	28 596	-12.4%	94.8%	
Total revenue	45 096	5.9%	100.0%	32 444	31 558	30 186	-12.5%	100.0%	
Expenses									
Current expenses	45 096	7.8%	100.0%	32 195	31 307	29 937	-12.8%	100.0%	
Compensation of employees	19 472	13.0%	44.0%	20 998	22 110	23 284	6.1%	64.2%	
Goods and services	25 414	4.4%	55.2%	11 197	9 197	6 653	-36.0%	35.7%	
Depreciation	210	-1.5%	0.7%	–	–	–	-100.0%	0.1%	
Total expenses	45 096	7.8%	100.0%	32 195	31 307	29 937	-12.8%	100.0%	
Surplus/(Deficit)	–			249	251	249			
Statement of financial position									
Carrying value of assets	1 060	11.7%	4.3%	1 160	1 000	140	-49.1%	8.2%	
<i>of which:</i>									
<i>Acquisition of assets</i>	<i>(180)</i>	<i>-25.4%</i>	<i>-1.7%</i>	<i>(210)</i>	<i>(222)</i>	<i>(222)</i>	<i>7.2%</i>	<i>-6.9%</i>	
Investments	7 500	4.0%	37.4%	7 800	8 190	169	-71.8%	36.5%	
Receivables and prepayments	1 500	-23.2%	10.9%	1 790	1 300	345	-38.7%	15.7%	
Cash and cash equivalents	8 000	11.0%	47.4%	8 500	7 500	258	-68.2%	39.6%	
Total assets	18 060	2.8%	100.0%	19 250	17 990	912	-63.0%	100.0%	
Capital and reserves	17 310	7.8%	65.4%	18 500	17 198	–	-100.0%	71.9%	
Trade and other payables	110	-63.1%	5.1%	110	116	134	6.8%	4.1%	
Provisions	640	1.2%	5.8%	640	676	778	6.7%	24.0%	
Total equity and liabilities	18 060	2.8%	100.0%	19 250	17 990	912	-63.0%	100.0%	

Personnel information

Table 30.23 Academy of Science of South Africa personnel numbers and cost by salary level

Number of posts estimated for 31 March 2018			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 (%)			
			2016/17			2017/18			2018/19		2019/20		2020/21						
			Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			Number	Cost	Unit cost
Academy of Science of South Africa			35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	6.1%	100.0%
Salary level			38	25.2	0.7	35	19.5	0.6	35	21.0	0.6	35	22.1	0.6	35	23.3	0.7		
1 – 6	1	1	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	1	0.1	0.1	–	2.9%
7 – 10	25	25	27	14.0	0.5	25	11.7	0.5	27	12.8	0.5	27	13.4	0.5	27	14.1	0.5	6.5%	75.7%
11 – 12	6	6	6	4.6	0.8	6	3.6	0.6	4	3.8	0.9	4	4.0	1.0	4	4.2	1.0	5.6%	12.9%
13 – 16	3	3	4	6.4	1.6	3	4.1	1.4	3	4.4	1.5	3	4.6	1.5	3	4.9	1.6	5.7%	8.6%

1. Rand million.

Council for Scientific and Industrial Research

Mandate

The Council for 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 30.24 Council for Scientific and Industrial Research performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of journal articles published per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres	Outcome 5: A skilled and capable workforce to support an inclusive growth path	275	300	300	310	325	345	380
Number of conference papers delivered per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres		280	290	290	325	335	340	345
Number of new technology demonstrators per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres	Outcome 4: Decent employment through inclusive growth	25	30	40	25	30	44	45
Amount of contract research and development income per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres		R1.6bn	R1.9bn	R1.9bn	R2.1bn	R2.3bn	R2.5bn	R2.7bn
Number of science, engineering and technology staff per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres	Outcome 5: A skilled and capable workforce to support an inclusive growth path	1 753	1 850	2 050	2 100	2 152	2 206	2 260
Percentage of science, engineering and technology staff who are black per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres		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)	64% (1 450/2 261)
Number of science, engineering and technology staff with doctorates per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres		320	330	365	411	470	540	610
Number of new patents granted per year	Council for Scientific and Industrial Research science, engineering and technology operating units and centres	Outcome 4: Decent employment through inclusive growth	15	15	15	15	15	15	15

Expenditure analysis

Over the medium term, the Council for Scientific and Industrial Research intends to focus on conducting research, pursuing technological innovation to foster industrial and scientific development, building and transforming its core staff through ongoing development, renewal and transformation, and maintaining itself as a sustainable and well governed organisation. The council's work contributes mainly to outcome 4 (decent

employment through inclusive growth) and outcome 5 (a skilled and capable workforce to support an inclusive growth path) of government's 2014-2019 medium-term strategic framework.

To ensure an increase in new technologies and patents, over the MTEF period, the council plans to focus on conducting relevant research and development in health and energy, advanced manufacturing and mining, the built environment, defence and security, the natural environment, and scientific equipment and infrastructure. The council will support the development of new value chains in biomass beneficiation, medical devices, additive manufacturing, agro-processing, and nanotechnology, thus contributing to national efforts to shift South Africa towards a knowledge intensive economy. These areas of development could present opportunities for small businesses to emerge in industries where scale and investment requirements create barriers to entry. The council's initiatives also aim to advance the industrial policy action plan, which commits it to contribute to inclusive growth.

The council aims to increase its core staff in science, engineering and technology, from 2 976 in 2017/18 to 3 639 in 2020/21, to increase the output of its core deliverables. As a result, spending on compensation of employees is expected to increase at an average annual rate of 7 per cent, from R1.7 billion in 2017/18 to R2 billion in 2020/21, amounting to 56.6 per cent of the total expenditure over the medium term.

The council derives its revenue through transfers from the department; contracts for research; income earned from local, international, public and private sector projects; and intellectual property and technology transfers. Transfers received from the department account for 27 per cent of the council's projected revenue, increasing at an average annual rate of 5.5 per cent, from R835.7 million in 2017/18 to R980 million in 2020/21. The council expects to increase its net profit from R62 million to R78 million over the MTEF period and will invest this revenue in property plant and equipment.

Programmes/objectives/activities

Table 30.25 Council for Scientific and Industrial Research expenditure trends and estimates by programme/ objective/ activity

	Audited outcome			Revised estimate	Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	2014/15	2015/16	2016/17				2017/18	2014/15 - 2017/18	2018/19		
R thousand											
Administration	362 578	372 747	391 149	437 777	6.5%	14.6%	467 814	500 091	534 641	6.9%	14.8%
Council for Scientific and Industrial Research science, engineering and technology operating units and centres	2 036 497	2 323 569	2 278 348	2 521 139	7.4%	85.4%	2 691 367	2 877 548	3 075 546	6.9%	85.2%
Total	2 399 075	2 696 316	2 669 497	2 958 916	7.2%	100.0%	3 159 181	3 377 639	3 610 187	6.9%	100.0%

Statements of historical financial performance and position

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

Statement of financial performance										
	Audited outcome		Audited outcome		Audited outcome		Revised estimate		Average: Outcome/ Budget (%)	
	Budget	2014/15	Budget	2015/16	Budget	2016/17	Budget estimate	2017/18		2014/15 - 2017/18
R thousand										
Revenue										
Non-tax revenue		1 662 780	1 776 555	1 878 606	2 067 191	2 039 565	2 050 975	2 118 158	2 185 376	104.9%
Sale of goods and services other than capital assets		1 625 768	1 686 836	1 832 438	1 970 256	1 998 568	1 957 250	2 076 665	2 143 886	103.0%
<i>of which:</i>										
<i>Sales by market establishment</i>		1 625 768	1 686 836	1 832 438	1 970 256	1 998 568	1 957 250	2 076 665	2 143 886	103.0%
Other non-tax revenue		37 012	89 719	46 168	96 935	40 997	93 725	41 493	41 490	194.3%
Transfers received		825 740	675 340	794 968	680 485	815 629	714 105	831 468	835 717	88.9%
Total revenue		2 488 520	2 451 895	2 673 575	2 747 676	2 855 194	2 765 080	2 949 626	3 021 094	100.2%
Expenses										
Current expenses		2 437 876	2 399 075	2 610 365	2 694 762	2 793 129	2 669 456	2 887 574	2 958 916	99.9%
Compensation of employees		1 284 173	1 341 617	1 455 036	1 468 201	1 541 195	1 487 899	1 643 162	1 671 313	100.8%
Goods and services		1 099 411	1 001 854	1 103 758	1 163 676	1 194 162	1 110 851	1 183 187	1 222 153	98.2%
Depreciation		54 292	48 652	51 571	54 514	57 772	61 745	61 225	65 450	102.4%
Interest, dividends and rent on land		-	6 952	-	8 371	-	8 961	-	-	-
Total expenses		2 437 876	2 399 075	2 610 365	2 696 316	2 793 129	2 669 497	2 887 574	2 958 916	100.0%
Surplus/(Deficit)		50 644	52 820	63 210	51 360	62 065	95 583	62 052	62 178	

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

Statement of financial position									Average: Outcome/ Budget (%)
	Budget	Audited outcome	Budget	Audited outcome	Budget	Audited outcome	Budget estimate	Revised estimate	2014/15 - 2017/18
R thousand	2014/15		2015/16		2016/17		2017/18		
Carrying value of assets	532 598	736 032	784 370	753 737	813 420	762 908	843 778	841 250	104.0%
<i>of which:</i>									
Acquisition of assets	(85 405)	(130 635)	(99 909)	(100 543)	(117 455)	(71 987)	(91 582)	(143 792)	113.3%
Investments	5 372	15 883	16 489	7 615	18 142	20 216	18 142	20 689	110.8%
Inventory	94 569	102 901	103 589	105 966	106 856	100 564	110 426	107 896	100.5%
Receivables and prepayments	207 592	264 325	247 944	252 455	264 397	281 923	281 318	280 161	107.8%
Cash and cash equivalents	756 539	983 915	810 721	1 012 879	793 673	1 106 474	797 565	797 963	123.5%
Non-current assets held for sale	—	—	—	27 550	—	—	—	—	—
Total assets	1 596 670	2 103 056	1 963 113	2 160 202	1 996 488	2 272 085	2 051 229	2 047 959	112.8%
Accumulated surplus/(deficit)	729 716	879 147	942 357	930 507	992 572	1 026 090	1 054 624	1 088 268	105.5%
Deferred income	—	54 307	—	23 526	—	4 248	—	—	—
Trade and other payables	856 967	1 158 988	1 009 146	1 195 474	991 261	1 230 983	982 812	945 898	118.0%
Provisions	9 987	10 614	11 610	10 695	12 655	10 764	13 793	13 793	95.5%
Total equity and liabilities	1 596 670	2 103 056	1 963 113	2 160 202	1 996 488	2 272 085	2 051 229	2 047 959	112.8%

Statements of estimates of financial performance and position**Table 30.27 Council for Scientific and Industrial Research statements of estimates of financial performance and position**

Statement of financial performance								
	Revised estimate	Average growth rate (%)	Average: Expen- diture/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expen- diture/ Total (%)
R thousand	2017/18	2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21	
Revenue								
Non-tax revenue	2 185 376	7.1%	73.6%	2 348 683	2 523 861	2 708 108	7.4%	72.9%
Sale of goods and services other than capital assets	2 143 886	8.3%	70.6%	2 308 003	2 481 250	2 665 426	7.5%	71.6%
<i>of which:</i>								
Sales by market establishment	2 143 886	8.3%	70.6%	2 308 003	2 481 250	2 665 426	7.5%	71.6%
Other non-tax revenue	41 490	-22.7%	3.0%	40 680	42 611	42 682	0.9%	1.3%
Transfers received	835 717	7.4%	26.4%	879 694	928 956	980 049	5.5%	27.1%
Total revenue	3 021 094	7.2%	100.0%	3 228 376	3 452 818	3 688 157	6.9%	100.0%
Expenses								
Current expenses	2 958 916	7.2%	100.0%	3 159 181	3 377 639	3 610 187	6.9%	100.0%
Compensation of employees	1 671 313	7.6%	55.6%	1 787 162	1 911 247	2 045 034	7.0%	56.6%
Goods and services	1 222 153	6.8%	42.0%	1 302 642	1 392 853	1 487 201	6.8%	41.2%
Depreciation	65 450	10.4%	2.1%	69 377	73 539	77 952	6.0%	2.2%
Total expenses	2 958 916	7.2%	100.0%	3 159 181	3 377 639	3 610 187	6.9%	100.0%
Surplus/(Deficit)	62 178			69 195	75 179	77 970		
Statement of financial position								
Carrying value of assets	841 250	4.6%	36.1%	873 847	907 894	943 985	3.9%	41.0%
<i>of which:</i>								
Acquisition of assets	(143 792)	3.3%	-5.3%	(101 973)	(107 587)	(114 042)	-7.4%	-5.4%
Investments	20 689	9.2%	0.8%	25 144	29 346	31 107	14.6%	1.2%
Inventory	107 896	1.6%	4.9%	118 698	126 879	136 395	8.1%	5.6%
Receivables and prepayments	280 161	2.0%	12.6%	299 772	320 755	344 811	7.2%	14.3%
Cash and cash equivalents	797 963	-6.7%	45.3%	806 870	824 443	857 421	2.4%	37.8%
Total assets	2 047 959	-0.9%	100.0%	2 124 331	2 209 317	2 313 719	4.2%	100.0%
Accumulated surplus/(deficit)	1 088 268	7.4%	45.8%	1 157 463	1 232 642	1 310 612	6.4%	55.0%
Trade and other payables	945 898	-6.5%	52.7%	952 109	963 460	990 449	1.5%	44.4%
Provisions	13 793	9.1%	0.5%	14 759	13 215	12 658	-2.8%	0.6%
Total equity and liabilities	2 047 959	-0.9%	100.0%	2 124 331	2 209 317	2 313 719	4.2%	100.0%

Personnel information

Table 30.28 Council for Scientific and Industrial Research personnel numbers and cost by salary level

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		2017/18		2018/19		2019/20		2020/21		2017/18 - 2020/21							
Council for Scientific and Industrial Research		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	2 976	2 976	3 258	1 487.9	0.5	2 976	1 671.3	0.6	3 181	1 787.2	0.6	3 401	1 911.2	0.6	3 639	2 045.0	0.6	7.0%	100.0%
1 – 6	543	543	736	57.8	0.1	543	57.6	0.1	581	61.6	0.1	621	65.9	0.1	664	70.5	0.1	7.0%	18.3%
7 – 10	1 422	1 422	1 559	553.5	0.4	1 422	567.1	0.4	1 519	606.4	0.4	1 624	648.4	0.4	1 738	693.8	0.4	7.0%	47.8%
11 – 12	462	462	467	317.9	0.7	462	350.2	0.8	494	374.5	0.8	528	400.5	0.8	565	428.5	0.8	7.0%	15.5%
13 – 16	528	528	472	509.3	1.1	528	644.9	1.2	565	689.6	1.2	604	737.4	1.2	646	789.0	1.2	7.0%	17.7%
17 – 22	21	21	24	49.4	2.1	21	51.5	2.5	22	55.2	2.5	24	59.0	2.5	26	63.2	2.5	7.1%	0.7%

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, as well as evaluate its implementation
- 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 and analysis of developmental issues, thus contributing to the improvement of the quality of their lives
- develop and make publicly available data sets to underpin research, policy development and public discussion of developmental issues
- develop new and improved methodologies for use in the development of such data sets.

Selected performance indicators

Table 30.29 Human Sciences Research Council performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of interns (research trainees) enrolled in a masters programme appointed at the Human Science Research Council per year	Research, development and innovation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	42	42	52	42	42	42	42
Number of interns (research trainees) enrolled in a PhD programme appointed at the Human Sciences Research Council per year	Research, development and innovation		45	49	52	49	49	49	49
Number of postdoctoral fellows appointed at the Human Sciences Research Council per year	Research, development and innovation		21	29	27	25	25	25	25

Table 30.29 Human Sciences Research Council performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of Human Sciences Research Council data sets that were preserved (archived/curated) per year	Research, development and innovation	Entity mandate	23	23	23	23	23	24	25
Number of unique downloads of Human Sciences Research Council curated data sets per year	Administration		-1	-1	-1	450	472	496	520
Number of public dialogues on poverty and inequality hosted per year	Administration	Outcome 12: An efficient, effective and development oriented public service	-1	-1	4	4	4	4	6
Number of recognised book chapters with at least 1 Human Sciences Research Council researcher listed as author or co-author, published per year	Research, development and innovation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	52	53	64	54	54	54	55
Number of Human Sciences Research Council humanities and social sciences research seminars hosted per year	Research, development and innovation	Outcome 12: An efficient, effective and development oriented public service	50	62	60	50	50	50	50
Number of policy briefs produced by Human Sciences Research Council researchers and published by the council per year	Research, development and innovation		19	16	25	15	15	15	15
Number of human development indexes with which the Human Sciences Research Council has actively collaborated per year	Research, development and innovation		-1	-1	-1	5	5	6	6
Percentage of all South African researchers at senior level (science research manager and above) who are black African per year	Research, development and innovation	Outcome 5: A skilled and capable workforce to support an inclusive growth path	54%	45%	41%	56%	56%	56%	56%
Number of peer reviewed journal articles published in acknowledged scientific journals per Human Sciences Research Council researcher per year	Africa Institute of South Africa		-1	-1	0.79	0.8	0.9	1.0	1.1

1. No historical data available.

Expenditure analysis

Over the medium term, the Human Sciences Research Council intends to focus 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's research outputs are widely disseminated to support policy development at all levels of government. Spending on research and administration, in support of government's monitoring and evaluation mandate over the MTEF period, is expected to support large-scale, longitudinal and cross sectional studies; more innovative and collaborative research work; the development of research infrastructure and activities, which are aimed at enhancing inter-institutional collaboration; and the enhancement of human capital nationally and globally. Spending on these activities amounts to 41.5 per cent (R752 million) of total projected expenditure over the medium term. The council's main cost drivers are spending on activities related to direct research such as fieldwork, travel, accommodation and other sundry costs; goods and services; and capital expenditure.

Human capital is central to the council's work. Accordingly, spending on compensation of employees accounts for 51.3 per cent (R936.9 million) of the council's total projected expenditure over the MTEF period. The

council remains committed to contributing to the development of researchers and professional support staff to provide evidence-based support to government and to take part in funded national and international partnership agreements with other organisations in the sector. The number of personnel in the council is expected to remain constant at 564 over the next three years.

54 per cent of the council's activities are expected to be funded by a government grant of R968.4 million over the MTEF period. The remaining 46 per cent is generated from the council's own revenue sources such as research partners, interest earned, publication sales and rent.

Programmes/objectives/activities

Table 30.30 Human Sciences Research Council expenditure trends and estimates by programme/objective/activity

	Audited outcome			Revised estimate	Average growth rate (%)	Average: Expenditure/Total (%)	Medium-term expenditure estimate			Average growth rate (%)	Average: Expenditure/Total (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
R thousand					2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21	
Administration	151 094	165 408	165 324	198 274	9.5%	36.9%	209 977	223 576	232 519	5.5%	36.6%
Research, development and innovation	212 349	245 990	286 107	297 900	11.9%	56.4%	315 488	336 081	354 365	6.0%	55.2%
Africa Institute of South Africa	26 579	26 195	27 805	43 942	18.2%	6.7%	46 545	49 676	51 663	5.5%	8.1%
Total	390 022	437 593	479 236	540 115	11.5%	100.0%	572 011	609 333	638 547	5.7%	100.0%

Statements of historical financial performance and position

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

Statement of financial performance									
R thousand	Audited outcome		Audited outcome		Audited outcome		Revised estimate		Average: Outcome/Budget (%)
	Budget	2014/15	Budget	2015/16	Budget	2016/17	Budget estimate	2017/18	
Revenue									
Non-tax revenue	188 652	161 986	193 168	198 529	220 375	205 076	235 459	235 459	95.6%
Sale of goods and services other than capital assets	160 359	131 191	163 239	164 159	186 290	168 493	196 633	196 633	93.5%
<i>of which:</i>									
Administrative fees	181	–	192	–	204	204	216	216	52.9%
Sales by market establishment	156 545	128 826	159 247	161 246	182 051	166 070	192 148	192 148	94.0%
Other sales	3 633	2 365	3 800	2 913	4 036	2 219	4 270	4 270	74.8%
Other non-tax revenue	28 293	30 796	29 929	34 369	34 084	36 583	38 826	38 826	107.2%
Transfers received	276 010	245 872	288 706	270 610	290 149	254 517	304 656	304 656	92.8%
Total revenue	464 662	407 858	481 874	469 139	510 524	459 593	540 115	540 115	94.0%
Expenses									
Current expenses	435 370	390 022	446 419	437 593	473 360	479 236	501 052	501 052	97.4%
Compensation of employees	225 394	230 800	253 535	236 986	254 546	270 926	274 259	274 259	100.5%
Goods and services	197 561	149 257	182 462	192 393	207 520	195 309	214 863	214 863	93.7%
Depreciation	10 665	8 695	9 270	6 995	10 070	11 251	10 654	10 654	92.5%
Interest, dividends and rent on land	1 750	1 270	1 152	1 218	1 223	1 750	1 276	1 276	102.1%
Transfers and subsidies	29 293	–	35 455	–	37 164	–	39 063	39 063	27.7%
Total expenses	464 663	390 022	481 874	437 593	510 523	479 236	540 115	540 115	92.5%
Surplus/(Deficit)	(1)	17 837	–	31 546	–	(19 643)	–	–	
Statement of financial position									
Carrying value of assets	194 997	208 297	198 926	223 688	211 259	237 842	223 512	223 512	107.8%
<i>of which:</i>									
Acquisition of assets	(5 565)	(5 634)	(2 968)	(19 177)	(3 132)	(26 954)	(3 288)	(3 288)	368.2%
Investments	111	1 319	–	–	–	–	–	–	1 185.1%
Inventory	6 325	8 013	5 910	5 355	6 277	5 986	6 641	6 641	103.3%
Receivables and prepayments	47 699	43 284	45 104	34 493	47 900	50 257	50 679	50 679	93.4%
Cash and cash equivalents	42 768	80 324	56 516	111 148	60 020	61 307	63 501	63 501	142.0%
Taxation	–	842	879	4 122	933	5 779	987	987	419.0%
Total assets	291 901	342 078	307 335	378 806	326 390	361 171	345 320	345 320	112.3%
Accumulated surplus/(deficit)	24 082	51 282	17 832	82 019	18 938	62 376	20 036	20 036	266.7%
Capital and reserves	154 925	184 282	172 762	184 283	183 474	184 283	194 115	194 115	105.9%
Finance lease	573	–	573	–	609	–	644	644	26.8%
Deferred income	54 244	55 903	61 249	55 991	65 046	57 763	68 819	68 819	95.6%
Trade and other payables	29 784	21 516	27 044	32 305	28 721	30 266	30 387	30 387	98.7%
Taxation	932	–	–	–	–	–	–	–	–
Provisions	27 361	29 096	27 874	24 208	29 602	26 484	31 319	31 319	95.7%
Total equity and liabilities	291 901	342 079	307 335	378 806	326 390	361 172	345 320	345 320	112.3%

Statements of estimates of financial performance and position

Table 30.32 Human Sciences Research Council 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 (%)
					2017/18	2014/15 - 2017/18	2018/19		
R thousand									
Revenue									
Non-tax revenue		235 459	13.3%	42.6%	266 515	286 731	298 200	8.2%	46.0%
Sale of goods and services other than capital assets		196 633	14.4%	35.1%	222 258	234 704	244 093	7.5%	38.0%
<i>of which:</i>									
Administrative fees		216	–	0.0%	228	241	251	5.1%	0.0%
Sales by market establishment		192 148	14.3%	34.4%	217 512	229 693	238 881	7.5%	37.2%
Other sales		4 270	21.8%	0.6%	4 517	4 770	4 961	5.1%	0.8%
Other non-tax revenue		38 826	8.0%	7.5%	44 257	52 026	54 107	11.7%	8.0%
Transfers received		304 656	7.4%	57.4%	305 495	322 603	340 346	3.8%	54.0%
Total revenue		540 115	9.8%	100.0%	572 010	609 333	638 546	5.7%	100.0%
Expenses									
Current expenses		501 052	8.7%	98.2%	530 682	565 690	593 158	5.8%	92.8%
Compensation of employees		274 259	5.9%	55.2%	293 608	315 340	327 954	6.1%	51.3%
Goods and services		214 863	12.9%	40.7%	224 452	237 021	251 342	5.4%	39.3%
Depreciation		10 654	7.0%	2.0%	11 272	11 904	12 380	5.1%	2.0%
Interest, dividends and rent on land		1 276	0.2%	0.3%	1 350	1 426	1 483	5.1%	0.2%
Transfers and subsidies		39 063	–	1.8%	41 328	43 643	45 388	5.1%	7.2%
Total expenses		540 115	11.5%	100.0%	572 011	609 333	638 546	5.7%	100.0%
Surplus/(Deficit)		–			–	–	–		
Statement of financial position									
Carrying value of assets		223 512	2.4%	62.6%	236 476	249 719	259 707	5.1%	64.7%
<i>of which:</i>									
Acquisition of assets		(3 288)	-16.4%	-3.8%	(3 479)	(3 674)	(3 821)	5.1%	-1.0%
Inventory		6 641	-6.1%	1.8%	7 026	7 419	7 716	5.1%	1.9%
Receivables and prepayments		50 679	5.4%	12.6%	53 618	56 621	58 885	5.1%	14.7%
Cash and cash equivalents		63 501	-7.5%	22.0%	67 184	70 947	73 785	5.1%	18.4%
Taxation		987	5.5%	0.8%	1 045	1 103	1 147	5.1%	0.3%
Total assets		345 320	0.3%	100.0%	365 349	385 808	401 241	5.1%	100.0%
Accumulated surplus/(deficit)		20 036	-26.9%	14.9%	21 198	22 385	23 281	5.1%	5.8%
Capital and reserves		194 115	1.7%	52.4%	205 374	216 875	225 550	5.1%	56.2%
Finance lease		644	–	0.0%	681	720	748	5.1%	0.2%
Deferred income		68 819	7.2%	16.8%	72 810	76 888	79 963	5.1%	19.9%
Trade and other payables		30 387	12.2%	8.0%	32 149	33 950	35 308	5.1%	8.8%
Provisions		31 319	2.5%	7.8%	33 136	34 991	36 391	5.1%	9.1%
Total equity and liabilities		345 320	0.3%	100.0%	365 349	385 808	401 241	5.1%	100.0%

Personnel information

Table 30.33 Human Sciences Research Council personnel numbers and cost by salary level

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		Unit cost	2017/18		Unit cost	2018/19		2019/20		2020/21				2017/18 - 2020/21			
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	564	600	581	270.9	0.5	564	274.3	0.5	564	293.6	0.5	564	315.3	0.6	564	328.0	0.6	6.1%	100.0%
1 – 6	163	174	166	23.5	0.1	163	24.3	0.1	163	26.0	0.2	163	28.0	0.2	163	29.1	0.2	6.1%	28.9%
7 – 10	257	268	266	104.7	0.4	257	106.7	0.4	257	114.3	0.4	257	122.7	0.5	257	127.6	0.5	6.1%	45.6%
11 – 12	83	89	84	64.8	0.8	83	66.9	0.8	83	71.6	0.9	83	76.9	0.9	83	80.0	1.0	6.1%	14.7%
13 – 16	57	63	62	71.3	1.2	57	67.5	1.2	57	72.3	1.3	57	77.6	1.4	57	80.8	1.4	6.1%	10.1%
17 – 22	4	6	3	6.7	2.2	4	8.8	2.2	4	9.4	2.4	4	10.1	2.5	4	10.5	2.6	6.1%	0.7%

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, 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 30.34 National Research Foundation performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of members of the public reached through interactions focusing on science awareness activities per year	Science engagement	Entity mandate	972 547	1 013 716	1 084 760	1 080 000	1 080 000	1 090 000	1 090 000
Number of black researchers funded per year	Research and innovation support and advancement		1 235	1 355	1 563	1 960	2 193	2 438	2 438
Number of female researchers funded per year	Research and innovation support and advancement		1 514	1 610	1 699	2 450	2 550	2 650	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	7 057	9 715	10 747	10 350	10 850	11 360	11 360
Number of female postgraduate students funded per year	Research and innovation support and advancement		5 976	8 265	8 017	8 700	8 990	9 280	9 280
Number of masters students supported per year	Research and innovation support and advancement		4 263	4 853	4 995	5 350	5 600	5 800	5 800
Number of doctoral students supported per year	Research and innovation support and advancement		2 917	3 181	3 363	3 230	3 300	3 400	3 400
Number of researchers rated through the National Research Foundation system per year	Research and innovation support and advancement		3 161	3 369	3 663	3 600	3 800	4 000	4 050
Number of active grants emanating from bi-national, multinational and agency to agency agreements per year	Research and innovation support and advancement	Entity mandate	1 055	1 161	1 008	1 404	1 105	1 112	1 212
Number of users of equipment funded by the national equipment programme and national nanotechnology equipment programme per year	Research and innovation support and advancement	Outcome 6: An efficient, competitive and responsive economic infrastructure network	1 700	2 360	2 937	2 000	2 641	2 242	1 824
Number of publications emanating from the usage of equipment funded by the national equipment programme and national nanotechnology equipment programme per year	Research and innovation support and advancement		1 700	1 105	779	2 300	695	590	480
Number of Web of Science publications produced in nuclear, biodiversity, conservation and environment at the national research facilities per year	National research infrastructure platforms	Entity mandate	234	275	321	370	406	419	419

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 improved quality of life for all, in alignment with the NDP's vision. Through capacity building, such as support provided to students through bursaries, targeted investments and the use of modern research infrastructure, the foundation 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 foundation supports research in nuclear sciences, biodiversity, astronomy and geosciences. The budget for research done in-house or by external bodies such as universities amounts to R4 billion over the MTEF period. To strengthen its role as a globally competitive research institution, over the medium term, the foundation plans to invest R793 million of the R4 billion in palaeosciences; Antarctic research; indigenous knowledge systems; biodiversity; and astronomy to enable researchers to collaborate across disciplines and institutions.

The Square Kilometre Array, which will be the world's largest and most sensitive radio telescope; is expected to be completed in 2023. The foundation has an allocation of R2.3 billion over the medium term for the project and capital expenditure on the project is set to decline significantly in 2018/19 as work on the MeerKAT radio telescope, the precursor to the Square Kilometre Array, enters its final stages. Over the medium term, investment in optical and radio astronomy is expected to amount to R446 million. Targeted initiatives that

enable the foundation to be globally competitive, such as the national astronomy and space science programme and the South African Research Chairs Initiative, are allocated R160 million over the MTEF period to spend on work streams related to astronomy, space science and human capacity development.

The foundation supports initiatives that are aimed at making South Africa a knowledge intensive economy. A total of R2.3 billion was spent in 2016/17 on capacity development and knowledge generation, and on providing the required infrastructure for these activities. Of this, R904 million was invested in supporting 4 995 masters and 3 363 doctoral students. The foundation expects to increase the number of academic staff with PhD qualifications from 43 per cent in 2014 to 75 per cent in 2030; and increase the number of doctoral graduates from 2 000 in 2013 to 5 000 per year in 2030; and, in doing so, increase the number of PhD graduations per million people from 42 in 2015 to 74 in 2030.

The foundation aims to diversify the research cohort by dedicating funds to women and black researchers, and fast-tracking black women PhD graduates towards obtaining a globally recognised foundation rating. In this regard, the foundation has secured an investment of R82.4 million from the First Rand Foundation towards the National Research Foundation-First Rand Foundation sabbatical grants funding instrument, targeted at establishing previously marginalised groups as researchers. This is in addition to an amount of R195 million per year from the foundation, which is dedicated to supporting emerging researchers.

The foundation receives funding primarily through allocations from the Department of Science and Technology and other government departments and entities. The baseline allocation, received from the Department of Science and Technology, is projected to increase at an average annual rate of 5.4 per cent, from R3.7 billion in 2018/19 to R4 billion in 2020/21.

Revenue from the Department of Science and Technology and other entities comprises approximately 75 per cent of the foundation's total projected revenue over the medium term. About R140 million will be reallocated from the foundation's budget to the South African National Biodiversity Institute, with effect from 1 April 2018, due to the transfer of all national zoological gardens to the institute.

Programmes/objectives/activities

Table 30.35 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 (%)
	2014/15	2015/16	2016/17				2017/18	2018/19	2019/20		
Administration	67 291	82 249	85 007	104 185	15.7%	2.3%	126 600	135 214	142 638	11.0%	3.0%
Science engagement	135 010	163 946	169 509	176 328	9.3%	4.4%	135 735	128 362	133 900	-8.8%	3.4%
Research and innovation support and advancement	1 877 740	2 645 156	2 690 504	2 564 415	10.9%	66.9%	2 560 689	2 928 465	2 882 167	4.0%	63.6%
National research infrastructure platforms	381 370	394 746	430 026	1 119 254	43.2%	15.7%	1 265 394	1 360 332	1 434 732	8.6%	30.1%
National research facilities: Astronomy	371 843	514 031	637 930	-	-100.0%	10.6%	-	-	-	-	-
Total	2 833 254	3 800 128	4 012 976	3 964 182	11.8%	100.0%	4 088 418	4 552 373	4 593 437	5.0%	100.0%

Statements of historical financial performance and position**Table 30.36 National Research Foundation statements of historical financial performance and position**

Statement of financial performance										
	Budget		Audited outcome		Budget		Audited outcome		Average: Outcome/Budget (%)	
R thousand	2014/15		2015/16		2016/17		2017/18		2014/15 - 2017/18	
Revenue										
Non-tax revenue	1 604 110	1 528 905	1 307 477	1 487 106	1 241 612	1 382 965	1 313 542	1 237 537	103.1%	
Sale of goods and services other than capital assets	1 523 607	99 522	121 969	127 550	130 500	106 657	129 746	129 746	24.3%	
<i>of which:</i>										
<i>Sales by market establishment</i>	53 330	71 699	69 143	72 137	76 577	67 968	81 748	81 748	104.5%	
<i>Other sales</i>	1 470 277	27 823	52 826	55 413	53 923	38 689	47 998	47 998	10.5%	
Other non-tax revenue	80 503	1 429 383	1 185 508	1 359 556	1 111 112	1 276 308	1 183 796	1 107 791	145.3%	
Transfers received	1 565 365	1 568 756	2 877 081	2 675 486	3 197 817	3 118 154	3 115 177	3 378 083	99.9%	
Total revenue	3 169 475	3 097 661	4 184 558	4 162 592	4 439 429	4 501 119	4 428 719	4 615 620	101.0%	
Expenses										
Current expenses	1 131 565	1 044 219	1 308 607	1 243 400	1 362 159	1 414 962	1 446 881	1 459 584	98.3%	
Compensation of employees	612 608	541 632	666 440	577 904	678 757	627 097	749 310	749 962	92.2%	
Goods and services	460 693	420 930	563 093	573 795	585 517	663 105	584 852	596 903	102.8%	
Depreciation	58 232	81 283	79 039	91 560	97 854	124 713	112 686	112 686	117.9%	
Interest, dividends and rent on land	32	374	35	141	31	47	33	33	454.2%	
Transfers and subsidies	1 952 887	1 789 035	2 394 538	2 556 728	2 460 484	2 598 014	2 543 119	2 504 598	101.0%	
Total expenses	3 084 452	2 833 254	3 703 145	3 800 128	3 822 643	4 012 976	3 990 000	3 964 182	100.1%	
Surplus/(Deficit)	85 023	264 407	481 413	362 464	616 786	488 143	438 719	651 438		
Statement of financial position										
Carrying value of assets	1 641 876	1 364 478	1 862 028	1 708 293	2 353 563	2 209 717	2 792 283	2 873 031	94.3%	
<i>of which:</i>										
<i>Acquisition of assets</i>	(480 048)	(321 231)	(565 884)	(440 047)	(741 738)	(630 046)	(551 405)	(776 000)	92.7%	
Investments	32 650	25 763	25 763	22 795	20 000	18 447	19 000	17 000	86.2%	
Inventory	6 000	5 816	6 500	6 180	6 500	7 080	6 300	6 300	100.3%	
Receivables and prepayments	704 528	1 323 626	1 000 832	1 500 380	986 418	1 512 990	900 000	945 707	147.1%	
Cash and cash equivalents	473 404	704 558	648 404	671 475	589 069	494 775	550 000	510 000	105.3%	
Defined benefit plan assets	–	459	500	1 459	1 300	3 701	1 150	1 150	229.5%	
Total assets	2 858 458	3 424 700	3 544 027	3 910 582	3 956 850	4 246 710	4 268 733	4 353 188	108.9%	
Accumulated surplus/(deficit)	2 467	2 537	–	4 110	–	431	–	–	286.9%	
Capital and reserves	52 357	87 721	97 721	104 112	78 329	94 513	77 329	83 068	120.8%	
Capital reserve fund	1 640 776	1 364 477	1 862 028	1 708 296	2 353 563	2 209 717	2 792 283	2 873 031	94.3%	
Finance lease	1 308	649	600	220	240	175	210	150	50.6%	
Deferred income	1 084 770	1 840 779	1 478 805	1 972 022	1 420 430	1 798 739	1 294 439	1 294 439	130.8%	
Trade and other payables	76 780	120 164	95 998	103 727	94 862	134 761	94 500	94 500	125.1%	
Provisions	–	8 373	8 875	18 095	9 426	8 374	9 972	8 000	151.5%	
Total equity and liabilities	2 858 458	3 424 700	3 544 027	3 910 582	3 956 850	4 246 710	4 268 733	4 353 188	108.9%	

Statements of estimates of financial performance and position**Table 30.37 National Research Foundation 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 (%)	
R thousand	2017/18	2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21		
Revenue									
Non-tax revenue	1 237 537	-6.8%	35.7%	630 274	570 283	562 269	-23.1%	16.6%	
Sale of goods and services other than capital assets	129 746	9.2%	2.9%	65 789	68 425	71 400	-18.1%	1.9%	
<i>of which:</i>									
<i>Sales by market establishment</i>	81 748	4.5%	1.8%	63 645	66 155	69 048	-5.5%	1.6%	
<i>Other sales</i>	47 998	19.9%	1.0%	2 144	2 270	2 352	-63.4%	0.3%	
Other non-tax revenue	1 107 791	-8.1%	32.8%	564 485	501 858	490 869	-23.8%	14.8%	
Transfers received	3 378 083	29.1%	64.3%	3 691 441	3 940 209	3 959 230	5.4%	83.4%	
Total revenue	4 615 620	14.2%	100.0%	4 321 715	4 510 492	4 521 499	-0.7%	100.0%	

Table 30.37 National Research Foundation 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	2017/18	2014/15 - 2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	2017/18 - 2020/21	
R thousand								
Expenses	1 459 584	11.8%	35.4%	1 579 213	1 682 753	1 779 287	6.8%	37.8%
Current expenses	1 459 584	11.8%	35.4%	1 579 213	1 682 753	1 779 287	6.8%	37.8%
Compensation of employees	749 962	11.5%	17.2%	791 892	813 691	868 778	5.0%	18.8%
Goods and services	596 903	12.3%	15.4%	637 538	708 123	739 845	7.4%	15.6%
Depreciation	112 686	11.5%	2.8%	149 783	160 939	170 664	14.8%	3.4%
Interest, dividends and rent on land	33	-55.5%	0.0%	-	-	-	-100.0%	0.0%
Transfers and subsidies	2 504 598	11.9%	64.6%	2 509 205	2 869 620	2 814 150	4.0%	62.2%
Total expenses	3 964 182	11.8%	100.0%	4 088 418	4 552 373	4 593 437	5.0%	100.0%
Surplus/(Deficit)	651 438			233 297	(41 881)	(71 938)		
Statement of financial position								
Carrying value of assets	2 873 031	28.2%	50.4%	3 106 325	3 068 600	2 999 925	1.5%	69.2%
of which:								
Acquisition of assets	(776 000)	34.2%	-13.3%	(383 078)	(119 053)	(98 726)	-49.7%	-7.9%
Investments	17 000	-12.9%	0.5%	15 000	14 000	12 000	-11.0%	0.3%
Inventory	6 300	2.7%	0.2%	3 350	3 300	3 200	-20.2%	0.1%
Receivables and prepayments	945 707	-10.6%	33.6%	874 053	842 053	827 753	-4.3%	20.0%
Cash and cash equivalents	510 000	-10.2%	15.3%	505 000	406 000	388 000	-8.7%	10.4%
Defined benefit plan assets	1 150	35.8%	0.0%	1 000	900	800	-11.4%	0.0%
Total assets	4 353 188	8.3%	100.0%	4 504 728	4 334 853	4 231 678	-0.9%	100.0%
Capital and reserves	83 068	-1.8%	2.3%	82 068	80 068	78 068	-2.0%	1.9%
Capital reserve fund	2 873 031	28.2%	50.4%	3 106 325	3 068 600	2 999 925	1.5%	69.2%
Finance lease	150	-38.6%	0.0%	190	170	155	1.1%	0.0%
Deferred income	1 294 439	-11.1%	44.1%	1 225 095	1 096 395	1 066 185	-6.3%	26.9%
Trade and other payables	94 500	-7.7%	2.9%	82 550	80 920	78 345	-6.1%	1.9%
Provisions	8 000	-1.5%	0.3%	8 500	8 700	9 000	4.0%	0.2%
Total equity and liabilities	4 353 188	8.3%	100.0%	4 504 728	4 334 853	4 231 678	-0.9%	100.0%

Personnel information**Table 30.38 National Research Foundation personnel numbers and cost by salary level**

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		Unit cost	2017/18		Unit cost	2018/19		Unit cost	2019/20		Unit cost			2020/21		Unit cost	
National Research Foundation		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	1 531	1 531	1 411	627.1	0.4	1 444	750.0	0.5	1 531	791.9	0.5	1 531	813.7	0.5	1 531	868.8	0.6	5.0%	100.0%
1-6	337	337	336	48.9	0.1	319	52.3	0.2	337	55.2	0.2	337	56.7	0.2	337	60.6	0.2	5.0%	22.0%
7-10	888	888	792	310.2	0.4	842	380.3	0.5	888	401.6	0.5	888	412.6	0.5	888	440.6	0.5	5.0%	58.1%
11-12	189	189	176	135.3	0.8	171	160.8	0.9	189	169.7	0.9	189	174.4	0.9	189	186.2	1.0	5.0%	12.2%
13-16	109	109	100	113.6	1.1	104	134.2	1.3	109	141.7	1.3	109	145.6	1.3	109	155.4	1.4	5.0%	7.1%
17-22	8	8	7	19.0	2.7	8	22.4	2.8	8	23.7	3.0	8	24.4	3.0	8	26.0	3.3	5.1%	0.5%

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

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of high impact products and applications in national geospatial decision support data products per year	Earth observation	Outcome 7: Comprehensive rural development and land reform	-1	4	5	5	5	5	4
Commercial income generated from space operations activities per year	Space operation	Outcome 6: An efficient, competitive and responsive economic infrastructure network	-1	R77m	R66.7m	R44m	R65m	R69m	R65m
Number of government decisions or policies implemented per year	Space science	Outcome 12: An efficient, effective and development oriented public service	-1	2	3	3	3	3	2
National research productivity score for space supported research and development per year	Space science	Outcome 10: Protect and enhance our environmental assets and natural resources	-1	1 992	1 656	1 200	1 600	2 000	1 800
Number of students supported for formalised training per year	Space science	Outcome 5: A skilled and capable workforce to support an inclusive growth path	-1	53	87	70	50	90	70

1. No historical data available.

Expenditure analysis

The work of the South African National Space Agency is focused on the improvement of geospatial patterns to foster the development of marginalised communities; the planning and monitoring of backbone national infrastructure; health surveillance and intelligence; space-based service delivery and performance monitoring; and geospatial decision-making tools. The agency contributes to outcome 10 (protect and enhance our environmental assets and natural resources), outcome 12 (an efficient, effective and development oriented public service), outcome 5 (a skilled and capable workforce to support an inclusive growth path), 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.

Over the MTEF period, the agency intends to continue carrying out activities that ensure that space services, which entail the acquisition and archiving of satellite data, are integrated into service delivery. Knowledge generated from this data helps to address challenges in agriculture, water, energy, health, and safety and security by providing high quality image data products to support informed spatial decision-making. More than 40 government departments and entities use national geospatial data for efficient planning, monitoring and decision-making. R202.6 million is allocated over the medium term to the earth observation programme to supply cost effective data and information in support of various national imperatives. The agency also plays a key role in contributing to the Operation Phakisa oceans economy programme by developing, fabricating, testing and launching a nano-satellite that will be used to monitor illegal fishing in South Africa's oceans.

To enhance the competitiveness of the South African space industry, the agency plans to lead high impact space research; develop human capacity to ensure transformation; and foster strong global partnerships. These activities are conducted through the space operations and space engineering programmes at an estimated cost of R190 million over the medium term. These programmes are aimed at servicing the international commercial market through space-related support, such as satellite and sub-systems engineering and analysis, and providing infrastructure for telemetry services, thus enabling the acquisition of satellite data and imagery. Over the MTEF period, the agency plans to support 90 postgraduate research students through an allocation of R30 million in the space science programme. Addressing the critical skills shortages in these areas will improve South Africa's global competitiveness and reduce the currently high trade deficit in high-tech products and services.

Compensation of employees remains the agency's most significant cost driver, spending on which amounts to an estimated 54.8 per cent (R393 million) of total expenditure over the MTEF period. This will enable the agency to recruit more scientists, engineers and researchers to support its mandate, as well as the satellite build programme, a multi-year project funded through a grant from the Department of Science and

Technology. The project is expected to be completed in 2018/19, with its current remaining contract value at R187.3 million. The agency's staff complement is expected to remain constant at 198 over the MTEF period. Spending on compensation of employees is projected to increase at an average annual rate of 4.8 per cent, while spending on goods and services is expected to account for 42.4 per cent (R268.4 million) of the agency's total budget over the same period, decreasing by 12 per cent due to a reduction in the overall budget.

The agency derives its revenue through transfers from the department and services rendered to government institutions and other organisations. Transfers from the department are expected to decrease by 17.5 per cent over the medium term, from R280.9 million in 2017/18 to R158 million in 2020/21.

Programmes/objectives/activities

Table 30.40 South African National Space Agency expenditure trends and estimates by programme/objective/activity

	Audited outcome			Revised estimate 2017/18	Average growth rate (%) 2014/15 - 2017/18	Average: Expenditure/Total (%) 2014/15 - 2017/18	Medium-term expenditure estimate			Average growth rate (%) 2017/18 - 2020/21	Average: Expenditure/Total (%) 2017/18 - 2020/21
	2014/15	2015/16	2016/17				2018/19	2019/20	2020/21		
R thousand											
Administration	47 419	34 239	34 089	54 151	4.5%	18.4%	44 110	46 882	45 150	-5.9%	20.2%
Earth observation	64 009	82 625	74 061	61 768	-1.2%	31.0%	65 478	67 741	69 407	4.0%	28.2%
Space operation	59 805	62 493	62 511	69 220	5.0%	27.6%	60 313	63 547	67 574	-0.8%	27.7%
Space science	33 972	36 211	43 305	38 313	4.1%	16.5%	37 022	39 255	41 598	2.8%	16.6%
Space engineering	2 837	9 762	10 925	40 022	141.6%	6.4%	10 055	10 534	10 751	-35.5%	7.3%
Total	208 042	225 330	224 891	263 474	8.2%	100.0%	216 978	227 959	234 480	-3.8%	100.0%

Statements of historical financial performance and position

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

Statement of financial performance									
	Audited outcome		Audited outcome		Audited outcome		Budget estimate	Revised estimate	Average: Outcome/Budget (%) 2014/15 - 2017/18
	Budget	2014/15	Budget	2015/16	Budget	2016/17			
R thousand									
Revenue									
Non-tax revenue	59 576	76 108	63 270	110 397	131 478	83 179	67 157	81 127	109.1%
Sale of goods and services other than capital assets	59 396	67 681	62 820	96 829	90 816	71 765	67 157	70 596	109.5%
of which:									
Sales by market establishment	59 396	67 681	62 820	96 829	90 816	71 765	67 157	70 596	109.5%
Other non-tax revenue	180	8 427	449	13 569	40 662	11 415	-	10 532	106.4%
Transfers received	272 604	163 586	217 741	232 441	231 115	227 233	247 907	280 862	93.3%
Total revenue	332 180	239 694	281 011	342 838	362 593	310 412	315 064	361 989	97.2%
Expenses									
Current expenses	345 380	205 941	277 684	219 215	359 889	216 630	310 927	255 153	69.3%
Compensation of employees	87 366	93 020	104 545	96 046	111 986	104 695	120 516	120 106	97.5%
Goods and services	258 014	90 019	150 047	98 062	247 903	88 033	190 411	135 047	48.6%
Depreciation	-	22 903	23 092	25 097	-	23 878	-	-	311.3%
Interest, dividends and rent on land	-	-	-	10	-	24	-	-	-
Transfers and subsidies	-	2 100	3 327	6 115	2 704	8 261	4 137	8 320	243.9%
Total expenses	345 380	208 041	281 011	225 330	362 593	224 891	315 064	263 473	70.7%
Surplus/(Deficit)	(13 200)	31 653	-	117 508	-	85 521	-	98 516	
Statement of financial position									
Carrying value of assets	366 658	192 881	142 809	279 597	150 663	364 814	158 196	459 236	158.4%
of which:									
Acquisition of assets	(110 729)	(87 461)	(56 988)	(113 533)	(50 523)	(110 124)	(62 970)	(84 253)	140.6%
Inventory	345	335	453	352	478	463	502	463	90.7%
Receivables and prepayments	5 927	22 434	24 519	20 587	25 867	20 801	27 161	20 801	101.4%
Cash and cash equivalents	-	123 229	134 405	178 459	141 797	150 758	148 887	61 511	120.9%
Total assets	372 930	338 879	302 186	478 994	318 806	536 836	334 746	542 011	142.8%
Accumulated surplus/(deficit)	303 703	204 276	188 214	321 783	198 566	407 304	208 494	496 550	159.1%
Borrowings	-	-	-	27 975	-	9 269	-	1 010	-
Finance lease	-	14 101	729	-	769	-	808	-	611.5%
Deferred income	-	89 146	85 896	82 336	90 620	86 816	95 151	12 835	99.8%
Trade and other payables	63 657	25 195	21 639	34 047	22 829	20 927	23 971	23 971	78.8%
Provisions	5 570	6 161	5 708	6 962	6 022	7 645	6 323	7 645	120.3%
Derivatives financial instruments	-	-	-	5 892	-	4 876	-	-	-
Total equity and liabilities	372 930	338 879	302 186	478 994	318 806	536 837	334 746	542 011	142.8%

Statements of estimates of financial performance and position**Table 30.42 South African National Space Agency 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		2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21	
R thousand		2017/18						
Revenue								
Non-tax revenue	81 127	2.2%	28.3%	76 657	78 685	82 602	0.6%	31.3%
Sale of goods and services other than capital assets	70 596	1.4%	24.8%	76 287	78 306	82 215	5.2%	30.4%
<i>of which:</i>								
<i>Sales by market establishment</i>	70 596	1.4%	24.8%	76 287	78 306	82 215	5.2%	30.4%
Other non-tax revenue	10 532	7.7%	3.5%	370	378	387	-66.7%	0.8%
Transfers received	280 862	19.7%	71.7%	145 709	154 184	157 964	-17.5%	68.7%
Total revenue	361 989	14.7%	100.0%	222 366	232 869	240 566	-12.7%	100.0%
Expenses								
Current expenses	255 153	7.4%	97.4%	209 798	220 065	231 517	-3.2%	97.2%
Compensation of employees	120 106	8.9%	44.9%	123 983	130 929	138 088	4.8%	54.8%
Goods and services	135 047	14.5%	44.3%	85 815	89 136	93 429	-11.6%	42.4%
Transfers and subsidies	8 320	58.2%	2.6%	7 180	7 894	2 963	-29.1%	2.8%
Total expenses	263 473	8.2%	100.0%	216 978	227 959	234 480	-3.8%	100.0%
Surplus/(Deficit)	98 516			5 388	4 909	6 086		
Statement of financial position								
Carrying value of assets	459 236	33.5%	67.0%	462 623	464 534	466 620	0.5%	74.6%
<i>of which:</i>								
<i>Acquisition of assets</i>	(84 253)	-1.2%	-21.4%	(2 967)	(2 091)	(2 086)	-70.9%	-4.2%
Inventory	463	11.4%	0.1%	463	463	463	-	0.1%
Receivables and prepayments	20 801	-2.5%	4.7%	20 801	20 801	20 801	-	3.4%
Cash and cash equivalents	61 511	-20.7%	28.3%	180 996	166 497	151 157	34.9%	21.9%
Total assets	542 011	16.9%	100.0%	664 883	652 295	639 041	5.6%	100.0%
Accumulated surplus/(deficit)	496 550	34.5%	73.7%	489 987	481 305	472 127	-1.7%	78.2%
Borrowings	1 010	-	1.9%	1 010	1 010	1 010	-	0.2%
Deferred income	12 835	-47.6%	15.5%	140 880	136 974	132 898	118.0%	16.3%
Trade and other payables	23 971	-1.6%	5.7%	25 361	25 361	25 361	1.9%	4.0%
Provisions	7 645	7.5%	1.5%	7 645	7 645	7 645	-	1.2%
Total equity and liabilities	542 011	16.9%	100.0%	664 883	652 295	639 041	5.6%	100.0%

Personnel information**Table 30.43 South African National Space Agency personnel numbers and cost by salary level**

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		2017/18		2018/19		2019/20		2020/21		2017/18 - 2020/21							
South African National Space Agency		Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost	Number	Cost	Unit cost			
Salary level	202	202	175	104.7	0.6	175	120.1	0.7	198	124.0	0.6	198	130.9	0.7	198	138.1	0.7	4.8%	100.0%
1-6	26	26	19	3.8	0.2	19	3.3	0.2	23	3.9	0.2	23	4.1	0.2	23	3.8	0.2	4.4%	11.4%
7-10	109	109	93	40.3	0.4	93	49.2	0.5	108	50.1	0.5	108	52.3	0.5	108	55.1	0.5	3.9%	54.2%
11-12	33	33	32	23.4	0.7	32	26.1	0.8	33	26.0	0.8	33	27.7	0.8	33	29.5	0.9	4.2%	17.1%
13-16	33	33	30	35.1	1.2	30	39.2	1.3	33	41.7	1.3	33	44.3	1.3	33	47.1	1.4	6.3%	16.8%
17-22	1	1	1	2.2	2.2	1	2.3	2.3	1	2.3	2.3	1	2.4	2.4	1	2.6	2.6	3.8%	0.5%

1. Rand million.

Technology Innovation Agency**Mandate**

The Technology Innovation Agency draws its mandate from the Technology Innovation Agency Act (2008), as amended. The agency serves as the key institutional intervention to bridge the innovation chasm 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 30.44 Technology Innovation Agency performance indicators by programme/objective/activity and related outcome

Indicator	Programme/Objective/Activity	MTSF outcome	Past			Current	Projections		
			2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Number of technologies, processes or services advancing by 2 or more technology readiness levels per year	Provide technology development funding and support in strategic high-impact areas	Outcome 5: A skilled and capable workforce to support an inclusive growth path	8	6	13	13	14	15	15
Number of innovation project outputs taken up in the market per year	Provide technology development funding and support in strategic high impact areas		6	4	14	10	7	8	9
Amount of additional funding attracted to the agency's portfolio per year	Provide technology development funding and support in strategic high impact areas		R30m	R75m	R59m	R66m	R94m	R100m	R110m
Income received per year	Provide technology development funding and support in strategic high impact areas		-1	R98m	R111m	R141.8m	R17m	R18m	R22m
Number of knowledge innovation products as a result of agency funding and support programmes per year	Provide an enabling environment for technology innovation		-1	-1	64	83	87	96	113
Number of knowledge innovation products produced by agency supported programmes receiving additional funding per year	Provide an enabling environment for technology innovation		-1	-1	25	27	30	33	36
Number of SMMEs receiving technology support per year	Provide an enabling environment for technology innovation		-1	-1	2 261	2 800	3 360	3 840	4 000
Percentage of SMMEs owned by previously disadvantaged individuals assisted as a percentage of total SMMEs supported, receiving funding, and support and/or technology services from the Technology Innovation Agency per year	Provide an enabling environment for technology innovation		-1	-1	64% (1 456/ 2 261)	65% (1 820/ 2 800)	67% (2 251/ 3 360)	69% (2 650/ 3 840)	75% (3 000/ 4 000)
Number of technology innovation initiatives undertaken by the agency consisting of conference papers, presentations and posters, policy recommendations, panel discussions, position papers, publications, think tanks and keynote addresses per year	Provide an enabling environment for technology innovation		-1	-1	56	31	32	34	41
			Outcome 6: An efficient, competitive and responsive economic infrastructure network						

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 and to create decent employment and sustainable livelihoods. This informs the Technology Innovation Agency's goal to position itself as a world class technology innovation institute. 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 aim of the agency is to use technology innovation to address issues of national importance, particularly poverty alleviation, job creation, and the reduction of the burden of disease by developing technological innovations. Over the MTEF period, the agency plans to positioning itself as a hub for the support of technologies that are within the national system of innovation by ensuring the visibility of its project portfolio. The agency also plans to scale up all strategic programmes by increasing its activities, fast-tracking applications and internal processes, and creating a conducive environment when engaging with innovators, stakeholders

and suppliers. The agency will form partnerships to ensure that there is a seamless progression of ideas across the innovation value chain over the medium term, and will extend its service offering to other departments and the private sector.

In fulfilling its mandate to bridge the innovation chasm between research and development outcomes from higher education institutions, science councils, public entities and private companies, between 2010/11 and 2016/17, the agency assisted in developing more than 205 innovation products, and disbursed R2.6 billion to support the development of new technological innovations and 8 550 small, medium and micro enterprises (SMMEs). This resulted in a contribution of R4.8 billion to GDP and led to the creation of 14 022 jobs. The agency has allocated R296 million over the MTEF period in the technology station and technology platform programmes to produce 296 innovation products and assist 11 200 SMMEs with product development. This is expected to contribute to faster growth and create an estimated 900 sustainable jobs.

To invest in the youth, the agency expects to assist young innovators between the ages of 18 and 35 who are in need of funding, mentorship and business support in the youth technology innovation programme and seed fund programme, with a budget allocation of R55 million over the medium term. The agency is the executing partner and hosting institution of the Global Cleantech innovation programme, an international development programme implemented by the United Nations Industrial Development Organisation and funded by the Global Environment Facility. This programme is set to be incorporated into the agency in 2018, with the agency planning to invest R11.2 million in the programme over the medium term.

To enhance its role as a connector, the agency plans to facilitate the commercialisation of products, services and processes that have been developed with its support by assisting innovators to secure funding from companies and development finance institutions. The agency will also provide thought leadership in the national system of innovation by participating in workshops and panel discussions on innovation. Catalysing its role as a connector will require the agency to create an environment for supporting sector-specific innovations that enable global competitiveness by forming partnerships with private industries, universities and science councils.

The agency derives the bulk of its revenue through transfers from the department. These transfers are expected to amount to R1.3 billion over the medium term, accounting for an estimated 75.4 per cent of the agency's total revenue over the period.

Programmes/objectives/activities

Table 30.45 Technology Innovation Agency expenditure trends and estimates by programme/objective/activity

	Audited outcome			Revised estimate	Average growth rate (%)		Medium-term expenditure estimate			Average growth rate (%)	
	2014/15	2015/16	2016/17		2014/15 - 2017/18	2017/18 - 2020/21	2018/19	2019/20	2020/21	2017/18 - 2020/21	2020/21
R thousand											
Administration	160 783	175 825	154 583	154 351	-1.4%	30.3%	189 694	201 076	213 140	11.4%	32.8%
Provide customer-centric early stage commercialisation for technology development	171 750	124 834	108 942	107 925	-14.3%	24.1%	123 676	136 778	157 383	13.4%	22.7%
Provide an enabling environment for technology innovation	199 780	210 285	335 890	237 207	5.9%	45.6%	223 235	259 006	307 969	9.1%	44.5%
Total	532 313	510 944	599 415	499 483	-2.1%	100.0%	536 605	596 860	678 492	10.7%	100.0%

Statements of historical financial performance and position**Table 30.46 Technology Innovation Agency statements of historical financial performance and position**

Statement of financial performance									
	Budget		Audited outcome		Budget		Audited outcome		Average: Outcome/Budget (%)
R thousand	2014/15		2015/16		2016/17		2017/18		2014/15 - 2017/18
Revenue									
Non-tax revenue	73 948	80 070	51 122	79 458	114 044	110 091	151 789	102 751	95.3%
Sale of goods and services other than capital assets	58 948	13 491	6 150	44 122	–	83 413	–	–	216.6%
of which:									
Administrative fees	45 000	–	6 150	–	–	–	–	–	–
Sales by market establishment	13 948	13 491	–	44 122	–	83 413	–	–	1 011.1%
Other non-tax revenue	15 000	66 579	44 972	35 336	114 044	26 678	151 789	102 751	71.0%
Transfers received	380 717	380 588	385 188	385 188	382 364	382 364	396 732	396 732	100.0%
Total revenue	454 665	460 658	436 310	464 646	496 408	492 455	548 521	499 483	99.0%
Expenses									
Current expenses	255 146	160 783	141 659	175 825	146 675	154 583	166 851	154 351	90.9%
Compensation of employees	130 198	110 512	92 729	83 557	90 569	88 674	104 899	99 899	91.5%
Goods and services	113 806	39 800	42 957	85 936	48 336	62 585	55 252	47 752	90.7%
Depreciation	11 037	10 471	5 973	6 332	7 770	3 324	6 700	6 700	85.2%
Interest, dividends and rent on land	105	–	–	–	–	–	–	–	–
Transfers and subsidies	266 634	371 530	371 651	335 119	463 033	444 832	381 670	345 132	100.9%
Total expenses	521 780	532 313	513 310	510 944	609 708	599 415	548 521	499 483	97.7%
Surplus/(Deficit)	(67 115)	(71 655)	(77 000)	(46 298)	(113 300)	(106 960)	–	–	
Statement of financial position									
Carrying value of assets	23 473	13 244	19 178	13 346	13 346	15 892	13 346	16 923	85.7%
of which:									
Acquisition of assets	(11 037)	(1 740)	(8 000)	(7 317)	(7 000)	(7 051)	(7 000)	(7 000)	69.9%
Investments	66 342	61 814	45 068	29 313	29 313	29 313	29 313	26 300	86.3%
Loans	28 164	44 374	34 081	19 226	18 362	5 029	17 310	–	70.1%
Receivables and prepayments	2 236	65 214	3 607	16 118	4 080	6 995	4 080	4 865	665.5%
Cash and cash equivalents	–	74 798	11 176	132 333	12 176	64 567	12 176	62 357	940.3%
Total assets	120 215	259 444	113 110	210 336	77 277	121 796	76 225	110 445	181.5%
Accumulated surplus/(deficit)	73 000	206 273	21 572	144 865	24 708	37 905	24 708	39 232	297.4%
Capital reserve fund	13 948	16 222	13 431	44 086	20 000	54 443	20 000	45 700	238.1%
Borrowings	–	2 762	–	–	–	–	–	–	–
Finance lease	547	188	188	194	194	61	194	150	52.8%
Trade and other payables	30 178	25 031	74 749	21 116	30 131	28 891	29 079	25 013	61.0%
Taxation	2 170	–	2 169	–	2 169	–	2 169	–	–
Provisions	–	7 480	–	–	–	–	–	–	–
Derivatives financial instruments	372	1 488	1 001	75	75	496	75	350	158.2%
Total equity and liabilities	120 215	259 444	113 110	210 336	77 277	121 796	76 225	110 445	181.5%

Statements of estimates of financial performance and position**Table 30.47 Technology Innovation Agency 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 (%)	
R thousand	2017/18	2014/15 - 2017/18		2018/19	2019/20	2020/21	2017/18 - 2020/21		
Revenue									
Non-tax revenue	102 751	8.7%	19.4%	116 283	153 000	208 000	26.5%	24.6%	
Other non-tax revenue	102 751	15.6%	12.0%	116 283	153 000	208 000	26.5%	24.6%	
Transfers received	396 732	1.4%	80.6%	420 322	443 860	470 492	5.8%	75.4%	
Total revenue	499 483	2.7%	100.0%	536 605	596 860	678 492	10.7%	100.0%	
Expenses									
Current expenses	154 351	-1.4%	30.3%	189 694	201 076	213 140	11.4%	32.8%	
Compensation of employees	99 899	-3.3%	18.0%	118 644	125 763	133 308	10.1%	20.7%	
Goods and services	47 752	6.3%	11.1%	63 680	67 206	71 239	14.3%	10.8%	
Depreciation	6 700	-13.8%	1.3%	7 370	8 107	8 593	8.7%	1.3%	
Transfers and subsidies	345 132	-2.4%	69.7%	346 911	395 784	465 352	10.5%	67.2%	
Total expenses	499 483	-2.1%	100.0%	536 605	596 860	678 492	10.7%	100.0%	
Surplus/(Deficit)	–			–	–	–			

Table 30.47 Technology Innovation Agency statements of estimates of financial performance and position

Statement of financial position		Average growth rate (%)	Average: Expenditure/ Total (%)	Medium-term estimate			Average growth rate (%)	Average: Expenditure/ Total (%)
	Revised estimate	2014/15 - 2017/18	2017/18	2018/19	2019/20	2020/21	2017/18 - 2020/21	2017/18 - 2020/21
R thousand								
Carrying value of assets	16 923	8.5%	10.0%	15 674	16 549	17 376	0.9%	15.3%
<i>of which:</i>								
Acquisition of assets	(7 000)	59.0%	-4.1%	(7 000)	(7 000)	(7 000)	-	-6.4%
Investments	26 300	-24.8%	21.4%	26 300	26 300	26 300	-	24.2%
Receivables and prepayments	4 865	-57.9%	10.7%	4 962	5 220	5 538	4.4%	4.7%
Cash and cash equivalents	62 357	-5.9%	50.3%	60 000	58 000	62 000	-0.2%	55.7%
Total assets	110 445	-24.8%	100.0%	106 936	106 069	111 215	0.2%	100.0%
Accumulated surplus/(deficit)	39 232	-42.5%	53.8%	39 915	32 839	33 468	-5.2%	33.5%
Capital reserve fund	45 700	41.2%	28.3%	40 320	45 000	47 983	1.6%	41.2%
Finance lease	150	-7.3%	0.1%	135	102	168	3.8%	0.1%
Trade and other payables	25 013	-0.0%	16.5%	26 263	27 839	29 231	5.3%	24.9%
Derivatives financial instruments	350	-38.3%	0.3%	302	289	365	1.4%	0.3%
Total equity and liabilities	110 445	-24.8%	100.0%	106 935	106 069	111 215	0.2%	100.0%

Personnel information**Table 30.48 Technology Innovation Agency personnel numbers and cost by salary level**

Number of posts estimated for 31 March 2018		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 (%)				
		2016/17		2017/18		2018/19		2019/20		2020/21		2017/18 - 2020/21							
		Number	Unit cost	Cost	Number	Unit cost	Cost	Number	Unit cost	Cost	Number	Unit cost	Cost	Number	Unit cost	Cost			
Technology Innovation Agency		139	88.7	0.6	153	99.9	0.7	167	118.6	0.7	167	125.8	0.8	167	133.3	0.8	10.1%	100.0%	
Salary level	153																		
1 - 6	13	13	11	1.4	0.1	13	2.8	0.2	13	3.2	0.2	13	3.7	0.3	13	4.0	0.3	12.5%	8.0%
7 - 10	78	78	72	27.9	0.4	78	32.1	0.4	91	40.3	0.4	91	42.6	0.5	91	45.1	0.5	12.0%	53.6%
11 - 12	31	31	29	22.5	0.8	31	23.7	0.8	30	26.0	0.9	30	27.2	0.9	30	28.7	1.0	6.5%	18.5%
13 - 16	29	29	25	32.2	1.3	29	36.5	1.3	31	44.0	1.4	31	46.9	1.5	31	49.8	1.6	11.0%	18.7%
17 - 22	2	2	2	4.7	2.3	2	4.8	2.4	2	5.0	2.5	2	5.3	2.7	2	5.7	2.8	6.0%	1.2%

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 2017/18	Medium-term expenditure estimate		
				2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
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	645 199	–	652 756	693 931	709 412	769 800	812 139
Large projects (total project cost of at least R250 million but less than R1 billion over the project life cycle)										
Space infrastructure	Construction of satellite	Construction	290 791	40 000	31 386	–	28 860	–	9 200	–
Hydrogen strategy	Purchase of equipment	Various	440 714	60 772	63 568	–	67 080	70 971	74 945	77 654
National nanotechnology centres	Equipping of centres	Various	309 954	34 715	50 429	–	63 504	67 187	70 949	74 496
Cyber infrastructure	Creation of broadband network connectivity and high performance computing	Various	833 190	204 045	213 479	–	223 273	236 339	251 686	260 782
Total			3 523 844	984 731	358 862	652 756	1 076 648	1 083 909	1 176 580	1 225 071

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome			Estimate 2017/18	Medium-term expenditure estimate			
							2014/15	2015/16	2016/17		2018/19	2019/20	2020/21	
R thousand														
Foreign														
European Union	General Budget Support: ICT innovation programme to support development and government delivery	Socioeconomic Innovation Partnerships	3 years	120 000 000	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	–	–	–	–	–	–
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	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	–	–	–	–	–	–	–

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome			Estimate 2017/18	Medium-term expenditure estimate		
							2014/15	2015/16	2016/17		2018/19	2019/20	2020/21
R thousand European Union	CAAST-Net Plus	Technology Innovation	4years	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	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	69 409	24 941	-	-	-	-	-
European Union	RINEA Programme	International Cooperation and Resources	3years	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	4years	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	20 000	-
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	340	-	-	-	-	-	-
United States of America	Indigenous Knowledge Systems 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	-	-	-	-	-
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	59 800	-	-	-	-	-	-

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		
							2014/15	2015/16	2016/17		2017/18	2018/19	2019/20
R thousand 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	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	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	-	-	-	-	-	
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	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	-	954	-	-	-	-	
Portugal	Bridging Actions for GIMES & 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	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	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	-	-	-	-	
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	-	-	-	-	-	

Table 30.B Summary of donor funding

Donor	Project	Programme	Period of commitment	Amount committed	Main economic classification	Spending focus	Audited outcome		Estimate 2017/18	Medium-term expenditure estimate		
							2014/15	2015/16		2016/17	2018/19	2019/20
R thousand												
Local												
In cash												
European Union	Green economy for Development	International Cooperation and Resources	3 years	–	Public corporations and private enterprises	to bridge the gap between the pre-commercialisation instruments for technology development that the DST created and full entry into the commercial market	–	–	–	30 000	36 000	34 000
Total				120 929 111			224 442	139 505	29 398	21 500	50 486	34 000



Private Bag X115, Pretoria, 0001 | 40 Church Square, Pretoria, 0002

Tel +27 12 315 5944 | **Fax** +27 12 406 9055

Web: www.treasury.gov.za



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