

Annual Report

2022/23



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



NATIONAL ADVISORY COUNCIL ON INNOVATION

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ANNUAL REPORT

2022/23 FINANCIAL YEAR



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



NATIONAL ADVISORY COUNCIL ON INNOVATION



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Part

A

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GENERAL INFORMATION

1. GENERAL INFORMATION

Physical address: Suite L2, Enterprise Building
Mark Shuttleworth Street
The Innovation Hub
Lynnwood
Pretoria
0087

Postal address: Private Bag X894
Pretoria
0001

Telephone number: 012 844 0925

Fax number: 086 681 6144

Email address: naci@dst.gov.za

Website: www.naci.org.za

2. LIST OF ABBREVIATIONS AND ACRONYMS

4IR	Fourth Industrial Revolution
AI	Artificial intelligence
AOSP	African Open Science Platform
APP	Annual Performance Plan
AU	African Union
BRICS	Brazil, Russia, India, China and South Africa
CEO	Chief Executive Officer
CHE	Council on Higher Education
CODATA	Committee on Data for Science and Technology
CSIR	Council for Scientific and Industrial Research
CSTP	Committee for Scientific and Technological Policy
CUT	Central University of Technology
DAAD	Deutscher Akademischer Austauschdienst
DG	Director-General
DHET	Department of Higher Education and Training
DSI	Department of Science and Innovation
DTIC	Department of Trade, Industry and Competition
DTPS	Department of Telecommunications and Postal Services
EU	European Union
ExCo	Executive Committee
FISS	Freestanding Innovation and Scarce Skills
FCS	Food Consulting Services
GERD	Gross expenditure on research and development
GOSC	Global Open Science Cloud
GSF	Global Science Forum
HIV	Human immunodeficiency virus
HSRC	Human Sciences Research Council
IP	Intellectual property
IRBA	Independent Regulatory Board for Auditors
M&E	Monitoring and evaluation
MBA	Master of Business Administration
MBL	Master of Business Leadership
MTT	Ministerial Task Team
NACI	National Advisory Council on Innovation
NDP	National Development Plan
NHI	National Health Insurance
NIST	National Institute of Standards and Technology
NITheCS	National Institute for Theoretical and Computational Sciences
NRF	National Research Foundation
NSC	National Senior Certificate

NSI	National System of Innovation
NSTIIP	National STI Information Portal
OECD	Organisation for Economic Cooperation and Development
PPP	Public-private partnership
PRI	Public research institution
R&D	Research and development
RDA	Research Data Alliance
S&T	Science and technology
SET	Science, engineering, and technology
SEZ	Special Economic Zones
SME	Small and medium-sized enterprises
STI	Science, technology, and innovation
TB	Tuberculosis
TFP	Total Factor Productivity
TVET	Technical and vocational education and training
UCT	University of Cape Town
UDW	University of Durban-Westville
UJ	University of Johannesburg
UKZN	University of KwaZulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISA	University of South Africa
UP	University of Pretoria
USPTO	United States Patent and Trademark Office
WEF	World Economic Forum
WITS	University of the Witwatersrand

3. FOREWORD BY THE CHAIRPERSON

Mr Tilson Manyoni
Chairperson



On behalf of the National Advisory Council on Innovation (NACI), I am delighted to present the 2022/23 Annual Report. This is the first report in the term of the current Council, which began in the fourth quarter of 2022/23.

In the year under review, the NACI Council and Secretariat advised the Minister of Higher Education, Science, and Innovation on several issues. NACI continues to advance the quality, relevance, and efficacy of its advice to the Minister, and through the Minister, the Cabinet.

The Council works to ensure that NACI influences industry-wide consideration of the foundation of science, technology and innovation (STI) (disciplines or knowledge domains, infrastructure, and human resources) and the role of STI in addressing the socio-economic challenges of education, health, food security, and global change. We were delighted to see the approval of the STI Decadal plan (2022 – 2032).

NACI has also been performing extensive work towards facilitating international and local networking and partnerships to ensure knowledge sharing and skills transfer, thereby globally deepening the understanding of the latest trends in STI policy.

We acknowledge the significance of all stakeholders in the National System of Innovation (NSI), as we serve the nation. The Annual Report will provide information on how the NSI and ordinary citizens benefitted from the work undertaken by NACI in the 2022/23 Financial Year.

I would like to extend a special note of appreciation to the Chief Executive Officer (CEO), Dr Mlungisi Cele, and the Secretariat team for their dedication and hard work.

The Council appreciates the unwavering support afforded to NACI by the Minister of Higher Education, Science and Innovation, Dr Blade Nzimande and the Director-General (DG) of the Department of Science and Innovation, Dr Phil Mjwara.

A handwritten signature in black ink, appearing to read 'Tilson Manyoni', with a horizontal line extending to the right.

Mr Tilson Mphathi Manyoni

Chairperson

National Advisory Council on Innovation

31 July 2023

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4. STATEMENT OF RESPONSIBILITY FOR AND CONFIRMATION OF ACCURACY OF THE ANNUAL REPORT

To the best of our knowledge and belief, we confirm the following:

All information and amounts disclosed in the Annual Report are consistent with the annual financial performance.

The Annual Report is complete, accurate, and free from any omissions.

The Annual Report has been prepared in accordance with the guidelines on annual reports issued by the National Treasury.

The accounting authority is responsible for the preparation of the annual financial performance and the judgements made in this information.

The accounting authority is responsible for establishing and implementing a system of internal controls designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information, and the annual financial performance.

In our opinion, the Annual Report fairly reflects the operations, performance information, human resources information, and the financial affairs of NACI for the Financial Year that ended on 31 March 2023.



Chief Executive Officer
Dr Mlungisi Cele
31 July 2023

5. STRATEGIC OVERVIEW

Vision

A leading advisory body for government on STI within a well-coordinated, responsive, and functioning NSI.

Mission

To provide evidence-based advice to the Minister of Higher Education, Science, and Innovation, and through the Minister, to Cabinet, on STI matters, through research expertise and engagement with stakeholders.

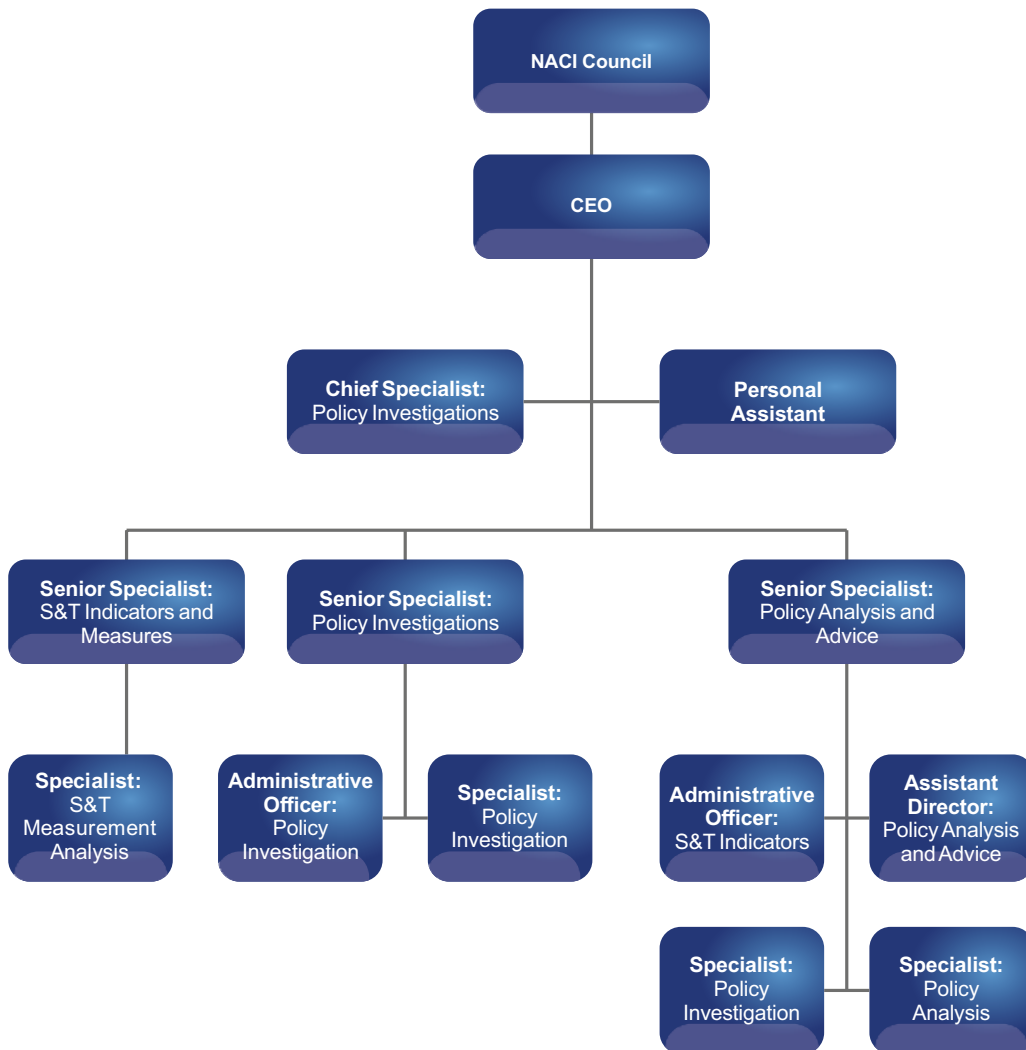
Values

- Professionalism
- Integrity
- Innovation and knowledge sharing
- Transparency and accountability

6. LEGISLATIVE AND OTHER MANDATES

The National Advisory Council on Innovation Act, Act 55 of 1997 provides the mandate for NACI. The Act mandates NACI to advise the minister responsible for S&T and, through the minister, the Cabinet, on the role and contribution of science, mathematics, innovation, and technology, including indigenous technologies, in promoting and achieving national objectives – i.e. to improve and sustain the quality of life of all South Africans; develop human resources for science and technology (S&T); build the economy; and strengthen the country's competitiveness in the international arena.

7. ORGANISATIONAL STRUCTURE



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PERFORMANCE INFORMATION

1. PERFORMANCE INFORMATION

1.1 Programme 1: (NACI)

1.1.1 Activities, Performance and Outputs 2022/23 Financial Year

This section covers NACI's activities, performance, and outputs for the 2022/23 Financial Year.

NACI achieved most of its objectives for the 2022/23 Financial Year at the end of March 2023. These included providing evidence-based advice on STI to the Minister by providing three STI advice documents by 31 March 2023. The organisation continued to monitor the performance of the NSI resulting in the draft Science Technology and Innovation (STI) Indicators Report 2023 and five NSI draft monitoring and evaluation (M&E) reports finalised by 31 March 2023. Further, the communication plan was updated and implemented by 31 March 2023, to support the discharge of NACI's core mandate to stakeholders. NACI also produced and tabled the 2023/24 Annual Performance Plan (APP).

The role of the National System of Innovation (NSI) in Implementing the National Health Insurance (NHI)

The proposed National Health Insurance (NHI) reform is designed to move the South African health system closer towards Universal Health Coverage, defined as the provision of quality care in a way that does not impose financial risk on beneficiaries and ameliorate the current fragmentation in policy, systems and stakeholders within the national health system.

The study intended to focus on the proposed NHI reform and make recommendations regarding how best the NSI could complement the plans of the National Department of Health.

The State and Commercialisation of Patents and Plant Breeder's Rights in South Africa

The report offered a synopsis of the state of patenting, development of plant varieties and commercialisation of intellectual property (IP) in South Africa with emphasis on publicly financed institutions over a twenty-year period.

The study had two objectives; to investigate how locally produced patents could remain in South Africa and the African continent and be commercialised for the socio-economic benefit of the country and the continent. Further, to evaluate the association between research and development (R&D) investment, patenting activity and the Total Factor Productivity (TFP).

Assessing the Viability of Utility-scale Energy Storage

The study aimed to assess the market viability of utility-scale stationery energy storage in the industrial, commercial transport, local government residential sectors and provide policy recommendations for the development of different market segments in South Africa. The assessment was structured to answer two research questions:

- How should the South African Government enable the development and growth of a utility-scale stationery energy storage market in the country, given its available policy levers and best practices globally?
- If the South African fiscus is to invest in accelerating the uptake and adoption of utility-scale energy storage, how to prioritise efforts and investment into possible interventions needed by the country to unlock this market potential?

Assessing the Effectiveness of Mathematics and Science Education Initiatives in Schools

An effective and equal system of education for all South Africans is a crucial government policy objective. As expressed in key national policy frameworks, mathematics and science remain at the centre of transformation for a better society, and provide the basis for successful modern living.

The purpose of the study was to assess the effects of the various interventions that have been implemented across the system to improve participation and performance in mathematics and science in schools including the impact of initial teacher education on school-level interventions and outcomes.

Further, the study aimed to review a sample of evaluation reports of programmes that were implemented since the launch of the first iteration of a national strategy on mathematics, science, and technology, (2001 – 2020) involving system-wide government-led interventions and those that were funded and implemented by social partners.

2022 South African Science, Technology, and Innovation Indicators Report

The 2019 White Paper on STI advocates for the use of STI to address societal challenges and contribute towards improving the quality of life of citizens and support socio-economic progress. It also clearly expresses the need to strengthen the M&E capability of the NSI. The STI Indicators Report is part of NACI's contribution to the M&E of the state of the NSI and the transformation of the society and economy.

The 2022 STI Indicators Report reflects progress in some indicators while identifying areas of concern in others. Below are key highlights from the report:

Although growth of scientific publications decreased in 2020, the number of scientific publications produced in South Africa increased. The global trends in scientific publication per million inhabitants showed that the country's publications increased constantly, from 248 in 2011 to 505 in 2020. Overall, South Africa's scientific publications per million inhabitants ranked 80th in 2019 and 2020. This is higher than the average for upper middle-income countries (88th in 2020).

There were worrying trends at basic school levels. The proportion of national senior certificate learners who passed Mathematics with 30% and above, dropped from 54,6% in 2019 to 53,8% in 2020. While there was a drastic drop in the proportion of learners passing Physical Science at different levels in 2020, and 2021 percentages were lower than 2019 levels.

The proportion of science, engineering, and technology (SET) graduates remains low, especially for honours degrees (23,9% in 2020). The proportion of SET graduates at doctoral level is also declining – while it should be noted that this is happening with a constant increase in the number of doctoral graduates.

The financing of the NSI by the government is improving. Government expenditure on R&D has more than doubled in the past decade, increasing from R9 billion in 2010/11 to R19 billion in 2019/20. A minor decline in 2018/19 was followed by a huge increase in 2019/20 (11.1%). Over the years, government's funding of R&D has been shifting more towards the higher education sector, increasing from a share of 43.4% in 2010/11 to 58.6% in 2019/20.

In 2019/20, R&D expenditure by the business sector declined by 29% as compared with the previous year. This decline was far larger than the decline in aggregate private sector investment of 16%. The share of the business sector in gross expenditure on research and development (GERD) has been declining consistently since 2010/11. There was a further significant decline in 2019/20 (from 39.3% in 2018/19 to 31.0% in 2019/20). While there was

an increase in foreign funding of R&D in the business sector in 2019/20, this was off a very low base, following two years of significant decline. Foreign funding for business sector R&D in 2019/20 remains well below the levels of the last decade.

In terms of innovation activities, the report showed that during the period 2016 – 2019, the University of Cape Town (UCT) had more co-publications with industry (5.2%), followed by the University of the Witwatersrand (Wits) (5.1%) and the University of Pretoria (UP) (4.9%). Analysing publications showed that several universities experienced a decline in their share of scientific co-publications with the industry. Further that most of the public research institutions' (PRIs) publications are co-authored with at least one researcher from the universities in South Africa (90.56% in 2021). However, the co-publications between the universities and the PRIs constitute a small fraction of total university publications (6.43% in 2021).

Domestic patents granted to South African residents declined by more than one-half in 2020 (from 694 in 2019 to 313 in 2020) while patents granted to non-residents declined by 42% (from 5 468 in 2019 to 3 153 in 2020). Similarly, South African patent registrations at the United States Patent and Trademark Office (USPTO) declined by 13%.

Socio-economic indicators presented in the report show a significant rise in deprivation, which reflects the impacts of the Covid-19 pandemic. There was a significant increase in the number of households living in poverty, including all poverty line indicators, food, lower-bound, and upper-bound poverty lines. This is shown by the proportion of people living in extreme poverty of 24% in 2020. Furthermore, 33% lived below the lower-bound poverty line, and 45% lived below the upper-bound poverty line. In terms of spatial patterns – approximately 16% of the South African population lives in informal settlements.

The provincial innovation systems show that during 2015/16 – 2019/20, Gauteng enjoyed the highest R&D expenditure, followed by the Western Cape and KwaZulu-Natal. In 2020, Gauteng province had the highest level of National Senior Certificate (NSC) attainment at 41.6% followed by KZN (39.3%) and Western Cape (37.5%). In 2021, the Western Cape province was the best performer for the NSC Physical Science (78.3%) followed by Free State (75.1%). Mpumalanga (61.5%) and Eastern Cape (62.3%) were the poorest performers. In 2020, access to the Internet using all available means was the highest in Gauteng (85.2%), Western Cape (80.9%) and Mpumalanga (77.6%). While provinces that had the lowest access were Limpopo (58.4%) and Eastern Cape (61.2%).

Findings of the STI Indicators Report continue to provide greater understanding of the performance of the NSI in promoting socio-economic development in South Africa.

Table 1: Strategic Objectives, Performance Indicators Planned Targets and Actual Achievements

Strategic objective	Performance indicator	Actual achievement, 2021/22	Planned target, 2022/23	Actual achievement, 2022/23	Deviation from planned target to actual achievement, 2022/23	Comment on deviations
STRATEGIC OUTCOME-ORIENTED GOAL 1: To learn from previous experience to improve efficacy and ensure evidence-based, informed, confidential, and timely policy advice to the Minister of Higher Education, Science, and Innovation and, through the Minister, to Cabinet						
To provide evidence-based advice on STI matters to the Minister of Higher Education, Science, and Innovation and, through the Minister, to Cabinet, on request or on NACI's initiative	Number of STI advice documents submitted to the Minister of Higher Education, Science, and Innovation	Four STI advice documents were finalised by 31 March 2022. <ul style="list-style-type: none"> Facing the Facts: Women participation in science, technology, engineering and mathematics (STEM) An Integrated Regional Agenda on Renewable Energy Audit of the bioeconomy The renewal and repositioning of NACI document 	Three STI draft advice produced and engaged by 31 March 2023	Three STI draft advice produced and engaged by the 31 March 2023 <ul style="list-style-type: none"> The effectiveness of mathematics & science education initiatives in schools Development and growth of a utility-scale energy storage market in South Africa Benefits of importing technology in South Africa 	n/a	n/a

Strategic objective	Performance indicator	Actual achievement, 2021/22	Planned target, 2022/23	Actual achievement, 2022/23	Deviation from planned target to actual achievement, 2022/23	Comment on deviations
STRATEGIC OUTCOME-ORIENTED GOAL 2: To contribute to the building of NSI monitoring, evaluation and learning capability, in order to assess the health of the NSI and its contribution to sustainable and inclusive development						
To assess the performance of the NSI	<p>Number of NSI M&E reports</p> <ul style="list-style-type: none"> STI Indicators Report produced An STI Integrated Regional Agenda on Renewable Energy Facing the Facts: Women's Participation in SET Audit of the SA Bioeconomy Sector Assessing the utility-scale energy storage: Policy Study Impacts of imported technologies in South Africa 	Six NSI M&E reports finalised by 31 March 2022:	Three NSI M&E reports finalised by 31 March 2023	<p>Four NSI M&E reports finalised by 31 March 2023:</p> <ul style="list-style-type: none"> The effectiveness of mathematics & science education initiatives in schools Development and growth of a utility-scale energy storage market in South Africa Benefits of importing technology in South Africa Retaining local patents and technologies was developed 	n/a	n/a
STI central data and information portal	Successful operation of the National Science, Technology, and Innovation Portal (NSTIIP)	Directory of Experts: 3 universities (North West, Limpopo, Free State) have provided lists of experts, and communities of practice modules have been developed by 31 March 2022	Directory of Experts and Communities of Practice platforms/modules developed by 31 March 2023	Directory of Experts from 4 universities (Free State, Limpopo, Wits, North West) and Communities of Practice platforms/modules developed by 31 March 2023	n/a	n/a

STRATEGIC OUTCOME-ORIENTED GOAL 3: To contribute towards building a well-coordinated, effective and, responsive NSI					
To contribute towards improving NSI coordination and planning	Foresight exercise capability institutionalised	No sectoral/provincial/regional foresight exercise was conducted by 31 March 2022	The Foresight Exercise institutionalisation plan produced by 15 December 2022	The Foresight Exercise institutionalisation plan not produced by 15 December 2022	The Council is embarking on the re-alignment and repositioning of NACI, in line with the Minister's recommended legislative changes
					Following the Mid-term Performance Assessment, NACI revised the five-year target for the output
STRATEGIC OUTCOME-ORIENTED GOAL 4: Transforming NACI into a smart, efficient, and learning organisation					
To ensure the efficient and effective provision of administrative, financial, technical, and professional corporate services, among others, to support the discharge of NACI's core mandate	Communication plan implemented	Communication plan implemented by 31 March 2022 The NACI website and portal were updated throughout the financial year to reflect the latest events and outputs The Chairperson and Acting CEO conducted interviews with SA FM	Communication plan updated and implemented by 31 March 2023	Communication plan updated and implemented by 31 March 2023	n/a
				Profiling and engagement events, including: <ul style="list-style-type: none"> Zoom webinar on the establishment of an African Continental Research Foundation on 02 June 2022 Zoom launch of the 2022 STI Indicators Report on 29 July 2022 Inaugural NACI STI Policy Colloquium on 8 and 9 September 2022 Media statements issued and participation in media interviews including with Power FM on the launch of the STI Indicators	n/a

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Strategic objective	Performance indicator	Actual achievement, 2021/22	Planned target, 2022/23	Actual achievement, 2022/23	Deviation from planned target to actual achievement, 2022/23	Comment on deviations
STRATEGIC OUTCOME-ORIENTED GOAL 4: Transforming NACI into a smart, efficient, and learning organisation	Internal corporate governance system implemented	<p>The 2020/21 Annual Report was approved by Minister on 23 September 2021</p> <p>The 2022/23 APP was approved by the Minister and Parliament by 31 March 2022</p>	<p>Corporate governance system implemented. (2023/24 APP, 2021/22 Annual Report) developed and approved by Minister and submitted to Parliament by 31 March 2023</p>	<ul style="list-style-type: none"> The 2021/22 Annual Report was developed and approved by the Minister and submitted to Parliament by 30 August 2022 The 2023/24 APP was developed and approved by the Minister and submitted to Parliament by 25 January 2023 	n/a	n/a
	Knowledge management system implemented	<p>Meetings have been recorded and transmission for storage into Alfresco continues</p> <p>Knowledge management tools were developed with support from the service provider</p>	<p>All NACI meetings recorded and transcripts for 2022/23 Financial Year stored safely in knowledge management system by 31 March 2023</p>	<p>All NACI meetings were recorded and transcripts for 2022/23 Financial Year stored safely in knowledge management system by 31 March 2023</p>	n/a	n/a

1.1.2 Events and Stakeholder Engagements

The Establishment and Operation of an African Continental Research Foundation NACI and the Human Sciences Research Council (HSRC) hosted a webinar on 2 June 2022 to explore the establishment of a continental research foundation for Africa.

Launch of the South African STI Indicators Report

The Minister of Science and Innovation, Dr Blade Nzimande, launched the 2022 South African STI Indicators Report virtually on Friday, 29 July. The report outlines innovation in South Africa and its impact on the economy. Over 200 delegates registered and attended the webinar. These include representatives from the business sector, government, academia, civil society, science media and the broader national system of innovation stakeholder community.

Inaugural NACI Science, Technology and Innovation Policy Colloquium

The Council hosted an inaugural STI policy colloquium on 8 and 9 September 2022. The Minister of Higher Education, Science and Innovation gave a keynote address to the colloquium. The colloquium enabled stakeholders to engage on key STI issues and policy debates.

Table 2: Round-Table Discussions (2022/23)

EVENT	ATTENDEE	DATE
NACI MS Teams, Virtual Round-Table Discussion on the 2022 South African Science, Technology, and Innovation Indicators Report	NACI	26 April 2022
International Conference on Organisational Resilience, Corporate Governance, Innovative Entrepreneurship and Sustainable Development During and Beyond the COVID-19 Crisis	Dr M Cele	1-2 June 2022
Knowledge Sharing Virtual Workshop: Improving Government Departments' Data Collection and Evaluation of South Africa's Science, Technology and Innovation Expenditure	NACI	23 June 2022
NACI MS Teams, Round-Table Discussion on the NACI Case Study on Business Investment in Research and Development in South Africa and its Impacts	NACI	26 July 2022
MS Teams, Round-Table Discussion on the Energy Storage	NACI	16 August 2022
NACI Virtual, Workshop on Transformation in the National System of Innovation	NACI	25 August 2022
NACI Webinar on Assessing the Effectiveness of Mathematics and Science Education Initiatives in Schools	NACI	06 September 2022
NACI Workshop on the STI Indicators Report for the National System of Innovation in Durban, KZN	NACI	23 November 2022
NACI Virtual, Workshop on the Role of the National System of Innovation in Implementing the National Health Insurance	NACI	07 February 2023

Table 3: NACI's Participation in International Engagements (2022/23)

EVENT	ATTENDEE	DATE
Organisation for Economic Cooperation and Development (OECD) workshop: "Accelerating clean innovation for energy independence and climate neutrality", virtual	Dr M Cele	6 July 2022
47th Meeting of the Global Science Forum (GSF) and 121st Meeting of the CSTP - Participate in the OECD in Paris, France	Dr M Cele	24-28 October 2022
World Science Forum in Cape Town	Dr M Cele	5-8 December 2022
122nd meeting of the CSTP - Participate in the OECD in Paris, France	Dr M Cele	21-24 March 2023

These events provided NACI with the opportunity to share its experience and knowledge, and to learn about STI policy development, planning, and evaluation from a range of partners.

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GOVERNANCE

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22

1. THE NACI COUNCIL

The Science and Technology Laws Amendment Act, Act 16 of 2011 requires the NACI Council to meet at least once per quarter to ensure proper oversight over NACI's advisory work programme. To align with governance, the guidelines for NACI and its operations require the NACI Executive Committee (ExCo) to meet as often as necessary to direct the programme of work and to deal with important and urgent matters.

The members of NACI – other than the CEO and an officer from the Department of Trade, Industry and Competition (DTIC) – are appointed in their personal capacity, based on their outstanding achievement in any field of S&T, or in the context of innovation, special knowledge, experience in and insight into the role and contribution of innovation in promoting and achieving national and provincial objectives.

Table 4: Composition of the NACI Council

Name	Designation in terms of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Dr S Moephuli	Chairperson from Sept 2021	Sept 2021	Nov 2022		Male, African				1
Mr Tilson Manyoni	Chairperson from Dec 2022	Dec 2022	-		Male, African				2
Dr M Cele	Acting CEO	Sept 2018	-		Male, African				4
Ms B Arendse	Council Member	Dec 2022	-		Female, White				2
Ms C Busetti	Council Member	Sept 2018	Nov 2022	BSc in Chemistry Master of Business Administration (MBA)	Female, White		Member of the Special Economic Zones (SEZ) Advisory Board Member of the National Research Foundation (NRF)	Advisor to Ariya Bridge Trust Fund in Namibia	1

Name	Designation in terms of Council of structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Dr T Dlamini	Council Member	Sept. 2018	-	BSc Chemistry: Wits BSc (Hons) Chemistry: Wits PhD Chemistry, Catalysis: Wits Master's in Business Leadership (MBL): UNISA	Male, African	Materials science Technology and innovation management Strategic thinking	Member of SIMODISA Advisory Board Member of Spartan small and medium-sized enterprise (SME) Finance (Pty) Ltd. Board Member of Debswana Pension Fund Board Member of Senior Experts Panel of Industrial Development Corporation Member of Council for Scientific and Industrial Research (CSIR) Board Director of Board of Vumelana Trade 120 Director of Board of Kusile Invest 125 Director of Mavela Consulting Services	Presidential Commission on the Fourth Industrial Revolution (4IR)	2

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Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Mr I Engelbrecht	Council Member	Sept 2018	Nov 2022	MBA	Male, Coloured	Innovation Technology Business Leadership	NACI ExCo	Municipal Innovation Maturity Index Assessing the viability of utility-scale energy storage for the industrial, commercial transport and residential sectors in South Africa State of innovation at technical and vocational education and training (TVET) colleges Mainstreaming of innovation in the public sector (member)	2
Dr O Franks	Council Member	Dec 2022	-		Male				
Prof. B Kana	Council Member	Dec 2022	-	Bachelor of Science: Wits Bachelor of Science Honours: Wits Doctor of Philosophy PhD: Wits	Male, Indian	Tuberculosis (TB), human immunodeficiency virus (HIV), diagnostic devices, Quality control in laboratory diagnostics, innovation in academic environments, antimicrobial resistance Manufacturing, strategic leadership Post-graduate teaching and mentoring	Chair of the GSK Advisory Board for the Open African Programme, Board member of the Sidney Brenner Institute for Molecular Biosciences, Board Member of the HVTN Cape Town Immunology Laboratory, Board Member of the Microscopy and Microanalysis Unit	Melinda Gates Research Institute (Cambridge, USA), Research representative to the Brazil, Russia, India, China and South Africa (BRICS) Network Consultant: Bill and for TB (appointed through a nomination process by the South Africa TB research community) – Focus on international strategy and cooperation	2

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
								Consultant: South African Medical Research Council – Focus on National TB Strategy Served on the Covid-19 Research Task Group convened by the Department of Science and Innovation (DSI) and South African Medical Research Council (SAMRC) Community of Practice Forum on use of Bacillus Calmette-Guérin (BCG) for Covid-19 High-level working on access and affordability of diagnostics South Africa- South Korea working round-table on production of diagnostics National Corona virus variants consortium, Covid-19 SAMRC Wastewater surveillance working group (Focus on establishing wastewater surveillance in HDIs)	

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Ms I Karg	Officer of the DTIC	Sept 2018	-	BCom Economics School of Government: Presidential Strategic Leadership Development Portfolio: Executive Development Programme	Female, White	4IR and related issues Skills, technologies, advanced manufacturing, strategies, etc. Government plans: National Development Plan (NDP), Medium-Term Strategic Framework, Medium-Term Budget Policy Statements and Industrial Policy Action Plan Governance and ethics Financing of programmes	Board member and Co-chair for Intsimbi Future Production Technologies Initiative (Public-Private Partnership)	Academic Covid Testing Coordinating Steering Committee (ACoR), Working group for New TB Drugs – Global Alliance for TB Local Member of Ministerial Task Team (MTT) Department of Higher Education and Training (DHET): Post-School Education and Training System on 4IR Council member: NACI Council and ExCo member MTT Department of Telecommunications and postal Services (DTPS): Presidential Commission on the 4IR Steering Committee member: Industrial Development Think Tank with Centre for Competition Regulation and Economic Development (UJ)	3

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
						<p>Budget, expenditure, and cash flow</p> <p>National budget preparation</p> <p>Feasibility studies: funding models</p> <p>Editing and publishing financial and economic data</p> <p>Legal: compliance and regulation</p> <p>Public Finance</p> <p>Management Act and Treasury regulations</p>		<p>Implementation /Working Committee member:</p> <p>Human Resources</p> <p>Development Strategy</p> <p>Review and Co-chair for 4IR Skills and Training</p> <p>Task team member for the Digital Skills Strategy of South Africa</p> <p>Judge: Factory of the Year Competition International</p> <p>Chairperson (2018/19) Rotating Chair as presiding BRICS country</p> <p>Member of Advisory Committee: BRICS Partnership on New Industrial Revolution (Founding member of International 4IR Workgroup)</p> <p>Steering Committee Member: SA-EU Dialogue Facility</p> <p>BRICS Business Council Member of Manufacturing Workstream</p>	

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Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Ms Funeka Khumalo	Council Member	Jan 2021	-			Policy formulation and development Performance management		World Economic Forum (WEF) member: Shaping the Future of Advanced Manufacturing and Production, Global Community Group WEF Africa participant African Union (AU): 4IR participant Member of Commonwealth Digital Connectivity Working Group	3
Prof. Tawana Kupe	Council Member	Jan 2021	-		Female, African Male, African				1
Dr T Lephoto	Council Member	Sept 2018	Nov 2022	BSc BSc (Hons) MSc PhD MBA candidate	Female, African	Microbiology Biotechnology Bioinformatics Genomics Science Innovation	Nematech Bioscience GoMaths Foundation	NACI BioEconomy Audit Project member and Chairperson NRF Committee member for Thuthuka grant applications for 2020	-

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
								NRF Committee member for the review of applications submitted in the 2018 Free Standing Innovation and Scarce Skills (FISS) postdoctoral: call for 2019, 2018 NRF Committee member for the review of applications submitted in the 2018 FISS: Call for 2018, 2017 NRF Review Committee member for the Deutscher Akademischer Austauschdienst (DAAD)-NRF Joint In-Country Master's and Doctoral Scholarships in 2017 & 2018	

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Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Mr Andrew Madella	Council Member	Jan. 2021	Nov 2022		Male, Coloured		-	-	1
Ms N Maharej	Council Member	Dec 2022	-	B Proc:UKZN Bachelor of laws LLB :UKZN Financial accounting for public entities: UNISA Corporate Governance: UNISA	Female Indian	Legal: Auditing, human resources, business management, corporate governance, transformation and risk management	Director of Ishana Maharaj Incorporated Board member of Independent Regulatory Board for Auditors (IRBA), board member of KZN gaming and betting board, board member of the housing development agency	Enforcement committee of the films and publication board, loss committee chairperson of NDA, audit committee of SAWS, independent member of the legislation adjudication and transformation CSOS	2
Ms K Makhohliso	Council Member	Dec 2022	-		Female, African				1
Dr Charity Mbileni-Morema	Council Member	Jan. 2021	-	Ph.D. in Chemistry: Wits MBA: Heriot-Watt University, Scotland	Female, African	Innovation Technology development Chemistry Renewable energy strategy development Enterprise development	Member of NACI Council Deputy Chairperson of the Central University of Technology (CUT) Chairperson of the Remuneration Committee: CUT Council Member of the Planning, Finance, Resources Committee: CUT Council Board Member of CUTis (Pty) Ltd.		4

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Prof L Morris	Council Member	Dec 2022	-		Female, White				1
Mr D Naidoo	Council Member	Sept. 2018	Nov 2022	MSc	Male, Indian	Water and sanitation, policy, strategy, innovation	Human Right 2 Water Water Policy Group		2
Mr D Ndima	Council Member	Dec 2022			Male African				2
Prof F Nelwamondo	Council Members	Aug 2021	-	PhD Electrical Engineering	Male, African	Electrical Engineering, Artificial Intelligence, Information Security, Mathematical Modelling, Data Science	SALT (Pty) Ltd; Other committees or task teams Governing Board Member: Global Research Council Belmont Forum of Funders; Council Member: Council on Higher Education (CHE) Council Member: South African Institute of Electrical Engineers Committee of Heads of Organisations of Research and Technology		2

Innovation for a better future

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Dr B Phakathi	Council Member	Sept 2018	Nov 2022	MBCbB: UKZN Food Consulting Services (FCS) (SA) MMed: UP PhD candidate	Female, African	Education Research		Chair: NACI Transformation Committee Foresight Task Team	1
Prof H Soodyall	Council Member	Sept 2018	Nov 2022	BSc (Hons): University of Durban-Westville (UDW) MSc (Biotech): Wits PhD (Human Genetics): Wits	Female, Indian	Human genetics Ethics Human origins and evolution	YAZI (Centre for Science and Society in Africa)	COHORT Open Science Advisory Board African Open Science Platform	2
Mr P Steenkamp	Council Member	Sept 2018	Nov 2022	Executive MBA: Henley Business School Honors in Organisational Psychology: Rhodes University	Male, White	Innovation & integration expert	I Am Jack Frost Holdings (Pty) Ltd. Creative Leadership Collective (Pty) Ltd.	Mainstreaming of innovation across the public and private sector Technologies emanating from publicly funded research in South Africa Sovereign Innovation Fund	1

Name	Designation in terms of Council of Council structure	Date appointed	Date resigned	Qualifications	Equity information	Area of expertise	Board directorships	Other committees or task teams	Nr. of meetings attended (2022/23)
Dr A Vahed	Council Member	Dec 2022	-	PhD (Computer Science – Artificial Intelligence)	Male Coloured	Data Science, Data Management, Big Data, Artificial Intelligence, Machine Learning	National Institute for Theoretical and Computational Sciences (NITheCS) Advisory Committee African Open Science Platform (AOSP) Advisory Board	South African CODATA Committee, US National Institute of Standards and Technology (NIST) Big Data Committee; Research Data Alliance (RDA) Artificial Intelligence Working Group Global Open Science Cloud (GOSC) Technical Infrastructure Group	2
Prof L Zungu	Council Member	Dec 2022		PhD Occupational Health	Female African	Occupational Health Policy and Systems Epidemiology Research Ethics	Member of NACI Council NACI representative to NRF Board	NACI Transformation Sub-committee NACI Monitoring and Evaluation Sub-committee NACI Communication, Branding and Public Engagement Sub-committee	2

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2. EXECUTIVE COMMITTEE

The duties of the NACI ExCo are to dispose of matters determined by the Council. The ExCo's terms of reference and decision-making power for each matter referred are decided by NACI.

Table 5: Previous ExCo Meeting Attendance (2022/23)

EXCO Member	Meetings Attended			Number of meetings attended
	31/05/2022	07/09/2022	29/11/2022	
Dr S Moephuli: Chairperson from Sep 2021	√	√	√	3
Dr M Cele: Acting CEO	√	√	√	3
Mr I Engelbrecht	√	√	√	3
Ms I Karg	√	√	√	3

Table 6: Current ExCo Meeting Attendance (2022/23)

EXCO Member	Meetings Attended	
	25/01/2023	Number OF Meetings Attended
Mr T Manyoni Chairperson from Dec 2022	√	1
Dr M Cele: Acting CEO	√	1
Ms I Karg	√	1
Ms F Khumalo	n/a	0
Dr O Franks	n/a	0

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Part



HUMAN RESOURCE MANAGEMENT

1. INTRODUCTION

To implement its advisory work programme, the NACI Council is supported by the NACI Secretariat. As of 31 March 2023, the staff establishment of the Secretariat was 14, with 11 positions filled and one vacant. There are four Senior Management Service members and four technical employees at the deputy director level. Two people were employed on fixed-term contracts to assist the team with the workload.

The Secretariat complied with the Performance Management and Development System and all employees submitted their performance agreements and assessments. Seven employees qualified for performance rewards by 31 December 2022.

The employment equity profile of the Secretariat is 50/50 male/female representation and 0% for employees living with a disability. The target is to increase female representation to 75% over the next financial years.

2. HUMAN RESOURCE OVERSIGHT STATISTICS

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Table 6: Performance Rewards

Programme / activity/ objective	Performance rewards				Personnel expenditure (R'000)		% of performance rewards to total personnel cost (R'000)	
	Notch progression		Bonus		Notch progression	Bonus	Notch progression	Bonus
	No. of employees	Beneficiaries	No. of employees	Beneficiaries				
Top Management (L15-16)	0	0	0	0	0	0	0	0
Senior Management (L13-14)	4	2	4	0	R54 746	0	0,015%	0%
Professional qualified (L9-12)	5	2	3	0	R28 392	0	0,008%	0%
Skilled (L6-8)	3	1	3	0	R4 470	0	0,001%	0%
Semi-skilled (L3-5)	0	0	0	0	0	0	0	0
Unskilled (L1-2)	0	0	0	0	0	0	0	0
TOTAL	12	7	10	0	R87 608	0	0,025%	0%

Table 7: Training Costs

Programme// activity/objective	Personnel expenditure (R'000)	Training expenditure (R'000)	Training expenditure as a % of personnel costs	No. of employees trained	Average training cost per employee
NACI training and development	R9 561 734.38	R32 822.50	0,34%	4	R8 205.63

Table 8: Employment and Vacancies

Programme/ activity/ objective	2022/2023 No. of employees	2022/2023 Approved positions	2022/2023 No. of employees	2022/2023 Vacancies	% of Vacancies
Secretariat	12	13	12	1	23.07%
TOTAL	12	13	12	1	23.07%

Table 9: Employment Changes

Salary band	Employment at beginning of period	Appointments	Terminations	Employment at end of the period
Top Management	0	0	0	0
Senior Management	4	0	0	4
Professionally qualified employees	3	2	0	5
Skilled employees	3	0	0	3
Semi-skilled employees	0	0	0	0
Unskilled employees	0	0	0	0
TOTAL	10	2	0	12

Table 10: Reasons for Staff Leaving

Reason	Number	% of total number of staff leaving
Death	0	0
Resignation	0	0
Dismissal	0	0
Retirement	0	0
Ill health	0	0
Expiry of contract	0	0
Other	0	0
TOTAL	0	0

Table 11: Labour Relations: Misconduct and Disciplinary Action

Nature of Disciplinary Action	Number
Verbal warning	0
Written warning	0
Final written warning	1
Dismissal	0

Table 12: Equity Targets and Employment Equity Status

Level	Male							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	0	0	0	0	0	0	0	0
Senior Management	3	0	0	0	0	0	0	0
Professionally qualified employees	2	0	0	0	0	0	0	0
Skilled employees	1	0	0	0	0	0	0	0
Semi-skilled employees	0	0	0	0	0	0	0	0
Unskilled employees	0	0	0	0	0	0	0	0
TOTAL	6	0	0	0	0	0	0	0

Level	Female							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	0	0	0	0	0	0	0	0
Senior Management	1	0	0	0	0	0	0	0
Professionally qualified employees	3	0	0	0	0	0	0	0
Skilled employees	2	0	0	0	0	0	0	0
Semi-skilled employees	0	0	0	0	0	0	0	0
Unskilled employees	0	0	0	0	0	0	0	0
TOTAL	6	0	0	0	0	0	0	0

Levels	People Living with Disabilities			
	Male		Female	
	Current	Target	Current	Target
Top Management	0	0	0	0
Senior Management	0	0	0	0
Professionally qualified employees	0	0	0	0
Skilled employees	0	0	0	0
Semi-skilled employees	0	0	0	0
Unskilled employees	0	0	0	0
TOTAL	0	0	0	0

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FINANCIAL

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FINANCIAL INFORMATION

1. REPORT OF THE EXTERNAL AUDITOR

NACI is not subject to external auditing.

2. ANNUAL FINANCIAL PERFORMANCE

NACI's allocated budget for 2022/23 was R19,144 million, including the compensation of employees. The total expenditure on goods and services from the annual budget was R7,974 million, which was higher than the original budget, due to the remuneration for the fixed-term employment contracts.

Table 13: Financial Performance in the 2022/23 Financial Year

Description	Expenses (R'000)	Commitments (R'000)	Allocated Budget (R'000)	Available Funds (R'000)
Compensation of employees	9,562	-	11,170	1,608
Goods and services	7,818	500	7,974	(156)
Payment of capital assets	-	-	-	-
Transfers and subsidies	-	-	-	-
TOTAL	17,380	500	19,144	1,764

NACI Secretariat | Tel: 012 844 0252 | Email: naci@dst.gov.za
www.naci.org.za



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

