



National Advisory
Council on Innovation

Strategic Plan

2015 - 2020



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

NACi
NATIONAL ADVISORY COUNCIL ON INNOVATION



OFFICIAL SIGN-OFF

It is hereby certified that this National Advisory Council on Innovation (NACI) Strategic Plan 2015-2020

- was developed by the Secretariat of the National Advisory Council on Innovation under the guidance of the NACI Executive Committee and its Chair;
- takes into account all the relevant policies, legislations and other mandates which govern the operations of the National Advisory Council on Innovation; and
- accurately reflects the strategic outcome oriented goals and objectives which the National Advisory Council on Innovation will endeavour to achieve over the next five fiscal years (2015 – 2020).

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FOREWORD

This National Advisory Council on Innovation (NACI) Strategic Plan 2015-2020 falls in the second year of the 5-year election mandate of the Government that covers the period 2014-2019 and is captured in the Medium Term Strategic Framework (MTSF). The 2014-2019 MTSF forms the first five-year implementation phase of the National Development Plan (NDP) adopted in September 2012.

The MTSF is structured around 14 priority outcomes which cover the focus areas identified in the NDP and Government's electoral mandate. In its focus on the 14 key outcomes and associated activities and targets, the MTSF has two over-arching strategic themes – radical economic transformation and improving service delivery.

The current Council, appointed by the Minister for Science and Technology in August 2014 took the NDP and the MTSF as its point of departure in developing this 2015-2020 Strategic Plan. In addition, the nine key challenges identified by the National Planning Commission in its Diagnostic Report (2011) still warrant the attention of all stakeholders and role players in the NSI.

Through its strategy NACI endeavours to provide a framework for galvanising throughout the NSI the necessary intellectual support, advocacy acumen and relevant resources to effectively influence changes where it matters most.

This Strategic Plan should be viewed as a dynamic document

Executive Authority of NACI

LIST OF ACRONYMS

ASSAf	Academy of Sciences of South Africa
APP	Annual Performance Plan
BRICS	Brazil, Russia, India, China and South Africa Economic Block
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COHORT	Committee of Heads for Organisations of Research and Technology
DG	Director-General
DST	Department of Science and Technology
TT100	Technology Top 100
ENE	Estimates of National Expenditure
FET	Further Education and Training
the dti	Department of Trade and Industry
ExCo	Executive Committee
GDP	Gross Domestic Product
IPAP	Industrial Policy Action Plan
MTEF	Medium Term Expenditure Framework
MTSF	Medium Term Strategic Framework
NACI	National Advisory Council on Innovation
NDP	National Development Plan
NGP	New Growth Path
NIP	National Infrastructure Plan
NRF	National Research Foundation
NSI	National System of Innovation
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
S&T	Science and Technology
SMME	Small, Medium and Micro Enterprises
STI	Science, Technology and Innovation
TYIP	Ten-Year Innovation Plan

EXECUTIVE SUMMARY



The National Advisory Council on Innovation (NACI) is established in terms of the NACI Act, Act No. 55 of 1997, as an advisory council to the Minister for Science and Technology. The vision of NACI as encapsulated in this document acknowledges the central role of NACI in quality policy advice development and in the coordination of the roles of various players in the National System of Innovation (NSI). In the next five years NACI will deliver high quality advisory support, i.e. relevant, responsive to government priorities, timeous and based on sound information and insight of the Council, to the Minister and Cabinet in line with its mandate.

The reviews of NACI and of the NSI that have been undertaken thus far highlight important challenges for the organisation and the national system of innovation. The Minister has responded very favourably to the Ministerial Review Committee's recommendations with regard to NACI by, inter alia, statutorily providing for a CEO position, appointing high-level business representation on Council and acknowledging its coordinating role in the NSI. In addition, the Terms of Reference were developed for NACI that defines the relationship between itself and the government. The preceding developments empower NACI effectively to fulfil its mission.

The empowerment of NACI and a revised delivery model, it is anticipated, will improve both the quality and quantity of output of the organisation, and hence of its impact in the NSI. Moving forward, NACI will focus on partnerships with relevant stakeholders, in particular the business sector, to leverage on and seek policy support for existing local innovations and for replicable international models.

The reviews referred to above advocate a revision of "mental models" of how the innovation system operates as well as for a participative system with mechanisms in place for effective cross-governmental coordination. These views, together with priorities identified in government's Mid Term Strategic Framework, the National Development Plan, the New Growth Path, the Industrial Policy Action Plan, and the Ten-Year Innovation Plan inform NACI's strategic priorities, which are:

- the setting of an agenda for prioritisation of science, technology and innovation;
- provision of framework conditions conducive for innovation, including fostering coherence and coordination in the NSI. NACI plans to achieve this by reviewing science, technology and innovation policy;
- monitoring the contribution of innovation to South Africa's economic growth and competitiveness in order to improve the quality of life for its citizens; and
- establishing NACI as the premier body for providing timeous, reliable and relevant innovation policy advice by developing and implementing a rapid response policy advisory system.

These strategic priorities cut across the mandates of several government departments. It is NACI's intention to engage all stakeholders extensively on these priority issues in order to arrive at inclusive and comprehensive policy solutions, and cohesive strategies. In addition, NACI will continue to make its voice heard in all matters pertinent to science, technology and innovation.

An assumption underlying NACI's commitment to deliver on its plans, set out in this Strategic Plan, is the allocation of the required budget, also to strengthen the Secretariat by e.g. temporary appointment of experts on the staff.

This Strategic Plan should be viewed as a dynamic document as it takes the organisation from its traditional way of conducting its business to a new delivery model that focuses on key issues for agenda setting for science, technology and innovation.

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PART A: STRATEGIC OBJECTIVES

1. BACKGROUND TO NACI

1.1 INTRODUCTION

Following on the publication of the White Paper on Science and Technology in 1996 South African science and technology was for the first time conceptualised within the frame of a National System of Innovation. In terms of the National Advisory Council on Innovation Act, (Act No, 55 of 1997) (the Act), the National Advisory Council on Innovation (NACI) was established as a statutory Council advising government on optimising the role of science, technology and innovation in stimulating a knowledge economy that would improve its international competitiveness.

The Act specifies the composition of NACI, criteria for membership, and the tenure of office of the Council members. The Act further provides for the establishment of the Executive Committee and Working Committees of NACI, and prescribes how meetings of NACI should be conducted. The Act makes provision for NACI staff to be appointed in terms of the Public Service Act on a full time basis, to carry out work incidental to the functions of NACI. Furthermore, the Science and Technology Laws Amendment Act (Act No.16 of 2011) provides that a Chief Executive Officer (CEO) of NACI must be appointed by the Minister. The fourth Council took office in August 2014.

1.2 VISION

The vision of NACI is:

A well-coordinated NSI in which Science, Technology and Innovation are recognised as primary drivers of economic and social development which enables South Africa to participate in the global knowledge economy.

1.3 MISSION

NACI's mission is to serve as the premier advisory body to the Minister for Science and Technology and Cabinet on all innovation policy matters in particular:

- the contribution of innovation to economic competitiveness;

- the contribution of innovation to economic development and social upliftment; and
- the coordination and coherence in the national system of innovation, thereby facilitating the achievement of national objectives.

This mission statement finds expression in the NACI motto:

“Innovation for a better future”

To give effect to its mission, NACI will, if and when required, utilise research-based evidence approaches to enquiry; however, the most important value to be derived from an advisory council is the “intellectual leverage” - the ability to brainstorm on overarching strategic issues as a team. NACI will therefore rely heavily on the individual expertise of its membership.

1.4 VALUES

The following values inspire all activities of NACI (Figure 1):



Figure 1: Values of NACI

1.5 REVIEW OF VISION, MISSION AND VALUES

The Council, having taken office in August 2014, will review the vision, mission and values within the context of the recent extension of the responsibilities given by the Minister, its terms of reference and commitment to developing new modes of advice development and delivery.



2. LEGISLATIVE AND OTHER MANDATES

2.1 LEGISLATIVE MANDATE

NACI derives its mandate from the Act which sets out its objects and functions. In terms of the Act, NACI's mandate is to advise the Minister for Science and Technology and, through the Minister, Cabinet, on the role and contribution of science, mathematics, innovation and technology, including indigenous technologies, in promoting national objectives. National objectives include:

- improving and sustaining the quality of life of all South Africans;
- developing human resources for science and technology;
- building the economy; and
- strengthening the country's competitiveness in the international sphere.

The functions of NACI are set out in Sec (4)1 of the Act, and include advice on:

- the coordination and stimulation of the NSI;
- the promotion of cooperation within the NSI;
- the development and maintenance of human resources for innovation, through selective support for education, training, research and development in the higher education sector, science councils, science and technology institutions and private institutions;
- strategies for the promotion, development, acquisition, transfer and implementation of technology innovation in all sectors;
- international liaison and cooperation in the fields of science, technology and innovation;
- the coordination of science and technology policy and strategy with policy and strategies in other environments;
- the structuring, governance and coordination of the science and technology system;
- the identification of research and development priorities in consultation with provincial departments and interested parties and the incorporation of such priorities in the process of government funding of research and development;
- the funding of the science and technology system in respect of its contribution to innovation;
- the establishment, phasing out, rationalisation and management of science councils, national facilities for research and development programmes conducted by science councils; and science and technology institutions within the national system of innovation;
- the promotion of mathematics, the natural sciences and technology in the education sector, in consultation with the Minister(s) for Education and the Minister of Labour;
- strategies for the dissemination and accessibility of scientific knowledge and technology as well as the promotion of public understanding of science and technology and its supportive

- role in innovation for development;
- the establishment and maintenance of information systems to support the monitoring and evaluation of the science and technology system and the national system of innovation; as well as the revision of science and technology policy to address changing and new circumstances;
- developments in the fields of science, technology and innovation which might require new legislation; and
- any other matter relating to science, mathematics, innovation and technology - including indigenous technologies – which the Minister may refer to NACI or in respect of which NACI may deem it necessary to advise the Minister.

The Act further directs NACI to submit to the Minister an annual report on its activities, including an assessment of the extent to which its objects have been achieved.

The Science and Technology Laws Amendment Act (Act No. 16 of 2011) provides the following further directives: that NACI Council must meet at least once per quarter and that the Minister must appoint a suitably qualified person as a Chief Executive Officer of NACI.

2.2 POLICY MANDATE

NACI's mandate stems from the White Paper on Science and Technology 1996. Chapter 5 of the White Paper on Science and Technology directs NACI to play an advisory rather than an operational role in respect of stimulating the national system of innovation.

2.3 CONSTITUTIONAL MANDATE

NACI operates within the Constitution of the Republic of South Africa, but has no specific Constitutional mandate.

2.4 COURT RULINGS

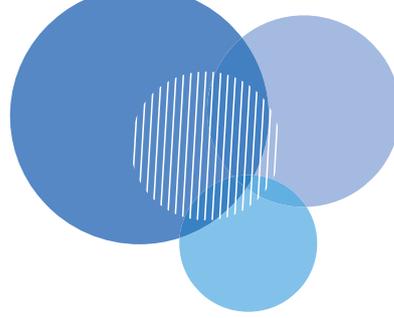
NACI has no mandate arising from a Court ruling.

2.5 *PLANNED POLICY INITIATIVES*

NACI has no direct policy mandate and therefore no planned policy initiatives, however in respect of its advisory responsibilities, the White Paper on Science and Technology directs the Department of Science and Technology to provide a link between the activities of the NACI and government.



3. SITUATION ANALYSIS



3.1 SITUATION ANALYSIS

Since its inception in 1997, NACI has been subjected to a number of reviews (local and international) which have assisted the organisation to continually reflect on its role and impact in the NSI. The most notable reviews are: the international review of the NSI conducted by the Organisation for Economic Co-operation and Development (OECD) in 2008; and the Science, Technology and Innovation Landscape review conducted by the Ministerial Review Committee in 2012. Both reviews made significant findings pertaining to NACI and its role in the NSI.

Chief amongst the shortcomings identified by the 2008 OECD review, was that the Council's mandate was hamstrung by the fact that it reported to the Department of Science and Technology (DST), thus leaving NACI with no real authority to effectively coordinate the NSI. The OECD also raised the location of the NACI Secretariat in the organisational structure of the DST as binding the Council into a situation of de facto being an entity under the administrative control of DST.

To address NACI's lack of autonomy the OECD recommended that, whilst the NACI Secretariat can remain within the DST, the Head of Secretariat should report directly to the Minister. The DST should continue to provide administrative support functions (corporate services), but the Department should have no oversight responsibility in respect of NACI's work. The OECD further recommended that the Head of the Secretariat be elevated to a CEO position with strong networking, communication and management, supervisory and political skills in order to engage effectively at any level and ensure NACI lives up to its mandate.

Following the OECD review and at the direction of the Minister, a Ministerial Committee was set up to review the Science, Technology and Innovation Landscape in South Africa. The findings of the committee, published in 2012 did not depart significantly from the findings of the OECD report. The report of the Ministerial Review Committee drew attention to:

- the concern that although the 1996 *White Paper on Science and Technology* articulated a compelling vision for an NSI, that vision has not been sufficiently adopted across government to achieve its intended and pervasive impact;
- the concern that, although the DST and NACI are deemed the designated coordinators of the NSI in respect of their roles, they are yet to make an impact;
- the absence of business involvement reflects in part on the country's poor efforts in supporting a transition from a strong resource reliant economy to a value-adding and knowledge intensive

economy;

- the need to be alert to the state's investment in innovation so that practical emphasis is not only placed on "the big science", as has historically been the case, but that a healthy balance between demand-pull approaches and science supply approaches is necessary;
- the need to see innovation as involving more than just research and development (R&D), so that innovation in public service delivery systems is equally seen as urgent; and
- the responsiveness of the NSI is also critically dependent on a system-level quantitative and qualitative monitoring and evaluation capability.

The Ministry for Science and Technology has in the recent past, implemented measures to respond to the outcomes of the reviews. Interventions have included:

- moving the physical location of the NACI Secretariat to a leased property outside the DST;
- the creation, through statute, of the position of a CEO to head the Secretariat, and the upgrading of such a position in respect of remuneration and authority;
- the inclusion of high-level business representation on the NACI Council;
- the inclusion on the NACI Council of high-level representation of the Committee of Heads of Organisations for Research and Technology (COHORT); and
- the provision of Terms of Reference for the Council to locate and guide the level of engagement with government.

NACI has thus been empowered to perform its mandatory functions.

3.2 THE PERFORMANCE ENVIRONMENT

NACI must fulfil its mandate within the broader South African context where all government effort is focussed on implementing the National Development Plan (NDP) and addressing the three major challenges of *poverty, unemployment* and *inequality*.

3.2.1 Policy environment

NACI's advisory services are positioned within a policy environment informed by, amongst others:

- National planning outcomes
 - The National Development Plan – Vision 2030
 - The Medium Term Strategic Framework 2014-2019
 - The State of the Nation Address 2015

- Major economic policy frameworks
 - The New Growth Path
 - The Industrial Policy Action Plan (IPAP5)
 - The National Infrastructure Plan
- Science and Technology policy frameworks
 - The White Paper on Science and Technology "*Preparing for the 21st Century*" (1996)
 - The National Research and Development Strategy (2002)
 - The Ten-Year Innovation Plan (2007)

In 2012 the Cabinet adopted the NDP to serve as a blueprint to achieve socio-economic development and growth. The NDP charts a path to address the government's triple challenge of **poverty, inequality** and **unemployment**. As part of the implementation of the NDP, Cabinet released the Medium Term Strategic Framework (MTSF 2014-2019), outlining government's main priorities to underpin the direction of government in the next five years. The MTSF, drawn largely from the NDP, outlines the fourteen priority outcomes of government in the next five years. Consequently, and as discussed with the Minister for Science and Technology in July 2014, The Council's advisory strategy is focused on implementing government's priorities with regard to growing the economy, and tackling unemployment, inequality and poverty.

Fig 2 illustrates the priority outcomes of government, which NACI's advisory services will respond to:

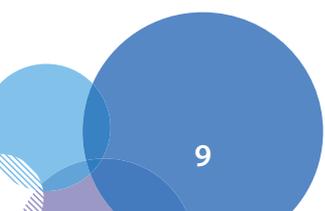




Figure 2: Advisory role in support of the NDP

The following paragraphs offer brief indications of how NACI plans to address the above five outcomes. Priority outcome 4 requires the government to find a balance between creating a stable and supportive environment for growth and investment while at the same time addressing structural changes in the economy and society. NACI's strategic goals of advising on the creation of conducive framework conditions for science, technology and innovation to contribute to economic growth as well as facilitating agenda setting for prioritisation of science, technology and innovation in order to achieve coordination and stimulate the NSI will respond to outcome 4.

The NDP identifies education, training and innovation throughout the value chain, as a critical component to achieve the country's 2030 vision. As part of its strategy going forward, the Council will provide internship opportunities for young, unemployed graduates to gain relevant experience in the science, technology and innovation advisory space. The Council seeks to achieve this by taking on internship placements through the DST's internship programme. The Council will also advise on strategies to promote science, mathematics, entrepreneurial skills and generally on the STI skills base. Enhancing science, technology and innovation skills will enable the Council to contribute positively to priority outcome 5.

The Council will further respond to priority outcomes 6, 7 and 10 through its rapid response advisory system. Priority 6 requires government to build an efficient, competitive and responsive economic infrastructure network. The NDP proposes an expansion of South Africa's economic infrastructure network. The National Infrastructure Plan, consisting of 18 strategic infrastructure projects (SIPs) covering investments in four broad areas: energy, social, economic and ICT is a response to this call. Government plans are therefore underway to expand energy, water, transport and communication.

Priority outcome 7 requires the government to create vibrant, equitable, sustainable rural communities contributing towards food security for all. This priority outcome calls for government leadership in sustainable land reform, including communal tenure security, financial and technical support to farmers as well as the provision of social and physical infrastructure to aid sustainable land reforms. Priority outcome 10 requires the government to protect and enhance our environmental assets and natural resources. This priority outcome calls for South Africa's transition to an environmentally sustainable, climate change resilience, low carbon economy and a just society by 2030. In this regard, the Council will deliver relevant science, technology and innovation advice to address issues such as energy, water, food security, innovation, entrepreneurship and job creation. This may include advice on tradeoffs between environmental protection and economic objectives, the regulatory environment, e.g. carbon taxes and resource limitations to economic activity e.g. water shortages.

3.2.2 The delivery environment

NACI discharges its mandate within the ambit of the multi-tiered South African Science, Technology and Innovation (STI) landscape that consists of the following stakeholders (according to the OECD 2008 report):

- Level 1: Government advisory bodies, e.g., NACI, the Council for Higher Education (CHE) and ASSAF;
- Level 2: Ministries, e.g., the DST, the dti, DHET, DoE, NDA, DoH, etc.;
- Level 3: Government agencies, e.g., NRF, WRC, MRC, IDC, etc.; and
- Level 4: Research and innovation performers, e.g., Science Councils, Higher Education Institutions, Business enterprises, etc.

The stakeholders and entities at the respective levels have complementary roles and a diverse range of interests, functions and foci. NACI should ideally be in a position to interact effectively with all NSI stakeholders across all the levels. In this regard, the Council is also mindful of the conclusions of the OECD 2008 report on the NSI, namely, that there was limited horizontal and vertical integration in the activities of the agencies in the NSI; no Cabinet-level coordinating body to devise and monitor

national strategies for innovation; little understanding of the notions of innovation and NSI; and insufficient involvement of business in building the NSI.

3.2.3 Recent outputs

In the recent past, NACI has initiated and delivered advice in a wide range of areas. The list below highlights some of NACI's recent work, all of which is available on the NACI website:

A "Refocused NSI" better aligned to the vision of the NDP

To refocus and strengthen the NSI, NACI proposed a National Innovation Framework comprising nine pillars, namely: (i) skills development, (ii) investment, (iii) inclusive innovation system, (iv) enabling institutional framework and delivery system, (v) innovation infrastructure, (vi) flagship projects, (vii) champions and role models, (viii) measures and indicators and (ix) "brains trust" for credible quality advice and strategic direction. A refocused NSI will have great potential to respond to targets of the National Development Plan (NDP) and other government strategies.

Assessment of the National Innovation System (STI Indicators)

NACI completed a study assessing the status of monitoring and evaluation of the science, technology and innovation system. The study identified gaps in the available input/output indicators data. The Council found that current measures of input do not sufficiently measure the entire innovation domain, which includes impact on quality of life, economic growth, environmental sustainability and entrepreneurship. A package of indicators which could measure the holistic performance of the system of innovation was therefore recommended.

Infrastructure for Research and Innovation

NACI completed a review into the research and innovation infrastructure required to support the targets of the NDP. The review further investigated the broader social infrastructure which would ensure an inclusive NSI. In that regard NACI has suggested a range of actions such as strategies and governance models for research and innovation infrastructure to make the NSI competitive in both knowledge creation and commercial impact; and the development of an Open Innovation Platform linked to existing social infrastructure such as the grant system, schools and clinics, as well as venture capital structures.

Strengthening Skills in Mathematics, Science and Technology

In a document entitled “Policy Discussion on Strengthening Skills in Mathematics, Science and Technology”, NACI identified strategies to address the shortage of skilled labour in the technical, vocational, education and training pipeline. These include a restructuring of the portion of the Skills Fund administered by the NRF to cater for an expanded DST/TT100 internship programme, and policy provisions for entrepreneurial education in the vocational curriculum.

Gender Mainstreaming in the STI

The NACI Council also focused its effort on the enabling policy environment for gender mainstreaming in science, technology and innovation. The outcome of the Council’s work showed that the STI workplace is slowly transforming but tends to be more responsive to access by both genders and all races, but rigid in upward mobility and leadership positions. This work also concluded on the urgency for impact assessments of three programmes in the STI that already carry a transformation agenda, that is, the Thuthuka Programme, the Centres of Excellence, and the South African Research Chairs Initiative.

An investigation into why certain biotechnology enterprises have failed in South Africa

NACI also investigated why certain biotechnology enterprises fail in South Africa. As a result of government interventions, South Africa witnessed an emergence of a biotechnology-based SME sector. However, many of the funded startups were not successful ventures in the long run. The NACI investigation recommended amongst other things, ensuring multiple rounds and different types of financing; improving funding turnaround times from TIA and other government agencies and channelling funding to where South Africa has a competitive advantage.

In the past, NACI has undertaken evaluations of various aspects of the NSI and provided advice on specific elements of the NSI. However, due to its having to operate in a constrained environment, it has not been able to direct science, technology and innovation policy and effectively coordinate the activities of the various participants in the NSI. Going forward, a key strategic objective of NACI is to review the 1996 White Paper on Science and Technology to ascertain progress against its stated objectives and develop recommendations in this regard. This review will be supplemented by a review of the outcomes and impact of the 1999 National Research and Technology Foresight.

3.3 THE ORGANISATIONAL ENVIRONMENT

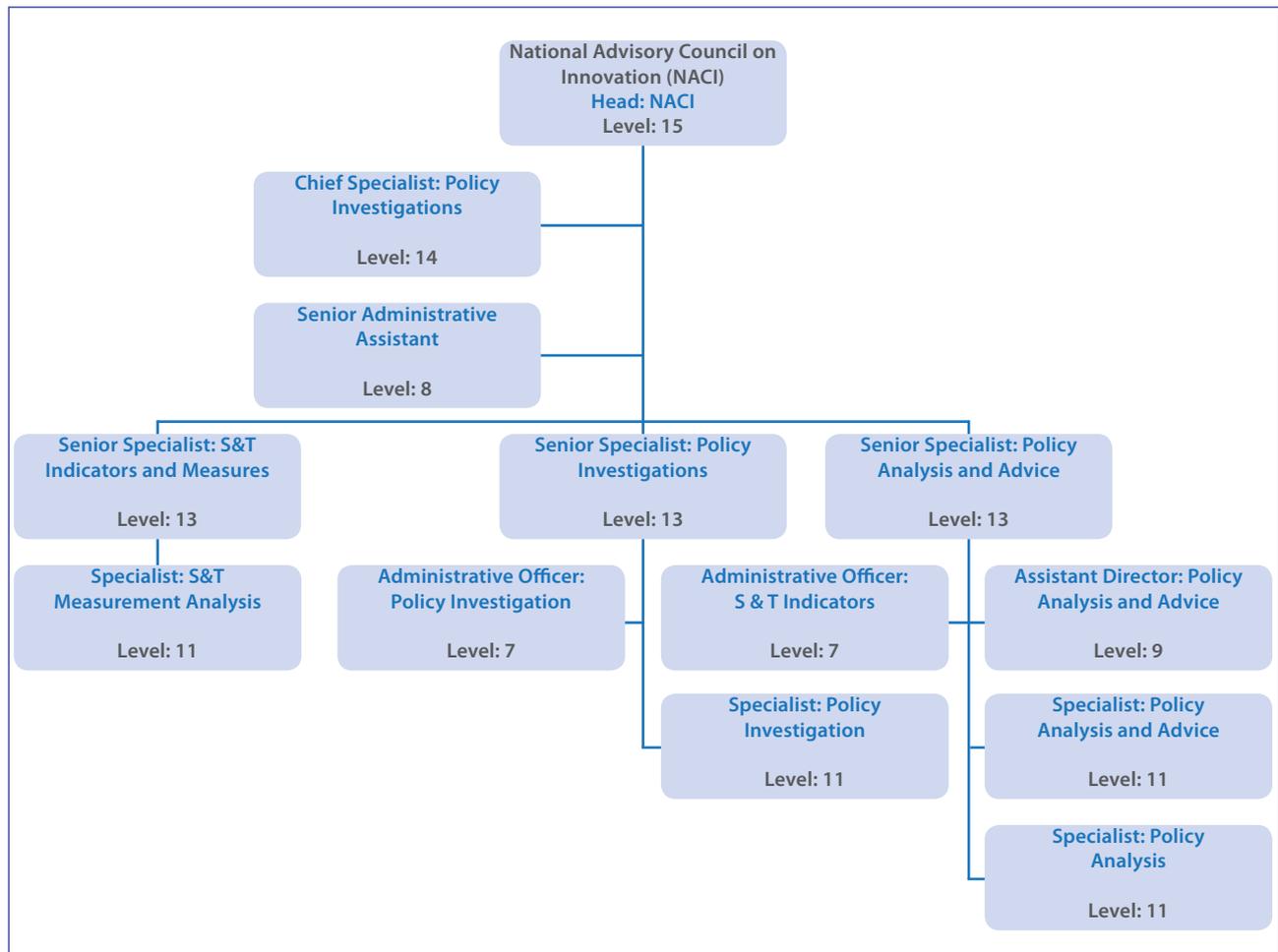


Figure 3: Organogram of the present NACI Secretariat

The Secretariat serves as an operational and management arm of the Council for project management, research and quality advice services. The NACI Secretariat comprises a small, but competent full time staff complement of 13 personnel, including a CEO, employed by the Department of Science and Technology (see Fig. 3). Of the 13 positions 12 are currently filled and one position is in the process of being filled. A rethink of the current size and capacity of the Secretariat in the context of NACI's shift in focus as well as changes and challenges occurring in the NSI, is worth consideration.

3.3.1 Changing economy

The NDP, NGP, IPAP and TYIP all recognise that the South African economy cannot survive in a sustainable way without a strong and profoundly reshaped industrial base. New technologies have dramatically changed the way business is done in the past 20 years. New players have emerged in global markets, as well as new materials, new technologies and a better type of worker is necessary. These changes occur at a time when South Africa is facing a severe economic slowdown.

NACI considers this situation and the changes as an opportunity. In support of the above mentioned policy frameworks, the Council also believes that focused science, technology and innovation investments in key industry sectors will yield high growth prospects. In the medium term, the Council will revise its draft National Innovation Framework for a refocused NSI to strongly focus on the structural issues affecting the economy, such as market uncertainty, access to venture capital, lack of demand and skills shortages which all trigger lack of confidence which in turn triggers lack of investment and job losses in the industry.

The Council's advisory activities will concentrate on selected themes where significant improvements can be achieved quickly such as energy, water and food security. In addition, the Council will continue to advise on other topical issues affecting innovation intensity, such as entrepreneurship, technology acquisition, technology transfer and commercialization, access to finance and capital to improve lending to the real economy. In that regard, the role of development finance institutions mobilising and targeting public resources is important. In addition, human capital and skills are a key weakness in the NSI; the Council will equally evaluate better ways of equipping the labour market for industrial transformation, in particular to anticipate the skills needs and mismatches.

4. GOVERNANCE AND ADVISORY STRUCTURE

NACI is accountable to the Minister for Science and Technology, and through the minister, to Cabinet. The structure governing NACI is outlined in Figure 2 and it comprises of the Minister for Science and Technology, and through the Minister the Cabinet. In addition, it includes the NACI Council that meets quarterly and its appointed experts, the Executive Committee that meets approximately ten times per year, as and when necessary and the NACI Secretariat.

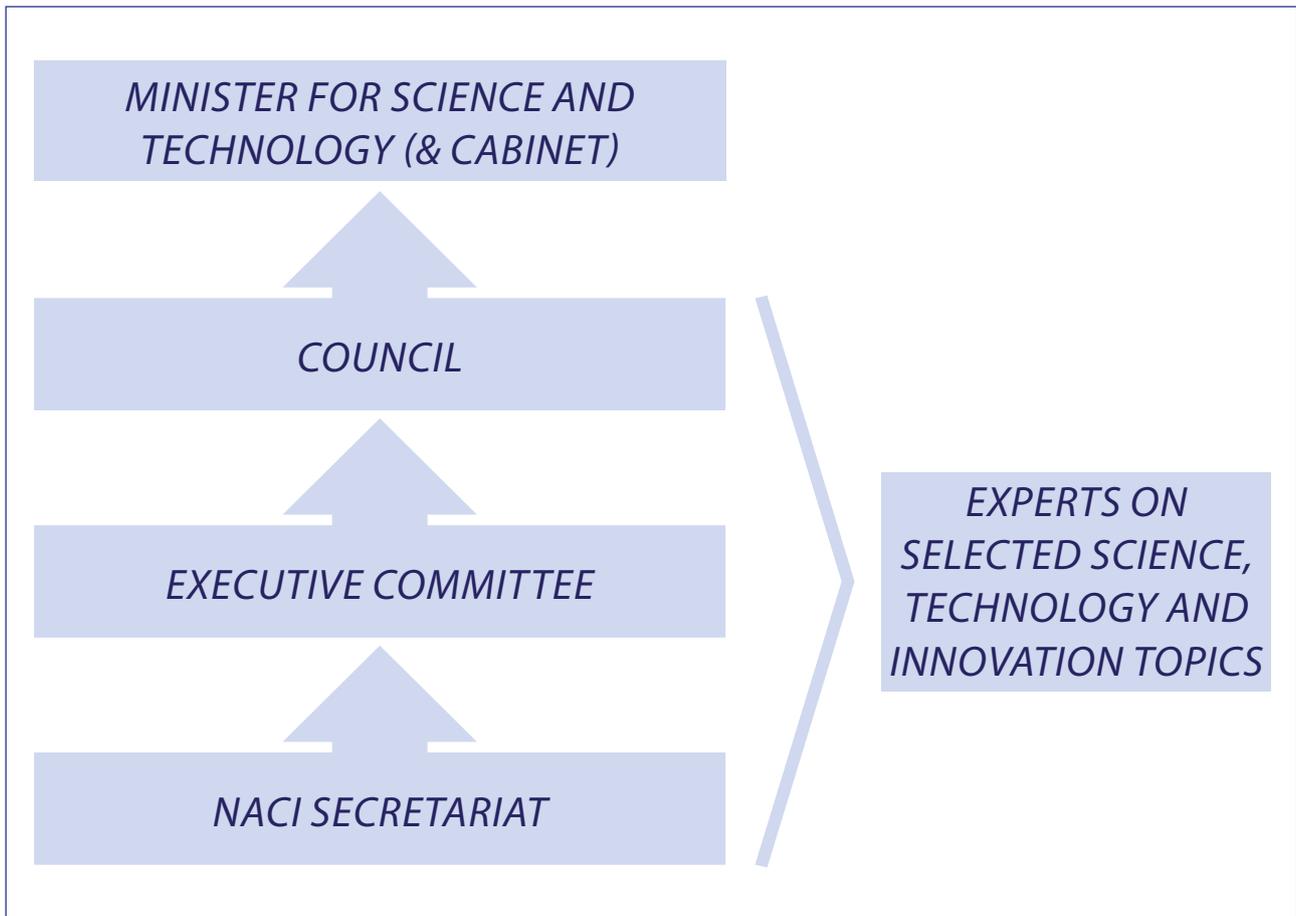


Figure 4: Present governance and advisory structure of NACI

PART B: STRATEGIC OBJECTIVES

5. STRATEGIC OUTCOME ORIENTED GOALS

The primary point of departure in identifying the following four strategic outcome oriented goals and associated objectives has been, firstly, NACI's statutory mandate and, secondly, the extended responsibilities recently granted to it by the Minister. In formulating the strategic goals the Council further took into account the conclusions and recommendations of the Ministerial review committee, finally and very importantly national government priorities and relevant policies.

NACI's operations for the period 2015-2020 will be directed by the following strategic outcome oriented goals and associated objectives.

5.1 STRATEGIC GOAL 1: TO FACILITATE AGENDA SETTING FOR PRIORITISATION OF SCIENCE, TECHNOLOGY AND INNOVATION (STI) IN ORDER TO ACHIEVE COORDINATION AND STIMULATE THE NSI

5.1.1 Strategic Objective 1:

To provide advice to the Minister for Science and Technology and Cabinet on medium to long term priorities for STI

- Strategic outcome
A coordinated and stimulated NSI
- Indicators
Framework for a 'Decadal plan on STI'
Stakeholder consultation

To date the DST's Ten Year Innovation Plan (TYIP) has been the framework document which sets priorities for science, technology and innovation progress in the country. Through five grand challenges, TYIP sets a vision for South Africa between 2008 and 2018. Whilst the five grand challenges of TYIP are accompanied by indicators to measure progress towards the vision, TYIP's timeline is 2018 and its success or impact is yet to be evaluated.

NACI's previous assessments have revealed less than optimal results in respect of the country's

trends in technological progress. The NDP, NGP and IPAP have prioritised specific technology sectors, but the relationship between targeted scientific output and technological development is unclear. Furthermore, the OECD concluded that countries that start to industrialise today, may have to choose different development paths than before and specialise in specific activities in global value-chains and this may require a re-think of innovation in industrial policy and the role of government.

The Council therefore seeks to contribute to setting the agenda for policy prioritisation in the science, technology and innovation space, by developing a high level framing of a “Decadal Plan on STI”.

5.2 STRATEGIC GOAL 2: TO ADVISE ON CONDUCIVE FRAMEWORK CONDITIONS FOR STI IN ORDER TO CONTRIBUTE TO ECONOMIC GROWTH

5.2.1 Strategic Objective 2

To review the White Paper on Science and Technology and associated strategies

- Strategic Outcome
An enabling environment for STI to contribute to economic growth
- Indicators
A discussion document on the review of the White Paper
Stakeholder consultation

The 1996 *White Paper on S&T* adopted the ‘NSI’ model as a framework to make innovation a key driver of economic growth and to improve the quality of life of all citizens. South Africa was the first country to do this. The NSI is an ecosystem of relationships and interactions between knowledge institutions (e.g. Universities and Science Councils), firms and government, and by its very nature cuts across responsibilities, policies and legislative mandates of many institutions and government departments.

However, as observed by the Ministerial Review Committee, the vision for innovation-driven national economic and social development that was articulated in the 1996 White Paper has not been adopted widely within government to achieve its intended and pervasive impact through STI. A persistent theme from the Ministerial Review Committee report has been the lack of effectiveness of the means that government has mobilised, especially those centred on the roles and powers of the DST and NACI as designated coordinators of an otherwise fragmented and diverse NSI.



Conducive framework conditions can be characterised by opportunities and means for linking the science base to industry through long-term national policies and specific support services. Government is key to creating a favourable investment climate needed to attract knowledge assets and trigger innovative commercial activity, in particular, the innovative activities of the small and medium enterprise sector. The Council plans to advise on conducive framework conditions for STI by, in the first instance, auditing the impact of the 1996 White Paper against the performance of participants in the NSI.

5.3 STRATEGIC GOAL 3: TO MONITOR AND EVALUATE THE CONTRIBUTION OF STI TO SOUTH AFRICA'S ECONOMIC GROWTH AND COMPETITIVENESS

5.3.1 Strategic objective 3

To develop a State of Innovation report at regular intervals and to assess the role of STI in economic growth and competitiveness

- Strategic Outcomes
 - The status of innovation in the country effectively and efficiently monitored;
 - The contribution of STI to economic growth and competitiveness will become evident;
- Indicators
 - An Innovation Scorecard
 - A framework for an innovation portal
 - A State of Innovation report

The South African government has signalled a clear commitment to innovation as a centrepiece of economic policy. This commitment is reflected in amongst others, the reconstitution of the National Advisory Council on Innovation with effect from 1 August 2014. However, to effectively enhance science, technology and innovation activity requires the State to have access to reliable measurements of the impact of its investments. The state needs to measure the actual and potential outcomes and impacts of government spending on innovation and scientific activity, including the effect on the gross domestic product (GDP), generation and transfer of knowledge, home grown innovations, the creation of new ventures and access to seed, development and venture capital.

Hence, one of NACI's focus points in the medium term is to assess the extent to which the economy transitions from an efficiency-driven economy to an innovation-intensive economy. In that regard,

NACI will develop a “State of Innovation Report” at appropriate intervals. The report will capture more than just new technological development and home grown innovations, but will include the extent to which new technologies are commercialised and the resultant impact on industrialisation.

Although NACI anticipates that this exercise will be a formidable undertaking, possibly requiring significant resources, measuring the impact of science, technology and innovation investments will ensure that the most effective STI programmes are supported with secure, stable and sufficient funding in the face of competing demands and austerity measures. Therefore, NACI plans to implement strategic priority 3 by introducing a scorecard to serve as a barometer for measuring innovation performance in the economy.

5.4 STRATEGIC GOAL 4: TO ESTABLISH NACI AS A PREMIER INSTITUTION FOR PROVIDING RAPID RESPONSE STI ADVICE

5.4.1 Strategic Objective 4

To develop and implement a rapid response advisory system

- Outcome
Responsiveness to requests on advisory services
- Indicators
Rapid response manual
Rapid response advice
Uptake of advice

NACI has, over the past number of years, established a national and international reputation for the quality of its advice, based on research evidence, on medium term challenges. In this regard, a productive and reliable network of policy analysts and researchers has been established and will be approached if and when required in the future. However, the accelerated speed at which technology is developing – and new opportunities and challenges arising – and the growing internationalisation of STI shorten the response time for decision making in general and policy responses in particular.

Dynamics such as the above require NACI to develop a capability for producing rapid response advice of a high quality¹. It is important to note that such advice will still be based on the best available information, experience and insight of members of the Council and other experts. NACI

¹ High quality in respect of advice, as used in this document, refers to relevant, responsive to government priorities, timeous and based on sound information and insight of Council.

plans to respond to strategic goal 4 by constituting panels of experts in the respective areas in which it seeks to advise e.g. energy, water and food security and by capacitating staff in the Secretariat to enable them to develop high quality advisory briefs.

5.5 SUMMARY OF NACI'S STRATEGIC GOALS IN THE POLICY CONTEXT

The four outcome oriented strategic goals are direct outflows of its vision and mission described in Chapter 1, the latter being based on its statutory mandate as embodied in the Act and (see Chapter 2). **Table 1** shows the potential linkages between NACI's strategic outcome oriented goals and objectives on the one hand and the policy ecology within which it functions on the other.

Table 1: Strategic priorities in the policy context

NACI Strategic Plan 2015-2020					
	Strategic Goal	Strategic Objective	Outcome	Indicator	Policy linkages
1	Facilitate agenda setting for STI	To provide advice to the Minister & Cabinet on medium to long-term priorities for STI	A coordinated and stimulated NSI	<ul style="list-style-type: none"> A Framework for a "Decadal Plan" Stakeholder consultation 	<ul style="list-style-type: none"> National Planning <ul style="list-style-type: none"> National Development Plan (NDP) Medium Term Strategic Framework (MTSF) SONA 2015 Major Economic Policy Frameworks <ul style="list-style-type: none"> New Growth Path (NGP) Industrial Policy Action Plan (IPAP5) Science and Technology <ul style="list-style-type: none"> White Paper on Science and Technology "Preparing for the 21st Century" (1996) National Research and Development Strategy (NRDS) 2002 The Ten-Year Innovation Plan (TYIP) 2007
2	Advice on conducive framework conditions for STI	To review the White Paper on Science and Technology and associated strategies	An enabling environment for STI to contribute to economic growth	<ul style="list-style-type: none"> A discussion document on the review of the White Paper Stakeholder consultation 	
3	Monitor and evaluate the STI contribution to SA's economic growth and competitiveness	To conduct a review of a state of Innovation in South Africa	The status of innovation in the country effectively and efficiently monitored; and- The contribution of STI to economic growth and competitiveness will become evident	<ul style="list-style-type: none"> Innovation Scorecard A framework for an innovation portal State of National Innovation Report 	
4	Establish NACI as a premier institution for providing rapid response advice	To develop and implement a rapid response advisory system	Responsiveness to requests for advisory services	<ul style="list-style-type: none"> Rapid response manual Rapid response advice Uptake of advice 	

5.6 CONCLUDING COMMENTS

As evidenced above, the Council's strategic priorities address important issues covered by various government policies that deal with science, technology and innovation. This strategic plan further introduces a new strategic approach to Council's mode of operation. This strategy is meant to contribute in no small measure to government's road map towards achieving developmental aims.

6. STRATEGIES TO ACHIEVE OBJECTIVES

6.1 CHALLENGES WITH THE DELIVERY MODEL

In 2012 NACI migrated from a system of long-standing advisory committees, which were appointed for the duration of the term of office of NACI Council, to the use of project teams. A project team consisted of a panel of external experts that enabled the Council to respond to the strategic priority areas and projects for that particular year more directly.

Notwithstanding positive properties of the project team model, such as utilising credible external expertise and transfer of skills, it turned out not to be as successful as expected, especially because of low participation (full schedules) and costs of meetings. These experiences with the previous delivery models led the Council to reorganise its approach.

6.2 RE-ORGANISATION OF THE DELIVERY MODEL

Capitalising on previous experience, the adjustments to the delivery model that the Council requires are therefore minor, but the Council believes will further add value in respect of the quantity and quality of output. The adjustments are as follows:

- experts will be identified and recruited on a project needs basis, and the duration of their appointment will be linked to the task they are to perform;
- the work to be undertaken by the expert will be approved by ExCo or the Council, not by the project team members;
- experts will be appointed in their individual capacity based on being distinguished in their field of expertise and therefore it is expected that they will be able to deliver as individuals; and
- experts will be remunerated in line with Treasury guidelines on the basis of output agreed to with the Chairperson of NACI.

Notwithstanding and in line with section 8(4)(a) of the Act, the Council can still appoint committees, task teams as and when required by the task at hand. The approach outlined above will assist NACI to depart from initiating a series of research projects towards addressing systemic issues. The Council also anticipates that this delivery mode will improve the quantity and quality of output and ultimately impact on the NSI. This modification will also significantly enhance the skills in the Secretariat.



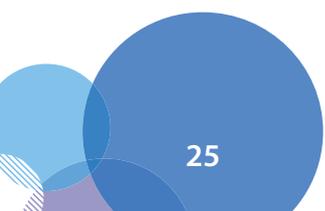
6.3 FURTHER AREAS OF IMPROVEMENT

While NACI has consistently provided evidence-based policy advice to all the Ministers who held the portfolio of the Minister for Science and Technology over the years, there have been some challenges. Some of these include the fact that the interaction between the Minister and NACI has not been consistent. In addition, in the past NACI never received a response from the Minister on whether NACI's evidence-based policy advice will be accepted or rejected. Going forward, the new Council has made an undertaking to meet with the Minister more regularly and to institute processes between itself and the DST to ensure that there is a formal government response to all policy advice given.

6.4 DEVELOPING THE SKILLS WITHIN THE NACI SECRETARIAT

The NACI Secretariat has made great strides to improve policy skills. This has been accelerated by the NACI's new mode of working. Through the panel of experts approach, skills such as the following have been improved: analytical capability, policy competence and project management. The appointment of the NACI CEO should enhance these skills further.

Serious attention should be paid to short term appointments/secondments of appropriately qualified and experienced local and international experts, e.g. an academic spending part of a sabbatical in NACI, to facilitate the upgrading and diversification of the skills base of the Secretariat.



7. REQUIREMENTS FOR IMPLEMENTATION OF THE STRATEGY

The expanded role of NACI in terms of agenda setting within the NSI requires NACI to be closer to the innovation community, government, private sector, state owned enterprises, science community and individual experts. This section highlights some requirements that are important for the implementation of this strategy.

7.1 FORGING LINKS WITH THE INNOVATION COMMUNITY

Innovation is a complex process that is characterised by dynamic activities involving actors across various spheres of government as well as economic and social sectors. This complexity implies that there is no single actor that can determine the success or failure of the NSI; hence NACI's efforts should be complemented by other stakeholders within South Africa's innovation system. NACI's ability to forge partnerships across the innovation value chain will be key to the success of this strategy. Ideal partners are experts and data collectors for evidence based policy making, but also the advisory councils and committees and interest groups with a specialist innovation focus. In 2013, the Council concluded a framework of engagement with the Academy of Sciences of South Africa (ASSAf). The new Council plans to build on this, focusing on relationship building with partners that are central to the fulfilment of its statutory mandate.

7.2 ESTABLISHMENT OF THE NATIONAL INNOVATION PORTAL

The Ministerial Review Committee report identified a gap within the NSI in ensuring availability, collation and maintenance of the science, technology and innovation indicators. Whereas this responsibility, including analysis of data, was recommended to be carried by a proposed Office of Research and Innovation, NACI will benefit from this central repository of innovation indicators. This will empower NACI to perform effectively on functions such as system-mapping, system-analysis, system-building, system-steerage, system-evaluation, system learning and system-foresight as envisioned by the Ministerial review report. The possibility that NACI could be ideally located to host the innovation portal requires further debate.

7.3 HUMAN RESOURCES REQUIREMENTS

The NACI Secretariat is currently comprised of a small team of 13 people including the CEO. An expanded structure of the Secretariat with increased innovation policy skills will result in improved capacity to execute projects in a broader range of innovation areas. With a need to respond quickly to issues, NACI is often constrained by the bureaucracy when requesting support from the department. The creation of additional support positions on the current structure such tasks as information technology services, finance, human resources, communications office, and supply chain to be placed at the NACI offices will improve turnaround times and circumvent the long waiting periods for processing of approvals.

7.4 THE NACI BUDGET

The NACI budget allocation in accordance with the Estimates of National Expenditure over the MTEF period is shown below. The Budget shown below is modest given the broad mandate of the organisation.

Table 2: Medium Term Expenditure Estimates

	2015/16	2016/17	2017/18
NACI Budget MTEF (R'000)	18,742	18,967	20,046
Compensation of employees	10,308	10,432	11,025
Goods and services	8,434	8,535	9,021

Table 3: Breakdown of the MTEF Allocation, together with a further two year projections

	2015/16	2016/17	2017/18	2018/19	2019/20
NACI Budget MTEF (R'000)	18,742	18,967	20,046	21,108	22,227
COMPENSATION OF EMPLOYEES	10,308	10,432	11,025	11,610	12,225
GOODS AND SERVICES	8,434	8,535	9,021	9,499	10,002
Quality Policy Advice Development	5,079	5,552	4,825	5,053	5,268
High-level Framing of the Decadal Plan	3,079	-	-	-	-
Drafting of the discussion document	1,150	-	-	-	-
Consultation process	1,929	-	-	-	-
A review of the White Paper on Science and Technology	-	2,674	-	-	-
Developing the policy review document	-	950	-	-	-
Consultation process	-	1,724	-	-	-
An innovation Scorecard	450	578	901	950	700
Framework (model) for an Innovation Portal	150	150	1,674	1,740	2,100
State of Innovation Report	-	750	850	963	1,068
Rapid Response Advisory System	1,400	1,400	1,400	1,400	1,400
Operational Expenses	3,355	2,983	4,196	4,445	4,734
Honorarium for the Council and Experts	1,850	1,439	2,000	2,062	2,113
Lease and Maintenance Services	1,505	1,544	2,196	2,383	2,621
Total NACI Allocation	18,742	18,967	20,046	21,108	22,227

PART C: LINKS TO OTHER PLANS

8. POLICIES ALIGNED TO THE STRATEGIC AREAS OF NACI

Listed below are some key public policies and strategies that NACI will have to interact with, or which will inform the work of NACI, in the next five years.

- White Paper on Science and Technology (S&T)
- National Development Plan Vision 2030
- New Growth Path
- Industrial Policy Action Plan
- Ten-Year Innovation Plan
- National Infrastructure Plan
- Mid Term Strategic Framework (MTSF)



9. PERFORMANCE MANAGEMENT AND REPORTING LINES

9.1 PERFORMANCE MANAGEMENT SYSTEM

As a statutory advisory body that advises the Minister for Science and Technology, and through the Minister, Cabinet, NACI is an important reference point on the efficacy of innovation policy in South Africa. The effective execution of NACI's statutory mandate, therefore, has to be monitored and evaluated regularly. Monitoring the impact of NACI's work will ensure the relevance and impact of its advisory services and accountability of its activities, while enhancing its performance.

At present, the Council also makes use of an impact assessment survey to monitor the relevance, quality and effectiveness of advice. Below are some lessons learnt that the Council will take forward in its operational strategy:

- Misalignment between advice given and government needs (DST) as well as lack of access to other departments;
- Lack of resources to implement the recommendations;
- Policy advice that is unbalanced in its analysis and clearly shows sectoral interest e.g. academic interest
- An approach to policy analysis that is too issue based and fails to deal with system concerns.

The Council's work has therefore been utilised only in the work of one department thus far, the Department of Science and Technology. Overall and for the reasons advanced above, the uptake of NACI advice has been minimal, something the newly appointed the Council seeks to rectify. Henceforth, NACI's policy work will advance beyond the domain of DST programmes. The Council will focus on creating internal avenues within central government e.g. through policy units to facilitate both interaction and dissemination of policy views. The Council will also conclude agreements with institutions in the system to gain access to key, up to date information.

9.2 REPORTING LINES

The NACI Act establishes an independent Council, which advises and reports directly to the Minister for Science and Technology. However, section 11 of the Act allows for the appointment of full time staff in the Secretariat as part of the staff complement of the Department of Science and Technology. Therefore NACI as an organisation maintains a dual reporting system: (a) for

administrative compliance purposes, the Director-General remains the Accounting Authority and for (b) dispensing the advisory mandate, the Council reports directly to the Ministry.





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