

**NATIONAL ADVISORY COUNCIL ON INNOVATION  
(NACI)**

**CORPORATE BUSINESS PLAN**

**2009/10**



**INNOVATION FOR A BETTER FUTURE**

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## LIST OF ACRONYMS

ARC	Agricultural Research Council
ASGISA	Accelerated and Shared Growth Initiative of South Africa
ASSAf	Academy of Science of South Africa
CBP	Corporate Business Plan
CEO	Chief executive officer
CHE	Council on Higher Education
CSIR	Council for Scientific and Industrial Research
DG	Director-General
DST	Department of Science and Technology
Dti	Department of Trade and Industry
ExCo	Executive committee
GAAP	Generally accepted accounting principles
GDP	Gross Domestic Product
HESA	Higher Education South Africa
ICT	Information and communications technology
IPR	Intellectual Property Rights
IRG	Indicator Reference Group
IT	Information Technology
JIPSA	Joint Initiative for Priority Skills Acquisition
MTEF	Medium term expenditure framework
NACI	National Advisory Council on Innovation
NBAC	National Biotechnology Advisory Committee
NEPAD	New Partnership for Africa's Development
NESTI	
NRDS	National Research and Development Strategy
NRF	National Research Foundation
NSI	National System of Innovation

NSTF	National Science and Technology Forum
OECD	Organisation for Economic Co-operation and Development
PFMA	Public Finance Management Act
R&D	Research and development
S&T	Science and technology
SARG	South African Reference Group on Women in Science and Technology
SET	Science, Engineering and Technology
SET4W	Science, Engineering and Technology for Women
ST&I or STI	Science, Technology and Innovation
TIA	Technological Innovation Agency
TIP	Technology and Innovation Policy
UK	United Kingdom

## Executive Summary

This overarching document serves as the National Advisory Council on Innovation (NACI)'s corporate business plan for the period April 2009 to March 2010. It was approved by the Council and formally presented to the Minister of Science and Technology in March 2009.

The term of office of the Second Council (initially appointed for 2004 to 2008 and subsequently reappointed for an additional year) comes to an end on 28 February 2009. In developing this business plan NACI attempted to complete self initiated projects in as far as possible, while at the same time providing enough momentum through ongoing or new initiatives to be taken forward by the next NACI. Continuity will also be achieved through a number of current Councillors who made themselves available for reappointment and by the direct and ongoing contribution of the Secretariat.

Against this background, it was decided to keep this plan factual and to the point, to allow the incoming Council to develop it further, approve it and thereby taking over full ownership.

Advice will be delivered during the 2009/10 financial year on:

- Broad-based innovation to address socio-economic challenges faced by South Africa
- Implications of African science and technology bilateral and multilateral agreements on South Africa's economy and national system of innovation.
- The effectiveness and efficiency of the higher education system (with a specific focus on the post graduate level) in supporting national objectives (NACI/CHE task force)
- Key databases supporting the South African STI indicator system
- The impact of the South African public understanding of biotechnology
- The funding environment of South African biotechnology
- Biotechnology capacity through comparative case studies
- SET4W update on "Facing the Facts"

New initiatives to be considered by the Third NACI are:

- Development of an Innovation Strategy for South Africa

- The role of innovation policies and other long-term growth policies in the context of the current global financial and economic crisis
- Follow up studies from the advice generated from the three biotechnology studies
- Assessment of financial incentives for employing women in a corporate environment
- Role played by women scientists in national priority sectors
- Impact of technological innovation on gender

As part of NACI's regular cycle of reviews, a comprehensive external review of NACI was conducted and successfully completed during 2008. The recommendations of the review, which included the future mandate and structure of NACI, have been accounted for in this new corporate business plan.

# 1. Introduction

## 1.1 NACI's mandate

The National Advisory Council on Innovation (NACI) is a statutory organisation established by an Act of Parliament (Act 55 of 1997) to advise the Minister of Science and Technology and through him the government of South Africa, on the role and contribution of innovation (including science and technology) in promoting and achieving national objectives. These national objectives include the improvement of the quality of life of South Africans and the promotion of sustainable economic growth and international competitiveness. The mandate of NACI is to generate advice to the Minister directed at, among others, the:

- Co-ordination and stimulation of the National System of Innovation (NSI)
- Promotion of co-operation within the NSI
- Structuring, governance and co-ordination of the S&T system
- Revision of the innovation policy
- Strategies for the promotion of all aspects of technological innovation
- Identification of R&D priorities
- Funding of the S&T system

## 1.2 The context of NACI's work in the 2009/10 financial year

NACI's corporate business plan is generally accepted to be both a dynamic and guiding document to represent the commitment to attaining national objectives. NACI should, as a statutory advisory body, also have a latitude to address new requests stimulated by an ever-changing policy environment. This business plan is therefore aligned with and will be able to respond to the:

- Recommendations of the Organisation for Economic Co-operation and Development (OECD) Review of the South African Innovation Policy
- Outcomes of the 2008 external review of NACI that are aimed at informing the future mandate, structure and functioning of NACI
- Strategic vision of the newly appointed Council
- Policies and programmes of the new South African government – specifically enhancing the role and functioning of the national system of innovation in addressing national priorities
- Effect of the global economic crisis on innovation policy

This document represents a strategic plan - and not detailed working plans - that would require commitment from all involved in NACI: including individual Councillors, committee members and support staff. It is envisaged that this Corporate Business Plan will be translated into viable working plans and that the execution thereof will validate the meaning of NACI's existence as the National Advisory Council on Innovation. This document also serves as a public

commitment to the critical and continuous role of science, technology and innovation in the growth of the economy and the improvement of the quality of life of all South Africans, and thus as the contribution that NACI can make in this regard.

NACI's business plan for 2009/10 serves as an essential handover document to the incoming Council. It stems from the experience and work produced by the Second Council and its committees and aims at providing an optimal balance between work in progress and a proposal of new initiatives to be taken forward.

The new Council will continue to be served by the NACI Secretariat consisting of the Head and a number of officials, all appointed on a full-time basis. In order to put to effect the work initiated by the Council, the NACI Secretariat should be equipped with the necessary skills and resources while steps should be taken to minimise the staff turnover experienced in the previous years. Human resource issues remain a constraint in the Secretariat. The appointment of a Head for the Secretariat is critical, as the position has been vacant since September 2007. The post was upgraded to an appropriate level in 2008 and the recruitment process was initiated in January 2009. The vacancy is managed by senior staff members who act in the position on a rotational basis.

### ***1.3 Outline of this Corporate Business Plan***

This section has provided an introduction to the NACI Corporate Business Plan 2009/10 by an overview of the NACI mandate and its strategic objectives and through highlighting the context of NACI's operations within this financial year.

In Chapter 2, the proposed portfolio of activities of NACI and its advisory committees is presented, after a critical assessment of the implementation of the 2008/09 Corporate Business Plan.

The availability of resources (human, infrastructure and financial) to undertake the work outlined in Chapter 2 is presented in Chapter 3. The last chapter offers an outline of the way forward as envisaged by the Second Council.

## **2. Portfolio of Activities**

It is important for the new Council to ensure that the advice it offers to the Minister of Science and Technology continues to enhance the Minister's decision-making capabilities. The advice must therefore be appropriate, relevant and proactive. Since 2004, NACI initiated a number of studies to support the formulation of evidence-based advice on a number of strategic thrusts, namely:

- Infrastructure for innovation
- Human capital and the knowledge base
- Science, technology and innovation (STI) for competitiveness
- Social dimensions of innovation
- Position and role of NACI in the NSI

In developing the present business plan, the point of departure was an assessment of the implementation of the previous year's plan in relation to the strategic direction set by the Second Council.

### ***2.1 NACI outcomes 2008/09***

During the previous planning period NACI was mindful of the fact that the Council had been reappointed for a limited period of one year and it therefore focused on closing out outstanding studies, as well as assessing the efficacy of advice given to the Minister so far. NACI managed to deliver successfully on the following projects:

- Input to the NACI external review as necessary, including an assessment of the efficacy of advice to date.
- Formulation of a response to the NACI external review
- Review of the National Innovation System including the outcome of the 2007 OECD review
- Optimising the South African system of science advice to government
- Advice on the attraction and retention of more women in the National System of Innovation, including the monitoring of women's participation in these fields
- Aspects of funding and public understanding pertaining to the biotechnology sector in South Africa
- Science, Technology and Innovation indicators for South Africa
- Energy emergency
- Global financial crisis

- Tracking the benefits of publicly funded R&D.
- Corporate activities – (business plan, annual report, external review)

Substantial progress was made on the following projects in 2008/09:

- Implications of African science and technology bilateral and multilateral agreements on South Africa's economy and national system of innovation
- Aspects of funding and public understanding pertaining to the biotechnology sector in South Africa
- A framework for an Science, Technology and Innovation indicator system for South Africa
- Investigations of the dynamics of innovation and competitiveness in the South African large, medium and small business.

Priorities for the new financial year 2009/10 were determined and endorsed by NACI. NACI's business plan includes the plans of the three specialized advisory committees namely Science, Engineering and Technology for Women (SET4W), the Indicators Reference Group (IRG) and the National Biotechnology Advisory Committee (NBAC). These committees broaden the scope of NACI's advice by focusing on dedicated themes.

## ***2.2 NACI planning for 2009/10***

Although the bulk of the work initiated during the period 2004 to 2008/09 was completed (see Appendix A), new initiatives emanated from the follow-up processes. The following list of projects or activities were initiated in 2008/09, and will have resource implications in 2009/10:

- Broad-based innovation to address socio-economic challenges faced by South Africa
- Review of the state of science and technology policy interactions in Africa and their implications
- An analysis of the effectiveness and efficiency of the higher education system (with a specific focus on the post graduate level) in supporting national objectives (NACI/CHE task force).

These projects have gained momentum and will ensure continuity in NACI's delivery of advice on topical issues. Topics emanating from the work carried out by the 2004-2008/09 Council to be taken further are:

- Development of an Innovation Strategy for South Africa

- The role of innovation policies and other long-term growth policies in the context of the current global financial and economic crisis

The agenda for 2009/10 includes activities that support NACI's strategic thrusts:

- Meetings planned for financial year 2009/10 include:
  - Plenary meetings for the NACI Council (4);
  - NACI ExCo meetings (10);
  - NACI/CHE task force for higher education (4)
  - Project steering committee meetings (4 per project)
  - JIPSA technical working group meetings (6) and NSTF Exco (10) and plenary sessions (4)
- NACI is committed to establishing, maintaining and strengthening its network with South African bodies and individuals involved in innovation policy. Such bodies include the National Science and Technology Forum (NSTF), the Academy of Science of South Africa (ASSAf), JIPSA, Higher Education South Africa (HESA) and others.
- A two day induction seminar for the newly appointed NACI is planned for June 2009.
- At least three conferences are planned for the year. Such conferences are yet to be decided on as part of the Secretariat's workplan. In addition, two NACI lunch seminars will be hosted, the themes of which are still to be finalised.
- NACI will provide fast response advice on any pressing matters that require urgent attention.
- Follow up arising from the Minister's response to previously submitted Ministerial Advice, (relating primarily to implementation), forms part of NACI's planned activities for 2009/10.
- The generation of new evidence-based advice during the 2009/10 financial year will be supported by project activity at three levels: (1) Ministerial Advice will be generated from completed research studies; (2) evidence-generating studies already in progress will be completed; and (3) new evidence-generating research will be initiated.

## **2.3 Advisory Committees**

The broad scope of NACI's mandate required the appointment of specialised national advisory committees to assist it with its tasks. These committees include persons – all specialists in the particular field - who are not necessarily Councillors of NACI. In this section the high level planning of the three specialised standing committees that assist in generating NACI's advice is presented.

### **2.3.1 Indicators Reference Group (IRG)**

The strategic objective of the IRG is to advise the Minister on the process of developing a comprehensive science, technology and innovation indicator system that would form part of the national statistical system and inform long range strategic planning.

Towards meeting this objective, the IRG plans the following activities for the financial year 2009/10:

- *Ministerial advice:* The IRG will develop recommendations on the following projects:
  - An assessment of key databases supporting SA indicator system
  - Development of a South African innovation Index
- *Quick advice:* In addition to specific requests by the Minister, the IRG will provide quick advice on
  - the value of the technology balance of payments as indicator of technological progress
  - The R&D tax credit system.
- *Publications:* An update of the South African Science and Technology Indicators report will be produced as well as a contribution to NACI's annual report.
- *Workshop:* IRG will be hosting a workshop in October 2009 to develop an innovation index for South Africa.
- *Meetings:* IRG plans plenary meetings in May, August and October 2009 and February 2010.

### **2.3.2 National Biotechnology Advisory Committee (NBAC)**

The strategic objectives of the National Biotechnology Advisory Committee (NBAC) include rendering advice on biotechnology in South Africa in the context of government's investment in developing the sector; providing

strategic interpretation and advice on overall development of the sector and particularly on R&D priorities within the sector; considering and recommending improvements to existing support strategies; providing advice to increase the impact and efficiency of the National Biotechnology Strategy (NBS); and monitoring and advising on issues relating to bioethics.

The momentum achieved by NBAC during 2008/09 will direct the committee's activities through 2009/10:

- *Ministerial advice from evidence based studies.* The beginning of the 2009/10 financial year will see the completion of the suite of three NBAC studies commissioned in 2008.
  - The impact of the South African public understanding of biotechnology
  - The funding environment of South African biotechnology
  - Biotechnology capacity: comparative case studies
- *Quick advice.* NBAC will provide quick advice to the Minister of Science and Technology, as necessary, on key topics of interest to the sector at the present time including:
  - The operation of TIA;
  - the implementation of IPR-PFR Act;
  - human stem cell research and regulations development;
  - the implementation and effects of the GMO Act;
  - the revision of the National Biotechnology Strategy and
  - national policy contradictions surrounding research into the genetic modification of indigenous crops.
- *New initiatives to be initiated in 2009/10.*
  - Follow up studies from the advice generated from the current studies to be identified by the NBAC and supported by the Minister.
- *Workshop.* A one-day workshop on the policy environment of South African biotechnology from a sub-sector perspective is planned for July 2009.
- *NBAC Plenary Meetings.* NBAC has planned three meetings within financial year 2009/10.
- *Project Steering Committee Meetings:* A average of four steering committee meeting per commissioned project.

### **2.3.3 Science, Engineering and Technology for Women (SET4W)**

The strategic objective of this committee is to achieve greater equality between women and men in the SET sector by introducing a gender equality perspective into policy-making, and by complementing the more traditional approaches of promoting gender equality, such as legislation and positive action.

All SET4W projects for 2008/9 are completed and therefore the following planned activities for 2009/10 financial year is intended to follow up current and implement new projects to meet the committee's strategic objective:

- *Ministerial advice from evidence based studies.*
  - Facing the Facts: An Update
- *Publications.* SET4W will publish its completed reports on the NACI website will produce appropriate hard copy booklets and brochures:
  - An assessment of the participation of women in industrial SET in South Africa
  - Facing the Facts: An Updated Publication to 2006 (Hard copy booklet)
  - An Overview Study: Summary of an additional completed SET4W project
  - Changing Perceptions of Women in SET (Hard copy Z-folder)
- *New initiatives to be initiated in 2009/10.*
  - Assessment of financial incentives for employing women in a corporate environment
  - Role played by women scientists in specific national priority sectors, such as the agricultural sector
  - Impact of technological innovation on gender
- *Follow up of the Workshop. "Associations of Women in SET":* The aim of the workshop was to bring together other associations of women in science, engineering and technology in order to discuss how gender issues can be coordinated as well as establish areas of possible collaboration. In the next financial year, recommendations from this workshop will need to be implemented.
- *SET4W Plenary Meetings:* SET4W committee has planned four meetings in the new financial year. Of these meetings, three take place in April, July and October during 2009 whereas the fourth takes place in January 2010.

## **2.4 International liaison**

International liaison is essential for the following reasons: Accelerated globalization of STI; direct access to international priorities and best practices, network of expertise (e.g. for contributions and evaluation), credibility of NACI through international acknowledgement of its work, and evaluation of own strategies, methodology and outputs. NACI plans to participate in international conferences, symposia, workshops and meetings during 2009/10 financial year. A list of events organized by the OECD and other bodies is provided in Appendix E.

### **3. Resource Application**

In setting its agenda and work schedule, NACI must necessarily be mindful of its resources. The resources are human resources, including the Council members, other members of NACI's advisory committees and the Secretariat (the latter forms part of the staff complement of DST), financial resources and infrastructure. In this chapter the focus will be on the functioning of Council and on resources at its disposal to give effect to its mission, including the budget for the current year, 2009/10.

#### **3.1 Council and Advisory Committee Members**

All NACI members, including the chairperson, are appointed on a part-time basis, and tend to their duties as NACI members on a temporary part-time basis. A typical NACI Council member attends four plenary meetings during the year and will contribute towards the activities of or chair one or more of the subcommittees. Some members are active in or chair the three advisory committees, and a few also serve of the Executive Committee. Two NACI Council members are *ex officio* government employees, viz. the DG of the DST and a representative of the DTI.

The names of the new Council will be added to Appendix B once appointed by the Minister. Continuity in the work of NACI is essential and will be ensured by current members who made themselves available for reappointment, and by the Secretariat.

#### **3.2 The Secretariat**

In addition to the Council members, NACI is served by a Secretariat, overseen by the Head of the Secretariat. The recruitment process for a new Head of the Secretariat has been initiated in January 2009. Senior staff members will act in the position until an appointment has been made.

NACI welcomes the opportunity to relocate its offices to premises outside of the DST building from April 2009. Currently, the NACI Secretariat still operates as a sub-programme of the DST, but if NACI's recommendations on the changing of its Act are implemented, the Secretariat will be run as an independent entity. This is an opportunity to gradually adapt to the changing situation and be prepared once the changes come into effect. The DST has made available funding for this purpose as part of the NACI allocation for the three year MTEF period, starting in 2009/10. The relocation is expected to have an effect on NACI's work plan for 2009/10 as it puts additional pressure on the staff.

Human resource related matters are currently the major constraint for the effective operation of the Secretariat. The current staff situation is shown in Table 1 below.

**Table 1: Posts and associated key performance areas**

Post	Occupant	Key functions
Head of the Secretariat	Vacant	Professional executive service to Council and strategic and intellectual support to the Chair
Senior Specialist: Policy analysis	Mr Thiambi Netshiluvhi	Identification of innovation priorities, evaluation of relevant information and conversion into advice
Specialist: Policy analysis	Ms Rudzani Maila	
Senior Specialist: Policy investigations	Mr. Simon Mpele	Co-ordination and administration of projects, incl. financial control, project monitoring and quality control
Specialist: Policy investigations	Vacant from February 2009	
Senior Specialist: Measurement of STI system	Dr. Hermi Boraine	Analysis and interpretation of STI indicator information
Specialist: Measurement of STI system	Mr Lindile Adons	
Senior Secretary	Ms. Charlotte Mzolo	Administrative support for executive director and senior staff
Administrative Officer	Ms. Mavis Masia	Administrative support for specialists; secretariat for reference groups
Administrative Officer	Mr Thabo Mosenthal	Administrative support for specialists; secretariat for reference groups, IT support and website
Administrative Officer	Vacant	Administrative support for specialists; secretariat for reference groups

### **3.3 Financial resources and budget**

Funding for NACI's programmes and logistics are provided by the DST under the Programme 1: Administration. The expenditure administration and control of the medium term expenditure framework (MTEF) compliance will therefore, as in the past, be dealt with by the relevant divisions of the DST.

### **3.4 Budget: 2009/10**

A summary of NACI's budget for the 2009/10 financial year is presented in Table 2 together with the 2008/09 budget. The total allocation is more than that of the previous financial year, as it includes an amount of R2.5 million for the relocation of the NACI Secretariat to other premises. As in the past, the NACI projects will be funded from the "Goods and services" allocation. The DST biotechnology sub programme of Programme 2, has undertaken to contribute R500,000 for NBAC projects. This constitutes a serious decrease from the previous year requiring considerable more funding to be made available from the NACI allocation for

“Goods and Services”. The net effect is a decrease in available funding for commissioned studies from the previous financial year.

**Table 2: Overview of NACI Budget 2009/10 and comparison with previous financial year**

<b>Year</b>	<b>2008/09</b>	<b>2009/10</b>
<b>Item</b>	<b>Amount (R)</b>	<b>Amount (R)</b>
Compensation of employees	3,914,548	5,433,120
Goods and services	5,530,925	5,077,000
Capital Assets	42,000	0
Secretariat relocation	0	2,500,000
<b>Total NACI allocation</b>	<b>9,487,473</b>	<b>13,010,120</b>
Secretariat relocation funded by DST Prog. 1	1,250,000	0
NBAC projects funded by DST Programme 2	1,200,000	500,000
<b>Total</b>	<b>11,937,473</b>	<b>13,510,120</b>

Table 3 provides an alternative breakdown of the budget followed by descriptions of the budgeted items. The total funding available in 2009/10 for commissioned research work amounts to R3,326,000, which is made up of R2,826,000 available for contracts and the R500,00 from the DST funding for NBAC projects. Refer to Appendix F for more detail on the allocation of this total project budget (R3,326,000).

**Table 3: Details of NACI Budget 2009/10**

<b>Item</b>	<b>R'000</b>
<b>Advice Development</b>	<b>5,077</b>
Contracts for projects (including SET4W, IRG, NBAC and other)	2,826
Council, SET4W, NBAC, IRG honoraria	1,000
Secretariat operational expenses, excluding relocation and rental costs	1,251
<b>Institutional</b>	<b>7,933</b>
Compensation of employees	5,433
Relocation, including capital assets (Computer equipment, furniture, appliances, etc)	2,500
<b>Total NACI allocation</b>	<b>13,010</b>
NBAC projects funded by DST Programme 2	500
<b>Total available</b>	<b>13,510</b>

**Advice development**

All expenses incurred for advice development, including the work of the advisory committees, Council meetings and institutional costs are financed under the category "advice development". Provision is also made for the costs of the advisory committee meetings.

**Institutional**

Included under this item, *Institutional*, are the salaries of the members of the Secretariat and relocation cost.

## 4. Conclusion

This has to be interpreted as an interim business plan as it was generated by the Second NACI Council, but has to be amended if necessary and implemented by the Third NACI Council which will take office in April 2009.

Apart from finalising the work of the Second Council in 2008/09, substantial effort has gone into the external review of NACI and the development of a response by NACI. It will be the responsibility of the incoming NACI Council to ensure that the proposed changes to the NACI Act are implemented in order to optimise NACI's influence and reach as government's advisor on innovation. We are of the opinion that independence from the DST is a crucial step in raising NACI's profile as an independent national advisory body.

NACI considered various options to maximise its influence and reach. It is acknowledged that innovation is a cross departmental priority, as (to a greater or lesser extent) are most other priorities or responsibilities of government. NACI should therefore aim to optimally interact with relevant existing government structures and raise its influence by improving the relevance of its advice to the broader range of government stakeholders.

The key initiative to be undertaken by the new NACI will be to ensure that an innovation strategy is developed for South Africa – which addresses all aspects of innovation policy, specifically innovation that would address the socio-economic challenges facing South Africa and to effectively respond to the challenges and opportunities brought about by the current global financial situation.

## APPENDIX A: Completed Studies

### Completed NACI studies, reports and advice: 2004 - 2009

Project	Title of report <sup>1</sup>	Advice
Mobility	A Study on Mobility of Research and Development Workers.	Minister, June 2004
Technical skills	The Potential Impact of Skills Shortages on the Innovative Capacity of Major Capital Engineering Projects	Submission revised, March 05
Funding black research	A Profile of Postgraduate Higher Education and the Academic Research Community in South Africa	Submission revised, March 05
Facing the facts: Women in S&T	Facing the Facts: Women's Participation in Science, Engineering and Technology	Minister, Nov 04
Appropriate human resources for the NSI (1)	Appropriate human resources for the productive NSI	Submission being prepared after stakeholder consultation
Women in industrial S&T	An Assessment of the Participation of Women in Industrial Science, Engineering and Technology in South Africa	Minister: Gender policy; submitted 13 Nov 06
SET through eyes of women(Four sub-projects)	Looking at SET through Women's Eyes	Minister: Gender policy; submitted 13 Nov 06
Monitoring framework	A Monitoring and Evaluation Framework to Benchmark the Performance of Women in the NSI	Minister: Gender policy; submitted 13 Nov 06
OECD evaluation of the NSI - Phase one	The South African National System of Innovation: Structures, Policies and Performance (Background Report to the OECD Country Review of South African NSI)	Minister and OECD submitted on 25 July 06; OECD x Min interaction: 8 Sept 06
Draft gender and race equity policy	Creating the Future: Gender, Race and SET Sector Policies for Capacity Building and Innovation	Advice to Minister: 13 Nov 06
Profile of best practices	Development of a Profile of Best Practice of NSI	Advice to Minister: 30 Nov 06
Physical infrastructure for NSI	A Study on the Required Physical Infrastructure to attain the vision of the NSI	Advice to Minister: 30 Nov 06
Revisiting NACI's mandate, position and role	NACI position, role and function in the NSI	Advice to Minister: 30 Nov 06
Advisory note on IPR from publicly funded R&D	Intellectual Property Rights from Publicly Financed Research Findings	Advice to Minister: 25 Jul 06
Advisory note on ASSAF report on research publishing	ASSAF Report: A Strategic Approach to Research Publishing in South Africa	Advice to Minister: 25 Jul 06
Advisory note on tax incentives	Tax Incentives	Advice to Minister: 25 Jul 06
Appropriate Human Resource for the Productive NSI.	Advice letter submitted to the DG of DST on the lessons gained	Study completed in 2007
Physical Infrastructure for NSI – Secondary	Required Infrastructure to Attain the Vision of the NSI: Secondary School Education Component –	Advice to Minister: 2 Oct 2007

<sup>1</sup> Some of the reports had been released and are available from the NACI Secretariat

<b>Project</b>	<b>Title of report<sup>1</sup></b>	<b>Advice</b>
School component	"Hands on and Minds on".	
Regional and Local Innovation Systems in the Overall National System of Innovation	Regional and Local Innovation Systems	Advice to Minister: 2 Oct 2007
Human Capital and the South African Knowledge base	Human Capital and the South African Knowledge base	Advice to Minister: 2 Oct 2007
Quick advice regarding the performance of grade 12 learners in mathematics and science	The national problem with grade 12 mathematics and science performance	Advice to Minister: 2 Oct 2007
Quick advice regarding problems with the employment of foreign nationals	Advice regarding problems with the employment of foreign nationals in the higher education sector in South Africa	Advice to Minister: 2 Oct 2007
OECD review of SA Innovation Policy	Findings of the OECD Peer Group Review of the South African National System of Innovation	Advice to Minister 21 July 2008
Quick advice regarding electricity emergency	Effect of the Electricity Emergency on the National System of Innovation and Mitigation Actions	Advice to Minister 21 July 2008
Quick advice on global financial crisis	Current Financial Crisis and the South African National System of Innovation	Advice to Minister 30 Oct 2008
NBAC advice on funding for biotechnology	Funding and Focus on Biotechnology within the Technology Innovation Agency	Advice to Minister 15 Jan 2009
NBAC position statement on stem cells	Position Statement on Human Stem Cell Regulations in South Africa	Advice to Minister 15 Jan 2009
SET4W Changing perceptions of women in SET	An Assessment of the Participation of Women in the Science, Engineering and Technology Industry and Changing Perceptions of Women in Science, Engineering and Technology	Advice to Minister 15 Jan 2009
SET4W Good Practice Guidelines	The Enhancement of the Participation of Women in the Science, Engineering and Technology Sector: Principles and Good Practice Guidelines	Completed March 2009
Benefits of public R&D expenditure	Tracking the Benefits of Public R&D Expenditure: Input, Output and Impact Indicators	Advice to Minister Feb 2009

## APPENDIX B: NACI Councillors

Approved by Cabinet February 2009

(This list excludes the *ex officio* appointments: DG of DST and dti representative)

Title	Name	Position	Organisation
Mr	Baloyi, Paul	Managing Director and Chief Executive Officer	Development Bank of Southern Africa
Dr	Bhengu, Nthuthuko	Executive Director	Afrika Biopharma Investments
Mrs	Charnley, Irene	Chief Executive Officer	Smile Communications
Dr	De la Rey, Cheryl	Chief Executive Officer	Council on Higher Education
Mr	Dlamini, Kuseni	Head	Anglo American Corporation, SA
Dr	Jammine, Azar	Director and chief economist	Econometrix
Prof	Laburn, Helen	Dean of Health Sciences	WITS
Dr	Lennon, Steve	Managing Director: Corporate Services Division	Eskom
Prof	Mazwi-Tanga, Lineo	Vice-Chancellor	Cape Peninsula University of Technology
Ms	Njobe, Khungeka	Group Executive: R&D Outcomes & Strategic Human Capital Development	CSIR
Prof	Ogude, N	Deputy Vice Chancellor	UP
Prof	Petersen, Francis	Dean of Engineering	UCT
Prof	Prinsloo, G J	Director: Technology Transfer and Innovation	Durban University of Technology
Mr	Rothschild, Geoff	Director: Government and International Affairs	JSE Limited
Prof	Thomson, Jennifer	Professor of Molecular and Cell Biology (Retired)	UCT
Prof	Van Zyl, Arnold	Deputy Vice Chancellor: Research	University of Stellenbosch

## NACI Council: Appointed from March 2008 to February 2009

Name	Position	Organisation
Dr Steve Lennon	Managing Director: Corporate Services	ESKOM
Dr Philemon Mjwara – CEO	Director-general	Dept of Science and Technology
Ms Luci Abrahams	Director: Learning Information Networking Knowledge Centre	University of the Witwatersrand
Dr Ntuthuko Bhengu	Executive Director	Afrika Biopharma Investments
Dr Cheryl de la Rey: Chairperson	Chief Executive Officer	Council on Higher Education
Mr Alan Hirsch	Deputy Director General and Deputy Head of the Policy Unit	The Presidency
Mr Fairoz Jaffer	Chief Executive Officer	Abnoba Information Dynamics
Mr John Marriott	Advisor	SASOL Synfuels International
Prof Lineo Mazwi-Tanga	Vice-Chancellor	Cape Peninsula University of Technology
Dr Nhlanhla Msomi	Executive Director	Africa Vukani
Ms Khungeka Njobe	Group Executive: R&D Outcomes & Strategic Human Capital Development	CSIR
Dr Adi Paterson	General Manager:	Business Development and Pebble Bed Modular Reactor Company
Dr Francis Petersen	Head: Strategy & Planning	Anglo American Platinum Corporation Ltd
Prof Calie Pistorius	Vice-chancellor & Principal	University of Pretoria
Dr Johannes Potgieter	Chief director: Innovation & Technology	Department of Trade and Industry
Ms Thuli Radebe	Chief Executive Officer	Centre for Public Service Innovation.
Mr Geoff Rothschild	Director: Government & International Affairs	Johannesburg Security Exchange
Mr Thero Setiloane	General Manager: Marketing	AngloGold Ashanti Limited
Dr John Stewart	Consultant: Technology, environment, safety and sustainable development	
Prof Jennifer Thomson	Professor: Molecular and Cell Biology	University of Cape Town

## Appendix C: Advisory Committee Members

### Members of the Indicators Reference Group (IRG)

Name	Position	Organisation
Dr Adi Paterson		
Dr John Stewart:	Consultant: Technology, Environment, Safety and Sustainable Development	JM Consulting
Prof Tshildzi Marwala	Associate Professor: School of Electrical & Information Engineering	University of the Witwatersrand
Dr Johannes Potgieter	Chief director: Innovation & Technology	Department of Trade and Industry
Ms Marjorie Pyoos	Group Executive: Socio-Economic Partnerships	Department of Science and Technology
Prof Akiiki Kahimbaara	National Statistics System Division	Statistics South Africa

### Members of the National Biotechnology Advisory Committee (NBAC)

Name	Position	Organisation
Prof Jennifer Thomson: Chairperson	Professor: Dept. of Molecular and Cell Biology	University of Cape Town
Dr Ntuthuko Bhengu	Executive Director	Afrika BioPharma Investments
Prof Henk Huismans	Professor and Head: Department of Genetics	University of Pretoria
Dr Gatsha Mazithulela	Executive Director	CSIR Biosciences
Dr Sagadevan Mundree	General Manager: Innovation and Biosecurity Investment	Department of Primary Industries and Fisheries, Queensland Government, AU
Prof Michael Pepper	Director	NetCare Institute of Cellular and Molecular Medicine
Dr Heather Sherwin	Fund Manager	BioVentures
Prof Mbudzeni Sibara	Interim Vice-Chancellor,	Tshwane University of Technology
Prof Jocelyn Webster	Executive Director	AfricaBio
Prof Solly Benatar	Professor of Medicine	University of Cape Town
Dr Ivan May	Chief Executive	Intellectual Capital Corporation of Africa

### Members of the SET4W 2007 – 2010

Name	Position	Organisation
Dr Cheryl de la Rey: Chairperson Chairperson	Chief Executive Director (CEO)	Council on Higher Education (CHE)
Ms Luci Abrahams	Director: Learning Information Networking Knowledge Centre	University of Witwatersrand
Prof Judith Bishop	Professor: Computer Science	University of Pretoria
Dr Steve Lennon	Director: Resource and Strategy	Eskom
Dr Romilla Maharaj	Executive Institutional Development	Director: Capacity National Research Foundation (NRF)
Dr Linda Makuleni	Chief Executive Officer (CEO)	South African Weather Service (SAWS)
Ms Khungeka Njobe	Group Executive: R&D outcomes and human capital development	Council on Scientific and Industrial Research (CSIR)
Dr Yolisa Pakela-Jezile	Senior Manager	Agricultural Research Council (ARC)
Ms Jacqueline Williams	National Coordinator for Women in Oil and Energy South Africa (WOESA)	Women in Oil and Energy South Africa (WOESA)

## APPENDIX D: NACI Conferences, Workshops and Seminars: 2004-2009

Title	Date	Venue
NACI Regional seminar	05 March 2004	Port Elizabeth
NACI Sunday seminar: Intellectual property rights and innovation-Prof Prabuddha Ganguli; Mumbai, India	09 May 2004	Court Classic Hotel, Arcadia
NACI Lunch Seminar: Dynamics of Innovation-Prof Edward Lumsdaine, New Mexico State University	19 May 2004	SAASTA Boardroom
NACI Lunch seminar: ICT: its role in development-Prof Wesley Shrum, Louisiana State University	06 July 2004	Didacta Building, NACI Boardroom
NACI Secretariat operational planning meeting	02 September 2004	Farm Inn, Pretoria
NACI Lunch seminar: NSI concept to think and frame African Development-Prof Mammo Muchie (Middlesex University Business School and the University of Aalborg, Denmark)	15 September 2004	SAASTA Auditorium
Think Tools training workshop	16 September 2004	SAASTA Auditorium
Operationalisation workshop: Appropriate human resources for productive NSI	10 November 2004	Technopark, Pretoria
Operationalisation workshop: NSI after the first decade of democracy	13 December 2004	
Operationalisation workshop: Design of the innovation survey	23 March 2005	Diep in die Berg, Pretoria
NACI Lunch seminar: Strategies to promote the transformation of knowledge into innovation-Prof Russ Lea (University of North Carolina)	11 May 2005	NRF Auditorium
Operational workshop on the development of a dynamic model for human resources	04 August 2005	SAASTA Boardroom
NACI Secretariat strategic workshop	09 September 2005	SAFARI, Pretoria
SET4W workshop on gender equity policy	14 October 2005	SAASTA
Operationalisation workshop on the social dimension of innovation	25 October 2005	Diep in die Berg, Pretoria
NACI Secretariat planning workshop	27 January 2006	SAFARI, Pretoria
NACI Lunch seminar: Indicators as evidence base for policy development-Prof Anastassios Pouris, University of Pretoria	15 February 2006	CHE Boardroom
NACI Lunch seminar: R&D expenditure and economic growth: Nordic Paradoxes-Dr Per Koch, NIFU, Norway	17 February 2006	SAASTA Boardroom
Operationalisation workshop on tracking of R&D expenditure	13 March 2006	Burgers Park, Pretoria

<b>Title</b>	<b>Date</b>	<b>Venue</b>
International workshop on measuring systems of innovation: Inputs, Flows and Outputs	23-24 April 2006	Sheraton Hotel, Pretoria
NACI Lunch seminar: The role of cooperative digitized R&D information resources in a development context-Prof Harry Wels (Vry University of Amsterdam)	02 June 2006	DST, Timbuktu
Project workshop-Tracking of the R&D	04-05 September 2006	Stellenbosch
NACI Lunch seminar: Science, Technology and Innovation Advice to Policy Makers: Challenges, Problems and Possible Solutions- Prof Peter Weingart (Institute of Science and Technology Studies, University of Bielefeld, Germany)	05 October 2006	DST, Gondwanaland
Workshop on Human Resource Model	25 October 2006	DST, Gondwanaland
NACI Secretariat strategic planning workshop	11 January 2007	Casa Toscana, Pretoria
NACI lunch seminar: "Perspectives on the NSI: Past and Future" by Dr Bok Marais	23 March 2007	DST, Gondwanaland
OECD-SA workshop	31 July 2007	Innovation Hub
Lunch seminar Dr Ulrich Schmoch	8 October 2007	DST
OECD task Group meeting	8 November 2007	CSIR
SET4W Symposium: Changing perceptions of women in SET – to allow broader participation of highly qualified young (black) women to complement outcomes of study.	25 June 2008	CSIR, Pretoria
NACI dinner seminar: Presentation by Dr Arvid Hallén, Director General of the Research Council of Norway: "The evolution of the Norwegian research and innovation system and challenges faced in increasing public expenditure on research."	29 July 2008	Pretoria
2008 Biotechnology Expert Workshop 31 July 2008	31 July 2008	CSIR, Pretoria
SET4W Workshop: Associations of women in SET – to establish areas of collaboration and ways on how to effectively coordinate gender related activities.	13 February 2009	Casa Toscana, Pretoria

## **APPENDIX E: International meetings to be attended by NACI in 2009/10**

### **Theme: STI policy:**

- Workshop and meeting of the Working Party on Innovation and Technology Policy (TIP) 29 June 2009 – 1 July 2009
- Workshop and meeting of the Working Party on Innovation and Technology Policy (TIP, CC6), 14 - 16 December 2009
- SIDA regional seminar administered by Vinnova, 23-27 March 2009 (follow up of training programme presented in 2008). Cost is covered by SIDA.
- Atlanta Conference on Science and Innovation Policy – Georgia Institute of Technology Global Learning Centre, 2-3 October 2009

### **Theme: STI Indicators:**

- Conference and meeting of the National Experts on Science and Technology Indicators (NESTI) meeting, 2-5 June

### **Theme: Biotechnology**

- International Conference on Challenges in Biotechnology and Food Technology, Annamalai University, India, 26-28 Aug 2009
- ABIC 2009: Agricultural Biotechnology for Better Living and a Clean Environment, Organised by the National Centre for Genetic Engineering and Biotechnology (BIOTEC); the National Science and Technology Development Agency (NSTDA); and the Ministry of Science and Technology (MOST), Bangkok, Thailand, 22-25 Sep 2009
- International New Zealand Bioethics Conference, Otago University, Dunedin, New Zealand, Feb 2010

### **Theme : SET4W**

- Changing research landscapes to make the most of human potential - 10 years of EU activities in "Women and Science", and BEYOND Prague, Czech Republic, 14-15 May 2009.
- Going Diverse: Innovative Answers to Future Challenges - an International Conference on Gender, and Diversity in Science, Technology and Business, RWTH Aachen University in cooperation with Imperial College, London, 29-30 October 2009.

## APPENDIX F: Project planning 2009/10

Project	Committee	Target date	Budget <sup>2</sup>	Stage
Follow-up on NACI workshop: Broad-based innovation to address socio-economic challenges faced by South Africa	NACI	Mar-11	400,000	To be initiated
Implications of African science and technology bilateral and multilateral agreements on South Africa's economy and national system of innovation	NACI	Jun-09	200,000	Research to be completed and Ministerial advice to be developed
An analysis of the effectiveness and efficiency of the higher education system (with a specific focus on the post graduate level) in supporting national objectives (NACI/CHE task force).	NACI	Mar-10	200,000	To be initiated
Development of an Innovation Strategy for South Africa	NACI	Mar-11	500,000	To be initiated
The role of innovation policies and other long-term growth policies in the context of the current global financial and economic crisis	NACI	Nov-09	200,000	To be initiated
An assessment of key databases supporting SA indicator system	IRG	May-09	100,000	Research to be completed and Ministerial advice to be developed

<sup>2</sup> The budget specifically refers to commissioned research costs incurred in 2009/10 and excludes other project related costs or research costs incurred in other years. It is therefore not equal to the total budget associated with the various projects.

Project	Committee	Target date	Budget <sup>2</sup>	Stage
Development of a South African innovation Index	IRG	Feb-10	200,000	Research to be completed and Ministerial advice to be developed
The impact of the South African public understanding of biotechnology	NBAC	May-09	15,000	Ministerial advice to be developed
The funding environment of South African biotechnology	NBAC	May-09	15,000	Ministerial advice to be developed
Biotechnology capacity: comparative case studies	NBAC	May-09	15,000	Ministerial advice to be developed
Follow up studies from the advice generated from the current studies	NBAC	Feb 2010 (Research)	500,000	To be initiated
Facing the Facts: An Update	SET4W	Apr-09	15,000	Ministerial advice to be developed
Assessment of financial incentives for employing women in a corporate environment	SET4W	Oct 2009 (Research)	250,000	To be initiated
Role played by women scientists in national priority sectors	SET4W	Dec 2009 (Research)	300,000	To be initiated
Impact of technological innovation on gender	SET4W	Feb 2010	250,000	To be initiated
Various quick advice			166,000	To be initiated
Total			3,326,000	

## **APPENDIX G: Synopses of NACI Projects**

### **Broad-based innovation to address socio-economic challenges faced by South Africa**

This study is a follow-up of a workshop by the same title for which the main objective was to generate strategies for broad-based innovations that would address socio-economic challenges facing South Africa, as identified by the South African Government and other bodies. The study will focus on:

- Community based innovation from an informal sector perspective, considering which innovations in the second economy could effectively be massified to benefit both the first and the second economies, and of how this might be done;
- Broad based innovations (Technological and non technological innovations) from a formal sector perspective to consider which innovations in the first economy could effectively benefit the second economy, and of how this might be done, and the
- Identification of policy gaps

### **Implications of African science and technology bilateral and multilateral agreements on South Africa's economy and national system of innovation**

This study was initiated in response to a Ministerial request for advice on effective ways to utilise and optimise Africa's S&T bilateral and multilateral agreements for the benefit of the NSI and the South African and African economies.

The objectives are to:

- Assess and analyse the extent to which the South African NSI has been transformed in terms of policy frameworks, strategies, institutional capacities,
- Review and analyse the bilateral and multilateral collaborations of various South African S&T organisations and government departments,
- Identify strengths, weaknesses, opportunities and possible threats associated with South Africa's collaboration with other African countries in S&T, and
- Analyse the decisions taken or commitments made, the bodies and networks involved as well as implications and consequences of such decisions on South Africa and its system of innovation.

### **An analysis of the effectiveness and efficiency of the higher education system (with a specific focus on the postgraduate level) in supporting national objectives**

The need for this investigation emanated from a number of developments, including the 2007 OECD review of South Africa's innovation policy which emphasised the importance of human capital development for innovation and the 2008 OECD review of South Africa's education system. It is generally agreed that there is a need for better coordination of effort in the higher education sector.

Themes to be investigated will include: an investigation into the employability of post-graduates and the associated absorptive rate of the economy, improved matching of post-graduate students and mentors, improved utilisation of the supervisor capacity in higher education, science councils and the business sector, analysis of enrolment patterns vs. the needs of the economy and society, future capacity constraints of the higher education system based on an analysis, assessment and coordination of the past and current effort and experience gained with a view to identify gaps and priorities.

### **Innovation Strategy for South Africa**

In response to the 2007 OECD review of South Africa's innovation policy, NACI recommended in July 2008 that the formulation and implementation of a National Innovation Strategy should be pursued. In particular:

- The key elements of the envisaged National Innovation Strategy should be identified, in broad terms, to clarify the potential scope of the strategy, and to highlight the contribution that such a strategy could play in ensuring a coherent government approach to achieving economic growth and an improved quality of life for all South Africans. An indication of the possible scope and key elements of the strategy are provided in Appendix 1 of the attached report.
- Existing government strategies, policies, initiatives and programmes should be examined to identify and document innovation strategy elements that are already part of government's programme of action.
- The compilation of these existing elements should be examined to identify gaps, inconsistencies and inadequacies in need of further work, and such work should be undertaken with a view to developing a coherent national innovation strategy for implementation across government.

It is important to recognise that the proposed Innovation Strategy will only be successful if it is developed and adopted at national level, and then implemented across the relevant government departments and institutions. As such, the broad advisory role of NACI, is a key enabler to the success of this initiative.

### **The role of innovation policies and other long-term growth policies in the context of the current global financial and economic crisis**

The world economy is in the midst of the most severe financial and economic crisis since the Great Depression of the 1930s. In developing countries, the current financial crisis is likely to have a strong impact on the real economy. A very serious downturn will affect the wider economy and hitting households, businesses and jobs. The financial crisis could trigger credit rationing, a drop in demand and recession.

Policy makers, governments and monetary authorities are seeking to find solutions to the following questions: What caused the financial crisis? How could we mitigate its negative impact on the wider economy and bring about a swift return to economic growth and job creation? How could the sustainability of financial markets be enhanced in order to reduce the potential scale of any future crisis.

The OECD has published a report<sup>3</sup> that discusses its strategic response to the financial and economic crisis. The report focuses on two priority areas, namely (a) Strengthening and implementing principles and guidelines in the areas of finance, competition and governance (in the short term) (b) Restoring sustainable long term growth by keeping markets open, promoting macroeconomic, fiscal and labour market policies, fostering a “green” and innovation led recovery, advancing development and balancing markets and policies and fostering exit from public ownership (in the medium term).

Good macroeconomic policies are necessary but not sufficient for restoring sustainable long term growth. There is a need for sound innovation and long term growth policies to sustain growth. Innovation policy includes elements of R&D policy, science and technology policy, infrastructure policy, human capital policy and education policy. These policies overlap with “new growth theory” which suggests that new technologies, human capital, subsidies on R&D or education have a significant impact on long term growth.

In light of the above, NACI plans to undertake studies that will stimulate wider discussion of what global financial and economic crisis mean for South Africa and how we should respond to the crisis, specifically focusing on innovation policy.

### **An assessment of key databases supporting the South African indicator system**

The ongoing development of the South African STI indicator system will depend on the long-term protection and curation of the source datasets underpinning the system. The need to assess the databases was identified by NACI. The policy framework followed in carrying out the study is the 2002 National R&D Strategy which specifically identified indicators and the tracking of indicators over time as a basis for performance measurement. The new DST ten year innovation plan similarly requires a strong evidence based approach for monitoring

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<sup>3</sup> OECD (2008) “OECD strategic response to the financial and economic crisis: contribution to the global effort”

progress. In the process of assessing the status and quality of the databases, a directory with information on key databases will be developed.

### **South African innovation Index**

An innovation index for South Africa would be useful in raising the awareness of the general public regarding the concept of innovation and the links between innovation and economic growth and an improvement in the quality of life. Such an index could be announced on a regular basis as is the case with the consumer price index or business confidence index. The index would be based on a scoreboard of indicators of input or enablers and output science, technology and innovation indicators.

The development of the index will be done in three phases. In the first phase the components of the index will be identified by drawing on international best practice. The focus will be on the selection of indicators which are relevant for South Africa. The second phase of the project would be to determine the best way to combine the different components of the index. In the final phase the index will be calculated on historical data and its usefulness as a barometer of innovative capacity and activity will be assessed.

### **The impact of the South African public's understanding of biotechnology**

The purpose of this study has been to establish what factors are shaping the public's understanding of biotechnology and to what extent and in what manner this understanding is impacting on the sector's growth potential through its impact on the sector's attractiveness (domestically and internationally) from both a human resource and investment perspective.

The study is intended to yield information on issues such as:

- The South African public's understanding of the biotechnology sector and the factors that are currently shaping this understanding, both positively and negatively
- The key areas of concern (from a scientist, through a general public and to an investor perspective) in respect of entry into, and support of, the South African biotechnology sector
- Recommendations for improving the South African public's understanding of the biotechnology sector both in respect of knowledge gaps / misunderstandings as well as new innovative processes or methods of information dissemination.

The findings from this research will be used to inform strategic advice to the Minister of Science and Technology and other key stakeholders (such as PUB) around the future direction of initiatives aimed at improving the public

understanding of biotechnology towards the sustainable development of the sector.

### **The funding environment of South African biotechnology**

The purpose of this study was to undertake an internationally comparative evaluation of the current funding environment of biotechnology in South Africa from public sector R&D through to venture capital for companies, with focus not only of the levels of funding, but furthermore on the forms and impacts of such funding.

Through the identification of disparities of funding to biotechnology firms and research organisations in South Africa relative to peer countries, as well as any challenges in relation to the structures of funding bodies and the processes employed in funding disbursement, advice will be developed for the Minister of Science and Technology.

### **Biotechnology capacity: comparative case studies**

The purpose of the research is to undertake a comparative study of South Africa relative to a selected group of international countries who are considered to be examples in respect of the capacity of their biotechnology sectors. Through a well grounded and motivated comparison, lessons for South Africa, in respect of the potential benefits from various forms of biotechnology capacity as well as potential means of achieving the development or acquisition of these, will be extracted and presented as strategic advice to the Minister of Science and Technology and other relevant stakeholders.

### **Assessment of financial incentives for employing women in a corporate environment**

The aim of this project is to investigate how financial incentives could be used to benefit companies for employing women at a corporate environment; with a view to encourage corporate companies to employ more women, especially women of child bearing age who are currently considered to be financial risks to companies. The project will cover the following components:

- Identification of different kinds of financial incentives that could be given to corporate companies to encourage them to employ more women,
- Analysis of tax incentives and impact on productivity of companies,
- Analysis of how financial incentives could encourage the SET corporate companies to employ a large number of women, and
- Survey of whether financial incentives to companies could have a significant impact on the number of women employed

On the basis of the above, the project will result in a report with clear and detailed finding and recommendations that will be used as a basis for the development of advice on how the introduction of financial incentives to companies could

address the under representation of women in the science, engineering and technology corporate environment. The advice memo should include how to encourage and ensure that the corporate environment becomes receptive to women.

### **Role played by women scientists in national priority sectors**

Agriculture is one of the sectors where women play a considerable role. In the poor (rural and peri-urban) communities, women are highly involved in agricultural activities in order to feed their families. The project will therefore look at the role that women play in the agricultural sector, their challenges as well as what can be done to improve their productivity and representation in the sector.

The project will encompass the following components:

- Assessment of the different roles played by women within the agricultural sector,
- Investigation into the positions occupied by women along different levels within the agricultural sector, challenges they face and the different opportunities available within the sector,
- Analysis of the support that can be given to women in the sector, and
- Conceptualise the notion of “technological divide” between the agricultural and SET sectors, if any, as a means to contextualise the agricultural sector within the SET divide.

On the basis of the above, the project will result in a detailed report that will provide the basis for an advice on how to support women within the agricultural sector in order to ensure women's role is promoted and enhanced within the agricultural sector. The study will also inform future projects that could be initiated looking at other sectors within SET where women traditionally play stronger roles.

### **Impact of technological innovation on gender**

The aim of the research study is to investigate the impact of technological innovation with specific reference on gender across a wide variety of SET sectors. The project will include the following components:

- Investigation of the effects (impact, benefits, opportunities, etc) of the technological aspects of innovation on women,
- Analysis and outline of all gender studies and projects recently completed or underway by the DST on the topic, with a view to ensure that the study is properly aligned and to reduce duplication of efforts, and
- Analysis of outcomes of other related studies conducted outside the DST.

The outcome of this project would be a report to be used as a basis for the development of advice on how technological innovation can be used to benefit gender related issues within different SET sectors.