1. National System of Innovation (NSI)

A generic definition of the NSI is that this a cluster or network of interacting public and private organizations within a specific country focused on the nurturing and the development of the science and technology space within the borders of that particular country.

There are a number of definitions that are used to define the NSI, the most widely used are those quoted by the OECD publication National Innovation Systems (1997), namely:

- The network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies. (Freeman, 1987)
- The elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge ... and are either located within or rooted inside the borders of a nation state. (Lundvall, 1992)
- A set of institutions whose interactions determine the innovative performance ... of national firms. (Nelson, 1993)
- The national institutions, their incentive structures and their competencies, that determine the rate and direction of technological learning (or the volume and composition of change generating activities) in a country. (Patel and Pavitt, 1994)
- That set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technologies. (Metcalfe, 1995)

- The NSI is set to address the following issues
  - outdated technology and technology support used by many SMMEs
  - failure rates of start-up and entry into value-added areas by SMMEs
  - access to competitiveness and business support
  - promotion of innovative ideas

- **Priorities of the NSI**

- The key priorities of the NSI
  - Improvement of competitiveness
  - Improving the quality of life
  - Ensuring environmental sustainability
  - Work on human resource development
  - Ensure community development through technology transfer instruments

- **Structures of the NSI** (towards creating an effective NSI)

- The DST, DTI and Science Councils are responsible for the development and implementation of an effective NSI.
- The NSI also has 12 centres of which 4 are funded by the DTI

Centre Name	Location
DTI funded	
Aluminium Training Institute	Richards Bay
Steel Incubator	Middelberg
Furntech (Furniture Technologies)	George
Fibre Training Institute (National Fibre Centre)	Port Elizabeth
Other centres	
KwaZulu Natal Innovation Support Centre (Pilot model, IT and embedded systems)	Durban
Zenzele Technology Demonstration (Pilot model, Small scale miners)	Randburg
Gauteng Technology Incubator (Software Incubation)	Pretoria
Egoli Biotechnology Technology Incubator (Biotechnology)	Modderfontein
Timbhali Technology Incubator (Floriculture/ Horticulture)	Nelspruit
Brainworks Technology Incubator (ICT)	Johannesburg
Acorn Technology Incubator (Medical systems)	Cape Town
SACTI (Fine & Performance Chemicals)	Port Elizabeth

Consider the following websites:
http://www.nstf.org.za/activities
http://www.education.gov.za/content/documents/
http://www.sfa.ca/cprost/docs/9805.pdf

- **Policy and Strategy documents**

- The Research and Technology Development Strategy
- The South African National Survey of experimental Research and Development

- Growth strategy
- Human resource development and skills development
- Higher Education Plan
- Industrial development strategy
- Biotechnology strategy
- IRDS
- SMME
- BEE
- NEPAD

Policy and strategy processes completed to date that have informed the shaping of the National R & D Strategy and its technology missions

- The National Research and Technology Audit (1997)
- The Review of the Science and Technology Institutions in SA (1998)
- The National Research and Technology Foresight (1999)
- The NACI/ NSTF report: Growth and innovation (2000)
- The Integrated Sustainable Rural Development Strategy (2000)
- The National Biotechnology Strategy (2001)
- Visits to Cuba and Finland by SA technology policy delegations (2001)
- The Strategic Plan for South African Agriculture (2001)
- The DTI Integrated Manufacturing Strategy (2002)
- The National Plan for Higher Education (2002)
- The current “technology road-mapping” initiative, which seeks to define more accurately technological investments required to stay competitive in key product markets.