



Innovation as a driver of regional competitiveness

System of Innovation



...institutions* which **jointly and individually** contribute to the **development and diffusion of new technologies** and provide the framework within which governments form policies to influence the innovation process...it is a system of interconnected institutions to create, store and transfer the knowledge, skills and articles which define new technology...

* industry, academia and research institutions, innovation support agencies, venture capitalists, local / provincial / national government, etc.

SA's National System of Innovation



- Insufficiently developed provincial systems of innovation
- Lack of integration between provincial and national systems
- Regional and local linkages may not be a necessary condition for innovation but geographical proximity may offer structures, organisation and institutions which improve possibilities for local and regional innovation

Innovation and economic growth



- Generation, sharing and transfer of knowledge underpins a modern economy
- Triple helix model – university, industry, government – drives innovation in the knowledge economy
- Key premise for government investment in research and innovation
 - necessary to strengthen scope and competitiveness of industry
 - will deliver increased employment, wealth opportunities, economic growth

Knowledge base



- Specialisation of knowledge base influences the extent of innovative activities - industry sectoral specialisation should be reflected in the knowledge base
- Players in a region do not influence innovation by their presence alone unless they are part of a system working together
 - University-industry linkages have been shown to exert a positive influence on local and regional innovation

EC specialisations



- “The Eastern Cape...do(es) not have industrial specialisations which obviates the need for investigating regional dynamics...”

Lorentzen, J (2007) Regional and Local Innovation Profiles. A study on behalf of NACI. HSRC-ESSD

- Provincial share of national total is < 10% in all broad economic activities except for community, social and personal services.
- Only 2-3% of R&D investment in the EC (compared to 61% in Gauteng).
 - R&D investment mainly in paper and paper products, motor vehicles and advertising.
- Publication and patent data shows that no EC university has significant specialisations
 - UFH: biological and physical sciences
 - Rhodes and NMMU: biological sciences, information, computing, communication

DST's Regional Innovation Systems Strategy



- Three key interventions:
 - Human capacity development through training
 - Mechanisms to strengthen and implement strategies:
 - Formation of institutions (e.g. TIA)
 - Formation of programmes to build capacity
 - Implementation of infrastructure and networks (e.g. Science Parks)
 - Stimulating demand side innovation by localising large projects
 - Formation of provincial and national innovation structures

Innovation Structures



- Establish a Provincial Innovation Council within the Provincial Government
- Constitute a Regional Innovation Forum that can act a community of practice
- Organise a regional foresight workshop to set long-term priorities that will enhance the region's innovation potential
- Appoint a dedicated person that can champion the RIS development and advocacy work in the region
- Harmonise RIS strategy with PGDS and IDPs

Regional Innovation Forums (RIF)



- Facilitate RIS strategic planning
- Promote networking amongst RIS stakeholders within the Province
- Coordinate innovation programmes and initiatives within the Province
- Create awareness on innovation in the Province
- Act as gateway to innovation programmes and initiatives

Current status



- RIF formed for NMB and Cacadu:
 - “Stimulating, supporting and promoting innovation in the Eastern Cape”**
 - Networking and events (link players and projects to spur innovation)
 - Drive specific projects (e.g. PE Science Parks)
 - Innovation training
 - Creation of local “Innovation Fund”
 - Assisting with proposal development



Some examples

Example 1

- Technology
 - Chemical preservation of flowers
 - Flowers and foliage last one year
 - National phase patent applications
- Commercialisation
 - Entrepreneur worked “at risk” for 2 years
 - NMMU assigned patents to company in exchange for shares in the company
 - Early stage technology
 - No income to NMMU for a long time



Example 1



- Funding
 - Seed funding provided by university (R120 000)
 - R5 million Venture Capital funding from Industrial Development Corporation – patent was critical
 - NMMU still providing bridge funding when required
- Current status
 - Factory in Johannesburg; employs 100 staff
 - Have large orders from EU; local sales growing (20+ agents)
 - Cash positive!

Example 2



- Technology
 - Replacement of zinc oxide in rubber
 - Significantly decreases activation time
 - Three inventions by student during doctoral studies
 - Three patent applications in national phase
- Commercialisation
 - Student started company and sold shares to Financial Director and Technical Director of local chemical company
 - NMMU assigned patents to company in exchange for shares in the company

Example 2



- Funding
 - Seed funding provided by university (R100 000)
 - Student is entrepreneur – bootstrapped by selling shares in company
 - University still providing funding for patents
- Current status
 - Entrepreneur rents space for trials at NMMU
 - Doing manufacture in SA – job creation and economic development
 - Joint Venture company in EU with Italian company
 - Need to do technical marketing
 - Cash strapped! Applying to TIA for funding

