Accelerating Sustainable Regional Vaccine Manufacturing

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The Decadal Plan

The Decadal Plan is the implementation plan for the 2019 White Paper on Science, Technology and Innovation (STI)

Vision of the White Paper: Science, technology and innovation enabling sustainable and inclusive development in a changing world

The Decadal Plan theme is:

“deepening knowledge economy for enhanced socio-economic impact”
The Decadal Plan

Grand Challenges

STI Priorities

Energy Innovation

Health Innovation
Building infrastructure & expertise

Building innovation capacity & develop pipeline of homegrown products.
Capabilities needed for a vibrant vaccine manufacturing capability

Support and strengthen the country’s local research, development and innovation capabilities to manufacture active pharmaceutical ingredients, vaccines, biopharmaceuticals, diagnostics and medical devices to address the disease burden while ensuring security of supply.

Strengthening the National Regulatory Authority

Drug discovery & development / therapeutics

Surveillance capabilities (Climate Change & Health)
- identify/monitor variants circulating in SA.
- clinical & epidemiological evidence linked to the impact of vaccines on health

National Bio-economy Strategy

API manufacturing
Diagnostics
Medical devices
Human capital development
Establish world class RI infrastructure
Vaccine development pipeline

Building innovation capacity & human capital pipeline for domestic vaccine manufacturing

Next generation → Early career → Midcareer → Established Researchers

- Sanitation & Disposal
- Transport & logistics
- Design & Manufacturing
- Technicians & engineering
- Communication e.g. language barriers
- Environmental conservation

Robust healthcare system & workers

ENTREPRENEUR SKILLS
Essential Skills Needed to be an Entrepreneur

- Leadership
- Problem Solving
- Decision Making
- Communication
- Planning
Transformation: Diversity & Inclusion

Virtuous cycle

More and better skills

Conducive investment climate

High demand for skills

High inflows of foreign direct investment

Knowledge application and innovation

High productivity and growth

Employment

From a vicious cycle to a virtuous cycle

Skills shortage

Low demand for skills

Poor investment climate

Low productivity and growth

Unemployment

Low inflows of foreign direct investment

Low innovation

World not ready for aging population

The number of people in the world aged 60 and older is expected to grow past 2 billion by the year 2050.

Total population of people aged 60 and older

2.0
1.5
1.0
0.5
0.0
2.5 billion
Developing countries
Developed countries

SOURCE: United Nations Population Fund

The black African population is in the majority and constitutes approximately 81% of the total SA population

SA by population group, 2020

Total by Population Groups

BLACK AFRICAN
(48.2 million)

81%

COLOURED
(5.2 million)

9%

WHITE
(4.7 million)

8%

INDIAN/ASIAN
(1.5 million)

3%

*Due to rounding totals may not add up to 100%

Source: DOI: 10.13140/RG.2.2.12234.49605
Key Success Factors

- Microbiologists and chemical analysts
- Quality assurance/release/production/warehouse pharmacists
- Quality assurance/control and production managers
- Maintenance artisans/technicians/engineers/industrial engineers
- Production/Quality control team leaders
- Technical manufacturers
- Procurement category leads
- Controllers/product handlers (cold storage)
- Technical manufacturing
- Fill and finish capabilities'

- Core expert team
- Third party collaborators: skills and knowledge transfer
- On the job training
- Centres of Excellence
- Learning academy
- Service and maintenance contracts with suppliers of equipment
- Training initiatives in partnership with collaborators including suppliers
- Exposure and protocols for regulatory inspections
- Access to information and expertise

- Scientific Validity
- Collaborative partnerships
- Social justice
- Equal moral respect for participants & communities
- Voluntary participation
- Independent review
- Confidentiality
- Anonymity
- Informed consent
- Respect
- Beneficence
- Research merit & integrity
- Non-maleficence

PRINCIPLES GUIDING THE CONDUCT OF ETHICAL RESEARCH

KNOWLEDGE
- Know what

SKILLS
- Know how

ABILITY
- Know why

ATTITUDE

Learning Environment Purpose
- Envisioning
- Cultivating
- Finding
- Assembling
- Curating

Business Goals Performance Context

Science Validity
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Sustaining a viable domestic vaccine manufacturing capability

1. Strengthen policy coordination & build incentives for developing local, regional & continental capacity & capabilities for vaccines manufacturing

2. Develop, train, skill, re-skill & upskill human capital across the PSET sector

3. Strengthen the enabling environment: for facilitating access to funding, tech transfer & mutually-beneficial partnerships (equitable sharing of IP & downstream dividends)

4. Invest in the establishment & maintenance of large scale & feeder research infrastructure platforms with a focus on geographical spread

5. Ensuring security of equitable supply, access & distribution locally, regionally & continentally

...locally manufacture 60% of the vaccine doses required on the continent by 2040...
Siyathokoza
Re a leboga
Dankie
Ro livhuwa
Thank you
Siyabonga
Enkosi
Ha khensa