Planning a new Laboratory to deliver impact in South Africa

Ndwakhulu Mukhufhi
NMISA

18th NMI Directors meeting
25 October 2016
NMISA Maintains measurement equivalence with the global system of measurements as a foundation of all measurements performed in South Africa.

The complete view of NMS

Housed at the CSIR campus since 1950s, the buildings have reached their technical limit of modification.
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>The forerunner of the CSIR National Metrology Laboratory (NML) is formed</td>
</tr>
<tr>
<td>1957</td>
<td>The NML occupies building 4 and 5 on the new Scientia campus, so our buildings are 60 years old!</td>
</tr>
<tr>
<td>2006</td>
<td>The Measurement Units and Measurement Standards Act, no. 18 of 2006, is promulgated. It establishes the NMISA</td>
</tr>
<tr>
<td>2007</td>
<td>On 1 May NMISA officially starts business. The entity is transferred as a going concern from CSIR</td>
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<tr>
<td>2010</td>
<td>NMISA Management motivates to the dti that a recapitalisation of its facilities is urgently needed</td>
</tr>
<tr>
<td>2011</td>
<td>With the blessing of the dti, a motivation is prepared for additional CAPEX over the MTEF period (and beyond). It is successful and a dedicated Grant for Recapitalisation is published</td>
</tr>
</tbody>
</table>
NMISA HCD Programme

- Developing work ready graduates to address the Measurement Skills shortage
- Developing Future Experts and Leaders

1. Inspire
   - Complete Junior Degree
     - NMISA sponsorship

2. Engage
   - Mentorship and Coaching
   - Work Place exposure
     - Vacation work

3. Educate
   - Metrology Skills Development

4. Employ
   - Business & Soft Skills Training and Coaching

5. Further Development
   - Contribution
   - Employability
   - Basic Knowledge
   - Technical Competence + Culture

Nurture
Motivate
Involve
Socialise
Adopt

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OPTION D  INNOVATION HUB ERF 32 (LP.16 AND 17)
## The Building

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratories</td>
<td>8 943sqm</td>
</tr>
<tr>
<td>Offices</td>
<td>3 824sqm</td>
</tr>
<tr>
<td>Meeting rooms (incl. café + auditorium)</td>
<td>1 590sqm</td>
</tr>
<tr>
<td>GFA (Gross Floor Area)</td>
<td>14 357sqm</td>
</tr>
<tr>
<td>Services (incl. plant + circulation + ablutions)</td>
<td>15 840sqm</td>
</tr>
<tr>
<td>TFA (Total Floor Area)</td>
<td>30 197sqm</td>
</tr>
</tbody>
</table>
Metrology Equipment Replacement

Yellow - represents the cumulative expenditure over the life of the project. Grey - Metrology equipment. Orange - Lifecycle maintenance. Blue - Operating costs.
Competing Interests!
Envisaged Timeline

- TAI Approval: January 2017
- RFQ: May 2017
- RFP: December 2017
- Financial Closure and Commence Building: January 2018
- Financial Closure and Commence Building: January 2018
Metrology Impacts Every Sphere of Society

- Petroleum & Mining Industry
- Chemical Industry
- Plastics & packaging
- Locomotives and Large Passenger Vehicles
- Pharmaceutical Industry
- Quality of life
- Produce
- Air pollution
- Automotive and Alternative Energies
- Food sector
- Environmental
- Nanotechnology
CFTA developments

• 54 Countries
• > 1 billion population
• > $3.4 trillion market opportunity

The Tripartite free trade area project will be a post mortem case if the implementers do not take into account the important role of the QI during the early stages of implementation.
Paul Date at AFRIMETS GA meeting, Johannesburg, July 2015
Why Does Africa need Traceability?

Almost 30% of this food will be required in Africa with implications on trade growth and an increased focus on food and feed safety.
Example:
Reference material production for RSA and region (AFFRMP)
- Feed and Food
- Drug reference material for law enforcement

‘Shortening the Traceability Chain for Africa’
ShoTCAf
Lower-income countries are losing about 14% of their agrifood exports to non-compliance with SPS measures, **SADC is losing up to R3,5 milliard a year in export trade** *2011 figures*

SA need to import 3,8 million tonnes of maize in 2016, 2 recent consignments of 30 000+ tonnes rejected for mycotoxins
RSA imports app. R10 to R20 million high level CRMs p/a for accurate mycotoxin and pesticide analysis, estimated imports of all CRMs R100 – R150 million

NMISA started an African Food and Feed Reference Material Programme to:

- Replace Imports of CRMs
- Provide African specific matrix reference materials

The programme setup costs are app. R100 million

11 Foods HIGHEST in Mycotoxins
www.ExhibitHealth.com
Let’s unlock the hidden potential

- Political coup
- Poverty
- Conflits
- Starvation
- Corruption
- HIV/AIDS

- Natural Resources
- Average GDP growth rates 4.6% since 2000
- Moving from decades of conflict to stability
- More than 40% < 15 years old
- Middle class: +18% since 1990
- Increasing Income levels
- $2.6 trillion business opportunity.....
- New interest from China, Brazil, India,
2017 Focus on Africa

• Africa Year of Quality
• NMISA 70/10 Year Celebration