Science Communication skills development within the National System of Innovation

Date: 26 August 2016

Venue: Skills Summit

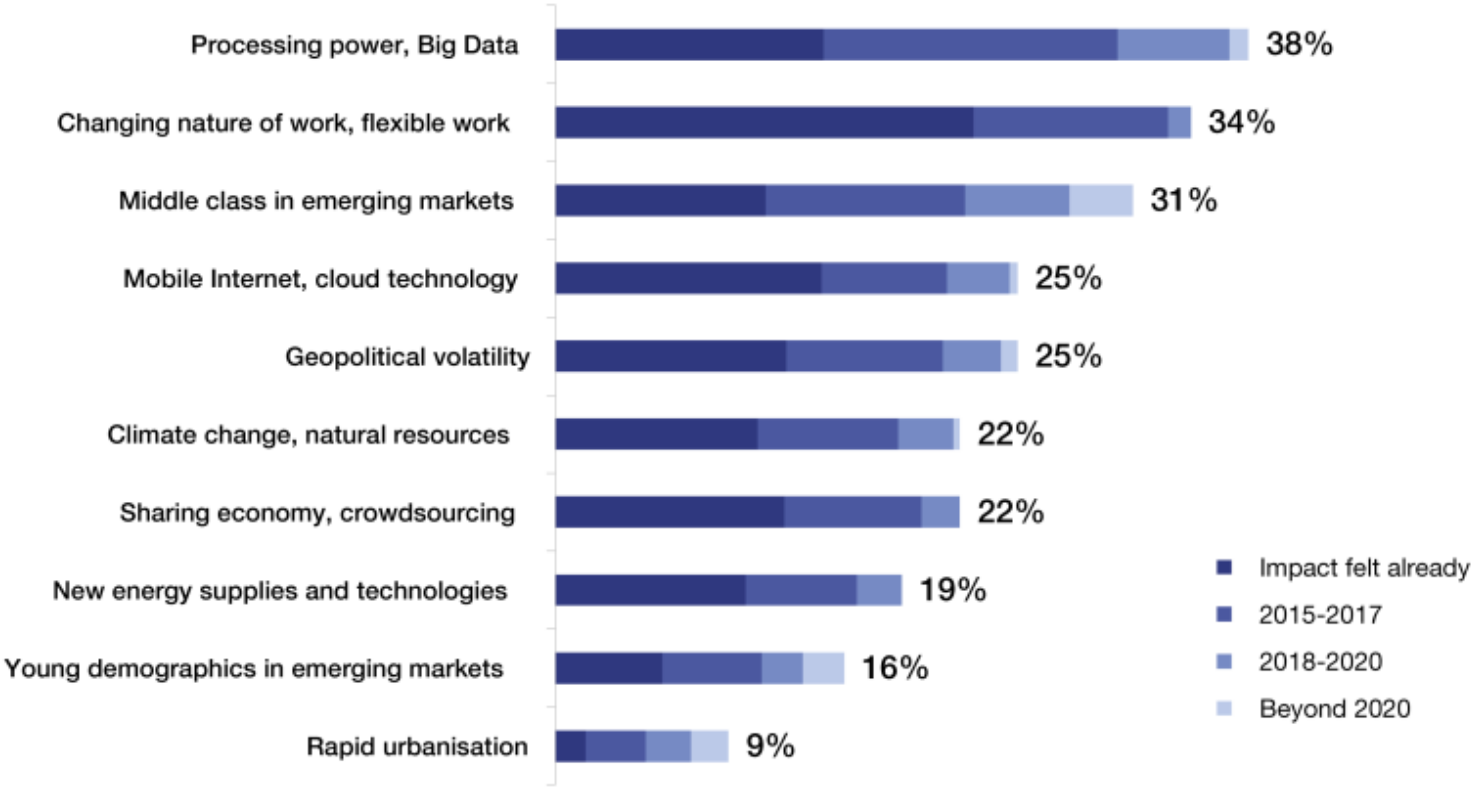
Michael Ellis
Manager: Science Communication
NRF SAASTA

- South Africa's **unemployment** rate currently stands at **26.6%**
- Higher rates for **youth**, at more than **50%**
- **60%** of the workforce is under 30 years old

- Driven by **inadequately educated workforce**
- Fourth **Industrial Revolution**
  - ✓ Fast-paced technological progress
  - ✓ Socio-economic and demographic changes
  - ✓ Transformed labour markets

Disruption to the labour market
in South Africa

WORLD ECONOMIC FORUM
COMMITTED TO IMPROVING THE STATE OF THE WORLD



Source: Future of Jobs Report, World Economic Forum

science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

NRF National Research Foundation | SAASTA South African Agency for Science and Technology Advancement

Overview

- Why is **science communication** an important skill in South African society?
- Who is the **South African Agency of Science and Technology Advancement (SAASTA)** and what do we do?
- How do we contribute to **National Science Engagement and communication strategy**?
- **Case studies** of skills development programmes run by SAASTA

THE CONVERSATION AFRICA PILOT

Academic rigour, journalistic flair

Search analysis, research, academics...

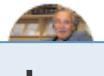
Arts + Culture Business + Economy Education Environment + Energy Health + Medicine Politics +

Science communi… and that'…

August 3, 2016 7…

"…public can voice an opinion about what kind of research best meets its needs."

Authors



Peter Weingart

This puts the scientific community in a position where it has to convince the public of two important things. First, that it's delivering "**value for money**" … and, second, that it is responsive to the **general public's needs and interests.** To achieve both of these aims, scientists must communicate.

THE CONVERSATION AFRICA PILOT

Academic rigour, journalistic flair

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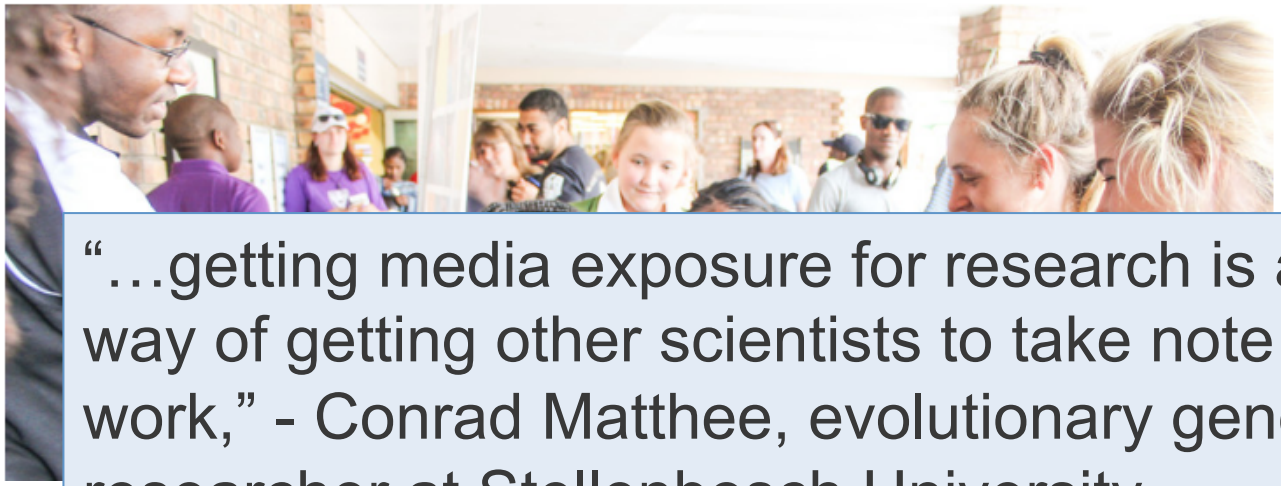
Arts + Culture | Business + Economy | Education | Environment + Energy | Health + Medicine | Politics + Society | Science + Technology

Scientists have much to gain by sharing their research with the public

August 23, 2016 9.18pm SAST



Author

Marina Joubert
Science Communication Researcher, Stellenbosch University

"…getting media exposure for research is a sure-fire way of getting other scientists to take note of your work," - Conrad Matthee, evolutionary genetics researcher at Stellenbosch University

Why science communication?

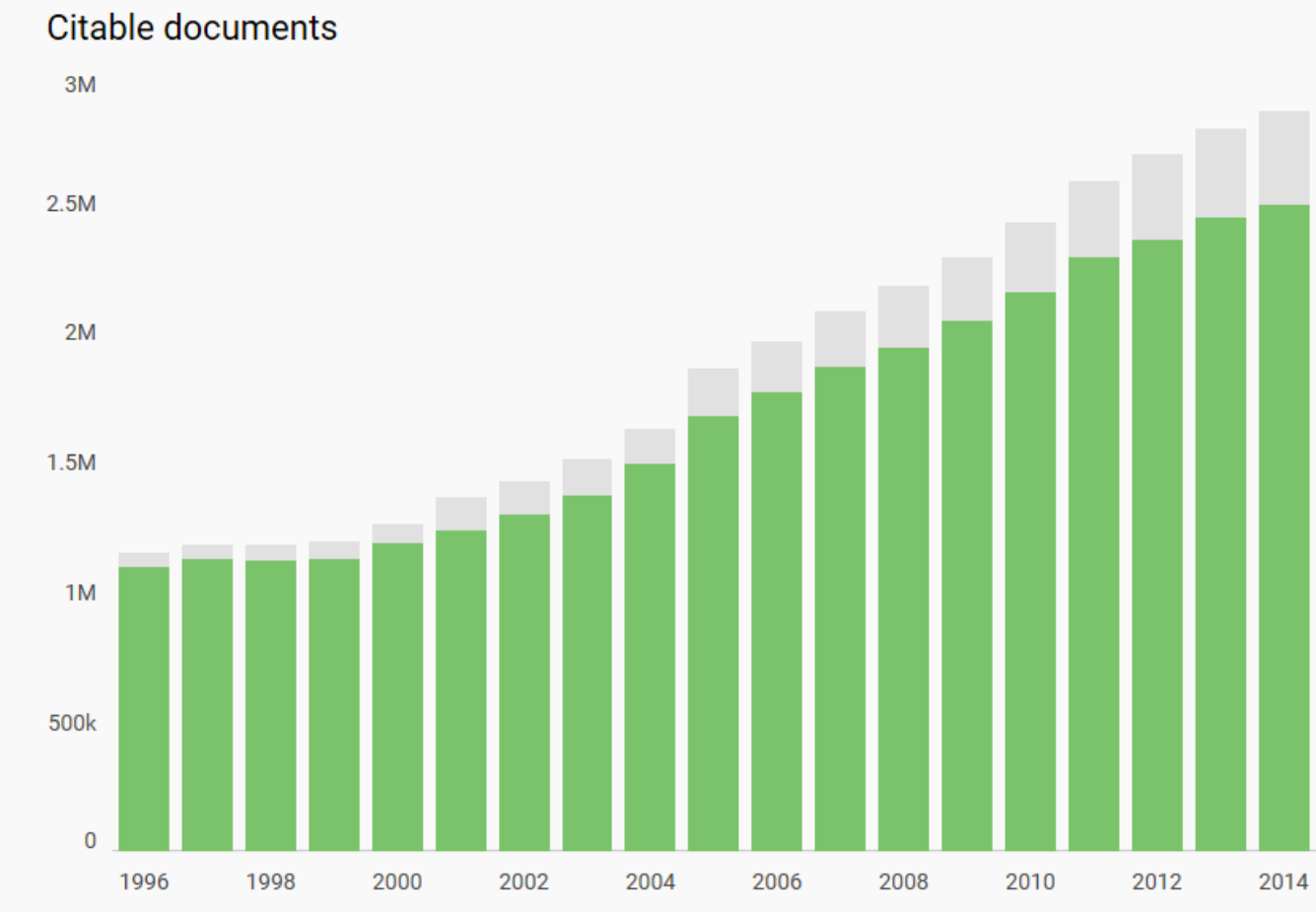
	Country	↓ Documents	Citable documents	Citations	Self-Citations	Citations per Document	H index
1	United States	9360233	8456050	202750565	94596521	21.66	1783
2	China	4076414	4017123	24175067			563
3	United Kingdom	2624530	2272675	507905			9
4	Germany	2365108	2207765	40951616	102942	17.31	961
5	Japan	2212636	212			13.76	797
6	France	1684479				16.82	878
33	Portugal	214838				11.84	334
34	South Africa	188104	172424	2125927	454537	11.30	320
35	Malaysia	181251	175146	888277	239643	4.90	190

Global Publications (1996 – 2015)
38 134 1200

Global Publications (2015)
3 011 686

SCImago Journal & Country Rank - from Scopus® database data (www.scimagojr.com)

Why science communication?



SCImago Journal & Country Rank - from Scopus® database data (www.scimagojr.com)

NRF Mandate

Support and promote research and knowledge generation through human capacity development

Support and promote research and knowledge generation through the provision of National Research Platforms

Strengthen the relationship between Science and Society through Science Engagement

Contribute to National Imperatives

03

PROGRAMME 03
Research and Innovation Support and Advancement (RISA)

04

PROGRAMME 04
National Research Facilities - Nuclear, Biodiversity, Environmental & Conservation sciences

01

PROGRAMME 01
Corporate

02

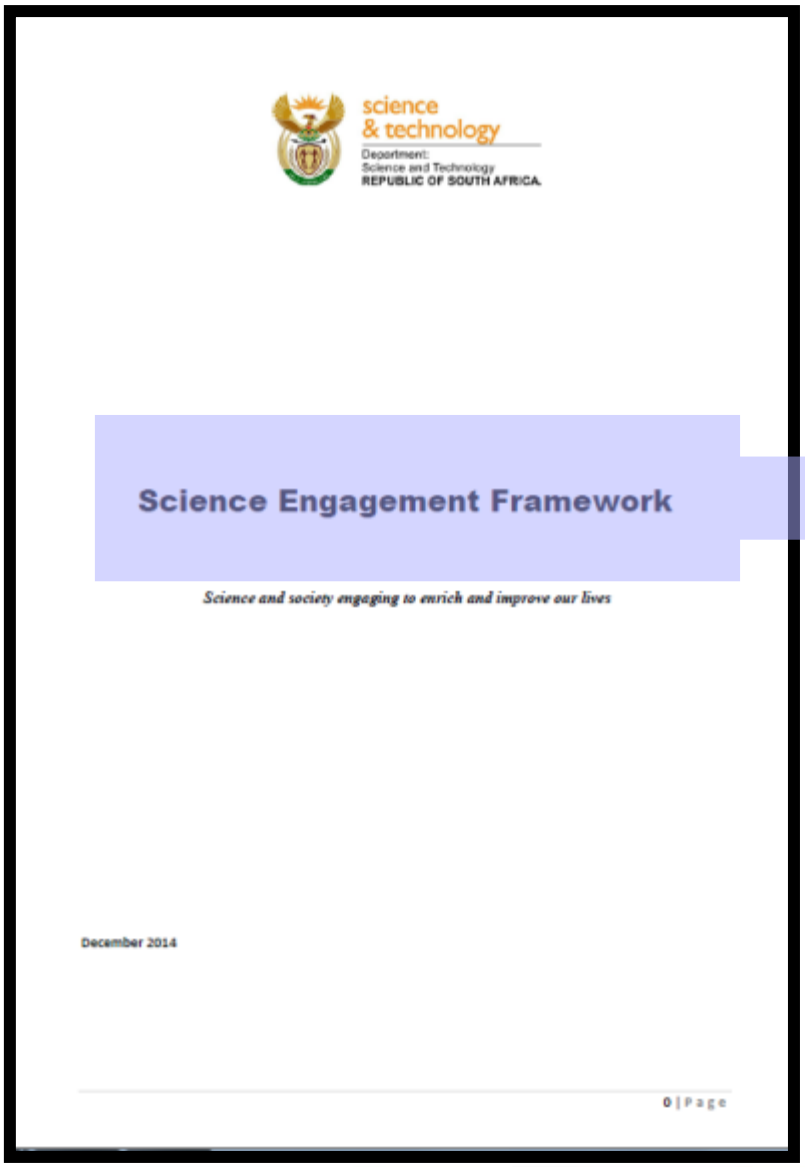
PROGRAMME 02
Science Engagement

05

PROGRAMME 05
National Research Facilities - Astro Geosciences

SAASTA's Mandate

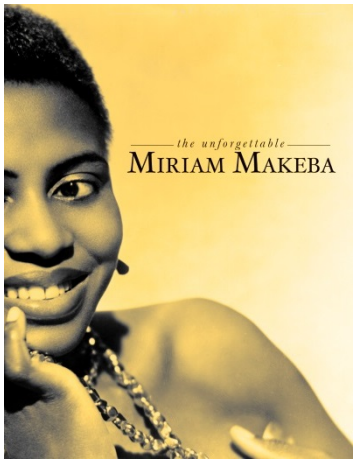
To advance **public awareness**, **appreciation of** and **engagement with** science, technology, engineering, mathematics and innovation in South Africa

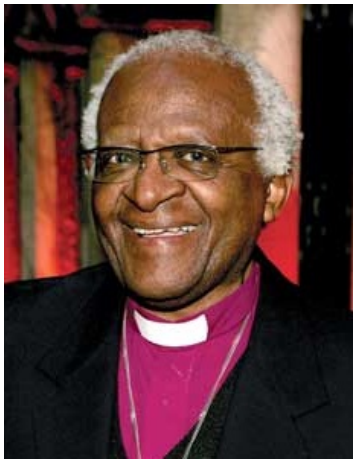


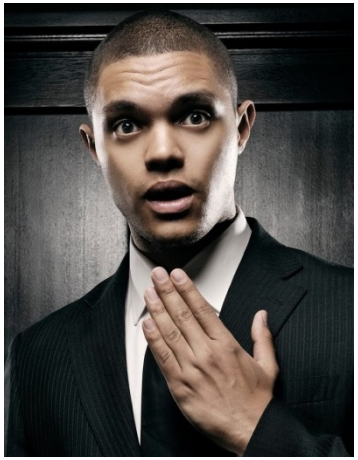
VISION:

A **stimulated and engaged South African society** that is **inspired by and values** scientific endeavour, critically engages with key science and technology issues, and **participates** in a fully representative innovative science and technology workforce.

Strategic Aim 1: To popularise science, engineering, technology and innovation as attractive, relevant and accessible in order to enhance scientific literacy and awaken interest in relevant careers







2

Strategic Aim 2: To develop a critical public that actively engages and participates in the national discourse of science and technology to the benefit of society

3

Strategic Aim 3: To promote science communication that will enhance science engagement in South Africa

International FameLab

TALKINGSCIENCE

4

Strategic Aim 4: To profile South African science and science achievements domestically and internationally, demonstrating their contribution to national development and global science, and enhancing its public standing

SAASTA as the National Coordinator

Grant Management

- Implement an effective and efficient grant-management system for science engagement

Engagement Programmes

- Design and implement programmes that enhance the strategic aims

Monitoring and Evaluation

- Design an appropriate performance monitoring and evaluation system

Data Management

- Collect, collate, analyse and disseminate data on the performance

Activity Coordination

- Coordinate across all DST Entities & develop systematic reporting

Multi-stakeholder Engagement / Network of Collaborating Institutions

Leverage External Resources

SAASTA Programmes

- **Science and Technology Youth Journalism Programme**
- **National Youth Service**
- **Science Centre Capacity Building & Support Programme**
- **Educator Support and Development** – *Natural Sciences, Technology, Mathematics, Life Sciences, Physical Sciences, Biotechnology, Nanotechnology, Fuel Cells*
- **Learner Camps** – *Collaborations DPW, DBE provincial, Harmony, Komatsu*
- **Career Profiling** – *Post engagement assessment*
- **Science Festivals** i.e. *Scifest Africa, Sasol Techno X, Beijing Science Festival, Provincial Festivals*
- **Science Clubs**
- **National Science Week**
- **STEMI Olympiads & Competitions and Expos**
- **Physics Undergraduate Programme**

Science and Technology Youth Journalism Programme

- **Unemployed Young adults** between 18 and 35 years, with undergraduate qualifications
- Prioritised **26 district municipalities** in the Comprehensive Rural Development Programme


Cebisa Khwebulana
EzakwaZulu News


Dumisile Masuku
Bushbuckridge Radio


Godfrey Pandeka
Sekhukhune Community Radio


Jillie Masemola
Motse Community Radio


Keorapetse Pitso
Vaaltar Community Radio


Maboni Mmatli
Seipone Newspaper


Mpho Matemane
Letlhabile Community Radio


Mthokozisi Dladla
Umgungundlovu Radio


Ntsakisi Nkomo
Mafisa FM


Phelo Lakitika
Alfred Nzo Community Radio


Thabile Nxumalo
Inhloso Yesizwe Newspaper


Pumeza Mabusela
Kumkani FM


Sandisiwe Mpahleni
Rainbow News


Sarah Mogashoa
Nthavela Newspaper


Sihle Ntenjwa
Nqubeko FM


Sinenhlanhla Mkhize
1KZN News

Profile: Maboni Malose Mmatli

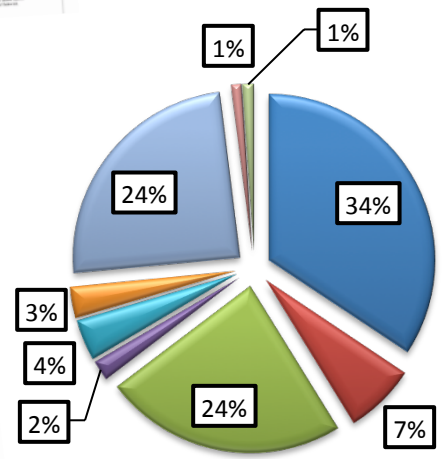
I am **Maboni Malose Mmatli from Segoahleng** in Polokwane, Limpopo province. I am currently a science journalist intern at the South African Agency for Science and Technology Advancement (SAASTA) hosted by Seipone community newspaper in Polokwane. I graduated with a Bachelor's degree in Science majoring in Botany and Zoology at the Nelson Mandela Metropolitan University in the Eastern Cape.

As a **science journalist for Seipone newspaper** I cover science related stories and focusing on the **Point of Use Water Treatment Technology (POU)**. This is a technology solution suitable for rural communities that do not have access to clean safe water as they still collect water from the streams and rivers for drinking. This POU is termed Woven-Fabric Microfiltration Gravity Filter. The POU systems will ensure that these communities will be able to treat their water to acceptable standards. The systems will provide users with approx. 30 to 40 L per day of safe filtered water for drinking and cooking. **The proposed project will directly benefit those households** who are selected for the demonstration by providing them with clean drinking water.

My aim is to provide science related information to the community in ways that the people can understand it and the impact of science in their daily lives and use the information to empower themselves. The stories that I cover for the newspaper ranges from innovative technology POU, sustainability to innovation. **I regard myself as an all rounded, people's scientist.**

Profile: Thabile Nxumalo

Languages used



- English
- Southern Sotho
- Northern Sotho
- Sotho
- Tshivenda
- Tswana
- Xitsonga
- IsiZulu
- IsiXhosa

*Community media pilot project 2015

National Youth Service Programme

- Target post graduates in STEM
- More than 50 host organisations across SA
- 2016 = 440 volunteers
- 2007 to 2011 co-ordinated by NSTF
- 2012 onwards coordinated by SAASTA

	Qualification			
	Diploma	Degree	Honours	Masters
Number of Volunteers:	144	224	78	6

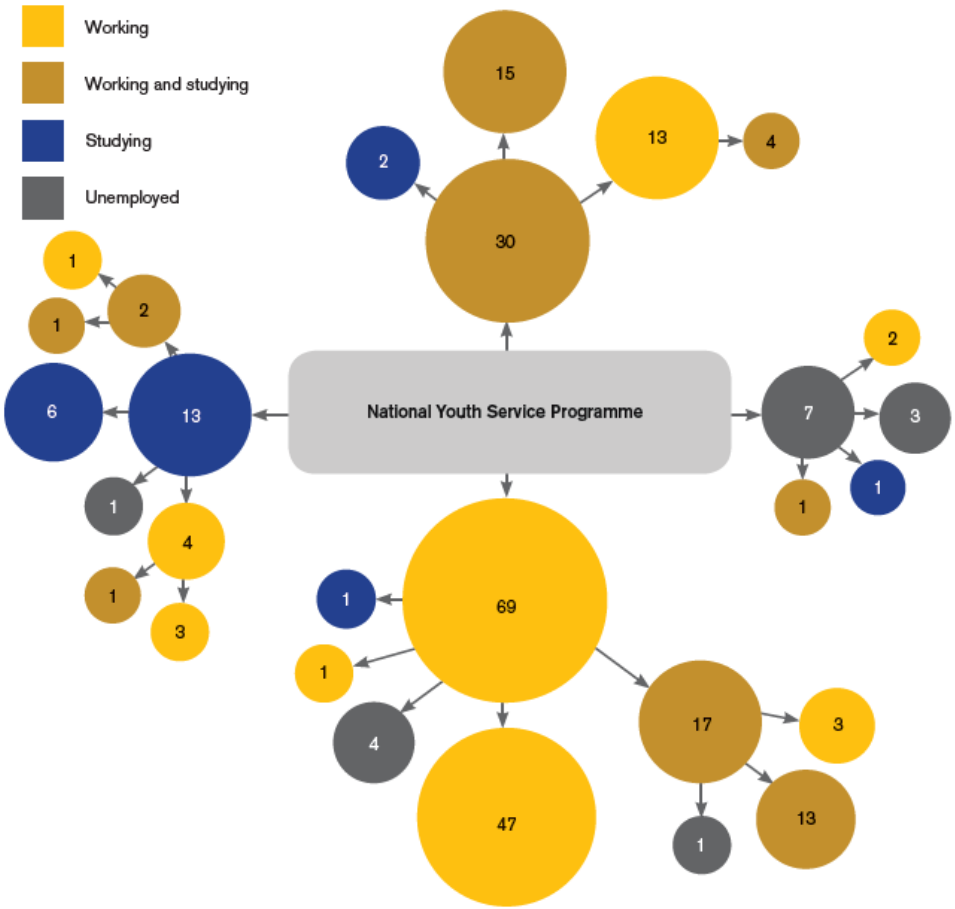
Gender	**Race**			
	African	Coloured	White	Asian
Male	202	2	0	4
Female	238	3	1	2
Total	440	5	1	6

National Youth Service Programme

After participating in the programme:
58% of went directly into work
25% into work and studying
11% into further studies
6% were unemployed

Earnings are distributed around R12000 to R15000 per month

Skills of communicating science, knowing how to manage the activities of the workplace and handling more responsibility in the workplace were enhanced.



*HSRC: Highlights of Youth into Science Strategy

Science Centre Capacity Building & Support

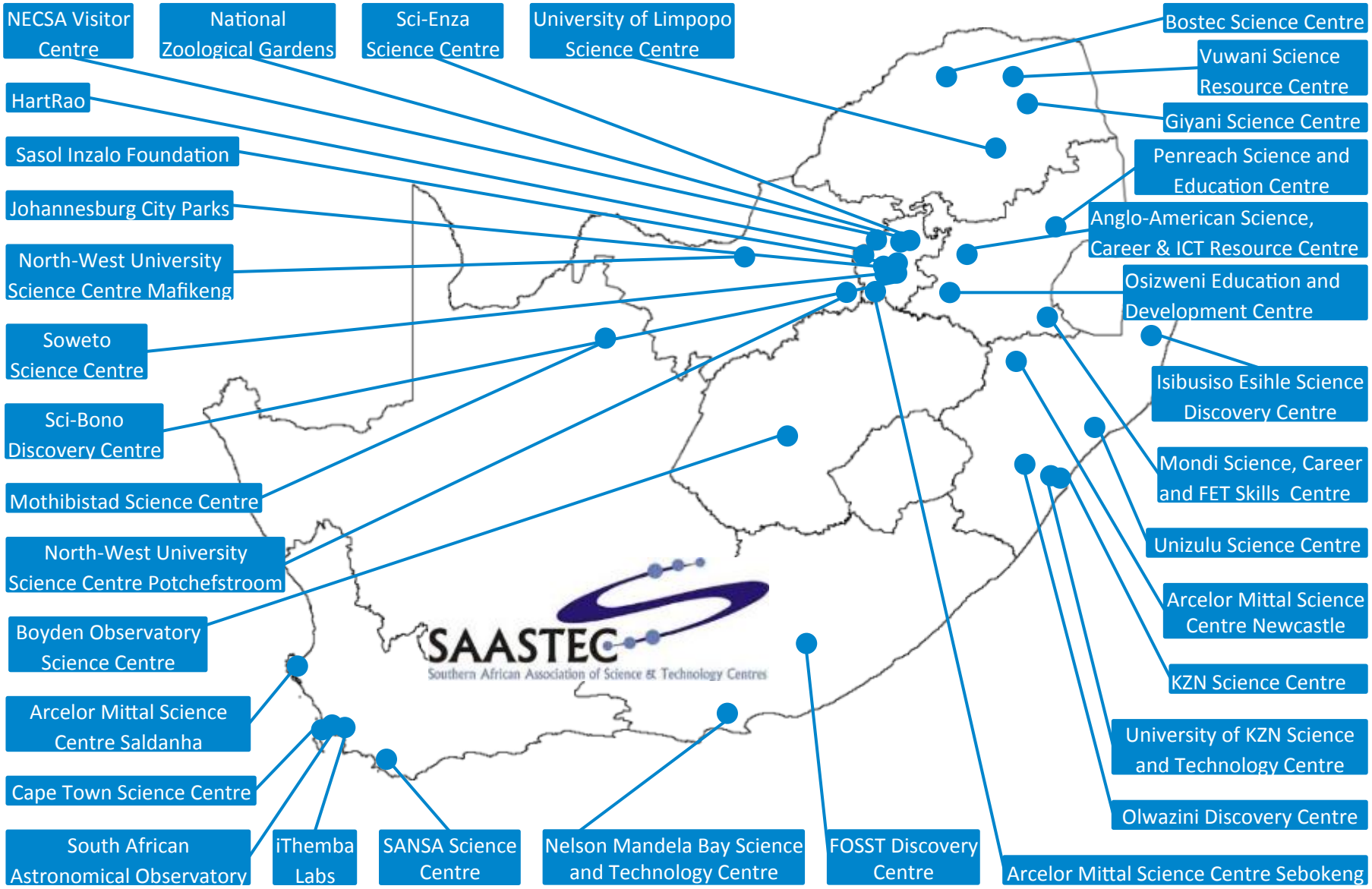
Sci-Bono Discovery Centre
Johannesburg, Gauteng

Vuwani Science Centre
Thohoyandou, Limpopo

NECSA Visitor Centre
Pelindaba, North West

Isibusiso Esihle Centre
Manguzi, KwaZulu Natal

- Financial Management
- Proposal writing
- Networking
- Marketing
- Project management
- Exhibit Development
- Conference Paper Presentation
- Impact Evaluation
- Programme Development
- Establishing a Centre
- Science Communication
- Outreach Programmes


NECSA Visitor Centre
National Zoological Gardens
Sci-Enza Science Centre
University of Limpopo Science Centre
Bostec Science Centre
Vuwani Science Resource Centre
Giyani Science Centre
HartRao
Sasol Inzalo Foundation
Johannesburg City Parks
North-West University Science Centre Mafikeng
Penreach Science and Education Centre
Anglo-American Science, Career & ICT Resource Centre
Osizweni Education and Development Centre
Soweto Science Centre
Isibusiso Esihle Science Discovery Centre
Sci-Bono Discovery Centre
Mothibistad Science Centre
Mondi Science, Career and FET Skills Centre
Unizulu Science Centre
North-West University Science Centre Potchefstroom
Arcelor Mittal Science Centre Newcastle
SAASTEC
Southern African Association of Science & Technology Centres
Boyden Observatory Science Centre
KZN Science Centre
Arcelor Mittal Science Centre Saldanha
University of KZN Science and Technology Centre
Cape Town Science Centre
Olwazini Discovery Centre
South African Astronomical Observatory
iThemba Labs
SANSA Science Centre
Nelson Mandela Bay Science and Technology Centre
FOSST Discovery Centre
Arcelor Mittal Science Centre Sebokeng

Enkosi
Thank you
Re a leboga
Siyabonga
Dankie

Michael Ellis
michael.ellis@saasta.ac.za

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