



*Applying scientific thinking
in the service of society*

The role of Science Diplomacy, with reference to the German-S.A cooperation

Siyavuya Bulani

Colloquium on Energy for the Gauteng Megacity Region:

Retrospective and Prospective

Goethe Institute, Johannesburg

05 April 2019

Science Diplomacy

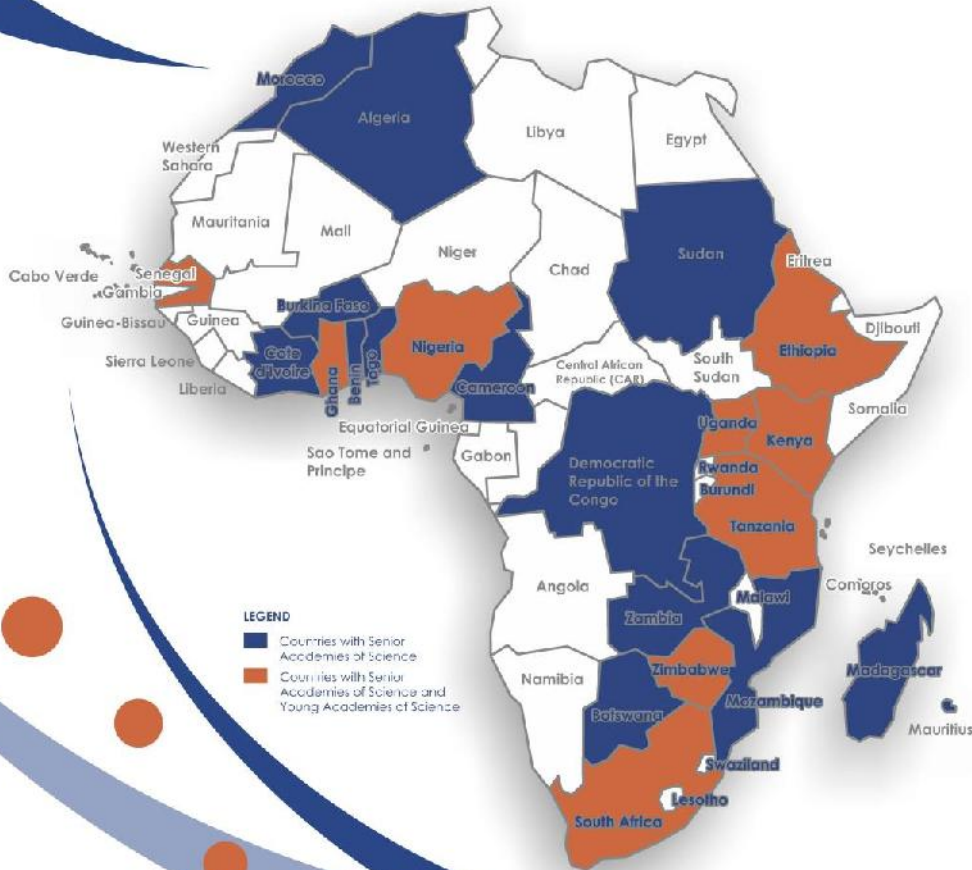
Three dimensions:

- **Science in diplomacy** – informing foreign policy with science advice. Priority is to ensure uptake of science advice.
- **Diplomacy for science** – facilitating international co-operation e.g. Large Hadron Collider, SKA.
- **Science for diplomacy** – using science cooperation to improve international relations between countries. “Soft power” of science.

Royal Society & AAAS (2010): New Frontiers in Science Diplomacy

INTERNATIONAL LIAISON PROGRAMME

SUB-PROGRAMME: AFRICAN COLLABORATIONS



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Science in Diplomacy Role of Science Academies

- Growing network of national science academies in Africa
- Networked through Network of African Science Academies (NASAC)
- Independence of science academies is critical in their science advisory role
- Varying capabilities of offering science advice
- Critical to build their capacity to offer science advice

Science in Diplomacy

Intergovernmental Network for Government Science Advice

- Established in 2014
- INGSA-Africa was created in 2016 after workshop hosted by ASSAf in Hermanus
- Primary objectives
 - to improve the use of evidence in informing public policy
 - to raise awareness about need for science advice discussions at all levels of government
- Platform for sharing experiences, building capacity and researching practices across diverse global science advisory systems

Science in Diplomacy

Science can present evidence to solve disagreements between countries e.g. **Grand Ethiopian Renaissance Dam (GERD)**

–Being built on Blue Nile in Ethiopia – capacity of 74 billion m³

–Sudan & Egypt concerned about impact on water supply

–Science critical to resolving dispute

- Can negotiate to extend period for filling dam (from 5-7yrs to 9-12 yrs)
- Can negotiate to lower height of dam wall to reduce capacity
- Can negotiate to not reduce flow during agricultural season

–Egypt investigating alternatives e.g. treatment of sewage water; diverting water from lake Victoria; desalination

–**Ultimate solution lies in greater cooperation between Basin Countries**

→ **Integrated Food-Energy-Water Plan**



Science in Diplomacy

- Clear that greater scientific cooperation is needed between neighbouring countries if we are to address transboundary and development challenges
- Yet scientific cooperation between African countries is underdeveloped

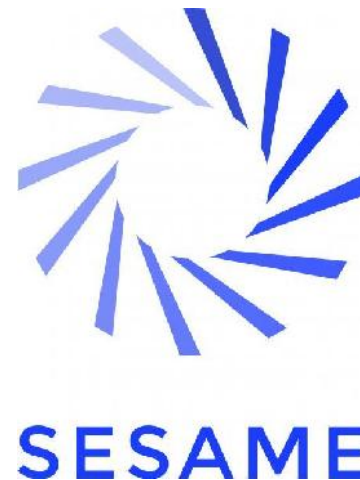


Diplomacy for Science

- Been used to facilitate international cooperation
- Ranges from facilitating permits for scientists to collect specimens to facilitating major international science projects
- Scientists would not have been able to undertake their work if governments did not cooperate
- Science diplomacy advances scientific objectives
- May involve scientific cooperation between scientists from countries that have poor political relationships

Diplomacy for Science

- Examples:
 - Square Kilometre Array (SKA)
 - SESAME synchrotron facility in Jordan
 - African Institute of Mathematical Sciences (AIMS)
 - PanAfrican University
 - African Open Science Platform (AOSP)



Diplomacy for Science

International agreements e.g. Climate Change, Montreal Protocol

- Often said that science diplomacy has failed in area of climate change
- But science diplomacy has led to African Group of Negotiators (AGN) that articulate Africa's negotiating position on climate change

Promotion of international co-operation e.g. SA

- 3 international offices based at SA missions in Brussels, Moscow and Tokyo
- Secondment of S&T official to SADC and AU

Obama's Africa Summit – 2014

- Obama met with heads of state
- US National Academies convened meeting of African science academies

Science for Diplomacy

- Science is a good way to engage at diplomatic level
 - Share common language, common methods, it is collaborative and addresses major challenges
- Science diplomacy is a strategic answer for democratic countries – Bruce Alberts
- Science for diplomacy role has not been exploited much in Africa

Why SD is important for Africa

Africa's present patchwork of diverse and underdeveloped nation-states needs SD more than any other region in the world

- Most economies are small and poor
- 15 are also landlocked with poorly developed cross-country connections

Small domestic markets and continental fragmentation → lack of scale economies in the production and distribution of goods & services.

Why SD is important for Africa

- SD can help identify, address, defuse & solve many cross-border or borderless problems, e.g.
 - managing **shared natural resources**
 - resisting & repelling international terrorism and addressing its cohort of humanitarian issues – **maintaining peace & security**
 - controlling & eradicating **human and animal pandemics**
 - promoting democratic principles & institutions, popular participation & **good governance**
 - nurturing & fostering **sound academic & scientific foundations**
 - achieving **economic, trade, social & political collaboration, coordination & convergence**

German-South Africa Science Cooperation

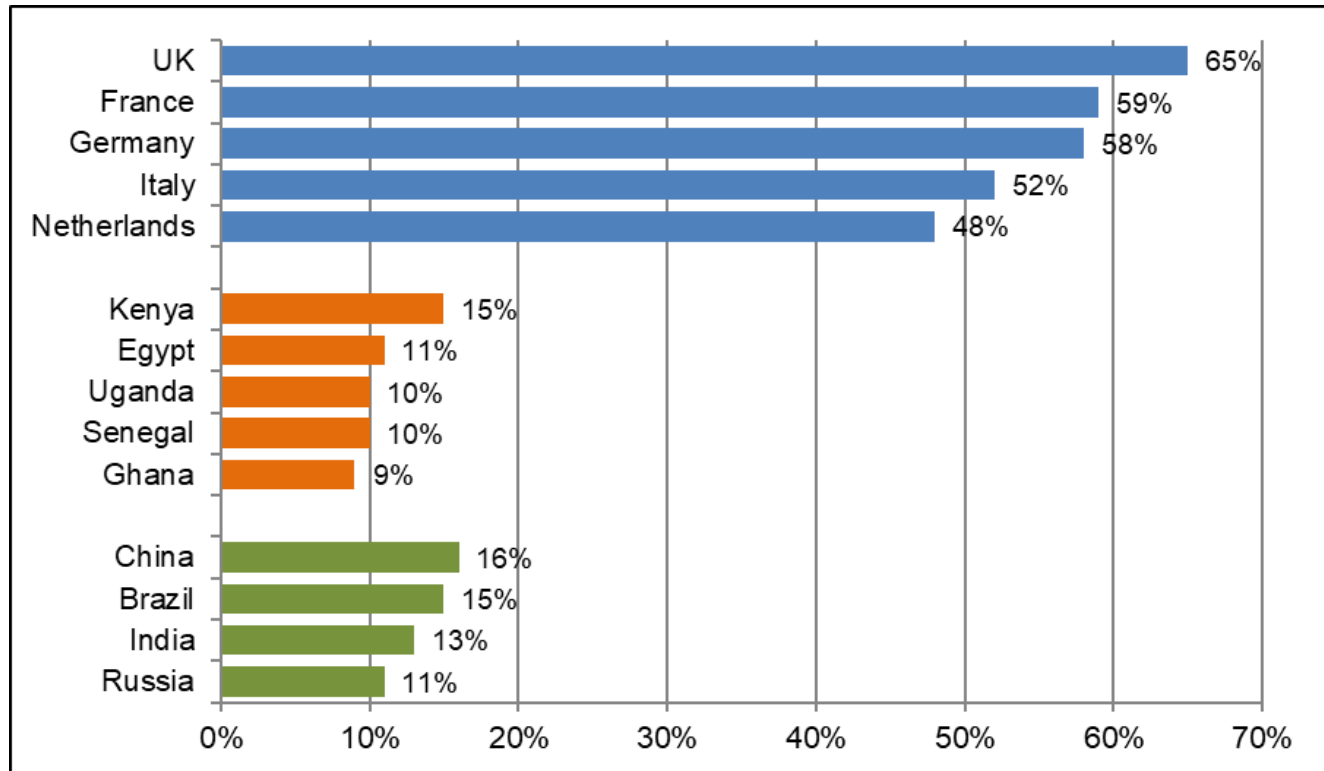
- With a budget > € 50 billion over 7 years (2007-2013), FP7 one of the largest sources of funding for scientific research in the world (additional €2.7 billion for Euratom)
- Budget for the FP7 represented a 41% increase from FP6
- FP7 was designed to support research activities of importance to EU



Insights into South Africa's Participation
in the 7th Framework Programme for
Research and Technological Development of the European Commission

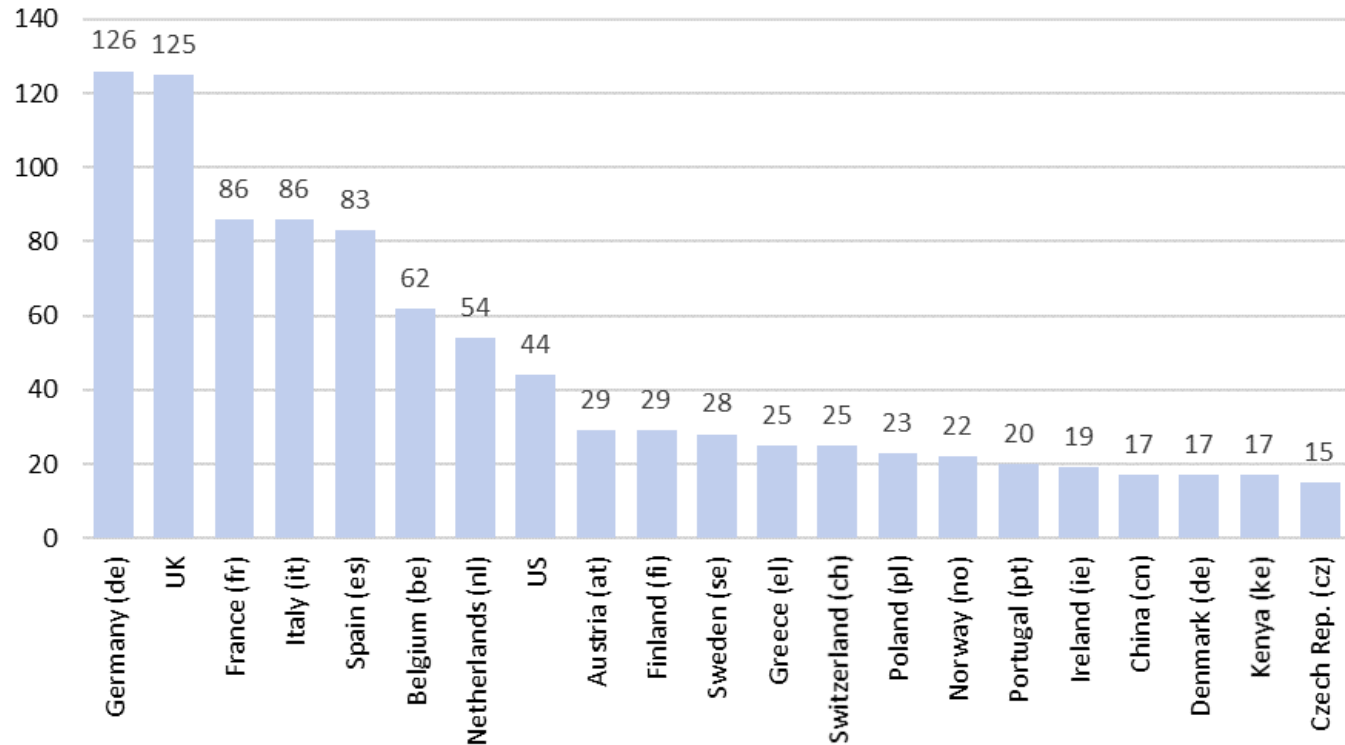
October 2015

7th Frame Work Programme



Collaboration of EU countries (top 5), African countries (top 5) and four BRICS countries in South Africa's FP7 projects (N=122)

Horizon 2020



Countries with the largest numbers of organisations participating in South African H2020 projects

PROCEEDINGS REPORT

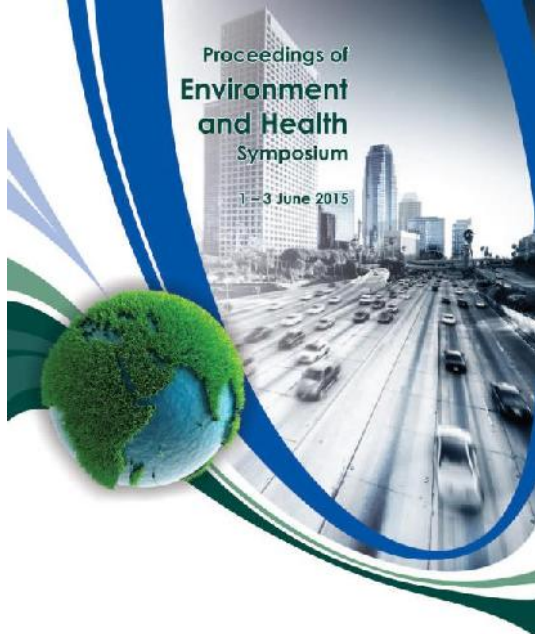
TECHNOLOGICAL INNOVATION FOR A LOW CARBON SOCIETY CONFERENCE

ASSAf-Leopoldina

- German-South Africa Year of Science: 2012
- Findings for policymakers:
 - Importance of links between government & private sector.
 - Energy policies to consider the energy-water-food nexus.
 - Government to lead renewable energy.
 - Energy efficiency is the first and the cheapest step to a low carbon future.

Proceedings of
**Environment
and Health
Symposium**

1 – 3 June 2015



**Neonicotinoids and their Impact on Ecosystem
Services for
Agriculture and Biodiversity in Africa**

Proceedings Report

14 to 16 November 2018

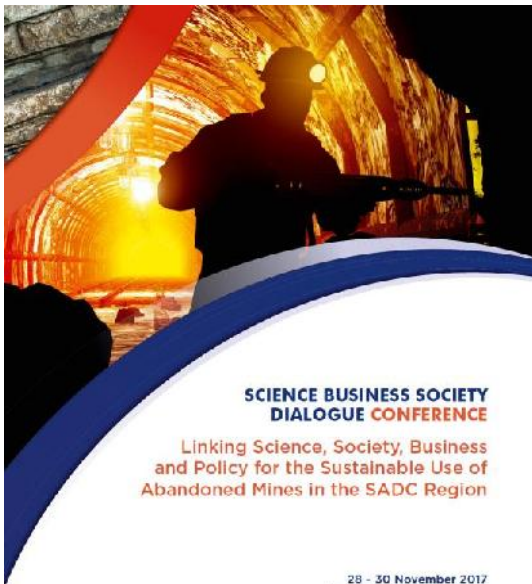
Leriba Hotel, Gauteng, South Africa



**Surveillance and Response to
Infectious Diseases and
Comorbidities: An African and
German Perspective**

Southern Sun Elangeni & Maharani, Durban

11 – 13 April 2018



**SCIENCE BUSINESS SOCIETY
DIALOGUE CONFERENCE**

Linking Science, Society, Business
and Policy for the Sustainable Use of
Abandoned Mines in the SADC Region

28 - 30 November 2017
Indaba Hotel, Johannesburg,
Gauteng, South Africa



**Science Business Society
Dialogue Conference**

Strengthening the Science Business
Society Dialogue in the SADC Region
6 - 7 December 2016

CSIR International Convention Centre
Pretoria, South Africa



Current Activities

- Statement on “Air Pollution and Health”.
- Mental Health Symposium: “Global Mental Health in an Era of Sustainable Development and Policy Priorities”.
- Energy Efficiency and Energy Storage Symposium: “Research and Innovation in Energy Efficient and Energy Storage Technologies in an Era of the Fourth Industrial Revolution”.
- Lindau Nobel Laurates Meetings

Science Diplomacy

“Science knows no country because knowledge belongs to humanity, and is the torch which illuminates the world”

Louis Pasteur 19th century chemist

THANK YOU