

Science for Development

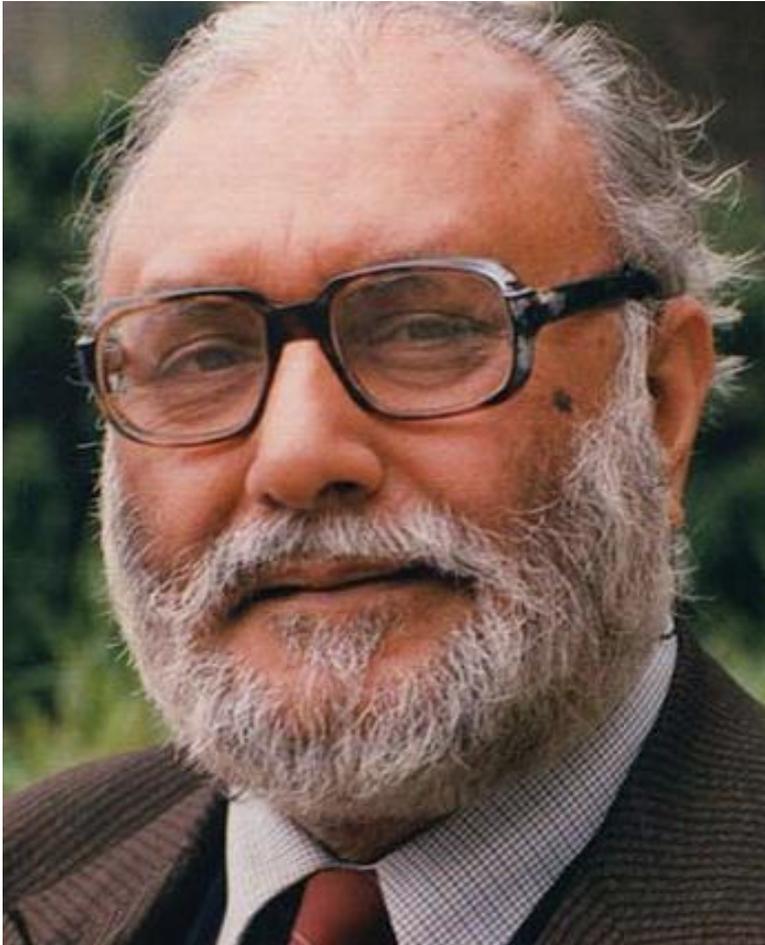
How can we bridge science and society?

Romain Murenzi, Executive Director
The World Academy of Sciences (TWAS)

Science Agora 2014

Japan Science and Technology Agency | Tokyo, Japan – 07 November 2014

A dream of science in the South



“...with man’s recent mastery of science and technology there is no physical reason left for the existence of hunger and want for any part of the human race.”

– Abdus Salam (1963)

A voice for
science in
the South

Today, TWAS is



The World Academy of Sciences
for the advancement of science in developing countries

a global academy with

- 1148 elected Fellows
- 94 countries
- 113 women
- 15 Nobel laureates

TWAS's
guiding
principle

Countries – and their
people – benefit by
building strength in science
and engineering



TWAS's
guiding
principle

Based on

- international goodwill
- shared interests

TWAS and partners are
working together to build
science capacity

Bridging science and society

Q: What are the new roles and responsibilities of science in the

A: Science, engineering, technology and related education are essential for development

Bridging science and society

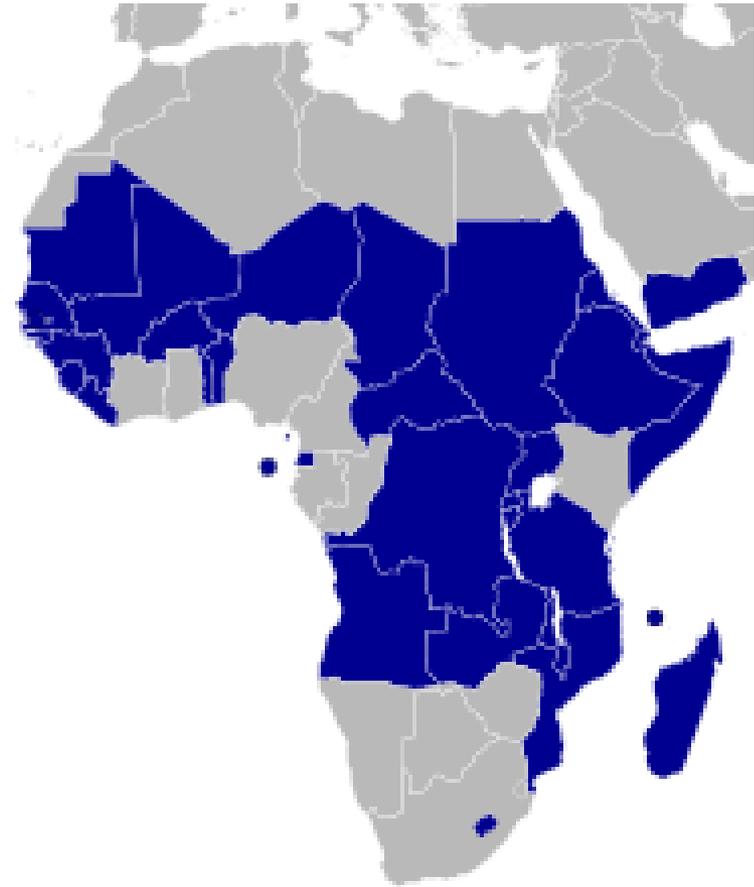
By developing its S&T capacity, a nation is better able to address challenges in areas such as agriculture, climate, health and energy

Africa: A time of historic challenge

Of the world's

48

Least Developed
Countries...



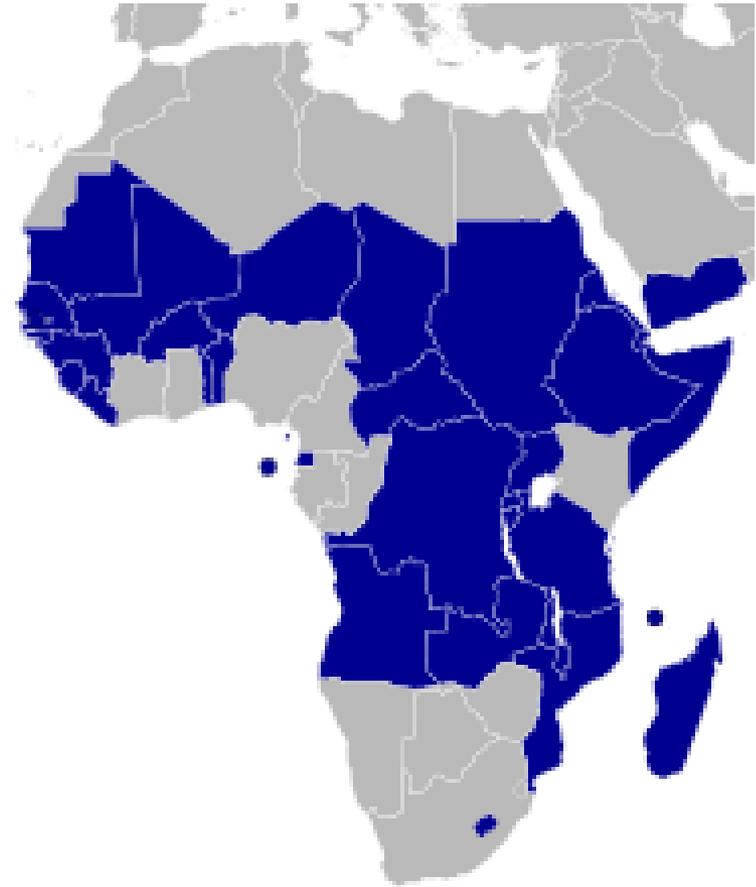
Africa: A time of historic challenge

Of the world's

48

Least Developed
Countries...

34 are in Africa



African challenges: Population

- Africa today has 1.1 billion people – 14% of the world's population
- Population could increase to 2.4 billion in 2050...



African challenges: Population

- In 2010, about 200 million Africans between 15 and 24 years old
- By 2050, over **450 million**



Africa: A central challenge

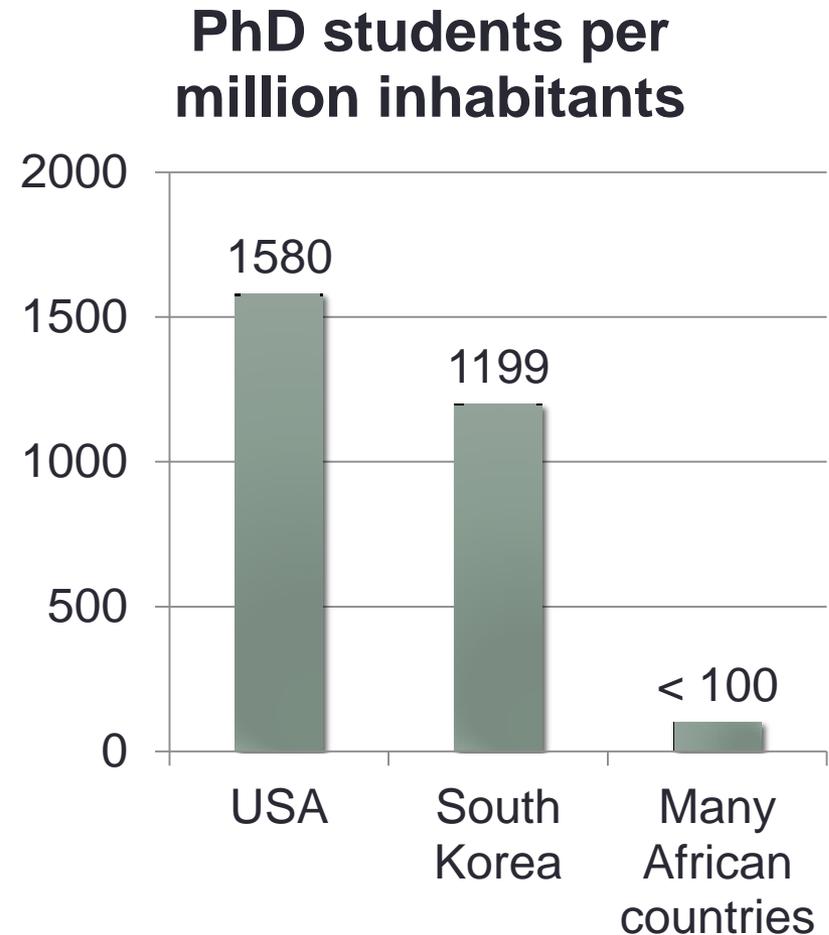
- Young people represent an enormous potential resource.
- Africa will need hundreds of thousands of new scientists and engineers in the coming decades...

Africa: A central challenge

But Africa's educational system currently does not have the capacity to teach and train them.

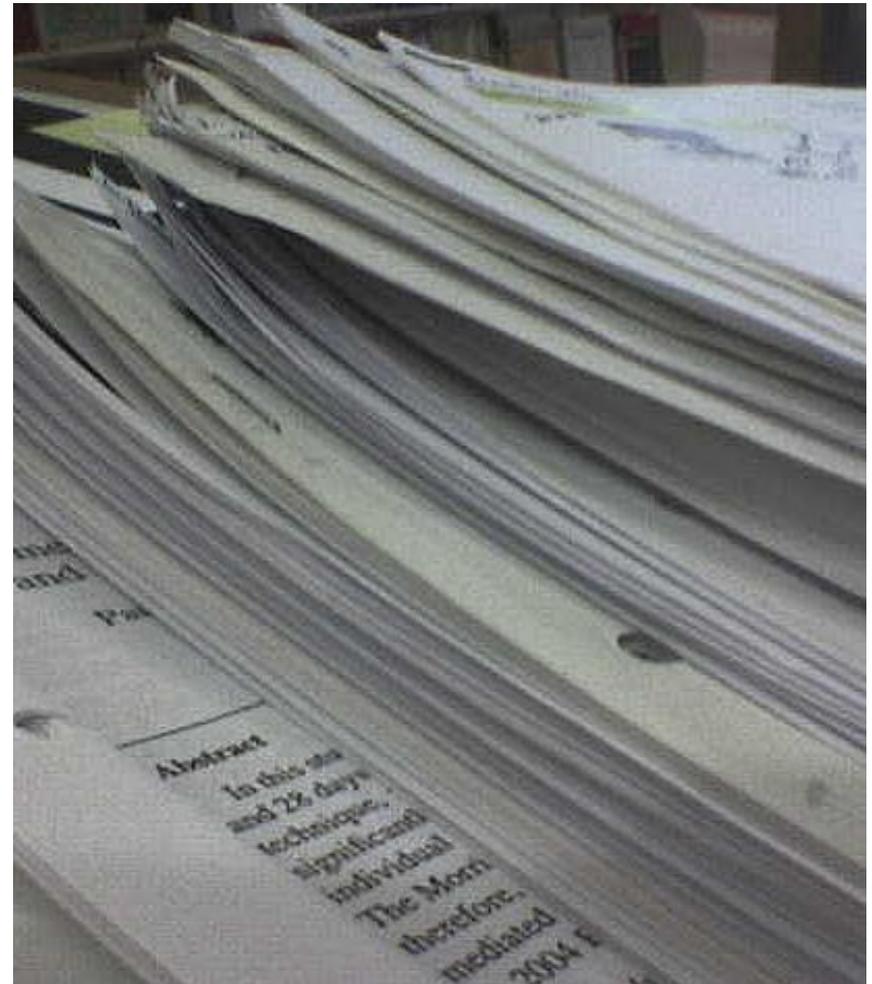
African challenges: The PhD deficit

- Many nations of Africa have fewer than 100 PhD students per million population
- Some have **fewer than 20**



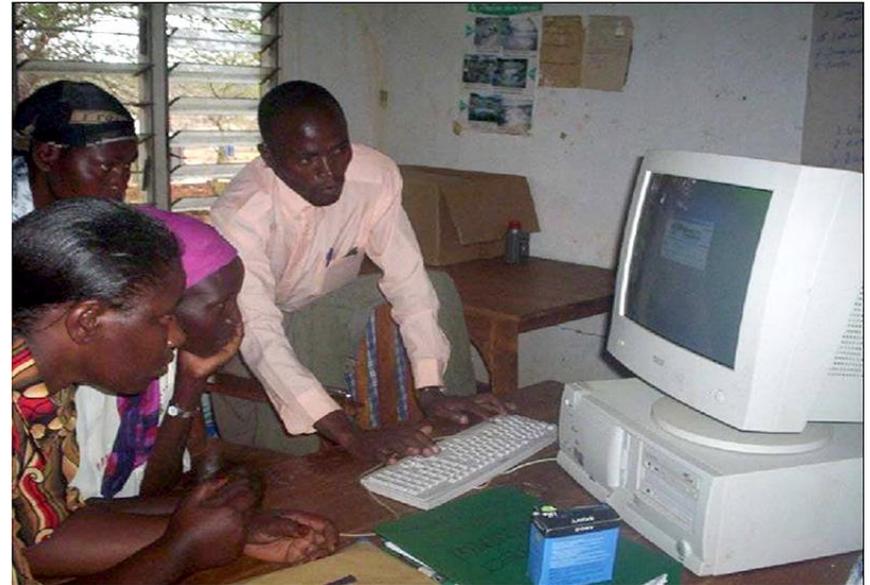
African challenges: Scientific output

- Africa accounts for only **0.8%** of global R&D expenditure
- only **2.4%** of global research publications



African challenges: ITC

- Of 40 countries that rank lowest in ICT development, 30 are African.
- The 22 countries that rank lowest for ICT development are all African.



Bridging science and society

Q: How can global communities

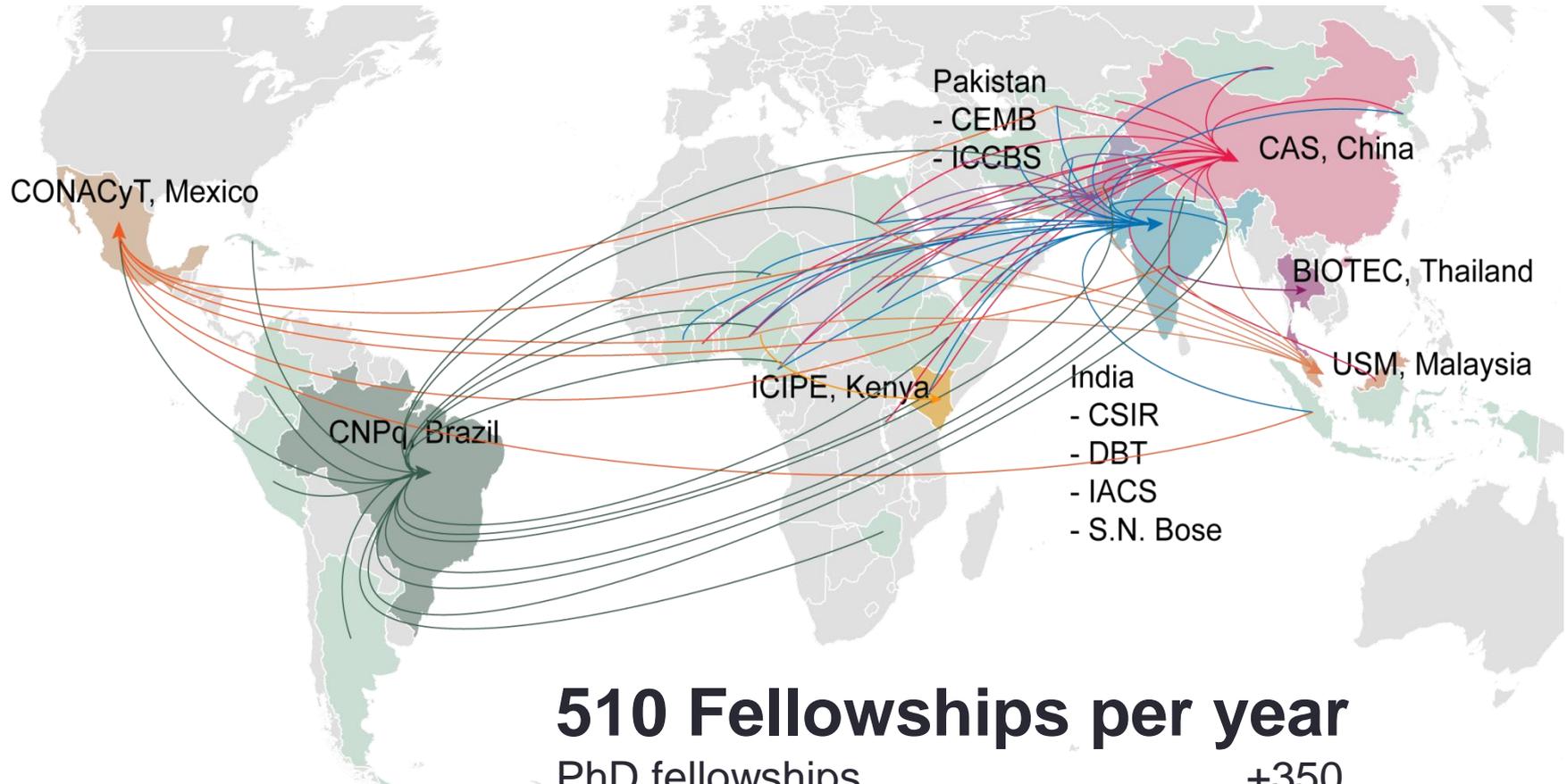
A: From local schools to global policy bodies, many institutions and leaders can work to bridge science and society

TWAS's guiding principle



Educating and training PhD-level scientists helps a country not only in research and education, but also in science policy, business and international relations.

TWAS Fellowships



510 Fellowships per year

PhD fellowships	+350
Postdoctoral fellowships	125
Visiting researchers/professors	45

TWAS Research Grants

About USD1.5 million per year to scientists in the developing world



Virima Mudogo,
Department of Chemistry,
University of Kinshasa,
Dem. Rep. of Congo
*Macromolecules extracted
from indigenous medicinal
plants with potential
antimalarial or anti-sickle
cell anaemia effects*

Partners:
The key to
success

TWAS initiatives are carried out with partners in 20+ nations:

- Governments
- Universities
- Academies
- Associations
- NGOs

TWAS General Meetings



- October 2014: Muscat, Oman
- October 2013: Buenos Aires, Argentina
- October 2012: Tianjin, China

High-level global policy initiatives



Millennium Development Goals 2000-2015

- UN-driven initiative focused on poverty, health and sustainability
- Endorsed by 189 nations and 23 major organizations

Sustainable Development Goals 2016-2030

- Now in development under umbrella of UN process

High-level global partnerships



UN Science Advisory Board

- 26 members from 25 countries appointed to provide advice director to the Secretary-General
- Four are TWAS Fellows

Science Diplomacy



- Building higher education to support science in Africa
- ITER fusion energy project – 7 nations, including Japan
- US-Cuba 2014 agreement
- Hungary – World Science Forum
- Jordan – hosts SESAME synchrotron

twas



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