



*Driving Scientific and Technological Innovation in Africa*

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# Role of science academies in development in Africa

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# Presentation outline

- Brief background of the African Academy of Sciences
- Introduction to the presentation
- The history of STI development in Africa
- Africa's awareness of challenges and belief in Science
- Science Academies in AFRICA
- Important roles of science Academies
- Making impact
- Important things to note
- Conclusion

Founded in 1985 in Trieste, Italy with 33  
Founding Fellows

## Vision

To be the engine for driving sustainable  
scientific and technological development  
and human wellbeing in Africa

## Mission

To serve, first, as an honorific society with the primary function of honouring African science and technology achievers and, second, as a development-oriented mobilizer of the entire African science and technology community with the fundamental role of facilitating the development of scientific and technological capacity for science-led development.



The late Nobel laureate M. Abdus Salaam  
speaking at the founding of AAS



Thomas Risley Odhiambo, 1931-2003  
First president of AAS

# Introduction

- Science drives development and improves the lives of people everywhere
- In 1960, Ghana's GDP per capita (USD 181) was similar to that of South Korea (USD 155)
  - 2011 GDP per capita: Ghana = USD 1,570; South Korea = USD 22,424
  - 2011 R&D spending per % of GDP: Ghana < 1%; South Korea = 3.0%
- Investments in Research and Development
  - Global R&D expenditure = 2.5%
  - Industrialized countries = 2.9%
  - Newly Industrialized Countries = 1.9%
  - Developing countries = 0.6%
  - Sub-Saharan Africa = 0.3%
- **The “Have and Have-nots” have become synonymous with the “know and Know-nots”**

# History of STI development in Africa

- The first tool-making industry called “Olduwan” was developed about 2.3 million BC by the ‘homo habilis’ in East Africa
- Acheulean stone tool industry emerged in Africa in 1.5 million BC
- Around 1200 BC, use of iron in smelting and forging for tools was happening in West Africa
- Invention of the calendar and the basis for the modern astronomy is traced to stargazing some 40,000 years ago by “Paleolithic Africans”; which transformed into a systematic observational science in Nilotic lands of Africa between 6,000 and 12,000 years ago
- Did Africa keep the momentum and interest in science, technology and innovation?

# Africa's awareness of challenges and belief in science as a critical solution

- Lagos Plan of Action for the Economic Development of Africa, 1980–2000; 1980
  - Following The Monrovia Declaration, 1979 ,to hold of an Extraordinary Session to consider economic problems facing Africa;
  - African governments should commit 1% GDP to R&D
- Africa's Science and Technology Consolidated Plan of Action (CPA); adopted by African ministers of S&T in 2005; endorsed by AU heads of state and government in 2006
- Addis Ababa Declaration on Science Technology and Scientific Research for Development, 2007
- Nairobi ministerial declaration, 2012
  - STI for youth Employment , Human capital Development and Inclusive Growth.

# Despite the awareness and belief . . .

- Only 3 countries (Malawi, Uganda and South Africa) in Africa spend close to 1% of GDP on Research and Development (R&D)
- South Africa and Senegal have the highest percentages of PhDs among their R&D staff, scoring 32% and 26%, respectively.
- Less than 10 percent of sub-Saharan Africa has Internet access
- In Sierra Leone, 3 persons per 1,000 are Internet users; there are 387 in every 1,000 people in Seychelles
- For the period 2005-2009, Namibia had the highest number of computers, at 239 computers per 1,000 people; and Niger the lowest at 1 per 1,000.



# Science Academies in AFRICA

- 17 science academies in Africa
  - Including the African Academy of Sciences (AAS)
- General Roles
  - The scientific eyes of the society
  - Provide impartial, credible, science and technology-based assessments of issues
  - Guide policy makers in making informed decisions in science and technology for sustainable development
- **NB: Close enough to government to work with it but far enough not to lose its ability to think professionally and independently**

# Important roles of science Academies - 1

- To mobilize the most talented minds
  - core of educated people who can serve as local adaptors of the expanding world science and technology knowledge base
  - Fellowships; AAS Fellows
    - Medicine                      Mathematics                      Physics                      Biochemistry
    - Sociology                      Anthropology                      Information sciences
    - Architecture and Urban Planning
  - RANDFORUM (Research and Development Forum for Science-led Development in Africa) of AAS
    - Platform for periodic meetings between African Presidents with their S&T advisors and businessmen and industry players and the academia to deliberate on science and technology-led development.

# Important roles of science Academies - 2

- To constitute think-tanks that will engage and advice policy makers in developing the right enabling policies
  - Bring the rich resources of science to bear on the most pressing problems of the continent
  - In the face of competing demands and choices by governments:
    - Demonstrate with facts to our leaders for them to believe strongly in the value of investments in STI;
    - All expenditures are not the same; only investments in S&T based on the best evidence yield the most optimum dividends
  - Academies should not shy from taking a stand where scientific evidence supports a particular policy approach
    - AAS published over 40 monographs on key issues affecting Africa

# Important roles of science Academies - 3

- Contribute to the development of a scientifically enlightened community
  - Explain the importance science and its benefits to society
    - AAS public lecture
  - Package scientific information in a form that is accessible and understandable to the average African
    - Discovery and Innovation (D&I) Journal
    - Whydah Newsletter
  - Ensure an effective and meaningful science education for Africa by leading in developing National Science Education policies
    - Microsciences Project

# Making Impact

- For African Science Academies to be the most competent bodies to advise governments
  - The academies must reposition themselves
    - Adopt trans-disciplinary approach to address emerging challenges
    - Current issues confronting Africa, for e.g. climate change, cuts across disciplines
  - African science academies need to bring together the diverse disciplines to bear on Africa's issues

# Worthy to note that . . .

- For the Science Academies to efficiently perform their roles
  1. They must be connected to government decision making
  2. There must be regular funding
  3. There should be a plan to build capacity for the future; mentoring of young scientists
  4. There must be strong relationship between the Science Academies and industry

# New developments at AAS

- AAS Strategic Plan 2013 – 2018 at final stages
- From the 5th African Union Ministerial Conference on Science & Technology (AMCOST V), Nov 12 – 16 2012, Congo (Brazzaville)
  - Resolution Paragraph 2.3.6:
    - “AMCOST notes the work presented by the African Academy of Sciences (AAS) and urges the (African Union) Commission to closely work with the AAS to tap from the pool of expertise, as a think-tank in the implementation of the CPA and setting up of panels of experts to undertake reviews and foresight studies, and assisting in running competitive prizes/awards under the auspices of the AU Commission”

# Conclusions

- Important roles of science Academies
  - Mobilize the most talented minds
  - Dialogue with leaders for the right enabling policies
  - Strive for development of scientifically enlightened community



# Thank you

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