

# Leverage of Innovative Finance and Partnerships on Science, Technology and Innovation in Africa

**Diran Makinde**

**NEPAD Planning and Coordinating Agency/ABNE**

**Ouagadougou, Burkina Faso**

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NEPAD Planning and Coordinating Agency



# NEPAD: Historical background

- OAU Extraordinary Summit in Libya (September 1999)
- Appointment of Steering Committee and development of MAP initiative (September 2000) by Presidents MBEKI (ZA), OBASANJO (NG) and BOUTEFLIKA (AL) & MUBARAK (EG)
- OMEGA Plan by President WADE (SN)
- Mandate for merger of MAP with OMEGA Plan and ECA Compact Initiative for Africa's Renewal (OAU Extraordinary Summit, Libya, March 2001)
- Merger completed on 3 July 2001



## Historical background

- Presentation of the NAI to the OAU Summit in Lusaka and approval by Summit on 11 July 2001
- Mandated the establishment of a Heads of State and Government Implementation Committee
- Presentation to the G8 Summit, Genoa, Italy (20 July 2001)
- First meeting of HSGIC in Abuja, Nigeria, October 2001 and name NEPAD adopted



## What is NEPAD?

- NEPAD can be defined as “a pledge by the African Heads of State and Government to eradicate poverty and to put their countries, both individually and collectively, on a path of sustainable growth and development”.
- NEPAD is a vision and a programme of the African Union, for Africa’s development
- NEPAD is not a Plan but a planning framework
- NEPAD is not a development nor a funding institution



# NEPAD principles

- African ownership and leadership
- Anchoring the development of the continent on the resources and resourcefulness of the African people
- Accelerating and deepening of regional and continental economic integration
- Building the competitiveness of African countries and the continent
- Promotion of partnerships with the private sector, the civil society and the international community
- A new partnership with the industrialised world and multilateral organisations based on mutual respect and mutual accountability.



## NEPAD priorities

- Peace and Security (management, prevention and resolution of conflicts)
- Political Governance and Democracy
- Economic and Corporate Governance
- Human Development, including Health, education,
- Regional infrastructure: Energy, Transport, Water and Sanitation, and Information and Communication Technology
- Science and Technology
- Economic integration and intra-African trade
- Market Access, Agriculture and diversification of production and exports
- Capital flows



# NEPAD governing structures

- The General Assembly of the African Union
- Heads of State and Government Implementation Committee
- Steering Committee
- NEPAD Secretariat



# The AU/NEPAD Agenda for S&T

## The Africa's S&T Consolidated Plan of Action

The CPA is a set of programmes and projects reflecting the combination of two main plans from both AUC/HRST and the NEPAD Secretariat.

It supports the efforts and needs of African governments via their Ministries in charges of S&T but also African experts' regional consultation outcomes to address the issue of:

1. Poverty eradication and sustainable development
2. African contribution at the global level in terms of Scientific knowledge and technological innovations.





# The African Biosciences Initiative (ABI)

Representing the first programme cluster of the 5 existing, ABI is especially focusing on:

- Conservation & Sustainable use of biodiversity (Flagship programme 1)
- Safe development & Application of biotechnology (Flagship programme 2)
- Securing and using Africa's Indigenous knowledge base (Flagship programme 3)

ABI is actively operational in Africa through networks, Hubs and Nodes.

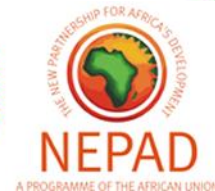
These networks are in North, East and Central, West Africa and South Hemisphere.



# The ABI Network Model

The Hubs are either international or regional institutions but represented by a significant mass of scientists.

The nodes are like hubs but bcos their comparable advantage will focus specifically on thematic areas for the Network. There are some xteristics:

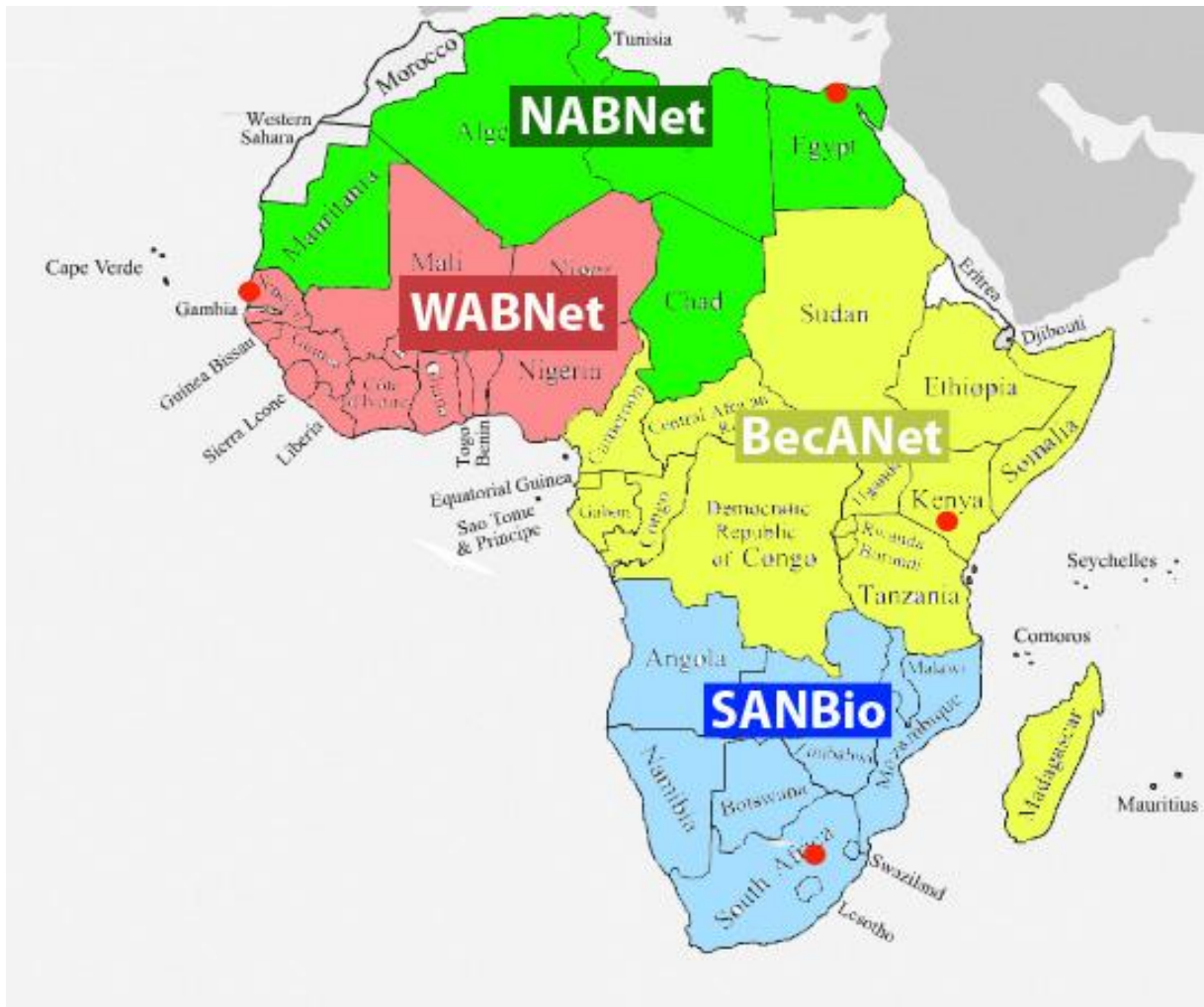


# ABI Nodes

- It is regionally important and fulfills national development priorities
- It has a particular strength, e.g. capacity/competency in a particular technology
- It has established a culture for collaboration, regionally and internationally
- It has potential (e.g. based on its geographical location) to provide an operational focal point outside the hub to service other members of the network
- It currently has the human capacity that can help support the out-scaling of key activities/initiatives
- There is a clear indication of political (national) support for the institution as indicated by (trends in) levels of activities
- It demonstrates that the research work being done in the institution contributes to improved food security and/or environmental sustainability within the region
- It demonstrates a potential for collaboration, networking and the involvement of regional biosciences activities.



# NEPAD/ABI S&T Networks



# *The NEPAD Agency as it is now*

## **NPCA (NEPAD Agency)**

- A programme of the AU
- Implementation/ technical arm of the AU
- Headquarters - Midrand, South Africa
- Transformed from the NEPAD Secretariat to **NEPAD Planning and Coordinating Agency (NPCA)**

## **NPCA's Thematic Areas**

1. Agriculture and food security
2. Climate change & sustainable development
3. Regional integration & infrastructure
4. Human capital development
5. Economic & corporate governance
6. Cross-cutting issues



# What is NEPAD?

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## NEPAD Thematic Areas

Agriculture and Food Security

Regional integration and infrastructure

Climate Change and Natural Resource Management

Human Development

Economic and Corporate Governance

Cross-cutting issues



## What is NEPAD?

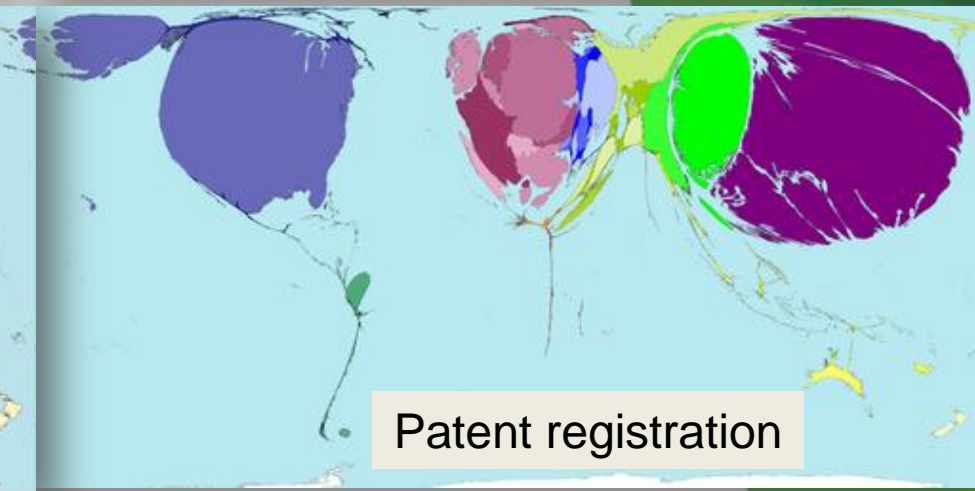
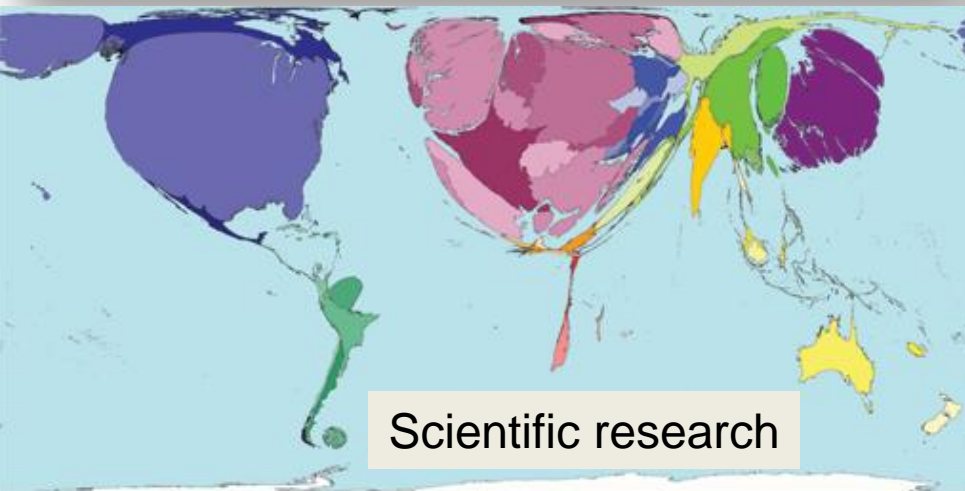
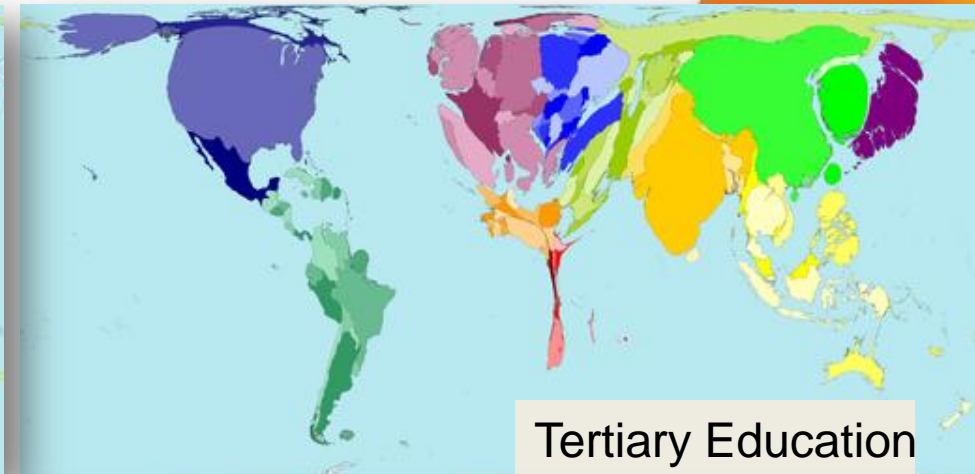
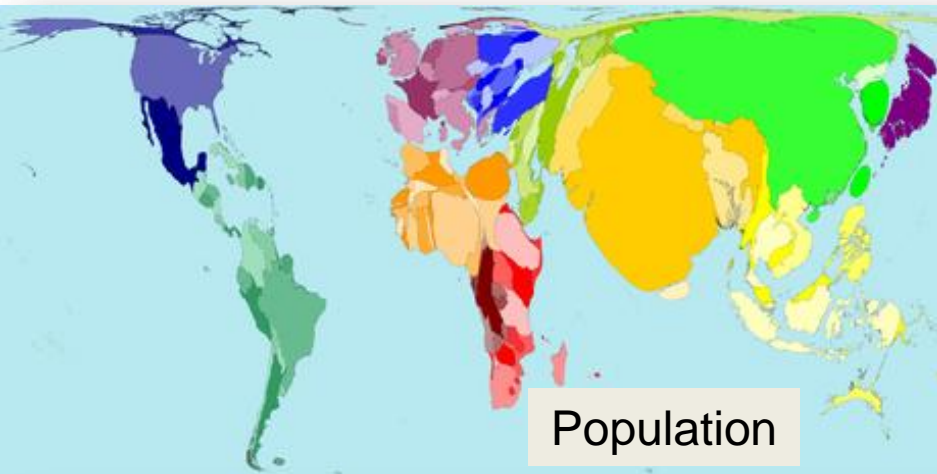
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### Nepad Agency Mandate

- ✓ Facilitate and coordinate the implementation of continental and regional priority programmes and projects
- ✓ Mobilize resources and partners in support of programmes and projects implementation
- ✓ Monitor and evaluate the implementation of programmes and projects
- ✓ Conduct and coordinate research & knowledge management
- ✓ Advocate on the vision, mission and core values of the AU and NEPAD Programme.



# Science & Technology Performance – a function of Value-addition to Human Capital



Source: [www.worldmapper.org](http://www.worldmapper.org)

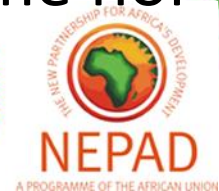
“... in the final analysis it is basically the mystery and utilization of modern science and technology which distinguishes the South from the North”. Abdus Salam African Nobel Laureate, 1979



# A new map of the world: Jeffrey Sachs

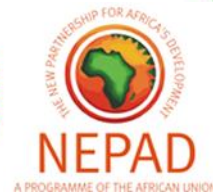
## *The Economist* June 24th 2000

- Today's world is divided not by ideology but by technology.
- A small part of the globe, accounting for some 15% of the earth's population, provides nearly all of the world's technology innovations.
- A second part, involving perhaps half of the world's population, is able to adopt these technologies in production and consumption.
- The remaining part, covering around a third of the world's population, is technologically disconnected, neither innovating at home nor adopting foreign technologies.

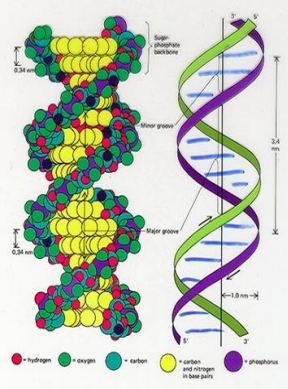


- The Greatest endowment any national can have is human capital.
- Human Capital with knowledge & skills (value-added Human Capital) is the key to development!

- Availability of other natural resources in itself is not as necessary and by no means a sufficient condition for Socio-economic development!



# Life Sciences and Bioengineering (LSBE)



Sustainable  
Agriculture

Health and  
Bio-Medical  
Sciences



Food  
Biotechnology  
& Nutritional  
Sciences

Life  
Sciences

Molecular Bio-  
Engineering

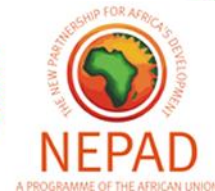
Bio-  
Engineering

Biodiversity  
Conservation &  
Ecosystems  
Management



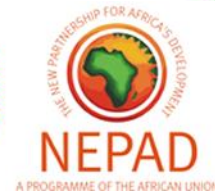
# Africa's investment in R&D

- “Africa’s sustainable development will depend more and more on its capacity to find innovative solutions to its particular problems, including in the area of food production, and its capacity to produce and market competitive, innovative products and services.” **UNESCO Science Report 2010** (p. 288)
- “In the final instance, however, Africa’s share of world science continues to decrease. The few African countries where scientific output is substantial and even growing are not as productive as other developing countries elsewhere in the world ...” **African Innovation Outlook 2010**(p. 107)



# Leverage of development partner support for ABI-Examples

- ABI 4 Networks-CIDA
- Medical Research Initiative-Kenya (Sida)
- Medicine Regulatory Harmonization- RSA (BMGF)
- Regulatory mechanism in GM Mosquito (Varied-BMGF)
- Additional support to ABI (SANBio) by the governments of South Africa & Finland; and Australia, and several other sources.



# Leveraging Innovative Finance

- **Climate Change** (Tanzania, Zambia, Mozambique, West and Central Africa sub-region)
- **Innovative and Market-Based Mechanisms (IMBMs)** (Tanzania, Zambia, Cameroon, Mozambique)
- **Aid for Trade** (Mali, Uganda, Burkina Faso, Rwanda, Senegal, Tanzania)
- **Public-Private Partnerships (PPPs)** (Kenya and South Africa)
- **Comprehensive stock-taking of innovative opportunities** (Eritrea, Zambia, Tanzania)
- **South-to-South Cooperation**
- **Microfinance** (Eritrea)



# External Factors

- **Political and economic situation across the continent**
- **Public pressure to find solutions**
- **Low levels of African investment in R&D across the continent**
- **Emerging appreciation of R&D as an engine for development**
- **Research capacity is mixed and evolving**
- **Building research capacity will continue to need support**
- **A continuing gender imbalance in research in sub-Saharan Africa**



# Challenges

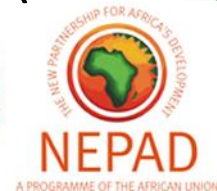
- R&D Infrastructure and Implementation capabilities
- Finding Mechanisms for Sustainable Programs
- Effective Utilization of Resources
  - Natural resources
  - Human resources
- Capacity Building
  - Human capacity
  - R&D capacity
  - Industry Capacity
- Specialization and Networking





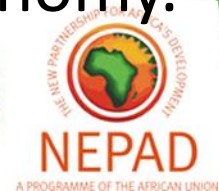
# Two essential elements for success: dynamic linkage & partnerships

- Efforts: How sufficient and how sustainable?
- Health Innovation Networks to help dev'g countries address neglected diseases. e.g. Developing Country Vaccine Manufactures Network; WHO Developing Countries' Vaccine Regulator Network; Dev'g countries need to move up the Public expenditure ladder; e.g. Developed countries average \$2,500/capital (2003) cf \$150 to \$10/capital in developing countries.
- Technological & social innovation: Dev'g countries need R&D partnerships & implementation research networks to play a more prominent role in global health (Gardner et al., 2007) Dev'g countries need to concentrate on areas of comparative adv for +ve growth; e.g. traditional health systems, areas that will yield the greatest returns. (Pareto's Law)



# Emerging appreciation of R&D as an engine for development

- “The target of a 1% GERD/GDP ratio, the level recommended by UNESCO and by the African Union Summit (Jan 2007). Even more worrisome is that many countries either have no record of the share of GDP they devote to R&D or simply allocate no funds at all to R&D. This is most saddening for a continent desirous to develop STI. “(p. 278)
- African countries have begun to recognize that, without investment in S&T, the continent will stay on the periphery of the global knowledge economy.



# Biotech Funding: South Africa Scenario

**GDP US\$ 11,400 Formal R&D Expenditure 0.87%**

**- Companies contribution 1.8% sales revenue**

**- Knowledge economy: key ingredient innovation-capacity to innovate internally and absorb external innovation with impact on the economy and society.**

**Developed new mechanisms for public funding of R&D**

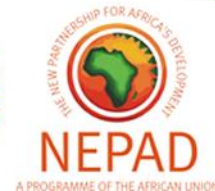
**-Technology and Human Resources for Industry Programme (THRIP)**

**-Technology push': 3 BRICs of \$240 million/year**

**-HSRC's Centre for Science Technology & Innovation Indicators in**

- collaboration with NRF, NACI, & CHE to provide strategic intelligence and analysis to support policy.**

*Source: OECD-Review of the South Africa's Innovation Policy (2007)*



# Biotech Funding: Sub-Saharan Africa Countries Scenario

- Gross expenditure on R&D less than 0.3% (some 0%)
- International donors provide 75% of R&D budgets
  
- Bilateral Donors: EU, DFID, USAID, DANIDA, GTZ, SIDA, CIDA, etc
  
- Foundations: Rockefeller Foundation, BMGF, Gatsby Trust Foundation, IFS, KirkHouse Trust (AATF for Agric Biotech Research and Training in Africa)
- World Bank
- Africa Development Bank
- Others: IDRC, IFAD, MAE (France), CTA, etc



# Political will vs. Financial Commitments

**Political will for biosciences is in Africa but no fund to support the knowledge-based development.**

**Funding is less than \$250,000/year in most AU countries.**

- **AMCOST developing legal instruments for African Science & Innovation Facility (ASIF) a distinct funding scheme for S&T in Africa in partnership with AU-NEPAD, ADB, and WB.**

**Other sources/possible sources of fund for R&D**

**AU : Maputo Declaration 10% of Agric GDP to R&D**

- **AMCOST: 1% of GDP to S&T**



# Conclusion

To create an enabling environment for S&T and development mainly requires:

- maximum capacity in terms of awareness, human resources and infrastructure;
- good governance for good innovation systems;
- leverage financial resources;
- establish follow-up mechanisms (monitoring and assessment);
- strengthen ST advice within African IGO institutions

NIS can enhance innovative performance in the knowledge-based economies where stakeholders share ideas to achieve the same goals.



# Conclusion (II)

- **Universities & Research Inst. in the AU member states need to be re-invented for innovations and PPP; piecemeal changes will not do.**
- **AU leaders must significantly increase public investments in biosciences R&D. Failure to do so will impair the continents' capacity to stay connected to global advances in biosciences and to transfer, adapt and exploit life sciences knowledge for the benefit of all citizens.**
- **Regional approach to disease control be adopted.**
- **With NEPAD Agency, it is no longer 'business as usual'**

