United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

Building the critical mass of in STI capacity in response to emerging needs of Africa

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Outline

- Introduction
- Where we are
- Where do we want to go
- Why we need to advance
- How do we get there
- Who are to drive the processes

Introduction

- The worlds' population has almost tripled since 1945 and now stands at 7 billion habitants resulting in :
  - rampart urbanisation,
  - over-exploitation of some natural resources,
  - accelerating pollution and environmental degradation
  - relative aging of some population
- Half of the world population is under 25 years
- Youth bet 15-19 years is 1 billion in 2010 and growing
- Young people have to cope with consequences of unsustainable use of the earth and its resources

UNESCO Education for All Monitoring Report - Africa

- Global youth literacy stands at 90% in 2005-2010 indicating that the world will not achieve the target to eradicate illiteracy by 2015
- In absolute terms 45 million illiterarte young people live in SSA
- Completing primary school does not guarantee literacy for all

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Introduction

- The World's economies are undergoing a fundamental transformation to knowledge-based industries
- The role of government is changing. The democratic process is making the decision-making process more complex.
- Skills development is wise investment because it is vital to reduce unemployment, inequity, and poverty and increase economic growth
- The capacity of countries to compete in the global market depends on their ability to:
  - innovate,
  - harness their human capital and natural resources
  - apply the relevant technology for socio-economic development.

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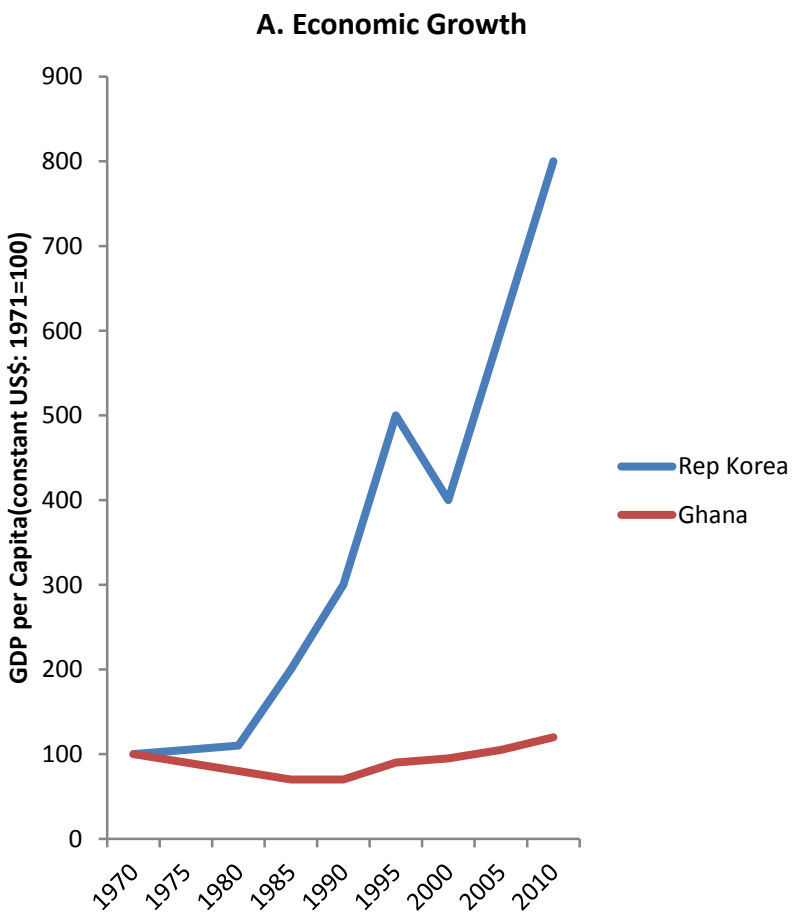
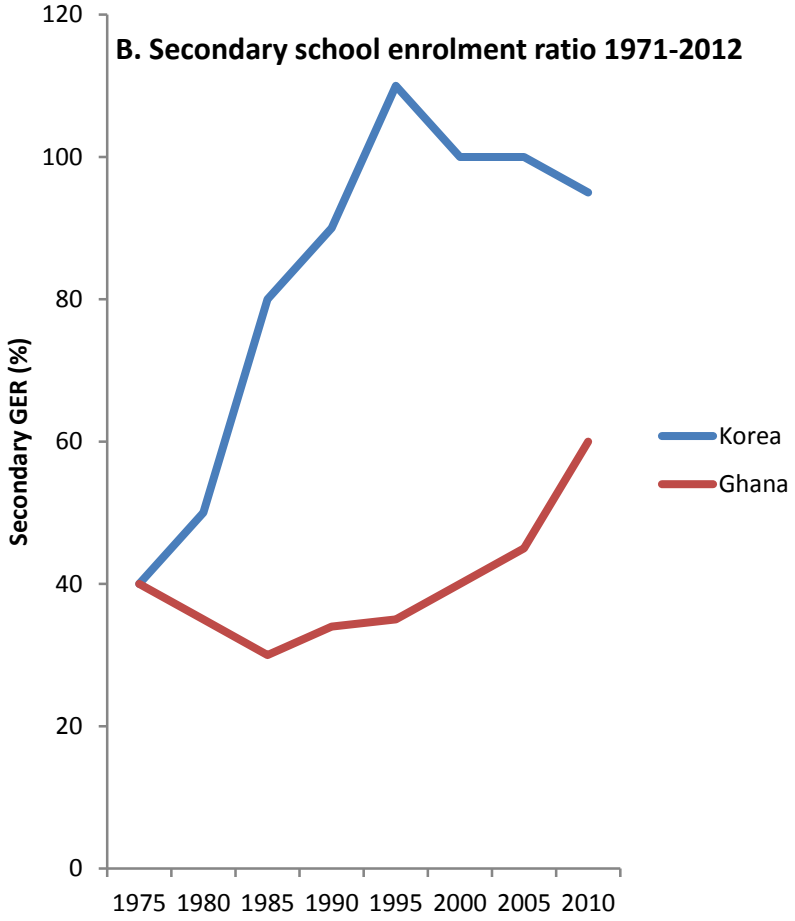
Investment in skills development and economic growth in Korea and Ghana 1970-2010





Lessons learnt comparing Ghana and Rep of Korea

- Effective education, skills training and policies
- Impressive economic growth making Korea high income country, while Ghana is middle income country with economic growth at 8%
- Korea's sound economic policies coordinated with government investment in education and training that meets the needs of the labour market
- Korea invested in knowledge-base economy , Ghana like most SSA countries were reliant on export of minerals or agricultural produce or raw material

Lessons learnt

- Countries need to respond with policies, programmes, institutions and partnerships which maximize their economic opportunities while sustaining the social fabric.
- Governments must re-evaluate not only where they spend their S&T resources but also how they can spend their resources more effectively.

- They also need to focus on establishing partnerships, networks and an innovation system that enhances a country's ability to share knowledge and information.

Where are the opportunities?

- Young people present enormous opportunities and we must mobilise their potential by providing educational, scientific and cultural resources that they need for personal development, access to decent jobs and mutual understanding for lasting peace.

- The speed at which economic, social , food, energy, and climate crisis have spread thus requiring interconnection between science and society.

- The development landscape has also changed. New partners and new forms of cooperation are emerging, regional blocks are becoming stronger

- And Scientists and policy makers must collaborate at national, regional and international levels to find solutions, take advantage of opportunities and innovate

- New funding resources must be sought in a context of growing expectations

What can Africa do to catch up

- Foresight planning to create the critical mass of foundation skills , vocational technical and secondary skills for growing market demands
- Provide quality education at all levels with relevant and robust skills and dynamic economic planning and development policies
- Revamp science, technology and engineering education and make it relevant for employment creation and entrepreurship
- Ethiopia aims to grow through comprehensive skills planning

Are these strategies adequate beyond 2020?

- The end of ‘products’ and ‘manufacturing’: where
- Physical products will be manufactured when and where needed (eg.CNC machines)
- Where retail culture is ‘I want is now and I want it cheap’
- Expensive ‘products’ have become free ‘service’ and personal communications have become basic human rights
- Bio and nanotech have revolutionised health care and prevention . Those who will live to 200 have already been born

Can Africa catch up Beyond 2020

- With the third youth revolution; where
- Age and experience no longer equals power
- Hiring the best is no longer a viable strategy. Corporations compete aggressively to have the coolest workplace and to attract the brightest young people
- People are no longer a company's asset but relationships are.
- The under 30s can handle 20x the number of relationships than their seniors can

Beyond 2020

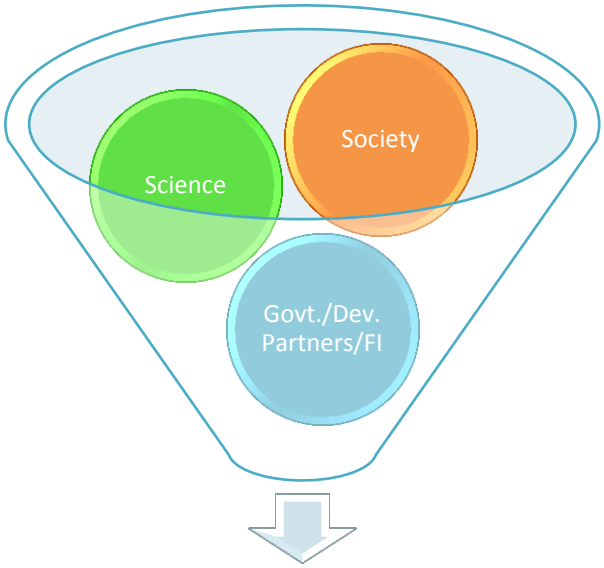
- Size means nothing- but scale is: ‘Every one can access sophisticated networks, computing power and software’
- Even the smallest entrepreneurial business has access to unlimited computing power and sophisticated software be it for contract calls, genomic sequencing for thousands or actuarial calculations on real time basis
- Barriers to enter have disappeared and the agility is more important than strength.
- In all these INNOVATION rules the day; and the answer is ‘Yes we can’

Beyond 2020

- 'Pharming' is booming in response to huge demands for food, water and health, bio-and nanotechnology have spawn massive new industries creating new jobs in industries that did not exist 10 years ago
- Beyond knowledge economy –where knowledge has 'zero' value because it is available to everyone and new lenses create significant value
- Knowledge alone is not a definer of value but its ability to turn knowledge into intelligence and creativity.
- Making access to knowledge available to all has sparked innovation (Future World, 2011)

Creating the Critical Mass of Expertise

Synergy of actors



Sustainable Socio-economic Development

How do we do it

- We Scientist, Engineers, Policy makers and Society must all work together, through collaboration and dialogue. Leaders must lead.
- There are many opportunities for action:
- Develop strong synergy between Science and society as key drivers for sustainable development
- New technologies, creative industries and innovative financing should be provided as incentives to extend and strengthen the basis of scientific knowledge and creativity
- Provide access to education to harness the talents of young people and ensure safe and peaceful societies.
- We need more differentiated approaches, better adapted to local setting and development needs and priorities that may vary from one country to another
- Collaboration is simple and delivers great result

Who are to drive the process

- All of us and UNESCO, the UN specialised agency with the mandate for Educational, Scientific and Cultural development of the world and to:
- ensure education for all;
- build inclusive knowledge societies;
- preserve and encourage cultural diversity;
- promote sustainable development through the natural and social sciences;
- support freedom of expression for all giving the highest priority to Africa and
- promote gender equality

- Other dedicated leaders such as ATPS, Bilateral and International Networks

Conclusion

- Education science and technology is key to socio-economic development and peace building
- Education and training must respond by fostering the development of adequate technical and cognitive skills that promote new ways of thinking, a productive workforce and inspire entrepreneurship
- Create the critical mass of scientist and engineers in a peaceful and dynamic society to drive the process beyond 2020.
- Create human capital which has the agility and innovative power. Through networking, collaboration and developing partnerships

Inclusivity for sustainable development