

# **S&T Continuum from School to University: Quality, Equity and Relevance**

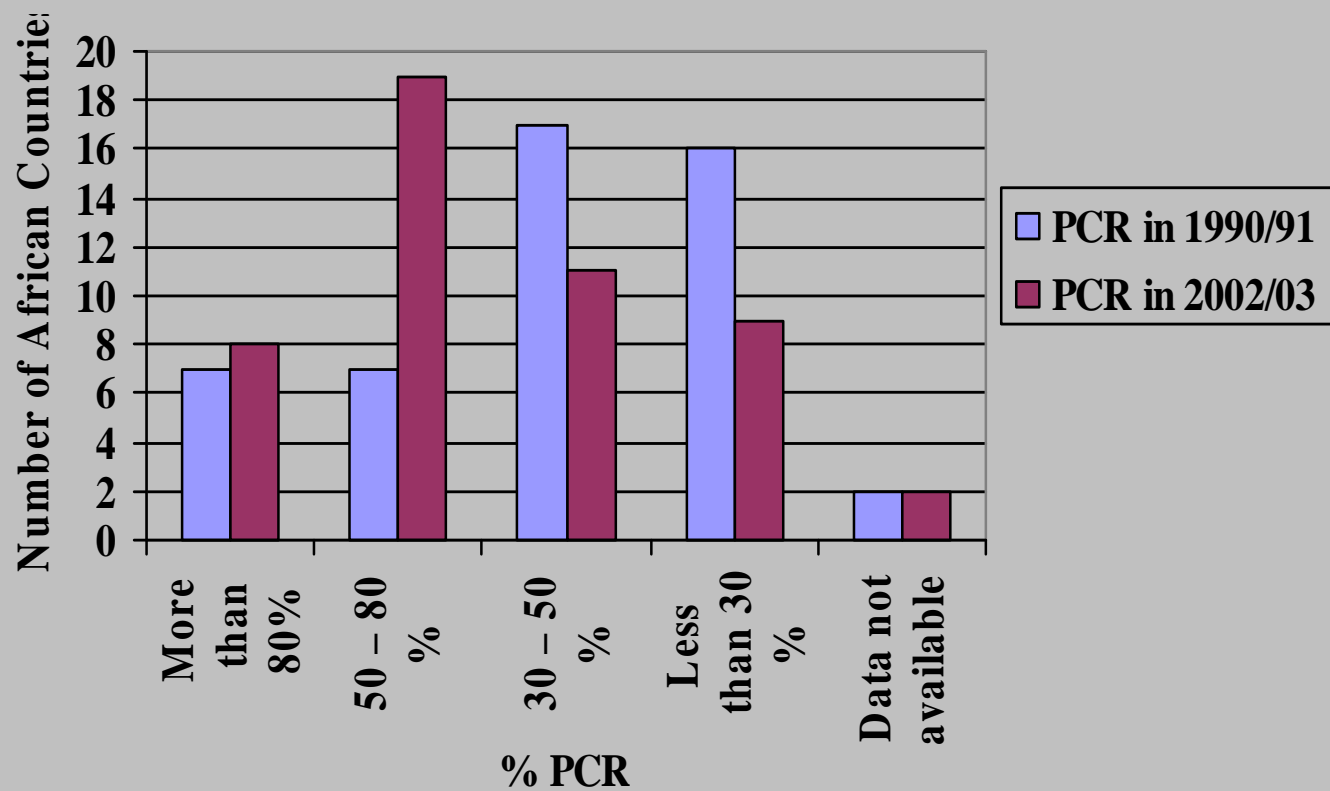
**by**

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# **Education and Development**

**Education is closely linked to economic and social development. Late 1990s/ early 2000 African countries invested heavily in UPE with great success.**

### Number of African Countries attaining a given % of Primary Completion Rate (PCR) in 1990/91 and 2002/03



- Access to formal schooling and PCR are still compromised by completion and the quality of the education given in SSA
- As of 2003, many African countries have launched plans to increase access to secondary schooling and to address the education quality issue.

- Early childhood education, Adult Education and Higher education continued to be marginalised. Low literacy rates in Africa have a direct impact on children's schooling
- Most SSA countries are implementing education for all in primary and secondary education, challenged by budget.

In the 1990s, donors advocated for investment in basic education, recent trends advocate for investment in higher education.

Proposed is an education continuum that is well balanced and diverse to foster prospects for economic growth, social cohesion, equitable economic distribution and poverty reduction.

It must be capable of producing students at different levels with qualifications that respond to labour market needs, generating a steady supply of skilled workers, technicians, professionals, managers and leaders.

# Science and Technology Education Continuum

- Human development has always been fuelled by discoveries in technology and science.
- NEPAD and sub-regional groupings has devised policies that are dealing with development of systems and networks that will deliver affordable, quality, equitable and relevant S&T education to sufficiently large numbers of students

NEPAD plan of action that consolidates S&T to meet MDGs are:

- Goal 1: Eradicate extreme poverty and hunger;
- Goal 2: Achieve universal primary education;
- Goal 3: Promote gender equity and empower women
- Goal 4: Reduce child mortality;
- Goal 5: Improve maternal health;
- Goal 6: Combat HIV/AIDS, malaria and other diseases;
- Goal 7: Ensure environmental sustainability;
- Goal 8: Develop a global partnership for development.

# The Primary School Science Education Curriculum in SSA

- The primary education science and technology curricula seek to establish high quality S&T education for all. Some vocational skills are offered at this level
- Goals of primary science curricula when attained, they could accelerate attainment of MDG 1, 4, 5, 6, and 7 directly and indirectly MDG 3.

# State of Secondary School S&T Education

- Secondary and tertiary education aims to prepare future national workforce and leaders. African countries are gradually moving from economies based mainly on the export of raw materials, to economies that increasingly are based on added value given to those raw materials. This is a process that requires a growing scientifically and technically literate workforce.

- In SSA common issues that inhibit good teaching of secondary S&T education include
  - ✓ Financing education,
  - ✓ lack of management capacity
  - ✓ Weak capacity and poor motivation of science teachers.
  - ✓ gap between the intentions of the curriculum and the curriculum as it is taught and learned

# State of Tertiary S&T Education

- Tertiary education in Africa grew strongly in the period 1990/91 to 2002/2003 with growth rate per 100,000 inhabitants between 1990/91 and 2002/03 of 104%.
- The expanded enrolment, limited funds and limited staff, traditional delivery methods, overloaded curricula, examination driven assessments, dissatisfied technical and academic staff and student's unrest mostly resulting from cost sharing policies have been cited to be major factors inhibiting S&T education at tertiary level.

**Median Gross Enrolment Ratios in tertiary education for 1998/99 and 2002/03**

	TOTAL		MALE		FEMALE		Gender parity Index	
	1998/99	2002/03	1998/99	2002/03	1998/99	2002/03	1998/99	2002/03
<b>World</b>	<b>21.2</b>	<b>26.7</b>	<b>20.4</b>	<b>23.5</b>	<b>21.9</b>	<b>30.0</b>	<b>1.07</b>	<b>1.28</b>
<b>Arab states</b>	<b>19.7</b>	<b>26.0</b>	<b>10.6</b>	<b>22.1</b>	<b>34.0</b>	<b>30.2</b>	<b>3.22</b>	<b>1.37</b>
<b>Central and Eastern Europe</b>	<b>38.7</b>	<b>39.4</b>	<b>32.8</b>	<b>36.1</b>	<b>43.8</b>	<b>42.8</b>	<b>1.34</b>	<b>1.18</b>
<b>Central Asia</b>	<b>24.9</b>	<b>32.2</b>	<b>21.1</b>	<b>26.0</b>	<b>28.2</b>	<b>34.0</b>	<b>1.33</b>	<b>1.31</b>
<b>East Asia &amp; the Pacific</b>	-	<b>16.4</b>	-	<b>18.2</b>	-	<b>14.5</b>	-	<b>0.80</b>
<b>Latin America &amp; the Caribbean</b>	-	<b>23.4</b>	-	<b>23.1</b>	-	<b>23.7</b>	-	<b>1.03</b>
<b>North America &amp; Western Europe</b>	<b>49.1</b>	<b>57.7</b>	<b>40.5</b>	<b>49.6</b>	<b>58.2</b>	<b>66.2</b>	<b>1.44</b>	<b>1.34</b>
<b>South &amp; West Asia</b>	-	<b>6.2</b>	-	<b>8.2</b>	-	<b>4.1</b>	-	<b>0.50</b>
<b>SSA</b>	<b>2.3</b>	<b>2.5</b>	<b>2.5</b>	<b>3.6</b>	<b>2.1</b>	<b>1.7</b>	<b>0.84</b>	<b>0.46</b>

- **Opportunities:** Science Teachers' Associations, Networks
- **Efforts:** ADEA, ADEA, AAU, and ANSTI, NEPAD and recently AU
- **Way Forward:**
  - ✓ Post independent educational goals attained.
  - ✓ Countries have set new goals

**Thank you**