Section 2

Current situation and the dynamics of education systems

This second section will present the development status, and in some cases the changes, at each educational level. Supplementary analyses of equity and quality will also be provided for certain levels.

This section will also provide an analysis of the dynamics in terms of student volumes in the different educational cycles and for the transitions between cycles.

Finally, a series of projections based on current primary enrolment conditions will be presented in order to determine which countries should be able to achieve Universal Primary Enrolment by 2015 if enrolment conditions and educational policies were to remain stable.

2.1 Status of enrolment in Africa

2.1.1 Dakar's central goal: primary education. Can we meet the challenge of Universal Primary Education by 2015?

Primary education is essential because this is the level at which long-term literacy is established. As graphic 1.4 in Section 1 shows, the percentage of people who can read easily after six years of studies (the length of most primary cycles in Africa - 36 out of 53 countries), is considerably higher than for those who left school prematurely. The average is 70%, which shows that UPE is the bare minimum needed to improve human capital in these countries. Furthermore, UPE is a central international commitment; universal completion of primary schooling is both the leading goal of the Dakar EFA conference and one of the principal objectives among the Millennium goals.

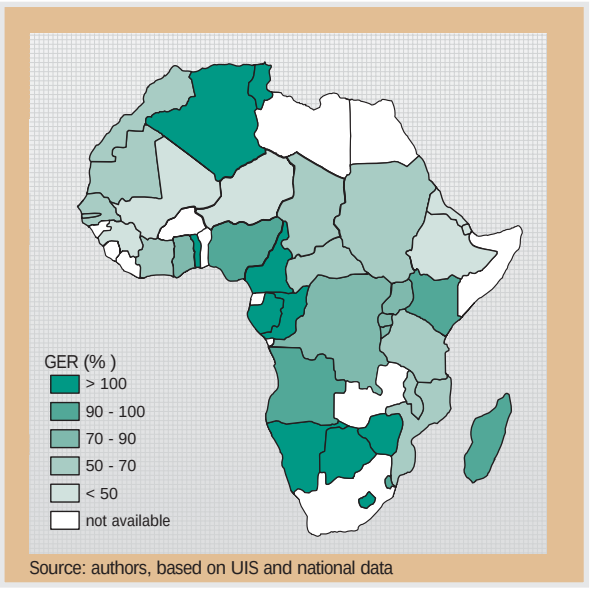
2.1.1.1 Educational coverage

• **From gross enrolment ratio…**

Gross enrolment ratio is one of the indicators that allow measurement of the development of an academic level. Calculated by relating the number of students enrolled in a given stage (primary in this case) to the number of children in the country that are of the theoretical age for enrolment, it allows measurement of the education system's intake capacity. However, a 100% GER does not mean that all school-age children are in fact enrolled, but rather that under current registration conditions, the system is logistically able to accommodate all of these children. A 100% GER does not coincide with achievement of UPE except in cases where no child leaves school or repeats a grade.

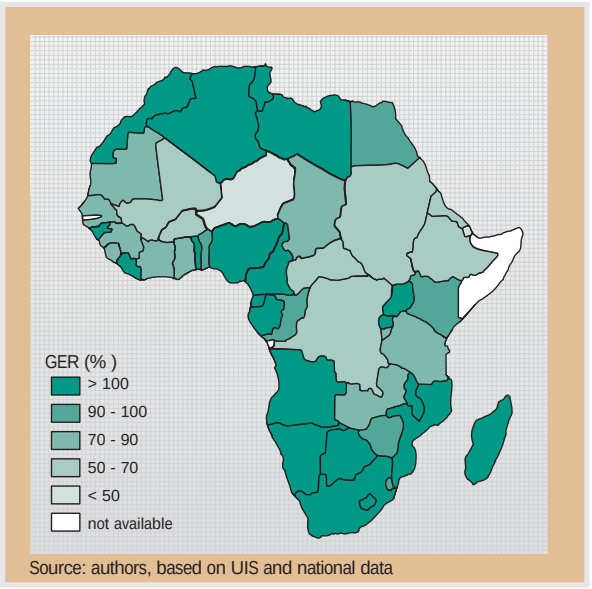
Intake capacity for primary cycle is growing strongly, although remains insufficient for certain countries

Map 2.1: Variety in the supply of places in 1990/91…



Source: authors, based on UIS and national data

Map 2.2: …which remains in 2002/03 (or close)



Source: authors, based on UIS and national data

Only Niger and Djibouti have a GER of below 50%. 23 of the 51 countries for which recent data are available have the capacity to enrol at least all children of the primary school age. Progress since 1990/91 has been substantial.

There are two major difficulties with using GER as an indicator of progress toward the Dakar goal[16]:

- it grants a «bonus» for repetition, which results in overestimation of academic coverage in countries which have high % of repeaters;
- it gives only the «average» for the educational level, and does not include the proportion of children who complete the entire primary level.

Finally, a 100% GER does not mean that all children go to school.

• …to access rates to the last grade of primary education: an estimate of the primary completion rate (PCR)

In order to measure the progress towards the goal of Universal Primary Education, it is preferable to use access rates for the last grade of primary education, defined as being the relationship between new entrants into the last grade of the cycle, and the population of the relevant age to be enrolled in that grade.

Universal Primary Education is far from the reality for many African countries

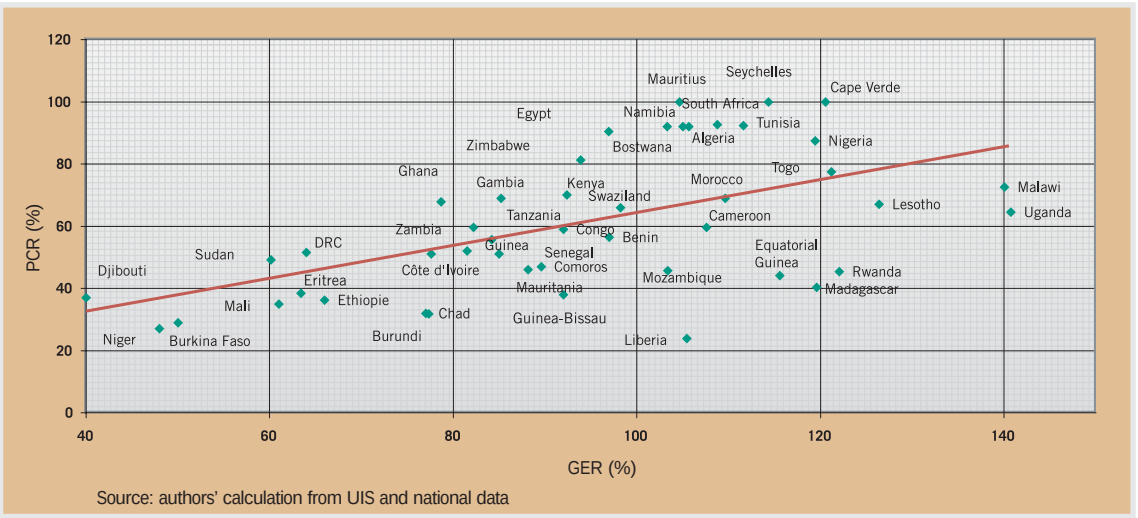
This indicator has two advantages: firstly, it shows progress towards the Dakar Goal of completion of primary education; secondly, it shows that six years of schooling is the bare minimum for lasting literacy.

Using the access rates to the last grade certainly has its drawbacks as measure of achievement. Since it is calculated by relating the number of non-repeaters students enrolled in the last grade with the population of the relevant age to enrol in that grade, it considers only the number of new entrants into the last grade of the stage and supposes that attrition in the last grade of primary education is zero (this is only slightly erroneous, since attrition in the last grade is very low).

Even with these disadvantages, this figure remains our best method for estimating completion. Using the results of exams at the end of elementary schooling raises problems of comparability between countries.

Shown in relation to the GER, access rates for the last grade of primary education allow us to examine a variety of situations, as can be seen in Graph 2.1.

Graph 2.1: GER in primary education and access rate to the last grade of primary education (PCR) in 2002/03 or close

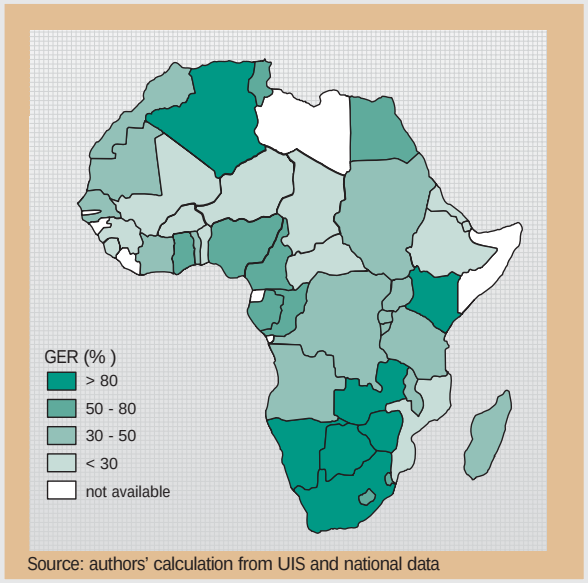


Source: authors' calculation from UIS and national data

16 For more information, see Reuge (2004a).

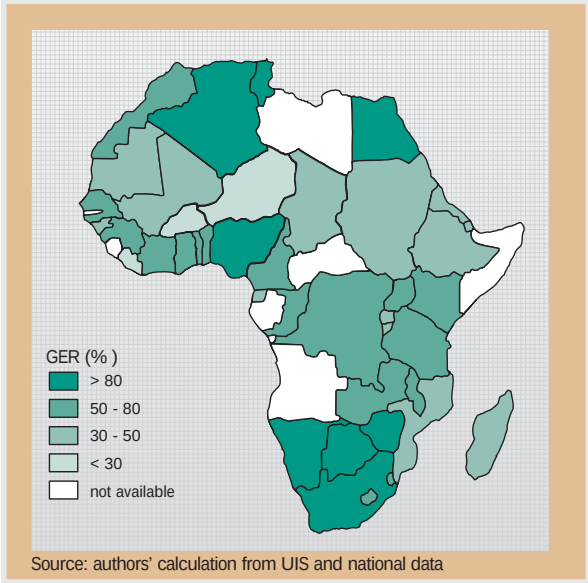
While a low GER is often associated with a low PCR, as in Niger or Djibouti, for example, a high GER can be associated with a wide range of PCR: In this way, for similar GER, while Algeria and Tunisia present an elevated PCR, countries such as Madagascar and Mozambique have a PCR below 50%. Empirically, a GER of 100%[17] or more is a necessary - but insufficient - condition for the achievement of UPE.

Map 2.3: Primary completion rates in Africa in 1990/91



Source: authors' calculation from UIS and national data

Map 2.4: Primary completion rates in Africa in 2002/03 (or close)



Source: authors' calculation from UIS and national data

The completion map for 1990/91 shows strong similarities to the GER map for the same years. 12 countries in particular were lagging behind the others, with a PCR below 30% (which means that out of 10 children of the relevant age to complete primary school, only 3 actually finished). In this category we primarily find West African countries (Mali is the farthest behind, with 10% completion) and Central African countries, as well as three East African nations (Eritrea, Djibouti and Ethiopia), in addition to Mozambique. On the other hand, in 1990/91, Mauritius[18] and the Seychelles had already achieved Universal Primary Enrolment.

The growth of primary level completion between 1990/91 and 2002/03 is striking. From this perspective two countries still lag behind: Niger[19] (27%), and Burkina Faso[20] (29%), although most countries were able to improve their completion levels. Only five countries had a lower completion level in 2002/03 than in 1990/91: Burundi (32% in 2002/03 compared to 46% in 1990-91), Congo (59% in 2003/04, down from 62% in 1990/91), Kenya (70% instead of 86%), Zambia (60%, down from 93%) and Zimbabwe (to 81% from 96%).

Other countries greatly improved their performance in Universal Primary Enrolment, with an average 0.8-percentage point gain between 1990/91 and 2002/03.

Some countries have already reached the goal of Universal Primary Education, or will reach it very soon; these countries have completion rates of over 90%. This is the case for some southern African countries (Botswana, Namibia, South Africa) and North African countries (Algeria, Tunisia, Egypt).

Nevertheless, the 2002/03 primary completion rate does not reflect current enrolment conditions; it is the result of enrolment conditions over the last five or six years.

17 Situations of this nature are associated with high level of dropout during the stage and/or high repeating rates years.

18 Note that Mauritius, the Seychelles, Sao Tome and Principe, Cape Verde and the Comoros are never present on the maps, for reasons of scale.

19 2003/04 Data.

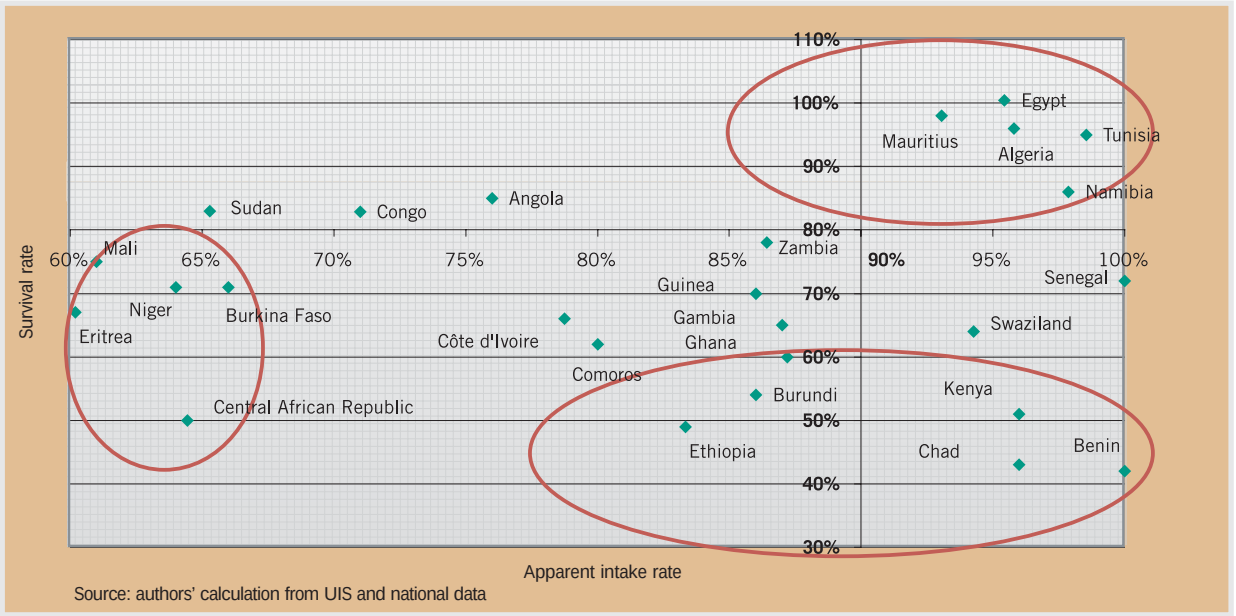
20 2003/04 Data.

- **Dropping Out: The major obstacle to Universal Primary Education**

Weak survival represents the major obstacle to achieving Universal Primary Education.

Structural enrolment conditions may be better understood using (i) the Apparent Intake Rate (new entrants into the first grade of the stage, compared to the population of the relevant age to enter primary school) and (ii) the 2002/03 survival rate (proportion of children entering the first grade who, given current conditions for promotion into the next grade, will reach the last grade of primary schooling). Essentially, these two rates will allow us to determine the 2007/08 completion rate (if we base our calculations on a six-grade primary stage). Graph 2.2 compares the two values (Apparent intake rate and survival rate), which highlights three different types of country:

Graph 2.2: Relationship between apparent intake rate and survival rate in 2002/03, or close



Source: authors' calculation from UIS and national data

- Countries that have both a low Apparent Intake Rate (around 60%-65%) and relatively weak survival (45%-80%): Mali, Niger, Eritrea, Burkina Faso and Central African Republic. In these countries, we can predict a low completion rate six years from now (i.e. over a timeframe equivalent to the length of the primary stage). These countries remain a long way off achieving Universal Primary Education.

- Countries with a relatively good Apparent Intake Rate (between 80% and 95%) and a fairly weak survival rate (between 30% and 60%): Benin, Burundi, Ethiopia, Kenya, and Chad. Above all, these countries must implement measures to encourage survival. However, Burundi and Chad have very high % of repeaters (over 25%). Repetition encourages dropping out. Reducing this rate is one measure to consider with a view to improving survival, as we shall see in Section 3.

- Countries with high access and survival rates (access rates above 90% and over 80% survival): Namibia, Algeria, Tunisia, Mauritius, and Egypt. The combination of these two characteristics leads us to believe that the primary education systems of these countries are performing well, and that they should be able to attain Universal Primary Enrolment within a reasonable timeframe, if they have not already attained it.

This graph highlights the fundamental problem of survival in a number of African countries. While several of these countries are showing access to grade 1 that is equal to or approaching 100%, few are close to universal completion of the primary cycle due to problems in retaining students during the stage. **Decreasing school dropout rates will be the major issue in achieving UPE in Africa in the next few years.**

2.1.1.2 Education systems with persistent inequalities

Equity issues are important in the analysis of education systems, because objectives relating to equal opportunities have been assigned to education. These objectives are in themselves a contribution towards attempts to achieve greater collective efficiency (Section 1), that can be promoted by education: e.g. the collective benefits of educating girls, improvements in agricultural yields for farmers who have been to school, etc. We have simply described the average situations, but the following analyses will focus on the potential dispersion that could exist, which will allow to better understand the issue of equity[21].

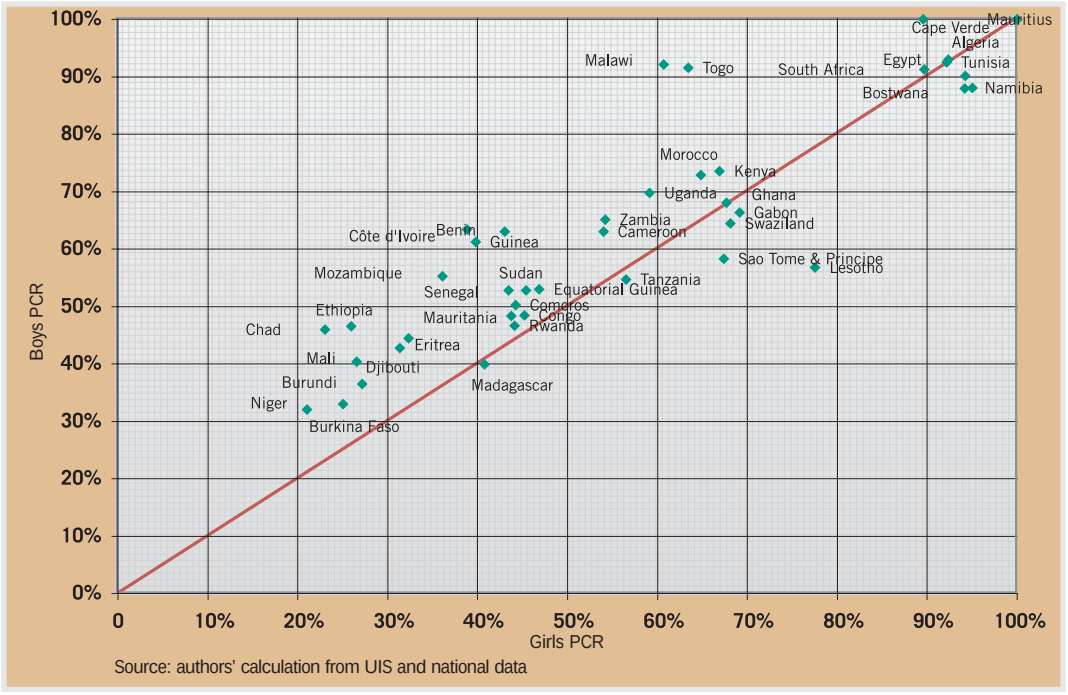
- **Gender disparities that were supposed to have disappeared by 2005**

The goal of eliminating gender disparities in primary and secondary education, which was fixed for 2005, is far from a reality in a large number of countries.

Parity-far from the reality in terms of primary school completion

Comparison of completion rates for boys and girls (Graph 2.3) shows the same results as examination of access rates ito grade 1 (girls and boys).
The diagonal that appears on the graphic is the parity line. Countries found on this line have identical PCR for boys and girls, while countries found below the line are those in which the girls' completion rate is lower than that for boys. Note that in the countries where parity exists or where completion rates for girls are higher than for boys, we can logically conclude that the country has reached the goal in terms of access.
On average, the parity index (completion rate for girls divided by the completion rate for boys) is 0.87. For 100 boys that attend up to the end of the primary level, only 87 girls make the same progress. Of the 42 countries for which data are available, 14 still have a girl-boy parity index below 0.8.

Graph 2.3: Comparison of boy/girl primary completion rate, 2002/03 or close



Source: authors' calculation from UIS and national data

Gender disparity remains substantial, especially in countries with a low primary completion rate

21 Equity, particularly between boys and girls, is one of the Millenium Objectives assigned to education.

- **Disparities according to other criteria are stronger**

While trends observed on the continent suggest that the gender parity goal is not a reality in many places in 2005, this dimension should not obscure the other discriminating factors in enrolment.

Disparities between urbans and rurals, riches and poors are stronger than gender's disparities

From the perspective of coverage, Table 2.1 presents access to and completion of primary education in Africa, along with certain variables for which we observe large disparities between these indicators. For example, the girl/boy PCR differential is valued at 11 percentage points, but the difference between urban and rural PCR is three times greater, reaching 33 percentage points. Even larger is difference by income quintile: PCR is 23.4 for the poorest 20%, but 68.6 for the richest 20%, or a 45.2 percentage point differential. The disparities created by income are more than four times greater than those related to gender.

Table 2.1: Social disparities between the different indicators for primary education in 21 countries[22], around the year 2000

Indicator		Gross Enrolment Ratio (%)	Access rate to the first grade (%)	Completion rate (%)
Sample Average		78.2	71.9	41.7
Gender	Boys	84.5	76.9	47.2
	Girls	72.1	66.8	36.2
	Difference (Boys-Girls)	12.4	10.1	11
	Ratio (Girls/Boys)	0.84	0.87	0.77
Location	Urban	103.5	88.4	61
	Rural	70.1	65.4	28
	Difference (Urban - Rural)	33.5	22.9	33
	Ratio (Rural/ Urban)	0.68	0.74	0.46
Income Quintile	Q5 (20 % richest)	106.7	89.9	68.6
	Q1 (20 % poorest)	62.1	53.3	23.4
	Difference (Q5 - Q1)	44.6	36.6	45.2
	Ratio (Q1 / Q5)	0.57	0.59	0.34

Source: Mingat (2003a).

2.1.1.3 Quality indicators

Quality should not be measured by resources, but on the basis of learning achievement

Increasing the number of children in school is crucial, but in itself, it is not enough. In addition, children must learn the content contained within curricula, particularly in primary education. Furthermore, as noted in Education For All Goal 6, it is important to: «*improve all aspects of quality in education and guarantee its excellence in order to ensure that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy, and essential life skills…*». But what is quality? If we were to ask a panel of experts, there is every chance that each one of them would give a different answer.

We often confuse quality with the resources needed to obtain it. Quality in education is generally described using indicators of resources such as the pupil-teacher ratio, teacher education level, school buildings, etc. This approach can be explained by a lack of comparable information between countries concerning learning achievement, especially in Africa.
Furthermore, we note that, unfortunately, **the relationship between resources and results (learning achievement) is very weak (see: Section 3).** Most macro and micro studies

22 These 21 countries are: Angola, Benin, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Guinea, Guinea-Bissau, Madagascar, Malawi, Mauritania, Niger, Nigeria, Uganda, Rwanda, Sierra Leone, Togo, and Zambia.

demonstrate that while resources are important, the way they are used counts even more towards explaining the differences in student learning. **Thus the use of resource indicators as a «proxy» for results indicators - which are not available - is unsatisfactory.** Efforts have been made to measure the quality of education in Africa in comparable terms on the basis of learning achievement. How are these measurements developed? How solid are they? And what are their limitations ?

- **Existing learning achievement evaluation programs in Africa**

In Africa, there are three major learning achievement assessment programs: **MLA** (Monitoring Learning Achievement), implemented by UNESCO/UNICEF, the **PASEC** (Program d'Analyse des Systèmes Educatifs de la CONFEMEN - CONFEMEN Program to Analyse Education systems), and **SACMEQ** (Southern African Consortium for Monitoring Educational Quality), which works in partnership with the IIEP. Since 1992, the MLA has helped 72 countries to develop or reinforce their achievement evaluation system, through studies testing students in the 4th, 5th and 8th grades of schooling. The PASEC program, which concentrates on the French-speaking African countries, has been performing learning achievement assessments since 1992 1992 (in the 2nd and 5th grades of primary school). PASEC evaluation has been performed in around 10 countries. Finally, the SACMEQ, a consortium created in 1995 that includes the Ministries of Education of 15 southern and eastern African countries, has also done studies on learning achievement in around 10 African countries.

Several studies measuring quality are available, but each has its limitations

- **The African Education Quality Index (AEQI)**

Each of the studies cited above was performed using standardised tests administered to public in primary schools. This allowed comparisons to be made between countries within each study, which cannot be obtained from student results in national exams. However, the tests for the three studies do differ and hence, it is not possible to make direct comparisons of the results between studies. Nevertheless, **the fact that some countries performed both an MLA and either a PASEC or a SACMEQ study makes it possible to re-calibrate all of the existing measures on a single scale (the MLA, for example) to obtain a reasonable comparison of average student scores across countries**. A. Mingat carried out this work and calculated an African Primary Education Quality Index (AEQI) for 24 African countries[24].

Limitations:

- *Comparability of results within a single study:*
  - *The samples used in each country are not always exactly representative of the student body (for example, some PASEC assessments were performed on a representative sample of teachers, slightly different from a representative sample of pupils)*
  - *The test items administered to students are not always entirely harmonised due to a country's desire to adhere as closely as possible to national curricula (MLA)*

- *Comparability across studies: The number of countries on which the relationship between MLA and the other scales is based (the countries that participated in two different studies) is low (5 countries).*

- **Multiple Indicators Cluster Survey (MICS) (Household Surveys)**

In co-operation with governments (often the national statistics office), UNICEF performs wide scale standardised household surveys (often numbering around 20,000 individuals), called MICS. This survey, performed in over 20 African countries, provides information about individuals' academic careers and their current literacy level.

23 Mingat (2003c).

24 This includes Zanzibar (a territory of Tanzania) which performed a SACMEQ evaluation, but excludes Nigeria (MLA) and Kenya (SACMEQ) due to questionable data.

Combining these two kinds of information allows international comparisons to be made concerning the relationship between literacy and the number of years of schooling completed. **The measurement of the literacy rate for people who have completed six years of schooling (one complete primary cycle in many African countries) can also be viewed as a comparable measure of the quality of education received** (the essential mission of primary education being to produce literate individuals). For example, it is reasonable to believe that an education system in which 90% of primary school completers are literate provides a better quality of education that a system in which only 50% of school completers are permanently literate[25]. The World Bank[26], in co-operation with the Pôle de Dakar and BREDA/UNESCO, has been able to calculate this measurement for around 20 African countries.

Limitations:

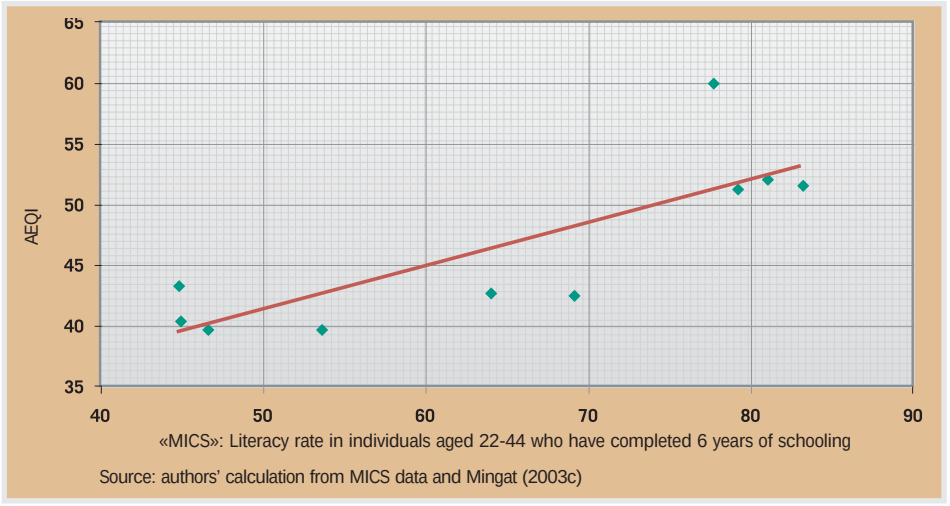
- *Information on individuals' literacy is gathered through self-declaration. No test is administered during completion of the questionnaire*
- *The indicator is calculated for a sample of individuals aged 22 to 44. For the older participants in this sample, the estimated quality measure corresponds to instruction given 30 years previously (when the individuals where in school[27])*

- **The African Education Quality Index+ (AEQI+)**

Since ten countries had both a learning achievement evaluation survey and a MICS survey, we can compare the AEQI and MICS indicators.

We can combine available data to develop a synthetic index of quality the AEQI+

Graph 2.4: Comparison of the AEQI and «MICS» indicators for 10 African countries



Source: authors' calculation from MICS data and Mingat (2003c)

As seen in Graph 2.4, **the two measures classify the countries in the same way**, and their good correlation allows to build up an other indicator, the AEQI+. This measurement provides broader coverage (all countries with the AEQI added to those without the AEQI but with a MICS indicator) by combining the results of the two measures. AEQI+ is built as follows: it is equal to AEQI if AEQI is available and it is computed from the MICS indicator on the basis of the estimated relation between the two indicators if AEQI is not available[28]. **The AEQI+ Indicator, an indicator of primary education quality, is reasonably comparable across countries and can be calculated for 36 African countries (see graph 2.5).**

Lastly, we note that despite the known limitations of the two indicators in question, the strong correlation between the AEQI and the MICS indicator encourages to consider that these mea-

25 However, education quality is not the only vector for literacy. The local or national context (frequency of foreign language use, openness to other countries, etc.) can also have a strong influence.

26 Mingat (2003c).

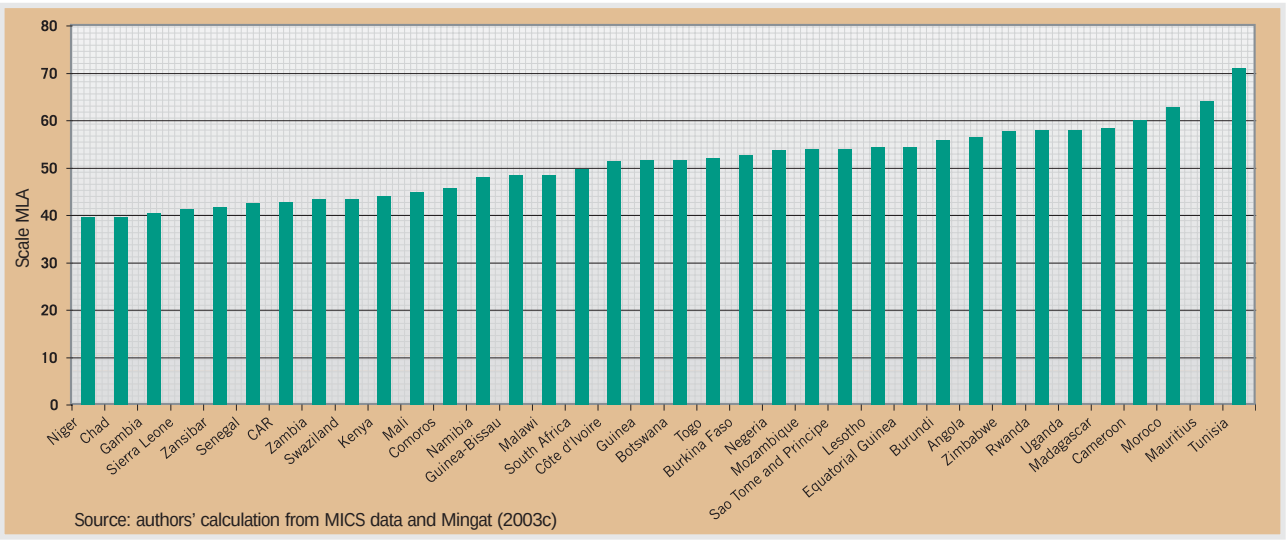
27 However, integration of the variable «number of years that have passed since studies were completed» in econometric models shows that the effect of this variable on literacy is not significant. When the number of individuals is large enough, it is possible to refine the measure by using smaller age groups and thus to calculate how the indicator changes over time (the younger the age group is, the more the measure corresponds to the quality of teaching provided in recent years).

28 AEQI+ is calculated based on the estimated relationship between the ten common AEQI-MICS countries:
AEQI+ =23.427 + 0.3556 x MICS Indicator (R^2= 0.656).

sures are reliable enough to be used (the fact that they coincide so well is a sign of their reliability).

Graph 2.5 gives an idea of the differences in learning achievement level on the continent based on the MLA[29] scale.

Graph 2.5: Differences between countries on a perfectible but comparable measure of quality (AEQI +)



Source: authors' calculation from MICS data and Mingat (2003c)

In conclusion:

- **There is a reasonably comparable measurement of primary education quality for 36 African countries.**
- **This measurement is not perfect due to the limitations of the sub indicators (AEQI and MICS) that are used to calculate it.** The plan for the future is to continue to test the reliability of this indicator as new data becomes available from the learning achievement surveys and/or MICS household surveys.
- The AEQI+ also **presents the limitation of not allowing yearly monitoring**, inasmuch as neither the MICS surveys nor the learning achievement surveys are administered regularly in these countries.
- To broaden the indicator's coverage even further, it would be useful to Test AEQI+ calibration with non-African countries (for example, countries that participated in the PISA and TIMMS surveys or other learning achievement assessments, or countries that have performed a MICS survey[30].

29 The MLA scale is the result of a combined assessment of averages in reading, writing, mathematics, and life skills, obtained from a sample of students during the study. For more information, see Chinapah inter alia, (1999).

30 cf. Mingat et al (2000), and Hanushek, (2003).

2.1.2 Literacy and the other cycles of education

2.1.2.1 Literacy: changes that are difficult to measure

Measuring progress towards the literacy goal remains difficult, given the wide variety of definitions that can be given for the notion of literacy itself[31]. Nevertheless, using available data helps us to understand the work that remains to be done in this field.

The African continent remains one of the areas most affected by illiteracy. Estimates for the period 2000-2004[32] show that **the proportion of literate adults over the age of 15 stands at around 60% for Africa as a whole**. As seen in Table 2.2, this proportion demonstrates one of the greatest levels of growth in the developing world since the 1990s. Table 2.3 illustrates that within Africa, the situation is no less disparate.

Table 2.2: Literacy rates (15 years +) in the developping world, 2000-2004 estimate (%)

	1990	2000 - 2004
North Africa	48.1	59.6
Sub-Saharan Africa	49.7	60.9
Latin America and the Caribbean	85	89,3
East Asia	79	91.3
South Asia	47.5	58.5
Southeast Asia	84.1	89.2
West Asia	67.3	76.4
Oceania	62.8	71.6

Source: UIS data

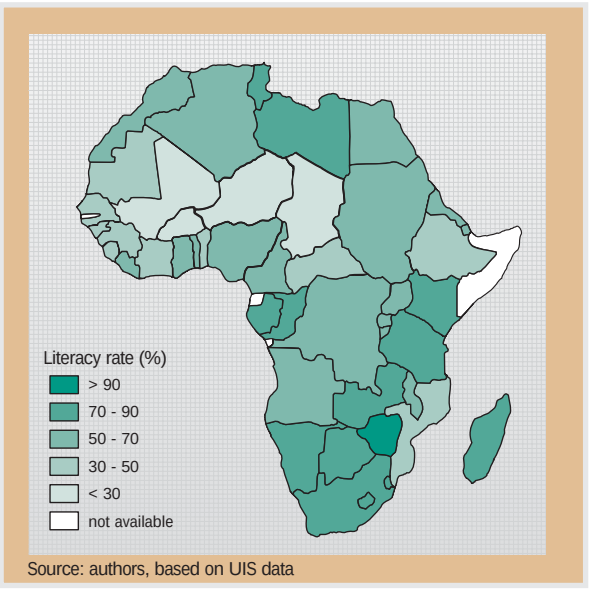
Table 2.3: Literacy rates (15 years +) on the African continent, 2000-2004 estimate (%)

Southern Africa	73.7
Central Africa	56.5
East Africa and the Indian Ocean	62.4
North Africa	59.6
West Africa	52.2
Total for Africa	60.2

Source: authors, based on UIS data

This average results in extremely variable national levels, as seen in Map 2.5. While some countries show nearly a 100% literacy rate (Zimbabwe, Mauritius, Seychelles), the challenge remains considerable for others. The French-speaking African countries are the most affected by illiteracy, and the situation is particularly troubling in the Sahelian countries: Mali, Burkina Faso, Niger, and Chad have literacy rates below 30%. The situation appears to be more favourable in the English-speaking countries.

Map 2.5: Literacy rates, 2000-2004 estimates



Source: authors, based on UIS data

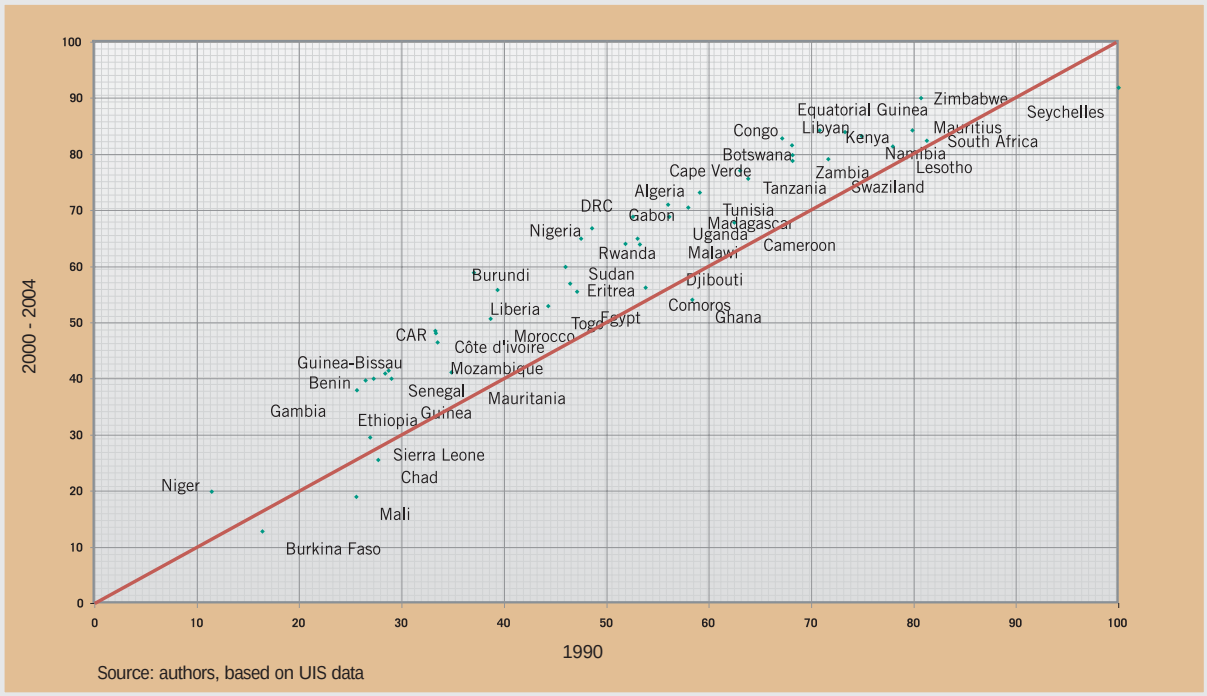
31 For example, in Malawi (2003 census), a literate individual is a person who can read in at least one language; in Cameroon (Cameroon household survey, 2001), literacy is the ability of people above the age of 15 to read and write in French or English.

32 The decision to present only a single estimate for a five-year period was adopted by the ISU based on the fact that literacy rates fluctuate very little in the short term.

Graph 2.6 shows the countries in which literacy rates increased between 1990 and the 2000-2004 period. The bisecting line on this graph represents situations that were unchanged between 1990 and 2000-04. Countries located above this line are those whose literacy rates increased between the two periods. We can see that most countries do report an increase, except for certain rare exceptions[33]. However, change appears to be relatively slow and country rankings remain essentially the same whether we base our study on literacy rates in 1990 or in 2000-2004.

Despite considerable progress, the African continent remains the least literate in the world. This phenomenon mainly affects women.

Graph 2.6: Growth of the literacy rate (15 years +, %)

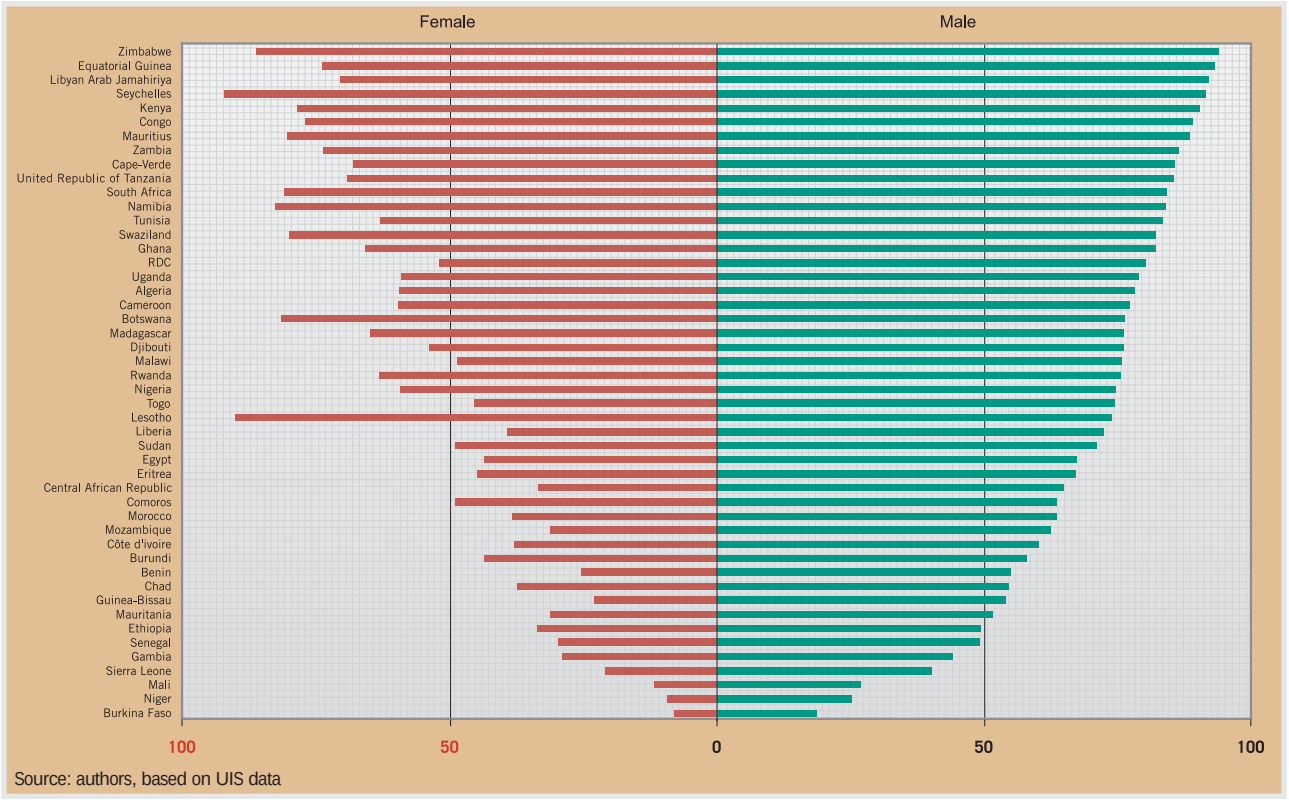


Source: authors, based on UIS data

Gender disparity varies considerably from one country to another, although it is generally greatest when the country has a low level of literacy. In Niger, for example, while 25% of men are literate, this proportion plummets to 8% for women. On the other hand, a country like Lesotho shows a higher literacy rate for women than for men (Graph 2.7).

33 Which can be attributed more to estimate problems than to a real decline.

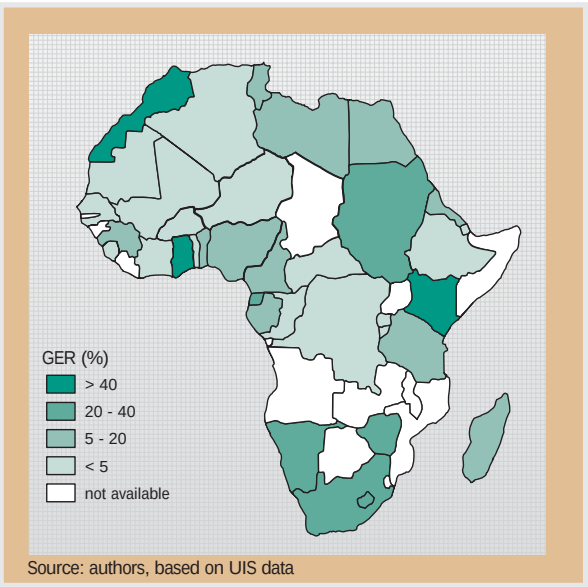
Graph 2.7: Literacy rate (15 years +) for women vs. men, 2000-2004 estimates (%)



Source: authors, based on UIS data

The challenge remains substantial, not just because of the diversity of situations across the continent, but also due to primary enrolment that is by no means universal for most African countries. Each year, the children that do not reach the end of primary education represent almost the same number of potential illiterates; this is a factor that should be taken into consideration in parallel with adult literacy programs.

Map 2.6: Pre-primary gross enrolment ratio in 2002/03 or close



Source: authors, based on UIS data

2.1.2.2 Pre-primary education - a slowly developing level

The definition and length of pre-school varies between countries. Thus a single value for Gross Enrolment Ratio can obscure the real situations. For this reason, it is important to take precautions when comparing two countries.

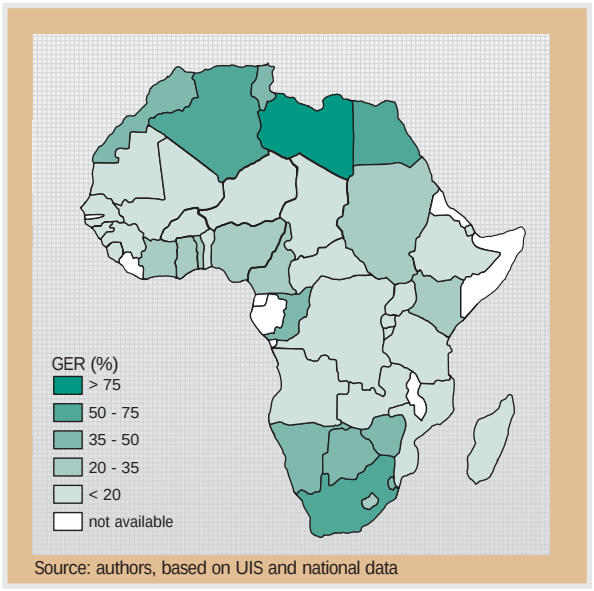
As seen in Map 2.6, development of this educational cycle is extremely disparate across the continent, although it is generally low. Thus, in 18 out of the 42 countries for which GER can be calculated, for 100 children in the pre-school enrolment age group, fewer than five actually attend school. 11 countries have a GER between 5% and 20%. Academic coverage[34] at this level exceeds 20% in only 13 countries.

2.1.2.3 Secondary education: a substantial change

Clearly increasing schooling coverage in secondary education

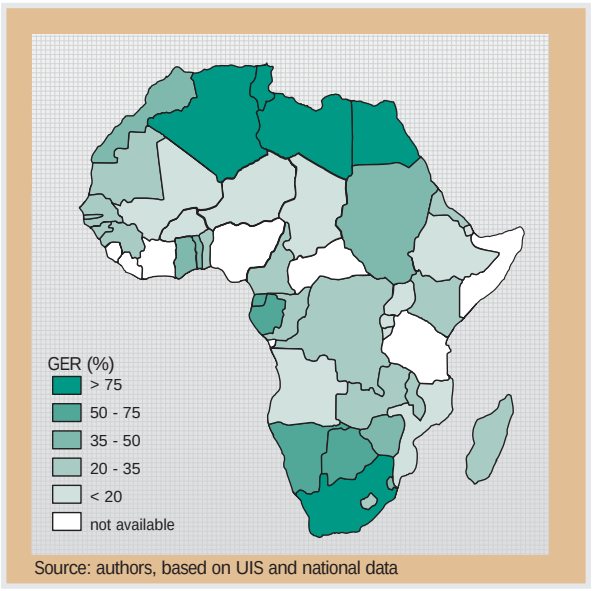
In 1990/91, general secondary education (lower and upper) was relatively undeveloped, with an average GER of 28.3% throughout Africa. Over half the countries studied in 1990/91 (24 of 45 countries) had a secondary level Gross Enrolment Ratio below 20%. Tanzania, Burundi, Niger, Mali, Burkina Faso and Mozambique had very low Gross Enrolment Ratios (between 4.7% and 6.9%) while Libya, Egypt, and South Africa varied between 66% and 86%.

Map 2.7: Gross enrolment ratio for the African countries in 1990/91



Source: authors, based on UIS and national data

Map 2.8: Gross enrolment ratio for the African countries in 2002/03 or close



Source: authors, based on UIS and national data

The situation has changed substantially since 1990, as **the average secondary GER in Africa has risen to 35.4% for 2002-03.**

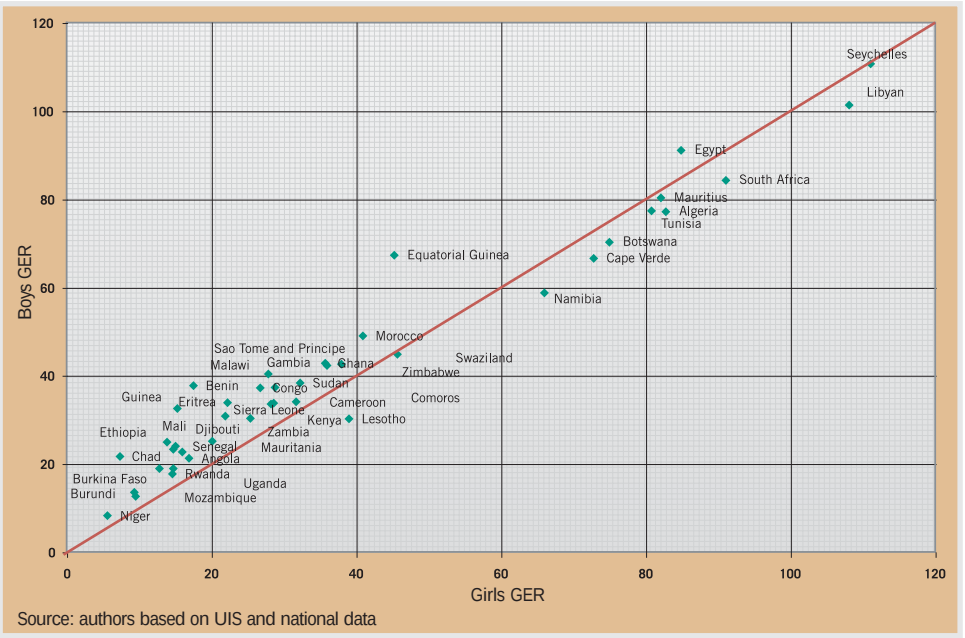
As seen in Map 2.8, the disparities in secondary enrolment remain considerable. GER varies from 7% in Niger and 11% in Burundi to over 100% in Libya and the Seychelles.

In 12 of the 46 African countries for which data are available, fewer than 20% of young people in the secondary school age group actually attend school (compared to 24 countries in 1990/91). These are mainly Sahelian countries. 12 countries have a GER over 50% (versus 5 in 1990/91). All of these countries are in North Africa or southern Africa.

As we can see, the situation has changed substantially. On average, GER for the continent has risen 7.1 points in 12 years.

34 Due to very rare repeated years at this level of study, we can combine GER with a coverage indicator rather than a capacity indicator.

Graph 2.8: Comparison of gross enrolment ratio in secondary education for girls and boys in 2002/03 (or close)



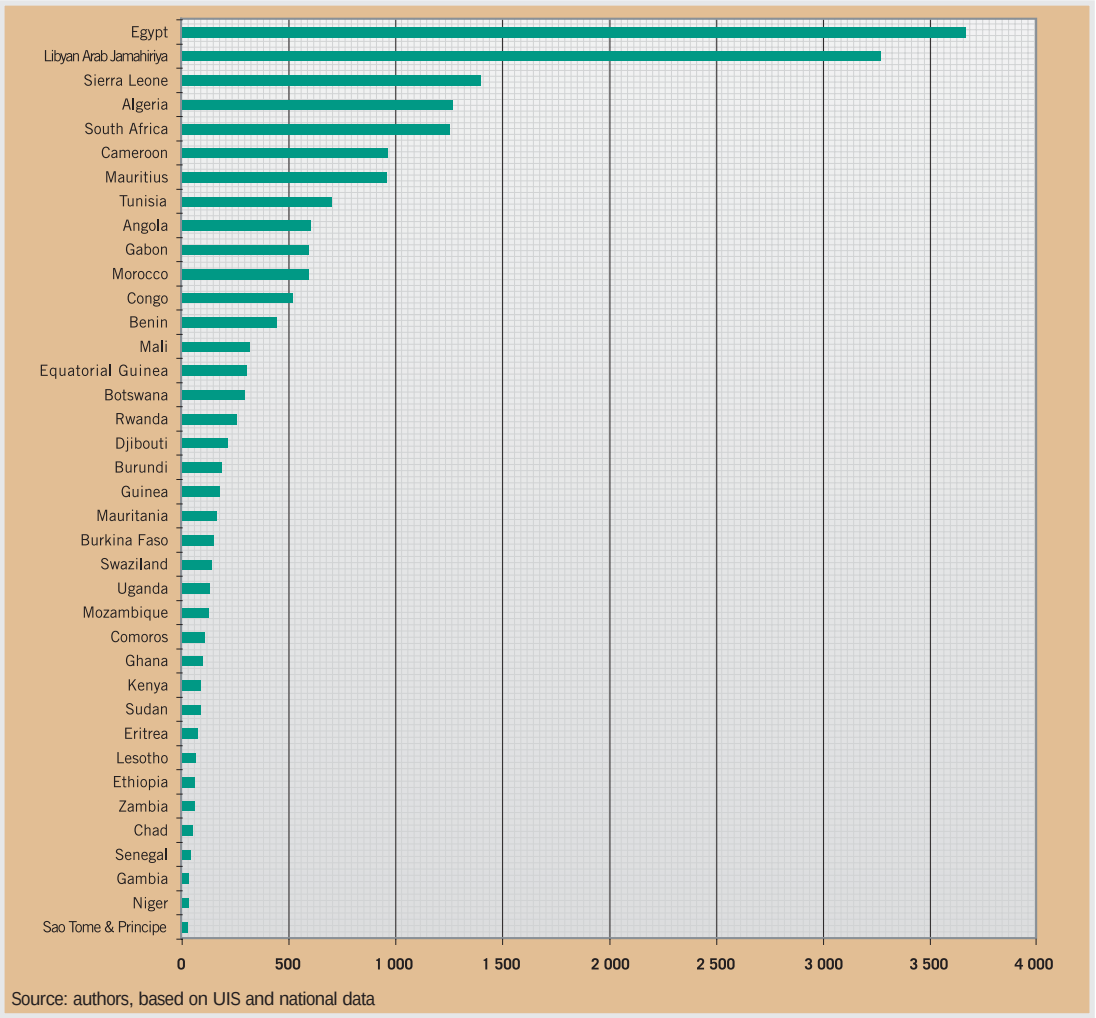
Source: authors based on UIS and national data

Graph 2.8 shows that the gap between girls and boys in secondary education is generally less important than at the primary level. In 13 of the countries in question, it can even be seen that more girls than boys attend secondary school, particularly in the North African countries and in southern Africa. The countries in which secondary education is relatively undeveloped are also the countries in which more boys than girls are enrolled.

2.1.2.4 Technical/vocational enrolment are often unrelated to economic realities…

The coverage of technical/vocational education is highly variable. Graph 2.9 provides a glimpse of the situations observed in the countries for which recent information is available. Figures range from fewer than 100 students per 100,000 inhabitants in countries such as Niger, Senegal, and Chad, to the much higher levels observed in Algeria (1,300), Sierra Leone (1,400), and in certain North African countries that exceed the threshold of 3,000 students per 100,000 inhabitants (Libya and Egypt). This dispersion does not appear to have any specific geographical characteristics.

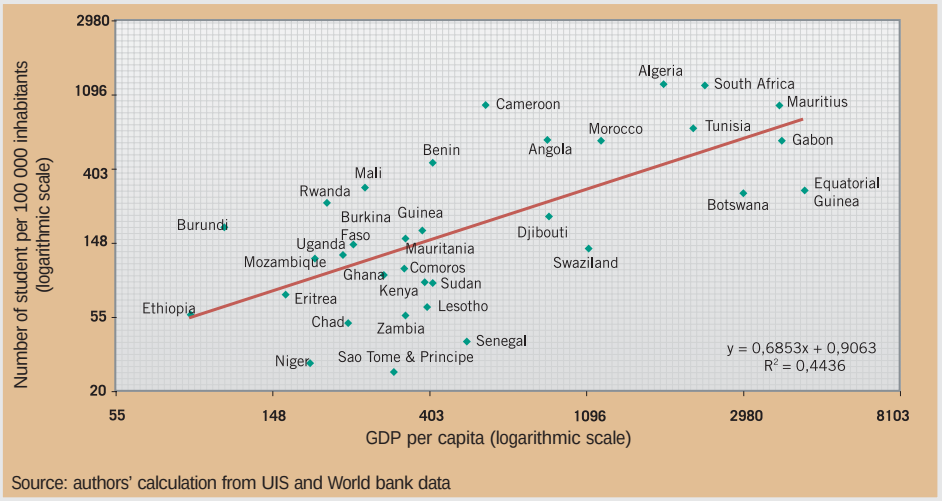
Graph 2.9: Coverage of technical/vocational education (number of students per 100,000 inhabitants), 2002/03 or close



Source: authors, based on UIS and national data

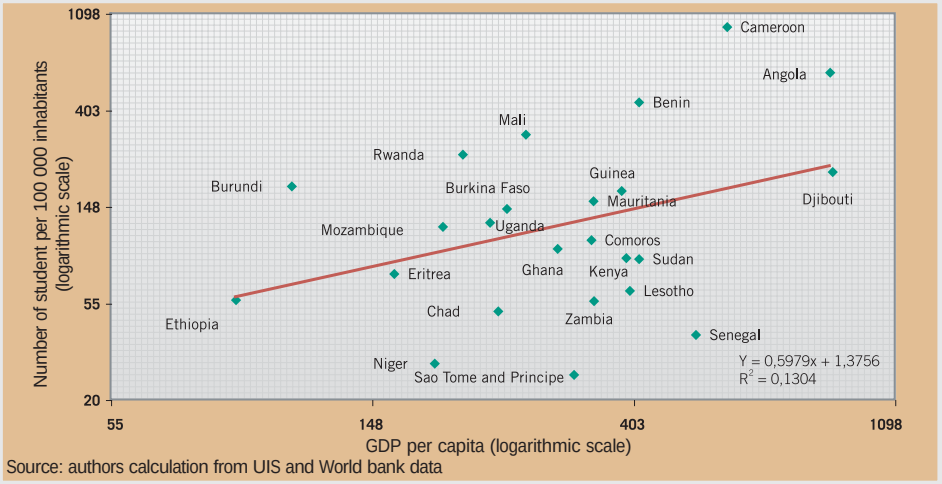
Given the relationship that, in theory, should exist between technical/vocational education and the economic sector (basically, the more developed the country and its industrial sector, the greater the need for students who have completed technical/vocational training), it is worthwhile comparing the level of coverage in different countries with the level of development. Graph 2.10 shows each country's GDP per capita as well as its level of coverage for the sub-cycle of technical/vocational education.

Graph 2.10: GDP per capita and technical/vocational education coverage, 2002/03 or close



Source: authors' calculation from UIS and World bank data

Graph 2.11: GDP per capita and technical/vocational education coverage for countries with GDP per capita below 1,000 US$, 2002/03 or close.



Source: authors calculation from UIS and World bank data

Technical/Vocational education that appears to be inadequate to the needs of a dual economy, in some low-income countries

The poorest countries (those with a GDP per capita below $US700) generally have lower coverage (fewer than 200 students per 100,000 inhabitants for most countries) but there is a certain degree of variability. Sierra Leone, Cameroon and Angola have a much higher ratio (1,300, 1,000 and 1,600, respectively). In contrast, countries with a GDP per capita over US$ 4,000 have much higher ratios of coverage, in spite of a few exceptions (for example, technical students in Botswana account for only 300 students per 100,000 inhabitants, which is four times lower than in South Africa).

There does appear to be an overall consistency when we examine all the African countries. The most economically developed countries are also those with the highest technical/vocational education enrolment ratios.

However, a closer examination of countries with a GDP per capita below US$ 1000 shows there is less consistency between the poorest countries, as shown in Graph 2.1.1. While the situation seems to be relatively homogeneous for the poorest countries, we can nevertheless observe that the number of students becomes ever more variable as wealth increases. This certainly highlights a mismatch between the number of trained individuals and the economic needs. Some countries (those found above the line in Graph 2.1.1) are running a strong risk

of «overproduction» of graduates (and thus of public investment) while others (those below the line) seem to have abandoned this sub-cycle and are risk not «producing» enough technical/professional trainees to meet the economy's needs

2.1.2.5 … as well as higher education

Quantitatively, higher education grew strongly between 1990/91 and 2002/03, but in a highly irregular way. As seen in Table 2.4, the number of students per 100,000 inhabitants varies quite considerably from one area to another, ranging from 220 in the East African and Indian Ocean nations, to 1,760 for North Africa. These regional averages are in no way homogeneous; in southern Africa, for example, Tanzania has 86 students per 100,000 inhabitants, while this figure is 17 times greater in South Africa.

Table 2.4: Number of students per 100,000 inhabitants, and percentage of growth

	Number of students per 100,000 inhabitants in 2002/03 (or close)	Percentage of ratio growth between 1990/91 and 2002/03	Range	Number of countries
Southern Africa	919	30	956 - 1 508	8
Central Africa	502	64	120 - 934	5
East Africa and the Indian Ocean	220	180	86 - 1 386	11
West Africa	555	100	124 - 784	10
North Africa	1 760	65	1 117- 2 349	3

Source: authors' calculation from UIS and World Bank data

Beyond the current situation, the changes are surprising in themselves. While we see a decrease in coverage in certain countries (e.g. Congo, Zimbabwe and Madagascar, where the number of students per 100,000 inhabitants has fallen by nearly 35%, probably due to the depression of the late '90s), coverage has generally increased, as shown by Table 2.5. The rates of increase are also quite variable: while South Africa and Botswana have seen more modest growth (27% and 29% respectively), other States have seen a veritable explosion in student numbers, multiplying their enrolment by a factor of up to 10 (Djibouti). For example, Mali had around 50 students per 100,000 inhabitants in 1990/91; by 2002/03, this ratio had risen to 224, an increase of 323%.

Finally, we can observe that there does not seem to be a strong relationship between the changes in the capacity to accommodate students and the initial level of coverage. For example, Cameroon and Madagascar had the same level of coverage of 300 students per 100,000 inhabitants in 1990/91, but since then, changes in growth have been very different in each country.

Table 2.5: Number of students per 100,000 inhabitants, 1990/91 and 2002/03 (or close)

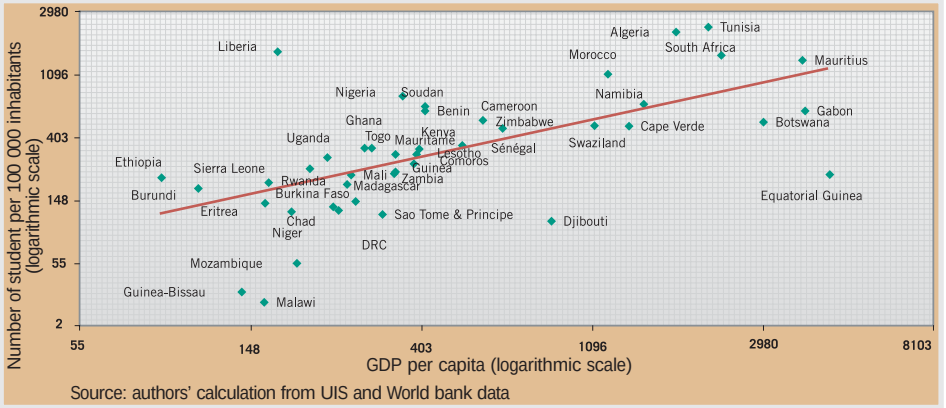
	1990	2002-2003	évolution
Madagascar	300	193	-36%
Congo	428	370	-14%
Zimbabwe	472	469	-1%
Mauritania	263	311	18%
Zambia	187	236	26%
South Africa	1 191	1 508	27%
Swaziland	381	491	29%
Senegal	255	338	33%
Botswana	385	518	35%
Angola	70	95	36%
Democratic Republic of the Congo	215	358	67%
Sierra Leone	117	198	69%
Cameroon	300	517	72%
Nigeria	402	784	95%
Burkina Faso	61	127	108%
Niger	57	124	118%
Kenya	137	311	127%
Namibia	285	691	142%
Lesotho	129	339	163%
Benin	234	644	175%
Burundi	64	180	181%
Tunisia	835	2 349	181%
Uganda	101	295	192%
Guinea	89	262	194%
Ethiopia	70	215	207%
United Republic of Tanzania	28	86	207%
Mauritius	330	1 386	320%
Mali	53	224	323%
Comoros	41	229	459%
Djibouti	10	107	970%

Source: authors' calculation from UIS and national data

As for technical/vocational education, it is interesting to compare the level of enrolment for this sub-cycle with a country's general level of economic development (Graph 2.12).

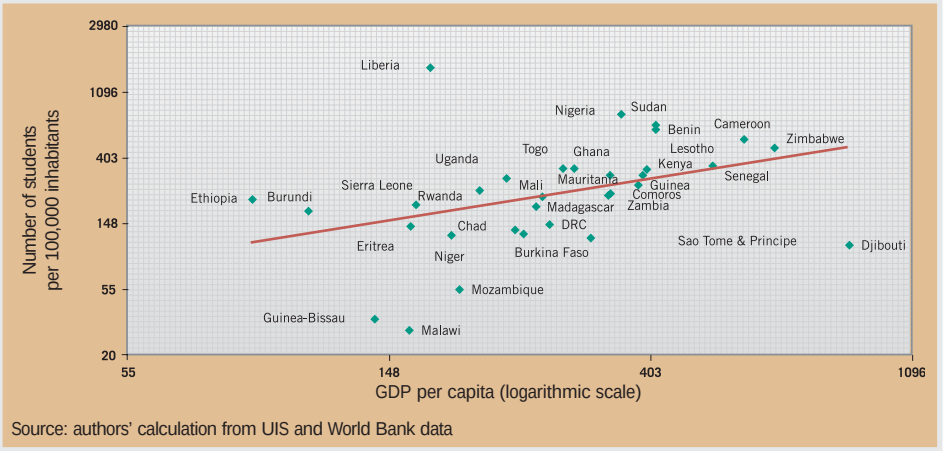
Very high levels of higher education compared to the absorption capacity of dual economies in low-income countries

Graph 2.12: Number of students per 100,000 inhabitants and GDP per capita in US$, 2002/03 or close.



Source: authors' calculation from UIS and World bank data

Graph 2.13: Number of students per 100,000 inhabitants and GDP per capita in US$ for countries with a GDP per capita below US$ 1,000, 2002/03 or close.



Source: authors' calculation from UIS and World Bank data

It is difficult to see a relationship between the data, because the level of coverage for higher education appears to be highly variable regardless of the GDP per capita level. For example, whereas Angola and Guinea have a GDP per capita nearly US$ 630, their enrolment ratios are 91 and 262 students per 100,000 inhabitants respectively. However, if we look at all the African countries together, we observe a strong trend: in general, the most economically developed countries are those with the most developed higher education systems.

Once again, a closer examination of the countries with a GDP per capita below US$1000 (Graph 2.13) shows a lower correlation between economic development and level of coverage for higher education. As with technical education in certain countries (primarily those above the line in the graph), some countries will certainly have ended up in a situation of graduate «overproduction», without any real links to the level of economic development. This is probably a consequence of insufficient regulation of student flows into this stage of education.

2.1.3 Synthesis

In this section we suggest some elements that give a better synthetic appreciation of the development of education systems on the African continent, as well as the progress towards quantifiable EFA goals.

2.1.3.1 The EFA African development index

This composite index (see Inset 2.1) allows to measure each African country's progress toward the EFA goals. It evaluates each country's progress toward three of the six goals, in relation to the performance of all of the countries under consideration. The goals are: Universal Primary Education as measured by the Primary Completion Rate, gender equity as measured by the GER parity index [girls' GER divided by boys' GER], and literacy, as evaluated by the literacy rate for people aged 15 and older. The countries that score highly on this index should be able to achieve the three goals included in the index, and vice versa. The EFA+ index includes the three previous dimensions but also includes quality, as measured by the AEQI+ index described previously.

Inset 2.1: Calculating the EFA African development and EFA+ indices

Methodologically, the EFA African Development Index is calculated in a similar way to the UNDP Human Development Index, except that here, all of the components are education indicators from the Dakar Goals for which a comparable measurement between African countries is available.
For each of the three components X of the EFA Index, we calculate a relative measure Y as follows:

$$Y = \frac{X_{country} - X_{min}}{X_{max} - X_{min}}$$

X_{min} and X_{max} represent, respectively, the minimum and maximum value on the African continent for the component under consideration, and $X_{country}$ is the value for the country concerned*.

In 2002/03 the minimum and maximum values retained for each value were as follows:
- Primary Completion Rate: 27% (Niger) and 100% (Seychelles, Mauritius, Cape Verde)
- GER Parity Index: 65% (Chad) and 100% (for several countries, see the explanation below)
- Literacy Rate for individuals 15 and older: 12.8% (Burkina Faso) and 91.9% (Seychelles)

For example, if a country's access rate to the Primary Completion Rate is 50, the relative value will be equal to:

$$\frac{50 - 27}{100 - 27} = 0.315$$

Note that for the parity index, given the benefits to human development of higher schooling rates for girls, all of the countries that show a disparity in this field (index above 100%) are considered to have achieved the Dakar Goal. For this calculation, a value of 100 is taken to be the maximum reference value.

The EFA African Development Index is calculated by taking the average of the three relative values and multiplying the result by 100.

EFA African Development Index = Average (Y1, Y2, Y3) x 100

When Y1 = Relative value of the Primary Completion Rate
Y2 = Relative value of the Parity Index (GER for girls/GER for boys)
Y3 = Relative value of the Literacy rate for individuals 15 years and older.

Let us show the calculation of the composite index using South Africa as an example:

Primary Completion Rate	GER Parity Index	Literacy Rate for individuals 15 and older
92.0	96.5	82.4

Relative value of the Primary Completion Rate = $\frac{92 - 27}{100 - 27} = 0.890$

Relative value of the Parity Index = $\frac{96.5 - 65}{100 - 65} = 0.899$

Relative value of the Literacy Rate = $\frac{82.4 - 12.8}{91.9 - 12.8} = 0.880$

The EFA Development Index for South Africa is: $100 \times \frac{0.890 + 0.899 + 0.880}{3} = 89$

Some countries can also calculate the EFA+ Index, which adds the dimension of quality to the three EFA index factors (the AEQI+ Index presented earlier in this report).
For 2002/03 or nearby years, the minimum and maximum values calculated for the AEQI+ are: 39.7 (Chad) and 71 (Tunisia).

The EFA+ African Development Index = Average (Y1 , Y2 , Y3 , Y4) x 100
When Y4= Relative value of the AEQI+ Index

Still using South Africa as our example, the relative value of the AEQI+ = $\frac{49.6 - 39.7}{71 - 39.7} = 0,317$

Hence the EFA+ Index stands at: $100 \times \frac{0.890 + 0.899 + 0.880 + 0.317}{4} = 74,7$

* The fact that the minimum and maximum values may vary over time is certainly a drawback for the comparability of the index in the long term, yet this choice is definitely preferable to fixing invariable minimum and maximum values, since it is entirely possible that one or more countries would in future years be outside any min-max interval that might be fixed.

Table 2.6: EFA and EFA+ African indices

Country	EFA 1990/91	EFA 2002/03	EFA + 2002/03
Niger	11.1	6.8	5.1
Chad	9.4	7.7	5.8
Burkina Faso	15.9	9.5	17.5
Mali	12.0	18.7	18.1
Central African Republic	26.0	20.2	17.6
Ethiopia	23.6	23.5	-
Guinea-Bissau	14.2	24.3	25.2
Benin	13.2	29.3	-
Guinea	10.3	35.2	35.9
Angola	-	35.8	40.3
Burundi	46.4	36.4	40.2
Djibouti	38.8	37.1	-
Mozambique	33.3	38.3	40.1
Eritrea	47.1	39.3	-
Côte d'Ivoire	38.7	39.9	39.2
Comoros	41.1	43.7	37.5
Sudan	43.4	50.8	-
Senegal	35.4	51.4	40.8
Mauritania	34.4	51.4	-
Togo	36.1	57.3	52.9
Cameroon	59.3	57.4	59.3
Morocco	38.4	58.9	62.6
Madagascar	58.1	60.0	59.9
Gambia	32.0	61.2	46.5
Rwanda	56.2	63.3	62.0
Ghana	60.0	64.7	-
Nigeria	57.2	65.6	60.3
Congo	64.7	69.8	-
Zambia	80.2	70.0	55.4
United Republic of Tanzania	65.7	70.3	-
Equatorial Guinea	-	70.6	64.7
Swaziland	74.5	72.1	57.0
Malawi	45.6	72.2	61.2
Uganda	52.2	72.4	68.9
Egypt	61.6	74.6	-
Gabon	70.9	76.0	-
Sao Tome & Principe	-	77.7	69.7
Kenya	80.8	77.6	61.7
Algeria	65.8	79.9	-
Lesotho	76.9	80.6	72.1
Tunisia	68.2	84.9	88.7
Cape Verde	65.2	88.5	-
Zimbabwe	90.7	88.8	81.0
South Africa	86.3	89.0	74.7
Botswana	82.7	90.9	77.8
Namibia	84.0	92.7	76.3
Mauritius	92.4	96.8	92.1
Seychelles	100	99.1	-
DRC	-	-	-
Liberia	-	-	-
Libyan Arab Jamahiriya	-	-	-
Sierra Leone	-	-	-
Somalia	-	-	-
Average	51.1	58.0	52.0

Source:
authors' calculation using data from UIS, countries, household survey and learning achievement surveys.

Given that the index makes less sense when based on a missing value, it is possible to calculate the EFA index for 47 countries, and the EFA+ index for 33.

Both of the indices give us an idea of each country's progress on the EFA Index for the three Dakar Goals: literacy, complete Universal Primary Education, and parity. For some countries, we have data on four of the goals - literacy, complete Universal Primary Education, parity, and quality - to create the EFA+ Index.

The weaker the index, the farther the country is from reaching these goals.

2.1.3.2 The African pyramid and how it breaks down

As a supplement to the assessment of the current situation for each level of education that was presented at the beginning of this section, this part of the report aims to bring all of the analyses together in the form of a sector-wide overview. It is necessary to consider the education system as a unified whole within which i) the different levels of education interact and ii) budgetary trade-offs are made. To do this, we use **use an educational pyramid, which gives a transversal picture of the education system at a given moment by synthesising student flows throughout the system**[35] (from entry into primary school through to higher education).

By analysing these flow charts dynamically (see: Inset 2.2), we can get an idea of the level of priority (in terms of quantitative development) that is assigned to each level of education - possibly to the detriment of others. For this report, we have chosen to describe only average pyramids[36], not because analyses of each country would not be useful (refer to the end of the report for the country diagrams) but simply in the interests of synthesizing the available information. The analysis is based on three factors. First to be shown are the changes in the average African pyramid between 1990/91 and 2002/03, which shows the overall trends in Africa by means of the sector-wide organisation of education systems. Secondly, the dynamic analysis is refined by highlighting the level of primary school completion for each country (countries are grouped into three rankings according to the 1990/91 PCR value). Finally, we take a closer look at countries with a low PCR rate (below 60% in 2002/03). Using a statistical method, these countries are ranked in accordance with the shape of their current pyramid. This allows us to draw up a typology of the least advanced education systems in four groups, differentiated by their «sector-wide» characteristics.

Inset 2.2: Interpreting the educational pyramids

A diagram of flows is a graphic representation that is used to describe student flows - in a synthetic and comparable manner -from entry into primary school and continuing through to higher education. It is presented as three blocks, which, from bottom to top, represent primary education, lower and upper general secondary education, and two discs that represent technical/vocational secondary education and higher education. There are also arrows that describe the transitions between the different levels.

Each of the blocks is in the form of a trapezoid, whose base and summit represent the access rates to the first and last grades of that educational level respectively. The height of the trapezoid represents the length of the cycle, and the corresponding theoretical ages of entry are shown on the left.

For example, for the lower block representing the primary level, the base of the trapezoid represents access to the first grade of primary school (or Apparent Intake Rate) and the summit represents access rates into the last grade of primary schooling (or Primary Completion Rate). To allow comparison with the universal enrolment goals - implying that all children enter the primary cycle and complete it - a rectangular shape has been added using a dotted line. With a view to UPE, this is the form the trapezoid should have in 2015: 100% access into the first and last grades.

Just above this block is the transition arrow between primary education and lower secondary education. The width of this arrow is proportional to the actual transition between the two levels (number of non-repeaters in the first grade of a level that is underway, compared to the number of non-repeaters students the year before in the last grade of the preceding level[37].

The same representational format is applied to the two other blocks and to the second transition arrow. For each country, the distance to the Universal Primary Education goal is clearly shown, and we can also see the management of flows - that is, the academic rate of attrition during the stage and the attrition during the transition between two stages.

Finally, the access rates for technical/vocational secondary and higher education are shown in slightly different ways, given that it is difficult to calculate the access rates for the first and last grades due to the number of different courses of study. The disc for technical secondary education represents the size of technical/vocational education in relation to the whole of secondary education. The size of the disc for higher education is proportional to the number of students per 100,000 inhabitants and its bottom angle (width) is proportional to the value of the number of students in relation to student body in the last grade of upper secondary education. The size of the arrow leading from the secondary education block to the higher education block is fixed, and is not a quantitative representation of student flows.

35 Pre-primary education is not considered due to insufficient data.

36 The indicators in these diagrams are the weighted averages (a more populous country is more heavily weighted when calculating the average) of the indicators for countries for which all data is available.

37 For more details, see the appendices relating to calculation and interpretation of indicators. The indicators in these diagrams are weighted averages (a more populous country is more heavily weighted in the calculation of averages) of indicators for countries for which all data is available.

a) Changes in the Average African Pyramid

A look at the two average African pyramids (1990/91 and 2002/03) shows positive developments in access to all levels of education, but also a change in educational structure on the continent (in terms of increased student flow within and between stages). A more detailed analysis of the average pyramids reveals the three primary observations that follow:

1. Access to the first grade of primary education has grown substantially, but progress on survival has been slow

In 2002/03, while access to the first grade of primary schooling had become nearly universal on the continent (an average of 9 in 10 school-age children were in fact enrolled, compared to slightly over 7 in 10 children in 1990/91), completion of the elementary level (Dakar Goal No. 2) remained low. This was a consequence of student survival in a system that had barely changed over the period in question. In 12 years, completion of the cycle for the continent had risen by an average of only 10 percentage points. On average, 4 children in 10 still did not complete the primary cycle in 2002/03, giving an access rate of just 59% for the last grade of primary schooling as compared to 49% in 1990/91.

Overall, access to each cycle is growing, but student drop-out remain a major problem

This result shows once again that while the UPE Goal must still include improvement of access to the first grade in certain countries, (given the disparities that still persist; see the first part of this section) **efforts must be mainly focused on improving the survival rates of students within the system.** On average this survival rate has only risen from 60% in 1990/91 to 68% in 2002/03.

2. A transition structure that has evolved toward less selective access into secondary education.

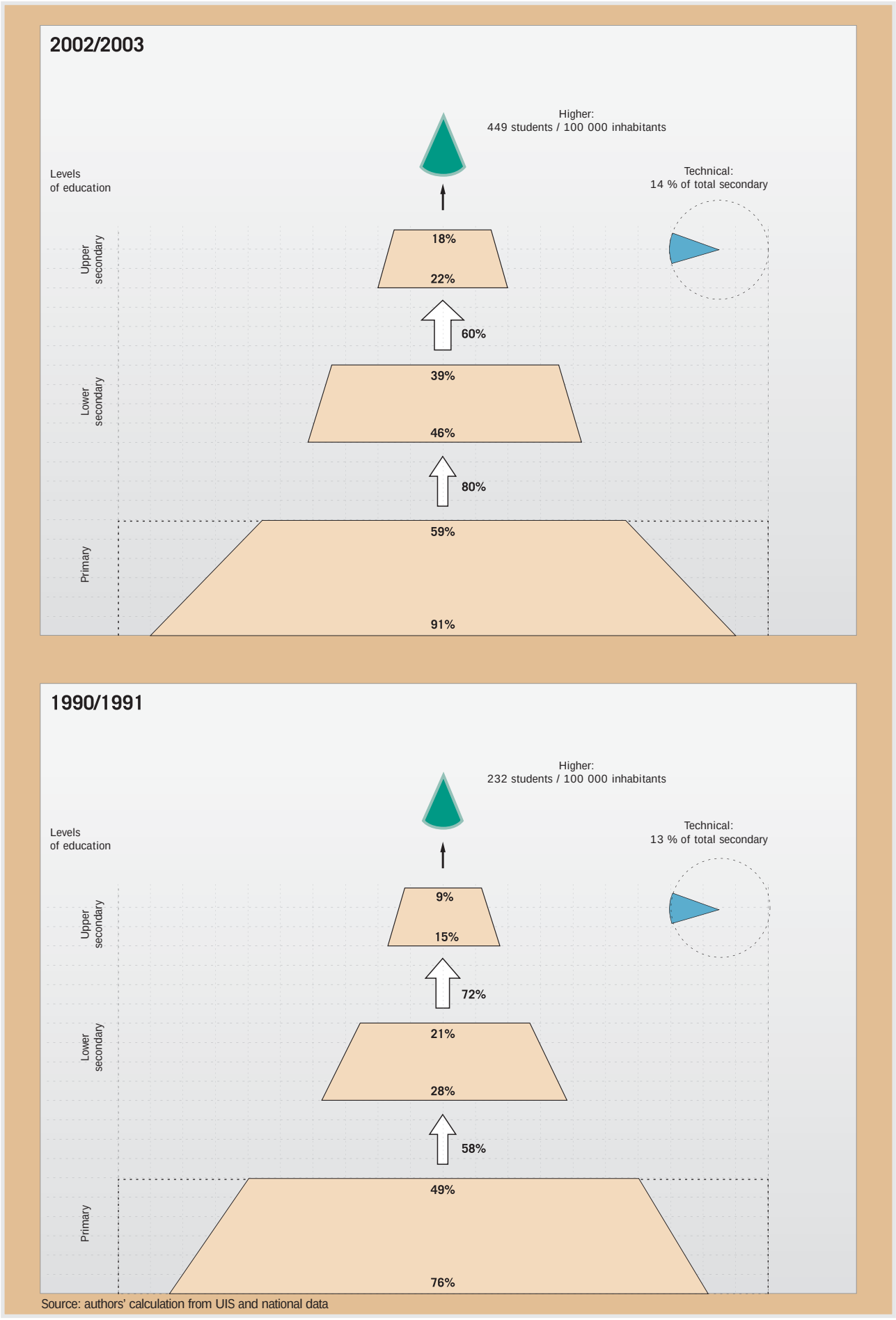
As with primary education, we see a change in schooling coverage in the post-primary levels. Everything points to the whole system being regulated from the bottom up in 1990/91. The choice (implicit or otherwise) was to let fewer students from primary education into lower secondary education, while allowing a larger proportion of students that had reached the end of lower secondary education (collège) access to upper secondary education (lycée). The secondary education cycle could then be considered as a block, in the same manner as primary education. It is possible that this choice was influenced by the limited capacity of the system to accommodate pupils in the secondary cycle.

In contrast, in 2002/03, the trend was more for regulation from the top downwards. The lower level tends to allow a larger proportion of students in the last grade of primary school access to lower secondary education. The transition rate from primary to lower secondary rose by more than 20 percentage points over the period, from 58% in 1990/91 to 80% in 2002/03. A lower proportion of students entered upper secondary education than in the past (transition rate from lower to upper secondary was 60% in 2002/03 versus 72% in 1990/91). This change, whether deliberately chosen by the decision-makers or a natural development, is doubtless the result of the growth in primary education and the non-regulation of entry into lower secondary education.

The individuals trend towards pursuing studies beyond primary school for students that have completed that level, and the desire of a considerable number of countries to extend universal enrolment to lower secondary education, could be the cause of a similar increase in the transition. In 2002/03, more students than in the past (both relatively and in the absolute) entered secondary education due to the increase in Primary Completion Rates and increased primary→lower secondary transitions.

Overall, survival is good in both cycles of secondary education. In the first cycle, the pseudo dropout rate (difference between the access rate to the first grade and the access rate to the

Diagram 2.1: Changes in the average African pyramid



Source: authors' calculation from UIS and national data

last grade) is 15%. Under current enrolment conditions in upper secondary education, 22% of young people in an average cohort enter the first grade of upper secondary, and 18% enter the last grade, giving a pseudo dropout rate of 4%.

Currently, 46% of school-age children are enrolled in the first grade of lowersecondary education (versus 28% in 1990/91), and 39% are enrolled in the last grade (versus 21% in 1990/91). **Education in lower secondary education (collège), whether measured at the outset or on completion, has gained 18 percentage points over the period, i.e. nearly double the growth recorded for primary completion (10 percentage points). While this growth is significant, it shows us the need to emphasise the priority for the primary level, particularly in countries that are farthest from reaching UPE.**

3. Access to the final levels of education is also less selective.

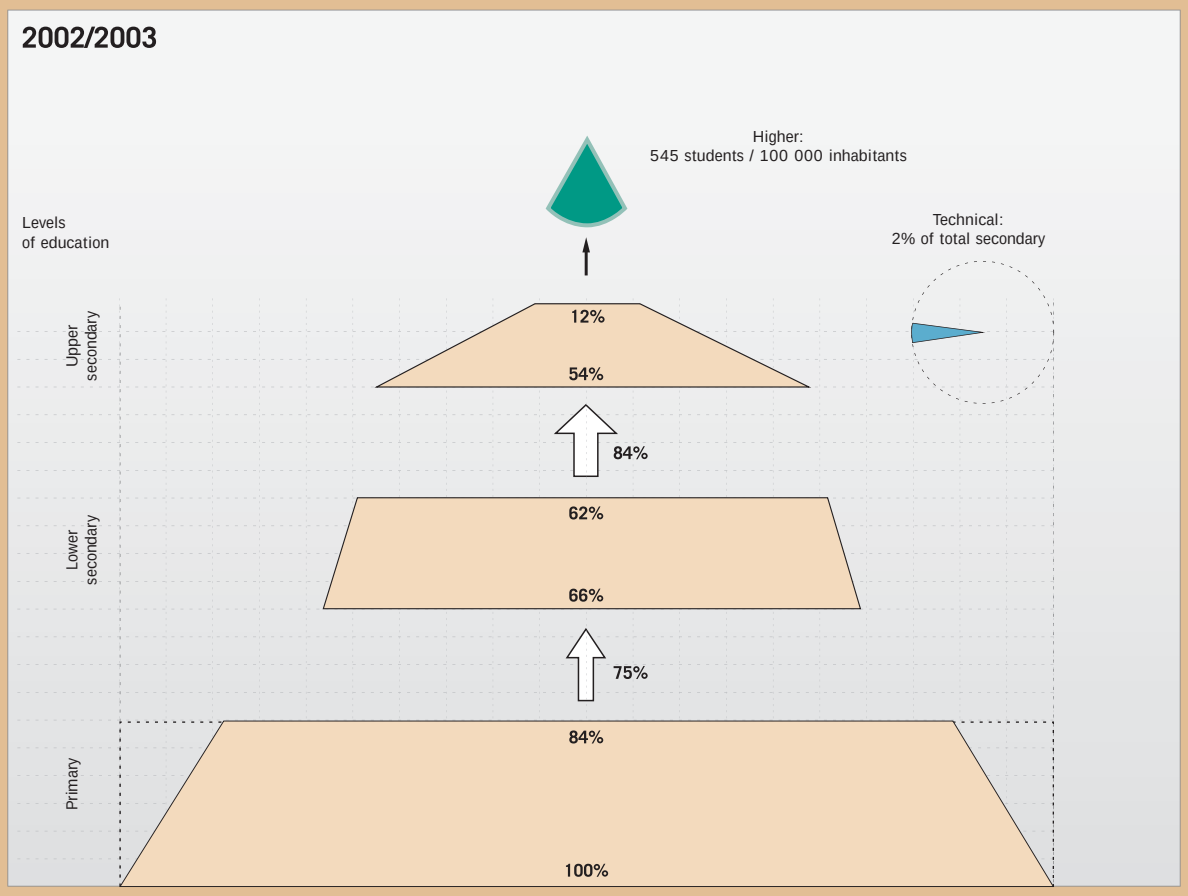
The percentage of students enrolled in technical/vocational education in the whole of secondary education has not really varied since 1990/91 (14% in 2002-03 versus 13% in 1990/91). **This means that the growth of student numbers in technical/vocational education has followed that of general education, i.e.r twice the growth observed in primary education.**
The average number of students in higher education per 100,000 inhabitants also nearly doubled over the period, rising from 232 to 449 in 2002/03.

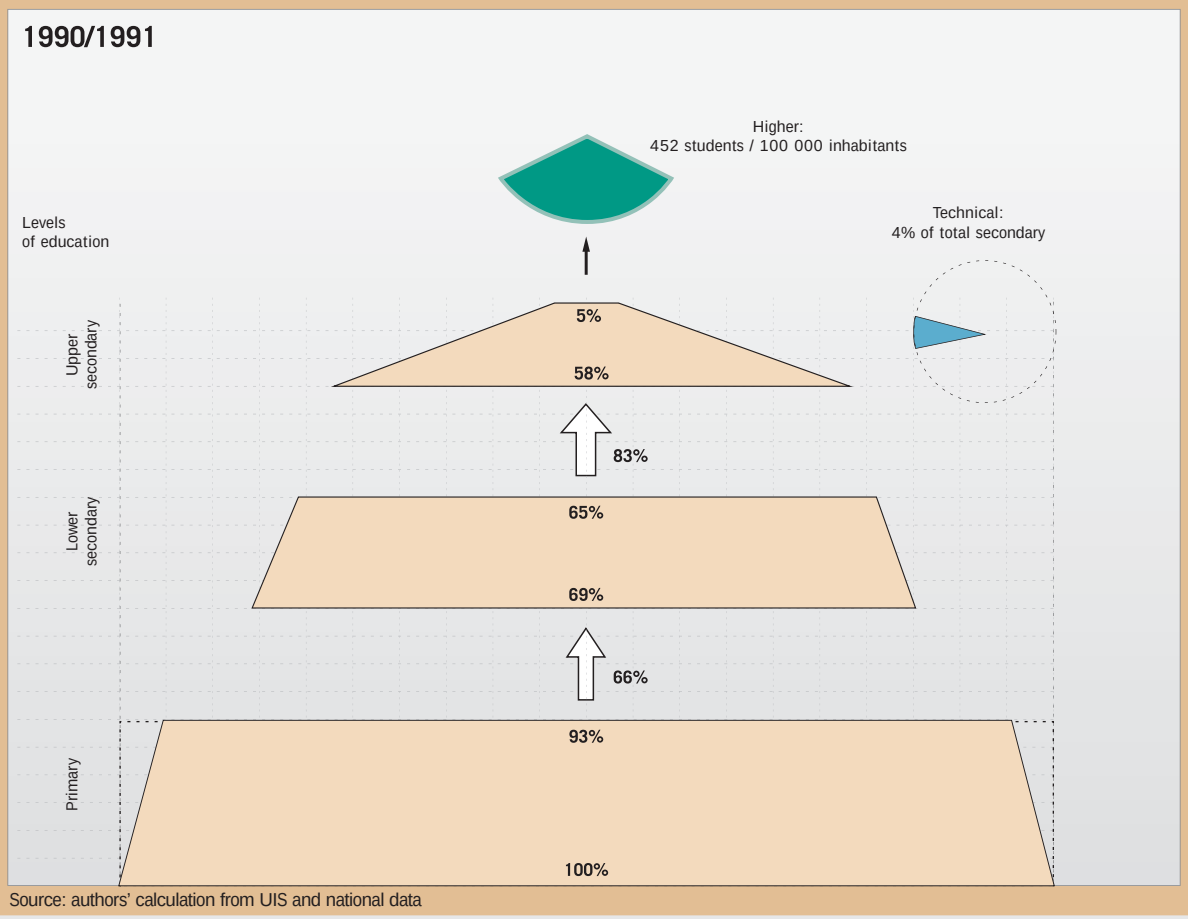
b) Average change in countries according to primary completion levels in 1990/91

To the extent that the objectives of an education system are a function of its progress in terms of the completion of the primary cycle, the countries have been grouped according to whether their 1990/91 Primary Completion Rate was below 50% (28 countries with a low PCR), between 50% and 75% (9 countries with average PCR), or above 75% (10 countries with high PCR). Some of the main features that characterise the average past and present structures of these groups of countries are described below:

Diagram 2.2: Changes in the average pyramid for countries with **high PCR** in 1990/91 (>75%)

In decreasing order of PCR for 1990-91: Mauritius, Seychelles, Zimbabwe, Zambia, Kenya, Botswana, South Africa, Namibia, Algeria, Egypt





Source: authors' calculation from UIS and national data

1. Countries with a 1990/91 primary completion rate above 75% (high PCR, Diagram 2.2)

The main observations concerning the development of the sector-wide structure in these countries are as follows :

• Changes in Primary Completion Rates vary widely between countries

Overall, countries with high PCR improve survival in the different cycles and regulate flows between cycles

While, on average, primary completion remains high in these countries, completion has regressed from 93% in 1990/91 to 84% in 2002/03. This is the result of declining survival rate in 3 of the 10 countries under consideration (Kenya, Zambia, and Zimbabwe). In the other countries where UPE has already been reached, it has remained stable (Mauritius), or else primary completion has increased (Botswana, Namibia).

• A clear growth in transition to lower secondary education

The fact that these countries have reached or nearly reached UPE has allowed them to focus on efforts in post-primary education and to increase the primary→lower secondary transition rate (from 66% to 75%). The transition rate between the two secondary stages has been maintained at a very high level (84%).

• Clear improvements in survival at the secondary level

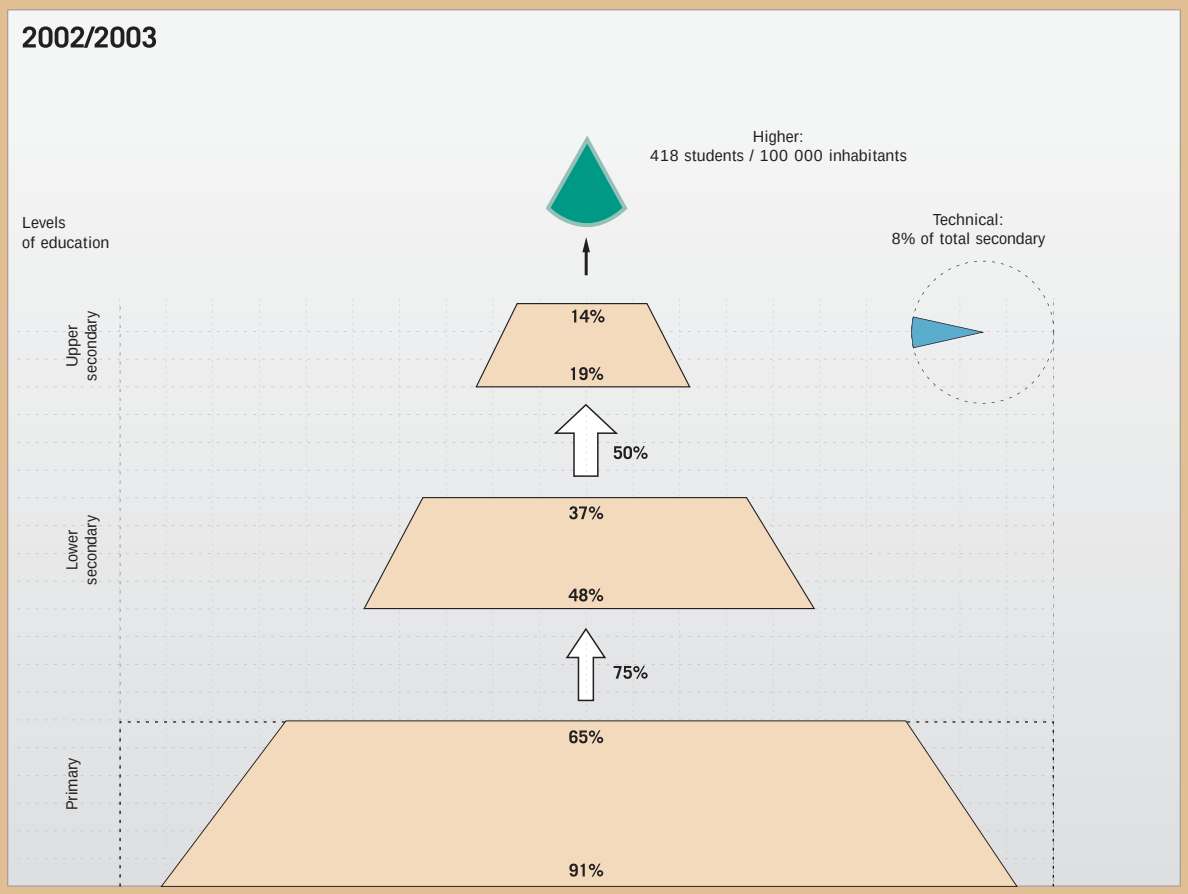
On average, survival in lower secondary education remains very good in these countries: of the 66% of children that enter lower secondary education, 62% complete it. For upper secondary education, where survival was very low in 1990/91, developments are quite positive although they are still far from reaching the desired levels (of the 54% of children who enter this cycle, only 12% complete it).

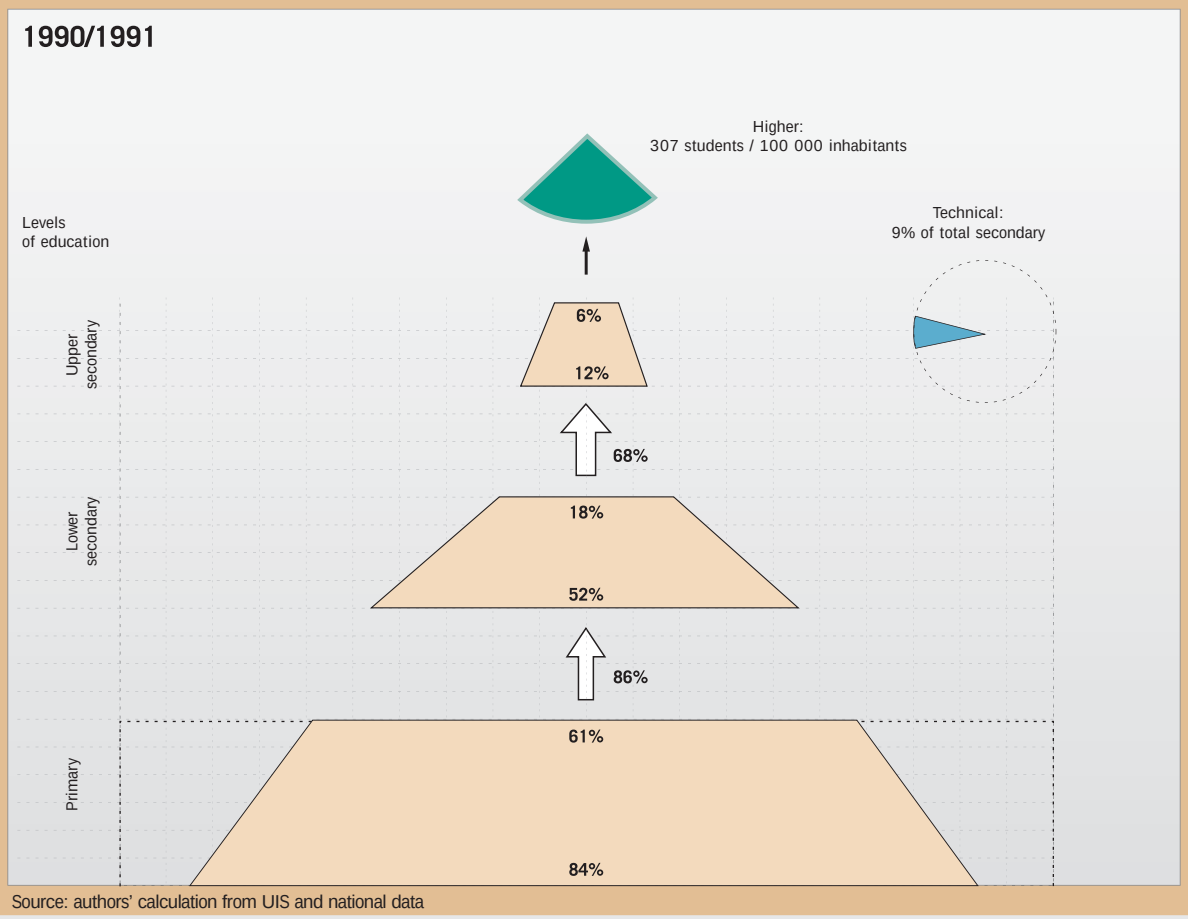
• Better-regulated entry into higher education

Higher education grew quantitatively over the period (from 452 to 545 students per 100,000 inhabitants), but this progress was slower than that observed for those who completed their secondary education (access rates into the last grade of secondary education more than doubled over the period studied, from 5% to 12%). This is to be encouraged to the extent that it supports a policy of regulated access into higher education, being (1) more in line with the quantitative employment needs of the economy (2) more in favour of quality (regulating quantity enables a greater allocation of resources per student).

Diagram 2.3: Changes in the average pyramid for countries with **medium PCR** in 1990/91 (between 50% and 75% PCR)

In decreasing order of PCR for 1990-91: Tunisia, Nigeria, Gabon, Swaziland, Congo, Ghana, Lesotho, Cameroon, Cape Verde





Source: authors' calculation from UIS and national data

2. Countries with a 1990/91 primary completion rate between 50% and 75% (medium PCR, Diagram 2.3)

On average, these countries are mainly characterised by:

- **Improved access to the 1st grade of primary education but a stagnant survival rate that hinders progress toward UPE**

In 2002/03, access rates to grade 1 had risen by 7 percentage points over the period, from 84% in 1990/91 to 91% in 2002/03. However, the survival of students did not follow the same pattern as access, which held back the progress toward primary level completion. Completion rates rose by only 4 percentage points over the period (from 61% to 65%, on average).

Countries with medium PCR have improved management of student flows and secondary survival but drop-out within the primary cycle remain the main obstacle to reaching UPE

- **Significant improvement in survival at the secondary level, combined with improved regulation of students flows between levels**

On average in these countries, transition rates between the main levels of education have decreased in favour of improved survival within each secondary cycle. This makes for considerable improvements in the internal efficiency of the system. For example, over the period, the transition between primary and lower secondary went from 86% to 75%, but the concomitant decrease in dropouts in lower secondary education (from 34% in 1990/91 to 11% in 2002/03) doubled the proportion of children that finish the cycle (up from 18% to 37%). Similar changes took place at the subsequent levels (transitions between lower and upper secondary and between upper secondary and higher education were lower, but survival rates were noticeably improved).

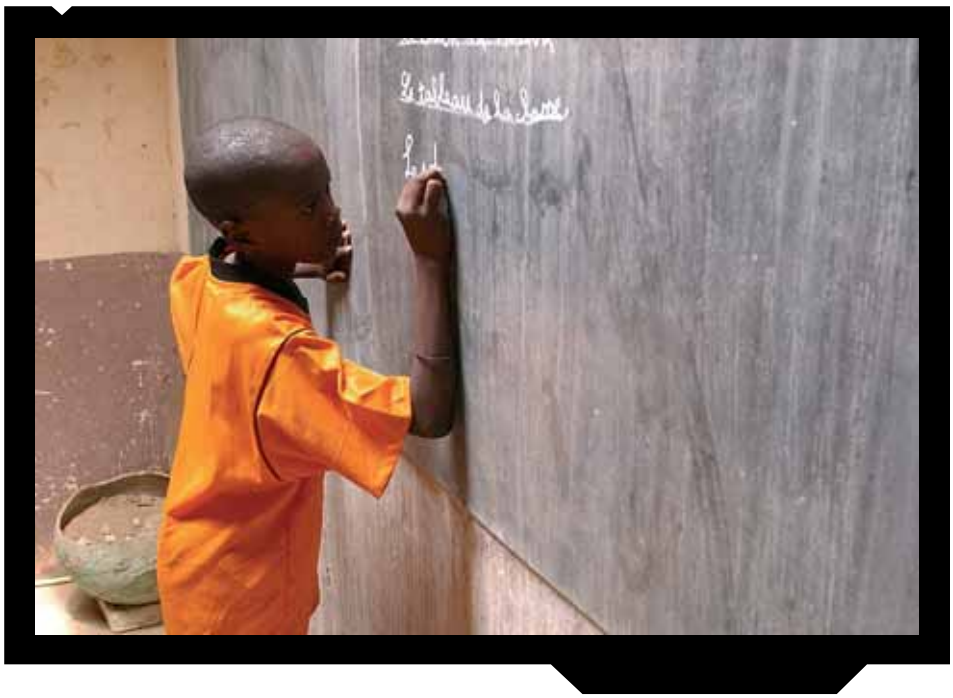
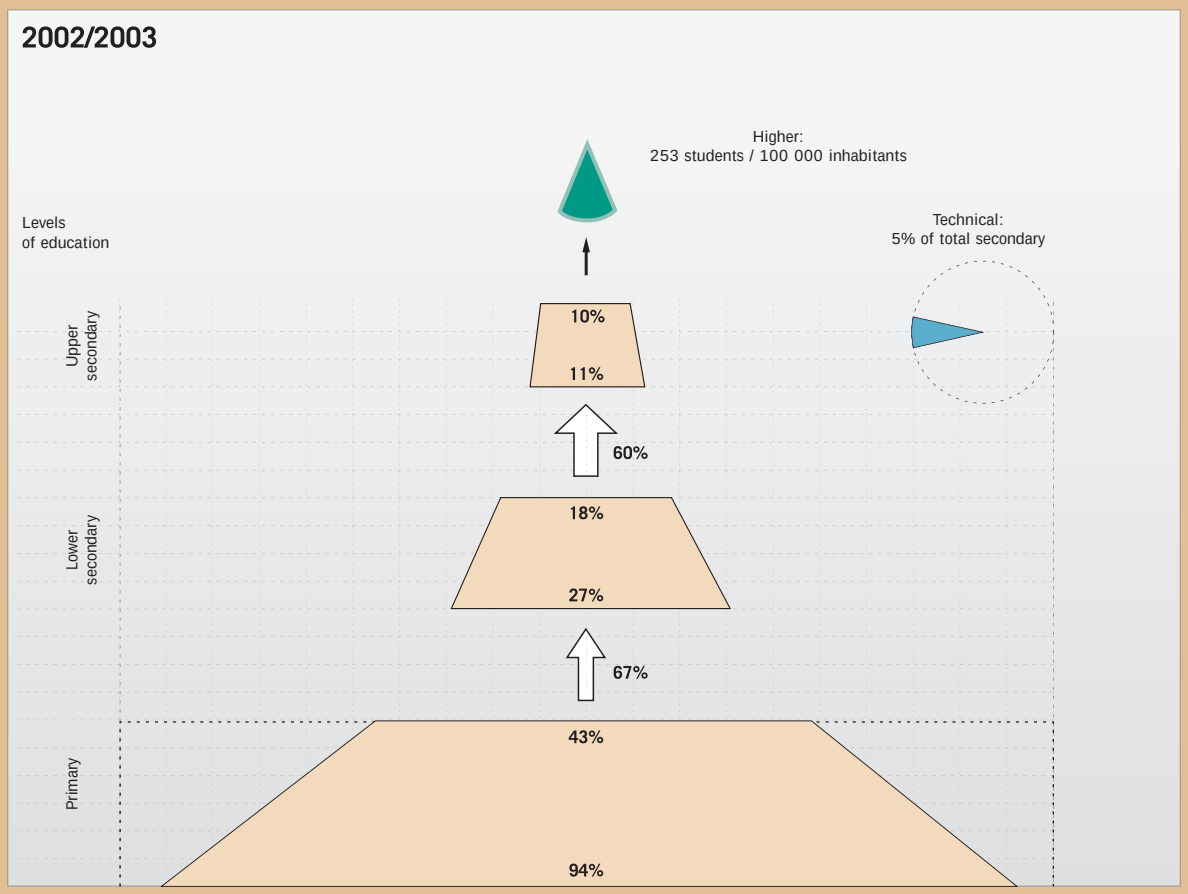
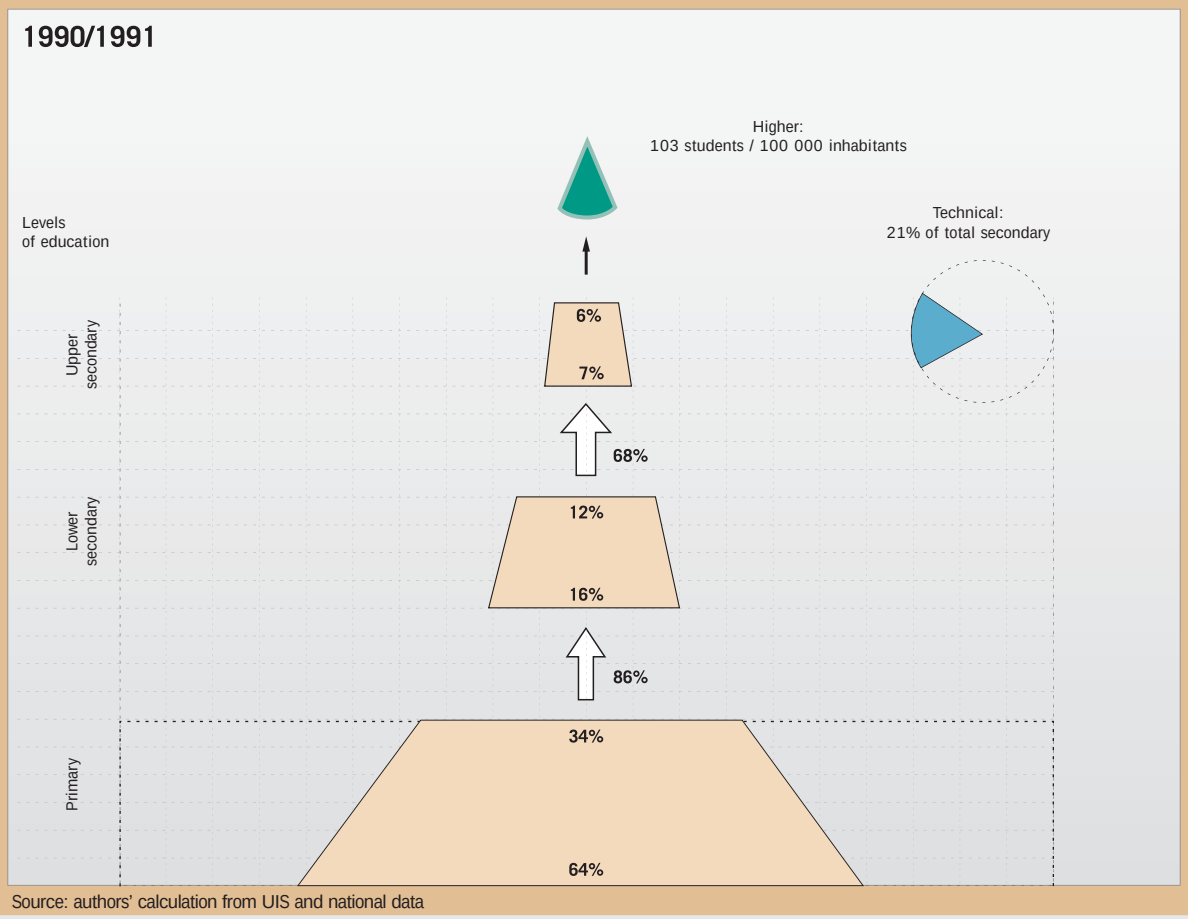


Diagram 2.4: Changes in the average pyramid for countries with low PCR in 1990/91 (<50%)

In decreasing order of PCR for 1990/91: Uganda, Tanzania, Morocco, DRC, Burundi, The Gambia, Sudan, Côte d'Ivoire, Senegal, Togo, Angola, Madagascar, Comoros, Rwanda, Mauritania, Malawi, Djibouti, CAR, Mozambique, Benin, Ethiopia, Eritrea, Burkina Faso, Chad, Niger, Guinea, Guinea-Bissau, Mali.





Source: authors' calculation from UIS and national data

3. Countries with a 1990/91 primary completion rate below 50% (Low PCR, Diagram 2.4)

The main observations concerning average growth in the sector-wide structure of these countries are as follows:

- **Almost universal access to the 1st grade, but low survival**

At the primary level, access to the first grade is almost universal: entry rate rose from 64% in 1990/91 to 94% in 2002/03 (or a 45% increase over the period). Unfortunately, survival of pupils within the cycle has not followed the same trend as access: in 2002/03 fewer than one child in two completed primary education, making the UPE goal of UPE by 2015 difficult to achieve for these countries if the dropout rate remains high.

Overall, countries with low PCR have low survival rates in primary and lower secondary. There is very little regulation of student flows between educational cycles

- **A lack of selection on entry to lower secondary education and a declining rate of survival within this cycle**

On average for the countries in this group, we observe a more than proportional increase in access to grade 1 of lower secondary education in comparison with the Primary Completion Rate, as shown by an average increase of 19 percentage points for the transition between the two levels. The current transition rate is 67%, compared to an average of 48% in 1990/91. Similarly to primary school, survival in lower secondary education has also declined compared to 1990/91 values. The result of these two factors is that while access rates to this cycle have risen by 11 points (from 16% to 27%), the proportion of children that finish lower secondary education has only increased by 6 points (from 12% to 18%). This demonstrates deterioration in the internal efficiency of the systems, as the returns (children finishing the cycle) do not match the increased investment.

- **Rapidly increasing numbers of students starting higher education due to a lack of regulation at entry**

At the same time as the period of comparative growth in the completion of the secondary cycle (from 6% to 10% over the period, or multiplication by a factor of 1.7), the number of students in higher education increased by a factor of 2.5 (the number of students per 100,000 inhabitants rose from 103 to 253). Overall, there does not appear to have been any regulation of student flows on entry to higher education, and it raises the question of how well the volumes of students correspond to the economic needs.

- **A drastic drop in technical/vocational education's share in secondary education**

Technical/vocational education's share of secondary education declined substantially from 21% of secondary students in 1990/91 to 5% in 2002/03.

c) Typology for the pyramids of countries with low 2002/03 primary completion rates - classification in 4 groups

Average pyramids must not obscure the sizeable differences between countries. To provide a closer analysis of the differences between the structures of education systems in these countries, it is worthwhile (1) taking a closer look at countries with a relatively low PCR (below 60%) and (2) organising them into different groups, based on different sector-wide characteristics.

On the basis of the indicators that make up the pyramid (access rates, survival, completion of different cycles, and transition or pseudo transition rates between cycles), we can use statistical methods[38] to analyse the differences and similarities, and thus to group the countries into relatively homogeneous categories. Countries with a PCR below 60%, for which recent,

38 This is a data reduction analysis (a method which studies correlations between the different indicators and develops new synthetic indicators, providing fuller explanations of the differences between countries). This analysis is combined with an ascending hierarchical classification (a method which uses the synthetic indicators developed by factorial analysis to classify countries into groups so as to maximise the differences between groups and minimises the differences within groups).

consistent data is available, can be grouped as shown below[39]. The country in italics is the most representative of the group. The other countries are ranked in decreasing order of their proximity to the average for the group. The average pyramid is presented for each group (Diagrams 2.5, 2.6, 2.7, and 2.8).

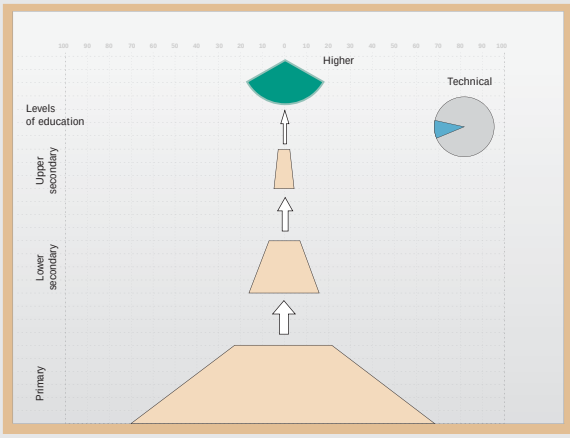
There are striking differences in the structures of different countries far from reaching UPE. Some structures are more efficient than others.

Table 2.7: Pyramids «under construction»: *CAR*, Burkina Faso, DRC[40], Niger, Mali, Djibouti

Main Characteristics	Group Average (%)	Average Countries with PCR <60%
Very low access to the grade 1 (AIR)	52.4	80.5
Very low completion of the primary cycle (PCR)	30.3	41.5
Very undeveloped secondary education (GER)	14.7	23.1
Low transitions between lower and upper secondary education (Transition Rate)	52	62.7
Relatively undeveloped higher education (number of students per 100,000 inhabitants)	143	299

Source: authors' calculation from UIS and national data

Diagram 2.5: Pyramids «under construction»



Source: authors' calculation from UIS and national data

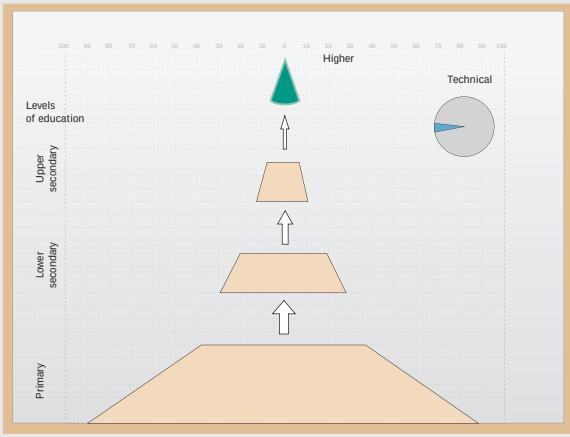
These countries will need to prioritise **improving access to primary school, while seriously tackling the issue of survival** (within the average for other countries, hence insufficient to achieve UPE).

Table 2.8: «Eiffel Tower» pyramids: *Chad*, Angola[41], Mozambique, Senegal, Madagascar, Guinea-Bissau, Mauritania, Ethiopia

Main Characteristics	Group Average (%)	Average Countries with PCR <60%
Quasi-universal access into grade 1 (AIR)	95.2	80.5
Very low survival in primary cycle (Survival Rate)	49.5	66.3
Technical/vocational education slightly lower than the average	3.2	7.9

Source: authors' calculation from UIS and national data

Diagram 2.6: «Eiffel Tower» pyramids



Source: authors' calculation from UIS and national data

39 Among the 28 countries with a PCR of below 60, the following countries were removed from the rankings due to unavailable or incoherent data: Sierra Leone, Liberia.

40 For the DRC, the transition rate from the first to second cycles of secondary education, the secondary GER, and the ratio of secondary students in technical education were not available.

41 For Angola we do not have information on the percentage of secondary students in technical education.

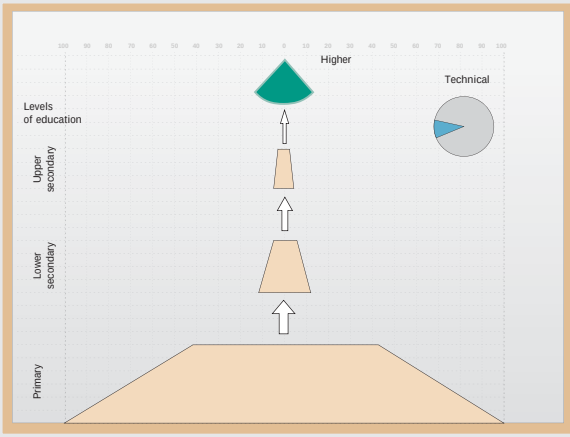
These countries will certainly need to make **primary school survival a priority**, as survival is the current impediment to UPE. Depending on the country and the areas inside each country, this will take place **either through supply policies** (adding more complete primary schools) **or through demand policies** (raising of awareness of different communities, reducing repetition rate, etc.), or through both methods[42].

■ Table 2.9: «Aztec» pyramids: *Burundi*, Rwanda, Tanzania[43]

Main Characteristics	Group Average (%)	Average Countries with PCR <60%
Quasi-universal access into grade 1 (AIR)	95.5	80.5
Undeveloped secondary education (GER)	13.6	23.1
Fairly low primary→secondary transition (Transition Rate)	37.7	69
Technical/vocational education slightly higher than the average	10.4	7.9

Source: authors' calculation from UIS and national data

■ Diagram 2.7: «Aztec» pyramids



Source:
authors' calculation from UIS and national data

These countries are mainly characterised by two factors: **A below-average primary→secondary transition rate**, evidence of **greater regulation of student flows, and a higher proportion of technical/vocational education at the secondary level.**

■ Table 2.10: «Toboggan» pyramids: *Guinea*, Côte d'Ivoire[44], Zambia, Comoros, Sudan, Congo, Eritrea, Gabon, Benin

Main Characteristics	Group Average (%)	Average Countries with PCR <60%
Slightly higher Primary Completion Rate (PCR)	51.7	41.5
Higher primary→secondary transition (Transition Rate)	85.4	69
Comparatively better-developed secondary education (GER)	31.7	23.1
Better-developed higher education (number of students per 100,000 inhabitants)	422	299

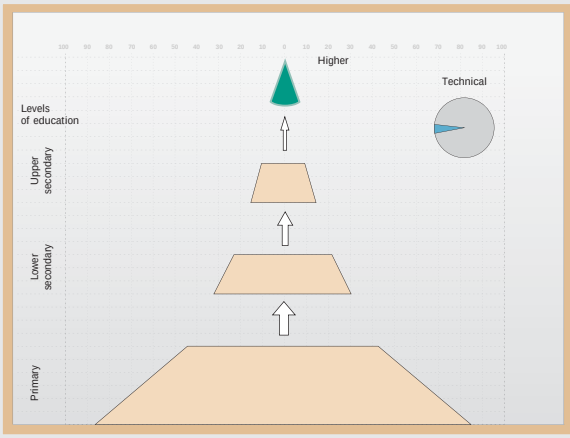
Source: authors' calculation from UIS and national data

42 For more information on the best ways to improve survival, see the example of Senegal in Amelewonou et al (2004).

43 Information on secondary GER in Tanzania is not available.

44 Secondary GER is not available for Côte d'Ivoire.

Diagram 2.8: «Toboggan» pyramids



Source:
authors' calculation from UIS and national data

These countries present the most «continuous» pyramids; the education system loses students throughout all levels of education, both within each cycle and between the educational cycles. There is no management of student flows between cycles. The system and the individuals in it are the primary decision-makers. These countries would be well advised to **1) take steps to increase survival in the primary cycle in order to achieve UPE, and 2) implement a flow management policy in order to produce a more balanced educational pyramid, which will be more effective in the fight against poverty and which is better adapted to a limited job market (universal base and terminal education levels in accordance with the labour market).**

2.2 Current dynamics: on track for UPE ?

The Dakar Framework for Action places primary education at the very heart of the Education for All goals. This level of education is also of capital importance in terms of its impact on social and economic development (Section 1)-particularly in African countries, where the returns for primary education are much greater than those for other levels. For this reason, **primary education must be a priority in national education policies.** What is the current situation? Will the trends observed help Africa achieve the Dakar Goal by 2015 ?

This section will attempt to analyse the reality of this priority by firstly examining comparative changes in pupil numbers in the different cycles. The question of managing flows between educational cycles will then be introduced, before concluding with a forecast of primary completion rates in 2015, given current enrolment conditions.

2.2.1 Changes in pupils' number: a priority with little impact on primary education

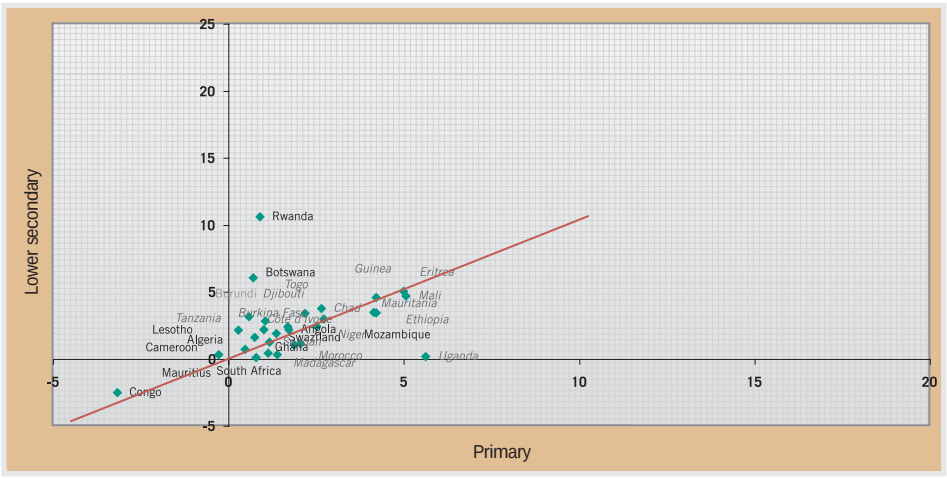
The review of the situation in 2000 showed that the Jomtien goals had not been achieved. Have the Member States prioritised action for primary education? To answer this question, we can compare the growth rate in student numbers within each educational cycle, and compare it with that for primary education. Section 3 will examine primary education's share of the resources that are allocated to education in relation to what is given to other levels.

Graphs 2.14 and 2.15 show changes in pupil numbers in primary education and in lower secondary schooling between 1990/91 and 1998/99 respectively (i.e. two years before the

deadline for the Jomtien Goals). The next chart compares 1998/99 and 2002/03. Graphs 2.16 and 2.17 present the same analysis for primary/upper secondary education. Lastly, Graphs 2.18 and 2.19 make the comparison between primary/higher education.

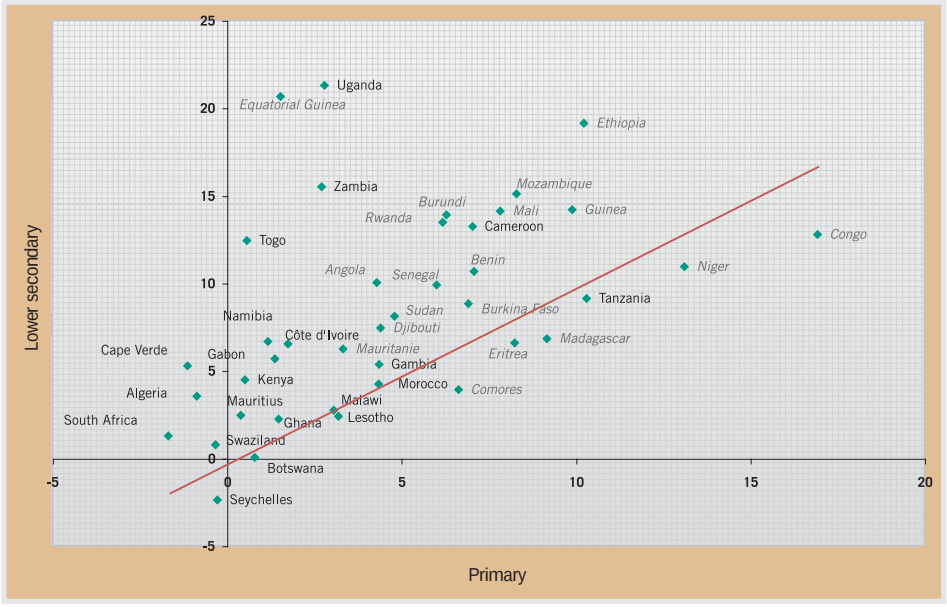
Countries found on the oblique line of each graph are those for which the expansion of primary education between the two dates was the same as for the other cycle in question. Those below the line showed greater development in primary education than in the other levels of study, and the reverse is true for countries found above the line.

Graph 2.14: Average annual variation in number of pupils in primary education and in lower secondary education between 1990/91 and 1998/99 (in %)



Source:
authors' calculation from UIS and national data.

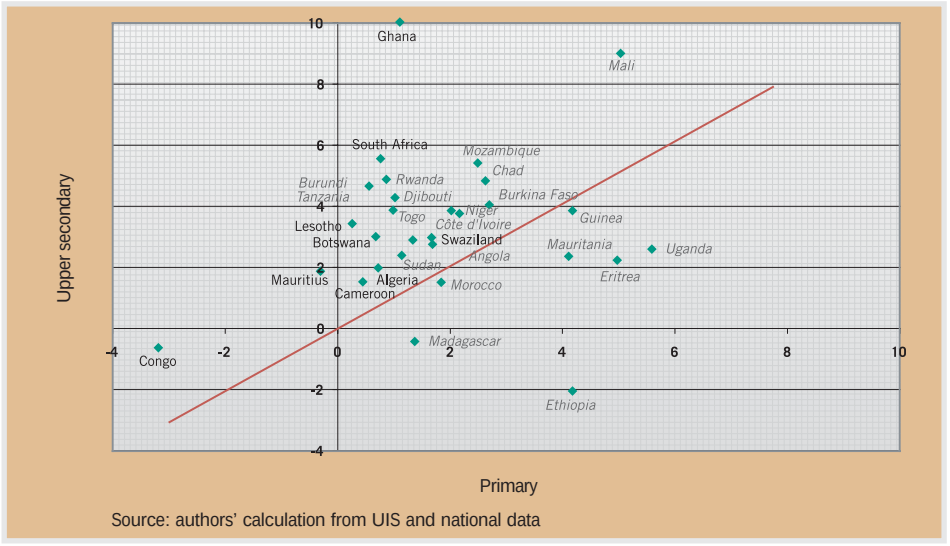
Graph 2.15: Average annual variation in number of pupils in primary education and in lower secondary education between 1998/99 and 2002/03 (in %)



Source:
authors' calculation from UIS and national data.

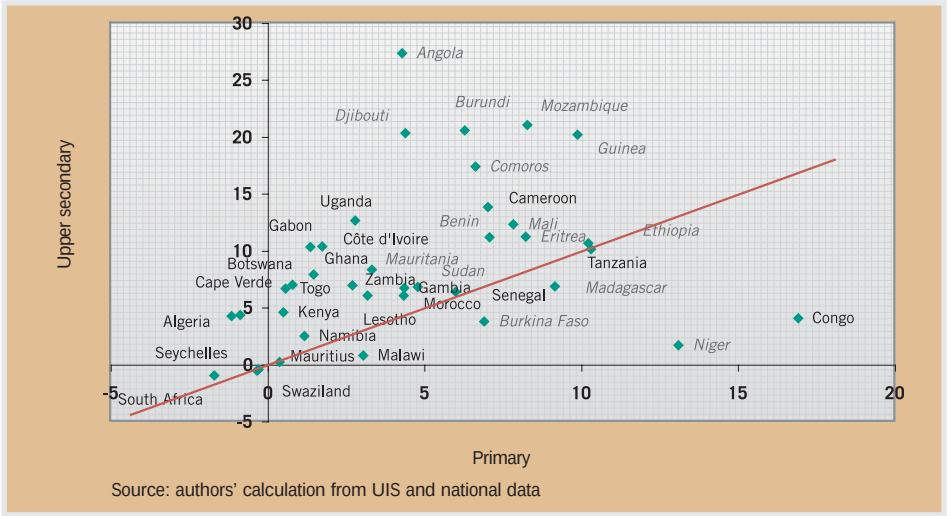
A dynamic comparison between cycles in student body growth does not show primary education as a priority. This trend is not improving, despite the Dakar Forum's commitments to do so.

Graph 2.16: Average annual variation in number of pupils in primary education and in upper secondary education between 1990/91 and 1998/99 (in %)



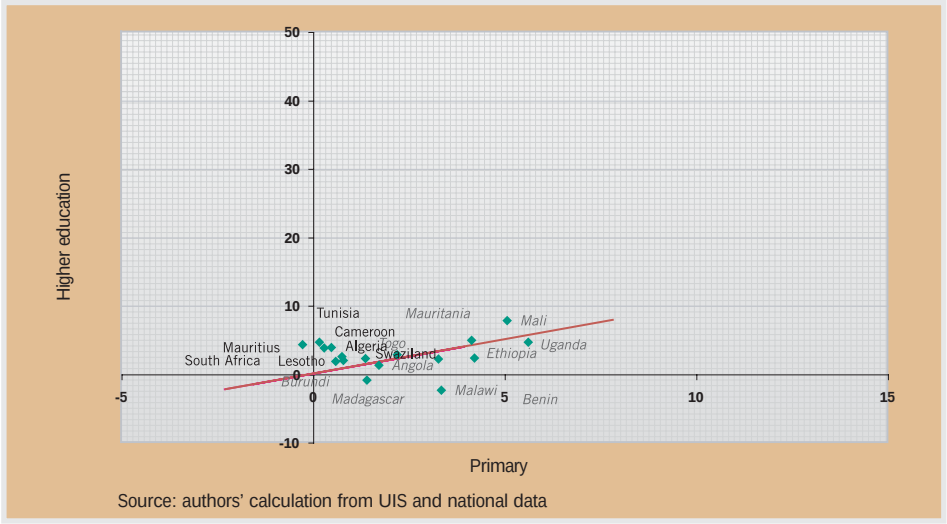
Source: authors' calculation from UIS and national data

Graph 2.17: Average annual variation in number of pupils in primary education and in upper secondary education between 1998/99 and 2002/03 (in %)



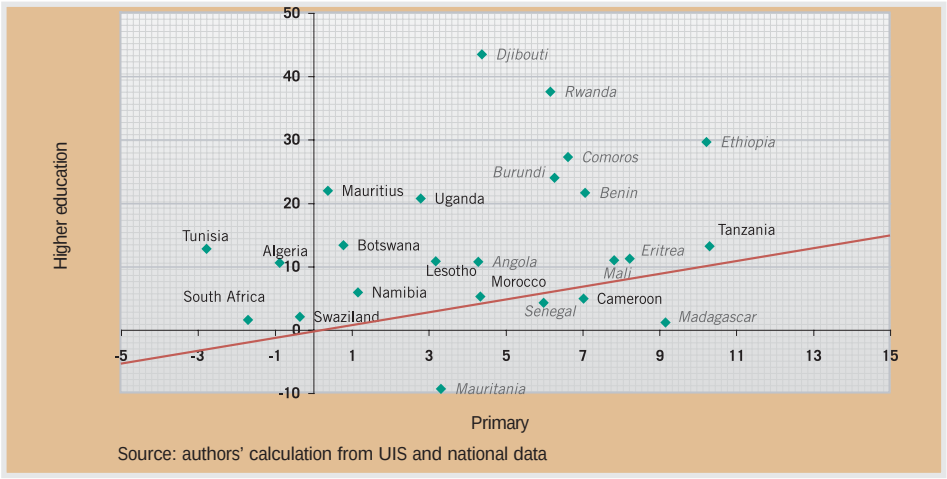
Source: authors' calculation from UIS and national data

Graph 2.18: Average annual variation in number of pupils in primary education and in higher education between 1990/91 and 1998/99 (in %)



Source: authors' calculation from UIS and national data

Graph 2.19: Average annual variation in number of pupils in primary education and higher education between 1998/99 and 2002/03 (in %)



Source: authors' calculation from UIS and national data

The analysis is similar for these three series of graphs. **Comparing the primary cycle with the post-primary cycles generally shows primary education to be lagging behind in terms of development**. For countries found below the bisecting line, primary schooling developed more quickly than for the other educational cycle in question. However, on the whole, these countries are few, whether we refer to lower secondary, upper secondary, or higher education. While this situation would be understandable in countries approaching Universal Primary Education-which can therefore devote greater attention to the other educational cycles-it is less easily justified for countries that are far from reaching this goal (see: conclusions in Section 1). However, stronger growth in post-primary education is still observed, even when we limit our study to countries that are a long way from achieving UPE (countries with PCR below 50% at the start of the period, shown in grey on the graph).

Countries with a low completion rate, and where the numbers of primary pupils increased more slowly than for the other levels of education, were even more numerous for the period

1998/99 to 2002/03 (cf. Graphs 2.15, 2.17, and 2.19) than for the period between 1990/91 and 1998/99. **The gap between the pace of growth in the primary sector and that in the other educational cycles is now even greater than in the past.**

While the comparative analysis of the 1990/91 to 1998/99 and the 1998/99 to 2002/03 periods shows the same tendency: an absence of true priority status for primary education, the results are even more striking for the more recent period. There were more countries with low Primary Completion Rates making better progress in their post-primary levels between 1998/99 and 2002/03 than between 1990/91 and 1998/99. Demographic growth and the (slow) increase in primary completion rates (without improved regulation of flows between cycles) may provide a partial explanation of this situation.

2.2.2 Flow management: survival and transition

Table 2.11, taken from Alain Mingat's «Issues of Financial Sustainability in Developing Secondary Education in Sub-Saharan African Countries» (2004d), shows estimated changes in the growth of pupil numbers, using the hypothesis of UPE in 2015 and depending on two scenarios: i) maintaining primary→lower secondary and lower→upper secondary transition rates between now and 2015, and ii) increasing these rates to 100%.

Table 2.11: Number of secondary pupils in 2015 according to several scenarii in 10 countries

Country	Primary Completion 2001-2015	Lower secondary					Upper secondary						
		2001 (1000)	Maintained Transition Rate (a)		Transition Rate=100 % (b)		2001	(a) + Maintained Transition Rate		(b) + Maintained Transition Rate		(b) + Transition Rate = 100 %	
		Num X	Num	Num /X	Num	Num /X	Num Y	Num	Num /Y	Num	Num /Y	Num	Num /Y
Togo	1.8	210	412	2	507	2.4	42	77	1.8	94	2.2	214	5.1
Cameroon	2.5	468	1 262	2.7	2 233	4.8	151	345	2.3	620	4.1	1 108	7.3
Mozambique	2.8	327	1 040	3.2	1 679	5.1	179	701	3.9	1 326	7.4	2 493	13.9
Benin	2.8	222	862	3.9	1 078	4.9	41	154	3.8	194	4.7	552	13.5
Senegal	3	210	717	3.4	1 353	6.4	62	190	3.1	358	5.8	667	10.8
Mauritania	3	45	181	4	324	7.2	29	82	2.8	140	4.8	162	5.6
Rwanda	3.5	96	368	3.8	884	9.2	57	236	4.1	560	9.8	740	13
Madagascar	3.6	316	1 350	4.3	2 150	6.8	66	309	4.7	480	7.3	930	14.1
Mali	4.9	181	806	4.5	1 203	6.6	58	215	3.7	321	5.5	886	15.3
Niger	7.9	85	1 026	12.1	1 555	18.3	17	132	7.8	200	11.8	694	40.8
Total	3.6	2 160	8 024	3.7	12 966	6	702	2 441	3.5	4 293	6.1	8 446	12

Source: Mingat (2004d).

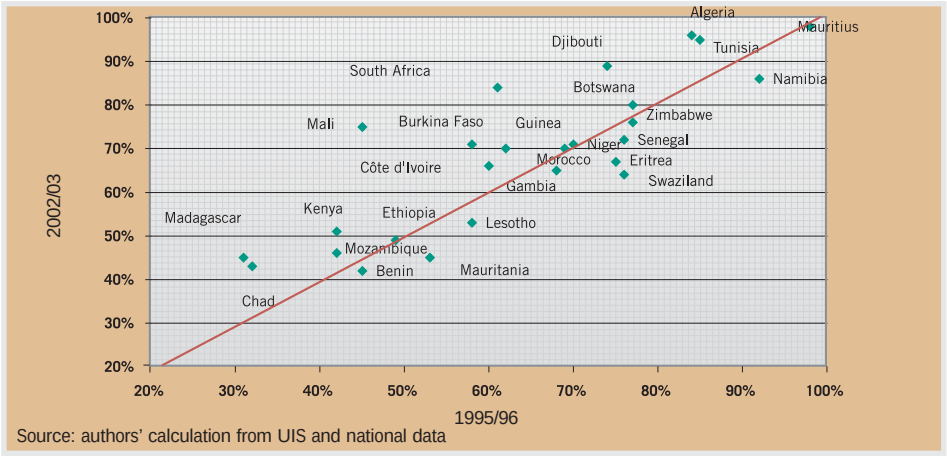
For all 10 of these countries, maintaining both primary→lower secondary and lower→upper secondary transition rates would involve multiplying pupil numbers in both levels by 3.7 and 3.5 respectively, while volumes of pupils in primary education will already have to be multiplied by 3.6 to achieve Universal Primary Education. **From a logistical and financial perspective, the simultaneous development of these three educational cycles seems unrealistic.** The scenario of universalising lower secondary education even implies multiplying pupil numbers at that level by a factor 6.
It is imperative that the regulation of flows between the different cycles be made a part of future educational policies, as will be seen in Section 3.

This table also reminds us of the **importance of relating survival within an educational cycle** (UPE implies 100% survival in primary education) to **transition from that cycle to the next one**.

2.2.2.1 Changes in Primary Survival and in Transition to Secondary School

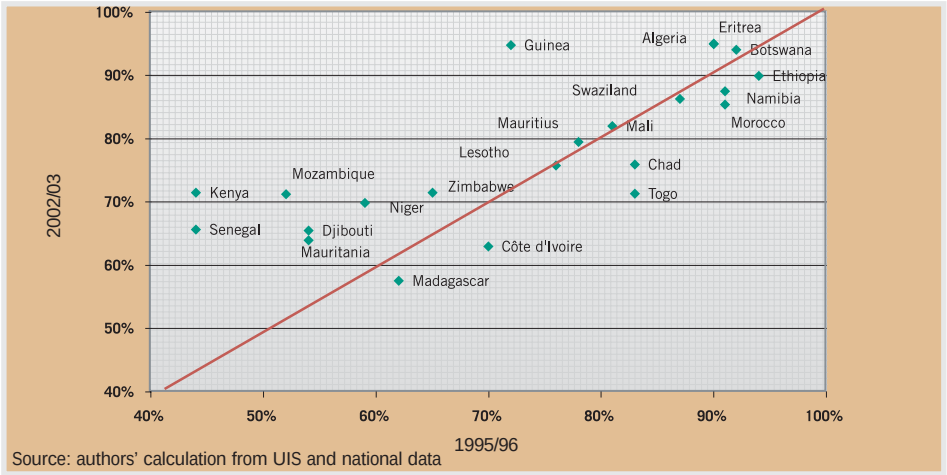
Graph 2.20 illustrates primary survival rates in 1995/96 and 2002/03 (or close). Next, we will examine the situation in countries where completion rates for 2002/03 (or close) were below 75%.

Graph 2.20: Changes in primary survival rate between 1995/96 and 2002/03



Source: authors' calculation from UIS and national data

Graph 2.21: Changes in primary-secondary transition rates between 1995/96 and 2002/03



Source: authors' calculation from UIS and national data

Stagnating survival in primary school and increasing primary→secondary transition

Survival rates showed little improvement in the majority of countries between 1995/96 and 2002/03. Some countries, such as Benin, Mauritania, Eritrea, Lesotho, Swaziland, Senegal, and Namibia, have even seen a decline. On the other hand, countries such as Algeria, Burkina Faso, Djibouti, Mali, and South Africa have made great improvements in survival. To a lesser extent, Chad, Madagascar, and Kenya, despite a currently low level, actually made progress.

Given that above and beyond access to primary school, it is essential for students to complete the cycle, **any stagnation or even a decline in a low survival rate is not compatible with the need to prioritise primary schooling.**

In contrast to survival rates, we can see that transition rates have, in general, increased, particularly in countries where they were below 70% in 1995/96. The exceptions are Côte d'Ivoire and Madagascar, where the transition rates declined. For the other countries (i.e., those where the transition rate was above 70% in 1995/96), this rate has remained relatively stable, except for Togo, Morocco, Namibia, and Ethiopia, where transition levels remain high, despite a fall.

2.2.2.2 Survival versus transition

Due to lack of student flow management, education systems tend to suffer from individual pressures.

The relationship between primary survival and primary-secondary transition (Graph 2.22) is very weak. Countries with low survival can have an equally low transition rate (Kenya), or a very high one (Congo). However, high survival rates are generally associated with relatively high transition rates.

It is important to include both survival and transition when examining the issue of flow management. Table 2.12 provides a succinct presentation of certain characteristics of two different, hypothetical education systems.

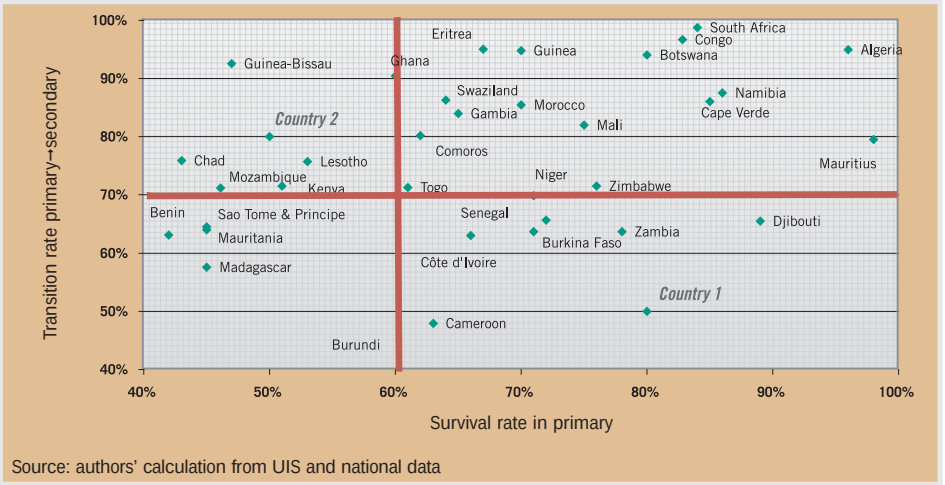
Table 2.12: Flow regulation - hypothetical examples

	Number of children in grade 1 of primary education	Primary survival rate	Number of students in the last grade of primary school	Primary-secondary transition rate	Number of students sntering secondary school	Simulated percentage of long-lasting literate children from the system[45]
Country 1	100	80%	100*80%=80	50%	80x50% = 40	62.8%
Country 2	100	50%	100*50%=50	80%	50x80% = 40	52%

Country 1, with a primary school intake of 100 children, is characterised by fairly high survival (80%) and a 50% primary-secondary transition rate. Country 2 also has a primary school intake of 100 children, but is characterised by a poor survival rate (50%) and a high, 80% transition rate between primary and secondary schooling. The result is that each system allows 40 children to enter secondary education. Nevertheless, the first country has implemented a policy that emphasizes primary completion, and then regulates access into secondary school. In contrast, primary dropouts are frequent in the second country, so completion is low. However, even when these children went to school, they did not reach the end of primary school and thus had less chance of becoming permanently literate, as shown in the last column on the table. The first system enables a 10% increase in literate children compared to Country 2.

In system 1, only 20 children out of 100 fail to reach the end of primary school. In system 2, this number is 50. This system, which is ineffective because of its high dropout rate, also produces more potential illiterates.

Graph 2.22: Primary survival rates and transition from primary to lower secondary education in 2002/03 (or Close)



Source: authors' calculation from UIS and national data

45 We simulate this rate by taking the percentage of children in an average country who will be literate after one, two, six, etc. years as our reference (average calculated for 22 countries with available MICS survey data). We suppose that the dropout rate is identical in each year of the cycle.

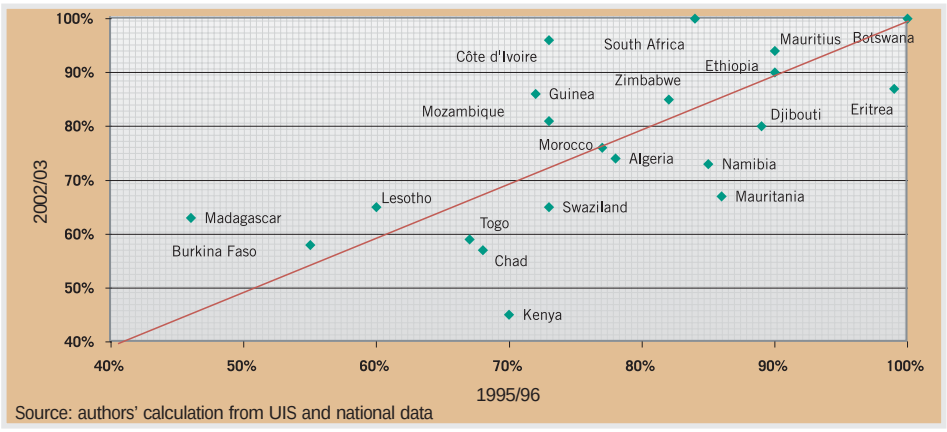
Graph 2.22 shows us which countries are close to the second category; i.e., having low survival and high transition rates into lower secondary education.

Guinea-Bissau, Ethiopia, Kenya, Lesotho, Mozambique, and Chad are among the countries that have high primary-secondary transitions despite low primary survival. Could education policies in these countries be considered to be at odds with prioritising primary education? Overall, it might have been preferable to implement measures designed to improve primary survival, without adversely affecting the development of secondary education.

2.2.2.3 Managing flows in secondary education

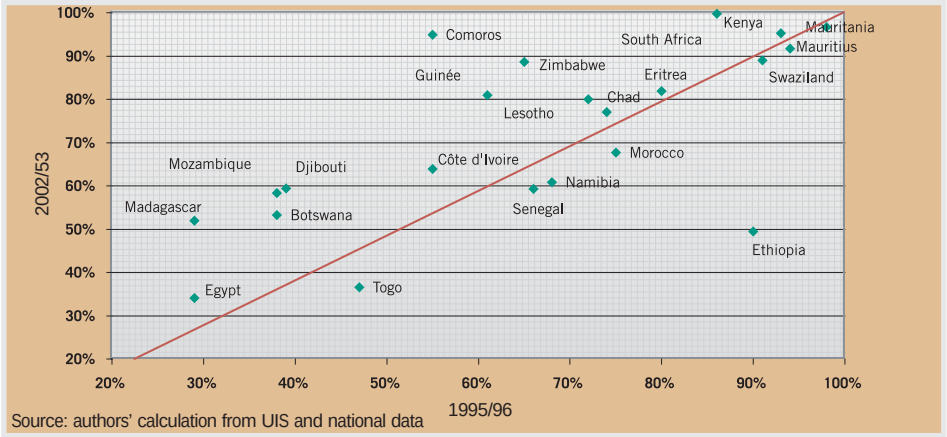
We can perform the same type of analysis for the relationship between lower and upper secondary education

Graph 2.23: Changes in survival rates for lower secondary education between 1995/96 and 2002/03 (or close)



Source: authors' calculation from UIS and national data

Graph 2.24: Changes in the lower→upper secondary transition rates between 1995/96 and 2002/03 (or close)

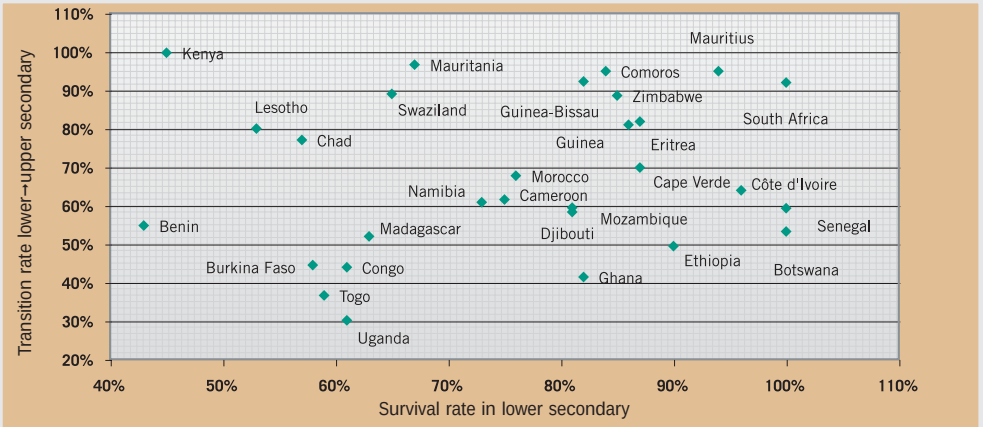


Source: authors' calculation from UIS and national data

Simultaneous study of Graphs 2.23 and 2.24 reveals that lower→upper secondary **transition rates have increased more quickly than the survival rates within lower secondary education** (there are more countries below the diagonal in the second graph). Survival rates within lower secondary have even shown an overall decline, since they have decreased for the majority of countries for which data were available. This is similar to the results in the cycle below, and is a sign of unregulated flows. The growth in enrolments (and the shape of the educational pyramids) seems to depend more on the effects of individual pressure than on the collective interest shown by public policies for the management of student flows.

Student flow management is just as low for the lower→upper secondary transition

Graph 2.25: Lower secondary education survival rates and lower→upper secondary transition rates in 2002/03 (or close)



Source: authors' calculation from UIS and national data

Graph 2.25 provides a look at lower secondary education survival in 2002/03 and lower-upper secondary transition, and confirms the previous observations. The link between these two values is very weak, or even non-existent. Thus, countries like Uganda and Swaziland have a survival rate in lower secondary education of nearly 60%, but the former has a transition rate of 30% and for the latter it is 89%.

Countries like Mauritania, Lesotho, Burundi, Kenya, and Swaziland are characterised by low survival rates (below 70%), and relatively high transition rates to upper secondary education (above 70%). However, rather than rationalising entry into upper secondary, a system that encourages survival at lower secondary education, and thus completion, seems preferable to one in which there is a high number of dropouts, for reasons of both internal efficiency and reducing the waste of public resources. Graph 2.25 also shows us that overall, transitions tend to stabilise at around 70% as survival rises, which implies that, over time, prioritising survival in lower secondary education leads to increased transition rates when the latter are low.

2.2.3 On track for Universal Primary Education in 2015 ?

The Dakar Forum reaffirmed the priority of Universal Primary Education by 2015. But will current trends in access and survival allow countries to achieve universal primary education ?

To answer this question, projections for the access rates to the last grade of primary education by 2015 have been performed for all of the countries for which sufficient information was available. These projections are based on:

- The most recently known primary completion conditions (the most recent access rate to the last grade of primary school, no earlier than 2000)
- The most recently known intake conditions (the most recent Apparent Intake Rate, no earlier than 2000)
- The average survival rate in the primary cycle observed for the 2000-2003 period

This method has the advantage of being based on **current enrolment conditions**. More specifically, it allows us to calculate the PCR that will be achieved in 2015 if conditions continue to change at the same rate as has been observed over the last (approximately) six-year period, during which we have measured the most recent changes.

Inset 2.3: Projection method

We consider one primary level, with duration d. We attempt to anticipate access rates into the last grade of primary school in 2015 on the basis of recent trends.

The method used is based on:

- Primary Completion Rate in 2002/03 (or similar year) (PCR_{2002})
- Apparent Intake Rate in 2002/03 (or similar year) (AIR_{2002})
- The Average Survival Rate (ASR) observed for the period 2000-2003 (or similar period), calculated as an average of Primary Survival Rates observed for the same period. Survival Rate, or SR, is the percentage of children who reach the last grade of schooling from among those who entered the first grade.

$$ASR = \frac{1}{\sum_{t=2000}^{2003} I_t} \sum_{t=2000}^{2003} SR_t \times I_t$$

Each survival rate is calculated using a pseudo-longitudinal method[46].

$$SR_i = \prod_{\text{All grades in the cycle}} \frac{\text{New entrants into a given grade, Year t}}{\text{New entrants into the previous grade, the year before (t-1)}}$$

I_t is a dummy variable worth 1 if the observation of survival rate is available for Year t, and 0 if it is not available. Thus, we calculate ASR using only the years for which this information is available, since in practice, cases where the information was available for four consecutive years were rare.

Using an average survival rate rather than the figure observed for the last available year allows us to smooth out data that could be an individual case or an accidental event.

Once the average survival rate has been calculated, it is applied to Apparent Intake Rate, which gives an initial estimate of Access Rate to the last grade of primary school for the base year + the level's duration. For example, if the last available AIR is for 2002/03 and the primary level lasts six years, we get an estimated PCR for 2007/08:

$$PCR_{2002+d-1} \approx AIR_{2002} \times ASR$$

Next we apply (in linear fashion) estimated progress between this base year and the first year of the projection to the period remaining before 2015/16

$$PCR_{2015} = PCR_{2002+d-1} + (2015 - (2002 + d - 1)) \times \left[\frac{PCR_{2002+d-1} - PCR_{2002}}{(2002 + d - 1) - 2002} \right]$$

Nous avons donc

$$PCR_{2015} = AIR_{2002} \times ASR + (2015 - (2002 + d - 1)) \times \left[\frac{AIR_{2002} \times ASR - PCR_{2002}}{d - 1} \right]$$

Certain countries are not included in the projections:

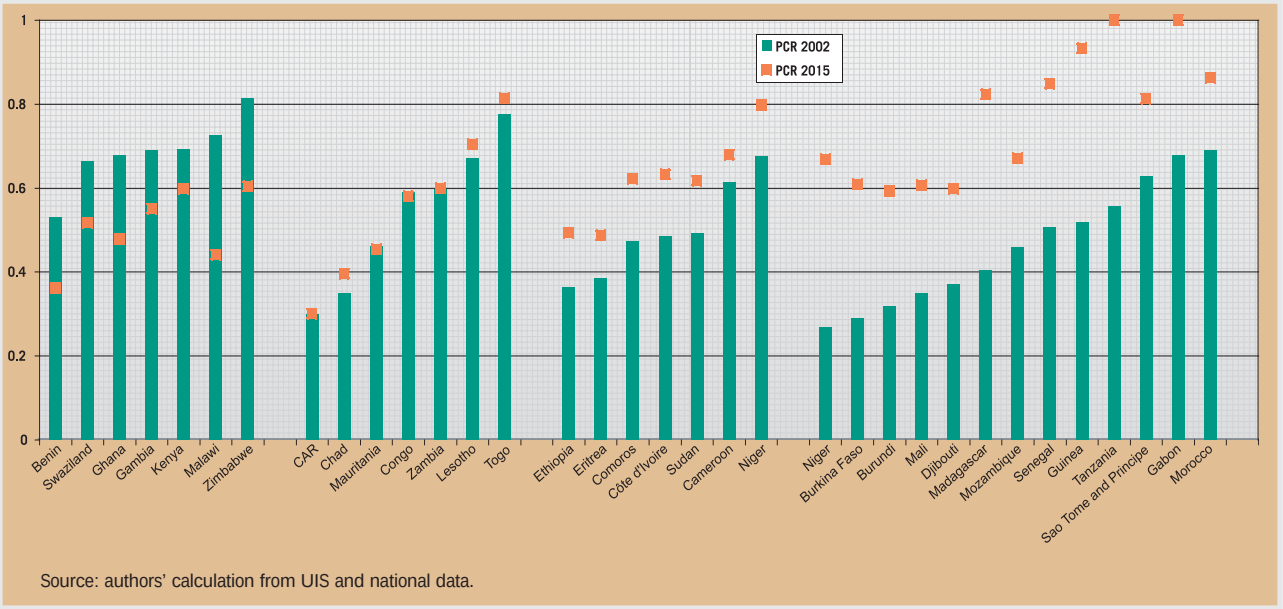
- Countries for which the available information structure fluctuated too much, or was insufficient (or unavailable): Angola, Guinea-Bissau, Equatorial Guinea, Liberia, Uganda, Democratic Republic of the Congo, Rwanda, Sierra Leone, Somalia;

- Countries where access rates to the last grade of primary school were above 90%. These countries are considered to have achieved UPE or to be close to doing so. Projections would have exacerbated a threshold effect, observed in recent years, related to the minimum effort to be implemented, given the shortest route to attainment of the goal: Cape Verde, Libya, Namibia, Mauritius, Seychelles, Algeria, South Africa, Botswana, Egypt, Tunisia.

The exercise was performed for 34 countries and the results are presented in Graph 2.27.

46 See Reuge (2004b).

Graph 2.26: Access rates into the last grade of primary school by 2015 for certain African countries



Source: authors' calculation from UIS and national data.

While UPE is already a reality for a small number of countries, current trends are not encouraging for the majority of the continent

Four groups are obtained when we classify countries by level of progress:

- Countries with a **downward trend** for access into the last grade of primary school and for which current enrolment conditions are decreasing their chances of meeting the 2015 goal. Some of these countries have a relatively high completion rate (Malawi, Zimbabwe).

- Countries that show a **slight increase** (fewer than five percentage points by 2015) in their access rate for the last grade of primary education. This situation could be seen as normal for countries with high PCR, but it is not desirable for other countries such as Chad, Central African Republic, and even Mauritania, since they currently have low completion levels.

- Countries that show a **moderate increase** (between 5 and 15 percentage points by 2015). This situation is less of a concern for countries with relatively high completion rates. However, this observation is more troubling when countries with low completion rates are involved, such as Ethiopia, Eritrea, Comoros, Côte d'Ivoire and Sudan

- Finally, we come to countries that can anticipate **strong growth** (above 15 percentage points). Some of these countries currently have low completion rates (Niger and Burkina Faso). Strong growth is pulling some countries towards the 2015 goal (Gabon, Tanzania).

Anticipated completion levels, by examining the overall situations in the light of current trends, therefore allow us to see whether these countries are on track for the 2015 Goal. Table 2.13 provides a summary.

Table 2.13: Classification of countries by current trends towards achievement of the Universal Primary Education goal by 2015

	PCR 2015>=90%	75%<=PCR 2015<90%	PCR 2015<75%
High 2002/03 PCR (above 75%)	Algeria, South Africa, Botswana, Cape Verde, Egypt, Mauritius, Namibia, Libya, Seychelles, Tunisia	Togo	Zimbabwe
Medium 2002/03 PCR (50% - 75 %)	Tanzania, Gabon, Guinea	Nigeria, Morocco, Senegal, Sao Tome & Principe.	Congo, The Gambia, Ghana, Cameroon, Kenya, Lesotho, Malawi, Benin, Swaziland, Zambia
Low 2002/03 PCR (below 50%)		Madagascar	Djibouti, Eritrea, Ethiopia, Comoros, Chad, Central African Republic, Mali, Burundi, Burkina Faso, Mauritania, Mozambique, Niger, Sudan, Côte d'Ivoire

As a whole, these results are disquieting. If current intake, and especially, survival rates do not change significantly, 30 countries (out of 44) will not be able to achieve the 2015 goal (their PCR will be below 90%). 25 countries will have less than 75% access to the last grade of primary school, even if we include countries which are making very good progress. In fact, countries like Niger, Burkina Faso and Mali have already made considerable progress, starting from a very low level of coverage.

It is important to emphasize, especially for countries that are not on track, that these projections are based on countries maintaining their current enrolment conditions. However, as we shall see in Section 3, there is potentially enough room for manoeuvre within education policies to significantly improve access and survival in the primary cycle and enable more countries to meet the 2015 deadline.

In terms of increasing the numbers of pupils, the 2000 review and the new commitments have not changed primary education's priority status. In a number of countries, pupil numbers in the post-primary cycles continue to increase faster than at the primary level. The current developments at the primary level must therefore be speeded up. In Section 3, we will attempt to show which educational policies are most likely to provide this impetus.