

# CHAPTER 5

## EQUITY IN SCHOOLING

In order to achieve long-term sustainability, the development of education systems must integrate the important equity dimension. Indeed, equity becomes a pillar of the analysis of education systems insofar as the aim is for all children to have as equal chances of schooling as possible. This objective has two main facets: social justice, and economic efficiency. Indeed, it is now widely recognized that education is a useful investment for those who benefit from it, as it contributes to their economic and social wellbeing in adulthood. Ensuring that all individuals have equal schooling opportunities therefore contributes to greater social justice within society. The search for equity is also positively related to increased economic efficiency, by allowing the more capable individuals, regardless of their gender, location, ethnic group or wealth, to access the top levels of education.

The description of education systems usually relies on average statistics that tend to limit the understanding of the issues at stake, because the figures often conceal significant disparities across groups. The analysis of equity aims to overcome such shortcomings by providing a picture of the distribution of results around these average situations, disaggregating indicators by individual characteristics (such as gender, location, socioeconomic background, and so on).

This chapter examines two aspects of equity, that will be analyzed successively:<sup>107</sup>

- (i) *Enrollment and individual schooling patterns according to gender, area of residence (urban/rural), geographical location (regions), and family income levels:* The respective weights of supply and demand factors in the explanation of schooling disparities will also be addressed to better grasp underlying issues. Indeed, understanding where inequities come from and how they affect school access and career paths is important for the design of adequate remedial policies; and
- (ii) *The allocation of public education resources among a generation of school-aged children:* Different groups' access to education, and the implications about the allocation of public education resources among groups, have a direct impact on how the value of education and future economic opportunities are distributed among individuals. This analysis assesses the degree to which the current financing of education reduces or exacerbates disparities.

## Equity in Schooling Patterns

This section reviews disparities in schooling patterns at the primary and secondary levels via a series of schooling indicators already used in Chapter 2, but disaggregated by gender, family wealth, residence (urban/rural), and region. Most analyses are based on the latest available household surveys, namely the 2000/01 and 2007 Household Budget Surveys.

### ● Disparities in Enrollment Ratios

Table 5.1 below displays GERs and parity indexes according to gender, location, and income groups,<sup>108</sup> for 2000 and 2006, underlining the following principal findings:<sup>109</sup>

- (i) *Disparities between girls and boys increase sharply at postprimary levels.* Enrollment ratios tend to show disparities between boys and girls at all levels, with girls' enrollment ratios being generally lower than that of boys (Gender parity Index, or GPI below 1), except at the primary level where girls are slightly overrepresented (GPI of 1.04). Female

enrollment also tends to drop from one level to another, as shown by the decreasing value of the GPI, from 0.95 at lower secondary to 0.65 at the higher education level.<sup>110</sup> Compared with 2000, girls' schooling has improved at preprimary and primary levels, although it has deteriorated at postprimary levels. Although the expansion of preprimary and primary education has favorably benefited girls, the improvement in access to secondary and higher levels has not. To compensate for this, the cut-off points for girls at CSEE and ACSEE exams have been lowered;

- (ii) *The schooling of rural children has improved but still lags behind that of urban children.* Enrollment rates for children living in urban areas are higher than for their rural counterparts, regardless the level of education. Wide gaps are observed at the secondary level: in 2006, for every 100 urban children enrolled at A-Level, only 16 were from rural areas. However, location disparities have decreased over 2000-06 in the primary and secondary cycles: in primary school, enrollment differences between urban and rural children are now minor (the location parity index was 0.97 in 2006, up from 0.79 in 2000); and at O-Level the index has tripled from a low 0.13 in 2000 to 0.39 in 2006. Both the fee-free primary education policy and the construction of new secondary schools in rural areas under the SEDP I have had a positive impact, allowing greater shares of rural children to enroll.<sup>111</sup> At the preprimary level the residency gap in enrollment has remained stable, with a location parity index of 0.52 in 2006; and
- (iii) *Great disparities between the rich and the poor remain.* Enrollment and income levels tend to be positively correlated, as shown by the rise in GERs with each wealthier quintile. In addition, disparities across income groups grow with successive education levels, reaching an extreme at A-Level, where only six children from the poorest quintile gain access for every 100 children from the wealthiest quintile (wealth parity index of 0.06), and higher education, that no poor students benefit from at all (wealth parity index of 0.00). Furthermore, although income-related enrollment gaps at preprimary, primary and O-Level have tended to narrow over the period, the situation has in fact deteriorated at A-Level and higher education: the wealth parity indexes in 2000 were considerably higher. It is apparent, therefore, that the expansion of these levels has squarely favored children from the wealthiest families.

**Table 5.1: Gross Enrollment Ratios and Parity Indexes, by Gender, Area of Residence, and Level of Income, 2006**  
Percent, and Parity Indexes

	Preprimary	Primary	O-Level	A-Level	Higher
Total Tanzania	28.6%	116.6%	30.9%	6.6%	2.4%
Gender (%)					
Male	29.9%	114.6%	31.7%	7.2%	2.9%
Female	27.2%	118.8%	30.2%	6.0%	1.9%
Gender Parity Index (Female/Male)	0.91	1.04	0.95	0.83	0.65
(Memo: Index, 2000)	0.89	0.95	1.13	0.95	0.75
Area of Residence (%)					
Urban	45.9%	119.6%	56.6%	16.2%	n.a. *
Rural	23.8%	115.8%	21.9%	2.6%	
Location Parity Index (Rural/Urban)	0.52	0.97	0.39	0.16	
(Memo: Index, 2000)	0.53	0.79	0.13	0.09	
Income Group (%)					
Q5 (The wealthiest)	48.1%	125.3%	64.8%	26.8%	7.9%
Q4	34.1%	148.6%	53.4%	9.1%	1.6%
Q3	30.2%	124.8%	33.4%	6.3%	2.6%
Q2	29.2%	126.0%	24.7%	2.5%	0.8%
Q1 (The poorest)	23.0%	117.1%	19.1%	1.6%	0.0%
Wealth Parity Index (Q1/Q5)	0.48	0.93	0.3	0.06	0.00
(Memo: Index, 2000)	0.21	0.82	0.23	0.19	0.15

Source: HBS, 2000/01 and 2007; authors' computations.

Note: \* The location parity index is irrelevant to higher learning institutions, that are all located in urban areas.

Reading Note: A gender parity index of 0.83 (2006, A-Level) indicates that for every 100 boys enrolled, there were 83 girls.

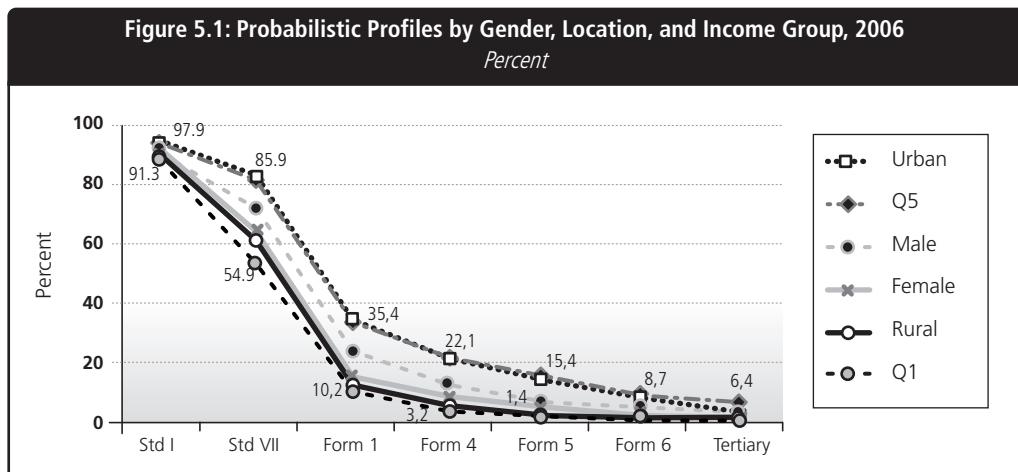
As noted in Chapter 2, GERs say little about access and retention. To obtain such information, it is necessary to rely on schooling profiles. The unavailability of accurate estimates of the distribution of the school-aged population by location and region has led to profiles being computed using the last HBS survey, that provides schooling information for 2006. Probabilistic profiles have been elaborated, providing information on the probability that a given generation of school-aged individuals gain access to successive education grades from primary through higher education. The results are displayed and discussed in the section below.

### ● Disparities in Access and Completion Rates

#### Disparities by Socioeconomic Characteristic (Gender, Area of Residence, Level of Income)

Figure 5.1 below displays simplified schooling profiles according to gender, location and income group.<sup>112</sup> It illustrates the following:

(i) Gender. The probability of primary access is high, for both boys and girls, at 94 percent and 95 percent respectively. Although dropout affects boys and girls throughout the primary cycle, boys tend to be more affected during the early grades (up to Standard IV), whereas girls are more likely to drop out once they have reached Standard V. Ultimately, the probability of girls accessing Standard VII is 66 percent, against 74 percent for boys. Secondary education access probabilities are low for both genders, with girls being at a greater disadvantage than boys. Indeed, access rates at O-Level are 15 percent and 24 percent respectively, and at A-Level, they reach five and six percent respectively. This situation may be due to the relatively fewer girls who pass the CSEE and ACSEE national examinations at the end of Standard VII and Form 4 (see Chapter 4 on quality), preventing them from attending publicly-funded O-Level and A-Level schools. The belief among parents that educating girls beyond a certain age is an unwarranted expense (as girls will marry and leave the family) may also account for this situation. Finally, completion probabilities for girls at O-Level and A-Level are lower than those for boys, although the gender gap observed at the entry of the cycle is wider than the one observed at completion, indicating that girls tend to drop out less than boys;



Source: HBS, 2007; authors' computations.

(ii) Area of residence. Children from urban areas have better access probabilities to all levels of education than their rural peers. The location gap widens sharply between primary and secondary cycles: although the residence-related gap in the probability of primary access is limited (just 4.5 percentage points difference, in favor of urban children), the gap reaches 23 percentage points at O-Level entry, and eight percentage points at A-Level entry. The narrowing of the disparities at A-Level can be attributed to the limited number of A-Level schools available nationwide, given that all children, regardless of their background have very limited access to A-level: indeed, in 2009, there were just 453, against 15,725 primary schools and 3,649 O-Level schools; and

(iii) Socioeconomic disparities. The gap in the respective access probabilities of children from the wealthiest households and those from the poorest ones is slight: the probability of Standard I access varies between 91 percent (Q1) and 97 percent (Q5). However, the differences between the two groups are more marked in terms of primary and secondary completion rates and access to secondary education. Only half the children from the poorest households (Q1) complete primary school, as opposed to 84 percent of children from the wealthiest families. Likewise, children from Q1 are less likely to have access to secondary education than their wealthier counterparts (10 percent and 34 percent, respectively), and they face the lowest chances of O-Level and A-Level completion (three percent and zero percent, respectively). By contrast, 22 percent of children from Q5 complete O-Level and nine percent are likely to complete A-Level. This shows that even a sizeable number of children from the wealthiest households do not have access to or complete A-Level; so beyond the disparities, access to and completion of secondary education is a major challenge to children from all income groups.

*Disadvantages tend to be cumulative.* Poor rural girls face the worst access conditions, and disparities tend to broaden as of the end of primary (for every 100 rich urban boys completing primary, only 53 poor rural girls do). They then explode at postprimary levels, leaving poor rural girls with virtually no opportunities to pursue secondary education (See Table 5.2).

**Table 5.2: Cumulated Disparities in Schooling Profiles, by Extreme Group, 2006**  
*Percent*

	Male/Urban/Q5	Female/Rural/Q1	Parity Ratio
Primary Access	98.8	92.5	0.94
Primary Completion	94.2	50.1	0.53
O-Level Access	55.4	7.1	0.13
O-Level Completion	36.5	1.1	0.03
A-Level Access	21.3	0	—
A-Level Completion	12.8	0	—

Source: HBS, 2007; authors' computations.

*Interestingly, primary school access by orphans is on par with that of nonorphans* (at 94.6 percent and 94.3 percent respectively). In 2006, 16.8 percent of children aged five to 17 years were orphans (having lost one or both parents), on average: 11 percent of children aged five years, to 22 percent of children aged 17 years (HBS, 2007). Apparently orphans do not face major schooling problems, as far as access is concerned.<sup>113</sup>

**Table 5.3: Disparities in Primary and Secondary Access Probabilities,  
by Socioeconomic Group, 2000 and 2006**

*Parity Indexes*

	Primary Access	Primary Completion	O-Level Access *	O-Level Completion	A-Level Access	A-Level Completion
<b>Gender (Female/Male)</b>						
2006	1.02	0.89	0.63	0.68	0.70	0.39
2000	0.96	n.a.	0.93	n.a.	0.94	n.a.
<b>Location (Rural/Urban)</b>						
2006	0.95	0.74	0.35	0.24	0.13	0.12
2000	0.90	n.a.	0.16	n.a.	0.15	n.a.
<b>Income (Q1/Q5)</b>						
2006	0.94	0.65	0.30	0.15	0.09	0.00
2000	0.84	n.a.	0.30	n.a.	0.38	n.a.

Source: Authors' calculations based on probabilistic profiles using HBS, 2000/01 and 2007 data.

Note: \* Includes all lower secondary levels.

Reading note: A gender parity index of 1.02 (Primary Access, 2006) indicates that for every 100 boys, there are 102 girls.

Table 5.3 provides a summary of access and completion probabilities at primary and secondary levels, confirming the earlier findings, and in particular the fact that disparities according to location and income appear to be much more important than gender disparities: for instance, whereas the gender gap in the probability of completing primary school is eight percentage points (in favor of boys),<sup>114</sup> the residence gap is 23 percentage points and the wealth gap is 27 percentage points (See Figure 5.1 above). Poorer transition and retention among the most vulnerable groups (the rural poor) may account for the disparities observed at post-primary levels (See Table 5.4 below).

*Retaining the poorest students in primary schools and ensuring their transition to postprimary cycles is a challenge.* Indeed, the analysis shows a deterioration in the relative O-Level access of the poorest, compared with primary completion (for every 100 wealthy children, 65 poor ones complete primary, but only 30 enter O-Level). At A-Level, a deterioration over time is also noticeable, the wealth parity index having dropped from 0.38 to 0.09. For many households, the direct costs associated with schooling may act as a deterrent to enrollment (See Chapter 3, Table 3.5).<sup>115</sup> In addition, the poorer exam performance of the poorest students may prevent them from pursuing their schooling careers to higher levels (See Chapter 4). Very much aware of this problem, the government has developed a series of programmes to address these pressing issues:

- (i) Secondary school scholarship grants are offered under the SEDP I to students from poor households, selected among good PSLE performers. In 2009, 40,000 students benefited. Increasing the coverage of the programme is necessary to ensure more students from low-income households can proceed to postprimary levels. The measure should be coupled with remedial classes throughout primary to support children with acute learning difficulties (that often come from the poorest families);

- (ii) The Community-Based Conditional Cash Transfer Pilot Programme (managed by the Tanzania Social Action Fund - TASAF) transfers cash to poor and vulnerable households whose children fulfill certain basic health and education requirements (including primary school attendance). By late 2009, the programme had benefitted 6,546 children (2,060 households, 40 villages) from the three districts of Bagamoyo, Chamwino and Dodoma. Geographical coverage is expected to increase; and
- (iii) School feeding programmes are also effective since 2000, to support primary education in drought-prone, pastoralist regions. Two meals per school-day are distributed to 213,000 pupils (enrolled in 350 schools located in 13 districts of the regions of Arusha, Dodoma, Singinda and Manyara). An evaluation carried out in June 2007 showed the programme's positive impact on primary access, attendance and retention. The programme is to be expanded in 2010.

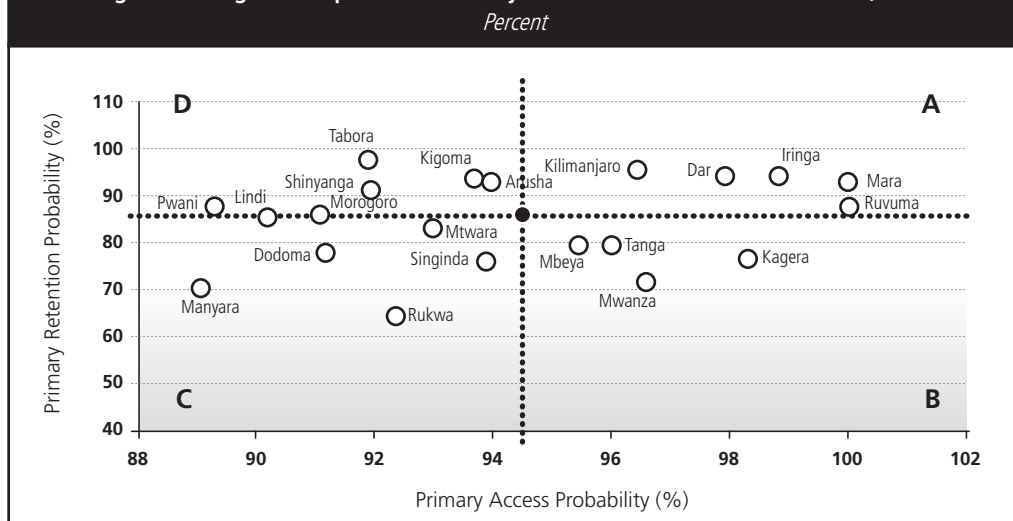
### Regional Disparities

*Access disparities across regions are fairly limited. Access rates vary between 89 percent (Manyara region) and 100 percent (Mara and Ruvuma regions). Variations in the primary retention probability are more marked, between 65 percent (Rukwa region) and 97 percent (Tabora region). Although disparities are slighter, Figure 5.2 below divides regions into four categories (areas A, B, C and D of the figure), according to their characteristics:*

- (i) Area A regions have both high access probabilities, and the highest primary retention probabilities, indicating no major school supply or demand issues;
- (ii) In areas C and D regions' access probabilities are below the national average, possibly pointing to school supply constraints (no schools nearby);
- (iii) Area C regions (Rukwa, Manyara, Singinda and Dodoma) also have retention probabilities below average: it is likely that both supply and demand constraints are at stake; and
- (iv) Area B regions (Mwanza, Tanga, Kagera), have good access probabilities but lower retention probabilities, suggesting that they face a fragile demand for education. Beyond school supply constraints, the economic and cultural environment prevailing in these regions also shapes demand.<sup>116</sup>



**Figure 5.2: Regional Disparities in Primary Access and Retention Probabilities, 2006**



Source: Authors' calculations based on probabilistic profiles using HBS, 2007 data.

### ● Disparities in Retention and Transition

Once enrolled at O-Level, girls benefit from equal opportunities to pursue their schooling. Differences in retention and transition probabilities by gender, location and income are displayed in Table 5.4 below. Although for girls, the transition from primary to secondary is less likely than for boys (GPI of 0.68), O-Level retention and the transition from O-Level to A-Level show almost equal opportunities (GPIs are 0.98 and 1.01 respectively).

Disparities in retention and transition rates are more pronounced according to location. Students in rural areas have lower retention probabilities than their urban counterparts, and their disadvantage increases with successive education levels (location parity indexes are 0.90 and 0.73 for primary and O-Level retention). Transition probabilities are also much poorer in rural areas: only half as many rural children progress from primary to O-Level and/or from O-Level to A-Level as urban children.

Retention and transition probabilities increase with the level of family income. O-Level retention is 60 percent lower for the poorest students (Q1) than for the wealthiest (Q5), with a wealth parity index of 0.39. The higher costs associated with this level of schooling make it prohibitive for many of the poorer students.

Here again, disparities tend to be cumulative, with poor rural girls having systematically lower retention and transition chances, and disparities tend to increase with successive levels of schooling.

**Table 5.4: Disparities in Retention and Transition Probabilities in Primary and Secondary Education, 2006**  
*Parity Indexes*

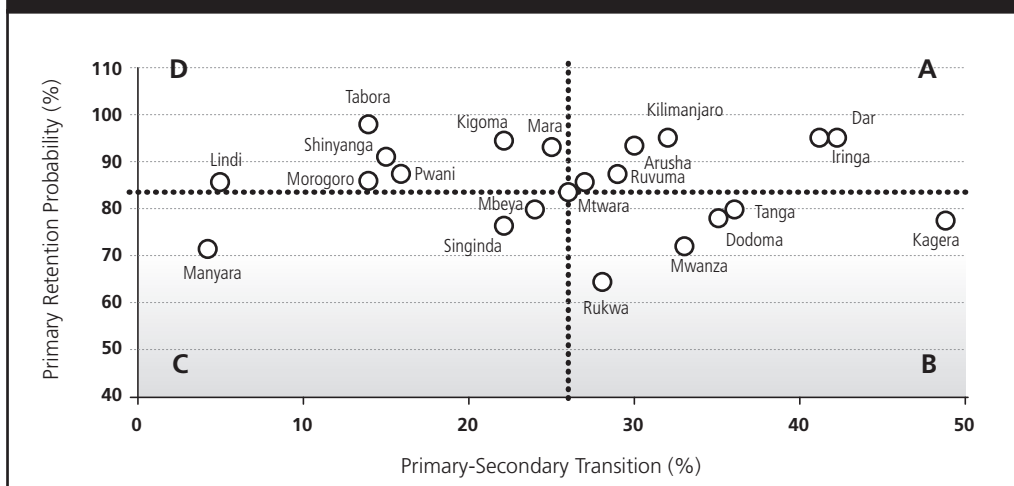
	Primary Retention	Primary-O-Level Transition	O-Level * Retention	O-Level – A-Level Transition
Gender Parity Index (Female/Male)	1.01	0.68	0.98	1.01
Location Parity Index (Rural/Urban)	0.90	0.48	0.73	0.53
Wealth Parity Index (Q1/Q5)	0.82	0.47	0.39	0.62
Consolidated Parity Index (Male-Urban-Q5/Female-Rural-Q1)	0.84	0.24	0.20	0.00

Source: Authors' calculations based on probabilistic profiles using HBS, 2007 data.

Note: \* O-Level includes technical and vocational lower secondary levels. A-Level retention was not computed due to the small sample size, not allowing for significant and reliable computations.

*Wide disparities are also observed by region.* Compared with the national average of 85 percent, retention probabilities are particularly poor in Rukwa (65 percent), Manyara, Mwanza, Singida, Kagera and Dodoma (78 percent) regions (See Figure 5.3). The primary to secondary transition probabilities are startlingly low in Manyara (four percent), Lindi, Tabora, Morogoro, Shinyanga and Pwani (16 percent) regions, compared with the national average of 27 percent.

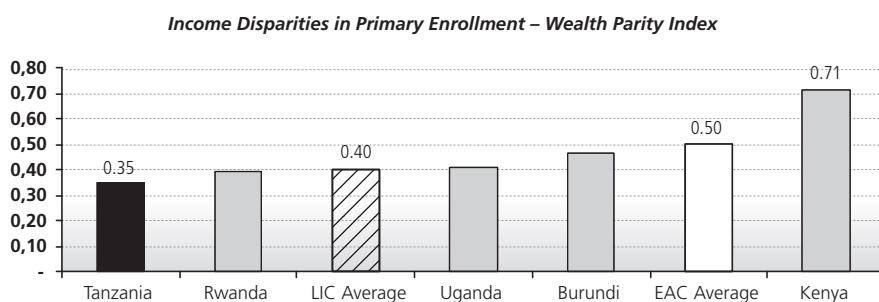
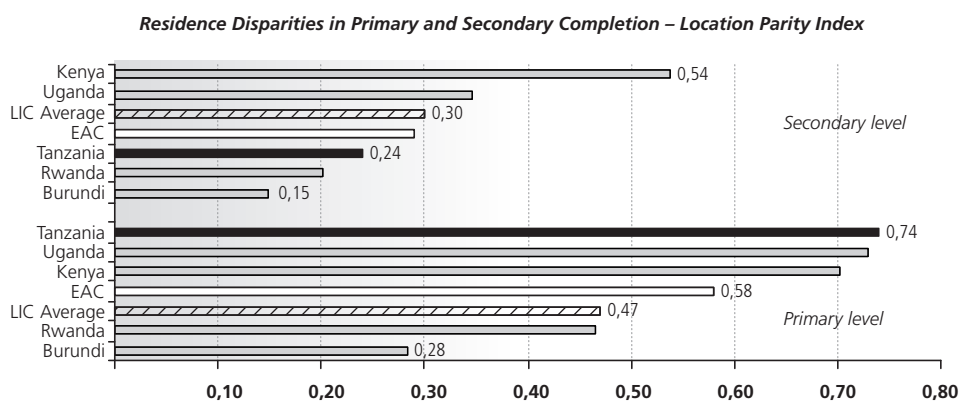
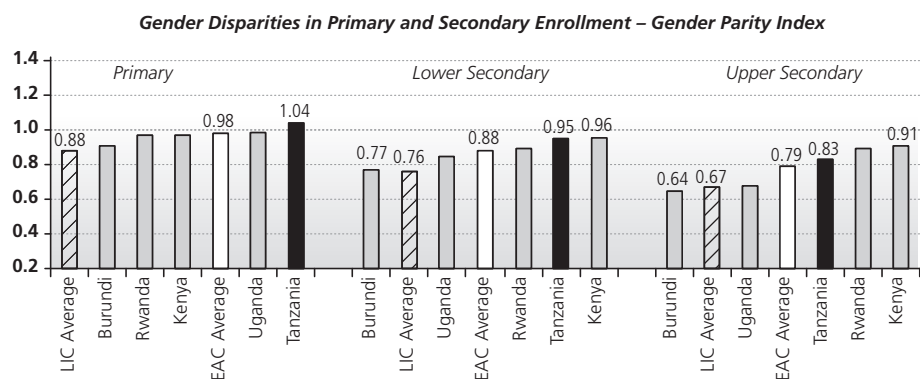
**Figure 5.3: Regional Disparities in Primary Retention and Primary-Secondary Transition Probabilities, 2006**  
*Percent*



Source: Authors' calculations based on probabilistic profiles using HBS, 2007 data.

Note: O-Level includes technical and vocational lower secondary levels. O-Level and A-Level retention and O-Level to A-Level transition rates were not computed due to the small sample size, not allowing for significant and reliable computations.

**Figure 5.4: Schooling Disparities, EAC and LIC Countries, 2006 or MRV**  
Parity Indexes



Source: Pôle de Dakar-UNESCO/BREDA ; Tables 5.1 and 5.2 for Tanzania.

## International Perspective

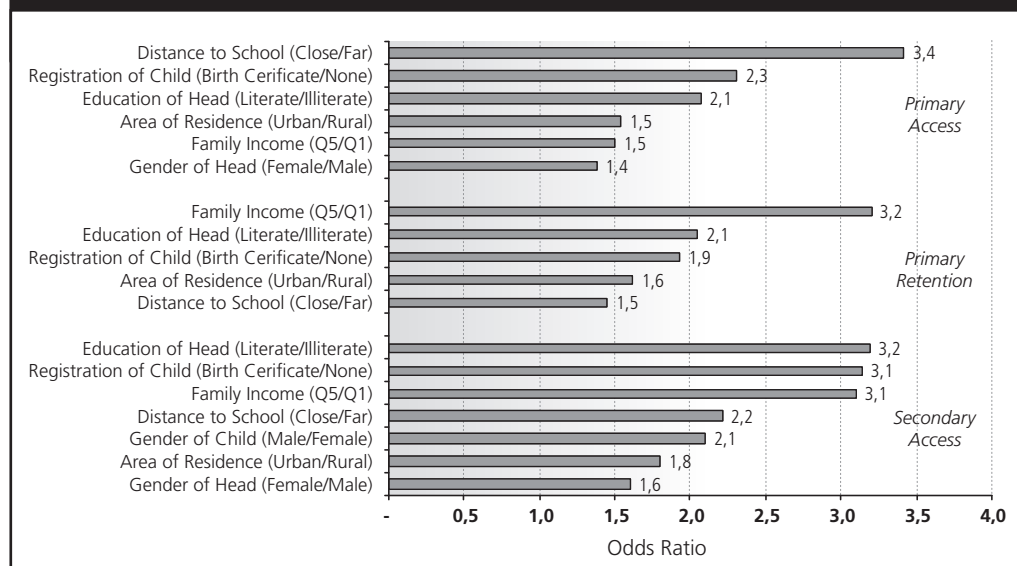
Figure 5.4 above puts Tanzanian socioeconomic disparities into regional perspective, comparing the parity indexes with East African Community (EAC) and African low-income countries (LIC) and averages:

- (i) The gender parity indexes indicate that Tanzania is systematically outperforming the EAC and LIC averages in terms of primary, O-Level (lower secondary) and A-Level (upper secondary) girls' enrollment;
- (ii) Tanzania's location parity index is one of the best for primary completion, but it is below the EAC and LIC averages for secondary completion, pointing to significant disparities by area of residence; and
- (iii) The wealth parity index in Tanzania is one of the worst, at 0.35 (the EAC and LIC averages are 0.50 and 0.40 respectively), showing considerable socioeconomic disparities. Greater efforts are required to improve schooling opportunities for the poorest students and to narrow socioeconomic disparities.

## Education Supply and Demand Factors

Chapter 2 briefly analyzed supply and demand factors affecting nonattendance. It suggested that beyond a certain distance from home, school location was likely to be decisive. The importance of family and contextual factors in schooling decisions were also stressed. This section pursues the analysis by further exploring supply-side and demand-side issues and assessing how they intertwine to produce schooling outcomes. The analysis relies on a series of econometric models to assess the independent impact of several supply-side and demand-side variables on the probability of accessing and remaining in school. Figure 5.5 below illustrates the odds ratios for primary access, primary retention (reaching Standard VII) and secondary access.

**Figure 5.5: Odds Ratios for Primary Access, Primary Retention and Secondary Access, 2006**  
Odds Ratios



Source: Authors' calculations based on Annex Table 5.1 regression results using HBS, 2007 data.

Reading note: The probability of secondary level access is 3.2 times higher for children whose household head is literate than for those whose household head is illiterate.

## Supply-Side Factors Affecting Primary and Secondary Schooling

As seen in the Chapter 2 section on nonattendance, supply related factors, proxied by the distance to school, are a major factor affecting enrollment.<sup>117</sup> It is only logical, as a result, that they should also have a significant impact on access and retention.

### Primary School Access

*Distance to school is still the major constraint identified in terms of school access, especially in rural areas.* Figure 5.6 below shows a significant negative relationship between access to primary school and the distance from home (all other things being equal): the closer the school, the higher the probability of access. Indeed, children living near a school are twice as likely to access primary school than their peers living three to five kilometers away, and 3.4 times more likely than children living over five kilometers away.

Although the majority of school-aged children have a primary school located within three kilometers of their home (77 percent),<sup>118</sup> 23 percent do not (See Table 5.5 below). In rural areas, over 30 percent of children live more than three kilometers from a school, and 22.5 percent live more than five kilometers away. Children in rural areas live 4.4 kilometers away from the nearest school on average, compared with 0.7 kilometers for their urban peers.

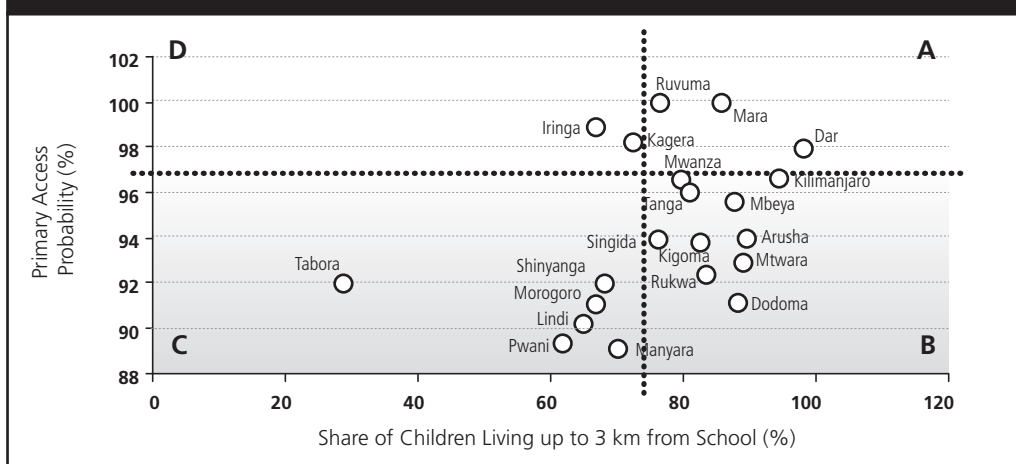
**Table 5.5: Distance to the Closest Primary School, by Area of Residence, 2006**  
Percent

	Urban	Rural	Total
≤ 1 km	83.4	47.4	55.5
]1-2] km	10.1	13.5	12.7
]2-3] km	4.0	9.5	8.3
]3-5] km	0.7	7.8	6.2
> 5 km	1.8	21.8	17.3
Total	100.0	100.0	100.0
Mean distance	0.7	4.3	3.5

Source: Authors' calculations based on data from HBS, 2007.  
Note: Includes children aged 7 to 13 years.

*Distance to primary schools varies significantly by region.* In Dar es Salaam, Ruvuma and Kilimanjaro regions, the average distance is less than a kilometer, whereas in Tabora it reaches a startling 18.2 kilometers (See Annex Table 5.2). Figure 5.6 offers a perspective on the relationship between the probability of primary access and the average distance to a primary school.

**Figure 5.6: Primary Access in Relation to the Distance to a Primary School, by Region, 2006**



Source: Authors' calculation based on HBS, 2007 data.  
Note: Computations for distance to school are based on children aged 7-13 years; primary school access probability is based on children aged 11-13 years.

Regions in area C of the figure have low values for both primary access and the distance to school. In those regions (such as Tabora, Pwani, Lindi, Morogoro, Shinyanga, and others), the lack of schools within reasonable distance of homes could be the main hindrance to primary school access.

Regions in area B are characterized by low primary access rates despite a relatively good level of school supply (on average, 85 percent of students live within three kilometers of a

school). Here, the main issue appears to be weak school demand, due to the low cultural value given to education, higher opportunity costs, and so on. The situation is particularly striking in Dodoma, Rukwa, and Mtwara regions, where approximately 90 percent of children live within reasonable distance of a school, yet the probability of accessing primary is below average.<sup>119</sup>

In the former case of school supply constraints, coherent school mapping will improve school coverage; in the latter case of demand constraints, breaking through cultural barriers and removing financial constraints are both required for an effective policy.

## Primary School Retention

*The presence of secondary schools near homes contributes to better primary retention.*<sup>120</sup> An analysis of the probability of reaching Standard VII (See Annex Table 5.1) shows that whereas the distance to primary school does not affect retention, the existence of a secondary school nearby (less than 10 kilometers away) does tend to favor retention. The physical impossibility of accessing a secondary school in the future may act as a disincentive to have children complete the primary cycle. Thus the one secondary school per ward policy could well have a double effect, increasing secondary level access (see below) but also favoring primary retention.

## Secondary School Access

The results of the model again indicate a negative relationship between the distance to secondary school and secondary access (See Figure 5.5 above and Annex Table 5.1), which is quite understandable here. The closer children live to a secondary school, the greater their chances of attending; in fact, the probability of secondary access is 2.2 times higher for children living nearby than for children who live far from a secondary school.

**Table 5.6: Distribution of School-Aged Children According to the Distance to the Closest Secondary School, by Area of Residence, 2000 and 2006**  
*Percent*

	2000			2006		
	Urban	Rural	Total	Urban	Rural	Total
< 2 km	67.5	11.6	23.8	70.9	21.3	34.2
[2-5] km	24.4	15.2	17.2	22.2	24.1	23.6
[5-10] km	4.0	22.6	18.5	5.0	27.0	21.3
>10 km	4.2	50.7	40.5	1.9	27.6	21.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Mean Distance (km)</b>	<b>2.6</b>	<b>15.9</b>	<b>13.0</b>	<b>2.1</b>	<b>8.5</b>	<b>6.9</b>

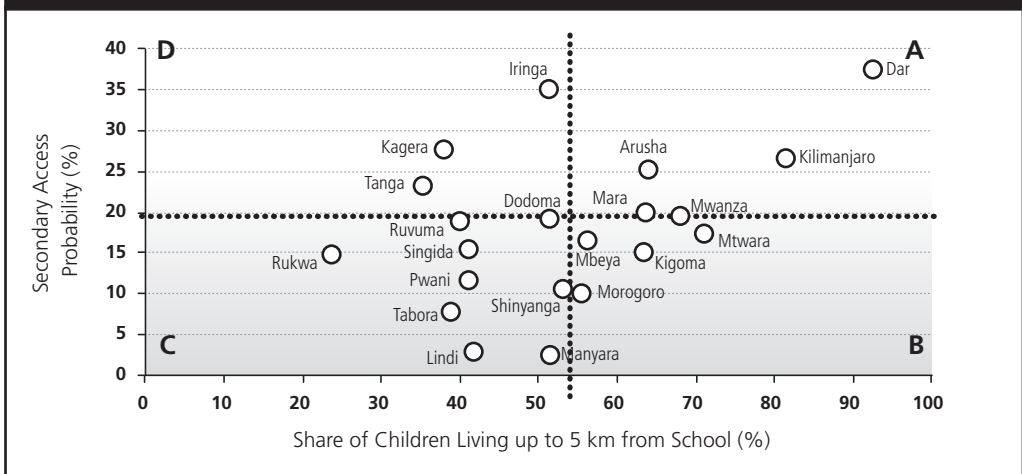
Source: Authors' calculations based on HBS, 2007 data.

Note: Computations are based on individuals aged 5 to 30 years to allow for an adequate coverage of the school-aged population.

Rural areas were comparatively undersupplied with secondary schools in 2006. Although national standards endorse a maximum distance of five kilometers to secondary school, in 2006, this norm was fulfilled by only 58 percent of children nationwide (See Table 5.6 above). Wide disparities existed according to the area of residence, with the greatest distances obviously affecting rural areas, where 55 percent of pupils live over five kilometers away from a school (compared with just seven percent in urban areas). The situation has improved considerably since 2000 however, with the mean distance to school having almost halved from 16 kilometers in 2000 to 8.5 kilometers in 2006, mainly thanks to special school construction programmes in rural areas, and the implementation of the SEDP I, under which the number of O-Level schools has quadrupled over 2003-09, from 893 to 3,649. This increase is reflected in the ratio of secondary to primary schools: whereas there were seven secondary schools for every 100 primary schools in 2003, there were 23 by 2009.

Disparities across regions still remain high, although they have very much narrowed over the 2000-06 period. The difference in the distance to school between the region offering the best access and that offering the worst has closed in from 25 kilometers to 10 kilometers (2.2 kilometers on average in Dar es Salaam region, and 12.7 kilometers in Lindi region - See Annex Table 5.3). However, the probability of access varies significantly among regions where the average distance to school is the same (See Figure 5.7). Whereas regions in area C of the figure face supply constraints (limited number of secondary schools nearby), regions in area B appear to be more affected by demand constraints, as shown by the relatively low level of access despite the relative proximity of secondary schools (compared with the national average). In these regions (Kigoma, Mtwara), a demand-side approach to improving school attendance is recommended. In the regions of area C of the figure, such as Rukwa, Lindi, Tabora, and Pwani, opening schools closer to the target school-aged population should improve secondary access.

**Figure 5.7: Secondary Access in Relation to the Distance to a Secondary School, by Region, 2006**



Source: Authors' calculations based on HBS, 2007 data.

Note: Computations for distance to school are based on individuals aged 5-30 years, and the probability of access is based on individuals aged 18-22 years, to allow for an adequate coverage of secondary enrollment.



The government's efforts to improve school supply since 2004 have helped to relieve the supply constraint in many regions. Those with an undersupply of schools were prioritized in terms of new construction (See Table 5.7) allowing some of them to eventually meet the national average. Lindi, Rukwa, Singida, Morogoro and Dodoma regions have been particular beneficiaries of this programme: their supply of schools has increased by 430 percent on average, more than twice the national growth rate, of 191 percent. Although these figures do not indicate the capacity of the new schools built, they do show the adequate targeting of school construction, reducing regional disparities.

**Table 5.7: Number of O-Level Schools per 100,000 School-Aged Children (13-24 Years), and Supply Growth, by Region, 2004 and 2009**  
*Number and Percent*

	2004	2009	Total Growth (2004-09)
Tabora	4.9	19.1	290%
Lindi	7.0	40.2	472%
Shinyanga	7.7	20.6	166%
Dar es Salaam	7.7	27.2	251%
Rukwa	8.1	36.1	345%
Pwani	8.5	25.8	203%
Singida	9.4	66.9	616%
Mwanza	9.4	31.7	238%
Kigoma	10.6	32.1	203%
Morogoro	11.0	56.5	413%
Kagera	11.9	34.3	189%
Manyara	12.2	36.7	200%
Mtwara	12.6	37.2	195%
Dodoma	12.9	52.5	307%
Mara	16.0	39.0	144%
Tanga	16.2	42.9	166%
Ruvuma	16.9	31.2	84%
Iringa	17.6	45.8	161%
Mbeya	18.5	28.9	56%
Arusha	20.8	39.6	90%
Kilimanjaro	44.7	73.7	65%
<b>National Average</b>	<b>12.5</b>	<b>36.5</b>	<b>191%</b>

Source: NBS projections for population estimates; BEST, 2004 and 2009 for O-Level school data.

A similar trend is observed in A-Level school coverage, although even the regions at no particular disadvantage have equally benefitted from the construction programme. The supply of A-Level schools in regions such as Shinyanga, Tabora, Linda, Mwtara and Kigoma is still low compared with other regions, with 1.5 secondary schools on average per 100,000 school-aged children, compared to the national average of 4.5 (See Annex Table 5.4).

*The important government efforts to increase secondary school supply under the SEDP I should be pursued, as school supply is an important constraint (although not the most critical one) in accessing secondary school. In its effort to pursue the expansion of secondary school supply, MoEVT will need to be particularly careful to pay adequate attention to ward population densities and catchment areas. Indeed, much as it is difficult to comply with the five kilometer norm in large and lowly populated wards, it is more difficult to justify the overcrowding of classrooms in secondary schools located in highly populated wards, where new schools could be built, and easily filled.*

### ● Demand-Side Factors Affecting Primary and Secondary Schooling

Although supply factors represent major constraints in school access and retention, demand-side aspects also affect schooling patterns. Schooling costs, be they direct (fees, transportation, meals, education inputs, uniforms, and so on) or the opportunity cost (related to the forgone family income derived from children's participation in the household economy), may restrict households' ability to send their children to school. They may also favor early dropout, especially when the perceived benefits associated with schooling tend to decrease as costs surge. Some school characteristics (such as the curricula, the distance to school, the quality of teaching, the school environment, and so on) might also make parents reticent to send their children to school. Such demand related factors are examined in this section.

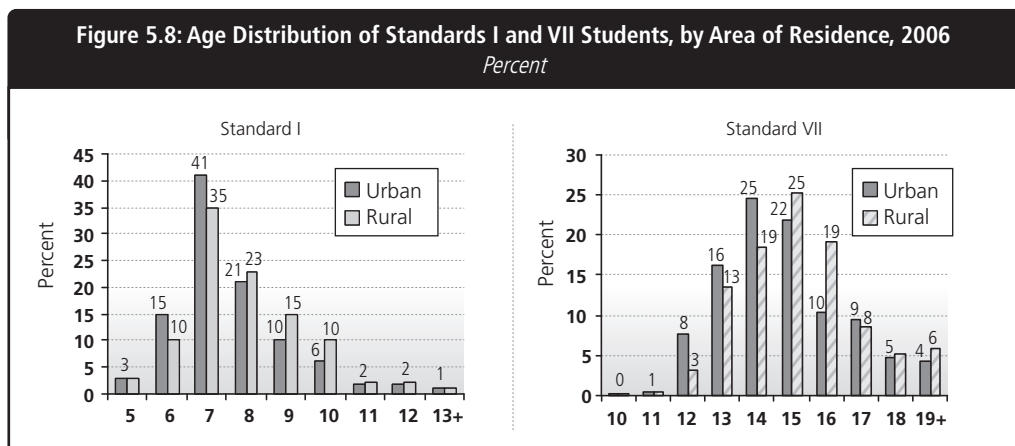
Not all variables have a significant impact on access and retention. Although no disparities appear to exist between boys and girls in terms of primary school access and retention, major gender gaps appear in terms of secondary access: the probability of access for boys is twice as high as that for girls. Strong cultural values prevail in many parts of the country, that discourage girls' schooling. Similarly, whereas being an orphan has no significant impact on primary access and retention, having a birth certificate is strongly correlated with both primary and secondary access and secondary retention: with it, the probability of entering primary doubles, and the probability of entering secondary school triples.<sup>121</sup>

Important differences also exist according to family background. Primary retention improves significantly with households' income levels: children from the 20 percent wealthiest households (Q5) are three times more likely to reach Standard VII than those from the 20 percent poorest households (Q1). A similar pattern is observed for access to secondary. Beyond wealth, the level of literacy of the household head also has an influence: having a literate head of household doubles a child's chances of accessing/remaining in primary, and triples a child's chances of accessing secondary. Literate parents are known to be more sensitive to the value and benefit of education, and are able to provide learning support when necessary. Children from urban areas are also more likely to access and remain in school. Cities provide environments that are more conducive to education and learning (more and better infrastructure, greater and more diversified labor opportunities, more literate and educated population, and so on).

## The Causes of Dropout

When asked about the reasons for children dropping out of school, household members refer to children's age or the fact that they have completed the cycle in 60 percent of cases.<sup>122</sup> Cost considerations (including direct and opportunity costs) account for 15 percent of answers. The high prevalence of responses citing "lack of interest" (8 percent) could be related to both the low general level of education quality, and exam failure.

Some differences in the reasons for dropout are apparent according to the area of residence and gender. In urban areas, the major reasons for dropout are financial (24 percent of cases, against 11 percent in rural areas), whereas in rural areas, greater concern exists about children's age (63 percent of responses, against 52 percent in urban areas). Late entry is an important problem, particularly in rural areas, where 52 percent of Standard I students are overaged (against 41 percent for urban pupils – See Figure 5.8).<sup>123</sup> By the time they reach the end of primary, the majority of rural students are teenagers: 64 percent are aged 15 and over (against 51 percent in urban areas). Late entry is often associated with early dropout as the opportunity cost of schooling increases with children's age (as their physical and earning capacities rise).



Source: HBS, 2007; authors' computations.

Regarding gender disparities, whereas family support affects girls more than boys, boys will be more prone to not find school interesting (in 13 percent of the cases, against four percent for girls). On the other hand, girls tend to be at greater risk of dropping out following pregnancy and/or marriage (in six percent of the cases). This issue increases in relative importance as girls grow older and reach secondary. Indeed, 10 percent of secondary school dropout cases were pregnancy related (See Table 5.8 below).<sup>124</sup> In a key government response to this challenge, "Guidelines on how to enable pregnant school girls to continue with their studies" have recently been approved, proposing specific measures targeting school girls themselves, but also their teachers, parents/guardians, religious leaders and society at large, and the government.<sup>125</sup>

**Table 5.8: Main Reasons for Dropout, Primary and Secondary Levels, by Gender and Area of Residence, 2006**  
Percent

		Gender		Area of Residence		Total (%)
		Urban	Rural	Urban	Rural	
Primary Dropout	Too old/too young/completed level	58.4	61.2	52.2	63.0	60.0
	Exam failure	8.6	8.5	9.7	8.1	8.6
	Cost of schooling	9.1	7.6	13.4	6.2	8.3
	Lack of interest	12.7	4.2	7.1	8.4	8.0
	Child is working	5.0	8.3	10.5	5.4	6.8
	Marriage	0.4	4.4	1.7	3.0	2.6
	Illness	2.3	2.1	1.1	2.6	2.2
	Early Pregnancy	0.0	1.7	1.0	0.9	0.9
	Distance to school	0.9	0.0	0.1	0.5	0.4
	Other reason	2.6	2.0	3.2	1.9	2.2
	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Secondary Dropout	Too old/too young/completed level	60.4	52.6	58.0	52.7	55.8
	Child is working	10.1	12.3	11.0	12.1	11.4
	Cost of schooling	11.3	10.6	10.4	11.6	10.9
	Exam failure	8.0	5.5	7.7	4.7	6.5
	Early Pregnancy	0.0	10.0	3.4	9.5	5.9
	Marriage	2.8	4.9	4.8	3.0	4.1
	Lack of interest	2.3	0.8	1.6	1.1	1.4
	Illness	2.2	0.7	1.1	1.7	1.3
	Distance to school	0.3	0.2	0.3	0.0	0.2
	Other reason	2.6	2.4	1.7	3.6	2.5
	<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Authors' calculations based on HBS, 2007 data.

Note: Based on self-reporting by heads of household with children aged 5-19 years.

As far as demand-side factors are concerned, the analysis has highlighted some interesting features:

- (i) Poverty is the greatest constraint to keeping children in primary school and allowing them to pursue secondary school, although the issue is less pervasive in terms of primary access;
- (ii) Too many children enter primary too late because of cultural beliefs. Unfortunately, late entry is often associated with early dropout as the opportunity cost of school attendance increases;
- (iii) Although gender is not an issue at the primary level, it is a key determinant of secondary access. Strong cultural beliefs against female secondary schooling as well as early marriage and pregnancy play a major role;

- (iv) Children with birth certificates have better probabilities of accessing school and remaining there;
- (v) Literate parents tend to exert a positive influence on their children's schooling; and
- (vi) The lack of interest in school is a major cause for primary dropout, especially among boys.

### ● Regional Level Supply and Demand Factors Affecting Primary and Secondary

In order to assess the impact of demand-side factors at the regional level, logistic models have determined the probability of access and retention for children living close to a primary school (under three kilometers away) and a secondary school (under five kilometers away). Variables related to the child and its family background have been included (not shown). They show that demand-side factors continue to affect the probabilities in certain regions (with distance to school held constant):

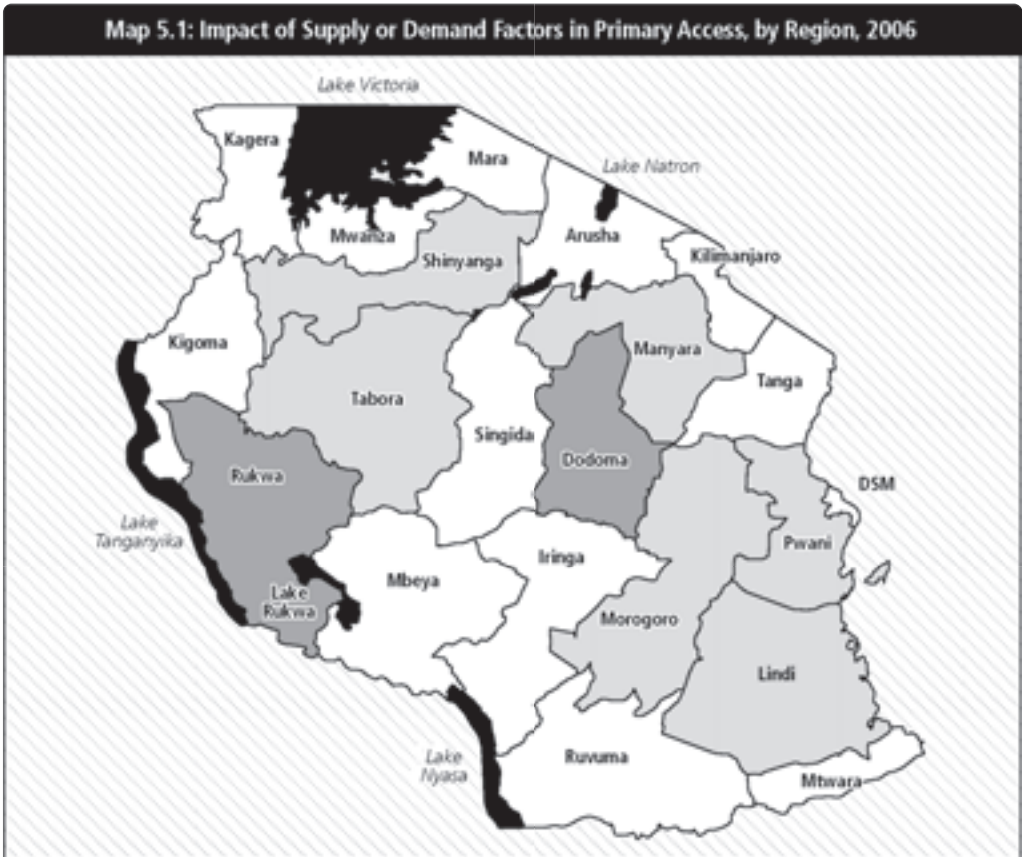
- (i) Primary school access. When discounting the impact of distance to school and various socioeconomic characteristics, the probability of access varies markedly: for instance, children in Dodoma and Rukwa regions are still less likely to access school than children living in Dar es Salaam (chances are 1.8 times lower, on average).<sup>126</sup> In such regions, demand-side factors are predominant. Here, the perception of the quality of schools and the value attached to education might explain disparities in access;
- (ii) Primary level retention. Here again, many regional disparities persist, even when controlling the distance to school factor. The situation is particularly striking in Kagera, Rukwa, Dodoma, Mbeya, Mwanza, Morogoro, and to a lesser extent Tanga regions, where students' probability of completing primary is between four (Kagera) and 1.17 times (Tanga) lower than the reference group;
- (iii) Secondary school access. Given that gender and income levels tend to be very decisive in secondary access, in the regions of Morogoro, Pwani, and Shinyanga, children's chances of going to secondary school are between 1.32 (Shinyanga) and 1.85 (Morogoro) times lower than the reference group. In such regions, the direct and opportunity costs related to O-Level education could be higher than the norm: in wealthy agricultural regions such as Morogoro, youth labor is sought-after (opportunity costs tend to be higher as children progress through levels and grow older); in regions like Shinyanga, cultural as well as economic constraints linked to the pastoralist activity may be at play. On the other hand, secondary school access probabilities are favorable in regions such as Arusha and Iringa.

Maps 5.1 to 5.3 below show a regional distribution of the impact of supply or demand factors likely to affect access and retention.<sup>127</sup> Regions with distance-to-access ratios<sup>128</sup>

below the national average are considered as “low performers;” regions that have benefited from intensive school construction (such as Pwani, Rukwa and Singida) have eased supply constraints (labeled as S (-) on the maps). Wide variations are apparent between regions in terms of the demand and/or supply factors affecting access and retention.<sup>129</sup>

Policies to adequately tackle the underlying challenges and ultimately remove regional disparities will need to be tailored to regions’ needs: in regions with supply constraints, coherent school mapping exercises help to target new constructions and improve school coverage; in regions with demand constraints, an efficient policy must address cultural and/or financial constraints, as well as the quality/adequacy of the service offered.

The unavailability of data disaggregated at the subregional level makes more detailed analysis difficult: current household surveys’ sampling processes do not enable the computation of schooling pattern indicators that are representative at subregional levels, the sample size being too small at this administrative level; and demographic projections by single-age and disaggregated by district, gender and area of residence are unavailable.



Source: Figures 5.2 and 5.6 and Annex Tables 5.2 and 5.5.

Legend: Light grey - Supply issues; Medium grey – Demand issues.

Note: Access is an issue when the ratio found in the region is below the national average. In some cases, regions display ratios slightly above the national average and are labeled “Supply.” This signifies that the main factor at stake explaining low access is related to the absence of a primary school nearby.

**Map 5.2: Impact of Supply or Demand Factors in Primary Retention, by Region, 2006**



Source: Figures 5.3 and 5.6 and Annex Tables 5.2 and 5.3.

Legend: Medium grey – Demand issues.

Note: Retention is an issue when a region's ratio is below the national average. Supply-side considerations could not be adequately assessed here due to data constraints.

Map 5.3: Impact of Supply or Demand Factors in Secondary Access, by Region, 2006



Source: Figure 5.7 and Annex Table 5.5.

Legend: Medium grey - Supply issues; Stripes - Demand issues; Dark grey - Demand and Supply issues.

Note: Access is an issue when a region's ratio is below the national average. "Supply" signifies that the main factor at stake explaining low access is related to the absence of a school nearby; the (-) sign indicates that the problem may be less of an issue today, as the region has strongly benefitted from new school construction, reducing the supply constraint.

### ● Supply and Access Issues in Postsecondary Cycles

Analyzing demand and supply issues and how they affect access and retention is limited by the little data available. Indeed, household surveys are not adequately designed to capture the schooling patterns of children in technical, vocational, or higher education. On the other hand, administrative data are not exhaustive, and are often only available in aggregated format. The data it was possible to compile are presented below, to address some access issues affected by supply-side factors.

*Opportunities for technical, vocational, and higher education are skewed toward urban areas and certain regions.* The distribution of vocational training centers across the country is still biased toward urban zones and eastern regions: Dar es Salaam is home to almost a quarter of all centers (214 centers). Iringa (70), Arusha, Kilimanjaro and Mwanza (68 each)

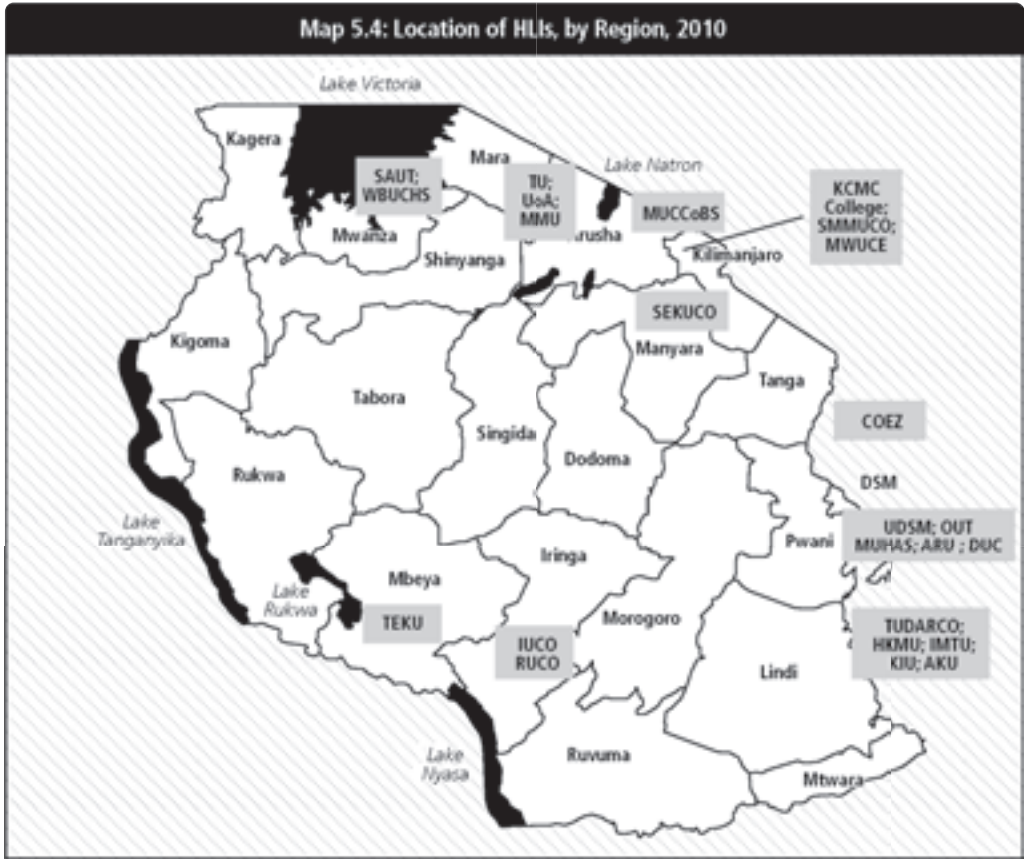


regions are also particularly well endowed compared with Rukwa, Manyara, Tabora, Kigoma, and Singida regions, that each have fewer than 15 training centers. There is nevertheless a strong will to ensure that all districts have a VTC, however the lack of adequate financial resources is a serious constraint to their adequate expansion nationwide. The 53 folk development colleges are better allocated: most regions have one. Those of Dar es Salaam and Morogoro regions enrolled the highest number of students (per 100,000 population), followed by Kilimanjaro, Mbeya, and Kagera regions, indicating better coverage relative to potential demand (See Table 5.9).

	Number of Centers	Enrollment	
		Number	per 100,000 Inhabitants
Arusha	68	2,893	179
Dar es Salaam	214	14,622	481
Dodoma	26	1,367	66
Iringa	70	3,210	188
Kagera	45	5,862	237
Kigoma	14	1,518	87
Kilimanjaro	68	4,685	292
Lindi	17	1,988	220
Manyara	12	2,102	157
Mara	23	1,950	111
Mbeya	45	6,410	248
Morogoro	30	8,448	408
Mtwara	25	2,432	187
Mwanza	68	5,487	158
Pwani	23	1,154	111
Rukwa	11	859	59
Ruvuma	35	3,012	225
Shinyanga	17	1,426	39
Singida	15	648	49
Tabora	14	995	44
Tanga	49	1,870	97
<b>Total</b>	<b>889</b>	<b>72,938</b>	<b>179</b>

Source: VETA, 2009.

Higher Learning Institutions are also skewed toward urban regions and the eastern part of the country (See Map 5.4). The expansion of open distance learning is crucial to break the urban/rural fracture in access to postsecondary curricula and programmes.



Source: Higher Education Handbook, 2010.

## Equity in the Distribution of Public Education Resources

Throughout their schooling careers, individuals consume variable amounts of public education resources: those without schooling consume none, whereas those who reach higher education absorb an amount that increases with the number of years spent in school and the level achieved (as unit costs tend to increase with each level of schooling). The allocation of resources among a generation therefore depends on: (i) the resources absorbed by a generation of children according to the highest level attained, and; (ii) the structure of per pupil spending for the different school levels. These two dimensions define the structural dimension of equity, as they will shape how individuals effectively benefit from the allocation of public education resources.

## ● Structural Dimension of the Allocation of Public Resources

In order to estimate the distribution of public education resources across the population, it is necessary to determine the highest education levels achieved by the members of a cohort of children, in what proportions, and the accumulated resources devoted to each (See Table 5.10).<sup>130</sup>

**Table 5.10: Distribution of Public Education Resources among a Theoretical Cohort of 100 School-Aged Individuals, 2008-09**

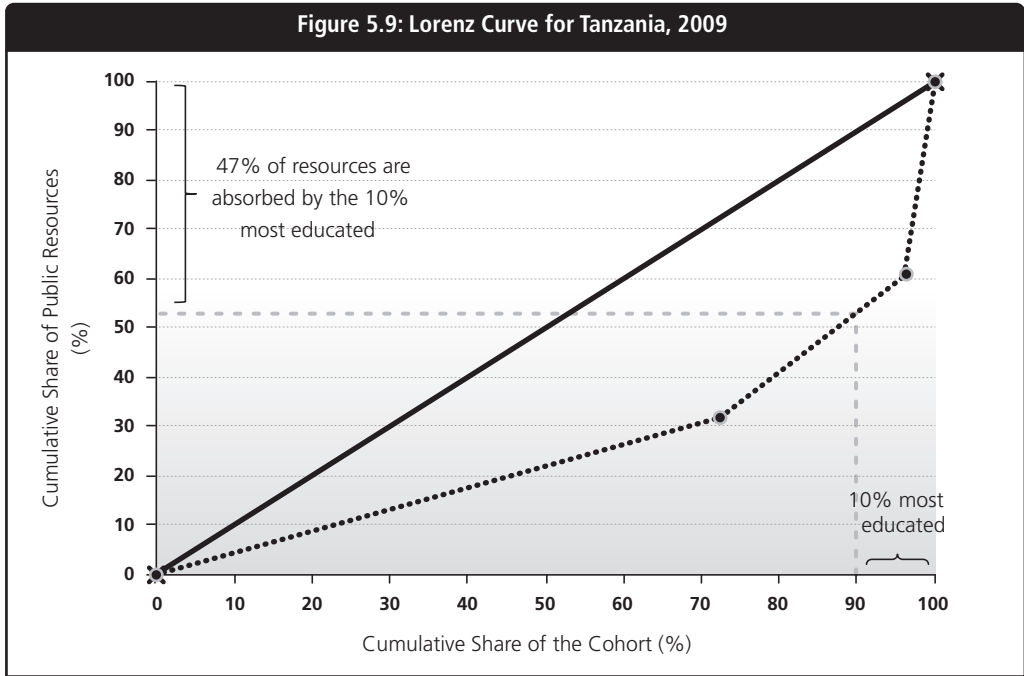
	% Cohort		Resources					Cumulative Distribution (%)	
	GER	Terminal Level Attained	Unit Costs (T Sh)	Years per Level	Absorbed per Pupil (T Sh)	Absorbed by the Cohort		Cohort	Res-ources
						('000s T Sh)	(%)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	
No Schooling	n.a.	0.0%	0	0	0	0	0,0%	0.0%	0,0%
Primary	100.0%	72.3%	61,464	7	430,248	31,106	32.1%	72.3%	32.1%
Secondary	27.7%	23.8%	119,687	6	1,148,370	27,331	28.2%	96.1%	60.2%
Higher/Tertiary	3.9%	3.9%	2,188,265	4	9,901,430	38,615	39.8%	100.0%	100.0%

Source: Chapter 3 on cost and financing in current report, Tables 3.6 and 3.9. Based on 2009 GERs and 2008 enrollment data for higher/tertiary education, and FY 2008/09 public expenditures.

*Reading Note:* (a) Based on primary level GERs, capped at 100 percent. (b) For each level, the proportion of individuals for whom it is the terminal level was computed by deducting the value for the subsequent level. For instance, if 27.7 percent of the cohort had access to secondary, 72.3 percent (100-27.7) of the cohort finished schooling at the primary level. (c) Public expenditures are estimated in Chapter 3. The public expenditures per student displayed in this table are estimated by dividing the total amount of public recurrent expenditures (excluding students studying abroad) by the total number of students enrolled in the system (either in public or private). These figures differ from the ones displayed in Tables 3.6 and 3.9, where public expenditures are divided by the total number of students enrolled in the public sector only. (d) The number of years refers to the theoretical number of years within each level (7 for primary, 6 for secondary and 4 for tertiary). (e) For each cycle attained, the cumulated resources absorbed by an individual leaving school at this level are computed. For instance, a child leaving school after secondary will have accumulated:  $61,464 * 7 + 119,687 * 6 = 1,148,372$ . (f) Finally, the accumulated public expenditure for each terminal level group is computed by multiplying the percentage of the cohort that finishes school at this level (b) by the cumulated cost for one pupil that reaches this level (e). Columns (h) and (i) respectively provide the cumulative distribution of the cohort by terminal school levels, derived from (b) and their corresponding cumulated share of resources, derived from (g). For instance, 72 percent of individuals leaving school after primary will have absorbed 32 percent of public education resources.

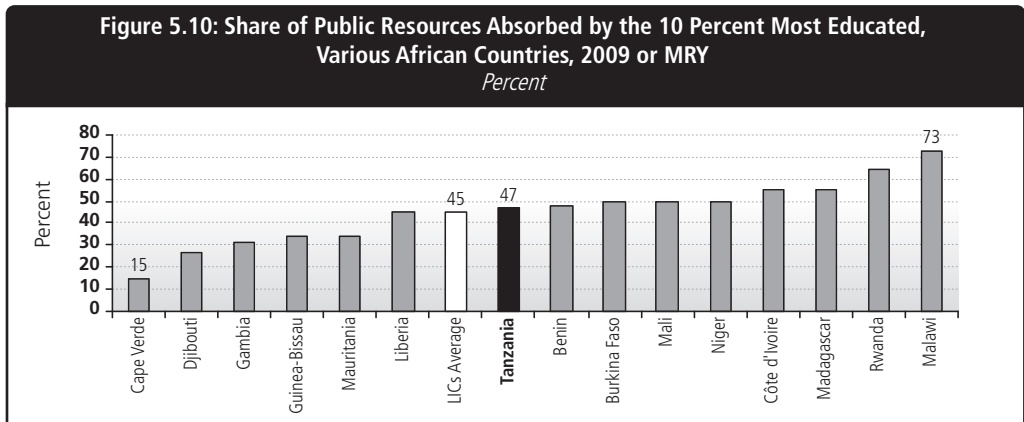
The results show that 72 percent of pupils who have primary as their terminal level consume 32 percent of public resources, whereas the four percent who reach higher education benefit from 40 percent of public education resources. The 24 percent of children who have secondary school as their terminal level consume 28 percent of resources. Public financing, as one can conclude from these observations, tends to be skewed toward higher/tertiary education.

The Lorenz curve provides a visual representation of the degree of inequity in the distribution of public education resources (See Figure 5.9 below). It shows the cumulative share of the cohort by terminal level attained on one axis and the cumulative share of resources benefiting each group on the other. The diagonal line corresponds to a theoretical situation of perfect equity in the distribution of public resources among all individuals. The curve itself represents the situation prevailing in Tanzania.



Source: Table 5.10.

The importance of the deviation (the degree of inequity), is measured by the Gini Index (estimated at 48 percent), based on the area that lies between the two curves. An alternative more intuitive indicator is the share of public resources absorbed by the 10 percent most educated individuals.<sup>131</sup> This is estimated at 47 percent for Tanzania in 2009. The average for a subsample of African low-income countries is close, at 45 percent (See Figure 5.10).



Source: Figure 5.9 for Tanzania, and Pôle de Dakar-UNESCO/BREDA for other countries.

## ● Social Selectivity in the Allocation of Public Resources

The benefit incidence analysis compares the global amount of resources consumed by different subgroups (aged six to 30 years; by gender, area of residence, and household income characteristics), with their representativity in the schooling population, and in the global population. Table 5.11 confirms the disparities in schooling patterns previously noted: individuals living in rural areas or from poor families tend to be underrepresented at postbasic levels.

**Table 5.11: Distribution of the School-Aged Population (6-30 years), by Socioeconomic Status, Location, Gender, and Highest Level Attained, 2006**

*Percent*

	Socioeconomic Status					Area of Residence		Gender		Total
	Q1	Q2	Q3	Q4	Q5	Urban	Rural	Boy	Girl	
No Schooling	36.6	25.9	18.6	12.2	6.7	14.2	85.8	47.7	52.3	100
Preprimary	22.7	23.2	20.6	17.6	15.9	35	65	54	46	100
Primary	29.1	25.8	20.7	16.5	7.8	23.4	76.6	50.8	49.2	100
Secondary	12.1	14.3	18.4	24.8	30.6	59.7	40.3	54.6	45.5	100
O-Level	17.9	19.6	19.9	25.4	17.3	47.6	52.4	52.9	47.1	100
A-Level	6.2	9	16.9	24.1	43.9	71.8	28.2	56.2	43.8	100
Higher/Tertiary	0	7.8	23.3	14.5	54.4	71.8	28.2	57	43	100
<b>Total</b>	<b>27</b>	<b>23.8</b>	<b>20</b>	<b>17.3</b>	<b>11.9</b>	<b>26</b>	<b>74</b>	<b>47.7</b>	<b>52.3</b>	<b>100</b>

Source: Authors' calculations based on HBS, 2007 data.

Note: Computations are based on individuals aged 5-30 years to provide better education coverage.

Reading note: 43.9 percent of children having attained no higher than A-Level are from Q5, which represents 11.9 percent of the total student population, on average.

Table 5.12 below displays the results of the benefit analysis. The appropriation index is a factor for the amount of resources consumed by a given group in comparison to the least favored comparable group, once their allocations have been weighted according to their respective shares of the total population. The results indicate that:

- (i) Urban people, accounting for 26 percent of the global population, benefit from 53 percent of public education resources, twice their proportional amount (appropriation ratio of 2.0) or three times more resources per person than their rural counterparts (appropriation index of 3.2);
- (ii) Important disparities exist between groups with different income levels: the wealthiest group (Q5) accounts for 12 percent of the population, but benefits from 33 percent of public resources, whereas the poorest group (Q1) accounts for 27 percent of the population, and benefits from only 13 percent of education resources. The wealthiest therefore consume six times more education resources per person than the poorest (appropriation index of 5.9). This is an indicator of great disparity, when considering that the Q5 population needs least financial support (but gets a disproportionately large amount), that the resources absorbed are particularly high

because they involve higher/tertiary education, and that as a result of their higher education, they will command comparatively higher earnings, that could enable them to repay the cost of their education; and

- (iii) Girls tend to benefit less than boys from public education resources, as boys receive 30 percent more resources than girls, per person (appropriation index of 1.3).

**Table 5.12: Benefit Incidence of Public Education Resources, by Level of Income, Area of Residence, and Gender, 2009**  
*Percent, and Appropriation Index*

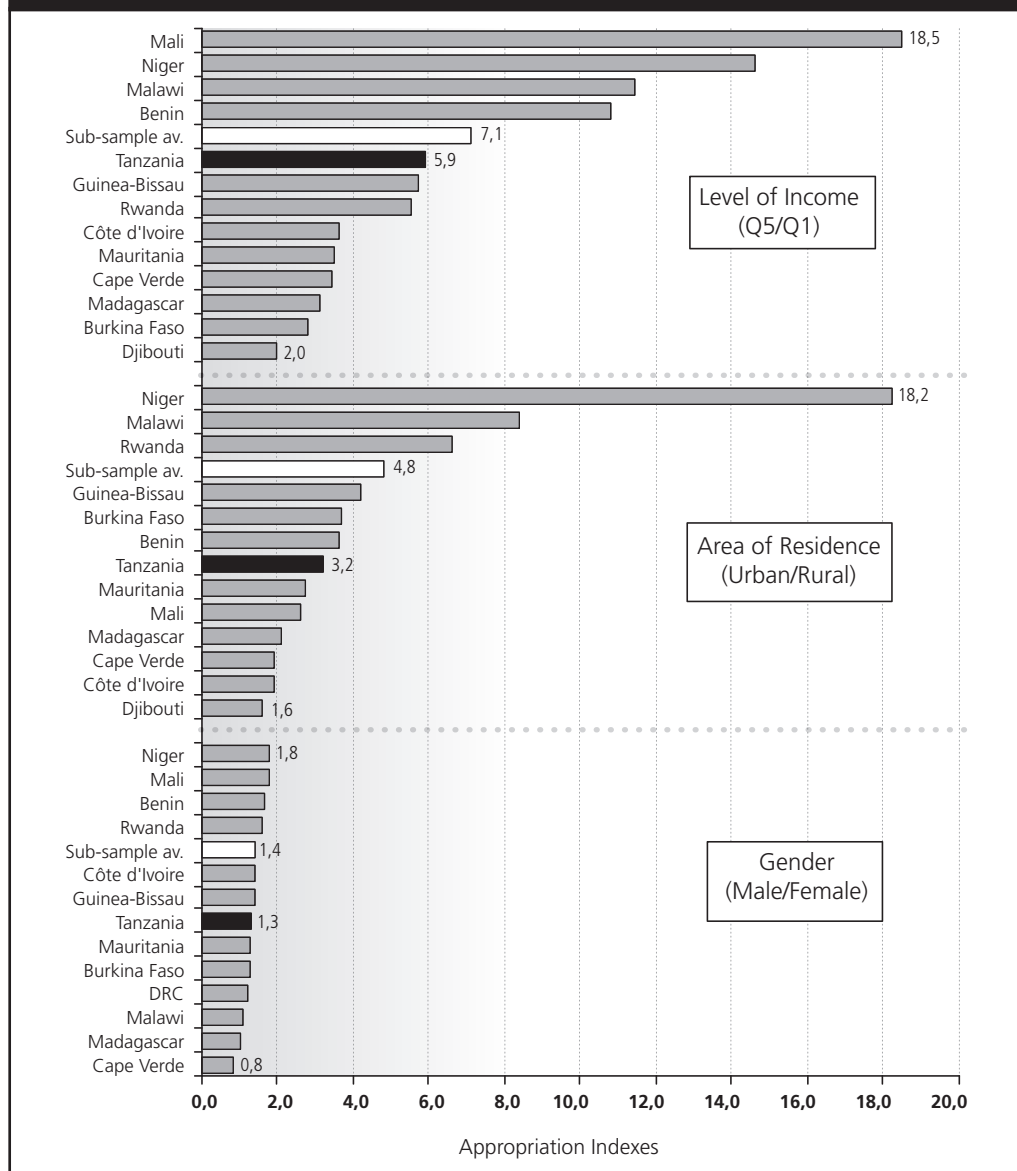
	Share of the Population (%) (a)	Public Resources Absorbed (%) (b)	Appropriation Ratio (b)/(a)	Appropriation Index
Socioeconomic Status				
Q1	27.0	12.7	0.5	1.0
Q2	23.8	15.4	0.6	1.4
Q3	20.0	21.1	1.1	2.2
Q4	17.3	18.0	1.0	2.2
Q5	11.9	32.8	2.8	5.9
Area of Residence				
Rural	74.0	47.1	0.6	1.0
Urban	26.0	52.9	2.0	3.2
Gender				
Girls	52.3	45.7	0.9	1.0
Boys	47.7	54.3	1.1	1.3

Source: Authors' calculations based on Tables 5.10 and 5.11, and Annex Table 5.8.

A similar analysis, conducted on other Sub-Saharan African low-income countries for which recent information was available, shows that there are fewer inequities in the Tanzanian education system than for the sub-sample average (See Figure 5.11 below), but that scope for improvement exists.

The analysis shows that major disparities exist across socioeconomic groups and, to a lesser extent, according to the area of residence. However, these inequities are lower in all cases than the sub-Saharan African average. In the case of the area of residence, school supply is probably a major constraint to schooling access, affecting the appropriation index. The fact that students from the poorest households have fewer opportunities to pursue their education and consequently benefit less from public education resources than their wealthier peers, constitutes an intergenerational poverty transmission factor. Further actions to support the schooling of the poor are required to ensure a more equitable development of the education system and ultimately of society as a whole.

**Figure 5.11: Disparity in the Distribution of Public Education Resources, by Level of Income, Area of Residence, and Gender, Various SSA Countries, 2009 of MRV**  
*Appropriation Indexes*



Source: Table 5.12 for Tanzania; Pôle de Dakar-UNESCO/BREDA for other countries.

## KEY FINDINGS

*Important disparities in access exist according to gender and area of residence, and they increase with successive levels of education, but the most discriminatory factor in schooling patterns is the family's level of income. Disparities tend also to be cumulative, poor rural girls facing the worst access and retention conditions.*

*Beyond the primary level, girls' participation in education is systematically lower than that of boys.* Gender parity indexes decrease from 1.04 (indicating greater girls' enrollment than boys') in primary school to 0.65 at the higher/tertiary level. Although entry requirements have been lowered to favor girls' secondary enrollment, additional measures directed at parents and teachers are needed to address cultural barriers. As shown in Chapter 2, technical and vocational studies are still slightly gender-oriented, as male students accounted for about 55 percent of trainees in 2008. At the higher education level, female enrollment has barely reached 34 percent. Girls are doubly prejudiced by their lower chances of reaching secondary school (and sit the ACSEE), and by their comparatively lower results in the ACSEE exam.

*Schooling inequalities are particularly unfair for children from rural areas.* Children from urban areas have better access probabilities to all levels of education than their rural peers, in part as a consequence of the relatively inadequate school supply in rural areas. Although the gap in the probability of primary access is of less than five percentage points, it reaches 23 percentage points for O-Level entry, and eight percentage points for A-Level entry. Technical, vocational, and higher education opportunities are also unequal across areas and regions: for instance, just five regions (Dar es Salaam, Iringa, Arusha, Kilimanjaro and Mwanza) are home to almost 55 percent of VTCs. HLIs are also particularly present in cities and the eastern part of the country. The expansion of open distance learning will be crucial in breaking the urban/rural fracture in access to postsecondary curricula and programmes.

*Disparities by region are equally marked.* Primary access and retention were particular issues in Rukwa, Tabora and Dodoma regions. Beyond school supply constraints, economic, cultural and environmental issues shape demand and keep children out of school: agro-pastoral activities in Manyara, Shinyanga, or Morogoro regions; cultural beliefs in the Pwani and Lindi regions; extensive tobacco plantations in Tabora region; adverse climate conditions in the central regions of Dodoma, Singida, Shinyanga. The lowest secondary access probabilities are faced by children in Manyara (four percent), Lindi, Tabora, Morogoro, Shinyanga and Pwani (16 percent) regions in 2006 (the national average is 27 percent). Extensive primary and secondary school construction programmes have contributed to loosen school supply constraints in many of those regions since.

*Disparities in access increase sharply with successive levels of education, especially those related to income.* Wealth parity indexes decrease from 0.94 in primary school to 0.09 at A-Level, and are virtually nil at the higher/tertiary level. Retaining the poorest students in primary schools and ensuring their transition to postprimary cycles is a major challenge: the direct and opportunity costs of schooling are an *ex ante* deterrent, and later poor



performance in exams halts further progression. Better coverage of the scholarship grants and the availability of remedial classes should contribute to making schooling more equitable for the poor.

*The distribution of public education resources is unequal, in benefit of the most privileged students.* The 10 percent most educated (those who study longest) benefit from 47 percent of public education resources, in line with the LICs' average. Boys benefit from 30 percent more public education expenditure than girls (accounting for their respective weights in the total population). Due to longer schooling, 33 percent of public resources are allocated to the 12 percent of students from the most privileged households, and those belonging to the poorest families only benefit from 13 percent of these resources, despite representing 27 percent of the population.

*Further action is required to support pro-poor schooling, ensure a more equitable development of the education system and ultimately of society.* The opportunity cost may be to maintain existing disparities, favoring future iniquities and intergenerational poverty transmission. On the basis of this analysis, a series of policy interventions are recommended to promote full access and retention to school for all, relying on a multipronged strategy tackling both supply and demand-side schooling constraints.

### **Primary School Access Related Policy Recommendations**

*Access to primary school is almost universal, but 5.5 percent of children have still never joined.* The unavailability of a school nearby is often a major hindrance (in some rural areas, 22 percent of children live over five kilometers away). There is clearly potential to build more schools in underserved areas; the cost could be compensated by offering multigrade teaching under close supervision. Lack of interest in school is also a major factor (mentioned by 12 percent as the reason for nonattendance) that could be counter arrested by improving the relevancy and quality of teaching.

Although the abolition of school fees has been a major measure in alleviating education expenses, the poorest households still face prohibitive schooling costs (uniforms, stationery, books, and so on - See Chapter 3). Interventions (such as cash transfers) specifically targeting these households may help to remove economic and financial barriers.

*Ensuring children start school at the required age is crucial.* In 2006, half the students enrolled in Standard I were aged over seven years, the official school-age, exposing them to greater risk of early dropout due to the opportunity cost of schooling. Parents' perceptions about the correct age for school attendance can be addressed through sensitization campaigns underlining the added value of school at both individual and collective levels, assisted further by the expansion of early childhood development programmes.

### Primary School Retention Related Policy Recommendations

*Schooling direct and opportunity costs must be alleviated.* Most of the interventions cited above should also favor primary school retention. Special attention should however be given to cost considerations. Costs borne by parents tend to increase as children progress through education grades and levels. School feeding programmes and cash transfer programmes are being implemented to compensate this situation, but further cost-benefit analysis is necessary before expanding them, mainly because of their notoriously high cost.

*School supply can be improved further.* Schools with incomplete cycles are known to negatively affect retention. Although this issue appears to be marginal in Tanzania, scope for improvement nevertheless exists: satellite schools, known to offer incomplete cycles, could possibly be converted into full-cycle schools using multigrade teaching.

*Closely monitoring repetition would be helpful,* especially for Standard I, the grade with the highest proportion of repeaters (6.5 percent). However, as ECCD programmes expand, and the school preparedness of children improves, this issue should resolve itself. Assessing the relevance and quality of teaching would be an interesting initiative, given that dropout is often justified by lack of interest in school.

### Secondary School Access Related Policy Recommendations

*Affirmative interventions to enhance girls' participation in school are needed to ensure parity is reached at postprimary levels.* In certain parts of the country, girls are still discriminated against, and expected to fulfill their traditional role in society, focused on home and family. Early marriage and pregnancy also favor dropout. Awareness raising campaigns at the local level on the value of girls' education could be beneficial to sensitize parents on the importance of educating girls beyond primary, and on the negative impact of early marriage and pregnancy on schooling and female health, possibly contributing to reduce dropout. Other security related concerns could be addressed by increasing the number of female teachers in schools, and providing community based hostels to avoid girls the repeated long journeys to and from school.

Just as the government has set up a programme targeted at the most talented PSLE graduates from poorer backgrounds, scholarships and cash transfers targeting bright girls could help to encourage girls' education by reducing direct and opportunity costs.

Finally, literacy programmes targeted at parents should give positive results, mainly by gradually overcoming cultural barriers to education, and the encouragement of families and schools to ensure that all children have birth certificates (although not strictly an education sector intervention), may have a positive impact on school access and retention.

## Notes

- 107 The main source of data used in this analysis is the 2007 Household Budget Survey. It provides information on schooling by gender, location (urban/rural), family wealth and region, for 2006. The findings provided as a result may be out of date in some cases, as the system has undergone a plethora of changes since 2006 (especially at the secondary level) that will not be fully grasped. Many features described here, such as education constraints linked to demand, tend to hold however, because of the longer time involved in their changing. Most analyses focus on the primary and secondary levels due to data availability issues; other subsectors are discussed when data permits.
- 108 Households are classified into five income groups (quintiles), from the poorest (Q1) to the wealthiest (Q5), based on income per capita. Each quintile represents 20 percent of the entire population.
- 109 The years analyzed are selected on the basis of available household survey data.
- 110 Lower secondary here refers to all O-Level equivalent postprimary levels, as it was not possible to distinguish between standard and technical and vocational streams at the secondary level.
- 111 SEDP I includes a policy that each ward should have an O-Level school. This has tended to encourage the construction of A-Level schools to accommodate the growing number of Form 4 leavers.
- 112 The analysis is based on probabilistic profiles that compute indicators from the historic data of generations that have already reached Standard II, Standard III, and so on. As such, they tend to provide an ancient view of children's schooling patterns. The focus should therefore be on the disparities between groups rather than on the absolute access and retention values.
- 113 Data constraints do not permit similar analyses at higher education levels.
- 114 As girls' access to school improves, their achievements are expected to improve also (compared with boys), should current retention conditions prevail (Table 5.4 shows that girls' retention is as good as boys').
- 115 Costs (fees, transportation costs) also tend to increase with each level as not all wards have an A-Level school.
- 116 Agro-pastoral activities in Manyara, Shinyanga, or Morogoro regions and extensive tobacco plantations in Tabora region keep pupils away from school; cultural beliefs in Pwani and Lindi regions discourage enrollment, as education is generally undervalued; adverse climate conditions and the poverty of infrastructure in the arid central regions (Dodoma, Singida, Shinyanga) or in Tabora, exacerbate the impact of drought and famine.
- 117 School supply is examined through the availability of schools (distance to home) as no data on school completeness (schools offering all the grades/levels a student wishes to follow) were available. Data on school quality were not collected in the household survey.
- 118 Note that this should be the maximum distance to a primary school, as established by a MoEVT norm.
- 119 An alternative explanation, that access is limited by the insufficient number of seats, does not hold here; the pupil-stream ratios in these regions are in line with the national average, of 40:1: at 36:1 in Mtwara, 39:1 in Rukwa and 42:1 in Dodoma (for Standard I classes, in 2006).
- 120 School completeness (schools offering all grades is usually used as an indicator to assess school supply issues related to retention. Incomplete schools often have a negative impact on retention, as children needing to go to a more distant school to complete their cycle are more at risk of dropping out, among other reasons because of the higher costs associated with transportation, and/or security. Although it is known that not all schools offer complete cycles (such as satellite schools in remote areas for instance) little data on such schools are available.
- 121 According to the HBS, 2007, more than three-quarters of the primary and secondary school-aged population had no birth certificate in 2006.
- 122 The reasons cited for dropout are based on direct declarations from household members (HBS, 2007). These figures combine the following answers: "child too young," and "child too old" and "cycle completed," making it difficult to distinguish between them which are related to children being too old.
- 123 It was not possible to obtain estimates of the age of new entrants; therefore this figure may be slightly inflated by the proportion of repeaters.
- 124 Over 2007-08, 23 percent of women aged 15 to 19 years had started childbearing (18 percent were mothers and five percent were pregnant of their first child (THMIS, 2007/08).

- 125 The guidelines recognize that the expulsion of pregnant girls from school contravenes various regional and international conventions (such as the African Protocol on the Rights of the Child, the International Convention on the Elimination of All Forms of Discrimination Against Women) to which Tanzania is a signatory. They are based on other sub-Saharan African country experiences, as well as national public discussions in eight education zones. The measures include: schools suspending pregnant girls until after delivery upon medical confirmation of pregnancy; the provision of guidance, counseling and monitoring of the baby's health; and measures to reduce/eliminate early marriage and pregnancy.
- 126 Dar es Salaam region is used as the reference group in these comparisons.
- 127 As mentioned, school supply is mainly measured here by school availability (the distance to school) due to data constraints.
- 128 This ratio is the one presented in Figures 5.6 and 5.7, that plot the probability of primary and secondary access against the share of the school-aged population living within three or five kilometers (respectively) of a school.
- 129 Supply issues could not be analyzed because of the lack of information on school completeness and quality.
- 130 Annex Table 5.7 provides a similar analysis based on the probabilistic profile, with similar results.
- 131 Although there is no benchmark for this indicator, regional comparisons enable to appraise its worth.