

RWANDA
EDUCATION COUNTRY STATUS REPORT
TOWARD QUALITY ENHANCEMENT AND ACHIEVEMENT
OF UNIVERSAL NINE YEAR BASIC EDUCATION

An Education System in Transition; a Nation in Transition



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 ANALYSE SECTORIELLE EN EDUCATION



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Fast Track Initiative

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CURRENCY EQUIVALENTS

(Exchange Rate: 2009 Average)

Currency Unit = Rwandese Franc (RF)
US\$ 1 = RF 579

FISCAL YEAR

January 1 – December 31

General Notes:

1. The academic year in Rwanda used to run over two calendar years, from September to June. In 2005, it changed to run over a single academic year, from January to December.
2. In this report, the former provinces are referred to only where no more recent data is available, or where the most recent data continues to use this classification. All references to districts relate to the new political geography.

Prior to 2006, Rwanda's 12 provinces were: Butare, Byumba, Cyangugu, Gikongoro, Gisenyi, Gitarama, Kibungo, Kibuye, Kigali City, Kigali-Rural (Kigali Ngali), Ruhengeri and Umutara.

The country's political geography has now been reorganized, and since 1 January, 2006, the five provinces of Rwanda are: North, East, South, West and Kigali (location of the capital).

These are organized into 30 districts. The districts of the East province are: Bugesera, Gatsibo, Kayanza, Kirehe, Ngoma, Nyagatare and Rwamagana. The districts of the Kigali province are: Gasabo, Kicukiro and Nyarugenge. The districts of the North province are: Burera, Gakenke, Gicumbi, Musanze and Rulindo. The districts of the South province are: Gisagara, Huye, Kamonyi, Muhanga, Nyamagabe, Nyanza, Nyaruguru and Ruhango. The districts of the West province are: Karongi, Ngororero, Nyabihu, Nyamasheke, Rubavu, Rusizi and Rutsiro.

This report is available in color online: <http://go.worldbank.org/539BCGQ9Y0>

Foreword

In recent years, the development context for education has evolved in ways that demand greater analytic work to inform education policy. Governments are striving toward poverty reduction and the Millennium Development Goals, and the international donor community has pledged to provide the necessary financial assistance. Many countries have given education a central role in their economic and social development agendas. Throughout Africa, thousands of new schools have been built and new teachers hired. Free primary education has been established or extended in many countries, and student enrollments have surged to record levels. However, challenges remain: millions of children still do not have access to basic education, particularly girls and those from poor families and living in rural areas; and the quality of learning is poor and often declines as systems rapidly expand. Secondary education lacks the capacity to accommodate the recent increased influx of primary graduates. Higher education, as well as technical and vocational education and training, have little relevance to the labor market — a key gap as economies grow and diversify.

To address these issues, a first step is to develop a country-specific knowledge base that sheds light on the key weaknesses and challenges in the education system.

This Country Status Report (CSR) for Rwanda is part of an ongoing series of country-specific reports being prepared by the World Bank in collaboration with governments and development partners. The series aims to enhance the knowledge base for policy development. This report is intended to help engage a diverse audience on issues and policies in the education sector and to develop a shared vision for the future of Rwanda. It is the first of a two-part overview and assessment of the education sector, along with the *Post Basic Education and Training in Rwanda* (PBET) study. While the Country Status Report offers a broad discussion of the country's entire education system, it concentrates mostly on the improvement of basic education quality. The PBET study follows on from this, with an overview and assessment of Rwanda's PBET system.

Besides consolidating information in a policy-relevant manner, this CSR makes a unique contribution to the education knowledge base by documenting not only traditional and basic indicators, such as gross enrollment rates and retention, but also examining the performance of the education system in terms of access, quality, equity, and resource allocation and utilization. The report also includes chapters on education governance and teacher management.

The Rwanda CSR has been completed at an opportune time. The findings from this report have already informed key education sector documents, including the new Education Sector Strategic Plan (ESSP) and the Long-Term Strategy and Financial Framework (LTSFF). With the Nine Year Basic Education policy firmly in place, Rwanda's education sector needs more resources than ever to accommodate rapid system expansion while improving student learning and retention. This report highlights the country's education progress to date and the challenges that need to be addressed. It does not, however, provide solutions. Policy responses to the issues

outlined in the report will be formulated through ongoing policy dialogue and reform. Although the report offers comprehensive information on education in Rwanda, it is constrained by the limited data available at the time. Additional data from the education management information system (EMIS) and student learning assessment will enhance future policy dialogue.

This report is an effort to share our collective knowledge on education in Rwanda as widely as possible. Rwanda already has a history of strong collaboration between government and development partners. And education is one of the main ways to consolidate the country's recent gains and help build a generation that is socially and economically secure and that competes effectively in the regional and global arenas.

It is my hope that as new knowledge emerges in the near future, this report will be updated to track progress and draw lessons that may have broad applications for Rwanda's education sector and that help build the country's human capital for the future.

Tawhid Nawaz
Acting Director
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A handwritten signature in dark ink that reads "Tawhid Nawaz". The signature is written in a cursive style with a light blue vertical line to its left.

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Abbreviations

AEA	Autonomous Education Agency
B.Ed.	Bachelor of Education
BREDA	Bureau Régional de l'Unesco pour l'Education en Afrique
CEO	Chief Executive Officer
CoE	College of Education
CoT	College of Technology
CPD	Continuous Professional Development
CSR	Country Status Report
DfID	UK Department for International Development
DG	Directorate General
DHS	Demographic Household Survey
EAC	East African Community
ECD	Early Childhood Development
EDPRS	Economic Development and Poverty Reduction Strategy
EFA-FTI	Education for All- Fast Track Initiative
EICV	Enquête Intégrale sur les Conditions de Vie des Ménages
EMIS	Educational Management Information System
ESSP	Education Sector Strategic Plan
ETFP	Enseignement Technique et Formation Professionnelle
FMT	Financial Means Testing
FRIA	Functional Review and Institutional Audit
FTS	Fast Track Strategy
GBS	General Budget Support
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
GIE	General Inspectorate of Education
HEC	Higher Education Council
HIPC	Highly Indebted Poor Countries
HLI	Higher Learning Institution
ICT	Information and Communication Technology
IEC	Internal Efficiency Coefficient
IMOA-EPT	Initiative de la Mise en Oeuvre Accélérée de l'Education pour Tous
JESS	Joint Education Sector Support
KIE	Kigali Institute of Education
LTSFF	Long Term Strategy and Financial Framework
MINALOC	Ministry of Local government
MINECOFIN	Ministry of Finance and Economic Planning
MINEDUC	Ministry of Education
MINFOTRA	Ministry of Civil Service and Labor
MTEF	Medium Term Expenditure Framework

NCDC	National Curriculum Development Centre
NGO	Non Governmental Organization
NISR	National Institute of Statistics of Rwanda
OVC	Orphans or Vulnerable Children
P6NE	Primary 6 National Examination
PBET	Post Basic Education and Training
PER	Public Expenditure Review
PRILS	Progress in International Reading Literacy Study
PSC	Public Service Commission
PTA	Parent Teacher Association
PTC	Parent Teacher Committee
QIWG	Quality Improvement Working Group
REB	Rwanda Education Board
RF	Rwandese Franc
RNEC	Rwanda National Examinations Council
SACCO	Mwalimu Savings and Credit Cooperative Organization
SACMEQ	Southern African Consortium for the Monitoring of Educational Quality
SBS	Sector Budget Support
SFAR	Student Financing Agency of Rwanda
SM	School-based Management
STR	Student Teacher Ratio
TBS	Taux Brut de Scolarisation
TDMP	Teacher Development and Management Policy
TIMSS	Trends in International Mathematics and Science Study
TSC	Teacher Services Commission
TTC	Teacher Training College
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WDA	Workforce Development Authority

EXECUTIVE SUMMARY

The Republic of Rwanda is a relatively small country located in Central Africa with a population of approximately 10 million people, making it one of the more densely populated countries in the world. The current government is taking positive steps to help the country emerge from its tragic past,¹ and aims to promote reconciliation and unity among all Rwandese and forbids any political activity or discrimination based on race, ethnicity, or religion. The government's efforts to deliver basic public services to its population, including education, also follow the spirit of inclusiveness and aims to diminish gender, socioeconomic, and geographic disparities.

Rwanda's development agenda is entering a new phase as it transitions from post-genocide recovery to producing a population that is regionally and globally competitive and economically and socially secure. The education sector plays a significant role in fulfilling the national agenda.

This Country Status Report (CSR) takes stock of recent progress and identifies a new generation of challenges facing the education sector, particularly in the context of ongoing decentralization and the government's recent initiative to extend basic education to nine years of schooling.

This CSR constitutes the first of a two part overview and assessment of the education sector, along with the publication *Post Basic Education and Training in Rwanda* (PBET study). While the CSR offers some macro level discussion of the entire education system, it concentrates mostly on the emerging focus on quality improvement in basic education. On the other hand, the PBET study provides an overview and assessment of Rwanda's PBET system.

The sections below summarize the CSR's main findings and suggested priority actions.

1. Enhance Efficiency of Service Delivery by Ensuring Sufficient Implementation Capacity

The government has been proactive in the education sector by setting its strategic direction and adopting policies in critical areas of the system. Particularly in the context of a transitional and increasingly decentralized educational system, the government's policy agenda requires considerable implementation and monitoring capacity at central, district, school and teacher levels. As the sector begins to address the next generation of challenges, a greater number of staff with more sophisticated skills is needed. Without adequate and appropriate implementation capacity, the sector is likely to achieve suboptimal results or suffer unintended negative consequences from the proposed and ongoing reforms.

The current lean structure of the Ministry of Education (MINEDUC) and other implementing agencies, the shortage of qualified professionals to fill vacancies, work overload and the lack of

¹ The recent history of the country is, unfortunately, characterized by the genocide of 1994 in which at least 800,000 people were killed over the course of approximately 100 days.

on the job training exacerbate the service delivery challenges for the education sector. High staff turnover also hinders the accumulation of institutional memory and decreases the ability to benefit from the lessons learned.

Data gaps also contribute to inefficiencies in service delivery. The effective management of an education system requires an equally effective process of monitoring and evaluation to provide timely data for informed decision making. Although an Educational Management Information System (EMIS) was partially launched in 2009, it is not yet fully operational. New and more comprehensive data produced by EMIS need to be incorporated to quality assurance efforts. This should enable a shift from planning, to evaluating and reporting on the performance of the system on a regular basis. Districts and schools need training in administration and management in order to effectively contribute to the evaluation and reporting process, given that the education system is increasingly dependent on the bottom-up flow of accurate data and information.

The priority actions to enhance the efficiency of service delivery in the sector are to:

- Continue to monitor service delivery, particularly for unintended consequences, to maximize the benefits from successes and lessons learned;
- Develop a comprehensive training strategy for all education and implementation levels, with a computerized database of all training activities;
- Develop a network of professionals and educational researchers who can provide high quality input;
- Ensure EMIS is fully functional, possibly including data on training activities and teachers' career paths;
- Identify and reward schools that are achieving good outcomes; and
- Provide districts and schools with adequate computer facilities, communication capabilities and training in the use of these tools.

2. Improve Internal Efficiency and the Quality of Education

Universal primary education entails the expansion of both access to and completion of primary education. Between 1999 and 2008, all levels of education showed expanded access. Pre-primary education recorded the highest relative increase in enrollment, although it remains underdeveloped, as is the case in many other countries in the region (See the following table). Compared with other Sub-Saharan African countries, Rwanda records a higher gross enrollment rate (GER) for primary and higher education, but lower rates for *tronc commun*² and upper secondary. While the expansion of the general and Technical and Vocational Education and Training (TVET) tracks in upper secondary contributed to an overall enrollment increase for this level, the pedagogical track, including teacher training, showed a decrease.

² *Tronc commun* is a French term commonly used for lower secondary

Gross Enrollment Rates by Level, 2002/03-2008³

	Pre- primary	Primary	Secondary				TVET (a)	Higher (b)
			Tronc Commun	Upper Secondary		All Secondary		
				All sections	General only			
(Per 100,000 inhabitants)								
2002/2003	3	123	17	10	4	15	312	251
2005	—	136	22	12	6	17	383	315
2006	13	145	24	13	6	19	414	410
2008	18	151	28	16	9	22	440	474

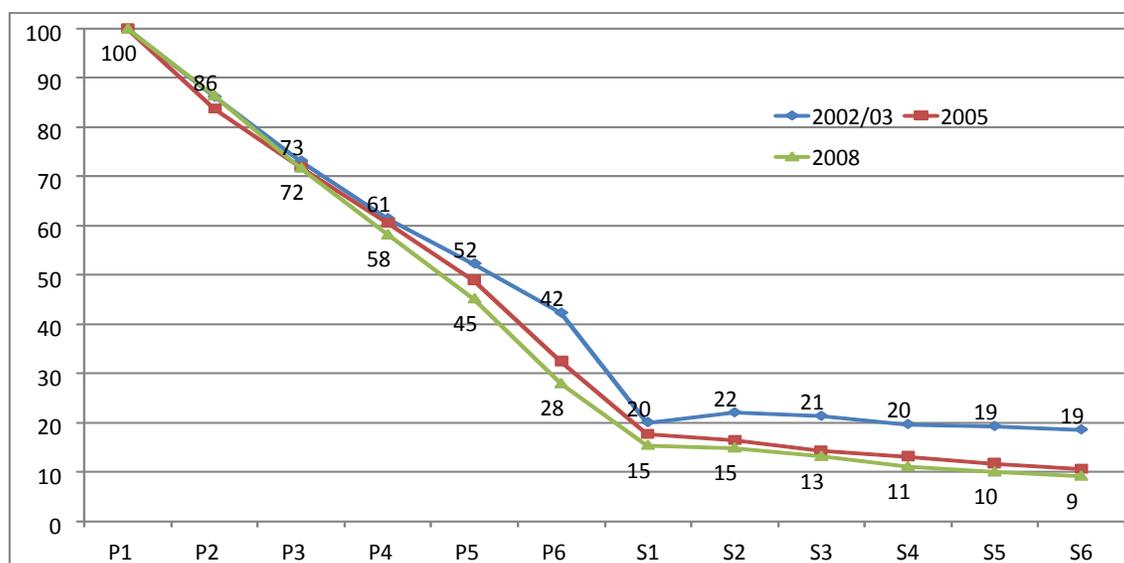
Sources: MINEDUC Statistical Yearbooks (various years) and MINEDUC School Census 2008, National Institute of Statistics Rwanda Census Projection 2005, and authors' computations.

Note: (a) TVET at secondary level. (b) Higher education takes into account Colleges of Technology (CoTs) and Colleges of Education (CoEs).

Rwanda's next challenge is to ensure that children have access to and complete quality basic education. Indeed, while Rwanda has almost achieved universal access to primary education, the primary completion rate remains low, close to 54 percent in 2008. The weakening retention trend underlines the need to address this issue immediately. The retention profiles show worsening retention rates between 2002/03 and 2008 at the primary level (down from 42 percent to 28 percent), *tronc commun* (down from 21 percent to 13 percent) and upper secondary (down from 19 percent to 9 percent) as a result of higher student dropout rates (See the following figure).

Retention Profile (Share of Primary Grade 1 Students who Reach Subsequent Grades) in 2002/03, 2005 and 2008

Percent



Source: MINEDUC Statistical Yearbooks 2003 and 2005, MINEDUC School Census 2008, National Institute of Statistics Rwanda Census Projection 2005, and author's computations; Demographic Household Survey (DHS) 2005 for repetition structure at primary level only.

Note: The primary retention rate has been estimated by adjusting the enrollment rate per grade on the basis of the repetition structure reported by the DHS 2005. At secondary level, the DHS repetition structure is not reliable due to the small sample size.

³ See General Note 1 about the reorganization of the academic year, on Page ii.

Dropouts can mainly be attributed to: (i) high repetition rates (in 2008, 17 percent of primary students repeated a grade on average) and (ii) the fragility of demand for education, particularly among the most vulnerable children (girls, children from rural areas, the poor and children with disabilities).

Enhancing learning conditions implies the improvement of key school inputs, such as the distribution of basic resources among schools and teaching practices in the classroom. Improvements in learning conditions are expected to ultimately result in enhanced student learning. Rwandese primary, *tronc commun* and upper secondary schools are relatively well resourced with respect to facilities such as toilets and access to clean water. In primary education however, access to electricity is scarce in all provinces except Kigali, and pupil to teacher ratios remain high. Access to a sufficient number of relevant and high quality textbooks at the secondary level remains a challenge, but recent changes to the textbook procurement system are expected to address this issue.

Construction is underway to meet the government's target to reduce the average pupil to classroom ratio in basic education from the current 70.7 to 1, to 52.0 to 1 by 2012. However, the government will first need to ensure the availability of accurate and timely data on the number of schools and classrooms available to each level, because some schools are currently in a transition phase in response to the Nine Year Basic Education policy, including the merging of primary and *tronc commun* schools.

As plans to build new schools are developed, the government will also need to look ahead to ensure that the physical features of new schools accommodate the needs of the students least likely to enroll, including those with physical disabilities. The cost of building new schools accessible to such students is low compared with the additional cost of fitting existing schools with the required infrastructure at a later time.

Aiming for simple, standardized classroom and school designs and limited construction of specialized facilities can be a cost effective option to expand the number of classrooms for basic education. The government's infrastructure policy will need to identify distinct strategies to enhance the quantity and quality of infrastructure for each level of the education system.

The discussion on student learning in this report relies on data from national examinations. As Rwanda moves forward with its plans to launch a more comprehensive national student learning assessment system, the government should be better able to determine whether the system is performing well in terms of learning outcomes, identify the strengths and weaknesses of the system, track the performance of subgroups, determine whether curricula are well designed and textbooks are relevant, and identify factors affecting student learning. Rwanda does not currently participate in any standardized student learning assessments, therefore it is difficult to compare national examination results with those of other countries. The implementation of an effective student learning assessment system would also enable performance comparisons with other countries.

The priority actions to improve internal efficiency and the quality of education are to:

- Complement the impressive growth in access with sustained efforts to improve the quality of education, to retain students and achieve the desired learning outcomes;
- Expedite plans to launch a national student learning assessment system;
- Consider participating in the regional Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) and the international *Trends in International Mathematics and Science Study* or *Progress in International Reading Literacy Study* assessments of learning outcomes;
- Monitor the progress of and obstacles related to the newly launched decentralized textbook procurement process, possibly through a randomized tracking survey;
- Ensure that new schools are accessible to children with disabilities; and
- Build cost effective secondary schools based on the lessons learned from international experience.

3. Continue to Eliminate Disparities

Rwanda has met the Millennium Development Goal (MDG) on gender parity in basic education. However, disparities according to geographical location and income are greater than those related to gender, and increase as students move up through the education system. The following table shows that 63 rural students are enrolled for every 100 urban students at the end of primary, while the figure drops to 37 by the end of *tronc commun*. However, income group disparity is even more significant; the 2006 wealth parity index was 0.16 for completion of *tronc commun* and 0.13 for completion of upper secondary, equivalent to an upper secondary completion probability for students coming from the wealthiest quintile eight times higher than for students coming from the poorest quintile. Despite the abolition of school fees for basic education, direct costs associated with schooling remain a major obstacle to the enrollment of children from low income families.

Access Probability Differences in Primary and Secondary Education, 2006

Difference according to	Access to Primary	Primary Completion	Access to <i>Tronc Commun</i>	<i>Tronc Commun</i> Completion	Access to Upper Secondary	Upper Secondary Completion
Urban/Rural Location Index (urban = 1)	0.98	0.63	0.47	0.37	0.32	0.36
(2000 Index)	(0.93)	(0.77)	—	—	—	—
Male/Female Gender Index (male=1)	1.01	0.88	0.83	0.88	0.81	0.70
(2000 Index)	(1.02)	(0.95)	—	—	—	—
Q1/Q5 Income Index (Q5 = 1)	0.98	0.38	0.19	0.16	0.13	0.13

Sources: Authors' calculations from EICV 2005/06; 2000 indices from CSR 2003.

The 1994 genocide left Rwanda with a high prevalence of orphans and vulnerable children (OVCs), constituting 25 percent of primary school aged children (7-12 years old) and 33 percent of children aged 6-20 years. While the 2004 CSR showed that attendance rates among OVCs were systematically lower than those of children whose parents were both alive, the disparity nearly had disappeared by 2006.

The priority actions to continue to eliminate disparities are to:

- Monitor the impact on completion and transition rates of extending basic education to nine years, particularly for the most vulnerable children; and
- Consider the implementation of specific, well designed and targeted support to rural and poor children, to offset residual direct costs associated with schooling.

4. Improve the Management and Deployment of Teachers

Teachers are perhaps most heavily affected by changes in education policy. In the Rwandese context, several government initiatives introduced in 2009 have had a major impact on primary teachers, including double shifting, the move to English as the teaching language, subject specialization and the reduction of core subjects. These initiatives reflect efforts to fast track the Nine Year Basic Education policy. Some are therefore considered to be temporary measures. Yet even temporary changes require teachers to adapt to new teaching expectations and will have a ripple effect on student learning. For instance, although the procurement of subject textbooks in English at the primary level is underway, teachers will require language training to effectively teach with them. The replacement of traditional class based teaching with subject teaching will undoubtedly have an impact on the extent to which teachers are adequately prepared to teach their assigned subjects, as well as on the deployment of a sufficient number of teachers in each subject and to each school.

In a dynamic context, having a medium to long-term resource development strategy for the teaching profession is crucial, particularly with respect to areas such as pay and career progression, working and living conditions and ongoing professional development. Financing constraints may hamper the government's ability to implement all the measures in the short term, but a thoughtful plan including benchmarks will allow implementing agencies to gauge whether they are on track to meet long-term goals. A resource development strategy would also minimize any intended or unintended turbulence from new or temporary government initiatives that impact teachers' daily working conditions.

Weak commitment to the teaching profession, limited practical experience and low pay result in declining demand for teacher training programs at the Teacher Training Colleges (TTCs) and Colleges of Education (CoEs) that respectively prepare primary, and lower secondary/upper basic school teachers. The overall quality of the teacher education program for secondary schools at the Kigali Institute for Education (KIE) is relatively good, and recent reforms are expected to remedy outstanding weaknesses. However, the qualifications of teacher educators at TTCs, CoEs and the KIE remain weak.

Nearly all teachers at surveyed schools believe that they are poorly paid, which is the main reason mentioned by teachers for wanting to leave their profession. Indeed, the total net basic income of certificate level primary school teachers is far below a living wage. A recently introduced annual performance bonus has increased the net pay by around one third. However, as the following table demonstrates, the net income of a certificate teacher remains almost three times lower than that of other similarly qualified civil servants.

Teacher Net Monthly Pay Compared with Other Civil Servants, 2008
Rwandese Francs (RF)

Grade	Teacher	Other
Certificate	27,012	80,012
Diploma	89,000	144,000
Degree	113,000	200,000

Source: Ministry of Public Service and Labor

The priority actions to improve the management and deployment of teachers are to:

- Conduct a formal assessment of teacher competency levels and behavior, taking into account recent reforms and the changes in the required skill set;
- Develop a medium to long-term human resource development strategy, including pay and career progression, working and living conditions and ongoing professional development;
- Develop a clear, professional roadmap for teacher educators to enhance the quality of pre service teacher training. Experienced and highly competent school teachers could be identified and encouraged to join the teacher educator profession;
- Provide universal access to subsidized housing loans for teachers;
- Strengthen teachers’ professional organization capacities; and
- Provide non monetary incentives such as the identification and recognition of high performing teachers.

5. Making Effective Use of Resources

Findings from this CSR show progress with respect to the equitable allocation of recurrent public expenditure across all levels. The 2004 CSR highlighted the need for Rwanda to increase the resource allocation for basic education. Including the support budget allocated to primary education, Rwanda now invests nearly 49 percent of its recurrent education budget on primary education, which is similar to the average of other African countries (See the following table). Rwanda’s spending on primary education is also approaching the EFA-FTI indicative benchmark, of 50 percent.

Share of Primary and Higher Education in Public Recurrent Education Expenditure for Rwanda and other African Countries, circa 2006

	Primary	Higher (b)
Rwanda, 2008 (%) (a)	49.0	26.5
Other African Countries, Subsample Average (%)	49.1	19.2
EFA-FTI benchmark (%)	50.0	—
Ratio of Rwanda to Subsample	1.00	1.35

Sources: World Bank 2009; For Rwanda, Table 6.4 in this report.

Note:

(a) Rwanda 2008: institutional support costs have been distributed across levels.

(b) The figure on higher education encompasses all spending related to higher education, including higher technical curricula (CoTs and CoEs). This is also the case for other countries in the sample.

A priority task for the government of Rwanda should be to redirect social expenditure for upper secondary (school feeding programs), and to a lesser extent, for higher education levels (loans/grants), towards basic education teacher salaries and targeted support to the most vulnerable students (See the following table). Social expenditure for these levels has predictably inequitable results, at the expense of ensuring that the poorest pupils have a chance to complete basic education, and at that of improving learning conditions in the lower grades.

Breakdown of Recurrent Expenditure other than Teachers' Salaries, 2008

Percent

	Administrative and Pedagogical	Administrative Staff	Social	Total
Primary	87	13	1	100
<i>Tronc Commun</i>	58	21	21	100
Upper Secondary	27	27	46	100
Higher (inc. CoE and CoT)	51	9	39	100
Total	65	14	22	100

Source: Computation based on Table 6.4 and on data from Annex Table 6.2.

The estimated level of household spending on education was equivalent to 42 percent of total spending on education in 2008, a sharp increase from 2000. Private spending on education is highest for secondary education. Yet private spending for primary education has only marginally decreased following the abolition of school fees in 2003/04, indicating that families maintain similar contribution levels to primary education, regardless of the school fees. The government may consider targeted financial support programs for the students in greatest need, with a focus on relieving the financial burden on households for non school fee expenses, to ensure that such students are given the opportunity to complete basic education.

The priority actions to make effective use of resources are to:

- Increase teacher salaries, to at least match those of other civil servants, at primary and secondary education levels;
- Hire more primary education teachers to lower pupil to teacher ratios and redirect some non salary expenditures towards management, inspection, training and scholarships for the poorest students;
- Sustain efforts to reduce the number of boarding students in secondary education, and redirect social expenditures from school feeding programs to targeted financial support for the students in greatest need; and
- Increase local teacher wages in higher education and introduce effective cost recovery mechanisms and grants targeted at the students in greatest need, through means testing.

Conclusion

The current assessment of the state of the Rwandese education system since the 2004 CSR reveals that the country has sustained a strong political commitment to improve access to and the quality of education. The Nine Year Basic Education policy firmly places Rwanda on a planned trajectory towards providing quality basic education for all.

The expansion of the education system, however, has also created new challenges for the sector, including the need to improve internal efficiency across all levels and to eliminate disparities between geographical areas and income groups. In order to better understand the impact of various inputs to the education system, Rwanda will need to prioritize the implementation of a national student learning assessment system in the near future. Teacher management and deployment remains a key challenge. Data and analyses provided in this report will hopefully allow the government of Rwanda to embark on the development of a long-term resource strategy for the sector and to concretely engage in ways to improve the motivation of its teaching staff, with a particular focus on non financial incentives. In the context of the ongoing decentralization process, the government will need to enhance its own capacity to deliver relevant and timely training to its staff at all levels of implementation, as well as monitor the detrimental effects of high staff turnover. Finally, as is the case with any education system in the world, access to and effective utilization of accurate and timely data is a crucial component of Rwanda's ability to make informed policy decisions.

Rwanda already has a history of strong coordination between government and development partners. Hopefully, the analyses and findings contained in this report will contribute to ongoing policy discussions among stakeholders who govern, implement and benefit from the education system.

RÉSUMÉ ANALYTIQUE

La République du Rwanda est un pays relativement petit, situé en Afrique centrale, avec une population d'environ 10 millions d'habitants, ce qui en fait l'un des pays les plus densément peuplés du monde. Le gouvernement actuel agit activement pour permettre au pays de renaître de son passé tragique,⁴ et cherche à promouvoir la réconciliation et l'unité nationale et interdit toute activité politique ou discrimination basée sur la race, l'ethnie ou la religion. Les efforts du gouvernement pour fournir à sa population des services publics de base, dont l'éducation, s'inscrivent aussi dans cet esprit d'inclusion et visent à réduire les inégalités socioéconomiques, géographiques et de genre.

Le programme de développement du Rwanda entre dans une nouvelle phase alors que le pays émerge de la reprise post-génocide. La priorité est à rendre la population compétitive sur le plan régional et mondial, et sécurisée sur le plan économique et social. Le secteur de l'éducation joue un rôle important dans la mise en oeuvre du programme national.

Le présent Rapport d'Etat du Pays (CSR) fait le point sur les progrès récents et identifie une nouvelle génération de défis auxquels le secteur de l'éducation est confronté, en particulier dans le contexte de la décentralisation en cours et de l'initiative récente du gouvernement pour étendre l'éducation de base à neuf années de scolarité.

Ce CSR constitue la première de deux parties d'une vue d'ensemble et évaluation du secteur de l'éducation, avec la publication de l'étude *Éducation Post-Primaire et Formation au Rwanda* (étude PBET). Quoique présentant une analyse macro de l'ensemble du système éducatif, le CSR se concentre principalement sur l'intérêt croissant pour l'amélioration de la qualité de l'éducation de base. D'autre part, l'étude PBET offre une vue d'ensemble et une évaluation du système PBET au Rwanda.

Les sections qui suivent résument les conclusions principales du rapport et les actions prioritaires suggérées.

1. Accroître l'efficacité des prestations de service en garantissant une capacité de mise en oeuvre suffisante

Le gouvernement du Rwanda a été proactif dans le secteur de l'éducation en établissant une direction stratégique et à travers l'adoption de politiques pour les principaux secteurs du système. Dans le contexte d'un secteur éducatif en transition et de plus en plus décentralisé, le vaste programme de réforme du gouvernement requiert d'autant plus de capacités de mise en oeuvre et de suivi aux niveaux central, du district, de l'école et de l'enseignant. Alors que le secteur

⁴ L'histoire récente du pays est malheureusement marquée par le génocide de 1994 au cours duquel au moins 800,000 personnes ont été tuées en l'espace de 100 jours.

commence à faire face à une nouvelle génération de défis, davantage de personnel ayant des compétences plus pointues est nécessaire. Sans une capacité de mise en œuvre adéquate et appropriée, le secteur pourrait connaître des résultats insatisfaisants ou des conséquences indésirables des réformes proposées ou en cours.

La modeste structure actuelle du ministère de l'Éducation (MINEDUC) et des autres organismes de mise en œuvre, la pénurie de personnel qualifié pour occuper les postes vacants, la surcharge de travail et l'absence de formation continue aggravent les défis en termes de prestation de service dans le secteur de l'éducation. Le taux élevé de renouvellement du personnel entrave également l'accumulation d'une mémoire institutionnelle et réduit la capacité à bénéficier des leçons apprises.

Le manque de données contribue aussi à l'inefficacité de la prestation de services. La gestion efficace d'un système éducatif requiert un processus de suivi-évaluation tout aussi efficace afin de fournir les données nécessaires aux prises de décision averties. Bien qu'un système d'information pour la gestion de l'éducation (EMIS par ses sigles en anglais) ait été partiellement lancé en 2009, il n'est pas encore pleinement opérationnel. Il faut incorporer les données plus récentes et complètes provenant de l'EMIS aux efforts d'assurance qualité. Ceci devrait permettre la transition de la planification vers l'évaluation et le reporting régulier sur la performance du système. Les districts et les écoles ont besoin de formation en gestion et administration afin de contribuer efficacement au processus d'évaluation et de reporting, puisque le système éducatif est de plus en plus dépendant de données et d'informations exactes issues de la base.

Les actions prioritaires pour améliorer l'efficacité des prestations de service dans le secteur sont :

- Continuer à surveiller les prestations de service, et particulièrement les conséquences imprévues, dans le but d'optimiser les bénéfices des succès et des leçons apprises ;
- Développer une ample stratégie de formation pour tous les sous-secteurs et niveaux de mise en œuvre, avec une base de données informatisée pour toutes les activités de formation ;
- Développer un réseau de professionnels et de chercheurs en éducation qui peuvent apporter une contribution de haute qualité ;
- S'assurer qu'EMIS est totalement fonctionnel, éventuellement en incluant des données sur les activités de formation et les trajectoires de carrière des enseignants ;
- Identifier et récompenser les écoles qui obtiennent de bons résultats ; et
- Fournir aux districts et aux écoles des équipements informatiques et de communication adéquats, et les former dans l'utilisation de ces outils.

2. Améliorer l'efficacité interne et la qualité de l'éducation

Offrir un enseignement primaire universel implique l'extension à la fois de l'accès à et de l'achèvement de l'enseignement primaire. Entre 1999 et 2008, tous les niveaux d'enseignement ont connu un accès accru. Les inscriptions en enseignement préscolaire sont ceux qui ont le plus augmenté relativement parlant, bien que ce niveau reste sous-développé, comme c'est courant

dans la région (voir le tableau suivant). Comparé à d'autres pays d'Afrique Subsaharienne, le Rwanda enregistre des taux bruts de scolarisation (TBS) plus élevés dans l'enseignement primaire et supérieur, mais plus faibles dans le tronc commun et au second cycle du secondaire. Alors que l'expansion de l'enseignement général et de l'Enseignement Technique et la Formation Professionnelle (ETFP) dans le second cycle du secondaire a contribué à un accroissement global de la scolarisation dans le sous-secteur, la filière pédagogique, qui inclut la formation des enseignants, a connu une diminution.

TBS par niveau d'enseignement, 2002/03-2008

	Préscolaire	Primaire	Secondaire				ETFP (a)	Supérieure (b)
			Tronc Commun	Second cycle du secondaire		Tout le secondaire		
				Toutes les sections	Section générale			
(%)							(Pour 100,000 habitants)	
2002/2003	3	123	17	10	4	15	312	251
2005	—	136	22	12	6	17	383	315
2006	13	145	24	13	6	19	414	410
2008	18	151	28	16	9	22	440	474

Sources: Annuaires statistiques (plusieurs années) et Recensement scolaire 2008, MINEDUC ; Prévisions 2005 de recensement, National Institute of Statistics Rwanda ; et calculs des auteurs.

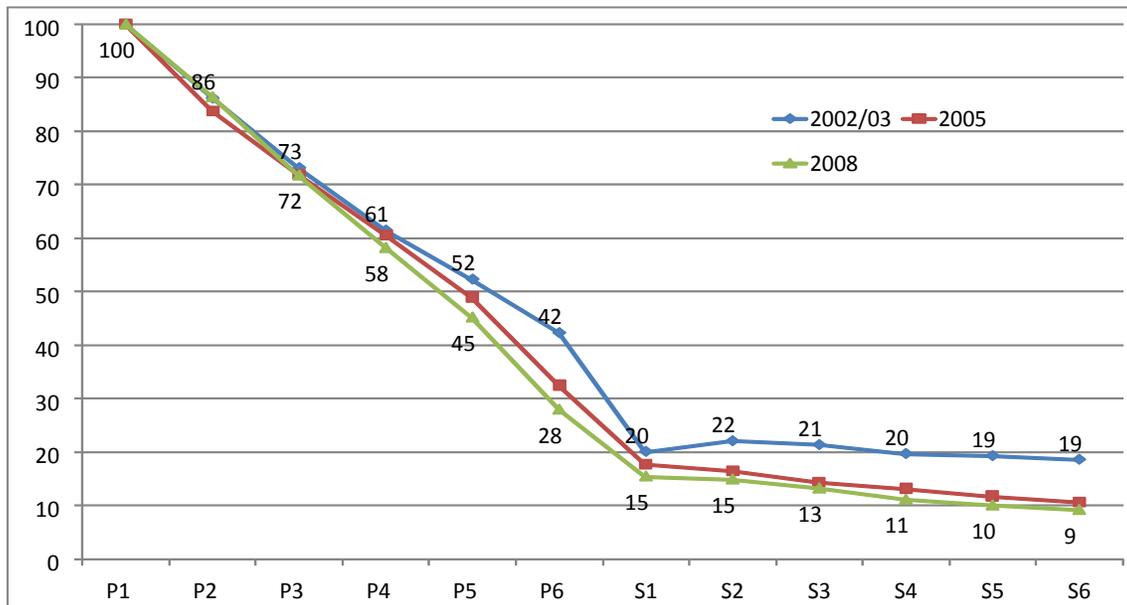
Note: (a) ETFP au niveau du secondaire ; (b) L'enseignement supérieur tient compte des Collèges de Formation et des Collèges d'Education.

Le prochain défi du Rwanda est de garantir l'accès à un enseignement de base de qualité, et l'achèvement. De fait alors que le Rwanda a presque atteint l'éducation de base universelle, les taux d'achèvement restent bas, près de 54 pourcent en 2008. La baisse des taux de rétention montre qu'il est impératif de régler le problème immédiatement (voir le schéma suivant). Les profils de rétention montrent une diminution des taux de rétention entre 2002/03 et 2008 au niveau du primaire (de 42% à 28%), du tronc commun (de 21% à 13%) et du second cycle du secondaire (de 19% à 9%), due à un taux élevé d'abandon scolaire. Les abandons peuvent être principalement attribués à (i) des taux de redoublement élevés (une moyenne de 17% des élèves du primaire étaient redoublants en 2008) et (ii) la fragilité de la demande scolaire, en particulier pour les enfants les plus vulnérables (les filles, les enfants de zones rurales, les pauvres et les enfants handicapés).

Développer les conditions d'apprentissage implique l'amélioration des principaux intrants scolaires, tels que la répartition des ressources de base aux écoles, et les pratiques pédagogiques en classe. L'amélioration de ces intrants devrait avoir un impact favorable sur l'apprentissage des élèves. Les écoles rwandaises primaires, du tronc commun et du second cycle du secondaire sont relativement bien dotées en installations tels que toilettes et l'accès à l'eau potable. Cependant l'enseignement primaire a un très faible niveau d'accès à l'électricité en dehors de Kigali et le taux d'élèves par enseignant demeure élevé. Au niveau secondaire l'accès à un nombre suffisant de manuels scolaires appropriés et de bonne qualité reste un défi, mais des changements récents dans le système de passation des marchés devraient résoudre ce problème.

Profil de rétention (part des élèves de la première année de primaire qui passent aux années suivantes) en 2002/03, 2005 et 2008

Pourcent



Source: Annuaire statistiques 2003 et 2005 et Recensement scolaire 2008, MINEDUC ; Prévisions 2005 de recensement, National Institute of Statistics Rwanda ; calculs des auteurs; et l'Enquête Démographique et Ménages (DHS) 2005 pour le redoublement du primaire.

Note: Le taux de rétention en primaire a été estimé en ajustant le taux de scolarité par classe sur la base de la structure de redoublement du DHS 2005. Au niveau secondaire, la structure de redoublement du DHS n'est pas fiable en raison de la petite taille de l'échantillon.

Un programme de construction est en cours pour atteindre la cible du gouvernement de réduire le taux moyen d'élèves par classe de 70.7 à 1 actuellement, à 52 à 1 d'ici 2012. Le gouvernement devra d'abord garantir la disponibilité de données exactes et pertinentes sur le nombre d'écoles et de classes disponibles à chaque niveau d'enseignement. En effet, certaines écoles primaires et du tronc commun sont actuellement en fusion du fait de la mise en œuvre de la politique d'étendre l'éducation de base à neuf années de scolarité.

Pendant que les plans pour construire de nouvelles écoles sont élaborés, le gouvernement devra aussi prendre les devants et s'assurer que les caractéristiques physiques des nouvelles écoles répondent aux besoins des élèves les plus difficiles à scolariser, dont ceux qui ont des handicaps physiques. Le coût de la construction de nouvelles écoles adaptées à ces élèves est faible par rapport au coût de réaménagement des écoles existantes.

Cibler des conceptions simples et normalisées de salles de classe et d'écoles en limitant l'installation d'équipements spécialisés peut être une option rentable pour accroître le nombre de salles de classe pour l'enseignement de base. La politique d'infrastructure du gouvernement devra identifier des stratégies distinctes pour améliorer la quantité et la qualité des infrastructures à chaque niveau du système éducatif.

La qualité de l'éducation se mesure en dernier lieu par la qualité de l'apprentissage des élèves. Dans le présent rapport, cette discussion est fondée sur les données provenant des examens nationaux. Quand le Rwanda implémente un système national d'évaluation de l'apprentissage des élèves plus complet, le gouvernement pourra mieux déterminer si le système fonctionne bien en termes de résultats d'apprentissage, identifier les forces et les faiblesses du système, suivre les performances des sous-groupes, déterminer si les programmes d'études sont bien conçus et les manuels appropriés, et identifier les facteurs affectant l'apprentissage des élèves. Actuellement, le Rwanda ne participe à aucune évaluation normalisée de l'apprentissage des élèves ; il est donc difficile de comparer les résultats des examens nationaux avec ceux d'autres pays. Mettre en œuvre un vrai système d'évaluation de l'apprentissage permettra aussi cette comparaison utile.

Les actions prioritaires pour améliorer l'efficacité interne et la qualité de l'éducation sont :

- Compléter l'amélioration impressionnante de l'accès par des efforts soutenus pour améliorer la qualité afin de retenir les élèves à l'école et obtenir les résultats d'apprentissage souhaités ;
- Accélérer les plans pour lancer un système national d'évaluation de l'apprentissage des élèves ;
- Examiner l'éventualité de participer à l'évaluation régionale SACMEQ⁵ et aux évaluations internationales TIMSS ou PRILS⁶ des résultats d'apprentissage ;
- Surveiller les progrès et les obstacles liés au processus décentralisé de passation des marchés pour les manuels scolaires récemment lancé, si possible par le biais d'une étude aléatoire de suivi ;
- S'assurer que les nouvelles écoles soient accessibles aux enfants handicapés ; et
- Construire des écoles secondaires rentables sur la base des leçons tirées de l'expérience internationale.

3. Poursuivre l'élimination des inégalités

Le Rwanda a atteint l'OMD sur l'égalité des sexes dans l'enseignement de base. Cependant, les inégalités découlant de la situation géographique et du revenu sont plus importantes que les inégalités de genre et s'aggravent à mesure que les élèves évoluent dans le système éducatif. Le tableau suivant montre qu'à la fin du primaire, 63 élèves sont scolarisés en milieu rural pour chaque 100 élèves en milieu urbain, et ce chiffre baisse à 37 à la fin du tronc commun. Toutefois, l'inégalité selon la catégorie de revenus est encore plus significative ; l'indice de parité de la richesse de 2006 était de 0.16 pour l'achèvement du tronc commun, et de 0.13 pour l'achèvement du secondaire supérieur en 2008, correspondant à une probabilité d'achèvement du secondaire pour les élèves venant des classes les plus riches huit fois plus élevé que pour ceux des classes les

⁵ *Southern and Eastern Africa Consortium for Monitoring Educational Quality* – Consortium de l'Afrique du Sud et de l'Est pour le suivi de la qualité de l'éducation

⁶ *Trends in International Mathematics and Science Study* – Etude des tendances dans les mathématiques et la science à l'international, ou *Progress in International Reading Literacy Study* – Etude des progrès dans la lecture et l'alphabétisation à l'international.

plus pauvres. Malgré la suppression des frais de scolarité dans l'enseignement de base, les coûts directs liés à la scolarité restent un obstacle majeur pour les familles des catégories à faible revenu.

Différences dans la probabilité d'accès à l'éducation primaire et secondaire, 2006

Différence selon:	Accès au Primaire	Achèvement du Primaire	Accès au Tronc Commun	Achèvement du Tronc Commun	Accès au Secondaire Supérieur	Achèvement du Secondaire Supérieur
Indice de Localité (Urbain/Rural) (urbain = 1)	0.98	0.63	0.47	0.37	0.32	0.36
(Indice 2000)	(0.93)	(0.77)	—	—	—	—
Indice de Genre (Male/Femelle) (male=1)	1.01	0.88	0.83	0.88	0.81	0.70
(Indice 2000)	(1.02)	(0.95)	—	—	—	—
Indice de Richesse (Q1/Q5) (Q5 = 1)	0.98	0.38	0.19	0.16	0.13	0.13

Sources: Calculs des auteurs sur la base de données de l'EICV 2005/06; indices 2000 du CSR 2003.

Le génocide de 1994 a créé une forte prévalence d'orphelins et d'enfants vulnérables (OEV), qui constituent 25% des enfants en âge d'école primaire (7-12 ans) et 33% des enfants âgés de 6 à 20 ans. Alors que le CSR 2004 montrait que les taux de fréquentation parmi les OEV étaient systématiquement plus faibles que ceux des enfants dont les parents étaient tous les deux vivants, l'inégalité avait presque disparu en 2006.

Les actions prioritaires pour continuer à éliminer les inégalités sont :

- Contrôler l'impact de l'extension de l'enseignement de base à neuf années de scolarité sur les taux d'achèvement et de transition, en particulier pour les OEV ; et
- Envisager un appui spécifique, bien conçu et ciblé aux enfants pauvres et de milieu rural, pour compenser les coûts résiduels directs liés à la scolarisation.

4. Améliorer la gestion et la répartition des enseignants

Les enseignants sont probablement les plus touchés par les changements de politique éducationnelle. Dans le contexte rwandais, plusieurs initiatives gouvernementales introduites en 2009 ont eu un impact majeur sur les enseignants du primaire, dont : le système de classes alternées, l'introduction de l'anglais comme langue d'enseignement, la spécialisation des matières et la réduction du nombre des matières principales. Ces initiatives reflètent les efforts pour accélérer la mise en œuvre de la politique d'étendre l'enseignement de base à neuf années de scolarité. Certaines sont donc considérées comme des mesures temporaires. Pourtant, même les changements temporaires requièrent que les enseignants s'adaptent aux nouvelles exigences d'enseignement, et auront un effet secondaire sur l'apprentissage des élèves. Par exemple, même si la passation des marchés de manuels d'anglais pour le primaire est en cours, les enseignants auront besoin de formation pour bien enseigner dans cette langue. Le remplacement de

l'enseignement traditionnel (par classes) par l'enseignement par matières aura sans doute un impact sur le degré de préparation des enseignants pour enseigner les matières qui leur seront attribuées, ainsi que sur le déploiement d'un nombre suffisant d'enseignants dans chaque matière et pour chaque école.

Dans un contexte dynamique, il est essentiel d'avoir une stratégie de développement de ressources à moyen et à long terme pour la profession d'enseignant, en particulier en ce qui concerne l'évolution de carrière et des salaires, les conditions de vie et de travail, et le développement professionnel continu. Les contraintes de financement pourraient entraver la capacité du gouvernement à mettre en œuvre toutes les mesures dans le court terme, mais un plan bien élaboré comprenant des points de référence permettra aux organismes de mise en œuvre de mesurer s'ils sont sur la bonne voie pour atteindre les objectifs à long terme. Une stratégie de développement de ressources minimiserait aussi toute turbulence prévue ou imprévue découlant des initiatives gouvernementales nouvelles ou temporaires, ayant un impact sur les conditions de travail quotidiennes des enseignants.

Un faible engagement pour la profession d'enseignant, une expérience professionnelle limitée et des salaires bas provoquent une baisse de la demande pour les programmes de formation d'enseignants dans les Centres de formation des enseignants (TTC) et les Collèges d'éducation (CoE) qui préparent les enseignants des écoles primaires et secondaires respectivement. Le programme de formation d'enseignants pour les écoles secondaires à l'Institut d'éducation de Kigali (KIE) est d'une qualité relativement bonne, et les réformes récentes devraient résoudre les insuffisances actuelles. Cependant, le profil de qualification des formateurs d'enseignants dans les TTC, CoE et au KIE reste faible.

Presque tous les enseignants des écoles enquêtées estiment être mal payés, ce qui est la principale raison qu'ils évoquent de vouloir quitter la profession. En effet, le revenu net total de base des enseignants ayant le niveau du certificat d'école primaire est très inférieur à un salaire de subsistance. Un bonus de performance annuel récemment introduit a augmenté le salaire net d'environ un tiers. Cependant, comme le montre le tableau suivant, le revenu net d'un enseignant certifié reste presque trois fois inférieur à celui d'autres fonctionnaires ayant une qualification équivalente.

Salaires mensuels nets d'un enseignant comparés à ceux d'autres fonctionnaires, 2008

Francs Rwandais (RF)

Niveau	Enseignant	Autre
Certificat	27,012	80,012
Brevet	89,000	144,000
Diplôme Universitaire	113,000	200,000

Source: Ministère du Service Public et de l'Emploi

Les actions prioritaires pour améliorer la gestion et le déploiement des enseignants sont :

- Mener une évaluation officielle des niveaux de compétence et du comportement des enseignants, en tenant compte des réformes récentes et de l'évolution des compétences requises ;
- Élaborer une stratégie de développement des ressources humaines de moyen à long terme, incluant l'évolution de carrière et des salaires, les conditions de vie et de travail, et le développement professionnel continu ;
- Élaborer un parcours professionnel clair pour les formateurs d'enseignants pour accroître la qualité de la formation initiale des enseignants ; envisager d'identifier des professeurs expérimentés et hautement compétents et les encourager à choisir la filière de formateur d'enseignants ;
- Offrir aux enseignants un accès universel au crédit immobilier subventionné ;
- Renforcer l'organisation professionnelle des enseignants ; et
- Offrir des incitations non monétaires telles que l'identification et la reconnaissance des enseignants les plus performants.

5. Faire un usage efficace des ressources

Les conclusions du CSR actuel montrent des progrès en ce qui concerne l'allocation équitable des dépenses publiques courantes entre les différents niveaux d'éducation. Le CSR 2004 soulignait la nécessité d'accroître l'allocation de ressources à l'enseignement de base. En tenant compte du budget de soutien alloué à l'enseignement primaire, le Rwanda investit désormais presque 49% de son budget sectoriel courant dans l'enseignement primaire, ce qui est similaire à la moyenne des pays africains (voir le tableau suivant). Les dépenses du Rwanda dans l'enseignement primaire se rapprochent aussi du point de référence indicatif de l'Initiative de Mise en Œuvre Accélérée de l'Éducation pour Tous (IMOA-EPT), de 50%.

Part de l'enseignement primaire et supérieur dans les dépenses publiques courantes consacrées à l'éducation pour le Rwanda et d'autres pays africains, circa 2006

	Primaire	Supérieur (b)
Rwanda, 2008 (%) (a)	49.0	26.5
Autres pays africains, Moyenne du sous échantillon (%)	49.1	19.2
Point de référence IMOA-EPT (%)	50.0	—
Rapport du Rwanda au sous échantillon	1.00	1.35

Sources: Banque Mondiale 2009; Pour le Rwanda, le tableau 6.4 dans le rapport actuel.

Note:

(a) Rwanda 2008: les coûts d'appui institutionnel ont été distribués parmi les niveaux

(b) Les chiffres de l'enseignement supérieur incluent toutes les dépenses liées à l'enseignement supérieur, y compris les programmes techniques supérieurs (CoT et CoE). C'est aussi le cas pour les autres pays de l'échantillon.

Une tâche prioritaire pour le gouvernement sera la redistribution des dépenses sociales du second cycle du secondaire (programmes d'alimentation scolaire), et dans une moindre mesure, des dépenses de l'enseignement supérieur (prêts/subventions) vers les salaires pour l'enseignement de base et l'appui ciblé aux étudiants en majeure difficulté (voir le tableau suivant). Comme on peut s'y attendre, les dépenses sociales à ces niveaux d'enseignement ont des résultats inéquitables, aux dépens de garantir que les élèves les plus pauvres aient la chance d'achever l'enseignement de base, et de l'amélioration des conditions d'apprentissage dans les années inférieures.

Répartition des dépenses courantes autres que les salaires d'enseignants, 2008

Pourcent

	Administration et pédagogie	Personnel administratif	Social	Total
Primaire	87	13	1	100
Tronc Commun	58	21	21	100
Second cycle du secondaire	27	27	46	100
Supérieure (dont les CoE et CoT)	51	9	39	100
Total	65	14	22	100

Source: Calculs basés sur le tableau 6.4 et sur les données du tableau 6.2 dans l'Annexe.

Le montant estimé des contributions des ménages à l'éducation s'élevait à 42% des dépenses totales en éducation en 2008, une forte augmentation par rapport à 2000. Les dépenses privées en éducation sont les plus élevées dans l'enseignement secondaire. Cependant, les dépenses privées dans l'enseignement primaire n'ont diminué que de façon marginale suite à la suppression des frais de scolarité en 2003/04. Il en découle que les familles continuent de contribuer aux frais autres que les frais de scolarité. Le gouvernement pourrait envisager d'introduire des programmes de soutien financier pour les élèves les plus nécessiteux, en mettant l'accent sur la réduction de la charge financière supportée par les ménages pour les dépenses autres que les frais de scolarité, afin de s'assurer que ces élèves aient l'opportunité d'achever l'enseignement de base.

Les actions prioritaires pour l'efficacité de l'utilisation des ressources sont :

- Augmenter les salaires des enseignants aux niveaux primaire et secondaire, pour au moins égaliser ceux des autres fonctionnaires ;
- Recruter un plus grand nombre d'enseignants dans l'enseignement primaire pour réduire les rapports d'élèves par enseignant, et réorienter certaines dépenses non salariales vers la gestion, l'inspection, la formation et les bourses pour les élèves les plus pauvres ;
- Poursuivre les efforts dans l'enseignement secondaire pour réduire le nombre d'élèves internes, et réorienter les dépenses sociales des programmes d'alimentation scolaire vers l'appui financier pour les élèves les plus nécessiteux ; et
- Augmenter les salaires des enseignants locaux dans l'enseignement supérieur, et introduire des mécanismes de recouvrement des coûts et des subventions pour les élèves les plus nécessiteux, identifiés par l'évaluation de leurs ressources.

Conclusion

L'évaluation actuelle du système éducatif depuis le CSR 2004 révèle que le Rwanda a maintenu un fort engagement politique pour améliorer l'accès à une éducation de qualité. La politique de l'enseignement de base de neuf années de scolarité place clairement le Rwanda sur une trajectoire planifiée vers un enseignement de base de qualité pour tous.

L'expansion du système éducatif, toutefois, a aussi conduit à des nouveaux défis pour le secteur, à savoir la nécessité d'améliorer l'efficacité interne à tous les niveaux d'enseignement et d'éliminer les inégalités en termes de catégories géographiques et de revenus. Afin de mieux comprendre l'impact des divers intrants du système éducatif, le Rwanda devra mettre la priorité sur la mise en œuvre d'un système national d'évaluation de l'apprentissage des élèves dans un futur proche. La gestion et le déploiement des enseignants restent un défi crucial. Les données et les analyses fournies dans le présent rapport devraient permettre au gouvernement de lancer le développement d'une stratégie de ressources à long terme pour le secteur et de s'engager concrètement dans des voies visant à améliorer la motivation de son corps enseignant, en portant l'accent sur les incitations non monétaires. Dans le contexte du processus de décentralisation en cours, le gouvernement devra accroître sa propre capacité à offrir une formation pertinente à son personnel à tous les niveaux de mise en œuvre, tout en surveillant les effets négatifs du taux élevé de renouvellement du personnel. Finalement, comme c'est le cas dans tout système éducatif dans le monde, l'accès à des données exactes et opportunes et leur utilisation efficace est une composante essentielle de la capacité du Rwanda à prendre des décisions politiques en connaissance de cause.

Le Rwanda a déjà un historique de forte coordination entre le gouvernement et les partenaires au développement. Il faut espérer que les analyses et conclusions contenues dans le présent rapport contribuent aux discussions politiques en cours entre les parties prenantes qui gèrent, mettent en œuvre et bénéficient du système éducatif.

CHAPTER 1: INTRODUCTION

An Education System in Transition

Following the 1994 genocide, Rwanda has focused on restoring internal stability and security, prioritizing the rebuilding of its stock of human capital. The effective delivery of public services such as education is at the forefront of the national development agenda. The emphasis on education as a path to poverty reduction and sustainable development is in line with the international consensus, as reflected in the global Education for All (EFA) initiative and the MDGs' education targets. In the years immediately following the genocide, Rwanda focused primarily on the most urgent task of ensuring better access to schools. Such efforts have produced tangible changes in key education indicators: the primary gross enrollment ratio has reached over 150 percent,⁷ and relative gender parity has progressed for all levels of education.

Rwanda is now entering a new phase in its development. The key stake is to create economic and social security so that the population can tackle the next set of challenges on the national development agenda. Education will continue to play a significant role, as reflected in the mission statement for the sector: "To transform the Rwandese citizen into skilled human capital for socio-economic development of the country by ensuring equitable access to quality education focusing on combating illiteracy, promotion of science and technology, critical thinking and positive values." For the education system, this will certainly entail improving student retention and learning outcomes, strengthening the institutional capacity to manage a decentralized system, and increasing the availability of the information and data required to effectively plan the service provision. The government's concern in recent years has been to embark on an appropriate and fiscally sustainable course of action for the sector's long term development, to tackle the next generation of challenges.

Objectives and Structure of this Report

This Country Status Report (CSR) takes stock of recent progress and identifies further challenges to be overcome so that Rwanda's education system may contribute to develop a socially stable population that meaningfully contributes to knowledge-based economies, both on the regional and global scale. This CSR follows up on the findings of the publication *Education in Rwanda: Rebalancing Resources to Accelerate Post-conflict Development and Poverty Reduction* (World Bank, 2004). This report builds on the 2004 CSR by assessing progress made in the education sector since its publication. It is not, however, an assessment of progress made in terms of the challenges and recommendations of the 2004 CSR. Rather, the report is a self-standing status

⁷ The gross enrollment ratio (GER) is defined as the ratio between all students enrolled in a given cycle of education and the population in the official age range for that cycle. The GER can exceed 100% due to inconsistency between the ages of the enrolled and reference populations, reflecting the cumulative effects of late entry and grade repetition.

report covering the education system's 'transitional period,' during which intensive dialogue and action around policy reform took place.

The report builds on post 2004 CSR data to analyze the education sector and enable a common understanding among stakeholders of the ongoing challenges and emerging issues. The report relies on data from national school administrative surveys, demographic data and household surveys. These include the 2008 Statistical Yearbook, the Ministry of Education (MINEDUC) School Census, the 2005 Demographic Household Survey (DHS), the 2005/06 survey on household living conditions (*Enquête Intégrale sur les Conditions de Vie des Ménages du Rwanda - EICV*) from the National Institute of Statistics of Rwanda (NISR), and macro-economic, expenditure and budget allocation data from the Ministry of Finance and Economic Planning (MINECOFIN). Individual chapters also rely on existing studies, interviews, surveys and feedback from stakeholder validation workshops.

This CSR constitutes the first of a two part overview and assessment of the education sector, along with the publication *Post Basic Education and Training in Rwanda* (PBET study). The PBET study provides an overview and assessment of Rwanda's post basic education and training (PBET) system, with an emphasis on its links with the labor market. The study provides an overview of Rwanda's current labor market and the academic achievement of its labor force. It also describes a PBET system's requirements to meet the demands of an increasingly sophisticated and changing economy, and assesses the extent to which Rwanda's PBET system currently meets those requirements. Finally, the study provides a number of policy options that can be considered to improve the extent to which the system equips future workers with the relevant knowledge and skills.

The CSR and PBET study analyses lay a foundation for discussion among education sector policymakers, government officials, citizens, development partners, and front line practitioners. Informed stakeholder consultation is a key ingredient to successful decision-making and, ultimately, policymaking. Both reports focus on issues that are relevant to the development of key education sector documents, including the new Education Sector Strategic Plan (ESSP) and Long-Term Strategy and Financial Framework (LTSFF).

This chapter first highlights the main findings of the 2004 CSR, before discussing the reforms initiated since it was published. It then describes the macro social and economic context to provide some benchmarks to better understand the progress made and challenges ahead.

The rest of the report discusses sector governance and management issues (Chapter 2); schooling patterns, including the structure of student flows (Chapter 3), the quality of education and learning conditions, reflected in learning outcomes (Chapter 4), the profiles, deployment, training, and motivation of teachers, as well as future demand for teaching staff (Chapter 5), and the cost, current pattern, opportunities and challenges of financing education (Chapter 6).

Main Findings of the 2004 CSR

In the aftermath of the 1994 genocide, the 2004 CSR has been the last piece of comprehensive analysis conducted on the education sector. It focused on the challenges of reconstruction, resource mobilization and balancing to accelerate post-conflict development and poverty reduction. It found that Rwanda recovered remarkably well in the years after the genocide, most notably in increasing primary level enrollment. The rapid increase in enrollment was also seen at the secondary level, with nearly three times more students enrolled in 2001 than before 1994. The government also endeavored to improve access to higher education, which then consisted of one single small university. In subsequent years, several key institutions were established, including the Kigali Institute of Science and Technology, the Kigali Health Institute, and the Kigali Institute of Education.

The 2004 CSR highlighted the need for the government to address the special needs of the large number of children orphaned by the genocide.⁸ The government's priority treatment of the issue has achieved positive outcomes: the enrollment gap between orphans and non-orphans was only noticeable among the most vulnerable children (those who lost both parents or lived away from home). At the secondary level, the enrollment of orphans was at least as high as that of non-orphans, mainly thanks to the establishment of the Genocide Fund in 1998 to provide financial support to orphans in secondary schools.

The 2004 CSR identified the following major challenges for Rwanda's education system:

- (i) The management of student flow and graduate output to reduce repetition, increase completion rates and expand access to secondary and higher education, to relieve the bottle-neck caused by a large cohort of students completing the lower cycles;
- (ii) The mobilization and effective use of public and private resources for education, including:
 - a. The introduction of public-private cost-sharing measures, especially for higher education which received 40 percent of government education spending in 2000 despite serving only a small fraction of the population; and
 - b. The improvement of the functional distribution of public spending, to favor the access to and quality of basic education, albeit at the expense of student welfare services, higher education bursaries, and management overheads;
- (iii) The optimal management and deployment of teachers to ensure consistency in teaching staff availability and minimize discrepancies across and within provinces;
- (iv) The balance between ease of access to primary schools and economies of scale, to improve primary school proximity while lowering per unit costs by allowing for an increase in distance for post primary level facilities;
- (v) The enhancement of student learning through the management of learning conditions: finding the right mix of inputs and performance incentives, establishing clear accountabilities and matching them with the appropriate spending and management authority at all levels;

⁸ In 2000, 40 percent of children aged 7-14 years had lost at least one parent.

- (vi) The minimization of barriers to school access for girls, children living in rural areas, and for the most vulnerable children, including orphans and those belonging to the poorest 40 percent of households.

Not only have the 2004 CSR findings shaped recent policy and reform, but even earlier drafts and background papers have been referential for the elaboration of the current ESSP (2006-2010) and LTSFF (2006-2015). These and other post 2004 government education reform initiatives are discussed in the following section.

Recent Reform Initiatives

Rwanda's Economic Development and Poverty Reduction Strategy 2008-2012 (EDPRS)⁹ emphasizes economic growth and poverty alleviation, continuing to build on achievements in human development and basic social services, with a focus on decentralization and a greater role for the private sector. The strategy seeks to accelerate progress toward the MDGs, including the improvement of education outcomes and gender equality (MDGs 2 and 3). As per the EDPRS, the priority areas for the education sector in Rwanda are to: (i) increase the coverage of basic education from six to nine years of schooling and enhance its quality; (ii) strengthen Technical and Vocational Education and Training (TVET), and (iii) improve the quality of higher education.

The education sector's financing framework and strategy are described in the 2006-2015 LTSFF and further elaborated in the 2006-2010 ESSP. Stating its main goal as providing a foundation for increased and equitable access to education, the ESSP offers a global framework for a sectorwide approach to the development and delivery of education services in Rwanda. It is the key document that sets the stage for the sector, spanning high level policymaking to service delivery in the classroom. Its purpose is to assist the poverty reduction process by enhancing Rwanda's human resources through the development of a learning society and the provision of knowledge and skills.

The Nine Year Basic Education policy, adopted by the cabinet in February 2006, is a cornerstone of the ESSP and the LTSFF. Implementation of the policy is expected to result in universal primary education both in terms of enrollment and completion, and a rapid increase in *tronc commun* enrollment. In the implementation of the program, particular focus and resources have been directed to: (i) school grants, classroom construction, and textbook supply, (ii) training of district officers in teacher management, and (iii) training of preschool and primary school classroom and head teachers in topics such as English, school management, and special needs education. These inputs have had a positive impact on most of the key indicators for basic education.

⁹ The EDPRS encompasses three flagship programs: (i) Sustainable Growth for Jobs and Exports, (ii) Governance, including expanding decentralization and enhancing accountability; and (iii) the Vision 2020 *Umurenge* Program (VUP), designed to alleviate rural poverty and improve productivity.

In 2007, in line with the aforementioned policy, the fee-free policy¹⁰ was extended to nine years of basic education.

Further guided by the overarching frameworks provided by the ESSP, LTSFF and Medium Term Expenditure Framework (MTEF),¹¹ MINEDUC initiated a number of reforms, listed below, to address the findings and concerns raised in the 2004 CSR and to ensure that the education sector is aligned with the broader national development agenda.

In 2008 school capitation grants were increased to RF 7,000 per child (from RF 2,500 per child in 2006). A portion of the increased amount enables primary schools to pay teachers' additional monthly allowances. The grants have also enabled schools to contract nearly 2,000 additional teachers in 2008, contributing to significantly reducing the pupil-teacher ratio.

A further major policy development in 2008 was the decision to adopt English as the national teaching language. The goal of the reform is to further integrate Rwanda into the East African Community (EAC) and to improve the country's chances of becoming a subregional leader in trade, tourism and science and technology. Although the language policy carries many potential benefits, MINEDUC is aware of the challenges. These include the urgent need to train teachers in English and the procurement of new textbooks. The government is currently designing a strategy to address them.

The cabinet has since approved policies in the areas of TVET, teacher development and management, girls' education, special needs education, means-testing for student loans, the targeting of higher education loans and grants to priority areas such as science and technology, quality standards for primary and secondary schools,¹² and Information and Communication Technology (ICT).¹³

Future planned reforms include an early childhood policy, expected to be developed in 2010; and the development of the Post Basic Strategy, which will include TVET. Policies have also been planned to improve the quality and equity of access to higher education, while better aligning it with the labor market and making it more relevant to the needs of the economy. These are: (i) the development and approval of the Higher Education Policy and the establishment of the Higher Education Council (HEC) and quality standards for the accreditation of higher education institutions; (ii) the creation of the Student Financing Agency of Rwanda (SFAR), and (iii) the creation of the Workforce Development Authority (WDA).

¹⁰ The fee-free primary education policy was implemented in 2003, and heralded as a major reform. Aimed at eliminating barriers for the poor to access primary education, school fees were abolished and replaced by school capitation grants. These are deposited directly into school bank accounts by the Ministry of Finance and Economic Planning (MINECOFIN) and reflect the decentralization of school resource management.

¹¹ The MTEF lays out a three-year plan for education sector allocations.

¹² Minimum quality standards have been determined with the UNICEF child friendly school methodology. Key standards, which have been tested successfully in 54 schools, will be rolled out nationwide to improve the overall learning environment. This in turn will be factored into the revised ESSP, to be completed in 2010.

¹³ The Global Education Alliance, a partnership between the government, development partners and international private sector foundations and companies was established in 2007 at the World Economic Forum. The alliance chose Rwanda as its first pilot country, and is providing support to MINEDUC and the Ministry of Science and Technology to develop a Strategic Implementation Framework for the Rwanda ICT Policy.

With respect to financing the reforms, in 2006 several partners signed a memorandum of understanding with the government to provide sector budget support (SBS) for the implementation of the ESSP through government systems. This built on the sector wide approach in education previously established in 2003 precisely to prepare credible strategic plans and budgets through the ESSP, LTSFF and MTEF.

Rwanda's acceptance into the Education for All - Fast Track Initiative (EFA-FTI) was a significant step toward helping the sector meet its MDGs: it has improved donor coordination and proper and timely funding for the sector. The US\$ 70 million that the EFA-FTI Catalytic Fund Steering Committee granted in 2007 and 2008 provided a substantial contribution to MINEDUC for the implementation of the basic education aspects of its ESSP and LTSFF. A bridging grant from the EFA-FTI Catalytic Fund for a further US\$ 35 million was approved in 2009 with the overall aim to improve the quality of basic education. In 2010 Rwanda intends to apply for a new three-year EFA-FTI grant for the 2010-2012 period.

In summary, the government has initiated numerous reforms since 2004 to address the main concerns and challenges facing the sector. The ongoing decentralization process offers the potential for further improvement in service delivery, given its focus on strengthening accountability mechanisms and encouraging the greater participation and involvement of districts and communities in the planning and management of school resources. However the decentralization process also raises issues about institutional decision-making capacity with respect to the criteria and processes for the allocation of resources to schools.

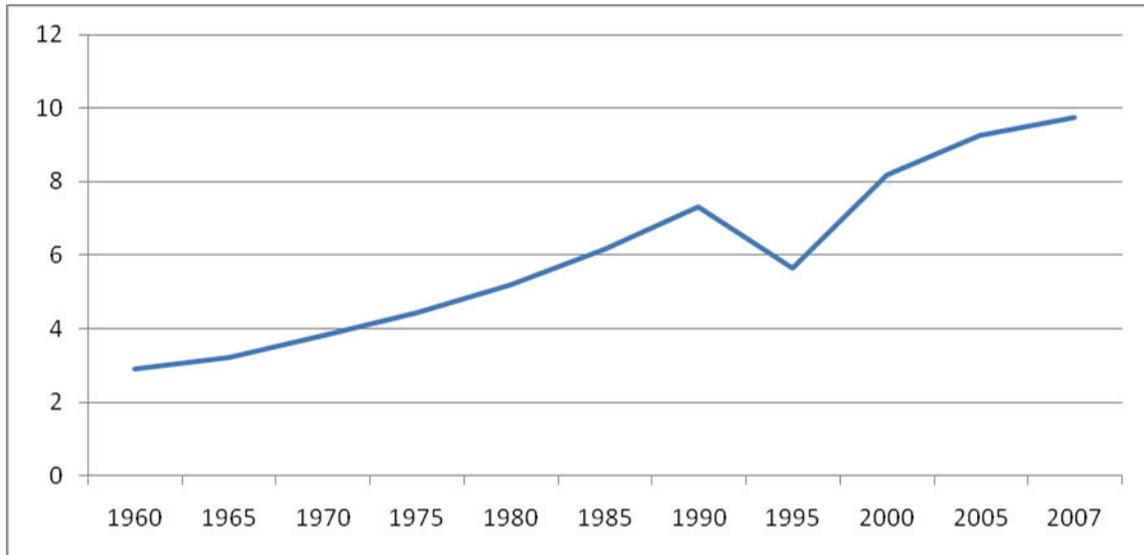
Rwanda reflects an effective collaboration between the government and donor partners, in alignment with the principles of the Paris Declaration on Aid Effectiveness. Yet sound reforms and donor harmonization in any country must work within the confines and opportunities presented by demographic, socio-economic and macroeconomic contexts. The remainder of the chapter provides the broader conditions that set the framework for further development of the education sector in Rwanda.

Demographic and Socio-Economic Context

Excluding the demographic dent caused by the 1994 genocide, Rwanda's population has been growing steadily over the past five decades, as Figure 1.1 below shows. In 2007, the total population reached 9.7 million, with 82 percent of the population living in rural areas. The latter figure conceals a slow but steady urbanization trend: the urban population has in fact increased significantly from only two percent in 1965 to 18 percent in 2007. Much of the internal migration in recent years has been to urban areas other than the capital, Kigali. According to the 2002 Population Census and 2005 DHS, population growth can be attributed to a combination of the high total fertility rate, a mortality rate much lower than the birth rate, and high levels of immigration. Given its relatively small land area, Rwanda remains one of the most densely populated countries in Africa with 374 inhabitants per square kilometer.

Figure 1.1: Total Population by Year, 1960-2007

Millions



Source: World Development Indicators 2009.

Poverty remains pervasive in Rwanda according to a poverty analysis report commissioned by the government in 2007.¹⁴ Furthermore, it is following irregular regional patterns, according to the EDPRS progress report: a substantial drop has occurred in the Eastern province and a slight one in the Northern province and the city of Kigali, but in the Southern province it has increased.¹⁵ This situation is further complicated by the rising level of inequality among the population, measured by the Gini coefficient, which increased from an already high 0.47 in 2001 to 0.51 in 2006. Kenya is the only other country in the East African Community with higher inequality (0.55). In order to meet the MDG target for poverty reduction, the government is faced with the challenge of reducing the share of the population living below the national poverty line from 57 percent to a maximum of 30 percent by 2015.

Major health indicators have also improved (EDPRS progress report, 2007). Infant, child and maternal mortality rates have fallen, and the incidence of underweight children has dropped (although stunting has increased). Nevertheless, child and maternal mortality rates are among the highest in Africa and the latter is still short of the goal of 286 per 100,000 live births to be attained by 2015. On the other hand, the results of the 2008 mini-DHS suggest that Rwanda is on track to achieve the MDG related to child mortality, which is 50 per 1,000 live births, considering the drop in child mortality rate from 196 per 1,000 live births in 2000 to 103 per 1,000 live births in 2007.

The current HIV prevalence rate is approximately three percent (DHS, 2005), down from 13 percent in 2000. Likewise, death related to malaria has decreased to 26 percent in 2005, from 51

¹⁴ *EICV Poverty Analysis for Rwanda's Economic Development and Poverty Reduction Strategy*, National Institute of Statistics of Rwanda, 2007. The report is based on a comparison of data from the 2000-2001 EICV and the 2005-2006 EICV, to track Rwanda's progress on key indicators included in the EDPRS.

¹⁵ See General Note 2 on the reorganization of the political geography of Rwanda on Page ii.

percent in 2000. Rwanda has also achieved gender equality in parliamentary participation where female representation is now 56 percent.

The number of orphans and vulnerable children (OVC) in Rwanda is high, as in many post-conflict countries or countries affected by the HIV/AIDS epidemic.¹⁶ The 2005 DHS reports that 11 percent of all children are orphans, and that an additional 15 percent of children fit the description of OVCs.

It goes without saying that the high number of OVCs needs to be taken into consideration when addressing the challenge of providing equitable quality education for all. Rwandese OVCs include genocide survivors who not only lost one or both parents but also suffer from psychological and emotional legacies of the genocide. Apart from financial support, these children need special attention and care to ensure that they stay in school. As mentioned above, the creation of the Genocide Fund in 1998 has helped to reduce the disparity in access between orphans and non orphans at the secondary level. Since then the fund's eligibility criteria have been extended to include university or other postsecondary education students. Yet meeting the needs of the younger most vulnerable children to ensure that they enroll and stay in school remains a challenge for the government.

Rwanda's economic performance has been impressive in the post-genocide era, as measured by GDP growth: between 1996 and 2000, real GDP grew at an annual rate of over 10 percent as the economy was recovering from the conflict. The annual growth rate from 2001 to 2008 slowed to an average of 6.8 percent (peaking at 11.6 percent in 2008) and slowed to 6 percent in 2009.¹⁷ Although Rwanda's economic growth remains above the Sub-Saharan African average of about 5 percent between 2001 and 2008, optimism is tempered by the high annual demographic growth rate of 2.7 percent.¹⁸ The World Bank's Country Assistance Strategy for Rwanda notes that to compensate for the rapid population growth, the economy will need to grow by at least 8 percent annually to make a significant impact on poverty reduction. The most recent macroeconomic indicator projections in Table 1.1 below show that the Rwandese economy is expected to experience constant growth, but at a rate lower than this threshold.

As the global economy loses speed, Rwanda's service and industrial sectors, particularly tourism and construction, are also expected to slow. Agriculture, on the other hand, is expected to continue to perform strongly in the short term, helping to mitigate adverse growth effects from the weakening external environment. However, Rwanda remains vulnerable to climatic shocks and increases in global fertilizer prices, and is therefore exposed to the possibility of food shortages.

¹⁶ OVCs are defined as children (i) having lost one or both parents (orphans); (ii) whose parent(s) have been chronically ill for at least three of the past 12 months; (iii) who live in a household in which at least one adult has been chronically ill for at least three of the past 12 months; or (iv) who live in households in which at least one adult has died during the 12 months after being chronically ill for at least three months. UNICEF, 2005.

¹⁷ *GDP Annual Estimates for 2009 based on 2006 benchmark*, NISR, 2010.

¹⁸ *Rwanda Country Assistance Strategy*, World Bank, 2008.

Table 1.1: Medium-term Macroeconomic Framework, 2005-2013

	2005	2006	2007	2008	Projections				
					2009	2010	2011	2012	2013
<i>Economic Growth and Inflation</i>									
Real GDP (% change)	7.2	7.3	7.9	11.2	5.3	5.2	6.0	6.0	6.0
Real GDP (per capita)	5.4	5.4	5.7	8.9	3.1	3.1	3.9	3.8	3.8
Consumer Price Index (eop)	5.6	12.2	6.6	22.3	6.0	5.0	5.0	5.0	5.0
Broad money (M2) a/	17.2	31.5	30.8	24.2	1.7	14.0	14.0	21.4	14.8
<i>Central Government Budget (% of GDP)</i>									
Revenue	13.5	13.3	13.6	15.6	13.1	13.3	13.7	14.3	14.5
Grants	12.6	10.7	9.9	11.5	12.6	9.8	8.6	7.4	7.1
Government Expenditure and Net Lending	25.6	24.5	24.9	26.7	27.0	26.6	25.3	25.3	25.5
- Recurrent Expenditure	16.1	16.3	16.8	15.1	15.6	15.2	15.2	15.3	15.5
- Capital Expenditure	9.1	7.6	8.6	11.0	11.2	11.1	10.1	10.0	10.0
Domestic Fiscal Balance b/	-3.8	-4.5	-5.3	-5.3	-7.3	-5.8	-6.1	-6.1	-6.0
Overall Balance (Payment Order)									
- After Grants	0.6	-0.4	-1.5	0.5	-1.2	-3.0	-3.2	-1.2	-3.0
- Before Grants	-12.0	-11.1	-11.3	-11.0	-13.8	-12.8	-11.8	-13.8	-12.8
<i>National Accounts (% of GDP)</i>									
Gross Domestic Investment	21.6	20.4	21.0	24.1	22.6	22.5	22.1	21.8	21.5
- Of which: private	12.5	12.8	12.4	13.1	11.4	11.9	12.0	12.1	12.2
Gross National Savings	9.4	6.9	7.9	8.6	4.8	5.7	6.8	7.7	8.1
Current Account Balance (excl. Grants)	-12.8	-13.5	-13.1	-15.5	-17.8	-16.8	-15.3	-14.1	-13.3
<i>Balance of Payments (% of GDP)</i>									
Exports of Goods and Services	13.7	12.3	12.2	14.9	9.0	10.4	11.2	11.9	12.3
Imports of Goods and Services	26.7	27.5	27.7	31.2	27.1	27.4	26.7	26.3	26.0
Current Account Balance (incl. Grants)	2.3	-4.7	-2.4	-5.5	-6.4	-8.8	-9.0	-8.6	-8.0
Overall Balance	4.6	2.9	3.2	1.5	-0.1	-0.5	-0.1	0.2	0.6
<i>External Debt</i>									
External Debt (% of GDP)	63.0	17.1	16.8	15.2	16.7	19.2	20.6	22.2	23.6
External Debt Service (% of G&S Exports)	6.4	2.9	2.4	1.1	2.9	2.6	3.3	3.5	3.5
Gross Official Reserves c/	6.2	5.6	4.8	5.3	4.9	4.5	4.2	4.0	1.0
Nominal GDP (billions of RF)	1332.9	1563.8	1866.1	2437.2	2877.5	3215.3	3591.1	4001.6	4464.4

Source: NISR, Central Bank, MINECOFIN, and World Bank estimates and projections.

Note: a/ 2008 reflects actual M2 growth including UBPR, a large microfinance network transformed into a commercial bank in February 2008. b/ Excludes demobilization spending. c/ Months of G&S Imports

Rwanda is considered highly aid dependent, despite the fact that debt relief and grants have maintained external debt at a sustainable level, because international grants and loans represent about half of total government revenue.¹⁹ Excluding a sharp drop after the 1994 genocide, the volume of revenues mobilized domestically has steadily increased from 10 percent of GDP in 1990 to 15.6 percent of GDP in 2008, but remains below the national average for Sub-Saharan African countries, where domestic resources are close to 25 percent of GDP on average.²⁰ Through the Highly Indebted Poor Countries initiative and Multilateral Debt Relief Initiative, debt relief had reduced Rwanda's external debt to around 15 percent of GDP in 2008, a significant reduction from earlier years when debt was over 60 percent of GDP. In line with the increase in total revenue, the level of government spending in proportion to GDP has gradually increased from around 20 percent in the 1990s, to close to 27 percent in 2008. The level of

¹⁹ Government resources come from internal revenues generated through taxes, and from external sources including grants and loans. A country's aid dependency is determined by the relation between internally and externally generated resources.

²⁰ World Bank Live Data Base, July 2009 version.

recurrent spending net of interest (one measure of the cost of running the government) has remained relatively stable in relation to GDP throughout the past two decades, with a slight increase in recent years. Interest on public debt is now a relatively minor burden for Rwanda, accounting for only two percent of the government's spending in 2008 and 0.5 percent of GDP.

Table 1.2 summarizes the main government spending indicators. Rwanda's GDP has grown strongly, particularly since the 1994 genocide. However, government spending has increased at a faster pace than GDP due to the expansion of the public sector, with about half of the expansion attributable to recurrent spending and the other half to capital spending.

Table 1.2: Government Spending, 1990-2008

Year	Total Government Spending				Recurrent Spending Net of Interest Payments		Interest on All Public Debt	
	Billions of Current RFs	As % of GDP	Index (1990=100)	As a Ratio of Total Government Revenue	As % of Total Spending	As % of GDP	As % of Total Spending	As % of GDP
1990	42.1	19.7	100	1.53	64.8	12.8	5.0	1.0
1995	69.5	20.5	104	1.13	49.4	10.1	11.2	2.3
2000	131.7	19.5	99	0.96	62.8	12.2	4.9	1.0
2005	340.7	25.7	130	0.98	60.1	15.4	3.0	0.8
2006	382.5	24.5	124	1.02	65.1	15.9	3.9	0.9
2007	464.5	24.9	126	1.06	63.2	15.7	2.4	0.6
2008	649.8	26.7	135	0.95	56.9	15.2	2.0	0.5

Source: World Bank Live Database (July 2009 version) and NISR, MINECOFIN.

Aid Modalities and External Financing of the Education Sector

The education sector in Rwanda receives three types of aid which can be categorized as sector budget support or have some of the characteristics of sector budget support: (i) un-earmarked general budget support (GBS) programs with a specific education window; (ii) sector budget support (SBS) programs notionally earmarked as additional resources for the education sector; and (iii) contributions to the education capacity building pooled fund through earmarked budget support.²¹ Dialogue relating to the three aid modalities takes place in the context of a structured framework between the government and donors at the national and sector levels.

The second type of SBS strongly increased in 2006 after the agreement on a Joint Education Sector Support (JESS) program which included the development of an education capacity building pooled fund. In 2007, the government requested that funds from the EFA-FTI Catalytic Fund be disbursed through JESS, providing a significant boost to the levels of SBS funding. By 2008, six donors had contributed to the sector through this modality. This type of SBS's share of the external support earmarked for the education sector increased from 60 percent in 2007, to 90 percent in 2008; and represented 48 percent of the total education budget in 2008.

²¹ Information in this section is based on *Sector Budget Support in Practice, Case Study: Education Sector in Rwanda*, Overseas Development Institute and Mokoro, January 2009.

Overall, the experience of providing SBS to the Rwandese education sector has been positive, with both government and donors' objectives being met. There are several examples of good practice and lessons learned that can be drawn from the Rwandese case, including:

- (i) Overall Design and Implementation: The development of a foundation for a strong sector policy framework, with a clear strategy and budgeted work-plan was first made possible through SBS provided by the Swedish International Development Agency, and through GBS supported by the UK's Department for International Development. The resulting institutionalized structures for dialogue and conditionality in the sector contributed to building systems, processes and trust and bringing other donors on board. The JESS provided a framework which gave other donors the confidence to switch to SBS in a harmonized way. The establishment of the annual Joint Review of the Education Sector also addressed an important gap in the monitoring of sector performance and contributed to increase trust and transparency. Finally, loose requirements for additional financing and notional earmarking minimized unnecessary derogations and transaction costs;
- (ii) Budget Allocation and Policy Dialogue: the greater SBS provided since 2006 has had a clear influence on intra-sector allocations, in particular increasing key primary education budget lines such as capitation grants, textbooks and classroom construction. This in turn has improved the availability of teaching materials and enabled the maintenance and construction of school facilities and the recruitment of contract teachers. The structured dialogue has also influenced improvements in education outcomes through policy changes, including the abolition of primary school fees that resulted in a rapid increase in access;
- (iii) Planning, Budgeting and Reporting: The establishment of a clear policy development framework and budgeted strategic planning before the wholesale shift toward SBS was crucial. This enabled the dialogue to focus on addressing financing gaps and aligning resources with the policy framework. The Joint Review of the Education Sector emerged as a focal point for monitoring sector performance through a harmonized process, thereby reducing transaction costs;
- (iv) Financial Management: The sector has focused on improving financial management at the service delivery level through the capacity building pooled fund, thereby addressing sector-level public finance management issues which are beyond the reach of cross-cutting reforms. The use of government systems for SBS, combined with government-wide improvements in public financial management supported by GBS, led to the strengthening of financial management in the education sector and increased funding predictability. However, the unpredictability of SBS disbursements within the annual budget cycle may make MINECOFIN's management of them more difficult;
- (v) Institutional Capacity and Service Delivery Systems: The use of government systems for SBS has meant that sector staff can focus their capacities on their core roles in the education system. The creation of a capacity building fund in parallel to SBS provision is potentially good practice. However, ownership of the arrangement must be strengthened, and measures reinforced to ensure that capacity building focuses on bridging institutional gaps and systems development; and

- (vi) **Accountability:** The use of existing government systems for SBS with minimal parallel requirements has raised the profile of domestic accountability, and of both executive and parliamentary control. The use of notional instead of real earmarking, affording the government discretion over the budget, has resulted in greater ownership of the budget allocation and annual work-plan development processes within the sector. Donor input is provided through a structured framework of dialogue.

It is also important to underscore that both GBS and SBS complemented each other and it is unlikely that the achievements within the sector would have been so great if one or the other had not been provided.

There is however room for improvement in sector and budget reporting and performance analysis, in terms of: (i) the harmonization of SBS and GBS conditions relating to the sector, and their alignment with the policy and planning framework; and (ii) the consistency and focus of the dialogue on the education budget in the context of SBS and GBS.

Public Expenditure on Education

Whereas government revenues are partly determined by factors that are beyond the government's control, resource allocation is about balancing competing economic demands and the priority the government attaches to each sector.

Table 1.3 shows that public expenditure on education in nominal terms increased between 1996 and 2008. Total education expenditure as a share of GDP has fluctuated between 3.7 and 4.1 percent from 2005 to 2008. However, expressed as a share of domestic revenues net of grants, total education spending does not show a steady trend, and has in fact experienced a general decrease since 1996.

Table 1.3: Government Expenditure on Education, 1996-2008

Year	Total Education Spending				Recurrent Education Spending				Domestic Capital Spending on Education
	Billions of Current RFs	As % of GDP	As % of Total Spending	As % of Government Revenues Net of Grants	Billions of Current RFs	As % of Total Spending on Education	As % of GDP	As % of Total Recurrent Spending, Net of Debt Interest Payments	
1996	13,784	3.2	14.5	35.0	8,626	62.6	2.0	17.6	5,158
2000	27,614	4.1	21.0	40.3	22,347	80.9	3.3	27.0	5,267
2005	49,359	3.7	14.5	27.4	46,071	93.3	3.5	22.5	3,288
2006	60,934	3.9	15.9	29.3	56,758	93.1	3.6	22.8	4,176
2007	89,351	4.8	19.2	35.3	75,423	84.4	4.0	25.7	13,928
2008	99,787	4.1	15.4	26.2	81,631	81.8	3.3	22.1	18,156

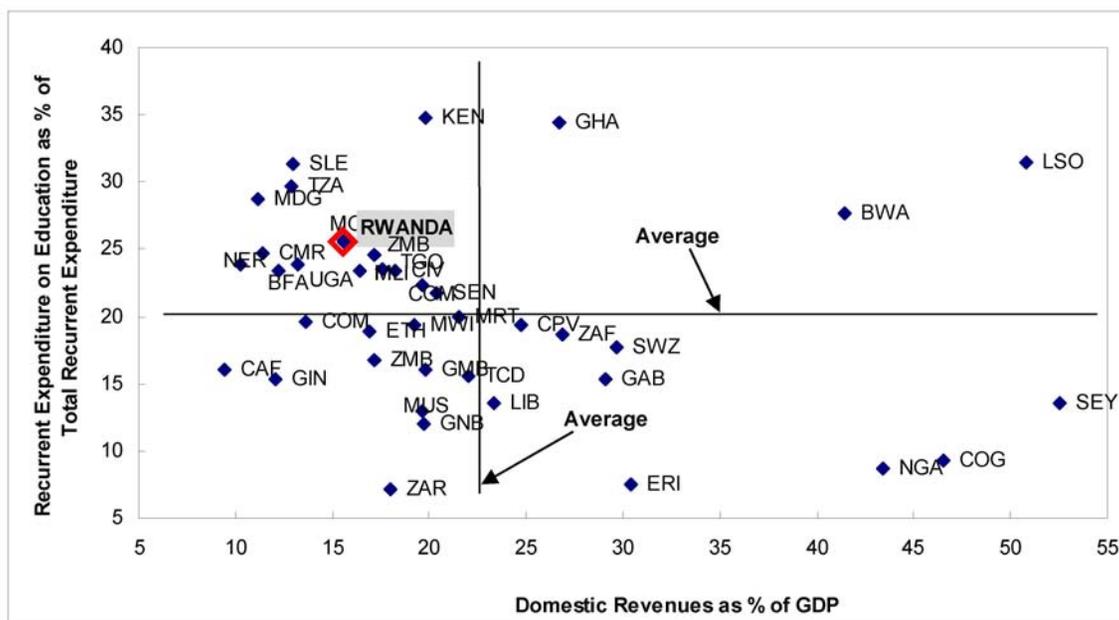
Source: CSR 2004, MINECOFIN.

Public recurrent spending on education has remained in the EFA-FTI benchmark range (2.8 to 3.6 percent of GDP) since 2000. In fact, Rwanda out-performed the benchmark in 2007 but then reduced its allocation in 2008. Although the government is committed to the long-term development of the education sector, it has recently put more focus on basic infrastructure including roads, electricity, water, and ICT. The anticipated decline in economic growth over the next few years may compound the pressure to divert expenditure away from education.

In the 1990s Rwanda invested heavily in capital investments rather than service delivery in the education sector. However, at some point capital expenditure should give way to increased recurrent expenditure and service delivery as the student population grows. Table 1.3 above shows an increase in the annual financial outlays for the education sector, including salaries and learning materials, to an average of 88.1 percent for 2005-08 compared with 62.6 percent in 1996. The additional spending was above all directed at the primary and secondary levels.²²

Figure 1.2 plots how a subset of African countries compare with respect to the volume of recurrent public education expenditure. The lower left quadrant displays countries where the education sector suffers most: countries' capacity to mobilize internal resources is weak, and the relative priority given to education is low. In the upper left quadrant, countries allocate above-average priority to education despite having low domestic revenues. Rwanda is part of this group. By contrast, the countries in the right quadrants benefit from a stronger fiscal position, but vary in the degree to which they prioritize education.

Figure 1.2: Comparison of African Countries, Based on their Resource Mobilization and Allocation to the Education Sector, 2005-2007



Source: World Bank Live Database (July 2009 version) and UNESCO Pôle de Dakar.
 Note: Data was available at different times for different countries over the 2005-07 period.

²² Education Public Expenditure Review, World Bank, 2007.

Although it is beyond the scope of this chapter to suggest how Rwanda might mobilize more resources for the education sector, it is worth reflecting on some parameters that are likely to affect future public expenditure on education. As far as generating domestic resources is concerned, Rwanda has made good progress in increasing its tax base in recent years, but the government will need to maintain growth in the coming years within an increasingly challenging global financial environment. In addition to growth in domestic revenues and the increased share of education in the national budget, external resource flows are likely to be important. Rwanda has been successful in attracting external resources for education, mainly through the growing SBS contributions from development partners and access to the EFA-FTI Catalytic Fund. In light of its limited domestic resources, Rwanda will probably have to continue relying on external support in the foreseeable future to fill the financing gap to implement its ESSP. Given increased competition for resources among EFA-FTI countries and among sectors in Rwanda, increasing the allocation of resources to education will most likely be gradual. Thus, the government will need to consider how best to use available resources effectively and efficiently to achieve its education sector objectives.

Conclusion

The government of Rwanda and the international development community attach great importance to the role of education for social, political and economic development. As acknowledged in the EDPRS, the development of human capital and the creation of a skills-based labor force will be essential for Rwanda to become a knowledge-based economy as per its vision. Although Rwanda has demonstrated considerable leadership and dynamism in its education sector, and is both ambitious and determined to develop the required human capital through education, both the government and development partners recognize that there are a number of challenges ahead. Some of the main hurdles are to ensure universal access to basic education while at the same time improving the quality and relevance of the sector to manage student flows and address the skills' shortages in the Rwandese economy. This will require attention to professionalism and the motivation of the teacher workforce, effective decentralization with a focus on governance, improved school management and the building of parent teacher associations and other community accountability structures. The distribution of learning and teaching materials and the deployment of teachers to ensure that all schools have equal access to an effective learning environment need to be addressed as well. All these issues will be even more important as Rwanda is implementing its Nine Year Basic Education strategy.

The government has adopted an inclusive and holistic approach to the quality of education based on UNICEF's child friendly school methodology. The nationwide scaling-up of this ambitious quality agenda, which targets teachers, communities, and the school environment as well as learning materials, will require a strong commitment from the government. During this process it will be important to monitor learning outcomes in order for the government to understand how effective its different policies and interventions are in achieving the desired outcomes.

Just as importantly, as Rwanda is embarking on a comprehensive post basic education reform, the government will need to determine the correct balance of resources between basic and post basic education levels. To encourage greater public/private cost sharing will also be helpful, although

taking care that public resources are funding the appropriate services and reaching the targeted groups. Another issue to be considered when implementing a post basic education reform is the skills' mix required for a knowledge-based economy, which has direct implications on the number of students to be trained in different programs (such as general education, or technical and vocational training).

Rwanda has a challenging task ahead to implement its ambitious education program. Although a growing economy will permit more public spending, increased public spending alone will not necessarily improve economic and social welfare.

The rest of this report will examine these challenges more closely, through overviews of: the governance and management of the education system (Chapter 2); supply and demand constraints (Chapter 3); key aspects of education quality (Chapter 4); with a special focus on teacher management and support (Chapter 5). The report will conclude with the patterns of education spending and resource allocation (Chapter 6). Disparities in educational outcomes and access to public resources will be treated as a cross-cutting theme throughout the report.

CHAPTER 2: GOVERNANCE AND MANAGEMENT

Chapter Overview

Building on the last chapter which discussed recent reforms launched by the government and the macro social and economic context of the education sector, this chapter provides a functional analysis of the governance and management structures. It focuses on primary and secondary education levels. The governance and management of higher education and its leading institutions is discussed in the PBET study.

This chapter relies on a variety of sources, including (i) existing studies,²³ (ii) interviews with over 70 officials,²⁴ (iii) a one-page survey of district officers in charge of education (21 of the 30 district officers responded and completed the questionnaire) distributed in February and March 2009,²⁵ (iv) a survey of 278 primary school head teachers (a representative sample of all but the most remote, rural schools); and (v) a workshop held in April 2009 at which preliminary findings were presented and extensively discussed (see Annex Table 2.1).

Decentralizing and Deconcentrating the Education Sector

In a context of extensive and on-going decentralization, the Rwandese education system is best characterized as fast changing and dynamic, where many functions have been reassigned from MINEDUC to districts, sectors, schools and communities, since 2006. MINEDUC set a clear mission at the time: “To transform the Rwandan citizen into skilled human capital for the socio-economic development of the country by ensuring equitable access to quality education, focusing on combating illiteracy, the promotion of science and technology, critical thinking and positive values.” From an organizational analysis perspective, the implications and specific objectives of the decentralization process are progressively emerging. One possible reason for this may be that the education sector is the first operational area to be fully decentralized.

At the same time, the education system underwent a process of deconcentration, where functions remain centralized at the federal level but have been transferred from MINEDUC to the Autonomous Education Agencies (AEAs). MINEDUC maintains responsibility for national macro strategic management functions, including providing overall guidance to the AEAs and development partner coordination. AEAs, on the other hand, have assumed responsibility for the more technical, professionalized functions. This has resulted in a recent report observing that MINEDUC “must rank as one of the smallest of all education ministries in the world” (Craig et

²³ In particular: Craig et al., 2007; Blackshaw et al., 2008; Bennell and Ntagaramba, 2008; Bontoux et al., 2008; and ODI and Mokoro, 2009.

²⁴ See Annex Table 2.1 for a list of the people interviewed.

²⁵ The questionnaire (in French) is in Annex Note 2.1.

al., 2007). This comment, however, must be considered in the light of the fact that functions carried out by many education ministries throughout the world have also been deconcentrated to structures similar to the AEAs, thereby providing relatively autonomous organizational structures for more professionalized functions (inspection, curriculum development, examinations, teacher career management, etc.)

The guiding spirit behind the decentralization and deconcentration processes appears to be pragmatic, responsive and adaptive, with an ethic of quick service delivery. Indeed, the delivery of educational services has not been hampered; resources are being delivered to schools, which remain operational. This dynamic environment defeats any attempt to take a static approach to a description, diagnosis and analysis of the existing structures. Thus, this chapter focuses on the functions of key aspects of the education system, with less concern for the organizational structures, which in any case, are in a process of mutation.

A few examples of the ongoing changes in the sector are:

- (i) The staffing of the central ministry, MINEDUC,²⁶ has decreased to 34 approved posts since 2007, from 203 in 2004. Further reductions are planned. This has been compensated in recent years by the increased staff and expanded roles of AEAs. In this context it is worthy of note that the ministry's management team includes the AEA leaders;
- (ii) The expected creation of the Rwanda Education Board (REB),²⁷ an umbrella agency replacing and incorporating the AEAs, mandated to implement examinations, curriculum development, inspection, student financing and teacher management. Synergies and economies of scale are major incentives for this;
- (iii) The creation of a Public Service Commission (PSC) in 2007 with the mandate to organize all government service recruitments, thereby reducing the autonomy of the AEAs. The PSC now indicates a possible return to the previous system whereby the AEAs had full control over recruitment;
- (iv) The implementation of school-based management (SM) in 2003;
- (v) The introduction of performance contracts for all civil servants in 2006. Their implementation has been gradual, but they are now generalized across the education system;
- (vi) The creation of an Educational Management Information System (EMIS), which will change the nature of data collection, analysis, dissemination and utilization for education planning and management. EMIS is awaiting full implementation, but is expected to be fully deployed at the district and school levels in due course;
- (vii) The imminent implementation of a new decentralized textbook procurement policy;

²⁶ Throughout this chapter, the term "MINEDUC" refers to the central ministry alone, excluding the Autonomous Education Agencies.

²⁷ As of April 2009, approved by cabinet and awaiting action by Parliament.

- (viii) A set of pedagogical reforms, including double-shifting, the move to English as the teaching language, the introduction of specialist teachers in primary schools; and the reduction of primary level core subjects;
- (ix) The transfer of the Education Faculty from the National University of Rwanda to the Kigali Institute of Education;
- (x) The promotion of English as the language of the administration, as part of broader alignments with the East African Community, of which Rwanda is now a member; and
- (xi) The evolution of prevailing attitudes that are now more pragmatic, denoting a willingness to adapt if a given policy decision does not appear to be productive, which can be attributed to a results-driven culture.

Table 2.1 provides an overview of the organization of the education sector as at April 2009, its components (or structures) and respective roles and responsibilities. At present, all indicates that the six levels will remain operative (with the possible exception of the sectors). However their internal configuration may change, as may their respective responsibilities, the relationships between them, and the relative requirements for capacity development.

Table 2.1: Organization of the Education Sector: Structures and Roles, April 2009

<i>Structures</i>	<i>Roles and Management Responsibilities</i>
MINEDUC	Policy and strategy formulation, guidance, planning, monitoring and evaluation; coordination and dialogue with partners; national program elaboration; standards and education service regulations development and monitoring; and institutional capacity building.
AEAs	Specialized, professional teacher management, by the Teacher Services Commission (TSC); examination organization, by the Rwanda National Examinations Council (RNEC); curriculum development, by the National Curriculum Development Centre (NCDC); higher education coordination, by the Higher Education Council; student funding, by the Student Financing Agency of Rwanda; and school inspection, by the General Inspectorate of Education. All the AEAs will be regrouped within the Rwanda Education Board that will coordinate these specialized services for the sector.
Districts (30)	Overall district school management: planning, budgeting, implementation and monitoring; secondary school supervision; new and expanded school planning, in conjunction with the central construction unit; teaching staff allocation, from regular staff increases; teacher pay list preparation; and MINEDUC policy implementation. Heavy involvement in policy implementation monitoring and, to a lesser extent, school performance monitoring, especially for publicly funded schools.

Table 2.1 Continued

<i>Structures</i>	<i>Roles and Management Responsibilities</i>
Districts (continued)	District and sector administrations have responsibility for various basic services, including education; they are not under the direct authority of MINEDUC. Typically, the District Director for Education, Youth, Sports and Cultural Affairs spends 80% of his/her time on education and has a dedicated assistant for education.
Sectors (416)	Primary school day to day management and oversight. N.B. Social Affairs' officers work on education.
Schools	School action plan and annual budget preparation, with the participation of teachers and students (at both primary and secondary levels), and presentation to general parent meetings for approval; and spending supervision, through the School Management Committee.
Communities	School accounts and spending joint approval, through the Parent Teacher Associations and Committees (PTA/PTCs); and school management, jointly with school leadership.

Analytical Framework

The functional analysis of the sector entails a relatively detailed examination of each implementing agency's essential tasks, identifying their organizational procedures and how they are performed. This is carried out on the basis of three broad functional families: strategic management, administration and pedagogical management. Table 2.2 provides an overview of the functions and the structures (implementing agencies for instance) currently associated with them.²⁸

Table 2.2: Analytical Framework of the Education System: Functions and Structures

	<i>Strategic Management</i>	<i>Administration</i>	<i>Pedagogical Management</i>
<i>Functions</i>	<ul style="list-style-type: none"> • Policy development • Budget • Planning, statistics and information processing • Monitoring and evaluation • Resource mobilization 	<ul style="list-style-type: none"> • Financial management • Personnel management • Procurement • School construction and maintenance • Distribution of mail, directives, and guidelines 	<ul style="list-style-type: none"> • Curriculum development and teaching/learning materials • Examinations • Inspection • Documentation • Textbook development • Teacher training • Support services

²⁸ Select organizational charts are available in Annex Figures 2.1-2.4.

Table 2.2 Continued

	<i>Strategic Management</i>	<i>Administration</i>	<i>Pedagogical Management</i>
<i>Structures</i>	<ul style="list-style-type: none"> • MINEDUC • AEAAs • Districts • Teacher training colleges • Schools and higher learning institutions • National Institute of Statistics of Rwanda • Other ministries (for example, Finance, Labor, and Civil Service) 	<ul style="list-style-type: none"> • MINEDUC • AEAAs • District administrations • Schools and higher learning institutions • Teacher training colleges • PSC • MINEDUC Financial and Administrative Affairs departments • Other ministries 	<ul style="list-style-type: none"> • AEAAs • Districts • Schools and higher learning institutions • Teacher training colleges • MINEDUC Primary, Secondary and Higher Education departments

The functions and structures outlined in Table 2.2 are explained in further detail below.

Strategic Management

In most countries, strategic management functions are the responsibility of the education ministry. In Rwanda, we find that as decentralization has progressed, MINEDUC has forgone direct implementation responsibilities in order to focus on strategic management functions. These include the elaboration of strategies and national programs; monitoring and evaluation; regulation; capacity building strategies and programs; planning, statistics and budget preparation; and coordinating dialogue with financing and technical partners. Secondly, in Rwanda a number of tasks related to these functions are also performed outside MINEDUC, by the AEAAs, districts, and schools.

Annex Figure 2.1 shows the structure and staffing of MINEDUC. The ministry is highly streamlined. The three substantive units of the ministry (Policy and Planning, Basic Education, and Post Basic and Higher Education) jointly have only 14 posts, eight of which are currently vacant. The Finance and Administration Unit, dealing with budgetary processes and financial accountability, has nine posts, four of which are currently vacant.

Policy Development. MINEDUC is primarily responsible for policy development, including: (i) setting AEA mandates, (ii) determining priority school construction projects, (iii) mobilizing resources and coordinating external partners, (iv) consolidating data, and (v) overall monitoring and evaluation of the sector.

MINEDUC’s functional capacities in these areas have been addressed by two recent studies: the Public Expenditure Review (PER; Craig et al., 2007) and the Functional Review and Institutional Audit (FRIA; Blackshaw et al., 2008). The studies make the following observations:

- (i) MINEDUC is one of the smallest education ministries in the world, with only 34 posts (as of June 2009) including the two ministers, a permanent secretary, two directors general, and four directors. Decentralization and deconcentration of functions and posts to districts and AEAs have left it with the bare minimum of staff to carry out its mandate. Education officers at the central level are responsible for a wide range of tasks but have had limited professional development to help them successfully deliver. The FRIA makes the same point and finds that it is unlikely, with such staff capacity constraints, that MINEDUC has sufficient resources to accomplish its strategic management mission.
- (ii) MINEDUC's organization is very flat and there are no obvious overlaps in its mandate.
- (iii) The system suffers from skills' shortages and staff work overload.
- (iv) MINEDUC personnel are suitably qualified for their positions, but are pulled in numerous directions with little time to consistently attend to day-to-day matters or concentrate on advancing longer-term strategic issues. Also, there are too few personnel for some functions. The problem with MINEDUC's effectiveness is therefore the size of its staff and its lack of support systems, not the expertise or qualifications of its personnel.²⁹

An analysis of MINEDUC staff deployment was conducted in 2009 and provides relatively detailed information for 35 proposed posts (of which 23 are currently occupied) that includes for each: (i) a detailed job description, (ii) the specific qualifications required, and (iii) the name of the current occupant of the post and his/her qualifications and experience. The report is expected to provide the basis for focused recruitment for currently vacant positions and a training program for current and future staff.

The PER and FRIA make similar points, that MINEDUC's capacities to carry out its responsibilities require upgrading in a number of areas: staff skills and numbers, staff availability to focus on their primary tasks, and improved information and communication systems. Training is being improved through a capacity building fund that has enabled MINEDUC to pursue an active staff development program. Currently, 31 MINEDUC staff (including AEA staff) are undertaking masters degree programs at the University of Witwatersrand in Johannesburg.

The small staff and the ongoing changes and staff turnover also raise the question of institutional memory, which is part of the broader capacity concern. Any organization needs to be able to capitalize on its acquired experience. The outsourcing of important events or exercises may appear cost-effective in the short run. However, this practice can have longer-term opportunity costs in the effective loss of experience and know-how, that are less likely to fully enter MINEDUC's institutional culture.

Budget. The Ministry of Finance and Economic Planning (MINECOFIN) establishes budget ceilings for the entire sector, which allows MINEDUC to determine how to allocate resources

²⁹ These points are also made in the ODI & Mokoro report (2009), which notes that the key issue with capacity building lies with the civil service policy.

according to its priorities. This is usually done in consultation with all concerned AEAs. Each AEA develops its budget estimates and submits them to MINEDUC who then reviews them, and establishes a consolidated budget that is in turn forwarded to MINECOFIN. AEAs, districts and schools prepare their own budgets and all education related expenditures are included in the MINEDUC budget (although the district and sector education officers are not on the MINEDUC payroll). Capitation grants are prepared by the districts on the basis of established, objective guidelines provided by MINEDUC. Within MINEDUC, the budget process is led by the coordinator of the Planning and Policy unit, with inputs from the director of Primary and Secondary Education.³⁰ Annex Figure 2.5 shows the flow of resources from the government's consolidated fund (managed by MINECOFIN) to the concerned entities.

MINEDUC disbursed 98.6 percent of its budget in 2008. However, there are three areas of underspending: teacher training (74.1 percent), TVET (76.3 percent)³¹ and non formal education (83.9 percent). On the other hand, the execution rate of MINEDUC's development budget was 97.4 percent in 2008 (compared to the Health Ministry's 79.8 percent, for example), which is particularly revealing of MINEDUC's budgetary execution capabilities. Although the wages and salaries' budget was overstepped by 9.6 percent, this could be related to the inefficiency of MINEDUC's databases, especially in terms of teacher management. Full implementation of EMIS should address this issue.

Planning, Statistics and Information Processing. These functions are carried out at all levels of the system, including MINEDUC, AEAs, districts, and schools, with MINEDUC taking the overall coordination lead. With SM, schools are expected to develop school strategic plans, along with indicators for monitoring and budgeting, but the planning database appears to be weak. This is attributed to a lack of consolidated data and coordination between different information providers, rather than the absence of raw data (which should be corrected once EMIS becomes operational). Training in SM at the secondary level is ongoing for relevant staff.

The educational statistics apparatus is also in transition. One aspect of this is that the National Institute of Statistics of Rwanda (NISR) is now considered to be the custodian of all government statistics, which means that it has ultimate authority over all aspects of data collection, consolidation and analysis. NISR thus constitutes a central warehouse for statistics and data gathering functions. Another consideration is the preparation of EMIS, which has been fully programmed and is awaiting data entry. Pending NISR approval, it is expected that data will be collected by schools with support from districts, and input directly at the school level.³² It should

³⁰ The PER (Craig et al. 2007) points out that "Total execution of the budget is now much closer to budgeted figures than in the past." ODI & Mokoro, 2009 conclude that "this illustrates an improved capacity for planning and budgeting by MINEDUC."

³¹ The 2008 Budget Execution Analysis (Backeus et al., 2009) notes that the "TVET underspend is particularly striking considering its budget allocation was increased in 2008, following some concerns raised during the joint review of the education sector. A key question is whether the underspend was the result of the TVET program absorptive capacity or to technical delays. From the quarterly execution it appears that TVET expenditure picked up only later during 2008, suggesting that the program absorptive capacity has been limited during the first part of 2008."

³² Through 2008, MINEDUC was responsible for preparing the template forms and forwarding them to the district education officers who then distributed them to schools, and organized a workshop on how to complete them. Schools returned the completed forms to the districts, generally in about two weeks. The district education officer then verified the data, sometimes contacted the schools for clarifications, entered the data into an Excel spreadsheet,

also be noted that the SM project has extensive data, including auto-evaluation forms from 80 percent of schools. These have not yet been consolidated or input.

Districts' capacities for data processing and communication appear to be limited by their equipment and training. According to the survey of district officers for education, the average office has 1.9 computers, 30 percent of which have adequate software (according to the directors); 80 percent have internet and e-mail, but only 44 percent report that their systems work satisfactorily. Also, when asked what they most lack, 24 percent indicate communication infrastructure, and 38 percent flag IT facilities.

Data, organized into usable statistics, are the lifeblood of educational planning. The issue in Rwanda is more one of organization of usable statistics than collection of raw data. Another challenge will be to make EMIS fully operational. In addition to providing statistics on enrollments and school facilities, EMIS should also be capable of assisting the management of teacher training (by recording teacher training activities) and incorporating the extensive raw data collected by the SM project. It would be useful to make an inventory of all existing data, raw and processed, and then embark on a focused and intensive effort to bring them together into a coherent statistical database, preferably linked to and compatible with the new EMIS, or even part of it.

It may also be necessary to take a closer look at NISR's role and its relationship with educational statistics and the work of MINEDUC. Current problems may well be transitional, as the operational details of NISR's role as custodian of all national statistics have yet to be fully defined. NISR's role could be quite beneficial for MINEDUC, especially in improving the presentation of statistics. However, MINEDUC has the technical and sector knowledge and should be able to undertake the processes of data collection, consolidation and analysis without undue delays.

Accountability. Accountability is the necessary complement to the autonomy engendered by decentralization. It includes the functions of monitoring, evaluation, inspection and financial management. With decentralization, schools have greater autonomy, especially since the introduction of the capitation grants, which constitute most or all of the schools' financial resources. Also, the imminent implementation of the decentralized textbook procurement policy (Bontoux et al., 2008) will heighten the schools' level of autonomy in the pedagogical and financial spheres. Without effective accountability mechanisms, the policy of decentralized, relatively autonomous institutions (from AEAs to schools) will be neither credible nor sustainable. Two forms of accountability mechanisms are presently operative in schools: (i) internal mechanisms that include the performance contract and the role of PTAs in most aspects of school management; and (ii) external mechanisms that are limited to the independent auditors who work at district level and within MINEDUC.

aggregated the results at the district level and submitted them to MINEDUC, where the statistics were aggregated nationally.

The performance contract was first introduced in 2006 and is now generalized throughout the system, from teachers to the most senior officials.³³ Its introduction has been gradual. Teachers sign contracts with their head teacher and PTA, whereas the head teachers sign contracts with the sector officer (for primary schools) or the district officer (for secondary schools).³⁴ The district officer signs a contract with the mayor, and the mayor with the president.

For teachers and head teachers, the contracts cover punctuality, completion of the curriculum, pedagogical matters, hygiene, AIDS, gender awareness, and student success. Interviews in schools indicate that the degree of fulfillment of the contract terms is used for formative evaluation; there are no negative consequences. Contracts between the head teacher and the district cover school development, school hygiene, activity plans and budgets, school financial management, beginning and end of year reports, textbooks, and building maintenance. Given their recent introduction into the system, as well as the current absence of any systematic evaluation of their impact, it is too soon to comment on the effectiveness of the performance contracts in improving outcomes. However, there is broad agreement that they are useful and some claim that they have improved overall school performance.

Internal accountability is also ensured through the role of the PTAs (generally the school management committees). These participate in all budget and procurement decisions, monitor school activities, sign-off on requests for disbursements and are encouraged to play a role in the pedagogical management of the school, including most aspects of school-based monitoring and evaluation (MINEDUC and VVOB, 2008b). This ensures a high degree of transparency.

An adequate monitoring capacity is an essential element of a global accountability system. Monitoring capacity is a function of several factors: quantitative and qualitative information, formal and other methods of information collection, analytical skills, trained staff at all levels, the means to disseminate information to all concerned parties, and the know-how and willingness to use the information. Systematic monitoring of school management materials is called for (MINEDUC, 2008c and 2008d). However, two studies indicate that capacities for this are inadequate: (i) the PER signals “serious weaknesses” in MINEDUC monitoring and the absence of substantial monitoring systems in place within schools, especially for financial management; and (ii) the FRIA of six ministries points out that MINEDUC “is lacking in both the systems and the resources to enable it to carry out its coordination, guidance, capacity-building and oversight functions fully effectively.” Recent measures designed to address this issue include school-level training in financial management (based on SM modules), EMIS development and the work of the capacity building pooled fund. A consultancy is also expected to be launched in 2010 to assess student achievement levels.

External accountability is ensured by independent auditors who focus on financial management, and the General Inspectorate of Education (GIE). There is a financial auditor in each district and two within MINEDUC (on secondment from MINECOFIN). The district auditors are responsible

³³ The survey conducted in the first half of 2007 by the PER found that four out of five primary school head teachers and 71 percent of teachers had signed performance contracts at the time of the survey (Craig et al., 2007). Two years later, the performance contracts appear to have become an established fixture in the institutional landscape.

³⁴ This person is the Director for Education, Sports, Youth and Culture, with approximately 80 percent of his or her time devoted to education.

for auditing all public institutions: schools, hospitals, health centers, etc.³⁵ The survey of district officers for education indicates that only about four percent of schools were audited in 2008.

The low level of external audits is compensated for by the transparency gained through three internal accountability factors: (i) the generalization and intensive use of performance contracts; (ii) the high level of PTA involvement in all aspects of school management, especially financial; and (iii) monitoring capabilities, albeit still relatively weak.³⁶ However, the sustainability of these mechanisms is likely to depend on two other interrelated factors: (i) the extent to which performance contracts and PTA involvement become established features of the internal culture of the education system in general, and of schools in particular; and (ii) the intensive, early investments in the ongoing training of the implementing actors (school heads, district and sector education officers and leaders/members of the school management committees). The existing SM training materials (MINEDUC and VVOB, 2008) provide a useful basis for such training.

The only regularly generated learning outcome indicators are the annual, end of cycle national examination results. There is no other method for assessing learning outcomes or by extension, the curricula (national examinations test students' knowledge of the curricula and therefore cannot be used to assess the effectiveness of the curricula, let alone provide international learning comparisons).³⁷ Furthermore, in a decentralized system, accountability should also involve the comparison of schools on the basis of student learning outcomes and the factors that contributed to the results. This should help to identify what works in some schools and which settings could be transferred to others. This is not currently done. SACMEQ, the Southern African Consortium for the Monitoring of Educational Quality, is a regional body that organizes sample-based learning assessments with cross-national reliability, and can therefore provide valid comparisons. Bontoux et al. (2008) also recommend that Rwanda participate in international comparative student achievement studies.

Administration

Administrative functions are carried out at all levels of the education system. However, what distinguishes the Rwandese education system from many others is that few administrative functions are carried out by MINEDUC. Most tasks related to personnel and financial management are executed by AEAs, districts and schools.³⁸

Schools in particular take on a large proportion of the overall workload. With the pending implementation of the decentralized textbook procurement policy, this is likely to increase. However, part of this workload is actually shared between the PTA/PTCs and the School

³⁵ One particularly large district indicated that it contracted part-time auditors in order to relieve its workload.

³⁶ For school operating expenditures, the PER (Craig et al., 2007) recommends a "two stage system of monitoring which records all compliance and then selectively evaluates to ensure that the quality of compliance is maintained."

³⁷ The chapter on quality in education discusses Rwanda's options for the implementation of a national student learning assessment system.

³⁸ "Fiscal and financial decentralization resides in the devolution of resources and decision-making powers to subnational governments that will allow them to implement." Ministry of Local Government, Good Governance, Community Development and Social Affairs, and Ministry of Finance and Economic Planning, 2006.

Management Committee.³⁹ A 2008 survey of schools⁴⁰ found a fairly high level of community involvement in school administration with the following results for the PTAs and PTCs:

<i>PTAs</i>	<i>PTCs</i>
<ul style="list-style-type: none"> • Present in 94 percent of schools • 79 percent of PTAs meet at least once a quarter 	<ul style="list-style-type: none"> • Present in 84 percent of schools • 28 percent of PTCs meet once a month and 52 percent meet once a quarter • 22 percent raise funds for the school • 50 percent have been involved in hiring contract teachers • 59 percent are involved in the monitoring and evaluation of teachers • 94 percent are aware of capitation grant spending

Financial Management.⁴¹ Each implementing structure is responsible for its own financial management. AEA budgets are prepared by their respective financial management units following government financial management guidelines and procedures.⁴² MINEDUC has computer access to all the AEA budgets submitted to MINECOFIN and is in a position to verify their level of execution. The AEAs receive external audits from the auditor general's office.

There do not appear to be serious bottlenecks that threaten the overall functioning of the system or the delivery of essential educational services. However some difficulties were reported, such as: the lack of inspectors, especially those specifically trained to assess school construction, and at the sector levels; resource constraints that make it difficult for sector education officers to make frequent visits to primary schools; delays in EMIS; the lack of a database on the results of inspection visits; the absence of an inspection budget for the October-December 2008 period; and weak mastery of English, which is becoming the administration's working language.

Schools receive capitation grants directly from the districts, which are calculated by each district on the basis of the number of pupils attending each school. Schools then follow the indicative guidelines (established by MINEDUC) for spending the grants: 50 percent for teaching activities, 35 percent for school maintenance and 15 percent for training.

Most schools' disposable resources consist entirely of the capitation grant. For each purchase or procurement, schools complete a form provided by the sector office which is signed by the school

³⁹ Although school organization and management are evolving, the school-based management materials produced by MINEDUC and VVOB define these committees as an essential component of self-managed schools. The duties and responsibilities of these committees are outlined in section 3.4 of the MINEDUC/VVOB document *Roles, Duties and Responsibilities of School Management Team* (July 2008)

⁴⁰ Based on the 2008 school census; the data were coded and analyzed by the World Bank, but have yet to be approved by MINEDUC.

⁴¹ This section complements the information provided in the Strategic Management / Budget section above.

⁴² All AEA financial management units will be merged into a single unit once the Rwanda Education Board is established.

treasurer and a parent representative. The form is then submitted to the sector (for primary schools) or district (for secondary schools) officer for approval, thereby authorizing the withdrawal from the bank. The procedure usually takes two days. External auditing by the district auditor is infrequent.⁴³ Problems with this system highlighted by school financial management audits include the lack of sufficient documentation such as receipts, the lack of written procedures and unnecessary travel expenses.

The application of the SM modules should contribute to eliminating these problems. SM materials include a training module on financial management, and advice for fundraising (MINEDUC and VVOB, 2008d). Sample forms are also provided (budget, expenditures, treasury plan, receipts, payment voucher, invoice, pay list, inventory, reports, etc.) as well as special report forms for the capitation grant and for paying part-time teachers.

Training has been widespread and for secondary schools it has involved the school bursars. The results are apparent: According to a survey of a representative sample of schools, 82 percent have school development plans, 81 percent have teacher identification forms and 74 percent have treasury plans, as called for in the SM materials. Furthermore, when asked to show these plans to the enumerator, they were available for 91 percent of the sample. Intensive training for primary school officials is also planned.

Personnel Management. Personnel management is largely decentralized, with schools, districts and the Teacher Services Commission (TSC) all playing roles. The TSC provides guidelines for teacher employment, including a ceiling for each district, and hiring is then conducted at the district and school levels. School head teachers indicate their needs to the sector and/or district and may even propose candidates. Recruitment is conducted by the districts, which have human resource management sections. The mayor, who is the top district official, signs a contract with each teacher because they are district civil servants. The hiring process takes two weeks on average. The efficiency of the district offices appears to be the crucial factor in the rapidity of teacher recruitment for approved posts.

Schools play a significant management role in the hiring of contract teachers⁴⁴ (Hassane and Ntagaramba, 2008), recruiting them directly and paying their salaries from the schools' resources (capitation grant or alternative school resources). At the school level, the SM administration training manual (MINEDUC and VVOB, 2008) provides guidelines for teacher management and templates for reports and contracts, as well as key indicators.

The TSC, which was established in 2006 as a task force within MINEDUC, is expected to be integrated into the REB (see Annex Figure 2.6). With a staff of five, the TSC:

- (i) Provides schools with guidelines for recruitment, career management and workload;
- (ii) Develops guidelines for teachers' career management and statutes;

⁴³ According to the survey of district officers, 4.2% of public schools were audited by in 2008.

⁴⁴ See Annex Figure 2.7.

- (iii) Worked on establishing the teachers' Mwalimu Savings and Credit Cooperative Organization, which is now autonomous;⁴⁵
- (iv) Is developing a teacher database (which does not yet exist and may well be incorporated into the EMIS in due course);
- (v) Negotiates the budget for teachers with MINECOFIN and sets ceilings for teacher recruitments for each district; and
- (vi) Identifies training needs.

With the creation of the PSC in 2008, the AEAs lost the full recruitment autonomy they previously enjoyed. According to the law establishing the PSC,⁴⁶ “any institution that needs staff shall forward for approval a list of vacant posts to the [PSC].” After consultation with the Ministry of Civil Service and Labor, the PSC then replies with the names of the successful candidates. One AEA indicated its preference for more autonomy in its recruitment process and a senior member of the PSC noted that they are considering reverting to direct recruitment by AEAs.

Decentralized Administrative and Strategic Functions. Districts play a crucial role in a number of areas related to administrative and strategic functions. However, their capacities appear to be overstretched. The survey of district officers in charge of education, along with the sample survey of 278 schools, has returned the following key findings:

- (i) The average district officer in charge of education (whose responsibilities also include youth, sports and culture) spends about 80 percent of his or her time on education, and 95 percent report having a full-time education specialist working with them;
- (ii) The district director for education and other social sectors and/or the education officer visited the schools in the survey once on average by the middle of the 2009 school year. However 44 percent of the schools in the sample did not receive a visit, and 27 percent received two or more visits;
- (iii) The district offices for education have an average of 1.9 computers per district. Thirty percent report having sufficient software; 80 percent have access to the internet and e-mail; and 44 percent report that their IT works satisfactorily;
- (iv) Sixty-three percent of districts responded that they have a full set of rules and procedures and 43 percent have “adequate information” (statistics are what they most lack), for decision-making and management; and
- (v) When asked what they most lack (multiple responses were permitted), the responses were: (i) transportation: 67 percent; (ii) adequate personnel: 43 percent; (iii) computers and associated equipment: 38 percent; (iv) adequate communication facilities: 24 percent; and (v) training: 19 percent.

⁴⁵ This organization was officially launched in 2008 with the aim of providing teachers with subsidized credit to be used primarily for income-generating activities.

⁴⁶ Law N^o06/2007 of February 1, 2007 “Determining the Organization and Functioning of the Public Service Commission.”

Decentralized administration appears to be working effectively, with the districts and schools acting as the linchpins. At issue here is the sustainability of these efforts and the capacities at all levels—although especially the districts and the schools—to continue playing their respective roles. “Capacity” here implies a combination of several factors:

- (i) District and sector capabilities to carry out their responsibilities in relation to the schools (monitoring, auditing and other services) and other bodies such as MINEDUC for statistics and NCDC for textbooks. Such capabilities require adequate staff and equipment, communication facilities, information and initial and ongoing training;
- (ii) School and PTC capabilities to perform SM, and future related tasks, such as school-based textbook procurement and EMIS data entry. In addition to ongoing training, this could also imply computer hardware and software, and communication facilities; and
- (iii) Fully operational EMIS, which is crucial. However, this should be accompanied with district/sector capabilities to use it as they work with the schools.

School Construction. Responsibilities for school construction are shared between MINEDUC and the districts. MINEDUC ensures the financing, determines priority projects and allocates resources to the districts, which plan for new schools and organize construction activities according to procurement guidelines.

Pedagogical Management

The pedagogical functions are carried out mostly in the schools and the AEA. The AEA was created by laws that specify their duties and responsibilities, as well as those of all of their constituent parts: the NCDC (law of 2007), the GIE (law of 2003), the RNEC for Primary and Secondary Education (law of 2001), the HEC (law of 2006), and the SFAR (law of 2006).⁴⁷

Through the creation of the AEA, MINEDUC has effectively opened relatively autonomous organizational spaces for more specialized, implementation-related sector activities. This means that functions related to the delivery of essential educational services such as curriculum development, inspection and examinations are executed with a reasonable level of professional independence and minimal bureaucratic impediments.

The expected consolidation of the AEA into the Rwanda Education Board is designed to achieve economies of scale through (i) the creation of common units for administration and financial management (currently, each AEA has its own) and ICT, and (ii) a common Board of Directors. Each of the current AEA, plus the TSC, will operate as discrete entities within the board (see proposed structure in Annex Figure 2.6). Pending its definitive organizational configuration, there is no reason to think that this would disturb the functions assured by the current set of AEA.

⁴⁷ The TSC is not a formally constituted AEA (that is, created by law), even though it is generally referred to as such. It is expected, however, that the REB will include an entity for teacher development and management and assume the functions of the TSC.

Development of Curricula and Teaching and Learning Materials. The National Curriculum Development Centre (NCDC) takes the lead on curriculum development and textbook publishing for all subjects for primary, secondary and technical schooling. The NCDC's organization includes three subject-specific units (see Annex Figure 2.2) that cover all subjects. It has a unit for the production of pedagogical materials, with a print shop that can print runs of up to 10,000 copies of a 200 page bound book per month; a unit for finance and personnel management; and an ICT unit. Curricula are revised every five years and most of the curriculum development work is done by consultants, including inspectors, and schools and university teachers. At present, NCDC has a staff of 86 professionals most of which have some teaching experience, and 10 support staff. Curricula are available online and piloting is done at a school near the NCDC in Kigali.

Staff turnover is fairly significant. In 2008, ten professional staff left for better paying positions in NGOs, development organizations, other government agencies, and the private sector. Even though NCDC generates additional income through its print shop, it is not able to provide salary incentives to staff. Furthermore, the agency's leadership indicates that they lack qualified staff, despite having in-house training activities.

Until now, the publishing functions of content development, authoring (often by consultants) and layout have been conducted by NCDC for all primary school books and about 80 percent of secondary school books. There is a Textbook Approval Committee within NCDC that reviews and clears all teaching and learning materials, as well as other MINEDUC materials, such as the SM training materials. Textbook copyrights are generally retained by NCDC, although a minority is held jointly with publishers. An in-house procurement board oversees the tendering of printing services, whereas districts are responsible for distribution.

Bontoux et al. (2008) point at several problems with the current distribution system: (i) textbook delivery to the schools is often late and/or unpredictable; (ii) distribution among schools is inequitable; (iii) information regarding school entitlements to textbooks and delivery dates is lacking; (iv) rural and remote schools support inequitable collection costs; and (v) storage conditions in the schools are poor, leading to high attrition of the books and other teaching materials.

A decentralized textbook procurement policy is planned for implementation (further described in Chapter 4), and some basic work related to tender management (bid management and opening) has already been accomplished. The policy allows schools to choose their textbooks from the NCDC Approved Book List of up to four books per subject per class. Textbook budgets will be devolved to the schools and the publishers will deliver textbooks and teacher guides directly to the schools. Schools will order non textbook materials (estimated at 25 percent of their pedagogical materials budget) directly from their local bookseller, who would obtain them from the publisher. Regular monitoring will ensure that appropriate adjustments are made in a timely manner.

There are several pedagogical advantages to the proposed decentralized textbook procurement initiative, the most important of which is that teachers can choose the books that best fit their needs and teaching styles. A non pedagogical advantage is that the initiative is likely to promote a

local publishing industry that would then be in a position to promote local authors. However, the process also raises a number of points related to its implementation that merit consideration:

- (i) The nature and volume of NCDC's work will be deeply modified by decentralized textbook procurement, because it will no longer produce textbooks. Rather, it will produce curricula standards and approved book lists;
- (ii) Part of NCDC's decreased workload will be transferred to schools, which will need to study each of the possible textbooks for each subject and class. Schools will need to establish a decision making process; teachers in particular, will be heavily involved, resulting in an increased workload for them;
- (iii) Publishers will be able to lobby schools in order to influence their textbook choices. This will probably consume more of teachers' and other school officials' time. Publishers may even attempt to pressure school officials to adopt their books.⁴⁸ Mechanisms to ensure transparency will be needed;
- (iv) Under the new textbook reform, NCDC will no longer own the copyrights of the new, commercially published textbooks. However, NCDC will retain copyrights for titles they already own, which will automatically be placed on the approved book lists. Contracts with commercial publishers will stipulate that NCDC will exercise control over reprints and reprint prices; and
- (v) Booksellers are rare to nonexistent in most of the country.

Examinations. The Rwanda National Examinations Council (RNEC) manages examinations for primary and secondary schools. There are national examinations at the end of Primary 6, Secondary 3 (*tronc commun*), Secondary 6 (upper secondary) and for technical subjects. See Annex Figure 2.3 for the RNEC's current organizational chart and Annex Figure 2.8 for the sequence of activities related to the administration of examinations (note that the school year begins in January).

Administering examinations may well be the most politically sensitive activity of any education system. Politically costly problems can occur in several areas: not respecting the established examination schedule; perceived lack of fairness in the examination process; confidentiality problems with questions and results; and poor validity and reliability of the results.⁴⁹ It is therefore noteworthy that RNEC appears to be well managed based on the following: (i) in 2008 there was no reported leakage of examination questions or results; and (ii) in 2006 RNEC won the United Nations Public Service Award in the category of "improving transparency, accountability and responsiveness."

⁴⁸ For an extreme example of how this led to corruption in the Philippines, see Chua, 1999. Also, see Hallak and Poisson, 2006 and 2007.

⁴⁹ An informal survey carried out in 1999 by the Association for the Development of Education in Africa asked the question: "When education makes the news, what is the news about?" The answer most frequently given was "examination results." In Rwanda, however, the administration and results of national examinations do not appear to be, controversial.

In addition to organizing examinations, RNEC is also mandated to: (i) orient students having passed the exam in their subsequent studies, (ii) deliver diplomas and certificates to those who passed, (iii) ensure that the diplomas and certificates meet the standards established by law, (iv) provide advice on curriculum development, (v) collaborate with similar regional and international bodies, and (vi) develop norms for accreditation.

RNEC has 69 budgeted posts but a current staff of 50. They suspended recruitment pending the establishment of the REB. Over 80 percent of staff has varying levels of university education. In 2008, about 218,000 students sat for RNEC examinations. IT is used intensively and examination results are available online (access is confidential; candidates have to use their candidate number) and by mobile phone.

RNEC generates revenues from candidate registration fees, which are set by the government, and from the mobile phone company that manages the SMS access to examination scores. This income is used for the development budget. However, it does not cover staff training, which is seriously needed. With SFAR financing, RNEC manages to send some staff overseas for training, including for six month diploma courses in assessment.

Staff development and turnover appear to be the major issues for RNEC (in the past two years, two qualified IT staff have left for better paying positions). Given the centrality of IT to RNEC's work, staff retention here is of particular importance. However, government salary scales can not compete with those of the private sector. The scarcity of resources is also an issue, both for staff training and for the RNEC library, which is complemented by that of the nearby Kigali Institute of Education.

Inspection. The General Inspectorate of Education (GIE) oversees inspection across the education sector. There are 31 inspectors, working out of five regional offices, who define their own schedules and action plans.⁵⁰ Their performance contracts are signed with the GIE board and are based on the fulfillment of their action plans. Inspectors have university degrees in their respective subject matters and have between five and twenty years of experience. However, information and lessons gathered from their visits are not easily available, as there is no database that consolidates the information contained in their reports.

According to MINEDUC's 2008 Annual Report, the GIE visited 139 literacy centers, 394 nursery schools, 222 primary schools, 142 secondary schools, 11 teacher training colleges, 21 farming and veterinary schools and farmer organizations, 69 vocational training centers and six special education schools. The objective of such visits is to contribute to the teaching and learning methodologies used in the classrooms. Inspectors also play a role in authoring textbooks and developing SM training materials. The 278 schools in the sample survey had received an average of 0.84 visits from the GIE by the middle of the 2009 school year, although 49 percent of schools had not been visited.

School-Based Pedagogical Management. The SM unit of MINEDUC has produced training manuals for primary and secondary school head teachers (MINEDUC and VVOB, 2008b), and trained all primary school head teachers in 2006-07. Continuous training is provided to ensure that newly recruited head teachers benefit. The manual on pedagogical management is a primer

⁵⁰ Annex Figure 2.4 shows the GIE's organizational structure.

on the subject and includes an overview of factors related to pupil learning and tools for timetable management; lesson and overall evaluations, organizing lesson plans, continuous student assessment, examination planning, marking and reporting, the leadership of pedagogical meetings, understanding disabilities, and a school self-evaluation form.

A survey of a representative sample of 278 primary school headmasters found that 78 percent received SM training and 80 percent received the SM training materials and modules. As called for in the SM materials, 71 percent of the schools surveyed had completed lesson evaluation forms. This indicates that the pedagogical management aspects of SM are being followed by a large majority of schools.

The school-based pedagogical management is a fine example of effective operational support for decentralization. The major issue here is the sustainability of the activities undertaken in recent years: will it become a fixture in the institutional culture of the schools and how best to ensure that this will happen? Continual, even repetitive, training in the SM approach, associated with monitoring of outcomes, may be the most effective means for achieving sustainability. In addition to this, consideration could be given to incorporating SM objectives into the performance contracts.

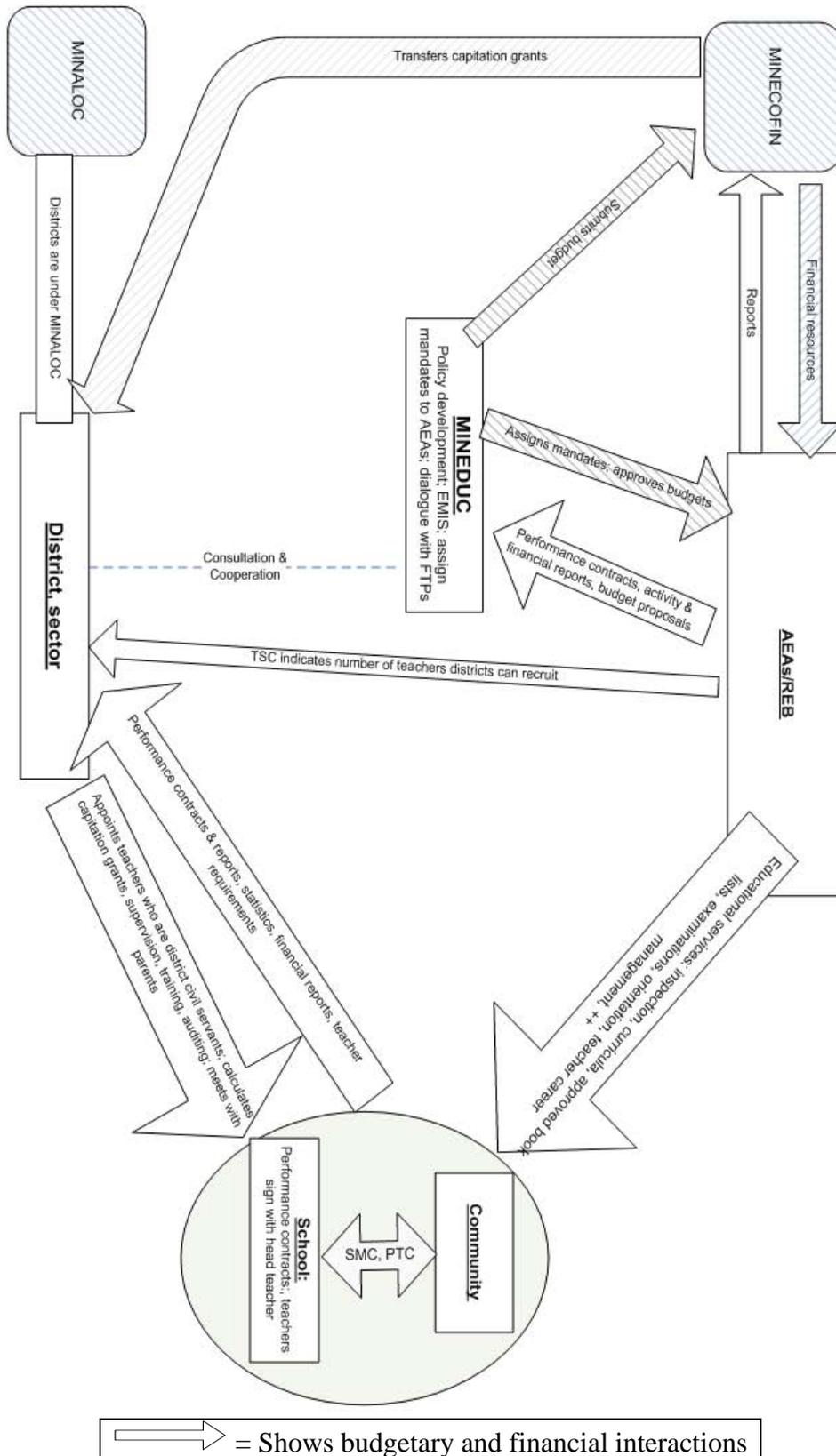
Conclusions and Policy Implications

Decentralization and deconcentration are now facts of life in the Rwandese education system. Everything suggests that they have happened fairly smoothly, without major perturbations in the overall operation of the system. The benefits of decentralization are expected to include: greater opportunity for local initiatives in all areas of schooling, including resource mobilization; an expanded role for communities; and further autonomy at all levels of the system, thereby providing more latitude for professionalism and responsiveness to issues as they arise. Even though there may well be unintended consequences—which is only normal for such large-scale organizational transformations—major dysfunctionalities have not been observed to date.

The decentralization and deconcentration processes are graphically illustrated by Figure 2.1 below which shows both the structural elements of the system (boxes and ovals) and the major functional relationships between them (arrows and lines). This diagrammatic view of the organization of the education system demonstrates, for example, that schools have no direct, formal contact with MINEDUC and that their major operational interlocutors are the districts, sectors and the AEAs. When it comes to personnel matters (teachers, head teachers and other staff) and school finances (capitation grants), the schools' formal relationships are with the district authorities who are under the Ministry of Local Government. The government's fiscal decentralization policy indicates how line ministries work with districts on finance-related matters. For example, districts work closely with MINEDUC and the AEAs, but their relationship is more of consultation and collaboration, rather than formal.

The facts in the field indicate that the system is functioning fairly well, given the available resource constraints. Many of the actors, especially in MINEDUC, districts and schools, are overstretched.

Figure 2.1: Functional and Organizational Configuration of the Education System



As a system, it is working, but according to a number of observers, it is fragile given the limited human resources in MINEDUC and the districts and the increasing local workload.⁵¹ Nonetheless, educational services are being delivered to schools and classrooms. Furthermore, the actors appear to feel comfortable in their respective roles: they know what is expected of them and have a reasonable grasp of the issues and the know-how involved. Sustainability is the issue that needs to be addressed. It is likely to become more acute as new tasks (such as decentralized textbook procurement) add to the workload of local actors and demands for accountability increase. The staff turnover observed throughout the system is a major symptom of this issue.

Training should be a major element in a strategy to ensure sustainability. A guiding objective for this should be to ensure that the practice of decentralization and deconcentration becomes well embedded in the culture of the education system and its institutions. All actors will need to possess the requisite skills and know-how to perform their tasks. The context in Rwanda is challenging. In addition to the significant turnover throughout the system, the system is expanding with the opening of new schools. Secondly, there is no computerized database for training, meaning that it is difficult to take past training into account when planning future training activities. Thirdly, schools' workloads are increasing (double shifts, move to English as the teaching language, decentralized textbook procurement), which implies a decreased availability for training along with an increased need for it. A major asset in this context is the experience of the SM program and the training materials it developed.

A training strategy will need to take all these factors into account. Given the high rate of staff turnover at all levels, it will be important to perceive training investments as recurrent activities. It would also be useful to ensure that such training is accompanied by the establishment of a computerized database of all training activities and participants.⁵² It may be preferable to do too much rather than too little to ensure that decentralization is embedded in the overall management culture of the system. A first step in developing this strategy could be to computerize all existing information on previous training programs, in order to know who (head teacher, teacher, PTC member, district and sector officers) has already attended which training program, and thereby have an inventory of what has already been accomplished.

Effective support mechanisms are also necessary to ensure the success of decentralization.⁵³ The first line of support to the school-community nexus is constituted by sector and district offices, and then by AEAs, the GIE and the TSC in particular. For the districts and sectors, several needs should be addressed: an increased number of dedicated and trained education officers; the supply of computer equipment and software, along with reliable connectivity for the districts; and

⁵¹ For example, the 2009 ODI and Mokoro report *Sector Budget Support in Practice* points out that "The main risk with a weak capacity in the Ministry of Education is ... difficulties in implementation of planned activities, but also the reliance on a very small number of key individuals for the dialogue with donors and ensuring a coherent and comprehensive planning, budgeting and reporting by the Ministry. The departure of one of these key individuals could compromise the quality of the donor-government partnership if not anticipated by government." The report also states that "the weakest dimension [of sector budget support] has probably been the contribution to building capacity of institutions at various levels."

⁵² The SM section of MINEDUC has extensive data, but 80 percent of self-evaluation forms have not been consolidated and computerized.

⁵³ The 2009 ODI and Mokoro study points out that the "weakest dimension [of sector budget support] has probably been the contribution to building capacity of institutions at various levels."

facilitated access to all relevant information, from regulations to statistics, along with the know-how for applying it to daily work situations.

Monitoring may well be the most strategic tool required to ensure a well-functioning decentralized system. Systematic monitoring capabilities are lacking in the Rwandese system, largely because of delays in implementing EMIS. Getting EMIS launched and functioning should be a top priority. It may also be necessary to extend its scope to cover training activities and teacher career paths.

The monitoring system should also be able to identify schools and districts that are producing particularly noteworthy outcomes, for the better or for the worse. In such a highly decentralized system, there will certainly be local innovations and variability between districts and schools, in terms of both inputs and outcomes. For a variety of reasons, it is necessary to keep track of how both inputs and outcomes vary, especially to learn what works and what does not in improving learning outcomes. Apart from student outcomes, factors that should be monitored include: the turnover of teachers and district and sector officers in charge of education, student-teacher ratios, school resources from sources other than capitation grants, the breakdown of school spending, pedagogical and didactic inputs, and unit costs. Joining the Southern African Consortium for the Monitoring of Educational Quality would be an important step in developing local capacities and know-how for the overall monitoring of learning outcomes (in addition to gaining periodic assessments of the state of learning outcomes in the educational system).

In order to strengthen the capacities of the central ministry, it could be useful to consider establishing a network of consultants, educational researchers and other professionals who could formally and informally advise MINEDUC, on a regular basis, and over time. However, in order for this approach to be effective, the members of such a network would need to establish long-term commitments with MINEDUC, and vice versa.

In the area of data collection for educational statistics, thought should be given to the challenges that districts and schools are likely to face with respect to the feasibility of collecting and computerizing data. Essential aspects of capacity building at the district and school levels are the presence of (i) adequate IT facilities (computers and software), (ii) communication capabilities (connectivity, e-mail and internet for the transmission of data and reports) and (iii) training in the use of these tools, with focus on EMIS and other applications specific to their work. As for the training, and given the turnover, it would be preferable to err on the side of too much (in the number of sessions over the years per trainee) rather than too little.

It will be necessary to think through the potential perverse effects and unintended consequences of the decentralized textbook procurement initiative and elaborate a strategy with accompanying measures designed to ensure its smooth and transparent implementation. The strategy could include four elements: (i) sensitization of district, school and community officials to the potential negative consequences and how to avoid them; (ii) training in effective book selection processes (the SM program could be a vehicle for this); (iii) improved internal and external accountability measures that could involve the community and school management committee members as well as sector and district staff; and (iv) the development of other transparency mechanisms (for example, ensuring that all information related to textbook procurement (budgets, costs, numbers, decision-making processes) is publicly available).

CHAPTER 3: SCHOOLING PATTERNS

Chapter Overview

The last chapter described the education sector's broad governance and management structures and provided a functional analysis of these actors and implementers within the context of the increasingly decentralized and deconcentrated service delivery. This chapter analyzes recent schooling patterns, in particular the expansion of schooling and the structure of student flows. It also identifies the main challenges with respect to improving access to education and the progression of students throughout the system.

The analysis relies on quantitative indicators, mainly at the national level, and where possible equity issues are also addressed (through gender, location and socioeconomic indicators). 2008 school census data (MINEDUC statistical yearbooks and database) is used, as well as 2005 national demographic projections and the latest household surveys (EICV 2005/06 and the 2005 DHS). When possible, data from other countries are presented to provide comparisons. The quality of some demographic data is questionable: the UN population estimates, 2002 census data, and 2005 or 2009 projections based on the 2002 census. For the purpose of this chapter, projections based on the 2002 census are nevertheless used, because there were fewer flaws and data were available over the 2002-08 period allowing for trend evolution analyses.⁵⁴

Structure of the Education System

The administration of Rwanda's education system lies mainly with MINEDUC. The formal education system is organized around four major cycles, as illustrated in Figure 3.1 below:

- (i) Preprimary education is still small, although rapidly expanding, and offers a cycle of three years for children of 3-6 years;
- (ii) Primary education is a six year cycle, and in theory enrolls children of 7-12 years. Primary education has been fee-free since 2003/04.⁵⁵ The cycle is sanctioned by a final examination at the end of Primary 6. The exam is used for the assessment of learning outcomes, and until 2009, as a way to filter access to *tronc commun*, by altering the pass mark each year according to the number of places available;
- (iii) Tronc commun is a three year lower secondary cycle which in addition to primary, constitutes Rwanda's nine year basic education. It is also fee-free, whereas neighboring countries have restricted fee-free education to the primary level. *Tronc commun* is now not only considered as the entry to upper secondary, but also as a

⁵⁴ 2009 projections based on the 2002 census data provide single-age projections for 2006-08 only.

⁵⁵ See General Note 1 about the reorganization of the academic year, on Page ii.

cycle that provides basic knowledge and skills for those who continue to technical and vocational education and training (TVET). *Tronc commun* is sanctioned at the end of Secondary 3 by the O-Level national examination, used primarily as a way to select students for upper secondary public schools; and

- (iv) Upper secondary requires a further three years and offers four sections: general, professional, technical and pedagogical (teacher training). At the end of the cycle, students take the Secondary 6 leaving examination, or the A-Level examination. Approximately 60 percent of upper secondary schools are boarding schools (PER, 2007) and around 44 percent offered all sections and both *tronc commun* and upper secondary in 2008.

Teacher training is provided by: (i) Teacher Training Centers (TTCs) for primary school teachers, who receive certificates from the Rwanda National Examinations Council (RNEC); (ii) a two-year post upper secondary diploma offered by Colleges of Education (CoEs) for *tronc commun* school teachers, and (iii) a degree offered by the Kigali Institute of Education (KIE) for upper secondary teachers. The teacher training system is described in more detail in Chapter 5.

TVET is offered through: (i) youth vocational training centers (*Centres de Formation des Jeunes*) that deliver vocational training for primary school leavers and secondary school drop-outs, and in some cases secondary school leavers and mature students, regardless of their level of education; (ii) upper secondary technical schools; and (iii) post secondary technical colleges and institutes that provide 2.5 year diploma courses to produce higher-level technicians. Integrated TVET Regional Polytechnic Centers are expected to offer all three levels under a new arrangement starting in 2009.

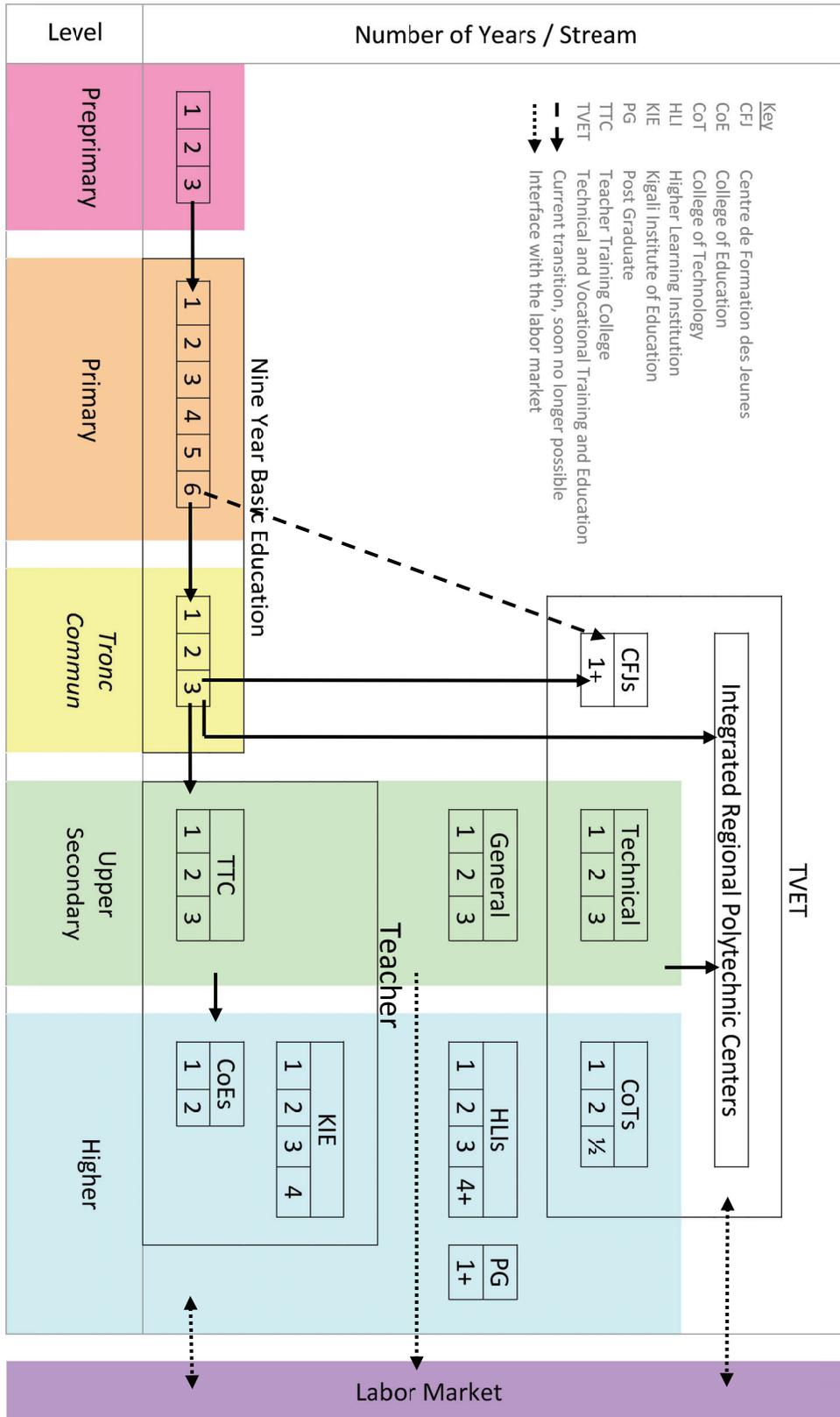
Higher learning institutions (HLIs) offer courses of study of variable duration, generally four-year degrees (or more, in cases such as medicine), and some shorter diplomas. Some higher education institutions are managed by ministries other than MINEDUC, such as the Ministry of Health which has administrative control over nursing colleges. Quality assurance remains the responsibility of the Higher Education Council (HEC), under MINEDUC.

Enrollment Trends

Table 3.1 below presents a general overview of enrollment trends for 1998-08, by level.

Enrollment in preprimary schools has rapidly increased over the last years, from 6,104 in 1998/99 to 145,409 in 2008. This is equivalent to an annual growth rate of 37 percent over the period. However, the time series before 2007 is not totally reliable as not all schools reported their student population.

Figure 3.1: Structure of the Rwandese Education System, 2008



Enrollment in primary school almost doubled over the decade with an average annual growth rate of 5.4 percent between 1998 and 2009, to reach almost 2.2 million students in 2008. However, enrollment growth slowed in 2007/08 with a total increase of only 40,000 students, compared with an increase of 160,000 students in 2005/06. Surprisingly, no significant increase is apparent following the implementation of the fee-free primary education policy in 2003/04, implying that factors other than school fees play a role in the decision to send a child to school.⁵⁶

Table 3.1: Enrollment by Level, 1998/99-2008

Thousands of students

	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2005	2006	2007	2008
Pre Primary	6.1	7.8	18.4	14.3	20.0	28.1	—	98.9	94.2	145.4
Primary	1,288.7	1,431.7	1,476.3	1,534.5	1,636.7	1,752.6	1,857.8	2,020.0	2,150.4	2,190.3
Tronc Commun	68.4	80.2	90.2	99.7	114.2	131.4	142.2	156.7	169.7	183.3
Upper Secondary	36.9	44.9	50.9	57.6	64.9	72.1	76.3	83.3	96.8	104.8
Higher	—	9.4	12.8	15.9	20.4	24.9	27.8	37.1	41.0	45.4

Source: MINEDUC Statistical Yearbooks, various years.

Note: Higher education includes all HLIs, Colleges of Technology (CoTs) and COEs. In 2008, there were 520 students enrolled in CoTs and 478 in CoEs.

Tronc commun total enrollment almost trebled from 68,438 students in 1998/99 to more than 180,000 in 2008, at an average annual growth rate of 11 percent over the period. The share of private school enrollment decreased sharply from 43 percent in 2001/02⁵⁷ to 27 percent in 2008, indicating that the new enrollees mainly went to public schools. The pressure stemming from the growing number of students at the primary level and the implementation in 2003/04 of the fee-free policy for *tronc commun* has helped support the trend.

Enrollment in upper secondary education (including general, technical, vocational and pedagogical streams) has registered a similar upward trend. In 2008, upper secondary had 104,752 enrolled students compared with 36,854 in 1998, equivalent to an average annual increase of 11 percent over the period.

However, not all upper secondary sections registered the above trend. Indeed, disaggregated data show a downward trend in teacher training enrollment, from 15 thousand students to less than five thousand between 2001/02 and 2007, coinciding with a drop in the private sector's share of students (from 62 percent to 19 percent). This is explained by the closure of many pedagogical streams in private institutions as a result of the poor quality of instruction, and by students' lack of interest in the teaching profession, linked to poor working conditions. (See Chapter 5)

Most growth in upper secondary enrollment was driven by the general section, which grew over the 2001-07 period at an average annual rate of 15 percent, against 8 percent for the technical stream. By 2007, 58 percent of students were enrolled in general sections, compared with 47 percent in 2001/02 (see Table 3.2 below).

⁵⁶ As will be seen later in this chapter, access to primary education was already almost universal.

⁵⁷ Data for previous years are not available.

Table 3.2: Upper Secondary Enrollment by Section, 2001/02-2007

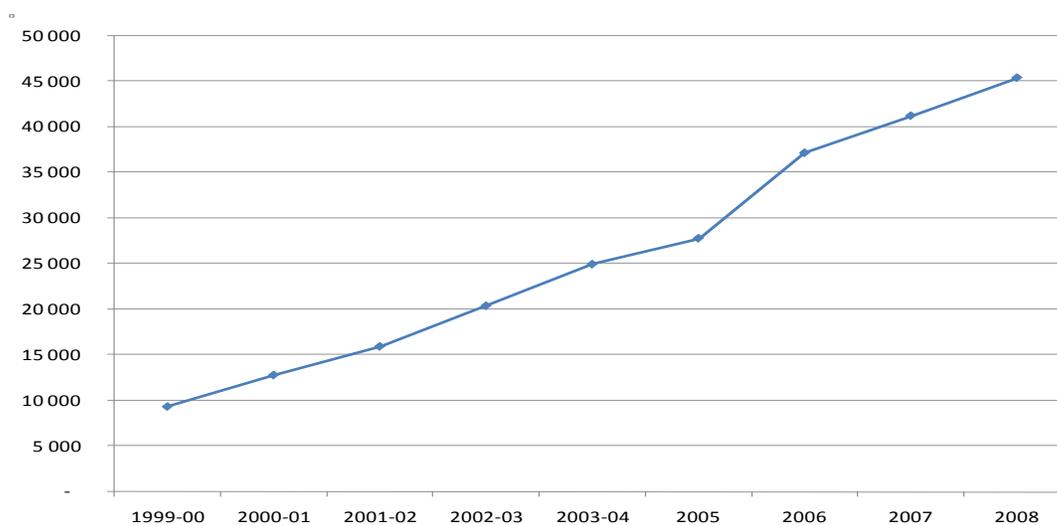
	2001/02	2002/03	2003/04	2006	2007	2008
Total Upper Secondary	57.552	64.936	72.124	83.330	96.836	104.752
General (students)	20.040	26.216	31.649	41.372	53.487	—
TVET (students)	22.364	25.324	30.912	37.488	38.895	—
Pedagogical (students)	15.148	13.396	9.563	4.470	4.454	—
<i>Distribution among sections</i>						
General (%)	34.8 (47)	40.4 (51)	43.9 (51)	49.6 (53)	55.2 (58)	—
TVET (%)	38.9 (53)	39.0 (49)	42.9 (49)	45.0 (47)	40.2 (42)	—
Pedagogical (%)	26.3	20.6	13.3	5.4	4.6	—
<i>Proportion of students in private institutions, per section</i>						
General (%)	25.7	36.8	38.9	42.5	49.4	—
TVET (%)	50.4	57.2	63.0	73.0	72.3	—
Pedagogical (%)	62.2	57.6	44.9	10.1	18.7	—

Source: MINEDUC Statistical Yearbooks (various years), 2008 MINEDUC School Census, and author's calculations.

Note: Figures in parenthesis are percentages computed on the basis of general and TVET sections only. Government subsidized schools are classified as "public schools".

Enrollment in higher education grew by an average annual rate of 19 percent between 1999/00 and 2008. This is mainly attributed to private institutions where 57 percent of students were enrolled in 2008, compared with 32 percent a decade earlier. The opening of various private institutions, from 2003/04 onwards, contributed to the influx of students (see Figure 3.2).

Figure 3.2: Enrollment Trends in Higher Education, 1999/00-2008



Source: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census.

Note: Higher education includes all HLIs, CoTs and CoEs.

Overview of Schooling Dynamics

Growth Rates. Table 3.3 summarizes annual enrollment growth for each level, before and after the introduction of the fee-free policy in 2003/04. Although strong increases occurred in primary schooling over the period, other levels grew even more. The fee abolition in 2003/04 was not followed by a large surge in enrollment; the annual growth rate remained stable before and after the introduction of the policy. The lower growth rates observed at the primary level in recent years are linked to a saturation effect.

Table 3.3: Annual Average Growth Rates by Level and Stream, 1998/99-2008
Percent

	Period			Factor of Increase in Enrollment in 1998-2008
	1998/99-2002/03	2003/04-2008	1998-2008	
Preprimary	34.5	50.8	42.2	23.8
Primary	6.2	5.7	6.1	1.7
<i>Tronc Commun</i>	13.7	8.7	11.6	2.7
Upper Secondary	15.2	9.8	12.3 (7.7)	2.8 (1.7)
General	—	—	(21.7)	(2.7)
Technical/Vocational	—	—	(11.7)	(1.7)
Pedagogical	—	—	(-21.7)	(0.3)
Higher Education	29.7*	16.1	21.8**	4.8

Source: MINEDUC Statistical Yearbooks (various years); 2008 MINEDUC School Census and authors' computations.

Note: Computed over * 1999/00-2002; ** 1999/00-2008; in parenthesis 2001/02-2007.

Growth levels for preprimary (42 percent over the period) and higher education (22 percent) are high because they started with low enrollment. This is also true for the secondary level, especially upper secondary. The surge in *tronc commun* is consistent with government efforts to implement the Nine Year Basic Education strategy.

Table 3.4: Share of Female Students, 1998/99-2008
Percent

	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2005	2006	2007	2008
Preprimary	49.0	49.4	49.6	50.2	50.1	50.6	—	52.0	51.8	51.1
Primary	50.0	49.6	50.0	50.3	50.5	50.8	50.9	51.2	50.9	50.9
<i>Tronc Commun</i>	51.5	51.3	50.5	49.1	47.7	47.6	47.6	47.8	48.2	49.0
Upper Secondary	49.5	50.2	49.7	50.1	48.6	47.7	46.6	46.9	46.6	45.7
General	—	—	40.7	38.9	41.4	41.8	42.2	43.9	—	—
TVET	—	—	52.5	52.5	51.3	51.8	52.4	50.6	—	—
TTC	—	—	58.9	58.5	56.9	46.8	44.0	43.4	—	—
All Secondary	50.8	50.9	50.2	49.5	48.0	47.7	47.2	47.5	47.6	47.8
Higher Education	—	32.9	33.7	34.1	36.8	39.6	40.4	41.6	—	—

Source: MINEDUC Statistical Yearbooks (various years), 2008 MINEDUC School Census and authors' calculations.

Girls' Enrollment. Regarding girls' enrollments, Table 3.4 above shows that gender parity has been achieved at the preprimary and primary levels. 51 percent of those enrolled were girls in 2008; this has been stable over the 1998/99-2008 period. Boys and girls have benefited equally from the expansion of *tronc commun*: girls accounted for 49 percent of total enrollees in 2008, compared with 47.6 percent in 2003. Girls' enrollment decreased very slightly at the upper secondary level, from 51 percent in 1998 to 48 percent in 2008. Girls are less likely to pass the O-Level examination at the end of *tronc commun* (see Chapter 4 on quality in education), which is necessary to enroll in public upper secondary schools. Female enrollment in higher education is still lagging behind; however, women were considerably better represented in 2006 (42 percent of the student population) than in 1999 (33 percent).

Private Sector. The share of private sector enrollment varies significantly from one level to another, as Table 3.5 shows.⁵⁸ Whereas barely 2 percent of students are enrolled in primary level private schools, this rises to 37 percent for secondary schools and 57 percent for higher education. However, the share of the private sector decreased in *tronc commun*, following the government's efforts to ensure free universal access to nine years of basic education. This trend has been supported by the increase in the availability of public secondary schools, particularly at *tronc commun* level, with the development of the *Ecoles Secondaires Inférieures*.⁵⁹ Between 2002/03 and 2008, the number of public secondary schools has more than doubled from 190 to 466, whereas the number of private secondary schools has remained quite stable (from 215 to 223).

Table 3.5: Share of Students Enrolled in Private Schools, 1999/00-2008
Percent

	1999/00	2000/01	2001/02	2002/03	2003/04	2005	2006	2007	2008
Primary	—	—	—	0.8	0.8	1.0	1.5	1.7	2.4
<i>Tronc Commun</i>	—	—	42.9	45.1	40.7	36.7	34.4	31.9	27.6
Upper Secondary	—	—	44.9	49.0	50.0	49.8	54.5	56.2	53.8
General	—	—	25.7	36.8	38.9	40.9	42.5	49.4	—
TVET	—	—	50.4	57.2	63.0	66.3	73.0	72.3	—
TTC	—	—	62.2	57.6	44.9	8.4	10.1	18.7	—
All Secondary	45.3	43.5	43.6	46.5	44.0	41.2	41.4	40.7	37.1
Higher Education	31.9	31.9	35.8	40.1	45.3	52.2	56.4	55.0	56.8

Source: MINEDUC Statistical Yearbooks (various years), 2008 MINEDUC School Census and authors' calculations.

Although declining fast, the private sector share of *tronc commun* is still high compared to other African countries, as is the case of upper secondary and higher education (see Table 3.6 below). The government will need to ensure that private institutions at the post primary level do not reinforce inequities in access and impede the poorest students from pursuing further schooling.

⁵⁸ This does not include *libre subsidié* schools that are classified as "public" in this chapter.

⁵⁹ The "écoles secondaires inférieures" are schools that are expected to provide nine years of basic education by having current primary schools offer the three additional years of *tronc commun* education.

Table 3.6: International Comparison of the Share of Private Schools, circa 2006
Percent

	Primary	<i>Tronc Commun</i>	Upper Secondary	Higher Education
Rwanda (2008)	2.4	27.6	53.8	56.8
Rwanda (2006)	1.5	34.4	54.4	56.4
Benin	10.8	15.0	15.7	18.0
Burkina Faso	13.0	36.4	32.4	16.0
Burundi	1.6	8.7	19.5	35.2
Eritrea	8.0	7.0	4.0	20.0
Ethiopia	4.0	6.2	2.3	26.2
Ghana	18.3	14.3	4.5	20.0
Kenya	3.5	9.9	6.5	21.4
Madagascar	19.3	43.0	47.5	7.4
Mozambique	2.3	7.8	11.0	22.4
Niger	3.7	13.0	29.0	0
Tanzania	1.0	42.6	44.4	16.1
Uganda	7.1	48.8	42.5	29.0
Subsample Average	7.7	21.1	21.6	19.3
African Average	11.9	20.2	21.7	19.0

Source: World Bank, 2009; Table 3.5 in this chapter for Rwanda.

School Coverage Analysis

Gross Enrollment Ratios (GERs). Enrollment patterns can be better understood when they are compared to the theoretical school aged population expected to attend certain levels of schooling over time, as it is this latter category which defines potential demand for education. Table 3.7 displays the evolution of GERs by education levels from 2002/03 to 2008.

Table 3.7: Gross Enrollment Ratio by Level, 2002/03-2008

	Pre-primary	Primary	Secondary				TVET (a)	Higher (b)
			<i>Tronc Commun</i>	Upper Secondary		All Secondary		
				All sections	General only			
(%)							(Per 100,000 inhabitants)	
2002/2003	3	123	17	10	4	15	312	251
2005	—	136	22	12	6	17	383	315
2006	13	145	24	13	6	19	414	410
2008	18	151	28	16	9	22	440	474

Sources: MINEDUC Statistical Yearbooks (various years) and MINEDUC School Census 2008, National Institute of Statistics Rwanda Census Projection 2005, and authors' computations.

Note: (a) TVET at secondary level; (b) Higher education takes into account Colleges of Technology (CoTs) and Colleges of Education (CoEs).

Coverage at the preprimary level has increased over the period to reach 18 percent in 2008, compared with 3 percent in 2002/03. There is an explicit will to expand access to this level

because of its expected positive impact on school preparedness. The strategy is to have communities develop their own preprimary schools and encourage attendance. This type of community organization is known to favor the development of the sector as it can reach rural and disadvantaged populations more effectively than formal preschools that can be costly to operate and may only benefit the wealthier urban population (PER, 2007).

At the primary level, GERs have structurally exceeded 100 percent and have registered an upward trend over the period, to reach 151 percent in 2008 (GERs are artificially inflated by repetition and late entry).⁶⁰ Repetition patterns are analyzed in more depth later in this chapter.

The upward trends observed at *tronc commun* and upper secondary levels are more timid. Respective GERs increased between 2002 and 2008 by 11 and six percent, reaching 28 and 16 percent respectively in 2008. When considering only the general section, the upper secondary GER decreases to 9 percent.

Regarding technical and vocational sections in upper secondary schools and higher education, coverage is calculated on the basis of enrollments per 100,000 inhabitants. Indicators show a rapid positive trend for both levels. TVET had 440 students enrolled per 100,000 inhabitants in 2008, compared with 312 in 2002/2003. In higher education, the increase is even more impressive, with 474 per 100,000 inhabitants in 2008, almost twice the level observed in 2002/03.

Table 3.8: International Comparison of GERs by Level, circa 2006

	GDP/Capita (2006 US\$)	Preschool (%)	Primary (%)	<i>Tronc Commun</i> (%)	Upper Secondary - General (%)	Higher Education (Per 100,000 inhabitants)
Rwanda (2008)	381	18	151	28	9	474
Rwanda (2006)	263	13	145	24	6	410
Benin	541	6	98	53	18	790
Burkina Faso	430	2	60	19	7	240
Burundi	111	2	103	19	7	209
Eritrea	231	14	62	46	19	106
Ethiopia	164	3	83	39	11	223
Ghana	561	86	92	75	33	597
Kenya	623	49	106	89	31	296
Madagascar	287	8	139	32	11	259
Mozambique	326	—	105	22	5	138
Niger	267	2	51	15	5	82
Tanzania	324	28	110	8	3	133
Uganda	315	3	117	22	10	315
Subsample average	369	19	96	37	14	276
African average	1,700	22	99	47	25	420

Source: World Bank, 2009.

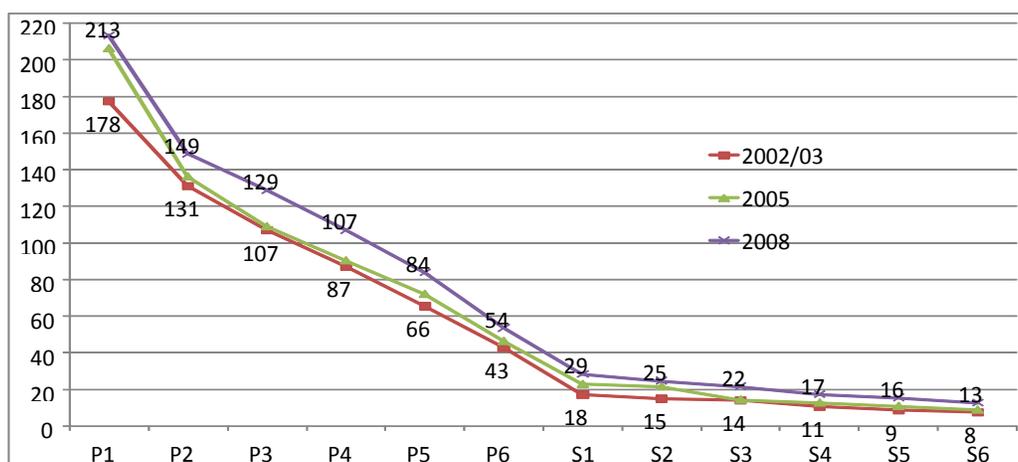
⁶⁰ If repetition were not taken into account, the then average enrollment rate would be 115 percent.

Although international comparisons may contain flaws, attributable to variable education cycles from one country to the other and different economic contexts, they do offer an assessment of Rwanda's progress, as compared to other Sub-Saharan African countries. The main conclusions that can be drawn from Table 3.8 above are: (i) many countries in the region, including Rwanda, have a limited preschool system; (ii) at the primary level, Rwanda's GER is among the highest in the region; (iii) at the secondary level, school coverage is lower in Rwanda than in many countries, which is particularly striking at the upper secondary level (general stream) where school coverage is two times lower than the average for the subsample in 2006 (the situation has slightly improved since); and (iv) for higher education, Rwanda shows higher than average coverage.

Schooling Profiles. Although GERs provide a measure of school participation, they remain an imperfect measure of schooling coverage. They are influenced by repetition rates, and represent more an average measure of coverage than they really reflect the schooling pattern of a cohort of children at each grade. It is thus preferable to compute schooling profiles on the basis of intake rates at each grade, thereby measuring the proportion of children that have access to school and the proportion of pupils that stay in school.⁶¹

There are several methods and data sources available to elaborate schooling profiles. In this chapter, administrative schooling and population data are used to compute transversal (cross sectional) and retention profiles, whereas household survey data (EICV 2005/06, DHS 2005) are used to compute probabilistic schooling profiles.

Figure 3.3: Transversal Schooling Profiles, 2002/03-2008
Percent



Source: MINEDUC Statistical Yearbooks (various years), 2008 MINEDUC School Census, 2005 NISR census projections and authors' computations.

⁶¹ Each intake rate is computed by dividing the number of new entrants (or non-repeaters) for a grade by the population of official school age for the corresponding grade. See Annex Table 3.1 for a summary of 2008 data. The intake rate for Primary 1 in 2008 is 213 percent, which is a figure obtained by dividing the number of new entrants (553,801) by the related official Primary 1 aged population (259,412).

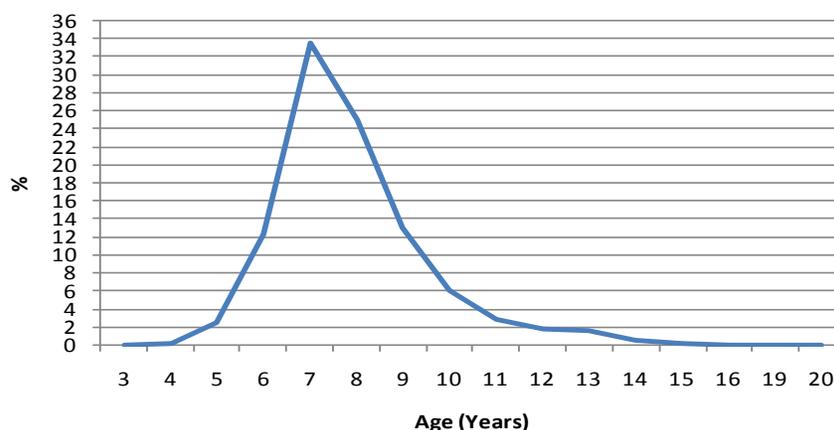
The transversal schooling profile makes it possible to visualize intake rates at each level and per given school year, thus allowing for a more refined analysis of schooling patterns. Schooling data obtained from the MINEDUC Statistical Yearbooks and the 2008 census data and 2005 national population projections are used to compute the successive intake rates for each grade, for both primary and secondary education. Figure 3.3 above presents the profiles for 2002, 2005 and 2008. Each point of the profile is the intake rate for the corresponding grade (see Annex Figure 3.1 and Annex Table 3.1).

An upward trend is observed between 2002 and 2008, with major changes occurring at the primary level, particularly in terms of access to Primary 1 (*std1* in the figure): the intake rate increased from 178 percent in 2002/03 to 213 percent in 2008. This latter figure is very high, but does not necessarily mean that all children have attended school. Rather, the high intake rate may be associated with other factors, which will be analyzed later in this chapter.

The intake rate to Primary 6 (*std6* in the figure) measures the progress toward universal primary education. Although it has increased from 43 percent in 2002/03 to 54 percent in 2008, it remains low, possibly reflecting the dropout level. In 2008, the intake rate for *tronc commun* was 29 percent, and under 13 percent for the entire secondary cycle.

Primary school fees were abolished in 2003/04. This could explain the high Primary 1 intake rate in 2005 and 2008, as many children no longer of official school age may have been enrolled as a result. However, high levels of intake rates were observed before the introduction of the fee-free policy (see Table 3.7 above), which implies that other factors are at stake. They may include the multi cohort factor attributable to out of age children returning to school, and late entry. DHS 2005 reports that only 33.5 percent of new entrants in Primary 1 were seven years-old, whereas 15 percent were under aged and 51 percent were over aged (see Figure 3.4).

Figure 3.4: Age Distribution of New Entrants in Primary 1, 2005



Source: Authors' calculation, based on data from DHS, 2005.

Although the multi cohort phenomenon may be present here, it is not sufficient to explain the significant level of intake in Primary 1. Table 3.9 shows that high levels of intake prevailed for several years, raising the possibility that other determinants are playing a role, such as:

- (i) The over declaration of enrollment, possibly to obtain higher capitation grants. However, this is believed to be minor, thanks to the control mechanisms in place;⁶²
- (ii) The underestimation of the school age population (according to the 2007 PER, the population may be underestimated by 7.5 percent); and
- (iii) The underestimation of repetition rates. The high dropout rate between Primary 1 and Primary 2 may result from pupils attending part of Primary 1 and dropping out before the end of the year. Such students are not considered to be repeaters because no official decision was made to have them repeat; but as dropouts, they will artificially inflate the number of new entrants and consequently the access level. One way to correct intake rates at each grade is to examine the alternate repetition structure (proportion of repeaters at each grade), such as that of the DHS 2005 (see Table 3.10).

Table 3.9: Gross Intake rate for Primary 1, 2002/03-2008

Percent

2002/03	2003/04	2005	2006	2007	2008
178	198	206	211	207	213

Source: Authors' calculations based on data from MINEDUC Statistical Yearbooks and 2005 NISR Census Population projections.

Table 3.10: Proportion of Repeaters in Primary Education, by Grade, 2005

Percent

	P1	P2	P3	P4	P5	P6
MINEDUC Statistical Yearbooks 2005	19.1	16.1	17.3	18.3	18.5	15.0
DHS 2005	34.4	18.1	19.5	20.3	20.7	16.6

Source: Authors' calculations from MINEDUC Statistical Yearbooks 2005 and DHS 2005.

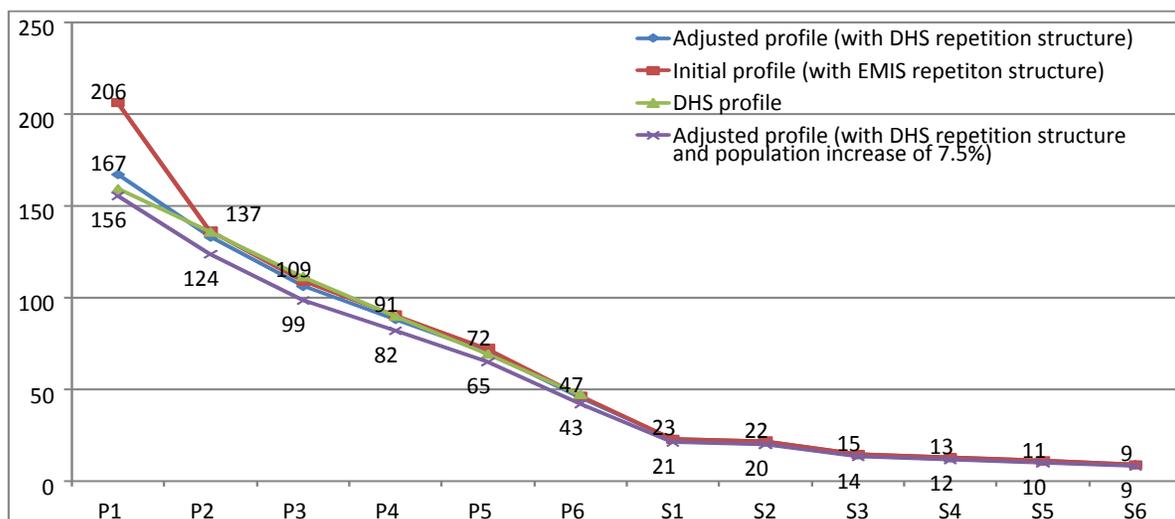
The global repetition structure provided by the 2005 DHS is consistent with the MINEDUC administrative data in all grades except Primary 1. Whereas MINEDUC reports a 19 percent repetition rate for Primary 1, the DHS reports a rate of 34 percent. The latter figure includes both: (i) pupils for whom a formal decision to repeat was taken; and (ii) children that dropped out of Primary 1 during the year to return the following year to the same grade. The latter are implicitly considered in the administrative data as new entrants, which leads to an overestimation of the global number of non repeaters/new entrants in Primary 1.

⁶² Another way to test the hypothesis is to compare administrative figures with related indicators computed from household surveys. At the primary level, the GER from the EICV 2005/06 is 141 percent, and the school data and NISR population projection gives a figure of 135 percent. The small discrepancy between the two values suggests a marginal overestimation of enrollment based on school data (Statistical Yearbooks or school census).

By applying the DHS primary level repetition structure to the 2005 administrative data, the overestimation of non repeaters can be eliminated. The underestimation of the population can also be compensated for, by inflating the population estimates by 7.5 percent (as suggested in the PER 2007). Figure 3.5 presents the resulting simulated profiles for 2005.

Figure 3.5: Transversal Schooling Profile with DHS Repetition Structure, 2005

Percent



Source: 2005 MINEDUC Statistical Yearbooks, 2005 NISR Census Projection, and authors' calculations.

Note: the DHS primary level repetition structure is applied to 2005 enrollment administrative data. The Initial profile is based on 2005 administrative data for repetition and enrollment. The DHS profile is based on DHS data for new entrants and the school aged population.

Although the estimated Primary 1 intake rate is significantly altered, variations decrease from Primary 2 onward and become insignificant for the secondary cycle. Indeed, the bias on non repeater estimates exists mainly for Primary 1. When adjusting data both for the repetition rate and the school aged population, the Primary 1 intake rate falls by 40 percent, from 206 to 156 percent in 2005. Finally, by applying the DHS 2005 assumptions with respect to the primary level repetition structure and population estimates (applying a 7.5 percent increase), new estimated gross intake rates at Primary 1 can be calculated (see Table 3.11 below).

The adjusted Primary 1 gross intake rate for 2008 is 160 percent, which is much lower than the unadjusted figure (213 percent), but is still quite high. Multi cohort is likely to be a major influencing factor, and the overestimation of new entrants and underestimation of the school aged population are also prevailing issues. Finally, immigration from neighboring countries might inflate the number of new entrants. The available data do not allow for the precise determination of the magnitude of the impact of these factors on the overall overestimation of Primary 1 intake rates.

Table 3.11: Evolution of Gross Intake Rate at Primary 1, 2002/03-2008

Percent

	2002/03	2003/04	2005	2006	2007	2008
Initial Access Rate	178	198	206	211	207	213
Adjusted for Repetition	144	161	167	168	167	172
Adjusted for Repetition and Population Underestimates	134	150	156	156	155	160

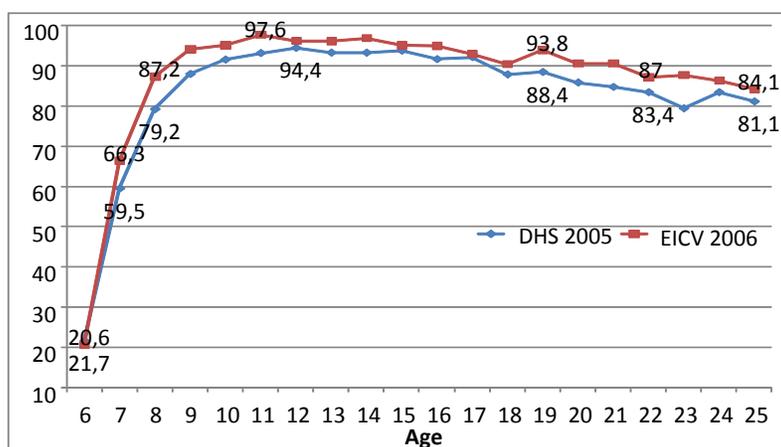
Source: Authors' calculations based on data from MINEDUC Statistical Yearbooks (various years), and the NISR 2005 national population projection.

Probabilistic Profiles. The probabilistic profile allows the intake rate to be unaffected by the multi cohort phenomenon and other factors that tend to introduce biases, as was the case with the previous transversal profile analysis.

Figure 3.6 illustrates the probability that a given generation will access primary school in the future. The two curves are almost identical, which suggests consistency in the results. The proportion of individuals that accessed Primary 1 varies between 59 and 66 percent for children aged 7 years. It reaches 21 percent for children aged 6 years, and increases with children older than 7 years. The maximum value is reached for children aged 11 years (98 percent), implying the existence of significant late entry, and a lower probability of entering Primary 1 after the age of 12 years.⁶³ The probability for a generation to access primary education is estimated at 96 percent in 2006 (EICV 2005/06),⁶⁴ which represents a substantial improvement since 2000 when the entry rate to Primary 1 was estimated at 88 percent (DHS 2000, CSR 2003). The fee-free primary education policy seems to have encouraged access, allowing almost universal access.

Figure 3.6: Share of People Who Report Ever Enrolling for Primary School, by Age

Percent



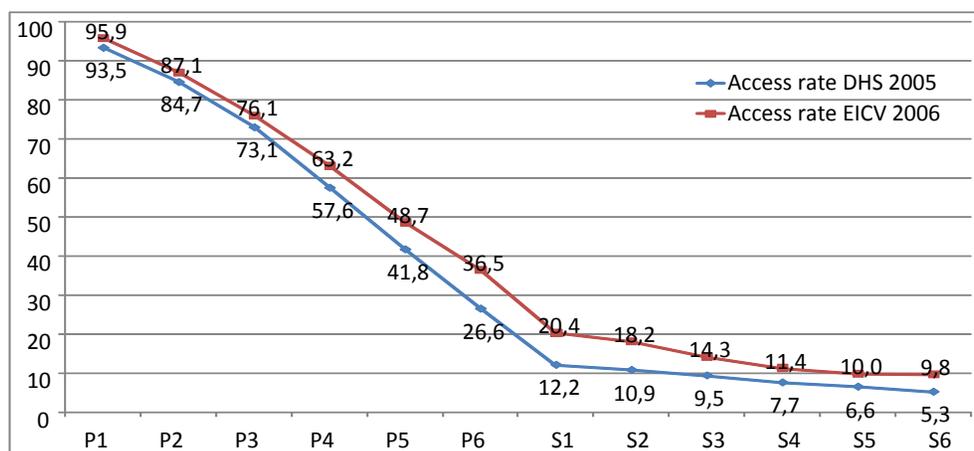
Source: DHS 2005, EICV 2005/06, and authors' computations.

⁶³ The data for ages may be imprecise, due to the low prevalence of birth registration certificates in Rwanda.

⁶⁴ Computed for the 10 to 13 year age group, to be consistent with the CSR 2004 methodology.

Household surveys allow the computation of probabilistic schooling profiles, which show the probability that a generation will access each grade of education. The results from the DHS 2005 and EICV 2005/06 are presented in Figure 3.7. Although the probability of access to Primary 1 is accurate for the year of reference (2005 for DHS and 2005/06 for EICV), the probability of access to other grades is somewhat biased. It provides a more obsolete picture, computing indicators for generations that have already reached Primary 2 and Primary 3.

Figure 3.7: Probability of Access to Each Grade, 2005 and 2006
Percent



Source: DHS 2005, EICV 2006, and authors' calculations.

Figure 3.7 shows high intake rates for primary education, with estimated probabilities of 96 percent in 2006 and 93 percent in 2005, confirming that Rwanda has nearly reached universal access to primary education. Yet nearly universal access to Primary 1 does not address the problem of retention at the primary level, which prevents many children from moving upward through the system. Furthermore, access to *tronc commun* and upper secondary is also limited, impairing children's options to pursue their studies at post primary levels.

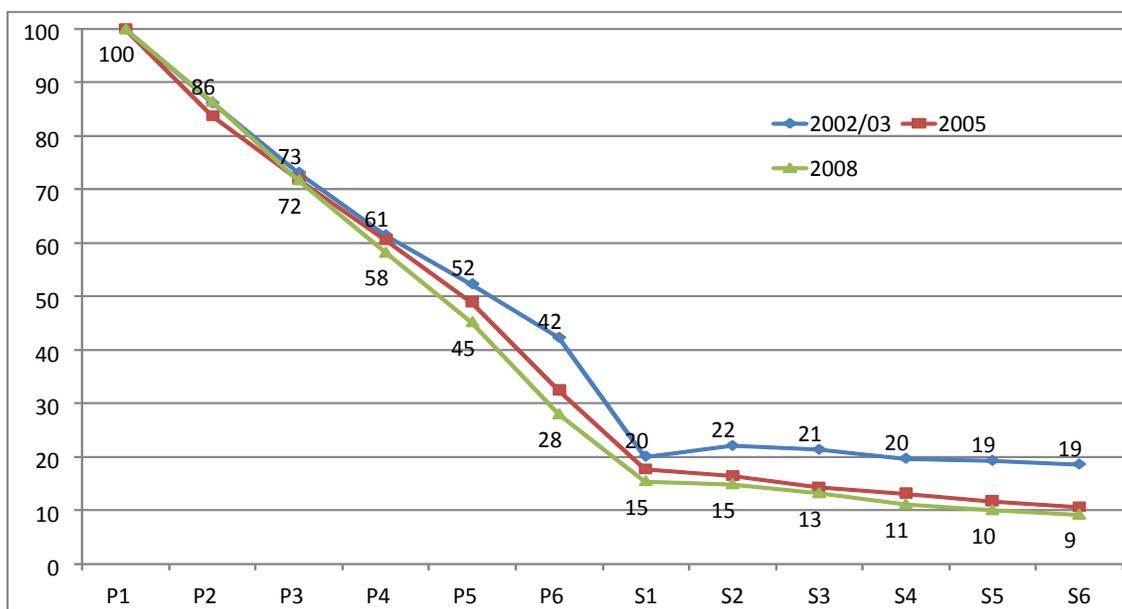
Retention Profiles. The schooling path of a cohort of 100 children who have entered school will be examined closely, with respect to how they progress through the grades and cycles, to provide some insight on the internal functioning of the education system. Retention profiles are computed using the pseudo-longitudinal method,⁶⁵ based on administrative data and adjusted for repetition using the DHS 2005 primary level repetition structure (see Annex Tables 3.2 and 3.3).

⁶⁵ The pseudo-longitudinal method differs from the "reconstructed cohort method." The "reconstructed cohort method" requires reliable information either on: (i) rates of promotion, repetition and dropouts for consecutive grades; or (ii) an assumption of the maximum number of repetitions allowed for a given grade. In this method, the promotion rates from Primary 1 to Primary 2 between 2007 and 2008 are computed by dividing the total number of new Primary 2 entrants in 2008 by the total number of students enrolled at Primary 1 in 2007. The pseudo-longitudinal method on the other hand only requires information on the "effective promotion rate" for consecutive grades, which gives the probability that a new entrant at a given grade will access the next grade. For example, the

Figure 3.8 provides a visual illustration of the retention profiles for 2002/03, 2005 and 2008. In 2008, of 100 children who entered primary school, under current conditions, 28 percent are expected to reach the end of the cycle, 13 percent to reach the end of *tronc commun* and 9 percent to reach the end of upper secondary. In 2002/03, 19 percent was expected to complete upper secondary. The analysis by level presented below provides some insight that may explain the general deterioration of retention patterns.

Figure 3.8: Retention Profile (Share of Primary Grade 1 Students who Reach Subsequent Grades) in 2002/03, 2005 and 2008

Percent



Source: MINEDUC Statistical Yearbooks 2003 and 2005, MINEDUC School Census 2008, NISR Census Projection 2005, and author's computations; Demographic Household Survey (DHS) 2005 for repetition structure at primary level only.

Note: The primary retention rate has been estimated by adjusting the enrollment rate per grade on the basis of the repetition structure reported by the DHS 2005. At secondary level, the DHS repetition structure is not reliable due to the small sample size.

From According to Table 3.12 below the following are apparent:

- (i) The low primary level retention rate (28 percent in 2008) which translates into low completion, with only one out of two children finishing primary school;⁶⁶

“effective promotion rate” from Primary 1 to Primary 2 between 2007 and 2008 is computed by dividing the total number of new Primary 2 entrants in 2008 by the total number of new Primary 1 entrants in 2007. With this method, the retention rate at a given grade is obtained by multiplying all the effective promotion rates until that grade. Annex Table 3.1 provides an illustration of the computation based on this method.

⁶⁶ Precisely estimating the primary completion rate is somewhat difficult based on available data. Instead, a range for the 2008 PCR is provided: between 49 percent (from the transversal profiles adjusted for repetition and population) and 54 percent (from the transversal profile without adjustments). See Annex Figure 3.1.

- (ii) The high secondary level retention rate, where 85 percent of students who enter *tronc commun* in 2008 are expected to complete the cycle. The retention rate in upper secondary is 83 percent;
- (iii) A decline in retention rates across levels over time, particularly in primary. Less than one third of new Primary 1 entrants in 2008 are expected to complete the cycle, compared with 42 percent in 2002/03;
- (iv) An improvement in the proportion of students progressing from primary to *tronc commun*, from 42 percent in 2002/03 to 55 percent in 2008. This figure is expected to continue to increase with the implementation of the Nine Year Basic Education strategy. Since 2009, the Primary 6 National Examination is no longer used to determine access to *tronc commun* and the MINEDUC has started to expand *tronc commun* capacity in order to better absorb students completing Primary 6;
- (v) A higher transition rate between *tronc commun* and upper secondary (84 percent in 2008) than between primary and *tronc commun*; and
- (vi) A slight decrease in the transition rate between *tronc commun* and upper secondary. A better understanding of this trend calls for further analysis.

Table 3.12: Retention and Transition Rates by Level, 2002/03-2008
Percent

Of 100 Primary 1 students, the share reaching:	2002/03	2008
Primary 6	42	28
<i>Primary 6 to Tronc Commun Transition</i>	48	55
<i>Tronc Commun 1 (TC 1)</i>	20	15
<i>Share of TC 1 students reaching TC 3</i>	86	85
<i>Tronc Commun 3 (TC 3)</i>	21 ⁶⁷	13
<i>Tronc Commun to Upper Secondary Transition</i>	92	84
<i>Upper Secondary 4 (US 4)</i>	20	11
<i>Share of US 4 students reaching US 6</i>	94	83
<i>Upper Secondary 6 (US 6)</i>	19	9

Source: MINEDUC Statistical Yearbooks (2002/3), 2008 MINEDUC School Census, DHS 2005 primary level repetition structure, and author's computations.

Note: See Figure 3.8 in this chapter.

Rwanda has not yet reached the goal of universal primary education by which all children enter and complete the cycle. In essence, our analysis indicates that although access has increased for all children, albeit overage, retention rates have not been constant, and have declined in some cases. The last section of this chapter provides a more detailed analysis of the factors affecting retention and low transition rates between the primary and *tronc commun* cycles.

⁶⁷ Survival profiles have been computed using the number of students remaining at each grade multiplied by the actual rate, over two consecutive years and the consecutive grade (based on new entrants). Transition rates may exceed 100% due to: (i) inaccurate data that year; or (ii) additional intake of students in a particular grade that year.

Equity in School Coverage

Equity is one of the key dimensions to be taken into consideration in the analysis of education systems insofar as the ultimate aim is for all children to have as equal chances of schooling as possible. Average figures of enrollment, resource mobilization and education conditions are all important in a global perspective, but their distribution is also vital, because averages may conceal significant disparities for different groups. The description of these disparities is helpful to understand their underlying reasons and examine options to minimize them.

The following section will focus particularly on school participation and student flows throughout the primary and secondary cycles, differentiated by gender, location, and income groups. Provincial disparities are not displayed here because: (i) population projections by age at the provincial level are not available for 2008; and (ii) data at provincial level from household surveys are based on the former administrative structure, which is now irrelevant.⁶⁸ All computations are based on data from the EICV 2005/06.⁶⁹

Enrollment Ratio Disparities. Table 3.13 shows that although enrollment ratios tend to be similar between boys and girls at the primary level, gender gaps widen as students move through the education system, with girls' enrollment consistently lagging behind that of boys, especially at post basic levels. Gender parity indexes decrease from 0.98 for *tronc commun* to 0.67 for higher education. Some improvement in girls' participation in higher education has occurred (the parity index rose from 0.44 in 2008 to 0.67), but it has worsened at the secondary level. The improvement in access to upper secondary education has not equitably benefited girls.

Table 3.13: Gender, Income Group, and Locality Enrollment by level, 2000 and 2006

	Primary	<i>Tronc Commun</i>	Upper secondary	Higher
<i>By gender</i>				
Male GER (%)	141	30	17	6
Female GER (%)	141	29	13	4
2006 Gender Parity Index (GER F/GER M)	1.00	0.98	0.74	0.67
		(0.88 average)		
2000 Gender Parity Index	0.98	1.00		0.44

⁶⁸ Nevertheless, an analysis of provincial disparities in schooling patterns based on the former administrative structure is presented in Annex Tables 3.6 to 3.8 for illustrative purposes.

⁶⁹ The EICV (*Enquête Intégrale sur les Conditions de Vie des Ménages* - Household Living Conditions Survey) was conducted in 2005/06 with a sample of 6,900 households. Its main objective was to assess the level of poverty in the country and its underlying causes. The derived welfare indicator relies on household consumption per capita. This indicator takes household structure and size into account to determine the equivalent level of consumption per adult. The poverty line has been estimated at RF 250 per adult per day in 2006, or approximately RF 90,000 per adult per year (*Method used for Poverty Analysis in Rwanda*, McKay and Greenwell, NISR, 2007). 57 percent of the population lives below the poverty line. Income quintiles can be used as a welfare indicator. Households are classified into 5 wealth groups (five quintiles), from the poorest (Q1) to the least poor (Q5). Each quintile represents 20% of the entire population. In Rwanda, the individuals belonging to the first 3 quintiles are largely under the poverty line, and classified as poor, while all those who belong to Q5 are not poor.

Table 3.13 Continued

	Primary	Tronc Commun	Upper secondary	Higher
<i>By income group (%)</i>				
Q1 GER (%)	128	9	4	0
Q2 GER (%)	143	20	6	0
Q3 GER (%)	147	25	13	1
Q4 GER (%)	144	44	18	2
Q5 GER (%)	148	60	33	18
2006 Wealth Parity Index (GER Q1/GER Q5)	0.87	0.15	0.11	0.02
		(0.14 average)		
2000 Wealth Parity Index	0.78	0.10		0.03
<i>By locality (%)</i>				
Urban GER (%)	144	53	29	21
Rural GER (%)	141	25	12	1
2006 Location Parity Index (GER rural/GER urban)	0.98	0.48	0.41	0.07
		(0.47 average)		
2000 Location Parity Index	0.85	0.18		0.06
Total GER (%)	141	30	15	5

Sources: 2006 figures from Authors' computations, EICV 2005/06; 2000 figures from DHS 2000 and QUID 2001 surveys (quoted in CSR 2003).

Children living in urban areas are also enrolled at higher rates than their rural counterparts, and the gaps tend to increase as students move from primary to secondary and higher education. However, location disparities have decreased over the 2000 to 2006 period. This is quite striking at the secondary level where the rural-urban parity index increased from 0.18 in 2000 to 0.47 in 2006. At the primary level, GER differences are minor (with a location parity index of 0.98, against 0.85 in 2000).

When turning to income group disparities, GERs increase with the level of income, and discrepancies across income groups grow as students progress up the education ladder: the difference is marked at the higher education level, where the parity index reaches 0.02, equivalent to a GER for students coming from the wealthiest quintile 49 times higher than the GER for students coming from the poorest quintile. Whereas gaps between the rich and poor at the post primary levels have remained stable over the period, the wealth parity index at the primary level has improved from 0.78 in 2000 to 0.87 in 2006.

Participation of Orphans in Primary School. The prevalence of orphans and vulnerable children (OVCs) is high in Rwanda, at 33 percent of children aged 6-20 years and 25 percent of all primary school aged children (7-12 years old).⁷⁰ Table 3.14 below shows that school attendance for OVCs is not significantly hampered. Only those children having lost their mother seem to have fared worse in 2006.⁷¹ In 2000, attendance rates among OVCs were systematically lower than those of children whose parents were both alive (CSR, 2004).

⁷⁰ The percentage of orphans increases with time. Eleven percent of children aged 6 years are OVCs, whereas more than 47 percent of those aged 20 years are.

⁷¹ Children who have lost their mothers represent only 16 percent of OVCs; 64.6 percent have lost their father and 19.5 percent have lost both parents. Among primary school aged children (7-12 years old), OVCs having lost their mother represent four percent of all children.

Table 3.14: School Attendance of Primary School Aged Children by Gender and Orphan Status, 2000 and 2006

Percent

	2006			2000
	Male	Female	Total	Total
Mother deceased	86.0	86.8	86.4	67.0
Father deceased	89.9	89.9	89.9	74.0
Both parents deceased	90.0	89.8	89.9	69.0
Both parents alive	87.8	89.8	88.8	75.0
Total	88.2	89.7	88.9	74.0

Source: Authors' computations, EICV 2005/06. For 2000: MICS 2000, quoted in the CSR, 2003.

However, the above results tend to be distorted by late entry. Among children aged 13-15 years, systematic lower intake rates are observed among orphans compared with non orphans. The trend is worse for orphans who have lost both parents or their mother, with an intake rate reaching only 92 percent, compared with 97 percent for their peers whose parents are both alive (see Table 3.15).

Table 3.15: Primary School Access Probability Rates for Children Aged 13-15 Years, by Gender and Orphan Status, 2006

Percent

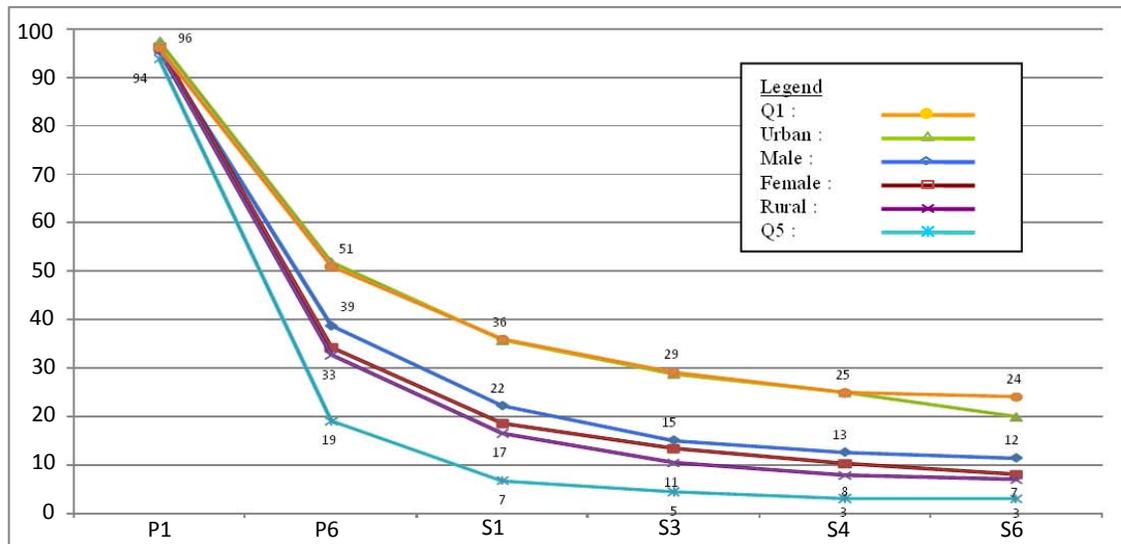
	Male	Female	Total
Mother deceased	88.7	95.9	92.4
Father deceased	94.3	96.2	95.3
Both parents deceased	92.1	91.3	91.7
Both parents alive	96.9	97.3	97.1
Total	95.4	96.4	95.9

Source: Authors' computations, EICV 2005/06.

Disparities in Student Flow Patterns. Figure 3.9 below displays simplified schooling profiles according to gender, location and income group, obtained from EICV 2005/06 data. It illustrates high levels of access to primary education for both boys and girls, with an intake rate of 96 percent. Although dropouts throughout the primary cycle tend to be high for both, they affect girls slightly more than boys: the probability of a girl reaching Primary 6 is 34 percent, whereas for boys it is 39 percent. Access to lower and upper secondary education is low for both sexes, with girls at more of a disadvantage. This may be because relatively fewer girls pass the national examination at the end of Primary 6 (see Chapter 4 on quality education), preventing them from attending publicly-funded *tronc commun* and upper secondary schools. Finally, completion probabilities for girls in lower and upper secondary are lower than those for boys, and the gender gap widens at the upper secondary level (12 percent of boys complete secondary education, while only 8 percent of girls do).

Figure 3.9: Probabilistic Profiles of Access to Select School Grades, by Gender, Location and Income Group

Percent



Source: Authors' computations, EICV 2005/06.

The location of children's homes also affects schooling patterns: children from urban areas have better access to all levels of education than their rural peers. The probability of accessing primary school is almost equal for urban and rural areas; the difference is just two percent. However the location gap increases sharply for the secondary level, to 19 percent for entry to lower secondary and 17 percent for upper secondary.

With respect to socioeconomic disparities, the probability of accessing Primary 1 for children from the poorest households (Q1: 94 percent) is similar to that for those from the wealthiest (Q5: 96 percent). However, again, significant differences appear between the groups' chances of completing primary and secondary education. Half the children from Q5 complete primary, as opposed to only 19 percent from Q1. The variation shows that although most children from the poorest households do have access to primary education, very few are likely to complete the cycle. Likewise, the poorest children are less likely to gain access to secondary education than their wealthier counterparts: the probabilities are seven and 36 percent, respectively.

Children from lower income groups face the lowest probability of completion of *tronc commun* and upper secondary education (five and three percent, respectively). By contrast, 29 percent of children from the wealthiest households complete lower secondary, and 24 percent are likely to complete upper secondary school. Interestingly, the latter result shows that even a sizable proportion of children from Q5 do not gain access to or complete upper secondary education. So, while the access to and completion of secondary education is not equitable between Q1 and Q5, they are in fact a major challenge to children from all income groups.

Significant disparities also appear among provinces. However, because data for provinces are based on the old administrative map of Rwanda, results are displayed in the Annex table 3.7.

Table 3.16 provides a recapitulation of access and completion probabilities at primary and secondary levels, and shows that: (i) access to primary tends to be relatively equitable and universal across gender, location and income groups; (ii) disparities within categories increase the higher the level of education; and (iii) disparities according to location and income groups are much more significant than gender disparities: for completion of primary, the gender gap is 12 percent, the location gap is 37 percent and the income group gap reaches 72 percent. Poorer transition and retention conditions among the most vulnerable groups, especially the poor, may account for the disparities.

Table 3.16: Access Probability Differences in Primary and Secondary Education, 2006

Difference according to	Access to Primary	Primary Completion	Access to Tronc Commun	Tronc Commun Completion	Access to Upper Secondary	Upper Secondary Completion
Urban/Rural Location Index (urban = 1)	0.98	0.63	0.47	0.37	0.32	0.36
(2000 Index)	(0.93)	(0.77)	—	—	—	—
Male/Female Gender Index (male=1)	1.01	0.88	0.83	0.88	0.81	0.70
(2000 Index)	(1.02)	(0.95)	—	—	—	—
Q1/Q5 Income Index (Q5 = 1)	0.98	0.38	0.19	0.16	0.13	0.13

Sources: Authors' calculations from EICV 2005/06; 2000 indices from CSR 2003.

Retaining the poorest students in primary schools and ensuring their transition to post primary cycles is a major issue. Trend analysis shows that retention of the poorest has worsened over the years.⁷²

Table 3.17: Composition of Household Spending on Education, by Level, circa 2000
Percent

	Primary		Secondary		Higher
	Public	Private	Public	Private	
School fees	22.7	60.2	54.4	68.4	68.4
Contribution to PTAs and other charges	6.4	0.9	5.6	1.9	0.0
Books and school supplies	24.3	15.6	11.8	9.0	8.1
School uniforms	45.0	20.1	11.6	9.0	0.3
Transportation to and from school	0.2	2.3	6.1	4.8	11.6
Other expenses	1.3	1.0	10.5	6.9	11.5

Source: CSR 2003, based on the 1999-2001 *Enquête Intégrale sur les Conditions de Vie des Ménages* (EICV).

Note: For higher education, to avoid small sample size problems, public and private sectors are dealt with as one; "public" refers to state and government subsidized schools.

⁷² Whereas the primary completion rate for Q1-Q2 students was 69 percent of the Q5 rate in 2000, this value had dropped to 44 percent by 2006.

For many households, the costs associated with schooling can deter them from sending their children to school. Although the abolition of school fees has certainly helped to reduce direct costs, all schooling costs have not been removed: data from the EICV show that school fees only accounted for 23 percent of household spending on public primary education in 2000 (see Table 3.17 above). While books and school supplies represented an equivalent expense (24 percent), the bulk of spending actually went to pay for uniforms (45 percent). Targeted financial support mechanisms may therefore be required to ensure that the poorest children complete basic education.

Equity in the Distribution of Public Resources

Within a given cohort of school aged Rwandese children, each individual will benefit differently from the public resources supporting the education system, depending on their schooling path. For instance, those who reach higher education will have absorbed a more significant share of public education resources than those who have only followed some primary education. Ultimately, the distribution of public resources across the cohort depends on: (i) disparities in schooling distribution within the cohort; and (ii) differences in average public expenditure per student by level.

In practice, in order to estimate the share of public education resources allocated across a cohort of school aged individuals, it is necessary to determine the distribution of the last grades attended within that cohort and their respective amounts of accumulated resources. The results of our analysis show that:⁷³

- (i) The 72 percent of pupils that leave school after primary absorb 27 percent of public resources;
- (ii) The 5 percent who reach higher education absorb 40 percent of public resources;
- (iii) In addition to the amount absorbed by those completing primary school, the 12 percent of students that complete *tronc commun* will benefit from an extra 14 percent of public resources; and
- (iv) Individuals completing upper secondary education (11 percent of the cohort) will benefit from an extra 19 percent of resources.

It is important to analyze to what extent some population groups benefit more than others from these public resources. A “benefit incidence analysis” compares the total amount of resources allocated to different subgroups (according to gender, location, income), with their schooling patterns and their proportion of the global population. The latter distribution is shown in Table 3.18 below, based on the EICV 2005/06 household survey data. The table confirms what has previously been observed with respect to schooling patterns: girls, individuals living in rural areas, and poorer children are under represented in post basic education.

⁷³ See Annex Table 3.4.

Table 3.18: Distribution of the Student Population (6-30 years old), by Socioeconomic Status, Location, and Gender, 2006

Percent

Education level	Socioeconomic Status					Location		Gender		Total
	Q1	Q2	Q3	Q4	Q5	Urban	Rural	Boy	Girl	
Uneducated	27	23	20	18	12	11	89	39	61	100
Primary	20	20	21	20	19	15	85	50	50	100
<i>Tronc Commun</i>	7	12	16	25	40	32	68	51	49	100
Upper Secondary	3	6	10	20	61	44	56	55	45	100
Higher	1	0	2	5	92	79	21	64	36	100
Total	20	20	19	20	21	17	83	47	53	100

Source: Authors' calculations based on EICV 2005/06 data.

Table 3.19 displays the results of the benefit analysis: (i) urban students, although accounting for only 17 percent of the population aged 6 to 30 years, benefit from 49 percent of public resources for education, 4.6 times more than their rural counterparts; (ii) boys benefit from 50 percent more resources than girls; and (iii) the wealthiest 20 percent absorbs 59 percent of public resources compared with only 7 percent for the poorest 20 percent. This is reflected by an appropriation index 7.7 times higher for Q5 than for Q1. Major gaps appear in relation to the wealthiest quintile, whereas little differences exist between the first four quintiles.

Table 3.19: Benefit Incidence Analysis Results, 2008

	Share of Global Education Resources					Share of the Population (%) (b)	(a) / (b)	Appropriation Index
	Primary (%)	Lower Secondary (%)	Upper Secondary (%)	Higher (%)	Total (%) (a)			
<i>Gender</i>								
Girls	13	7	8	15	43	53	0.82	1.0
Boys	13	7	10	26	57	47	1.21	1.5
<i>Location</i>								
Rural	23	9	10	9	51	83	0.62	1.0
Urban	4	4	8	32	49	17	2.87	4.6
<i>Wealth Index</i>								
Q1	5	1	1	0	7	20	0.37	1.0
Q2	5	2	1	0	8	20	0.41	1.1
Q3	6	2	2	1	11	19	0.55	1.5
Q4	5	3	4	2	15	20	0.73	2.0
Q5	5	6	11	37	59	21	2.83	7.7

Source: Authors' calculations based on EICV 2005/06 and cumulated public recurrent education expenditures per terminal level in 2008, from Table 3.18.

Note: 50% of primary school leavers are girls (Table 3.19), and primary school leavers absorb 27% of education resources (Table 3.18). Therefore, girls leaving school after primary benefit from 13.5% of global public education resources. The same calculation can be performed for girls leaving education after *tronc commun* (benefiting from an additional 7% of resources), upper secondary (resulting in an additional 8%), and higher education (obtaining an extra 15%). In total, girls would hence have benefited from a cumulated 43% of public resources. The same approach has been applied to the other categories. For each category, the proportion of resources effectively allocated can be compared with the respective weight of the category within the population: For instance, girls represent 53% of the population, and get 43% of public education resources.

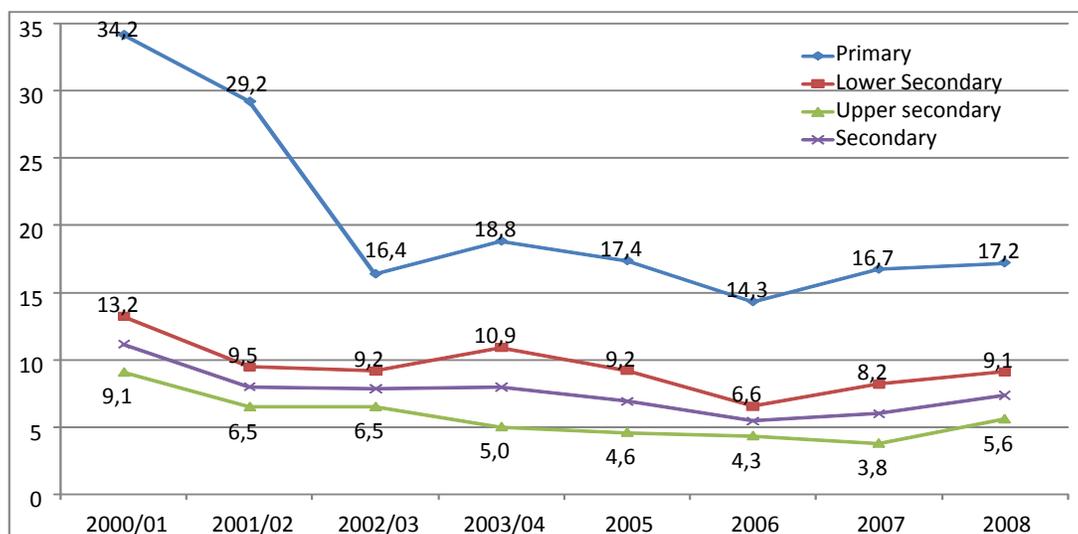
These disparities are the result of a mix of supply and demand factors, linked to local culture, the costs and affordability of education, the availability of schools, the quality of the schooling environment (the distance to school, quality of teaching, etc.), etc. In particular, it is clear that poor students drop out more than their richer counterparts.

Internal Efficiency

The internal efficiency of a given education level can be assessed by comparing the resources the system needs to achieve its current annual output (Primary 6 completers for the primary cycle) with the resources it would have spent if there were no grade repetitions or dropouts. One method to assess the internal efficiency of the education system is therefore to examine the prevalence of repetition and drop-out rates.

Repetition Trends. Repetition estimates are consolidated in Figure 3.10 and Table 3.20 below. In Rwanda, repetition is high in primary education, although it has decreased from 34 percent in 2000 to 17 percent in 2008. However, there is some evidence that administrative data understate the level of repetition,⁷⁴ as some students may be recorded as new entrants when actually they have dropped out of school and return to the same grade the following year. As discussed previously, this is particularly frequent in Primary 1.

Figure 3.10: Repetition Trend by Level, 2000/01-2008
Percent



Source: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census.

⁷⁴ The DHS 2005 estimate is of 21.6 percent, 4.2 percent higher than the administrative data figure.

The pattern of repetition is similar from one grade to another, although the level of repetition rates is clearly higher for Primary 1. The repetition rate for Primary 6 is lower than for other grades, which is surprising when considering that students who fail the end of primary national examination may attempt to sit the exam again by repeating that grade. Apparently, this is not the case.

The lower rate may be explained by the fact that students who reach Primary 6 are among the best performing, and students prone to repeat have already dropped out. The abolition of the end of primary national examination in 2009 is ultimately expected to improve retention within the primary cycle, and smoothen the transition to *tronc commun*.

Table 3.20: Repetition Trend for the Primary Cycle, by Grade, 2002/03- 2008
Percent

	P 1	P 2	P 3	P 4	P 5	P 6
2002/03	19.1	14.0	14.7	15.8	17.0	17.7
2005	19.1	16.1	17.3	18.3	18.7	15.0
2008	18.6	15.9	16.5	18.0	18.7	15.8
DHS 2005	34.4	18.1	19.5	20.3	20.7	16.6

Source: MINEDUC Statistical Yearbooks, 2008 MINEDUC School Census, NISR and author's calculations.

Secondary cycle repetition is low at 7.8 percent on average.⁷⁵ The rates are higher for *tronc commun* (9.1 percent average in 2008) than for upper secondary (5.6 percent average in 2008), with no marked trends from one grade to another (see Table 3.21).

Table 3.21: Repetition Trend for the Secondary Cycle, by Grade, 2002/03- 2008
Percent

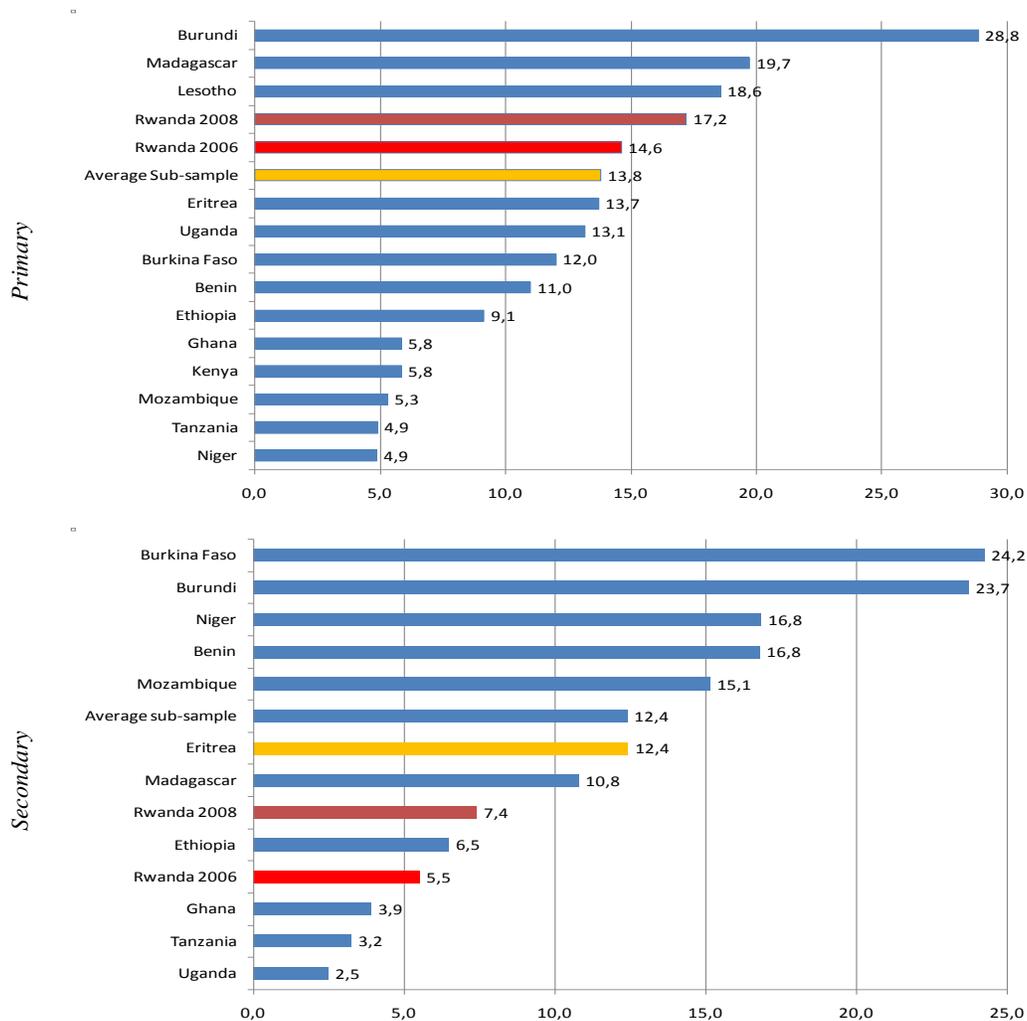
	<i>Tronc Commun</i>			Upper Secondary		
	S 1	S 2	S 3	S 4	S 5	S 6
2002/03	7.7	9.9	9.9	5.6	6.4	7.6
2005	8.5	8.7	10.5	6.0	5.4	2.5
2008	7.9	11.0	8.4	5.5	6.4	5.0

Source: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census.

Figure 3.11 below shows how Rwanda fares in comparison to other African countries in terms of repetition. The primary education repetition ranking was very close to the average registered for the subsample of African countries for 2006, but increased from 14.6 to 17.2 percent by 2008. The secondary level repetition rate is particularly good, below the subsample average of 12.4 percent.

⁷⁵ The average is calculated as the total number of repeaters over the total number of students in secondary.

Figure 3.11: Repetition Rates at Primary and Secondary Schools in African countries, circa 2006
Percent



Source: World Bank, 2009; Rwanda: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census.

Internal Efficiency Coefficient. As mentioned above, detailed data on student flow patterns (including repetition, dropout and reversely, retention) make it possible to estimate an aggregate internal efficiency coefficient. One can also estimate two related partial internal efficiency coefficients, respectively based on a scenario with only repetition (and no dropouts), and one with only dropouts (and no repetitions).

Table 3.22 below provides an estimation of the internal efficiency of the primary and secondary cycles, summarized by the aggregate internal efficiency coefficient and its two related partial indicators. The latter provide insight into the degree of inefficiency and wastage attributable to perturbation in student flows due to dropouts or repetitions. Educating a child is costly for the system, regardless of whether he/she completes the cycle. Students who do not complete primary

school have very little chance of becoming literate. Therefore, the “consumption” of student-years by children who drop out of school before the end of the cycle is considered to be a net waste of public resources. Similarly, repetition imposes an extra burden on the system, as it costs two or more schooling years to achieve one year’s learning. These “unproductive” years of schooling prior to dropouts or due to repetition are a misuse of already scarce public resources.

Table 3.22: Internal Efficiency Coefficients in Primary and Secondary Schooling, 2002/03-2008

	2002/03	2008
Primary		
Internal Efficiency Coefficient	56	39
Dropout related (without repetitions)	73	52
Repetition related (without dropouts)	77	76
<i>Student-years required to produce one graduate</i>	<i>12.9</i>	<i>18.3</i>
Tronc Commun		
Internal Efficiency Coefficient	93	82
Dropout related (without repetitions)	102	91
Repetition related (without dropouts)	91	91
<i>Student-years required to produce one graduate</i>	<i>3.6</i>	<i>4.0</i>
Upper Secondary		
Internal Efficiency Coefficient	94	91
Dropout related (without repetitions)	101	96
Repetition related (without dropouts)	94	95
<i>Student-years required to produce one graduate</i>	<i>3.4</i>	<i>3.5</i>
All Secondary (Tronc Commun and Upper)		
Internal Efficiency Coefficient	79	72
Dropout related (without repetitions)	86	78
Repetition related (without dropouts)	92	92
<i>Student-years required to produce one graduate</i>	<i>8.3</i>	<i>8.7</i>

Source: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census; DHS 2005 for the primary level repetition structure.

The internal efficiency coefficient (IEC) is the ratio between the cumulated student-years invested in a system with no student flow problems, and the actual cumulated student-years invested given the current pattern of dropout and repetition (therefore taking into account the additional schooling-years attributable to repetition and the wasted years attributable to dropouts). An education system with no dropouts and no repetitions would have a coefficient of 100.⁷⁶

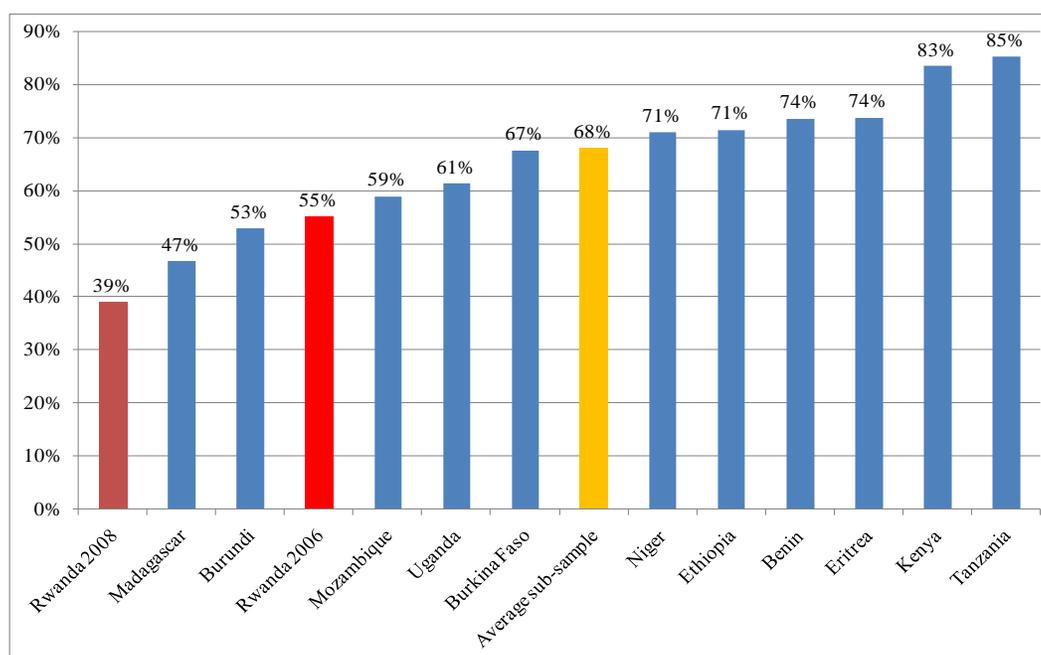
The 2008 primary level IEC is particularly low at 39 percent, implying that 61 percent of public resources are wasted on repeated years or schooling-years prior to dropout. This means that the system effectively requires 18 student-years to produce one primary level graduate, instead of the planned six years (with perfect efficiency). The situation has worsened since 2002/03, when the IEC was 56 percent. High dropout rates have the greatest adverse impact on primary education internal efficiency. Without dropouts, the internal efficiency coefficient would have been 76 percent.

⁷⁶ Dropout and repetition related coefficients are also useful to characterize the magnitude of the wastage.

Although efficiency is higher at the *tronc commun* level, the IEC declined to 82 percent in 2008, compared with 91 percent in 2002/03. This can be attributed to dropouts, as shown by the degradation of the related partial indicator. At the upper secondary level, similar conclusions can be drawn: the IEC dropped from 94 to 91 percent over the period, also because of an increase in dropouts.

International comparisons shed some light on the magnitude of the inefficiencies of Rwanda’s education system. As shown in Figure 3.12, Rwanda fares relatively poorly compared with other countries in the region. Its level of efficiency is below the average of the sample of African countries.

Figure 3.12: Primary Level IEC for Various African Countries, circa 2006



Source: World Bank, 2009. Rwanda: author’s calculations from 2006 MINEDUC Statistical Yearbook and 2008 MINEDUC School Census.

Retention in Primary and Transition from Primary to Tronc Commun

This section analyzes the main issues that contribute to the high primary cycle dropout rates. Supply-side factors (such as the availability of “complete schools” that cover Primary 1 to Primary 6) as well as demand-side factors (such as family and individual characteristics) are specifically discussed.

Supply-side Factors. Supply-side factors appear to have little impact on retention. Ninety four percent of primary schools offer the full six grade cycle, and less than 2 percent of students are enrolled in schools offering an incomplete cycle of education. This indicates that intra-school discontinuity is a minor issue in Rwanda.

A primary cycle retention model using EICV 2005/06 data has a low explanatory level (7 percent), which does not allow the drawing of any conclusions. In addition, no empirical evidence exists that the availability of schools in the community has an impact on student retention. School equipment (such as drinking water and latrines) did not appear to have any significant effect either. Factors other than those related to supply-side issues therefore seem to be at stake in explaining low retention. In some countries, the quality of teaching (pupil to teacher ratio, provision of textbooks, double shifts, etc.), the relevance of the curricula taught and the alignment of the school calendar with local economic activities are factors that contribute to dropout. Unfortunately, insufficient data exists to perform this analysis in Rwanda.

The 55 percent rate of transition from primary to *tronc commun* was still low in 2008, although it has increased over the years. This trend is consistent with the increase of available secondary schools, relative to primary schools: in 2008, 28 secondary schools were available for every 100 primary schools, compared with 18 in 2002/03 (see Table 3.23).

Table 3.23: School Availability at Primary and Secondary Levels, 2002/03-2008

	2002/03	2003/04	2005	2006	2007	2008
School Size						
Average School Size in Primary Level	743	775	810	870	907	901
Average School Size in Secondary Level	442	404	395	414	414	418
Ratio Primary/Secondary School Size	1.7	1.9	2.0	2.1	2.2	2.2
Number of Schools						
Total Primary	2,203	2,262	2,295	2,323	—	2,432
- Public and Government Subsidized	2,162	2,206	2,228	2,242	—	2,288
- Private	41	56	67	81	—	144
Total Secondary	405	504	553	579	643	689
- Public and Government Subsidized	190	286	337	356	405	466
- Private	215	218	216	223	238	223
Number of Secondary schools for 100 Primary Schools	18	22	24	25	27	28

Source: MINEDUC Statistical Yearbooks (various years) and 2008 MINEDUC School Census.

Because retention within the secondary cycle is relatively stable and high, an increase in the supply of *tronc commun* level schools should translate into higher access to and completion of the *tronc commun* level under current schooling conditions and educational practice, contributing to the achievement of nine year basic education for all.

Increasing the supply of secondary schools, especially at the *tronc commun* level, is therefore one of the government's major priorities, for which it has a two-pronged strategy:

- (i) The expansion of a pool of existing primary schools into *Ecoles Secondaires Inférieures* (ESI) that will offer nine years of basic education, which is likely to increase school size. To ensure the adequate management of large schools, MINEDUC intends to promote the hiring of head masters with the highest level of qualifications who are specifically trained in school management; and
- (ii) Enhance public-private partnerships, to allow more students to pass from primary to *tronc commun*. MINEUDC intends to subsidize students in private schools.

Demand-side Factors. To evaluate the impact of demand-side factors on retention, an analysis was conducted of the relation of gender, socioeconomic and location indicators to Primary and *Tronc Commun* completion, on the basis of EICV 2005/06 data. Specifically, the impact of the following variables was considered: urban or rural location, the gender of the head of household, the household wealth index, household size, gender of the child, and number of primary grades repeated. Two age ranges were used (19-24 and 21-25 years), using cut-off points providing close certainty that all children having ended the level have been taken into account, which prevents underestimations related to late entry and/or repetition, or unreasonable bias (see Annex Tables 3.5 and 3.6).

For survival to Primary 6, we found that all the variables have a significant effect. Wide disparities exist in retention rates according to location, household and child characteristics. Retention in Primary 6 is 9.2 percent lower for children living in rural areas compared with their urban peers, and is 3.4 percent lower for girls compared with boys. Differences related to wealth are even more important: the probability that a child from Q5 should reach Primary 6 is nearly 35 percent higher than for a child from Q1. Large families, and those whose head of household is a woman also achieve significantly better retention rates. Finally, the repetition rate has a decisively negative impact: the probability of completing primary education is inversely proportional to the repetition rate.

Some alternative models have been run (see Annex Tables 3.8 and 3.9) to assess the impact of other variables: province of residence (based on the former administrative structure), orphanhood status and school characteristics. Survival rates are lower in the rural provinces than in the city of Kigali, with the difference ranging from 9.6 to 15.5 percent.⁷⁷ The low explanatory power of the model indicates that many other uncaptured factors are present, possibly including the quality of the school environment. Finally, it is worthy of note that the factors of orphanhood, the proximity of the school to the community, and the level of school water and sanitation equipment do not have an impact on retention.

The probability of children reaching Secondary 3 is also reviewed, in the light of the Nine Year Basic Education policy. Similarly to survival to Primary 6, differences can be observed according to location, socioeconomic and individual characteristics. Children living in urban areas are more likely to reach the last year of *tronc commun*. No significant difference appears between the middle income (Q2 and Q3) and the poorest households (Q1). However, major gaps appear between all of these (Q1 to Q3) and the remaining wealthiest families (Q4 and Q5), where the probability of reaching Secondary 3 is 31 percent higher. Family size again has a positive impact on retention, probably because the availability of some children at home reduces the likelihood of those enrolled in school being needed elsewhere, and helps finance their schooling costs. Here again, primary level repetition has a negative impact on retention. However, there are no significant differences between boys' and girls' survival rates in *Tronc Commun*, all other factors being equal.

⁷⁷ The difference is starkest in the former provinces of Kibungo, Ruhengi, Umutara, and Gisenyi Butare, and is also significant for the former province of Kigali Ngali.

Conclusions and Policy Implications

Impressive Progress. Access to education has improved at all levels between 1999 and 2008. Preprimary education recorded the highest relative increase, although this level also had the lowest initial starting point. The primary cycle grew by a factor of 1.7 during the period, *tronc commun* by a factor of 2.7, upper secondary by a factor of 2.8 and higher education by a factor of 4.8. Rwanda's primary and higher education GERs are higher than those of other Sub-Saharan African countries, although it has lower rates for *tronc commun* and upper secondary. Given the shortage of school teachers, the one area of concern is the negative trend in student enrollment in upper secondary pedagogical streams, with a 70 percent decrease since 2001/02. The government is increasingly relying on the private sector to meet the rising demand in the education system, particularly at the post basic education levels.

Improve the Internal Efficiency of the Education System. Improving the internal efficiency of the education system, starting with that of the primary cycle, will be Rwanda's most significant challenge to meet the MDG goal of universal access to and completion of primary education, as well as to progress toward the targets set in the Nine Year Basic Education strategy. Although access to primary is almost universal, primary completion rates remain low, at 54 percent in 2008 (relative to the average for Sub-Saharan African countries of 66 percent). The analysis shows an increase in dropout rates at the primary level between 2002/03 and 2008. Dropout can be mainly attributed to: (i) high repetition rates (on average, 17 percent of primary students were repeaters in 2008); and (ii) the fragility of school demand, particularly on behalf of the most vulnerable children (girls, children from rural areas, the poor and children with disabilities). The challenge for the government is to ensure that targeted support is available for children with special needs.

Many African countries are questioning whether repetition has any positive effect, considering its high cost. Some countries that have successfully reduced primary level repetition or that have low repetition rates have institutionalized the systematic promotion of students within primary sub-cycles (for example Niger, Benin) or throughout their entire primary schooling system (for example Tanzania), thus structurally eliminating repetition. However, this type of administrative policy should be coupled with remedial pedagogical measures to ensure that weaker students are not left behind.

Better internal efficiency exists at the secondary level. However, government efforts to sustain low dropout levels must be pursued, given that retention rates have declined since 2002/03.

Enhance Student Flow Management between Grades. The Nine Year Basic Education strategy aims to improve the transition rate from primary to *tronc commun*. The abolition in 2009 of the Primary 6 National Examination as a screening device to restrict access to *tronc commun*, paired with the increase in the number of secondary schools, is expected to improve this transition rate. It should also improve access to and completion of *tronc commun*, assuming that dropout rates remain low. In the meantime, the government will need to provide adequate administrative staff and training to ensure that the management of larger schools, such as the new ESI, does not compromise education quality.

The transition rate between *tronc commun* and upper secondary is high in Rwanda (84 percent) compared with other Sub-Saharan African countries (65 percent on average). The next challenge

for the government is to monitor the impact of increased access at this level on the quality of teaching and learning.

Focus on Socioeconomic and Geographical Disparities. Rwanda has met the MDG goal on gender parity in basic education. Female enrollment in higher education has also shown a marked improvement between 2000 (33 percent) and 2006 (42 percent), but sustained efforts will be needed to continue to improve girls' access to and retention in higher education.

Analysis shows that disparities according to geographical location and income are greater than those related to gender, and worsen as students progress through the education system. At the end of primary education, 60 rural students are enrolled for every 100 urban students, whereas at the end of *tronc commun* this figure drops to 40. Regional disparities also exist. Analysis also shows that whereas nine out of the twelve provinces (according to the former political geography) show almost universal access to primary education, discrepancies emerge with respect to dropouts.

Regarding income related disparities, at the end of primary education only 40 students from the 20 percent poorest families attend school for every 100 students from the 20 percent wealthiest families. The gap is wider at the *tronc commun* level, with only 20 students from the poorest quintile attending school for every 100 of their wealthier counterparts. The main challenge for the government is now to retain children from rural and poor families in primary schools, and ensure their transition to post primary levels. Specific, well designed and targeted support mechanisms will be required. For many households, direct costs associated with schooling remain high despite the removal of school fees. In addition, efforts to support OVCs (either through the Genocide Fund, district education funds or other mechanisms) must be continued in order to remove inequities in schooling access.

Removing socioeconomic and geographical disparities across the education system requires targeted support mechanisms, based on current and accurate data on those students at risk of not accessing, repeating or dropping out of schools. The Education Management Information System that is currently being launched should provide the necessary and timely data to track progress and challenges, and feed this information back into the system to enable adequate policy monitoring and evaluation.

CHAPTER 4: QUALITY IN EDUCATION – LEARNING CONDITIONS AND OUTCOMES

Chapter Overview

The previous chapter examined the efficiency of the Rwandese education system and noted the impressive growth in enrollment in the past decade, particularly at the primary level. The government has shown strong political commitment to improving access to education and in recent years has focused its attention on the next challenge: providing quality education for all. The internal efficiency analysis in the previous chapter identified key indicators reflecting some challenges in the education system. These include low completion rates, particularly in primary education, and the wastage of resources attributable to low retention and high repetition rates. These indicators in particular probably point to the quality of the education delivered as a contributing factor.

This chapter examines two facets of quality in education: learning conditions and learning outcomes. The section on learning conditions focuses on key school resources and describes their distribution across provinces at the primary and secondary levels. The government's recent reform of the textbook procurement process is also described. In the section on learning outcomes, adult literacy and literacy retention rates are examined as a way of assessing how much students are learning in Rwandese schools. National student examination results from Primary 6, Secondary 3 (*tronc commun*) and Secondary 6 are also examined. Given the importance of teacher management and deployment in improving the quality of education, the next chapter (Chapter 5) is specifically devoted to this topic.

Definition of Quality of Education in Rwanda

The Economic Development and Poverty Reduction Strategy, 2008-2012 and the Education Sector Strategic Plan, 2006-2010 (ESSP) articulate the importance of continuing to expand access to education while improving quality in an equitable manner. MINEDUC is leading the implementation of the ESSP and is considering the establishment of a Quality Improvement Working Group, which would consist of key government officials and development partner representatives.

Quality of education, broadly speaking, can be viewed as a set of factors within the education system that are believed to lead to better student outcomes, including measurable dimensions of student learning. Quality education may comprise the sufficient and effective supply of direct resources to schools (infrastructure, teachers, and learning and teaching materials), pedagogical support, a supportive school climate, and the effective management and administration of the education system. Student learning is also influenced by the extent and nature of parent and

community support to schools, as well as by the socioeconomic characteristics of children and their families. Equity is yet another dimension of quality, because any education system would be hard pressed to claim it offers quality education without addressing equity imbalance issues.

According to the Quality Improvement Working Group of Rwanda, the meaning of quality of education is captured by the following definition:

“A quality education is defined as all children leaving school equipped with the skills, knowledge, attitudes and values needed for Rwanda’s economic and social development and for their own further educational and social development.”¹

MINEDUC has adopted quality standards for primary, secondary and higher education institutions, which have been approved by the cabinet. The Workforce Development Authority is currently developing quality standards for TVET.

The quality standard guidelines stipulate that the delivery of quality education requires:⁷⁸

- (i) Healthy learners, both physically and psychologically, ready to participate and learn, and supported in learning by their families and communities;
- (ii) Trained, motivated and well supported teachers using learner centered interactive teaching approaches in well managed classrooms;
- (iii) Skillful assessment to facilitate learning and reduce inequities;
- (iv) Stimulating environments that are also healthy, safe, secure, protective of children’s rights and gender sensitive, with adequate resources and facilities;
- (v) Content and materials that reflect the relevant curricula, including textbooks, readers’ and other didactic material, including material made from locally available resources. These should promote the acquisition of positive values and basic skills, such as: literacy; numeracy; critical life skills such as problem solving, lifelong learning, and communication; IT skills; and healthy living, including HIV/AIDS prevention and environmental education;
- (vi) Well-managed schools, where head teachers, teachers, parents, children and the wider community contribute to school planning, learning environments and accountability; and
- (vii) A reflection on how the system is performing and whether it is meeting the needs of students, parents, communities and employers.

⁷⁸ Based on *Defining Quality in Education*, UNICEF, 2000 and the concept note *Delivering Quality Basic Education for All and Setting-Up of the Quality Implementation Working Group*, MINEDUC, 2009.

The government has taken steps to improve the education system in adherence with the above guidelines, such as the approval of policies and costed strategic plans in key areas, including textbooks, teacher management and development, girls' education, school health and TVET. Policies on early childhood development, adult literacy, sports and educational infrastructure, and post basic education are under development.

Their implementation will further enhance the quality and relevance of the education system. To improve learning outcomes, the government has also prioritized the reform of the curricula to enhance their relevance to students' individual needs, as well as to broader societal and labor market demands. Between 2003 and 2009, subjects in the primary and *tronc commun* curricula have been streamlined to be more focused on core skills relevant to the labor market, while ensuring substantive links between the two cycles to facilitate a smooth transition.⁷⁹

Learning Conditions in Primary and Secondary Education

Overview of Basic School Resources in Primary Education. Table 4.1 summarizes the 2008 distribution of key school resources across the five provinces for the primary level. The disparity in the pupil to classroom ratio is clear across provinces. Schools in the provinces of Kigali and the South have lower pupil to classroom ratios (57 to 1 and 68 to 1 respectively) than those in the East (77 to 1). Although schools with access to separate latrines for girls and boys are relatively equally distributed across provinces, the geographical disparity with respect to access to water and electricity is significant. In particular, only 55 and 64 percent of schools in the West and South provinces have access to water, compared with 84 percent in Kigali. Seventy-three percent of schools in Kigali have electricity, whereas the other provinces hover at or below the national average of 25 percent.

Similar discrepancies are noted in the pupil to teacher and pupil to qualified teacher ratios, which are further discussed in Chapter 5. On the other hand, the pupil to textbook ratio (1.6 to 1) varies very little across provinces, at an average of about two textbooks for every three students.

Table 4.1: Distribution of Primary School Resources across Provinces, 2008

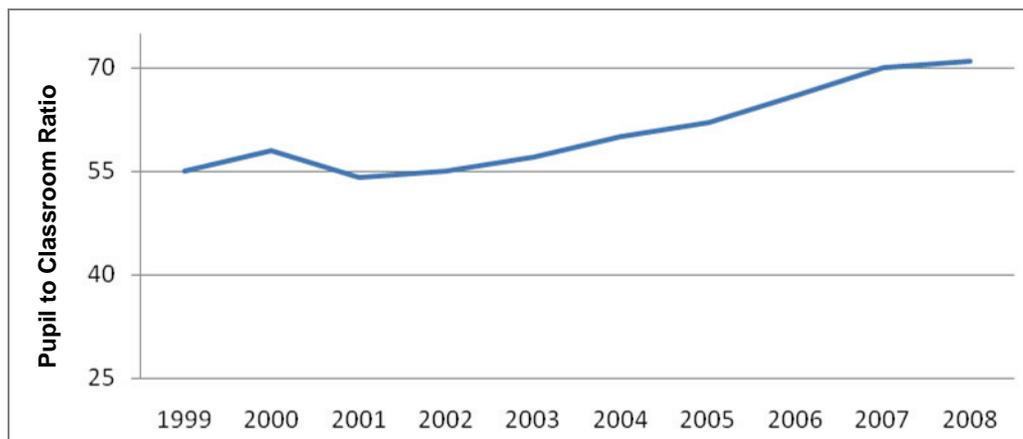
	South	North	West	East	Kigali	TOTAL
Pupil to Classroom Ratio	68.4:1	71.8:1	71.5:1	76.9:1	57.0:1	70.7:1
Schools with Separate Toilets (%)	91	95	92	95	95	93
Schools with Access to Water (%)	64	70	55	74	84	66
Schools with Electricity (%)	21	24	19	25	73	25
Pupil to Teacher Ratio	61.2:1	63.8:1	63.2:1	63.9:1	47.9:1	61.6:1
Pupil to Qualified Teacher Ratio	66.2:1	68.6:1	68.2:1	70.6:1	50.2:1	66.7:1
Pupil to Textbook Ratio	1.6:1	1.7:1	1.6:1	1.6:1	1.6:1	1.6:1

Source: MINEDUC School Statistics 2008, and author's calculations.

⁷⁹ The curriculum for upper secondary education is currently being revised.

Although MINEDUC has collected data on the above indicators annually since 1999 through school censuses, an analysis of trends for access to water, electricity, separate toilets, and textbooks is not possible given that the raw data have not been aggregated at the provincial level. With the launch of EMIS in 2009, these indicators will be more readily available, thus enabling trend analysis in the future. Conversely, raw data on the number of classrooms, teachers and qualified teachers are available. Therefore trends can be established for the pupil to teacher, pupil to qualified teacher, and pupil to classroom ratios (see Figure 4.1). Although the number of classrooms has risen between 1999 and 2008, it has not kept up with the pace of student enrollment. This has resulted in an annual increase in the pupil to classroom ratio, which reached a peak of 71 to 1 in 2008. Because data on the number of classrooms available are not disaggregated by type of school, checking for disparities in the pupil to classroom ratio between public or government subsidized schools and private schools is not possible.

Figure 4.1: Pupil to Classroom Ratio, Primary Level, 1999-2008



Source: MINEDUC School Statistics 1999-2008.

Overview of Basic School Resources in Secondary Education. The Nine-Year Basic Education strategy aims to expand the progress Rwanda has made at the primary level to include *tronc commun*. Not surprisingly, access to post basic education is lower, but the provision of basic resources is better at the secondary than at the primary level. The one exception is the pupil to textbook ratio.

Table 4.2 below summarizes the 2008 distribution of key school resources at the secondary level. Only the number of students data are currently disaggregated by *tronc commun* and upper secondary, so the table reflects the aggregate of the two subcycles.⁸⁰

⁸⁰ In order to monitor progress on the Nine-Year Basic Education strategy and its impact on expanding access to and the quality of education at the *tronc commun* level, the government will need to disaggregate key education indicators by primary, *tronc commun* and upper secondary levels.

Whereas the pupil to classroom ratio in the East province continues to lag behind, it is highest in Kigali at 35.3 to 1, above the national average of 27.3 to 1. This is probably a result of the higher enrollment ratios in urban areas, which tend to use schools at full capacity. This is the case even though, as noted in Chapter 3, the location parity gap for secondary enrollment has improved, from 0.18 in 2000 to 0.44 in 2006.

Secondary schools with access to separate latrines for girls and boys are distributed across provinces fairly equally. However, the share of schools with access to water, electricity, and a computer reflect a geographical divide: more than 92 percent of schools in Kigali fulfill these criteria on the one hand, whereas only 63 and 67 percent of schools in the North and East provinces have these three inputs, at most.

Table 4.2: Distribution of Secondary School Resources across Provinces, 2008

	South	North	West	East	Kigali	TOTAL
Pupil to Classroom Ratio	22.4:1	27.3:1	24.9:1	28.3:1	35.3:1	27.3:1
Schools with Separate Toilets (%)	98	96	96	99	100	98
Schools with Access to Water (%)	86	78	88	79	92	84
Schools with Electricity (%)	82	72	79	76	93	79
Schools with a Computer (%)	79	63	76	67	93	74
Pupil to Teacher Ratio	24.1:1	27.2:1	27.8:1	27.0:1	27.4:1	26.9:1
Pupil to Qualified Teacher Ratio	29.3:1	48.8:1	55.9:1	54.1:1	59.2:1	48.4:1
Pupil to Textbook Ratio	7.3:1	5.3:1	7.6:1	3.7:1	4.5:1	5.3:1

Source: MINEDUC School Statistics 2008, and author's calculations.

Within secondary schools, 5.3 students share one textbook on average, which is much worse than at the primary level. Furthermore, the disparity in the pupil to textbook ratio within secondary schools is important, ranging from 3.69 to 1 in the East province to 7.38 to 1 in the West province. Because of current data constraints, explanations for disparities in the pupil to textbook ratio at the secondary level are not explored in this report.

Except for textbooks, secondary schools tend to be better resourced than primary schools. Eighty four percent of secondary schools have access to water, compared with 66 percent of primary schools; and 79 percent of secondary schools have access to electricity, compared with only 25 percent of primary schools. These disparities are equally true of the pupil to teacher and pupil to qualified teacher ratios, which are discussed in Chapter 5.

Infrastructure. In 2008, Rwanda had 2,432 schools and nearly 31,000 classrooms at the primary level, and 689 schools at the secondary level.⁸¹ These totals include public, government subsidized and private schools.⁸² Most primary schools are government subsidized, whereas the share is almost equally distributed among the three types of schools at the *tronc commun* level.

⁸¹ The number of TVET institutions is not specified in the available data.

⁸² The difference between public and government subsidized schools relates to the manner in which they are funded and managed: public schools are funded and managed entirely by the government whereas *government subsidized schools* are funded by the government but operated by non governmental organizations.

Table 4.3: Share of Recognized Schools, by Level and Type, 2008

Percent

	Public	Government Subsidized	Private	Total
Primary	29	67	4	100
<i>Tronc Commun</i>	34	32	34	100
Upper Secondary	23	33	44	100

Source: RNEC.

Private schools are most common in upper secondary, and indeed they are very popular: 53.8 percent of upper secondary students enroll there, although they only represent 44 percent of total available institutions (see Table 4.3). Conversely, at the primary and *tronc commun* levels, the proportion of private schools is higher than their share of enrollment. Four percent of all primary schools attract 2.4 percent of students, and 34 percent of all *tronc commun* schools attract 27.6 percent.

Kigali concentrates a relatively high proportion of all Rwandese private schools: 38 percent of private primary schools and 24 percent of private secondary schools are located there. Also, private schools represent an important share of all of Kigali's schools: 34 percent of primary schools and 73 percent of secondary schools are private. However, the share of both primary and secondary students enrolled in private schools is low relative to public schools, because they tend to be smaller.

A recent review of school infrastructure revealed that the current supply of classrooms and latrines was insufficient to meet the 2010 projected needs. On the basis of the traditional school construction process, it was estimated that more than RF 36.6 billion would be required to build an additional 3,172 classrooms and 10,846 latrines to accommodate the students expected to enroll in 2010.

In 2009, MINEDUC responded by developing a temporary process to lower the cost and expedite the construction of classrooms and latrines, by encouraging school and community based participation. The temporary method aimed to promote ownership of the construction process by enhancing the community's active participation in the financial management and decision making processes. The community contributes money, time, labor, or construction materials to the extent possible, no matter how small. In February 2010, the government announced the completion of 97 percent of the needed classrooms and 85 percent of the latrines, for a lesser budget than that allocated to school infrastructure (RF 9.9 billion).

The temporary school construction program was coordinated at the central level by a steering committee composed of the Ministers of Education, Local Government, Finance, Defense, Internal Security, Infrastructure, Natural Resources, Youth and Information. A national task force met once a week to assess implementation progress. A technical team composed of 35 engineers and 374 technicians oversaw the construction work nationwide. At the provincial, district, sector and school levels, the program was coordinated by task teams created to ensure that the temporary program was completed by December 2009. At each level, a quality control process ensured that the standards and norms developed by MINEDUC were followed.

Teaching and Learning Materials. The provision of teaching and learning materials, including the distribution of textbooks, is a key factor in providing quality education for all. MINEDUC's 2003 textbook policy notes that one of the major tasks it faces is to "facilitate universal student access to all textbooks necessary for the study of national curricula, according to stated student to textbook ratios." Textbooks are allocated based on the number of students and the official target is a pupil to textbook ratio of 1 to 1 in both primary and secondary cycles. The 2008 data presented in Tables 4.1 and 4.2 above indicate that the global target pupil to textbook ratio was close to being reached at the primary level but remains well above the national target at the secondary level.⁸³ Furthermore, textbooks are more equally distributed across provinces at the primary level than at the secondary level.

A series of textbook studies initiated in 2007 identified several constraints that have affected the availability of textbooks in Rwanda:⁸⁴ (i) textbook distribution is heavily dependent on the availability of funds, which affects the government's ability to conduct adequate planning, and may not effectively respond to supply and demand; (ii) the evaluation of textbook publishing bids often take a long time; (iii) teachers feel that they are insufficiently involved in the textbook selection process; and (iv) textbooks may be damaged because of poor distribution and stock management. These factors result in discrepancies in pupil to textbook ratios between schools and within districts.

The mentioned constraints are aggravated by the fact that supplementary reading materials were found to be inadequate, particularly for the lower primary school grades.

The provision of teaching and learning materials in primary education is one of three priority areas addressed by the bridge grant from the EFA-FTI Catalytic Fund. The decentralization of the procurement of textbooks is one of the government's key education reforms. The 2003 textbook policy stipulates that MINEDUC is the main purchaser of textbooks, but also acknowledges the intention to work toward devolving the process to lower levels of government. This is intended to ensure the more timely and efficient provision of appropriate textbooks, teacher guides, and related learning materials in every subject, for both primary and secondary cycles.

Through this new approach, both the selection and procurement of textbooks will be decentralized to the school level. Textbooks will no longer be distributed by the National Curriculum Development Center, but directly by publishers, to schools and local booksellers. Responsibilities for textbook selection, the choice of pedagogical materials, procurement, and distribution will be progressively transferred to schools. Up to four publishers per subject and per grade will be approved to propose a textbook, amounting to a total of 177 textbooks to be offered at the primary level. They will have the opportunity to market their textbooks to schools and possibly provide training to teachers, while retaining the copyright to the teaching and learning materials. Schools will then select one textbook per subject and per grade.

The establishment of the new system is well underway. There hundred evaluators, mostly teachers and staff from the general inspectorate and the National Curriculum Development

⁸³ In particular, partly as a result of the Human Resource Development Project, the pupil to mathematics and English textbooks ratios at the primary level were reduced to 1:1 by the end of 2009. (Draft Implementation Completion Report, 2010).

⁸⁴ Bontoux and Read, 2007, Bontoux et al., 2008, Bontoux et al., 2009.

Center (NCDC), were trained in August 2009. Selected publishers have been awarded textbook provider status. The list of publishers and the selected textbooks were distributed in early 2010 to schools and districts. For all core subjects, except Kinyarwanda, there are 4 textbooks selected per subject per grade.⁸⁵ For each school, the plan is to train the headmaster, two teachers, and one parent on how to evaluate books and select those that are consistent across grades and subjects. The training for the textbook selection committee and the selection of 2011 textbooks by each school will need to be completed by the beginning of the next fiscal year.

The price of textbooks is expected to decrease considerably as a result of increased competition among publishers. This will be particularly helpful at the secondary level where the textbook shortage is more acute and the NCDC has identified the main challenge to be the high cost of teaching and learning materials. The projected textbook costs for both primary and secondary education for the next five years are expected to be available after the bid evaluation process is complete. Enhanced school level decision making for the selection of teaching and learning materials is expected to better align the materials with students' and teachers' local needs, improve the utilization of learning materials and enhance ownership by schools and teachers. The decentralized procurement process, in alignment with international policy good practice, should ensure the better and timelier delivery of textbooks and other learning materials to improve the general learning environment. This in turn is expected to improve retention and completion rates in both primary school and *tronc commun*, and encourage greater student commitment to the learning process. Cooperation between MINEDUC and the publishers is also expected to enhance the public private partnership in the sector.

Support from the General Inspectorate of Education. As discussed in Chapter 2, the government has been implementing a political, fiscal, and administrative decentralization process of the education system. Since 2008, MINEDUC has decentralized the responsibilities of the General Inspectorate of Education (GIE) by tasking the regional officers to provide education supervision and support in each region. Although the GIE continues to be managed centrally, its operations have been decentralized through 31 inspectors, working out of five provincial offices that aim to improve the management of schools as well as teaching and learning methodologies in the classroom. The districts, staffed with education officers, are expected to provide operational support to schools and have taken on increasing responsibility from MINEDUC in recent years as a result of the decentralization efforts. The responsibilities of the GIE and districts are distinct: the districts are the administrative bodies tasked with providing managerial supervision to schools in their district, while the GIE provides quality control.

As reported in the MINEDUC 2008 Annual report, inspectors visited 222 primary schools (9 percent) and 142 secondary schools (21 percent) that year.⁸⁶ Teachers are the prime beneficiaries of the support offered by the inspectorate officers during school inspections. The inspections generally have a classroom and lesson observation component and allow the inspectors to provide feedback and support to teachers in an effort to improve classroom management and pedagogical skills.

⁸⁵ Kinyarwanda is the mother tongue of most Rwandese, and as such is taught at school. Other subjects are taught in English (previously French), as the official teaching language. There were no publishers of Kinyarwanda secondary level textbooks and only two for the primary level.

⁸⁶ No inspection data exists for previous years to enable the comparison and analysis of the change in the number of inspections that may have resulted from the decentralization process.

Learning Outcomes

Adult Literacy. Literacy levels have been determined by series of studies using 2000 data,⁸⁷ which asked: “Can you read a letter or a newspaper (i) easily, (ii) with difficulty, or (iii) not at all?” The responses reveal that Rwanda has the highest adult literacy rate of 31 African countries, with 98 percent of those who completed primary school being literate.⁸⁸

Table 4.4: Adult Literacy Rates by Levels of Schooling, 2005
Percent

	No Schooling			Literacy Courses			Primary School			Overall				
	All	F	M	All	F	M	All	F	M	All	F	M	Urban	Rural
Adults that can read a letter or short note	13	10	19	56	49	65	89	88	90	74	70	79	87	69
Of the above, adults that can write a letter or short note	63	60	71	79	76	82	97	97	98	96	95	97	98	95
Can do written calculations	8	56	12	39	32	48	84	82	87	69	64	74	84	63

Source: EICV 2005.

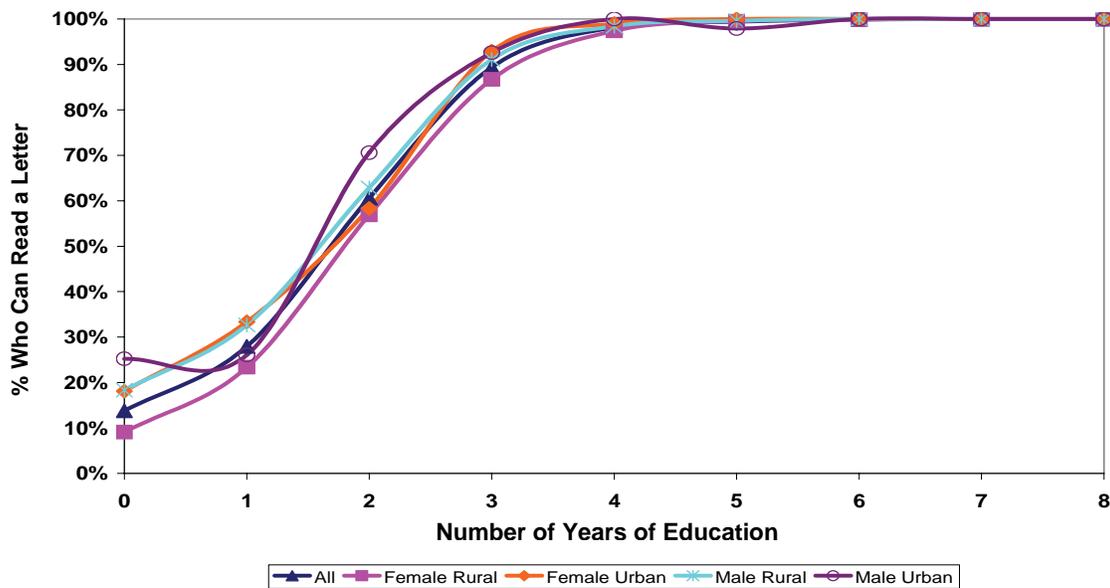
A more recent survey conducted in 2005 (MINEDUC, 2005) also confirmed Rwanda’s high adult literacy rate (see Table 4.4), defined by an individual’s ability to read or write a letter or short note. The same survey also examined basic numeracy. The survey found that 74 percent of all adults were able to read, 96 percent were able to write and 69 percent are able to perform simple written calculations. Rwandese men and those living in urban areas had higher literacy and numeracy rates than women and the rural population. The high literacy rates among adults who never attended formal schooling is worthy of note, reaching 13 percent overall, and close to 20 percent for men. This may be a reflection of the government’s strong commitment to literacy and its adult literacy initiative: in 2005 there were 6,500 literacy centers operating with a total enrollment of over 300,000 adults.

Figure 4.2 below shows the results of a logistic regression that estimates the probability that an individual can read based on age, gender, urban or rural location and the number of years of education completed. By Primary 4, almost all Rwandese know how to read a letter, regardless of their individual characteristics. These results are remarkable, especially compared with the proportion of individuals able to read by Primary 4 in other African countries such as Benin (25 percent) and the Central African Republic (30 percent). However, disaggregating the youngest and oldest extremes of the spectrum indicate that adults of about 44 years acquired full literacy faster than adults of about 22 years. After 2 years of schooling, 80 percent of those aged 44 years reported being able to read a letter, which is higher than the reported 60 percent of those aged 22 years.

⁸⁷ Included in the Education CSRs for Benin and the Central African Republic.

⁸⁸ The rate covers the 22 to 44 years age group.

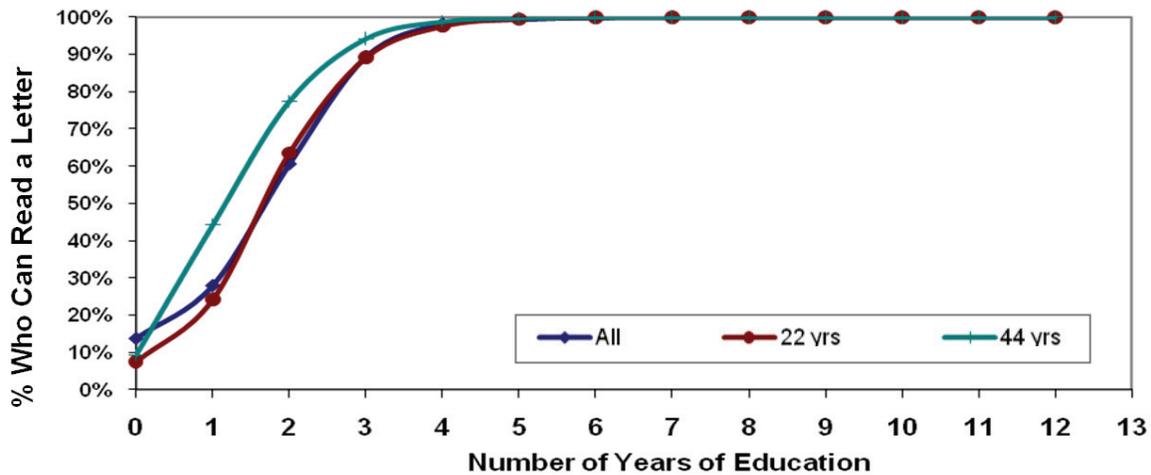
Figure 4.2: Estimation of the Literate Share of the Adult Population, by Number of Years of Education and Individual Characteristics, 2005



Source: EICV 2005.

Figure 4.3 shows that full literacy was attained by the older group one full year before their younger counterparts. This may reflect a possible decline in the quality of education over the past 20 years. Given the disruption to the education system resulting from the 1994 genocide, some decrease in adult literacy may be unavoidable.

Figure 4.3: Estimation of the Literate Share of the Adult Population, by Number of Years of Education and Age Group, 2005



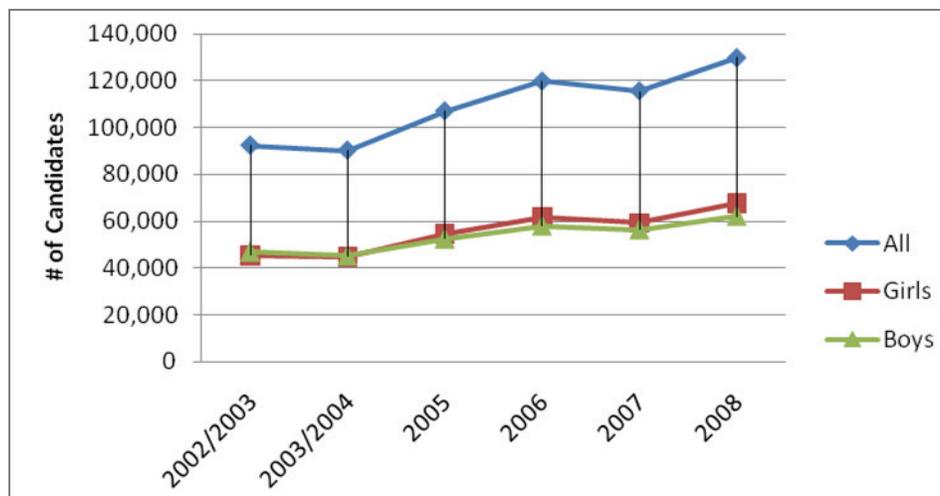
Source: EICV 2005.

Student Learning Assessment. Rwanda does not currently have a student learning assessment system, but does set examinations at the end of primary (the Primary 6 National Examination, or P6NE), *tronc commun* (O-Levels) and upper secondary (A-Levels). The government has indicated an interest in developing a national learning assessment system with comparable data for each year. In the meanwhile, this report uses the 2008 national examinations' data, provided by the Rwanda National Examinations Council (RNEC).

Although national examinations have been conducted annually since 1999, P6NE results' data are not comparable from year to year because the pass mark varies each year. Furthermore, the 1999-2007 data are not comparable with the 2008 data because a new grading system was introduced in 2008 to align Rwanda with the East Africa Community, with students receiving numerical grades (1 to 9) for the P6NE and O-Level examinations and alphabetical grades (A to F) for the A-Level examination, instead of percentage averages and raw scores.

National Examination Results in Primary Education. The P6NE tests students in mathematics, science, social studies, English and Kinyarwanda. Until 2008, the P6NEs were mainly used as a tool to select the same number of best performing students as the number of places available at the *tronc commun* level, granting them access. To achieve this, the P6NE pass mark was determined on an annual basis by the RNEC. The tests were therefore not designed to be comparable year after year, impeding the analysis of student learning trends. Since 2009, the efforts to implement the Nine Year Basic Education strategy mean the majority of Primary 6 graduates are guaranteed a place in *tronc commun*. The P6NE is no longer to be used as a filtering tool, and its pass rate is therefore no longer linked to enrollment capacity. The P6NE can therefore be reviewed to ensure year on year comparability, and to gauge its appropriateness as a broader national assessment tool.

Figure 4.4: Number of Candidates Sitting the P6NE, by Gender, 2002-2008

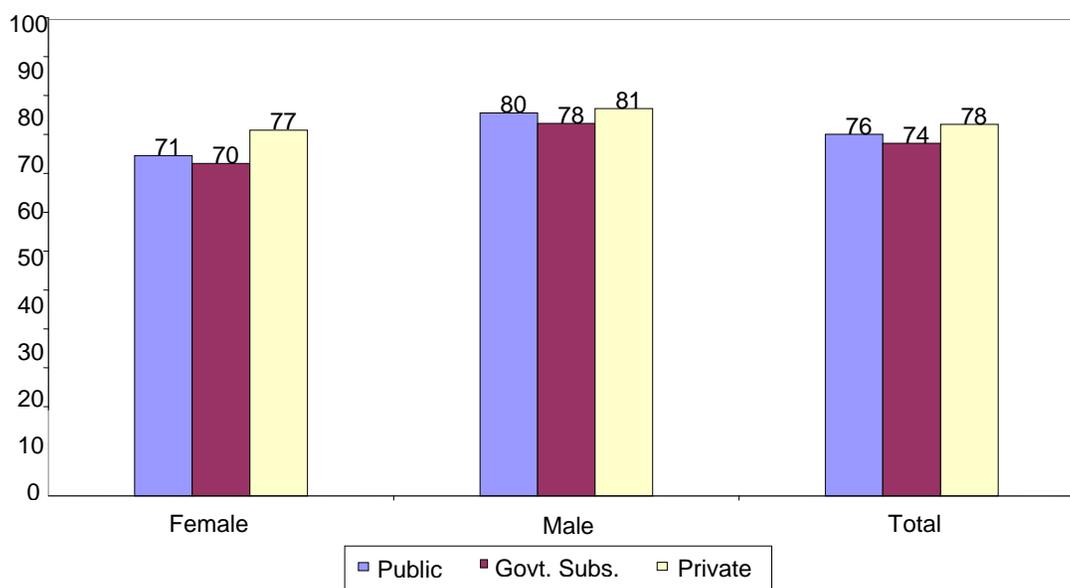


Source: RNEC.

The number of students taking the P6NE has been rising steadily, as depicted in Figure 4.4 above. In recent years, girls have represented a slightly larger share of the total number of candidates.

Figure 4.5 depicts the share of students who passed the 2008 P6NE, disaggregated by gender and school type.⁸⁹ Male and female private school students performed slightly better than their counterparts who attended public or government subsidized schools. In light of the fact that public or government subsidized schools educate nearly 98 percent of the primary student population (see Table 3.5 presented earlier), and the assumption that private schools are better resourced, the pass rate of the former is impressive (see Annex Table 4.1). Boys perform better than girls regardless of the type of school attended, and students in Kigali perform better than students elsewhere.

Figure 4.5: Share of Students who Passed the P6NE, by Gender and School Type, 2008
Percent



Source: RNEC.

Detailed school level census results were published in 2009, which facilitated the correlation of examination results with a variety of resources available at the school level.⁹⁰ A logistic regression was used to analyze the relation between the probability of passing the P6NE exam and certain school environment variables such as the location and type of school, the existence of a parent teacher association, the availability of electricity and water, and the teacher to pupil and book to pupil ratios. The odds ratio calculated in Annex Table 4.2 supports the analysis in the

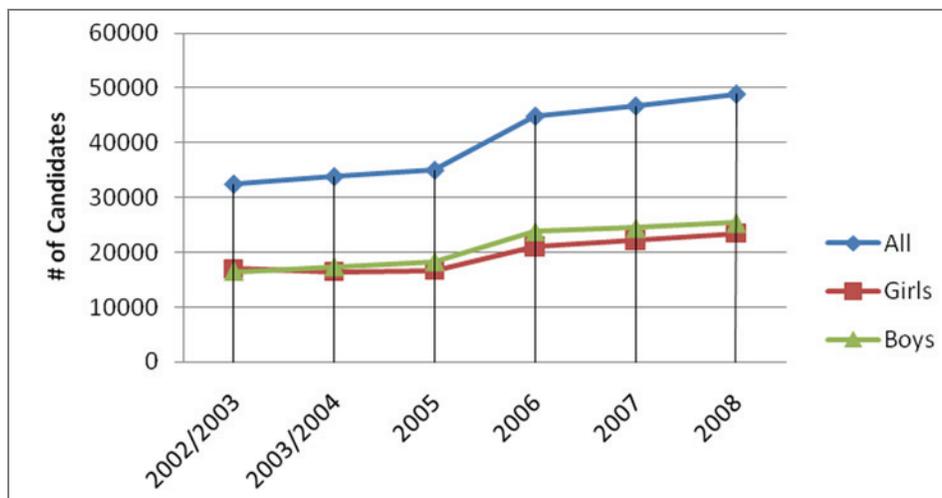
⁸⁹ Later in this chapter, Figure 4.10 summarizes the share of students passing the P6NE, O-Levels, and A-Levels, disaggregated by province.

⁹⁰ Difficulties in the identification of schools due to the different listing systems used by MINEDUC and the RNEC resulted in examination data for 25 percent of primary schools and 10 percent of secondary schools being unusable for the statistical analysis.

previous paragraph, except with respect to private schools. Contrary to what one could conclude from Figure 4.10 below, after controlling for other available school variables, the analysis indicates that students from private schools do not have significantly more favorable odds of passing the P6NE than students in public and government subsidized schools. In other words, student characteristics (which differ significantly between rural and urban areas) more than the type of school explain most of the variation in exam scores. However, statistical analysis also highlights the residual importance of the number of books available per student, and of the availability of mixed toilets (as opposed to separate toilets for boys and girls), which respectively increase and decrease the odds of passing the exam.

National Examination Results in *Tronc Commun*. *Tronc commun* ends with the O-Level examination, at the end of Secondary 3. Each candidate is tested in nine compulsory subjects, consisting of mathematics, French, Kinyarwanda, English, physics, chemistry, geography, history and biology. Similarly to the P6NE, the O-Level pass rates are not comparable year after year, because the examination was used as a tool for the selection of students for boarding schools at the upper secondary level. In 2008, the O-Level grading system was harmonized with the systems used elsewhere in the East African Community, to identify students who are expected to pursue academic study, as well as those who are expected to follow the TVET stream. The number of candidates taking O-Levels has increased in recent years, as Figure 4.6 shows. Contrary to the P6NE trend, boys represent the larger share of candidates sitting O-Levels.

Figure 4.6: Number of Candidates Sitting O-Levels, by Gender, 2002-2008



Source: RNEC.

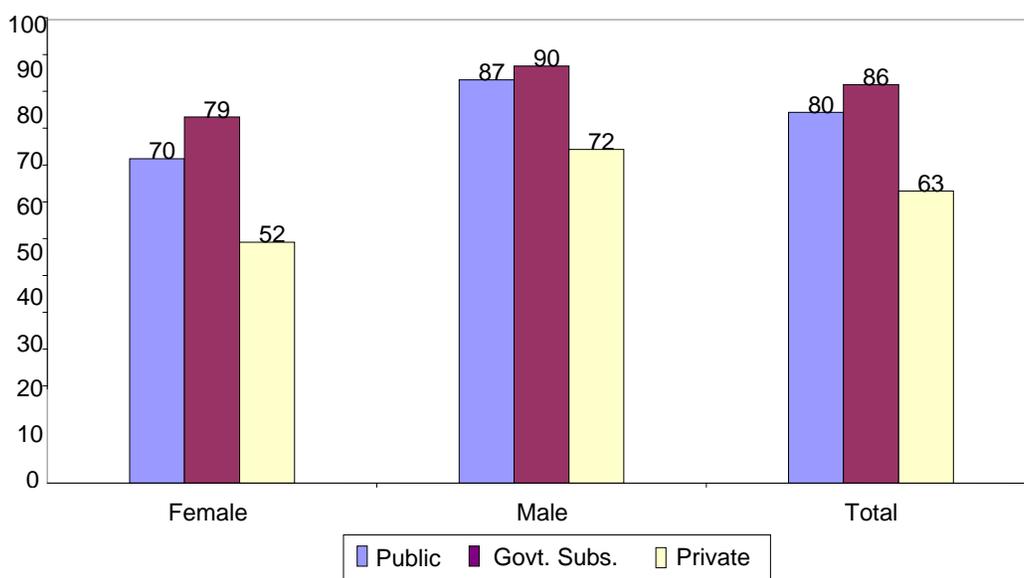
Figure 4.7 below presents the share of students who passed the O-Level examination in 2008, by gender and school type. As noted at the beginning of this chapter, the share of students attending public, government subsidized and private *tronc commun* level schools is equally distributed.

The marked difference from the primary level results is the low pass rate for private school students, both male and female. One possible explanation for this poor performance is that those who fail the P6NE are denied access to public or government subsidized *tronc commun* schools because of government resource constraints. On the other hand, the high performing primary school leavers may well enroll in public or government subsidized schools, to decrease the household burden of education expenditures. Private institutions therefore probably attract a high proportion of less achieving students who want to follow secondary education.

The O-Level pass rate of female students is lower than that of their male counterparts, following the same trend as for the P6NE, although in a more pronounced manner. And contrary to the provincial P6NE success rates, students in Kigali and the East are the worst performers in O-Level examinations (see Figure 4.10 below).

Figure 4.7: Share of Students who Passed the O-Level Examination, by Gender and School Type, 2008

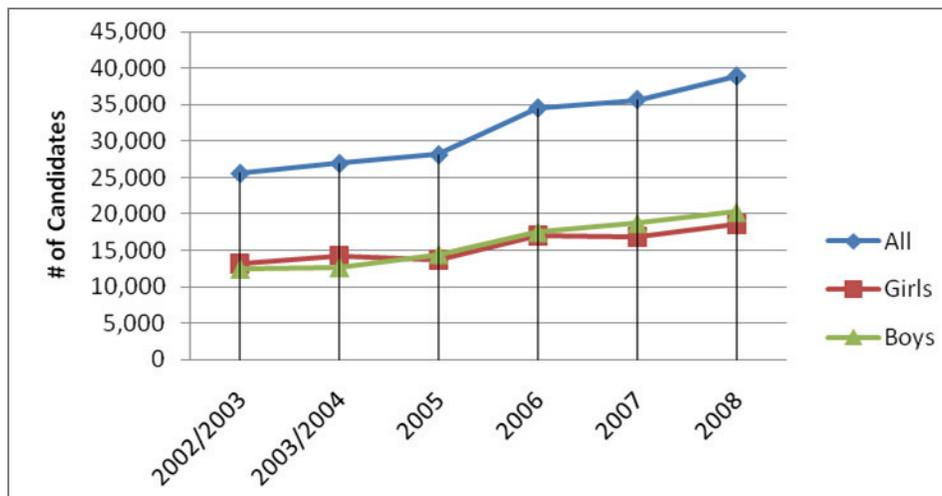
Percent



Source: RNEC.

National Examination Results in Upper Secondary. Upper Secondary ends with the A-Level examination, at the end of Secondary 6. Each candidate chooses four subjects. The A-Level examination determines students' entrance to universities and higher learning institutions. Students gain access to higher education according to their A-Level results, the number of available places, and their personal preferences. The number of candidates sitting A-Levels has increased in recent years (see Figure 4.8 below). Interestingly, a qualitative assessment of the trends in the number of male and female candidates sitting A-Levels indicates that prior to 2005, there were more female than male students; the situation was reversed after 2006.

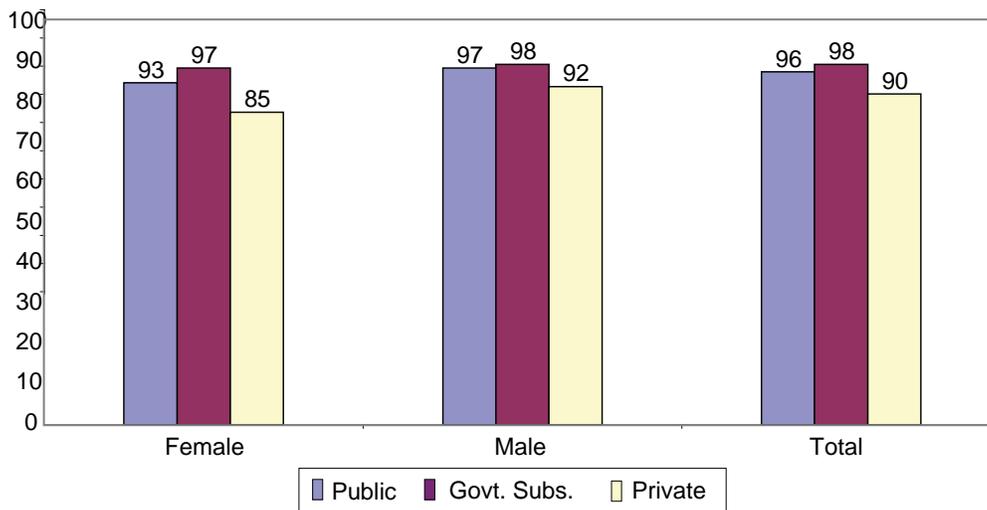
Figure 4.8: Number of Candidates Sitting A-Levels, by Gender, 2002-2008



Source: RNEC.

Figure 4.9 shows that the A-Level performance trend is very similar to that of O-Level examinations. Here again, students who performed well in their O-Levels are more likely to attend a public or government subsidized upper secondary school, explaining the slightly poorer performance of private schools. The key difference at this level is that the share of private school enrollments is larger (53.8 percent; see Chapter 3). The poor performance of private school students is hence of particular concern. The government may need to monitor student learning and control quality more closely as the private sector expands.

Figure 4.9: Share of Students who Passed the A-Level Examination, by Gender and School Type, 2008
Percent



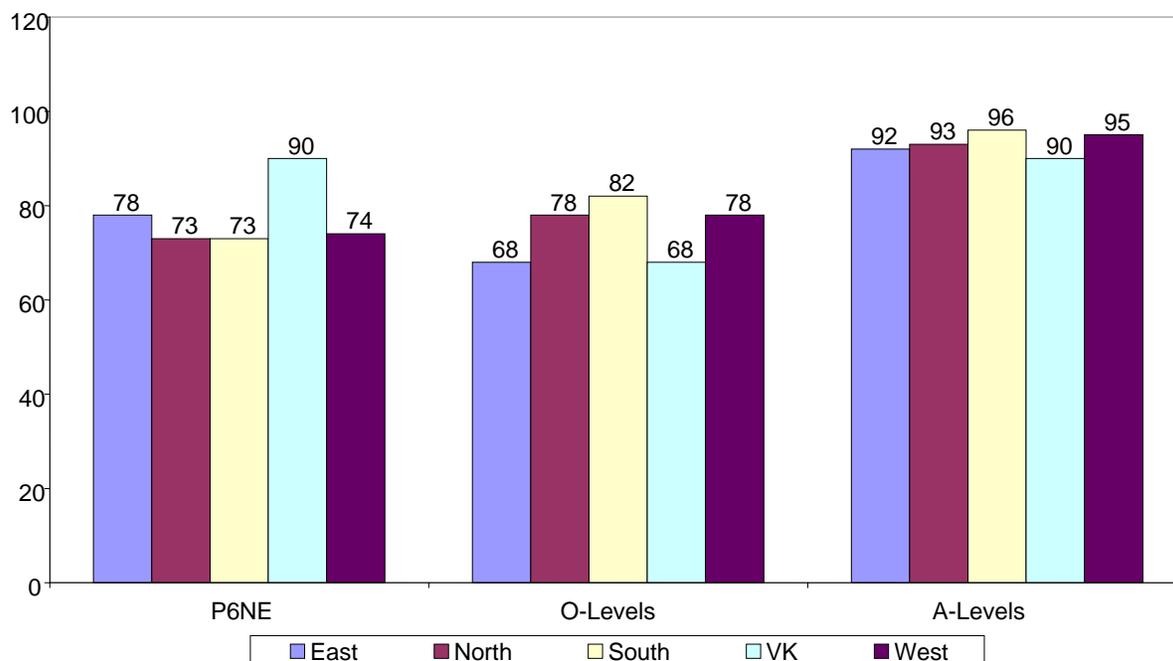
Source: RNEC.

Moreover, female and male performance levels are more harmonized at this level. The proportion of boys and girls passing the A-Level examination does not differ significantly, as is the case for O-Levels and the P6NE. Finally, the share of students passing their A-Levels is relatively evenly distributed among provinces.

The model and odds ratio are presented in Annex Table 4.3. The statistical analysis confirms the negative correlation between A-Level examination scores and being enrolled in private schools. Additionally, it highlights the importance of the availability of water and electricity, which increases the odds of passing the A-Level examination by more than twice.

Student Learning Variations across Provinces. Figure 4.10 depicts the student pass rate, disaggregated by examination and across the five provinces. At the primary level, students in Kigali perform significantly better than those from other provinces. As revealed earlier in Table 4.1, Kigali’s primary schools are consistently better resourced than schools in other provinces. Although other factors may be influential, the variance in student performance is consistent with the idea that more school resources yield better learning outcomes.

Figure 4.10: Pass Rate by Examination and Province, 2008
Percent



Source: RNEC.

On the other hand, the O-Level pass rate is as low as 68 percent in the East and Kigali provinces, whereas it is 82 percent in the South. The A-Level pass rate is relatively evenly distributed, but again Kigali is the lowest performing province; the South performs best. Given that a higher share of secondary school students in Kigali has access to water, electricity and a computer, all of

which are expected to improve the student learning environment, the explanation of this situation must be related to other important learning conditions. In particular, Kigali's underperformance could be related to the fact that, as reported in Table 4.1 above, the capital has the highest pupil to classroom ratio (35.3 to 1) as well as higher pupil to teacher and pupil to qualified teacher ratios than the South (27.4 to 1 versus 24.1 to 1; and 59.2 to 1 versus 29.3 to 1 respectively).

Girls' Performance. A key policy challenge that is highlighted by the national examination results is to eliminate gender disparity in performance. Girls represented more than half of those who took the P6NE in 2008, and they performed worse than their male counterparts. Overall, boys averaged 37 percent and girls 31 percent; in mathematics boys scored 31 percent and girls 27 percent; and in languages boys scored 34 percent and girls 32 percent. Similarly, in O-Levels, only 44 percent of those who passed were girls, a proportionately low rate, given that 48 percent of those who participated in the examination were girls.

With the approval of the Girl's Education policy in 2009, measures are being implemented to ensure the progressive elimination of gender disparities in education access and achievement. In particular, the establishment of a girls' education task force at both national and district levels will enable the collection and analysis of gender disaggregated performance indicators in order to better understand and appropriately tackle the problems related to gender disparity.

Conclusions and Policy Implications

The government of Rwanda has displayed a clear commitment to improve the quality of education, with a particular emphasis on basic education from Primary 1 to Secondary 3 (primary and *tronc commun*) in the context of the Nine Year Basic Education policy. The Quality Improvement Working Group is expected to further consolidate the governments' efforts to enhance the teaching and learning environment. The key issues related to improving student learning outcomes and which have implications for further policy development, are outlined below.

Adequate and Relevant School Resources. An analysis of the availability of basic resources in primary education shows that Rwandese primary schools are more or less adequately resourced. However, the access to electricity in all provinces except Kigali is scarce and, although low in international terms, the pupil to teacher ratio is relatively high outside Kigali. At the *tronc commun* and upper secondary levels, the availability of all basic school resources is better than at the primary level, with the exception of the number of relevant and high quality textbooks, which are in acute shortage. Changes to the textbook procurement system are expected to improve the availability of affordable textbooks across the system, thereby enhancing student learning. However, the government may wish to conduct a randomized tracking survey to evaluate the extent to which teaching and learning materials are reaching schools, and are then being used by students and teachers, particularly in inaccessible areas and rural schools.⁹¹

⁹¹ The analysis performed in this chapter has relied solely on 2008 data. With the launch of EMIS, the government will be in a position to conduct annual trend analyses to better understand the adequacy and relevance of basic school resources through time.

Sufficient Number of Classrooms and Other Infrastructure for Effective Learning. New construction is planned to meet the government's target of reducing the average pupil to classroom ratio in basic education to 52 to 1 by 2012. The extension of fee-free basic education to the *tronc commun* level will apply further pressure on the system and thus require ambitious efforts to enhance the quantity and quality of infrastructure. To maximize the efficiency of construction efforts, the government will first need accurate and timely data on the number of schools and classrooms available to each level. This information must take into account the consolidation of primary and *tronc commun* levels in response to the Nine Year Basic Education strategy. As plans to build new schools are developed, the government will also need to consider the physical features required accommodate the needs of the most disadvantaged students. The cost of building new schools accessible to such students is low compared with the additional cost of fitting existing schools with the required infrastructure at a later time. In East Asian countries, for example, school-aged children within the last 10-15 percent to gain access to basic education often have physical disabilities. The additional cost of building new schools that are accessible for such students is marginal compared with the cost of retrofitting existing schools at a later time.

Furthermore, international experience reveals that aiming for simple, standardized classroom and school designs and limited construction of specialized facilities can be a cost effective option to expand the number of classrooms at the secondary level.⁹² The cost of building laboratories is particularly high and in some instances prohibitive. However the building of ordinary science classrooms with a range of basic facilities appropriate for the teaching of most non specialized sciences has been recognized to be a cost-effective strategy. The government's infrastructure policy will need to identify distinct strategies to enhance the quantity and quality of infrastructure at each level of the education system.

Quality Control. School management has been devolved to districts and the schools themselves, with quality control provided by the GIE and districts. New and more comprehensive data produced by EMIS need to be incorporated to quality control efforts. This should enable a shift from planning, to evaluating and reporting on the performance of the system on a regular basis. Districts and schools need training in administration and management in order to effectively contribute to the evaluation and reporting process, given that the education system is increasingly dependent on the bottom-up flow of accurate data and information. Ideally, district and school staff should acquire basic skills not only to collect and enter data, but also to conduct simple analyses to feed back into the schools' decision making processes in a timely fashion.

National Student Learning Assessment System. The discussion on student learning in this chapter relies on data from the 2008 national examinations. The limitations of using such data to examine learning trends have already been discussed. Furthermore, because Rwanda does not currently participate in any standardized student learning assessments, it is difficult to compare national examination results with those from other countries. Rwanda is encouraged to participate not only in regional comparative tests such as the Southern African Consortium for the Monitoring of Educational Quality but also in international assessments such as the Trends in International Mathematics and Science Study and Progress in International Reading Literacy Study.

⁹² World Bank, 2008. "At the Crossroads: Choices for Secondary Education in Sub-Saharan Africa."

The government of Rwanda recently drafted a concept note to implement a national student assessment system at the primary level, to monitor progress of national education strategies and toward Education for All goals. Accurate disaggregated longitudinal gender data will be produced by the proposed system. This is expected to enhance Rwanda's ability to promote results based education management and enable better informed decisions with respect to policy reform. Particular emphasis will be placed on the assessment of student learning at lower primary grades, where the attainment of basic numeracy and literacy skills is especially important. Emphasis on lower grades will also enable the early identification of students who are at risk of repeating or dropping out of school, and the implementation of necessary remedial measures. Following the finalization of a concept note,⁹³ the government will determine the technical details related to the implementation of the system, in collaboration with resident donor organizations.

As Rwanda moves forward with its plans to launch a more comprehensive national student learning assessment system, the government should be better able to determine whether the system is performing well in terms of learning outcomes, identify the strengths and weaknesses of the system, track the performance of subgroups, determine whether curricula are well designed and textbooks are relevant, and identify factors affecting student learning. Such assessments in developing countries are usually sample based and test students at certain critical grades every few years. A good assessment system greatly helps the diagnosis of students' performance and the orientation of education quality improvement efforts.⁹⁴

Effective Public and Private Partnerships. The private sector manages education for more than half of upper secondary students. As access to education expands, the private sector is likely to play an even more important role in meeting the growing demand for schooling. The government will need to monitor its contribution over the coming years and provide the necessary quality control. At the same time, the government must ensure that relevant data are disaggregated between public, government subsidized and private schools for each level. This data should include indicators on basic resources available, basic literacy and numeracy skills and national student learning assessment results. Such data, and conducting analysis on a regular basis, will allow the government to evaluate the strengths and weaknesses of the public and private sectors, and ensure that each sector is delivering the services for which it has a competitive advantage.

Monitor Socioeconomic Disparities in Learning Outcomes. This chapter highlighted areas where girls tend to underperform, and the urban rural gap with respect to the availability of basic quality resources in primary, *tronc commun* and upper secondary schools. The learning needs of students who are at a socioeconomic disadvantage must be considered as Rwanda strives to improve the quality of learning across its education system. The learning needs of students who have a further disadvantage due to physical or mental disabilities, orphanhood, or vulnerability, will require special additional attention. Adequate basic physical infrastructure can be provided at little additional cost, but the government may also need to consider the development of programs that specifically target disadvantaged children to ensure that they do not fall behind. Possible cost and financing options are further discussed in Chapter 6 to ensure that effective and sustainable programs can be created.

⁹³ The concept note was completed in June 2010 and the first phase of implementation, which involves the training of trainers, was scheduled for summer 2010. The system is expected to be operational in 2011.

⁹⁴ World Bank, 2007, and <http://go.worldbank.org/M2O1YDQO90>

CHAPTER 5: TEACHERS

Chapter Overview

Enhancing access to and the quality of education in Rwanda relies, among other factors discussed throughout the report on maintaining a staff of competent and motivated teachers. The government recognizes that the education sector and its teaching staff will play a key role in building a highly competent and world class human resource base, particularly in advanced technology and knowledge-intensive growth sectors. Yet despite Rwanda's small geographical size, the distribution of teachers across the country with respect to key characteristics (qualification, experience and gender) remains uneven, particularly at the secondary level. This can be mainly attributed to the unattractive working and living conditions in rural schools.

This chapter draws on findings of two recently completed teacher surveys. The *Teacher Motivation and Incentives Survey*, conducted in November 2008, collected information from 550 teachers employed in a representative sample of 60 primary and secondary schools in 10 districts.⁹⁵ Then the *Teacher Utilization Survey*, conducted in May 2009 for this report, requested information on key aspects of teacher utilization from the principals of a representative sample of 230 primary and secondary schools in 15 districts.

This chapter is organized in four sections. The first section reviews key features of teacher utilization with respect to qualifications, experience, gender, location, subject specialization and workload. The pre service and ongoing training of teachers is discussed in the second section, followed by an analysis of teacher motivation and incentives in the third. The fourth section assesses the projected demand for primary and secondary teachers over the next 12 years in relation to current levels of output from the main teacher training institutions.

Teacher Deployment and Characteristics

With decentralization, each of the 30 districts is now responsible for the recruitment and deployment of teachers. The Teacher Services Commission (TSC) provides guidelines for teacher employment, including district recruitment quotas. There does not appear to be a problem with "ghost" teachers on the payroll.

The recently adopted Nine Year Basic Education strategy calls for double shifting⁹⁶ in all schools and teacher specialization by subject in primary education, as well as major curricula

⁹⁵ See Bennell, and Ntagaramba, 2008. The survey was conducted by MINEDUC with support from DfID.

⁹⁶ Double shifting is considered a temporary measure until adequately trained teachers and other resources are available for single shift schools to become the norm.

rationalization throughout the sector, all of which are expected to have serious implications for teacher utilization, and thus teacher demand.

Teacher Deployment. According to the 2008 MINEDUC school census, approximately 32,000 teachers were employed at the primary level in public and government subsidized schools: almost 30,000 permanent teachers, and about 2,000 contract teachers (see Table 5.1). By April 2009 however, the number of contract teachers had declined to around 750. Between 1999 and 2008, the number of primary school teachers increased by approximately 40 percent, whereas primary school enrollment increased by 53 percent.

In 2008, there were slightly more than 10,000 teachers at all *tronc commun* and upper secondary schools, of which approximately 40 percent were hired by private schools, compared with only 3,000 teachers in total in 1999.

Almost 10 percent of all secondary school teachers are foreigners, mainly from the Democratic Republic of Congo. According to the TSC the highest incidences are in the province of Kigali (20%), the West province (17%), and the Rusizi district (25%).

According to the 2009 teacher utilization survey, 2008 teacher transfer rates from one school to another were 4.8 percent for primary, 5.3 percent for *tronc commun* and 8.3 percent for upper secondary. Turnover is relatively low compared to other countries in Sub-Saharan Africa. The small size of the country may significantly contribute to the low transfer rates.

Table 5.1: Civil Servants in Primary and Secondary Education, 2008
Number of Staff

	Primary		Secondary	
	School Census (Raw Data)	Payroll	School Census (Raw Data)	Payroll
Permanent (All)	32,082	30,070	9,706	5,883
Teachers	29,710		6,608	
Administrative Staff	2,372		3,098	
Contract Teachers	1,966	n.a.	n.a.	n.a.

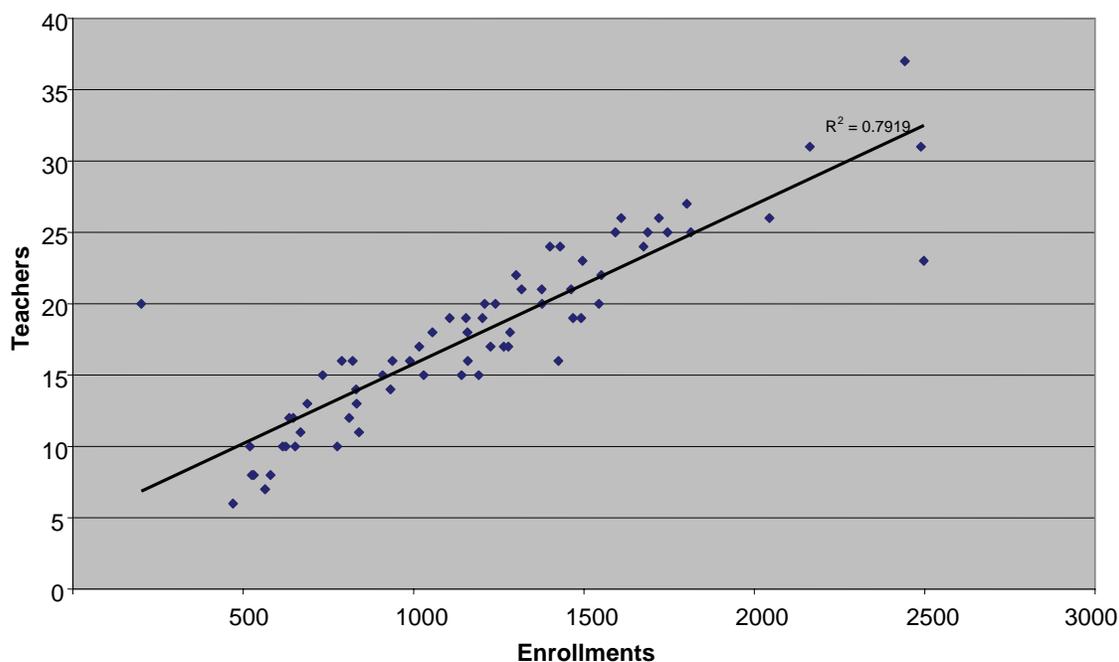
Source: MINEDUC School Census, 2008; MIFOTRA Payroll, May 2008.

Note: The discrepancies between school census data and payroll arise from the double counting in school census data of some staff, who work both as teachers and administrators.

In order for the government to achieve the primary level pupil to teacher target ratio of 57 to 1 for 2008, as set in its Education Sector Strategic Plan (ESSP), the sector needed a total of around 37,500 teachers. The actual pupil to teacher ratio in 2008 was 62 to 1, and there were significant variations among primary schools and between districts. Even though the deployment of contract teachers helped to reduce pupil to teacher ratio disparities, major district inequities still exist, ranging from a low of 50 to 1 in Huye to a high of 68 to 1 in Nyaruguru (see Annex Figures 5.1 and 5.2). Furthermore, pupil to teacher ratios vary significantly according to school size, which has major implications for teacher utilization and unit costs: the average pupil to teacher ratio for primary schools in Rwanda is 69 to 1 in large schools with over 2,000 pupils, compared with 51 to 1 in small schools with less than 500 students.

At the primary school level, the scatter plot for teachers and student enrollment gives a general idea of the variations in the pupil to teacher ratio according to school size. The Musanze district scatter plot shown in Figure 5.1 is quite typical, showing that some variation still exists in the deployment of teachers: for example, the number of teachers at the four primary schools with around 800 students ranges from 11 to 16.

Figure 5.1: Typical Scatter Plot of Teachers and Enrollment at Primary Public Schools (Based on the Musanze District), 2008

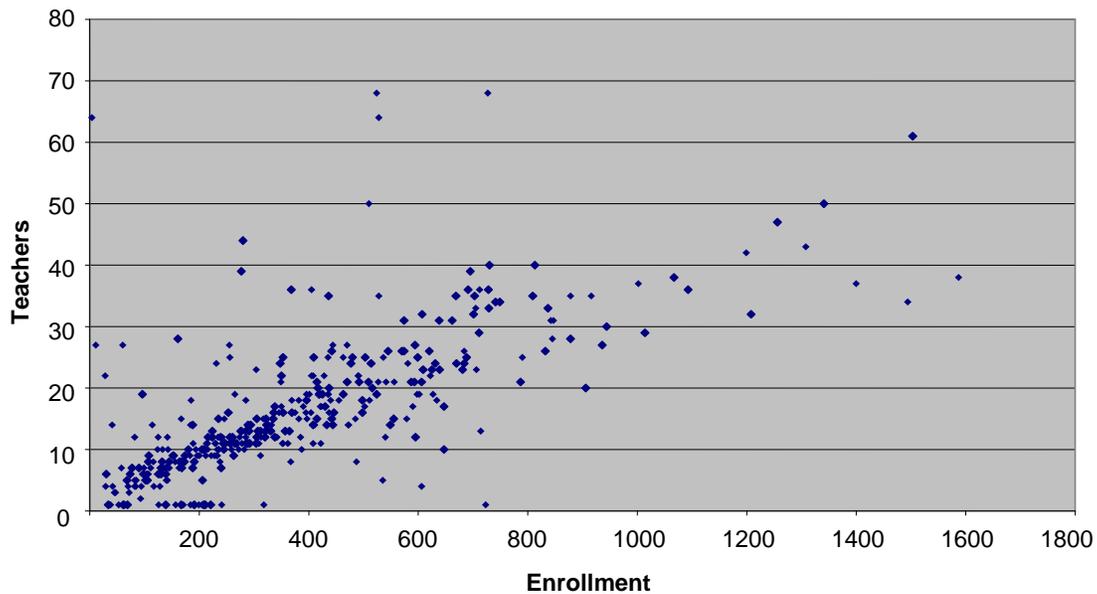


Source: MINEDUC School Statistics, 2008.

Secondary schools teacher staffing is based on a formula that should result in a fairly tight linear relationship between the number of pupils and teachers in publicly funded secondary schools.⁹⁷ However, Figure 5.2 below shows that although a fairly close linear relationship does indeed exist, there are some schools that do not adhere to the prescribed staffing norm. The schools in the group with fewer than the targeted number of teachers are mainly schools in more remote rural areas that have a relatively high incidence of vacancies because they find staff difficult to attract. The overall pupil to teacher ratio for secondary education is 26.9 to 1, which is relatively low compared with other African countries (see Annex Figures 5.3 and 5.4).

⁹⁷ The formula is: number of classes \times number of timetabled periods per week / teacher workload norm (periods/week).

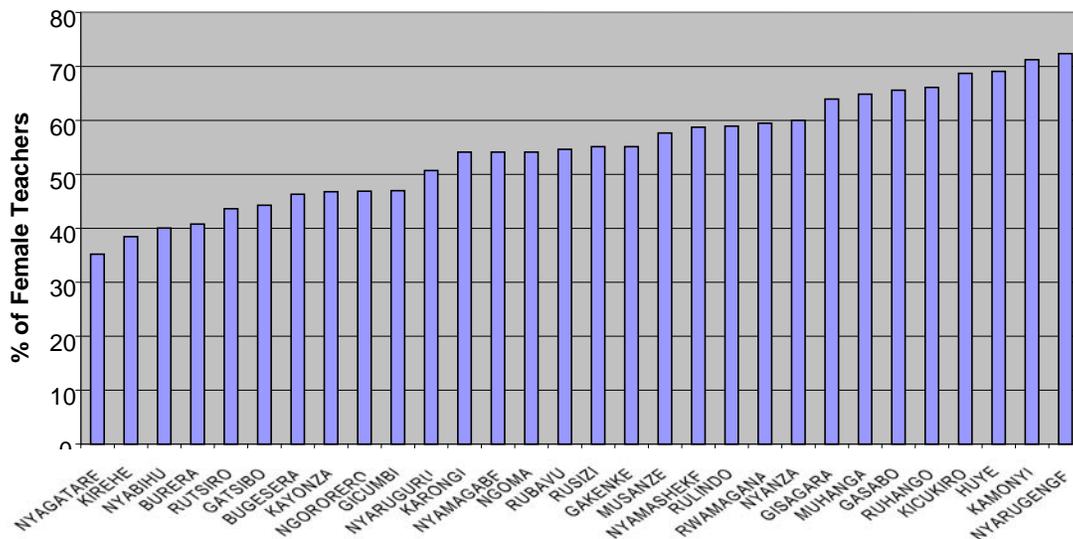
Figure 5.2: Scatter Plot of Teachers and Enrollment at Secondary Public Schools, 2007



Source: MINEDUC School Statistics, 2008.

Gender and Marital Status. The global proportion of female primary school teachers has remained roughly constant over the last decade at 55 percent, whereas it has increased slightly from 23 percent to 26 percent at the secondary level.

Figure 5.3: Share of Female Primary School Teachers, by District, 2008
Percent



Source: MINEUDC School Statistics (2008).

The share of female primary school teachers varies considerably across the 30 districts, ranging from a low of 35 percent in Nyagatare to a high of 72 percent in Nyarugenge (see Figure 5.3 above). Female teachers are more difficult to deploy to the more remote rural schools than male teachers. The incidence of single teachers also varies markedly across districts (see Annex Table 5.1). In many countries in Africa, a high proportion of single teachers in schools or groups of schools reflects staffing difficulties, as married teachers tend to be more stable where they are assigned to teach. It is noticeable that the Kayonza district has relatively large numbers of single teachers, both female and male.

Qualifications. There are ten teacher training colleges (TTCs) in Rwanda, two colleges of education (CoEs) and one university level higher education institution, the Kigali Institute of Education (KIE). The TTCs prepare certificate level teachers for primary schools; the CoEs train diploma level teachers for *tronc commun*; and the KIE trains mainly degree holding teachers for upper secondary education.

In 2008, 99 percent of primary school teachers were qualified, compared with only 49 percent in 1999 (MINEDUC). This is an impressive accomplishment. On the other hand, the figures for secondary school teachers are 36 and 33 percent, respectively, representing a mild increase. Rwanda cannot expect to become a highly skilled country with such a sizeable proportion of untrained secondary school teachers. Moreover, Table 5.2 shows that degree and diploma level secondary school teachers are concentrated in private schools.⁹⁸

Table 5.2: Secondary School Teachers, by Qualification Profile and School Type, 2008
Number of Teachers

Qualification Level	Public	Govt. Subsidized	Private	Total	%
Postgraduate Degree	15	16	44	75	0,72%
Degree (A0)	702	1,032	1,995	3,729	36,03%
Diploma (A1)	523	626	1,002	2,151	20,78%
Certificate (A2)	1,582	1,430	1,149	4,161	40,20%
Unqualified	87	57	42	186	1,80%
Other	25	11	12	48	0,46%
TOTAL	2,934	3,172	4,244	10,350	100%

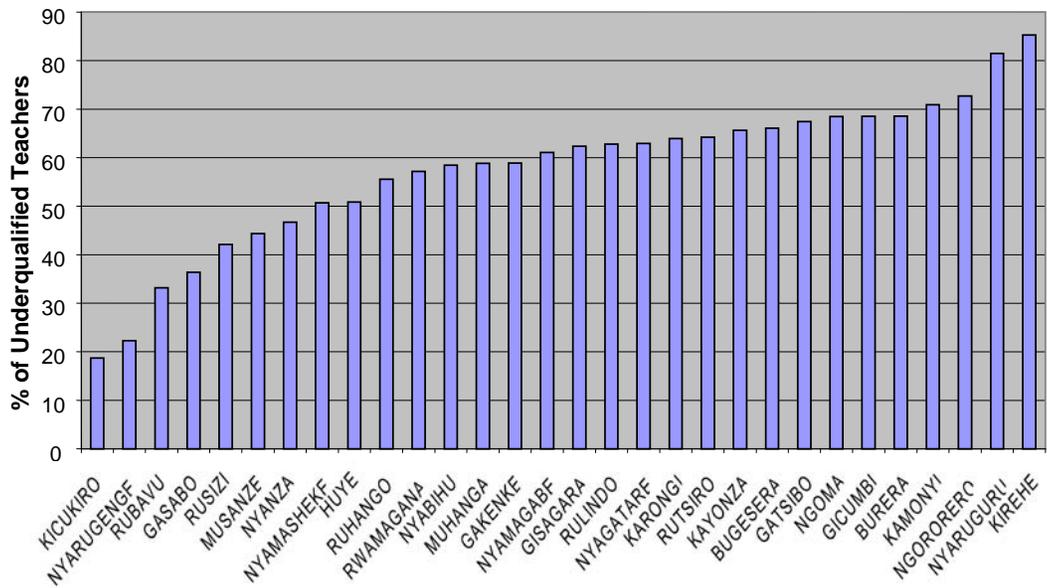
Source: MINEDUC School Census.

As discussed in Chapter 4, private secondary schools are mainly clustered in the Kigali province. The concentration of teachers with higher qualifications at private schools thus indicates that secondary school teachers are distributed inequitably across areas, urban schools being considerably better staffed than rural ones. Figure 5.4 below further illustrates the uneven spatial distribution of qualified secondary school teachers: more than 80 percent of teachers in Kirehe and Nyaruguru districts have not received sufficient training, compared with less than 25 percent in Kigali.

⁹⁸ Most certificate level secondary school teachers are unqualified school leavers.

Figure 5.4: Share of Underqualified Secondary School Teachers at Public and Government Subsidized Schools, by District, 2008

Percent

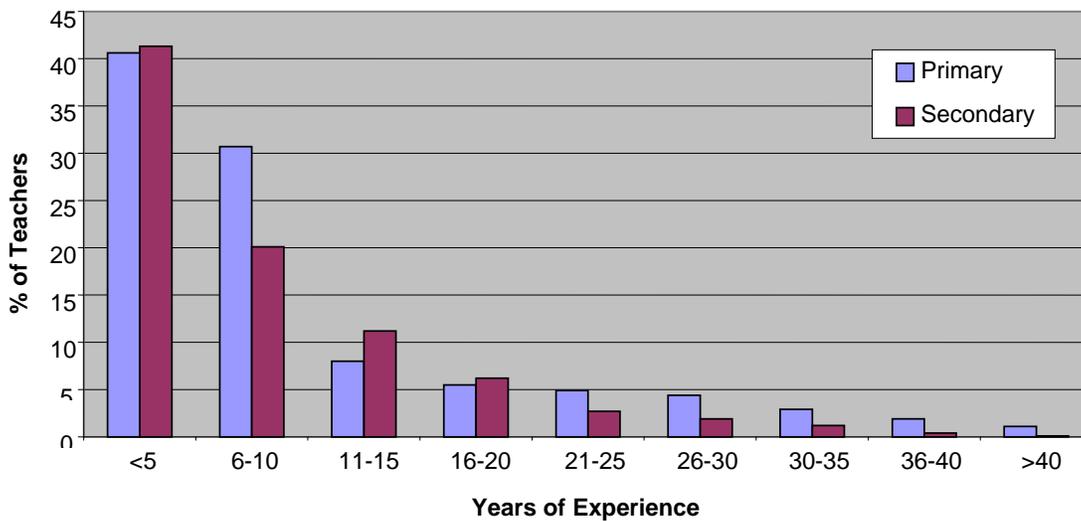


Source: MINEDUC.

Most primary and secondary school teachers have relatively few years of teaching experience, which underlines the need for good quality professional mentoring and support.

Figure 5.5: Teaching Experience of Primary and Secondary Teachers, by Number of Years, 2007

Percent



Source: MIFOTRA payroll data.

Figure 5.5 above shows that approximately 40 percent of all teachers at both primary and secondary levels have less than 5 years of experience. Furthermore, the spatial distribution of teachers with regard to years of experience is also uneven (see Annex Figures 5.4 and 5.5).

In both primary and secondary schools, fairly strong negative relationships exist between the average number of years of experience and teacher workload, using the pupil to teacher and pupil to qualified teacher ratios as proxies (see Annex Figures 5.6 and 5.7). Consequently, the districts that are hardest to staff, such as Kirehe, not only have the least experienced and qualified teachers, but they also have the highest workloads, which means that the students attending school in these districts are doubly disadvantaged.

In 2009, in conjunction with efforts to fast track the Nine Year Basic Education strategy, traditional grade based teaching was replaced by subject based teaching across all six primary grades (subject teaching was already the norm for *tronc commun* and upper secondary levels). Regardless of changes to the formal requirements for qualified teachers at each level of schooling, the subject specialization initiative will undoubtedly have an impact on the extent to which teachers are properly prepared to teach their assigned subject. There are also challenges related to the deployment of a sufficient number of teachers in each subject to each school, which will be addressed by districts and sectors.

Teacher Workload. The rapid expansion of primary schooling since the mid 1990s has been achieved through a marked intensification of teachers' workloads. The three percent cap for the annual increase in the number of teachers (which was in force until 2006) was a key factor, because it prevented teacher recruitment keeping pace with enrollment growth. Even by African standards, the overall workload of primary school teachers in Rwanda is high. A majority has had to contend with increasingly large classes. The average pupil to teacher ratio increased from 51 to 1 in 2001 to 62 to 1 in 2008.

Table 5.3: Distribution of Teachers, by Teaching Load and Level, 2009
Percent

Hours/week	Primary	<i>Tronc Commun</i>	Upper Secondary
<20	0	3	0
20-24	0	14	18
25-29	24	80	82
30-34	58	3	0
35-39	14	0	0
>40	4	0	0
Total	100	100	100

Source: Teacher Utilization Survey 2009.

Most primary school teachers are in class for 6.5 hours each day, with a one and half hour lunch break. Double shifting in primary schools, with teachers having to teach two separate classes each day, is particularly demanding. The results of the 2009 teacher utilization survey show that nearly 20 percent of primary school teachers teach more than 35 hours per week (see Table 5.3), the average being 32 hours per week. In other countries the introduction of subject specialization in primary schools has led to reduced teaching loads, but this is not yet the case to date in

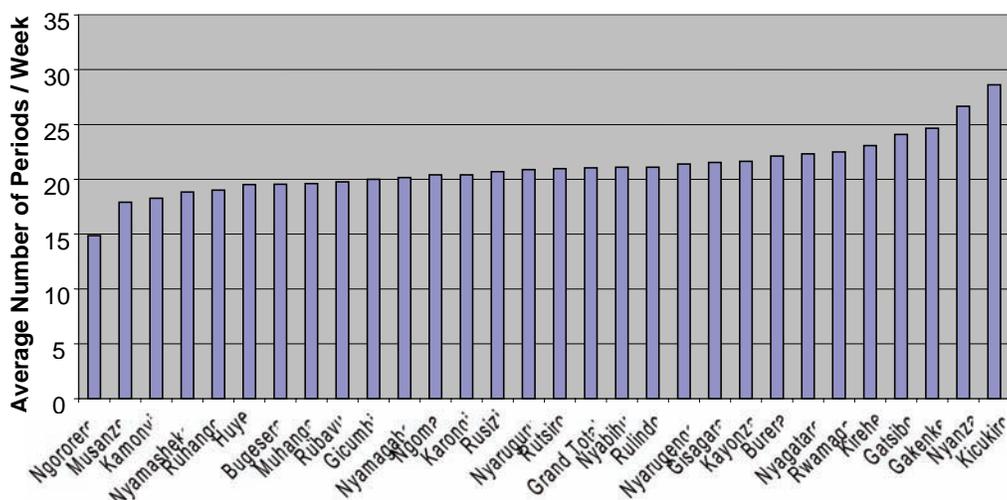
Rwanda. At the *tronc commun* and upper secondary levels the average teaching load is between 25 and 29 hours per week.

The least qualified and experienced teachers tend to be allocated to the lower primary classes, where the classes are the largest and the incidence of double shifting is highest.⁹⁹ Lower primary grades are considered the most important in terms of students' overall development and ensuring solid literacy and numeracy bases. Given that parents are free to decide which school to send their children to, more successful schools attract more pupils, which places even greater demands on teachers, who are responsible for very large classes.

The appointment of **contract teachers** was intended to improve the working conditions of teachers in primary schools with a pupil to teacher ratio higher than 65 to 1. The original plan was to employ 3,100 contract teachers in 2007; 1,278 were deployed that year, and 1,929 in 2008. The target for 2009 was to deploy a further 2,300 contract teachers, but as noted earlier, only about 750 of those were in post by the end of the year. Contract teachers are paid slightly less than permanent staff. Approximately two thirds teach Primary 1-3 classes.

The introduction of **subject specialization** in primary schools can be seen as a reaction to the heavy demands of class based teaching and the long school day. The implications of the effort to fast track the Nine Year Basic Education strategy in 2009 with respect to teaching loads will need to be carefully considered (see the last section of this chapter). Although experience from other African countries suggests that subject based teaching is likely to reduce teachers' workloads, teachers will know less about each pupil, which could increase disciplinary problems and adversely affect learning outcomes.

Figure 5.6: Average Secondary Teacher Work Loads, by District, 2007
Hours per Week



Source: MINEDUC.

⁹⁹ Primary 1-3 classes are typically 50 percent larger than Primary 4-6 classes.

At public and government subsidized secondary schools, the official policy is for teachers to work 28 to 30 hours per week. Secondary school teachers are also expected to dedicate some time to co-curricular activities, such as music, dance, drama, physical education, games and sports. Average teacher work loads for all secondary teachers show considerable variations across districts, ranging from a low of 15 periods a week in Ngororero to a high of 28 periods a week in Kicukiro (see Figure 5.6 above).¹⁰⁰ The 2009 teacher utilization survey also shows that around 80 percent of secondary school teachers have teaching loads of 25 to 29 hours a week, with relatively little variation between subjects.

Teacher Education

The TSC is responsible for the planning and overall supervision of teacher training. In practice, limited staffing and capacity has meant that the TSC has not been able to fully perform these functions. However, the Teacher Development and Management Policy (herein referred to as the teacher policy) approved by the cabinet in 2008, and its costed strategic plan approved by MINEDUC senior management in 2009, lay a firm foundation for the TSC to execute its mandate.

Teacher Training Colleges. TTCs were established as part of the reorganization of the school system in 1998.¹⁰¹ The teacher policy stipulates that:

“to become a primary school teacher, a person must gain entry into an accredited primary teacher training college after successfully completing nine years of basic education and initially undertake a three-year program of teacher training including teaching practice. Gradually, this will be phased out and future PTTC [primary and *tronc commun* teacher] candidates will have to complete six years of secondary education before they enroll for teacher training for either level.”

In the future, most teachers at primary and *tronc commun* levels will be trained at TTCs. The current ESSP proposes that the three year TTC course be replaced by a two year program including a one year school internship. TTCs are specialized and professional colleges, with a different curriculum to that of upper secondary schools. With the introduction of subject specialized teaching in primary school, TTC students are now required to opt for one of three specializations (mathematics and science, languages or social sciences).¹⁰²

An initial TTC intake of 1,700 teachers was planned for 2007, with a total annual enrollment target of 4,973 from 2010 onwards. The annual output of TTC graduates is projected to be 2,423 between 2010 and 2019. However, total enrollment at the ten TTCs decreased from 5,275 in 2004 to 3,644 in 2008 (see Table 5.4 below). Currently, around 1,200 students are graduating from the

¹⁰⁰ The teacher work load is the number of timetabled periods per school week (40) divided by the teacher to class ratio, which is the ratio of teachers to the total number of classes taught.

¹⁰¹ Prior to this, primary school teacher education was a separate stream known as *Normal Primaire*, offered by over 20 upper secondary schools.

¹⁰² The mathematics and science curriculum is most popular, with typically over 35 periods per week compared with only 25 to 30 periods for social sciences, creating an overcrowding issue.

TTCs each year. In addition, another six secondary schools continue to offer the *Normal Primaire* stream (see Annex Table 5.2).

The demand for primary teacher training courses among *tronc commun* school leavers is low and possibly even declining, mainly because of the low pay offered to primary school teachers and the limited opportunities available to TTC graduates to obtain public support for higher education.¹⁰³ This is illustrated by the fact that most TTC candidates did not initially plan to become a teacher. Among 2008 TTC students, only 36 percent had selected teacher training as the first or second choice for their upper secondary education. As a result, most TTCs do not operate at full capacity. The inability to recruit sufficient students means that three of the largest TTCs (in Mururu, Save and Zaza) still provide *tronc commun* classes and two thirds of enrollments at the Byumba TTC are in specializations other than teacher training. No private secondary schools offer primary teacher training and government subsidized schools originally selected by MINEDUC to become TTCs have only reluctantly taken on this responsibility. This is symptomatic of the low demand for teacher training, which results in the poor overall quality of student intake. Among those who pass their O-Levels and qualify to enter upper secondary, TTC candidates have significantly lower marks on average than candidates in other training streams.

Student wastage at the TTCs is minimal, with repetition and dropout rates generally below two percent. TTC students take a slightly modified A-Level examination, given that less time is devoted to core academic subjects because of the teaching practice requirement in the TTC curriculum. The overall pass rate for full-time TTC students is consistently over 95 percent (see Annex Table 5.3). Recurrent unit costs at TTCs do not substantially differ from those for other upper secondary students because pupil to teacher ratios and running costs are broadly similar.

Table 5.4: TTC and CoE Enrollment and Other Indicators, by Institution, 2008

	Number of Students	Number of Classes	Number of Teachers	Pupil to Teacher Ratio	Students per class
TTCs					
Bicumbi	402	10	17	23.6:1	40.2
Byumba	253	13	13	19.5:1	19.5
Kirambo	525	11	18	29.2:1	47.7
Matimbo	200	3	24	8.3:1	66.7
Mbuga	576	14	26	22.2:1	41.1
Mururu	199	10 (5)	22	9.0:1	39.8
Rubavu	304	12	26	11.7:1	25.3
Rubengera	442	12 (1)	18	24.6:1	38.3
Save	433	21 (12)	27	16.0:1	48.1
Zaza	330	18 (10)	27	12.2:1	41.2
Sub-Total / Average	3664	130 (28)	218	16.8:1	38.2
CoEs					
Kavumu	342	10	16	21.4:1	34.2
Rukara	333	7	22	15.1:1	48.6
Sub-Total / Average	675	17	38	18.3:1	41.4

Source: School Census, 2008.

Notes: Figures in brackets indicate the number of *tronc commun* classes offered, where applicable.

¹⁰³ Only TTC graduates with an A-Level distinction are offered places in public higher learning institutions.

Reviews of primary teacher training have consistently highlighted serious shortcomings in the quality and relevance of the courses offered (Livingstone, 2005; Penny, 2003; and Griffiths, 2003). The most notable findings are the poor alignment of the teacher training curriculum with the school curriculum, the limited emphasis on acquiring basic teaching skills, the limited teaching experience of teacher trainers, insufficient resources and the poor academic quality and limited commitment of candidates to the teaching career.

TTC graduates also tend to have only minimal knowledge of and practice in the primary school curriculum, due to the following factors:

- (i) Only four of the 30 to 35 periods a week are devoted to teaching practice during the first two years, and six during the last year;
- (ii) School internships are limited to three or four weeks during the third year. They are largely unsupervised because of the unavailability of funding for TTC tutors to travel to participating schools. Despite this, students complain that as a result they have less time to devote to core academic subjects and that they perform less well in their A-Levels;
- (iii) TTC students typically do not have direct access to current primary school textbooks on which to base their teaching practice, especially in English;
- (iv) Computers to enable students to gain enough practical experience in IT are insufficient; and
- (v) Large classes mean that science practice is conducted in groups of over five.

Furthermore, TTC staff have little relevant teaching experience and receive limited specialized training to be teacher trainers. Only a handful has postgraduate teaching qualifications, which are now the norm for teacher trainers in most developing countries, including the East African Community.

Further concerns include:

- (i) Class size, which is typically well over 40 students, considered too large for high quality professional teacher training (see Table 5.4 above);
- (ii) The insufficiently detailed TTC curriculum (according to TTC teachers);
- (iii) The use of the traditional teacher centered pedagogy using interrogatory methods, rather than learner centered participative approaches;
- (iv) The difficulty many teachers face to work in English, as is now required;¹⁰⁴ and
- (v) The short supply of general textbooks, other learning materials and library books.

¹⁰⁴ The English proficiency levels of 200 TTC staff members were assessed in 2008 by MINEDUC. Only 19 percent were rated as having 'upper' or 'intermediate' proficiency and over half were rated as being at 'beginner' or 'elementary' levels. Over half of the primary school head teacher respondents in the 2009 teacher utilization survey mentioned poor English and, to a lesser extent, poor French as the main weaknesses of TTC graduates.

Over the last five years MINEDUC has started to redress these weaknesses through the implementation of the teacher policy and strategic plan. Specifically, the policy has resulted in the establishment of the TSC, the launch of the Mwalimu Savings and Credit Cooperative Organization (see Chapter 2), the establishment of TTCs and the commissioning of a teacher motivation and incentives study.

Furthermore, the government has recently recruited 40 fully trained Ugandan tutors for the TTCs, to generally help address the shortcomings, and assist in reorienting the pedagogical approach. Also, more English textbooks have been ordered.

However, the quality of primary teacher training remains relatively poor and, as such, may not provide an adequate foundation for good quality education for the schooling system as a whole. In particular, the government will need to improve the alignment of the teacher training curriculum with the revised primary school curriculum.

Colleges of Education. In order to address the shortage of teachers for *tronc commun*, MINEDUC has also established two CoEs, in Kavumu and Rukara. The diploma qualification requires two years and is accredited and moderated by the KIE. The 2008 teacher policy states that the CoEs shall “with time become independent and allowed to offer their own certificates.” The Rukara CoE specializes in languages and social sciences, and the Kavumu CoE in sciences.

The first intake of students took place in 2008, one year later than planned. As with TTCs, the lack of demand among secondary school leavers is a critical issue. The Kavumu CoE enrolled 342 students, and the Rukara CoE enrolled 333 students. Only a small minority of students at both colleges are reported by staff as having a strong vocational commitment. Although CoE students have preferential access to student loans, the low secondary school teacher income discourages enrollment. Only 25 percent of CoE students are female.

Concerted efforts are being made to ensure that the new diploma training is of a high standard and provides rigorous preparation for subject based teaching. Although there is a strong commitment to learner centered teaching methodologies, the management at both CoEs recognizes that this change is a major challenge. Through school internships, the teacher centered methodology is engrained. Active learning in groups is encouraged at the Rukara CoE. However, the time allocated to teaching internships is inadequate with only 12 weeks of school based activities during the second semester of the second year. Only 20 percent of the timetabled lessons are devoted to pedagogy and teaching practice and theory, which again is insufficient.

Securing sufficient and appropriately trained staff is also an issue at the CoEs. The Kavumu CoE had 14 teaching staff in 2008, four of whom were expatriates, whereas the Rukara CoE had 24 teaching staff in 2009, half of whom were expatriates with masters degrees.¹⁰⁵ Rwandese masters degree holders have not applied for CoE teaching positions. The Rwandese tutorial assistants are almost all recent graduates from the KIE and the national university, with virtually no teaching experience.

¹⁰⁵ Expatriate lecturers receive around US\$ 1,300 per month (75 percent in dollars and the remainder in local currency), on one year, renewable contracts.

Given that salaries at the CoEs are the same as at other higher education institutions, and are therefore considerably higher than for secondary school teachers, there have been large numbers of applications. However the staffing guidelines require that all CoE teacher trainers have at least an upper second class honors degree, which is not the case for secondary school teachers. This means that neither Rukara nor Kavumu teacher trainers have any prior experience as secondary school teachers.

The expected teaching load will be around 18 hours per week when the colleges are operating at full capacity. The current teaching load at the Rukara CoE is 8 to 12 hours per week.

Despite having been recently opened, facilities are poor at both CoEs, but especially at Rukara. There are no language laboratories, which are essential given the introduction of English as the teaching language. Not enough facilities exist for prospective teachers to practice their specialized subject area, and library and other learning resources are minimal.

Kigali Institute of Education. Until recently, the KIE focused exclusively on secondary school teacher training, for upper secondary teachers in particular. The degrees awarded by the institute are based on the Higher Education Qualifications Framework. The four year degree program, which has been offered since the inception of the KIE, includes a twelve week internship program that is worth 20 credits. Mentors and institute lecturers supervise students during the internship period.

The KIE currently offers two **types of teacher training degrees**, namely: (i) a two subject specialization “with education,”¹⁰⁶ and (ii) a Bachelor of Education (B.Ed.). There are four faculties: (i) science, (ii) arts and languages, (iii) social sciences and business studies, and (iv) education. In addition, separate departments have been established for distance learning, quality control and ongoing education. The distance learning facility is especially aimed at teachers for the *tronc commun* level preparing the two subject specialization “with education” degree.

The **Bachelor of Education** program is managed by the Faculty of Education and is intended primarily for TTC qualified primary school teachers with a minimum of two years of teaching experience. In contrast to the other degree program, the B.Ed has the specific objective of creating professional teacher trainers. The B.Ed. prospectus states that “the whole purpose of their training is that they should excel in education as a discipline, particularly as professional specialist teacher trainers or school administrators and managers.” Only 25 percent of course credits are in a subject specialization with the remainder in education related courses. By contrast, for the two subject specialization program, only 25 percent of credits are devoted to education, which is too low.¹⁰⁷

¹⁰⁶ The main subject combinations are: mathematics and physics, biology and chemistry, biology and geography, English and religious studies, French and English, geography and economics, history and geography, and business studies and economics.

¹⁰⁷ A new modular course structure has recently been introduced by the Higher Education Council (HEC). Students must obtain 480 credits (one credit is equivalent to 10 hours of student learning) during the four year degree program, broken down as follows: two specialist subjects (290), education (130), support courses including computing, academic and life skills (30), and a dissertation (30).

As mature students,¹⁰⁸ B.Ed. applicants should be school teachers with satisfactory A-Level results, and having passed the KIE entrance exam. The B.Ed. also admits applications from TTC graduates who pass the national examination council examinations. In 2007, the first intake was of 70 students; this increased to 337 in 2009. Demand is high; there were nearly 1,000 applications in 2009. The original intention was that B.Ed. graduates would become TTC tutors, but the projected number of graduates will far exceed TTC staff requirements. It would be desirable for the extra graduates to return to the primary level as teachers, but without appropriate encouragement and incentives, it is more likely that they will apply for secondary school teacher positions or leave the profession altogether.

Table 5.5 shows **enrollment patterns** at the KIE from 2001 to 2009. Enrollments in the two subject specialization degree courses have grown rapidly, from 940 in 2001 to 2,897 in 2009 for day students. First year intake increased from 405 in 2006 to 1,366 in 2009. With regard to subject areas, roughly an equal number of students have enrolled in the science and arts and social sciences degree programs over the last three years.

Table 5.5: KIE Enrollments, by Course, 2001-2009

Number of Students

	2001	2002	2003	2004	2005	2006	2007	2008	2009
TWO SUBJECT SPECIALIZATION "WITH EDUCATION" DEGREES									
Sciences	297	411	574	737	786	840	885	1,220	1,580
Arts and Social Sciences	282	453	644	735	825	897	—	—	—
Arts and Languages	—	—	—	—	—	—	340	481	530
Social Sciences and Business Studies	—	—	—	—	—	—	577	679	797
<i>Subtotal</i>	<i>579</i>	<i>864</i>	<i>1,218</i>	<i>1,472</i>	<i>1,611</i>	<i>1,737</i>	<i>1,802</i>	<i>2,380</i>	<i>2,907</i>
BACHELOR OF EDUCATION									
<i>Subtotal</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>69</i>	<i>314</i>	<i>675</i>
DIPLOMAS									
Science	—	310	307	288	288	286	—	—	517
Arts and Social Sciences	—	190	190	178	178	179	—	—	599
<i>Subtotal</i>	<i>—</i>	<i>500</i>	<i>497</i>	<i>466</i>	<i>466</i>	<i>465</i>	<i>—</i>	<i>—</i>	<i>1,116</i>
OTHER (includes Evening Programs)									
Intensive Language Course	361	452	463	428	452	450	607	—	—
Bachelors in Office Administration & Management	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	200
Diploma in Secretarial Studies	—	214	267	177	173	100	65	31	52
Diploma in Library and Information Science	—	34	58	79	68	86	93	20	49
Computer skills	—	83	23	—	—	—	—	—	—
Bachelors in Business Studies	—	—	—	—	113	234	324	87	307
Bachelors in Commerce	—	—	—	—	—	—	—	—	197
French Language	—	17	19	20	30	21	—	—	—
English Language	—	100	134	67	60	48	—	—	—
<i>Subtotal</i>	<i>361</i>	<i>900</i>	<i>964</i>	<i>771</i>	<i>896</i>	<i>939</i>	<i>1,089</i>	<i>138</i>	<i>805</i>
POSTGRADUATE									
Masters	—	—	—	—	—	—	24	—	—
TOTAL	940	2,264	2,679	2,709	2,973	3,141	2,984	2,832	5,503

¹⁰⁸ Mature students are those who return to higher education after acquiring some work experience.

By contrast, enrollments in the distance learning diploma program have remained relatively limited. Although the first intake was in 2001, by 2009 only a total of 323 had graduated from this program. DfID provided £ 0.75 million to support the institutionalization of the course, including full time technical assistance. Logistical problems in delivering the course to widely dispersed students are the main reason for the low output. Demand constraints also exist: many secondary school teachers prefer to enroll in KIE based degree programs.

In its effort to **diversify the training** courses offered, the KIE now also offers evening programs in Office Administration and Management, which began in 2009. The Diploma in Secretarial Studies is to be phased out. The Bachelor of Commerce has replaced the Bachelor of Business Studies. Enrollments in these non core programs are expected to increase considerably, especially in Computing Skills and English, relying in particular on the 10 KIE centers that are located in key locations throughout the country. A new Postgraduate Certificate in Learning and Teaching in Higher Education has also been recently launched, mainly targeting lecturers at higher learning institutions.

Improving the **financial outlook** is the driving force behind the increase in enrollments in the non core degree programs and the diversification of training at the KIE. Under increasing pressure from the government, the management has set itself the ambitious target of increasing internally generated income from the current level of 10 percent, to 50 percent by 2012. However at the same time, an affirmative action program was launched to increase subsidies for KIE students to encourage high performing students into the teaching profession, which has had the desired effect of stimulating increased demand for the KIE degree program.¹⁰⁹ Currently, education students receive a 75 percent grant for tuition whereas other students are given a 50 percent tuition grant.

The core KIE budget was RF 1.64 billion in 2008, about seven percent of the total higher education budget of RF 23.9 billion. The cost per B.Ed. student is RF 1.2 million per year (75 percent tuition fees, and 25 percent subsistence costs). The unit cost of the full time degree programs was around RF 2.0 million in 2002/03 (Kayemba, 2003). This drop in unit costs is due mainly to economies of scale, as the student population of KIE almost doubled between 2003 and 2008. Other factors include the initial high capital investment required to create an adequate learning environment, which is reflected in 2003 unit costs, and stricter government funding practices, introduced in 2008.

The institute is expected to support the CoEs and TTCs, but has little capacity in terms of human, physical and financial resources to do so at present. The **qualification profile** of the teaching staff at the KIE is quite weak. Of a total teaching staff of 165, only 13 are professors and associate professors; approximately 100 are assistant lecturers and tutorial assistants, with lower qualifications. Despite having a strong staff development program with large numbers of young staff studying for postgraduate qualifications at overseas universities, especially in South Africa and France, little progress has been made in developing a sizeable staff of national teacher trainers (see Table 5.6 below). The inadequate number of senior and experienced staff in

¹⁰⁹ The teacher policy states that “in order to attract and motivate those entering secondary teacher training institutions, the current financial assistance in the form of loans will be reviewed so that the trainees who complete and enter the teaching service in government secondary schools will be exempted from the payment of loans. They will be bonded to remain in service for four years.”

professor and associate professor positions is a particular concern, and relatively few institute lecturers have a strong track record as experienced secondary school teachers.

Table 5.6: KIE Academic Staff, by Position and Qualification, 2005-2009
Number of Staff

	2005	2006	2007	2008	2009
Teaching Position					
Professor	8	8	7	6	4
Associate professor	7	7	9	9	9
Senior lecturer	9	15	13	11	14
Lecturer	52	46	34	39	37
Assistant lecturer	48	52	56	45	47
Tutorial assistant	2	22	35	46	54
Total	126	150	154	156	165
Teacher Qualifications					
Ph.D.	36	36	36	36	32
Masters	55	50	52	54	62
Bachelors	45	64	65	68	68
Total	126	150	154	156	165
Other Statistics					
Student to Faculty Ratio	16.2:1	14.6:1	16.2:1	17.1:1	21.6:1
% Expatriates *	41	40	34	36	32
% Female	13	18	17	17	23

Source: KIE.

Note: * Expatriates are senior academics, including professors, associate professors and senior lecturers

The **teaching load** norm is 700 hours per year, but most lecturers report that they spend more than 2,000 hours per year preparing and delivering lectures and assigning and marking student assessments. This leaves them little time to undertake their own research, which in turn adversely affects their career advancement, because promotion is largely based on research performance.

Staff turnover at KIE has remained relatively constant and low, at under three percent per year during the last five years. However, there are increasing concerns about the impact of low pay (declining, in real terms) on staff commitment and morale. The large pay differential between expatriate and local staff is also demotivating for nationals. Expatriate pay is itself decreasingly attractive for foreign staff, especially as a result of large salary increases awarded to academics in Kenya and Tanzania, offering appealing job alternatives nearby. In response to this situation, concerted efforts are being made by KIE management to enable staff to supplement their basic salaries. Staff are encouraged to undertake consultancy work on detachment, and are permitted to retain two thirds of their fees. Discussions are also underway between MINEDUC and MINECOFIN to generally improve the incentive structure for academic staff at higher learning institutions.

MINEDUC and KIE have launched efforts to improve the **learning infrastructure**, including the provision of classrooms and science laboratories. However, with rapidly growing enrollments, key learning resources are becoming increasingly stretched. IT and library resources are particularly inadequate. The institute has seven computer labs with a total of 400 computers, but with poor internet connectivity.

The overall **quality** of the teacher education program at the KIE is relatively good. Student to faculty ratios have halved from 22 to 1 in 2000 to 11 to 1 in 2008. Student completion rates are high. Repetition and dropout rates are low, ranging from two to four percent for the former, and around one percent for the latter. The overall degree program curriculum is also generally well aligned with the secondary school curriculum, and the government recently extended the internship period from 10 to 12 weeks.

However major **concerns** persist about the adequacy of the training in teaching methods, pedagogy and the overall level of teaching internships in schools. As with the diploma and certificate level teacher education program, the KIE is only able to attract students with relatively low A-Level results, especially in the sciences.¹¹⁰ Also, teaching practice remains below the international standard of 20 to 25 percent of teacher training.

Qualification Upgrading. Only 10 percent of the teacher motivation survey respondents have completed or are currently undertaking further studies to acquire additional qualifications. This is low compared with most other African countries. The bulk of such studies are done independently with no formal support or guidance from MINEDUC. Many secondary teachers are studying for non educational qualifications, which is symptomatic of their desire to leave the teaching profession.

Traditionally, there have been few opportunities for teachers to obtain further teaching qualifications at education institutions, which has recently been somewhat mitigated by the introduction of the distance learning program. Only eight percent of the surveyed teachers have ever been granted study leave. Not surprisingly, less than 50 percent of teachers rated the availability of qualification upgrading opportunities as “good” or “excellent.”

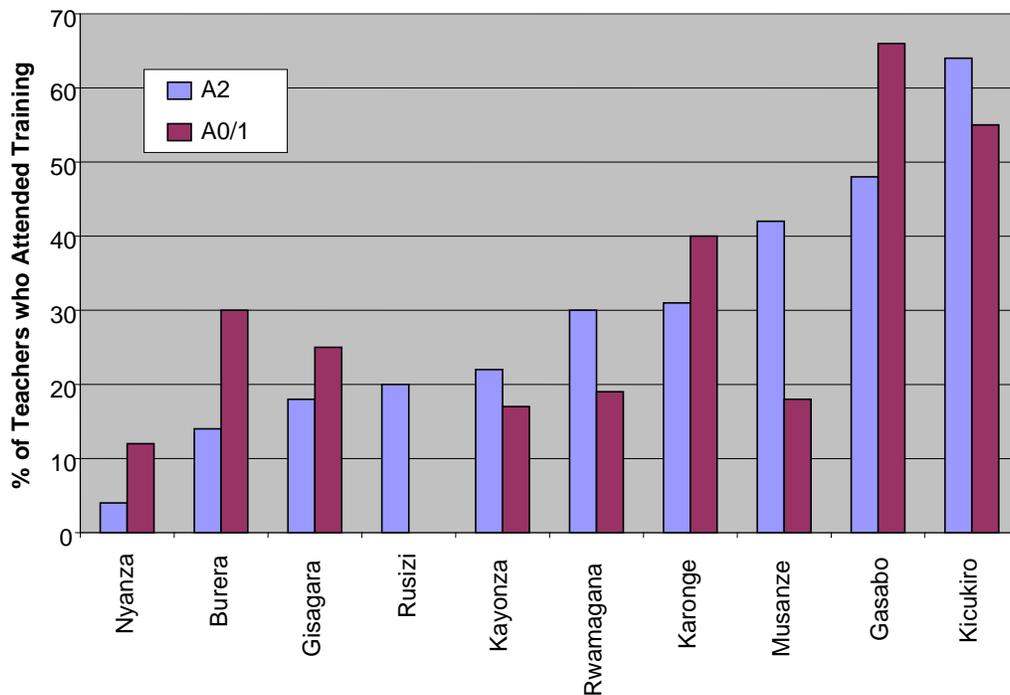
Given that qualification upgrading is still largely teacher driven, rather than in response to an established national strategy, it may not meet the human resource development needs of the education system.

Professional Training. The provision of regular, high quality ongoing training is essential to ensure the attainment of consistently high teaching standards. However, despite the widespread recognition of the need to accelerate or intensify professional teacher training, “current provision is ineffective because it is largely supply driven, ad hoc/one-off, with little or no reinforcement. Teachers are not seen as active participants in their own professional growth” (Rutayisire, 2008). The mentoring of newly qualified teachers is also inadequate.

Responding to the teacher motivation survey, only 60 percent of primary school teachers indicated that they have either a diploma or a degree, and 75 percent of certificate level teachers rated the current availability of ongoing training as “very poor” or “poor” (Bennell and Ntagaramba, 2008). Only a third of teachers attended at least one teacher training activity in 2008. The incidence of teacher training activities varies considerably across the 10 surveyed districts: fewer than 10 percent of primary school teachers in Nyanza benefited from training compared with over 60 percent in Kicukiro (see Figure 5.7 below).

¹¹⁰ The average A-Level results for the 2009 KIE degree candidates were as follows: 26 in mathematics and physics, 35 in biology and chemistry, 34 in languages, 40 in humanities and 42 in education. Minimum scores for degree courses at the national university are typically over 60.

Figure 5.7: Share of Teachers Participating in at Least One Teacher Training Activity in the Last 12 Months, by Existing Qualification Level and District, 2008
Percent



Source: Teacher Motivation Study.

Note: A2: primary certificate teacher; A0/A1: degree and diploma, respectively.

The average duration of teacher training in 2008 was six days, which is reasonable, but again conceals stark disparities: teachers attended 11 days of training in Kicukiro, whereas they benefited from less than an hour on average in Nyanza. The reasons for these large variations are yet to be examined in detail, but the dynamism of individual district officers and school heads, coupled with the lack of funding, especially at the school level, may be key factors. Only a limited amount of primary school teacher training is focused on the promotion of the active learner centered pedagogy. A key issue is the difficulty of introducing new and demanding teaching practices when teacher motivation is low.

Employment Outcomes. As a result of the lack of opportunities for further study and limited employment prospects, TTC principals and teachers report that most TTC graduates become primary school teachers. However, many subsequently try to secure positions at private universities. Also, an increasing number are being admitted to the B.Ed. degree program at the KIE and may not return to primary school teaching once they obtain their degrees.

Indeed, to date, relatively few KIE degree graduates have become teachers. Out of a random sample of thirty five 2003/04 KIE degree graduates (10 percent of the total), only one was found to be working at a public or government subsidized secondary school in 2008. The respective shares of 2005/06 and 2007/08 graduates working as teachers were 11 and 7 percent. Only eight of the 22 distance learning graduates in 2008 were employed at public and government subsidized schools, which is surprisingly few given that untrained teachers already in the

profession are the target group for this course. Without a rapid increase in the number of KIE graduates joining the teaching profession, the weak qualification profiles of secondary school teachers will not improve.

Teacher Motivation and Incentives

Effective teachers are not only well trained, but also highly motivated. A strong commitment to teaching as a lifelong career is the foundation of a high performing education system. Adequate numbers of capable and committed young people therefore need to be attracted and retained in the teaching profession. There are many factors that collectively influence teacher job satisfaction and motivation levels. The following discussion focuses on two types of motivators, namely pecuniary (pay and material benefits) and non pecuniary (especially living and working conditions).

There are widespread concerns that school teachers in Rwanda lack adequate incentives. As the 2007 appraisal report for the Education for All - Fast Track Initiative points out, “there is no system to support and motivate teachers in the classroom.” The declining quality of education has been widely attributed to “the low caliber of teachers,” but it may also be the consequence of low commitment levels. To redress this situation, MINEDUC is currently introducing a variety of monetary and non monetary measures to improve teacher motivation.

Motivation Levels. Teacher commitment is possibly higher than might be expected given the poor pay, difficult working and living conditions and limited opportunities for professional development. As has been pointed out in other reports, committed teachers are working hard for very little. However, the 2008 teacher motivation survey reveals increasingly poor job satisfaction and low motivation. In particular, only half of primary school teacher respondents agreed with the general statement that “teachers at my school are well motivated.” With regard to trends, 35 percent of primary and 39 percent of secondary school teacher respondents at publicly funded schools agreed with the general statement that “teachers at my school are increasingly demotivated,” which is worryingly high.

Vocational Intent and Commitment. As is generally the case throughout Africa, teaching is not regarded as an attractive career option among school leavers in Rwanda, which has in turn fuelled concerns that teacher candidates are not sufficiently skilled or motivated. The fact that only five percent of the 36,000 teachers on the government payroll are university graduates with a recognized teaching qualification is symptomatic of the lack of appeal of the teaching profession. As discussed earlier, most KIE graduates are not currently employed as teachers; many TTC graduates are, but this is mainly because they lack other prospects.

The teaching profession is also fragmented, which militates against the development of any strong sense of collective professional or occupational solidarity. Teachers are compartmentalized into three distinct groups according to their qualification level (certificate, diploma and degree). The new job classification for the public service further reinforces the segmented structure of the teaching profession, and the low status of primary school teachers in

particular. However, it is expected that separate teacher statutes offering improved career progression will soon be introduced.

Pay and Other Benefits. As with all human beings, basic needs must be satisfied in order to ensure adequate motivation and performance. Nearly all teachers at surveyed schools believe that they are poorly paid, which is the main reason mentioned by teachers for wanting to leave the profession. Over two thirds of respondents stated that their standard of living has declined over the last five years.

The most noticeable detrimental features of the teacher pay structure at publicly funded schools are:

- (i) The limited pay progression within the three main qualification groups. Consequently, the only way certificate or diploma teachers can increase their pay significantly is to upgrade their qualification to the diploma and degree levels, respectively. The income differential between certificate and degree teachers is large, which should provide a healthy incentive for teachers to do so. To date, however, very few are successful because of the limited support offered;
- (ii) The pay differential between non education university graduates and education graduates. The former earn over 50 percent more than the latter, which is likely to result in lower retention rates among this group; and
- (iii) The inexistence of an income differential between classroom teachers and head teachers.

Table 5.7 below reveals that the total net basic income of a certificate level public or government subsidized primary school teacher is around RF 27,000 (US\$ 46) per month. This is below the expected standard of living for a professional civil servant. The recently introduced annual performance bonus for primary school teachers has increased net pay by around a third, given that the bonus is not subject to income tax. This annual performance bonus of RF 12,500 per month is paid to all teachers from the school per capitation grant. Other motivation bonuses are not usually paid to primary school teachers, mainly because most parents and guardians are too poor to make the necessary contributions.

The food consumption poverty level based on the standard requirement of 2,500 calories per day was officially estimated at RF 250 per adult in 2006. Prices have increased by 30 percent since then, so in late 2008, this figure was approximately RF 325 per adult per day or RF 9,750 per month. Each teacher has an average of two children and four other dependents. Assuming each child to be equivalent to 0.67 of the adult day calorie requirement, then the minimum household expenditure required to meet these food consumption needs is RF 48,750 per month, which is slightly above the average monthly net income of a certificate level primary school teacher. Taking into consideration other essential household expenditures (clothing, transportation, etc.), it would appear that the majority of primary school teachers are living below the official poverty line.

Table 5.7: Median Net Basic and Supplementary Monthly Income for Primary and Secondary Teachers, by Level of Qualification Held, 2008

Thousands of RF

	PRIMARY			SECONDARY		
	Public	Government Subsidized	Private	Public	Government Subsidized	Private
Degree						
Basic	n.a.			113	112	120
Supplement				35	25	0
Total				148	177	120
Diploma						
Basic	n.a.			94	91	91
Supplement				35	20	0
Total				129	111	91
Certificate						
Basic	27	27	55	27	28	42
Supplement	12.5	12.5	n.a.	19	14	13
Total	39.5	39.5	55	46	42	55

Source: Teacher motivation survey.

Interestingly, the median monthly income (including bonuses) of degree and diploma level teachers at private secondary schools is lower than at publicly funded secondary schools (see Table 5.7). Although the basic salary is equivalent, most private schools find it difficult to pay the same level of bonuses, and are often in arrears. The main exception is at the relatively small number of elite private schools, where total remuneration can be twice as much as at government schools.

The net income of a certificate teacher is almost three times less than that of other similarly qualified civil servants (see Table 5.8). The gross monthly pay of a certificate level medical technician employed at a government hospital is RF 138,596, and a hospital doctor is currently paid RF 387,784 gross per month. Even laborers typically earn RF 3,000 per day, which is two to three times higher than the pay of a primary school teacher.

Table 5.8: Teacher Net Monthly Pay Scale Compared with Other Civil Servants, by Level of Qualification Held, 2008

Thousands of RF

GRADE	TEACHER	OTHER
Degree	113	200
Diploma	89	144
Certificate	27	80

Source: MIFOTRA.

Note: Certificate level primary teachers receive an additional RF 12,500 monthly bonus.

Secondary school teachers with a university degree earn approximately three times more than a certificate level primary school teacher, which is a large income differential both in absolute terms, and compared with other countries. Because of fiscal constraints, the government has been unable to fully implement the 2006 civil service pay reform, which means that the net basic

monthly pay of a degree qualified teacher is around RF 65,000 less than a university graduate employed in an administrative or technical role elsewhere in the civil service (see Table 5.8 above).

Large numbers of degree qualified teachers have resigned in recent years in order to benefit from better paying positions in the civil service, especially in district and sector offices. Turnover rates reached such a high level in 2006 and 2007 that the government was obliged to increase degree level teacher pay from around RF 50,000 to RF 113,000 in 2007, thereby opening up a very sizeable income differential with primary school teachers. This has done little to improve the latter's job motivation. Teachers at secondary schools also receive motivation bonuses, which generally range from RF 15,000 to 30,000 per month. In addition, around 12 percent of primary and 25 percent of secondary teachers at publicly funded schools also receive non monetary benefits, most notably accommodation and health insurance.

In real terms, teacher pay has declined precipitously since the late 1980s. The nominal average net starting income for a certificate level primary school teacher was RF 27,000 per month in 1990 and has remained at that level.¹¹¹ Taking the rise in the cost of living into account, the 2007 income (including the bonus) of a certificate level teacher in was, in real terms, over five times less than the 1990 income. The basic pay was increased between 2006 and 2007, by 147 percent for degree level teachers and 137 percent for diploma level teachers, but only three percent for certificate level teachers. The retention of expatriate staff was the main justification for the large increase in degree and diploma level salaries because other countries in the region pay much higher salaries for expatriate staff.

With regard to likely future trends, the scope for significant pay increases for teachers on the government payroll remains limited. The current fiscal situation is particularly tight and the government will do well if it can meet its objective to maintain the real value of expenditure in the social sectors. Any additional expenditure will be targeted at the "primary growth sectors." Annual inflation is currently running at 18 percent. Given the planned expansion of the education sector, it is unlikely that pay increases will exceed the previous trend of five to six percent per year. Assuming inflation levels remain high, this could result in teachers' real incomes declining by as much as 10 percent per year.

The government officially launched the Mwalimu Savings and Credit Cooperative Organization in 2009, aiming to provide teachers with subsidized credit, primarily for income generating activities. RF 1.2 billion were provided for the acquisition of fixed assets and start-up costs. Currently, 82 percent of teachers are members. The minimum monthly contribution is five percent of the teacher's salary, equivalent to RF 2,000 for a primary school teacher. Total collections are currently RF 68 million per month. Each member is entitled to borrow up to five times the amount of their savings. Since it received its operating license in early 2008, the cooperative has made loans to 1,400 teachers, averaging RF 300,000 per loan.

Expectations of the credit cooperative are high among teachers. However, given teachers' current level of income and saving capacity, it will take 11 years for all members to be able to access an average loan of RF 300,000. The cooperative's senior management estimates that an additional

¹¹¹ The figure does not include the RF 12,500 monthly bonus, which is part of the school capitation grant program.

capitalization of RF 6 billion is required in order for loans of this amount to be provided to all members within two years. They are working on a business plan to address the shortfall.

Around 15 percent of degree qualified and 20 percent of diploma and certificate qualified teachers in primary and secondary education indicate that they perceive other income to that of their normal job. Nearly 70 percent of the additional income comes from farming and slightly more than 10 percent from private tuition. The average monthly household spending of certificate level primary school teachers with additional income is 25 percent higher on average. The spending differential is 67 percent among degree teachers. Some principals, especially at urban secondary schools, are concerned that the need to earn a secondary income is negatively affecting teaching commitment and performance.

Table 5.9 shows median household spending by main expense categories for teachers responding to the 2008 teacher motivation survey. Around two thirds of teacher households have no other income, with little variation according to teachers' level of qualification. These households must survive solely on the teachers' pay.

Reported spending levels for certificate qualified teachers are notably higher than their total net monthly incomes. This is because 25 percent of households have a second wage earner, and due to the self-employed income (in particular from vending and farming) of other household members. Under reporting of secondary sources of income by teachers may also be a factor. The relatively high spending on education by all three groups is particularly noticeable. Household expenditure also varies considerably according to location. The cost of living is much lower in rural areas, but so also is the quality of life.

Table 5.9: Median Teacher Household Monthly Spending, by Category and Teacher Qualification, 2008

Thousands of RF

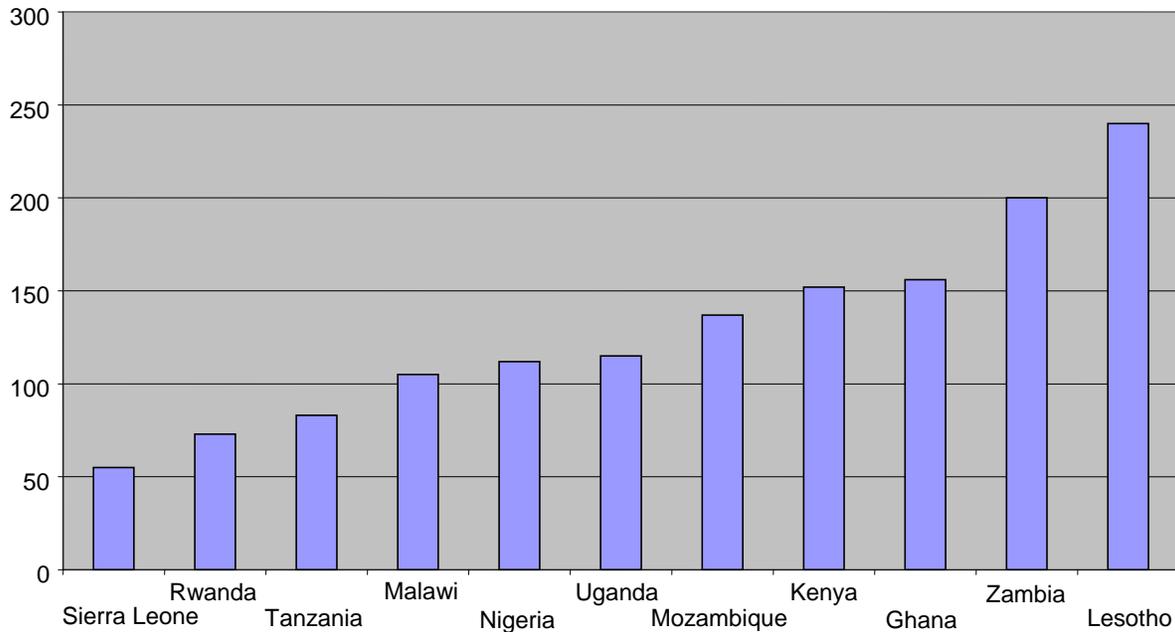
	Housing	Food	Transportation	Health	Education	Other	Total
Degree	30	60	19	10	30	20	152
Diploma	25	45	12	7	20	19	115
Certificate	10	30	8	5	20	15	85

Source: Teacher motivation survey.

Figure 5.8 below shows that the average income of a qualified primary school teacher in Rwanda is considerably lower than in most other countries. Most countries have separate, well defined categories for teachers (based on qualifications and seniority) with annual pay increments and sizeable pay differentials between teachers and head teachers. However, the most frequent shortcoming of the Rwandese teacher pay scale is that only limited salary progression is allowed within each category. Primary school teacher salaries are 2.6 times the GDP per capita, which is below the EFA-FTI benchmark indicator of 3.5.

Figure 5.8: Average Monthly Income of Qualified Primary School Teachers in Select African Countries, 2004-2006

US\$ per month



Source: Bennell and Ackyeampong, 2007.

Note: The Mozambique figure is the midpoint of the pay scale for a qualified primary school teacher. The Rwanda figure is for 2008.

Working and Living Conditions. The school environment is challenging in Rwanda, as reflected by one in three primary school teachers rating their working conditions as “very poor” or “poor.” Most teachers who want to transfer cite their family situation and the school itself as the main reasons. Whereas 75 percent of teachers live within three kilometers of their schools, 15 percent of married teacher respondents do not live with their spouses (the rate reaches 25 percent in some districts).

In addition to the poor physical environment and the paucity of learning materials, high teaching loads and poor student behavior also appear to be key issues. Maintaining student discipline is generally more difficult in urban schools. On the other hand, teachers generally appear to be reasonably healthy. The impact of HIV/AIDS with respect to teacher mortality and morbidity appears to be limited and thus the epidemic has not seriously affected teacher motivation and job satisfaction.

Less than three percent of teachers live in accommodation provided by their schools. The teacher motivation survey indicates that the median monthly spending on housing by primary and secondary school teachers is RF 10,000 and RF 30,000, respectively. Only 33 percent of primary and 25 percent of secondary teachers stated that they do not spend anything on accommodation, which indicates that they live in houses which they own. This implies that 71 percent of teachers live in rented accommodation on average. MINEDUC recognizes this problem and is looking into ways to increase government funded teacher accommodation.

Teacher Management. Teachers must be well managed if they are to be properly motivated and utilized. Around two thirds of primary and three quarters of secondary school teacher survey respondents agreed with the statement that “teachers at my school are well managed.” However, the majority of teachers also agree with the statement that teachers or teachers and parents work well together at their schools. Teachers in most schools are regularly monitored by principals and heads of department, but it appears that school inspectors do not visit all schools regularly. Also, as far as teachers are concerned, teacher transfers and promotions are frequently not managed well. Only slightly more than half of certificate level teacher respondents are members of the *Syndicat National de l’Enseignant Primaire*, the national primary teachers’ union, and only a third of all teacher respondents agreed with the statement that “teachers at my school think that their trade unions are doing a good job.”¹¹²

Most schools do not have properly constituted school management teams. In the past, principals were appointed mainly on the basis of seniority. The current policy is that more weight should be given to merit and, for this reason, more of the recently appointed principals are younger than their predecessors. Principals receive no additional pay and receive little training or support. MINEDUC is currently seeking approval from the government for the payment of additional allowances for primary and secondary school principals. MINEDUC also plans to distribute a good practice manual in school management to all schools.

In recent years, management training for head teachers has been provided during the longer vacation periods. In collaboration with the Flemish Cooperation Agency, MINEDUC has successfully conducted five day management training workshops for head teachers in primary and secondary schools, respectively covering 94 and 98 percent of schools. The KIE is planning to run two national school management courses to train all 2,300 primary school principals. These two week courses will deliver an accredited certificate to participants. The proposed budget is US\$ 2.27 million, for three years.

Teacher Absenteeism. Around 40 percent of teachers responding to the 2008 teacher motivation survey did not agree with the statement that “teacher absenteeism is not a problem at my school.” The 2007 Citizen’s Report Card exercise also reveals relatively high levels of concern about teacher absenteeism with 42 percent of respondents indicating that teachers are only “sometimes” available.¹¹³ The sickness related absenteeism rate is only around 2.5 percent at primary and 1.5 percent at secondary schools.

¹¹² The primary teachers’ union reports that it has around 24,000 members, about 80 percent of all primary school teachers. It only has four permanent staff at its head office in Kigali. Monthly contributions are RF 100.

¹¹³ The Citizen Report Card is a tool for governments to obtain public feedback on their programs. Issues such as access to services, quality and reliability of services, and problems encountered by service recipients are included. Rwanda’s most recent Citizen Report Card was conducted in 2007.

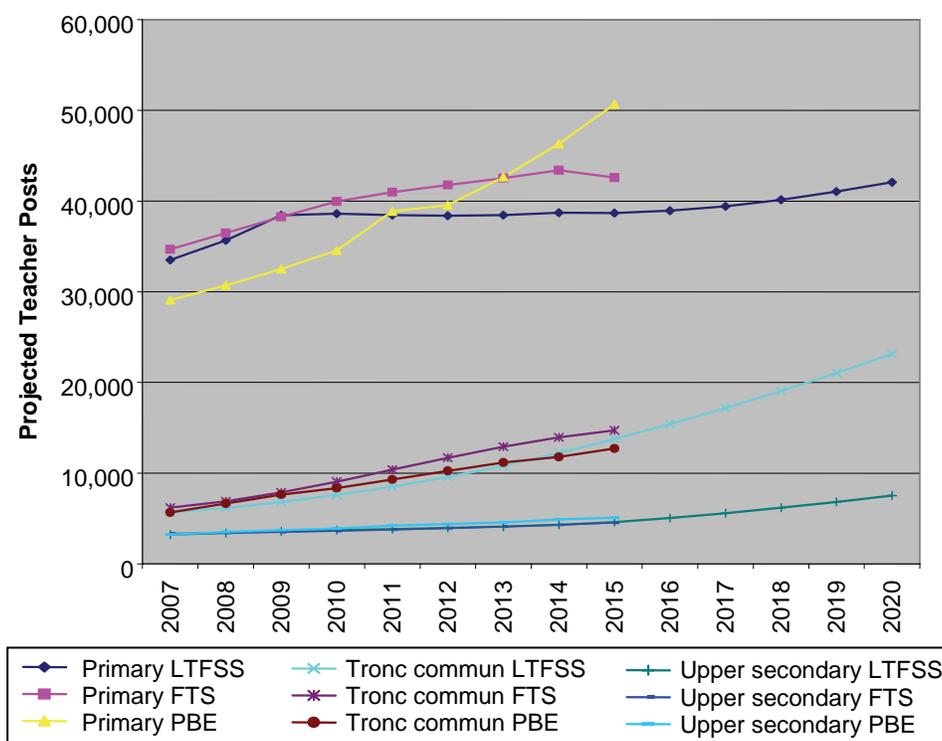
Projected Teacher Demand

Our estimation here of projected teacher demand will consider the annual change in teaching posts, and teacher replacement.¹¹⁴ However, it is worthwhile to first examine recent past projections.

Past Projections. The teacher requirement projections for primary school teachers presented in major documents such as the Long-Term Strategic Financing Framework, Post Basic Education report, and plans to fast track the Nine Year Basic Education strategy (Fast Track Strategy, or FTS) are markedly different (see Figure 5.9). The FTS projections are the most recent and show total teacher requirements for primary schools increasing from around 35,000 in 2007 to 42,000 in 2015. By contrast, the Post Basic Education (PBE) report projects primary school teacher requirements to be over 50,000 in 2015.

Figure 5.9: Long-Term Strategic Financing Framework, Post Basic Education Report and FTS Teacher Requirement Projections, by Level, 2007-2020

Number of Teaching Posts



Source: Annex Table 5.7.

¹¹⁴ Teacher vacancies may also be considered. In the teacher utilization survey, around 75 percent of primary and *tronc commun* and 60 percent of secondary schools reported vacancies. However, MINEDUC indicates that these vacancies are temporary, and that schools and districts are responsible for finding replacements. For this reason, vacancies will not be considered in the final estimation of projected teacher demand in this report.

All three projections for *tronc commun* and upper secondary teachers are broadly similar. The FTS projects that the required number of *tronc commun* teaching posts will increase from 5,673 in 2006 to 14,717 in 2015. The required number of upper secondary school teachers is expected to increase from 3,278 to 4,516 over the same period, which is only an increase of 1,300 posts. However, these figures are likely to change significantly once the implementation of the Nine Year Basic Education strategy begins.

Future Teaching Posts. A key objective of the teacher policy is to “carry out a national projection of teachers aimed at meeting the needs for quality improvement and teacher education budget rationalization.” The major determinants of the annual change in teaching posts are: (i) the projected total school enrollments for primary, *tronc commun* and upper secondary levels, and (ii) the target pupil to teacher ratios for each year, that consist of two variables, namely the teacher to class ratio or teaching load, and class size (See Footnote 7).

Robust enrollment projections should be based on detailed research and planning, examining all the key determinants of enrollment and budget constraints. There is always a degree of uncertainty in making projections of this kind, especially in countries such as Rwanda where gross intake rates are very high and completion rates are low. The two key determinants of school enrollment are the current and future size of the primary and secondary school age population and the proportion of this population that will attend and complete school. The critical population parameter for modeling purposes is the number of children aged seven years and who are expected to enroll in primary school. The actual number of children who will attend school depends on national educational policies, such as the Nine Year Basic Education strategy, as well as grade repetition or promotion policy.

The four main factors that determine the number of children who will attend primary and secondary schools are: (i) the future school aged population, (ii) future annual gross intake rates of children aged seven years into primary school, (iii) future grade specific repetition and permanent dropout rates, and (iv) future transition rates from primary to *tronc commun* and from *tronc commun* to upper secondary levels.

Target values for these four factors are currently under review by MINEDUC. For the purpose of this report’s enrollment projection, the following assumptions and target values have been retained:

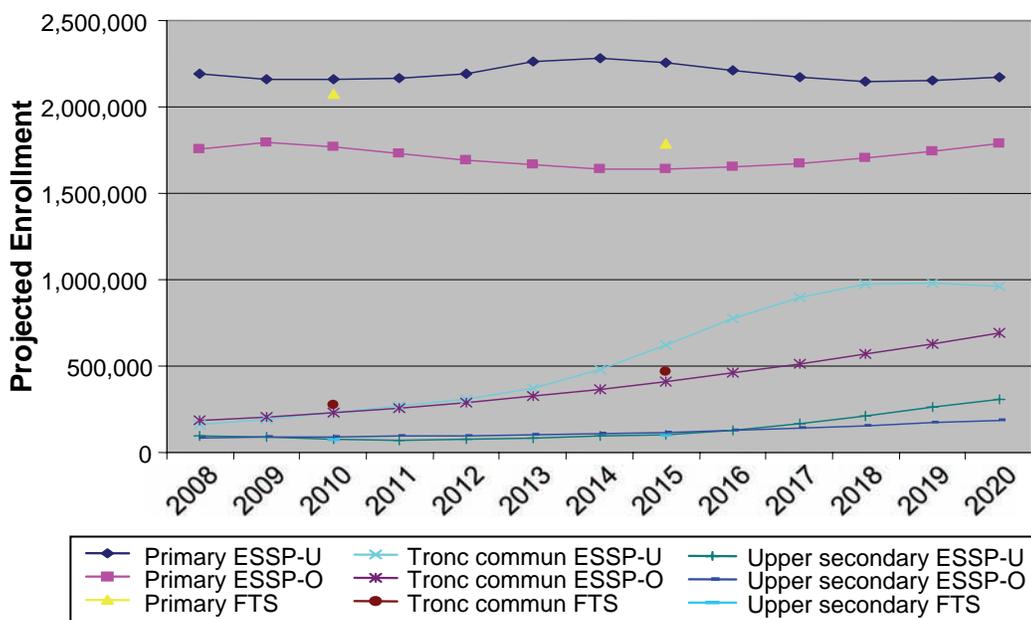
- (i) The future size of the school aged population is based on the most recent population projections made by the National Institute of Statistics of Rwanda (NISR), based on the assumption that the past fertility trend will continue over the next 10 to 15 years. According to this projection, the seven year old population will grow at an average rate of 3.8 percent per year between 2008 and 2020;
- (ii) According to the 2008 school census, the primary school gross intake rate was 228 percent in 2008. The rapid implementation of the fast track strategies coupled with the enforcement of compulsory school attendance has led to the assumption that the gross

intake rate will decline to 120 percent in 2013 and 100 percent in 2018 (that is all children aged seven years will enroll in primary school);¹¹⁵

- (iii) The ESSP has set targets for primary school repetition rates of eight percent in 2010 and three percent by 2015. The dropout rate targets are five percent for all primary school grades (except for Primary 2, for which the target is two percent) and to under three percent for the secondary level, by 2019; and
- (iv) The Long-Term Strategic Financing Framework has set a target transition rate for primary to *tronc commun* of 75 percent, to be reached by 2015. However, the ESSP envisages that this rate will be only 50 percent in 2009 and 35 percent in 2013 and 2019, which are the rates used for our teacher demand projection.

On the basis of the above targets (summarized in Annex Table 5.4), a standard education simulation model has been used to generate projected enrollments for the three main cycles of education. These are designated *Updated ESSP* in Figure 5.10 and are shown alongside the corresponding original enrollment projections presented in the ESSP and FTS documents.

Figure 5.10: Estimates of Projected Enrollments, by Level, 2008-2020
Number of Students



Source: Annex Table 5.7.

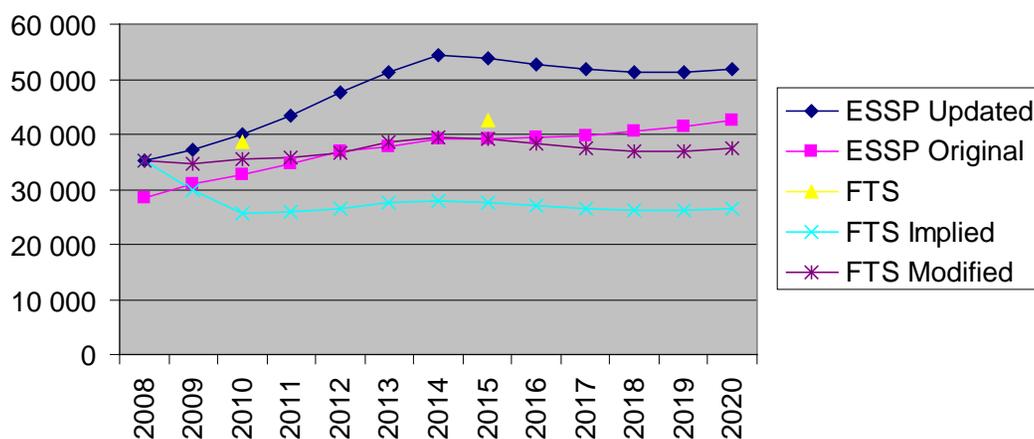
¹¹⁵ There was no surge in the intake rate after the fee free or compulsory education policy reforms took effect. This would indicate that access was already on track to be universal. The decline reflects the fact that as the system continues to take in children who are of the appropriate starting age for primary, there will be fewer over aged children starting school.

Large disparities exist in the enrollment projections between the three sets of estimates, which highlight the need for more detailed planning. The most noticeable features of the *Updated ESSP* projections are the increase and subsequent decline in primary school enrollments, and the marked increase in *tronc commun* enrollments, which level off at around one million students in 2017. Upper secondary enrollment starts to increase after 2014.

The **target pupil to teacher ratios** must necessarily make assumptions about two other parameters: the teacher to class ratio, and the pupil to class ratio. Three scenarios have been considered:¹¹⁶

- (i) The *Updated ESSP* scenario is based on the updated enrollment projections presented in this chapter, but continues to use the ESSP pupil to teacher ratio targets;
- (ii) The *Implied FTS* scenario is based on pupil to class ratios of 41 to 1 for primary education and 45 to 1 for *tronc commun*, and a teacher to class ratio of 0.5 (with double shifting, every teacher is responsible for two classes); and
- (iii) The *Modified FTS* scenario is based on the new curricula, but not on double-shifting. However, the teacher to class ratio is adjusted for the new teaching load required by the new curriculum.

Figure 5.11: Projected Primary School Teaching Post Demand, by Scenario, 2008-2020
Number of Teaching Posts



Source: Annex Table 5.7.

With projected enrollments and pupil to teacher ratios, it is possible to calculate the expected number of teaching posts required for primary, *tronc commun* and upper secondary schools for the next 10 years.¹¹⁷ (At this stage we are still assuming that all teachers remain in the

¹¹⁶ Annex Table 5.6 summarizes the values used for each of the three scenarios and also shows the 2008 values of the ratios drawing on data from the 2009 teacher utilization survey.

¹¹⁷ These calculations are presented in Annex Table 5.7

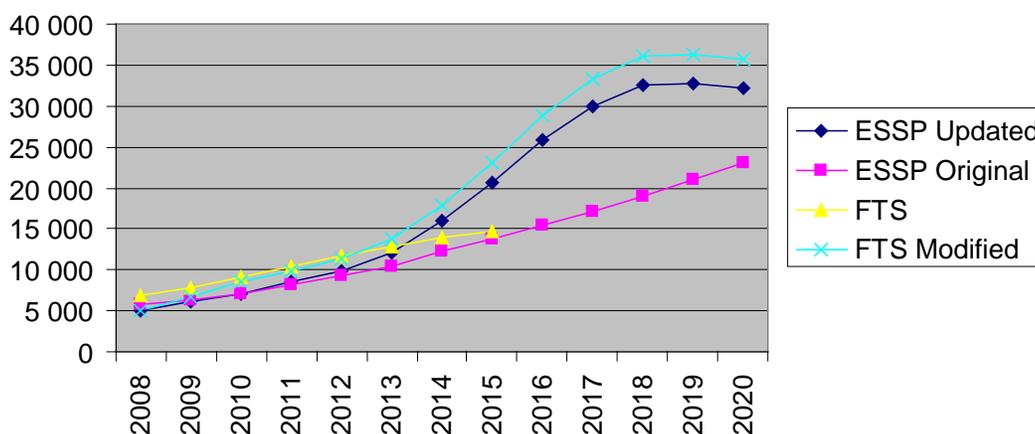
profession.) Figure 5.11 above presents the projected annual demand for primary teaching posts between 2008 and 2020, for each of the three scenarios. The original ESSP 2008-2012 and FTS teacher post projections are also presented in order to highlight the much larger number of required posts, given the adjustments in repetition and dropout rates and the updated school age population projections.

The differences in target post requirements between the *Modified FTS* and *Updated ESSP* scenarios are striking. From 2010, projected teaching posts fall by 8,000 under the *Implied FTS* scenario in comparison to the *Modified FTS* scenario, because of the large increase in the pupil to teacher ratio (as a result of the introduction of universal double shifting). On the other hand, the *Updated ESSP* scenario assumes the virtual elimination of double shifting by 2015, which leads to a substantially lower pupil to teacher ratio of just 42, resulting in a major increase in the required number of teaching posts up until that point.

As it is neither desirable nor feasible to further increase the teaching load of primary school teachers, the *Modified FTS* scenario projections may in fact be the most robust, given that they account for the new curricula. However, this scenario also assumes that the target pupil to class ratios, of 41 to 1 on average, are achieved over the next two to three years.

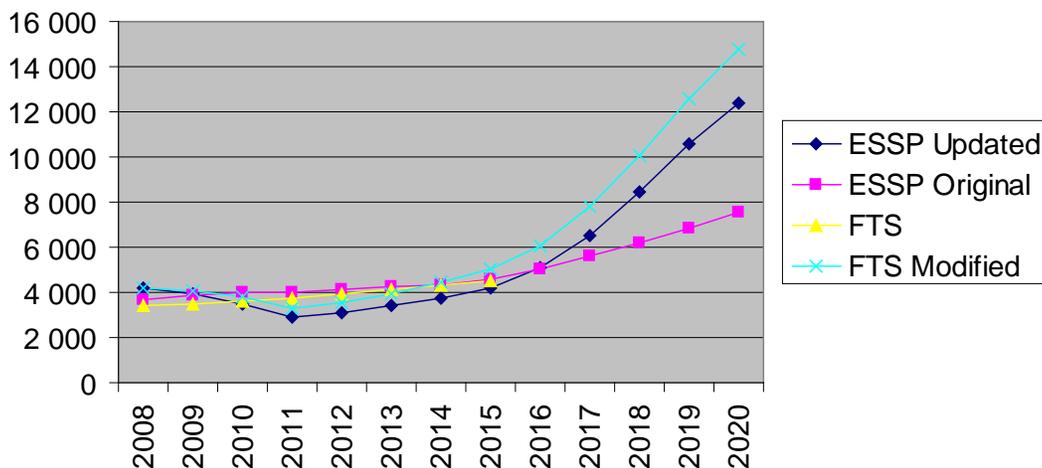
Figures 5.12 and 5.13 present the projected annual teaching post demand for *tronc commun* and upper secondary schools between 2008 and 2020, including the *Updated ESSP* and *Modified FTS* scenarios, as well as the original ESSP and FTS projections. Given that the FTS implementation report does not present case studies for *tronc commun* and upper secondary schools it is not possible to elaborate the *Implied FTS* scenario.

Figure 5.12: Projected *Tronc Commun* Teaching Post Demand, by Scenario, 2008-2020
Number of Teaching Posts



Source: Annex Table 5.7.

Figure 5.13: Projected Upper Secondary Teaching Post Demand, by Scenario, 2008-2020
Number of Teaching Posts



Source: Annex Table 5.7.

Teacher Replacement. The replacement of teachers lost through attrition is the other main source of teacher demand, determining how many individuals will be required per teaching post. There are six main types of attrition: (i) resignation, (ii) retirement, (iii) death and illness, (iv) dismissal, (v) the replacement of expatriate teachers by nationals, and (vi) the replacement of untrained teachers. The 2008 teacher utilization survey shows that annual attrition was three percent among primary and *tronc commun* teachers and two percent among secondary teachers (excluding attrition due to study leave, and the dismissal of unqualified and temporary teachers).¹¹⁸ No reliable time series data on teacher attrition are available. Each case of attrition is examined in further detail below:

- (i) Resignation rates are negligible among both primary and secondary school teachers (around one percent in 2008) and are unlikely to significantly increase in the near future. This is the direct consequence of the limited and dwindling alternative employment opportunities, both within the education sector and in the private sector;
- (ii) Retirement is compulsory for teachers aged 65 years. Given the young age profile of teachers, the overall retirement rate among the surveyed schools was 0.5 percent for primary, 1.3 percent for *tronc commun* and zero percent for secondary schools. Approximately 200 teachers per year are expected to retire over the next decade, and an average of 500 teachers per year between 2000 and 2025 (see Annex Table 5.5);
- (iii) Mortality and morbidity rates should remain stable over the next decade. The overall mortality rate among teachers was 0.3 percent in 2000, and has in fact declined noticeably in recent years. Among the 220 schools in the teacher utilization survey,

¹¹⁸ The current MINEDUC teacher requirement model estimates that the attrition rates for primary and secondary school teachers are 3 percent and 5 percent, respectively.

only one of the 1,101 employed teachers died in 2008. As recently as five years ago, it was expected that the HIV/AIDS epidemic would have a significant negative impact on Rwanda's teaching workforce. The exact reasons for the relatively low and declining AIDS mortality levels among teachers have not been systematically investigated, but the increasingly widespread availability of anti-retroviral drugs could be an important factor.¹¹⁹ As a result, the AIDS related teacher mortality rates should be around 0.1 percent, but with an ageing teaching population, mortality attributable to other causes will steadily increase to 0.5 percent by 2020;

- (iv) Dismissal is negligible for the purposes of this analysis, given the current shortage of teaching staff;
- (v) The replacement of expatriate teachers by nationals is likely to increase in the future, with the greater availability of KIE graduates. An approximate total of 600 foreign teachers were employed in secondary schools in 2007. Although Rwanda's entry into the East African Community means that teachers from other member countries will be allowed to compete with nationals for local teaching positions, it is nevertheless likely that fewer foreign teachers will be employed in the future; and
- (vi) The replacement of untrained teachers by newly trained TTC and KIE graduates is MINEDUC's stated policy. Given the projected expansion of *tronc commun* and upper secondary school enrollments, this will happen gradually over the next 5 to 10 years. There are currently around 3,800 untrained primary school teachers and around 3,500 certificate level secondary school teachers. It has been assumed, therefore, that MINEDUC will introduce a compulsory qualification upgrading program and that 50 percent of all untrained teachers currently in post will complete the diploma level distance learning courses over the next five years. Around 3,700 of the currently untrained school teachers will be progressively replaced by newly qualified KIE, CoE and TTC graduates.

Estimates of projected attrition and replacement rates for each of the three projected teacher demand scenarios are presented in Annex Table 5.7. These are considerably lower than those of both the MINEDUC planning model and the FTS implementation document. Because neither of the models disaggregate teacher attrition by principal motive for departure, it is difficult to establish precisely the main reasons for the large divergence.

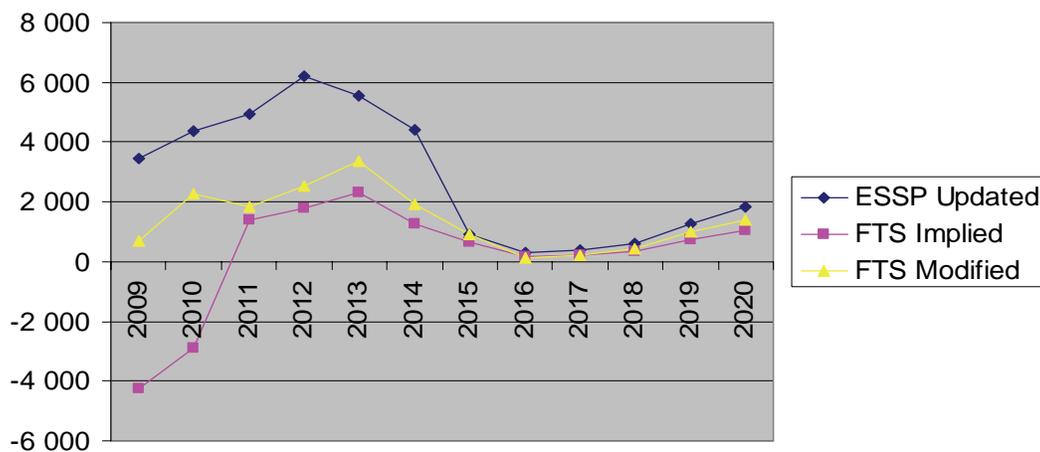
Projected Annual Teacher Demand. As a result of this exercise, projected annual teacher demand takes into account the expected annual change in teaching posts, and teacher replacement needs. Figures 5.14 to 5.16 show the projected annual teacher demand for the primary, *tronc commun* and upper secondary levels between 2010 and 2020.

As expected, the variation between the three studied scenarios in terms of annual primary teacher demand is large. According to the *Modified FTS* scenario, around 16,600 TTC graduates will need to be recruited for primary schools over the next 12 years, which is 50 percent higher than the current TTC output on average. A major complicating factor is that the annual recruitment

¹¹⁹ These usually reduce HIV viral loads to non detectable levels, which significantly reduces the infectivity of people living with HIV.

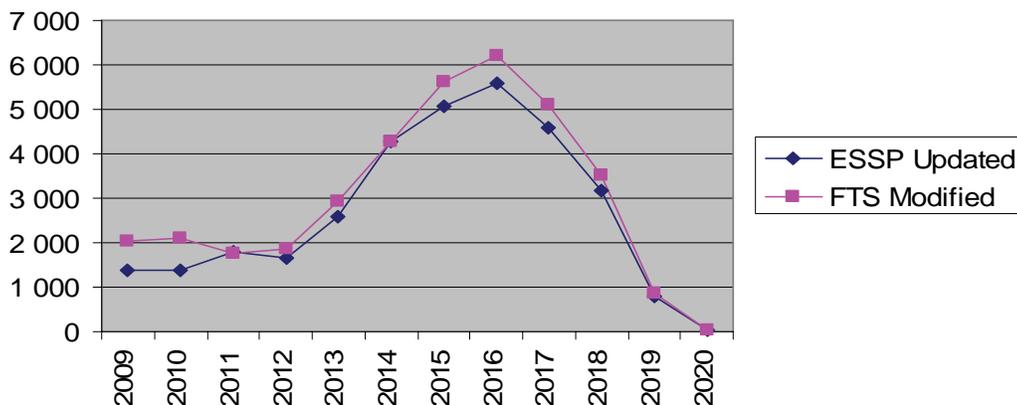
demand for these teachers is highly variable over the period. The highest level of demand occurs during the next three to four years, with an annual requirement of around 3,400 TTC graduates; and the lowest occurs during the 2015-2017 period, when recruitment demand is actually negative. In the short term, there will be no alternative but to make up the shortfall by recruiting unemployed TTC graduates¹²⁰ and employing untrained teachers on short-term contracts.

Figure 5.14: Projected Annual Teacher Demand for Primary Schools, 2009-2020
Number of Teachers



Source: Annex Table 5.7.

Figure 5.15: Projected Annual Teacher Demand for Tronc Commun Schools, 2009-2020
Number of Teachers



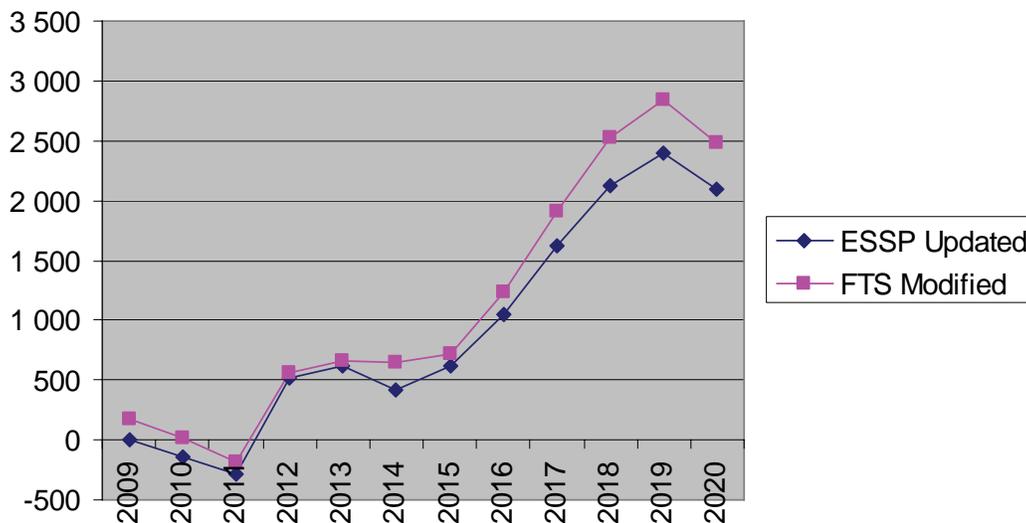
Source: Annex Table 5.7.

¹²⁰ According to the education section of the 2007 Public Expenditure Review, there could be as many as 7,500 qualified teachers who are currently unemployed and still want to pursue teaching careers.

Under the same *Modified FTS* scenario, a total of 36,000 *tronc commun* teachers will need to be recruited over the next 12 years, which implies an average annual CoE output of about 3,000 graduates, six times the expected 2009 output. The enrollment capacity of the two existing CoEs should therefore be increased as quickly as possible, and it may also be necessary to open another CoE to meet the burgeoning demand.

Annual demand for KIE graduates is projected to remain quite low for the next three years, before increasing rapidly to 2,850 by 2019 (see Figure 5.16). Overall, 14,000 graduates will need to be recruited between 2009 and 2020, which is three times more than the current KIE annual output of teacher graduates. The KIE’s strategic plan states that annual graduate outputs will increase to around 1,000 by 2012 (see Annex Tables 5.8 and 5.9), but this will only satisfy around half of the projected demand for teacher graduates to 2020.

Figure 5.16: Projected Annual Teacher Demand for Upper Secondary Schools, 2009-2020
Number of Teachers



Source: Annex Table 5.7.

Conclusions and Policy Implications

The Teacher Services Commission has a key role to play in counteracting the fragmenting effects of decentralization. The low motivation levels of the teaching staff may be mitigated by improving non salary material benefits for teachers as well as enhancing more intrinsic, non material motivators. These include pre service teacher education, ongoing professional development, improved teacher management, and greater professional solidarity and support. Given the limited budget available to the sector, any reform should be costed by a financial simulation model before being implemented.

When teachers are dissatisfied with their jobs or are poorly motivated, they are not likely to perform well and may even behave unprofessionally (poor class preparation and test marking, low levels of active teaching and poor timekeeping and absenteeism). Given that this type of information is not currently available, we recommend that a formal assessment of teacher competency levels and behavior be undertaken.

Strengthen Human Resources and Management. MINEDUC should seek to develop and implement a medium to long-term human resource strategy for the teaching profession, covering pay and career progression, working and living conditions and ongoing professional development. Even though the government cannot afford to introduce every measure in the short term, it is still important that teachers are soon made aware of the government's strong commitment to professionalize teaching and will to ensure that teachers are properly remunerated and trained. Another key component of the strategy is to analyze ways of improving the utilization of teachers, which could result in major cost savings.

There is no clear, professional route to becoming a teacher trainer and academic criteria predominate. Experienced and highly competent school teachers could also be recruited as teacher trainers. More generally, national professional teaching standards are required, that spell out the required staff competencies in detail.

Improve the Quality and Status of Primary School Teachers. Steps are being taken to improve the status and quality of primary school teachers, but more could be done. In particular, it is critical that better educated and trained teachers are employed at primary schools. Well trained university graduate and diploma level teachers could be key change agents and motivators, who could lead the introduction of effective school based ongoing teacher development, and improve school management. It is recommended, therefore, that MINEDUC begin to employ a limited number of university education graduates in primary schools.

Pre service, diploma level teacher education may be introduced for primary teachers and the current TTC certificate level teacher training gradually phased out. Ideally, all primary and *tronc commun* teacher candidates should enroll at CoEs and study for the same qualification, namely a Basic Education Teaching Diploma. Relatively large CoEs should be established with a minimum enrollment capacity of 2,500 so that all subject areas are adequately covered and economies of scale are reaped. The most able and committed serving certificate level primary school teachers should be given the opportunity to upgrade their qualifications to the diploma and even degree level.

Make KIE the Focal Point of the Teacher Education System. The teacher policy places the KIE at the centre of a structure which will see the two newly created CoEs affiliated to it. All the institute's programs of study, full and part-time, will be validated and accredited by the Higher Education Council. In addressing this, the teacher policy's strategic plan will review the current institutional architecture and identify who is doing what and how all teacher education providers can be made effective and accountable in terms of quality. A unified, coherent regulatory framework to govern and monitor the various institutions that provide pre service and professional teacher training will be developed.

Provide Universal Access to Subsidized Housing Loans for Teachers. In the absence of appropriate pay increases, the provision of long-term, subsidized housing loans is likely to be the single most effective measure to improve teachers' livelihoods, especially for primary teachers. It is recommended, therefore, that the feasibility of establishing a housing loan scheme for teachers be carefully examined, possibly based on a revolving fund with subsidized interest rates.

Create an Effective System of Ongoing Professional Development. An effective system of ongoing professional development should be institutionalized at both central and district levels. MINEDUC could develop its own capacity to provide training as well as contract other institutions to provide training services. A dedicated advisor could be appointed in each district to develop an appropriate strategy and facilitate district and school level training activities, especially in teaching methods. The possibility of introducing school clusters for ongoing professional development should also be explored.

Institutionalize School Management Structures. School management urgently needs to be professionalized. Three sets of measures are required: (i) school management teams should be established including the head teacher, deputy head teacher and heads of departments; (ii) school management posts should be graded according to school size and school managers should be paid substantially higher salaries than classroom teachers. School managers should also have reduced teaching loads; and (iii) MINEDUC should employ a staff of full-time school management advisers to offer effective management development and support, including comprehensive management training. A national school management development program could be established, with dedicated staff based at MINEDUC's head office and a school management adviser in each of the five provinces, at least initially.

Improve the Staffing of Rural Schools. Rectifying imbalances in the spatial deployment of teachers is a top priority. Research is needed in order to identify the reasons that some schools and levels are less appealing as postings, as well as to evaluate the cost effectiveness of possible interventions which target both causes and effects. A teacher staff index should be developed, based on key indicators. The current staff deployment formula should be reviewed to ensure a more uniform and equitable spread of teachers. It is also recommended that MINEDUC take greater control over the posting of newly appointed teachers.

Strengthen Teachers' Professional Organization Capacities. Teachers' organization skills need to be considerably strengthened. A unit under the education board's deputy CEO for teacher training and development would be responsible for the publication of a quarterly teachers' newspaper, the broadcasting of a regular radio program for teachers, the management of a national teacher award scheme, and generally for promoting opportunities for teachers to attend professional meetings, seminars, etc.

CHAPTER 6: COST AND FINANCING

Chapter Overview

As noted in the previous chapter, low teacher pay is an important contributing factor to declining teaching quality and teacher motivation. In addition, as Rwanda strives to universalize primary school completion, foster universal basic education and expand access at post basic levels, financing requirements are expected to grow. Yet the development of the education system and the quality of service delivery depend on the availability of resources for the sector and choices made regarding public expenditures per student, or unit costs.

The purpose of this chapter is to document the current pattern of education financing to provide insights into financial opportunities and challenges. The chapter analyzes the total amount of resources mobilized, whether from public or private (households) sources, and provides financing detail by category of spending, level of education and staff roles. An estimation of unit costs and unit cost structure is also conducted, with special attention to teachers' pay and social expenditure (bursaries and school feeding), two key components of unit costs.

The data used in this chapter originate from the MINEDUC education budget figures, as well as those of other ministries involved in education, in particular the Ministry of Local Government, Community Development and Social Affairs (MINALOC). With the MINEDUC decentralization process currently underway, a growing share of the education budget is channeled directly to the district level.¹²¹ To ensure consistency in trends and allow for comparisons over time, expenditure categories have not been reclassified.¹²²

Overview of Education Expenditure

Public Expenditures in Education. Recurrent and development budgets have increased since 1999, in both nominal and real terms (see Figure 6.1 below).¹²³ Nominal recurrent education expenditures almost quadrupled from RF 22 billion in 1999 to RF 82 billion in 2008. The nominal development budget trebled from RF 6 billion to RF 18 billion over the same period.

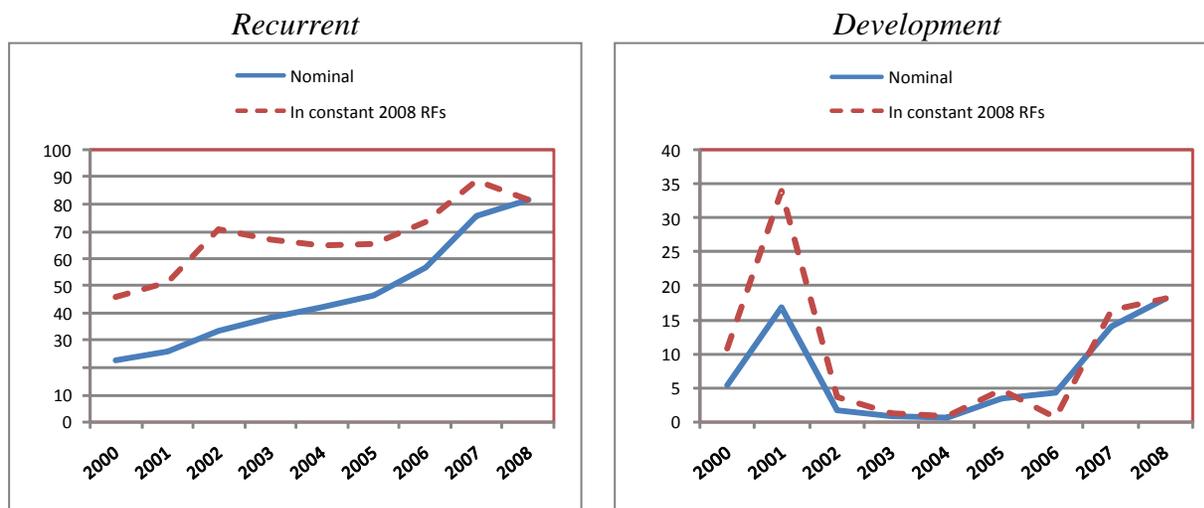
¹²¹ In 2000, 13.5 percent of recurrent education spending was channeled through ministries other than MINEDUC. In 2008, this share reached 45.8 percent, mostly managed by districts. Education district budgets cover: primary and secondary level teacher salaries, capitation grants for basic education, school feeding for secondary school students and a nominal amount for technical education. In addition, districts fund costs incurred by the district executive officer. There are also welfare funds for vulnerable groups and some capital funds (PER, 2007), which are not taken into account in this chapter's analyses. There have been some concerns that districts as well as schools might lack the required financial management skills. A capacity building program aims to strengthen district staff and head teachers' financial management capacities.

¹²² Expatriate salaries are classified within the development budget because hiring expatriate staff is linked to building local staff capacities.

¹²³ Annex Table 6.1 provides the data series for Figure 6.1.

The injection of US\$ 70 million from the Education for All Catalytic Fund grant into the education budget in 2007 and 2008 has resulted in a marked increase of resources since 2006. The majority of the budget is allocated to recurrent expenditures (between 68 and 99 percent, averaging 86 percent over the last decade), which will be the focus of this section.

Figure 6.1: Recurrent and Development Public Education Expenditure, 2008
Billions of RFs



Source: MINECOFIN.

Several features characterize the composition of public recurrent education expenditure and its evolution over the past decade (see Figure 6.2 below):¹²⁴

- (i) Higher education's share of the budget has decreased, from a high of 35 percent in 2001, to 26 percent in 2008.¹²⁵ The trend reflects the government's decision in 2003 to reduce higher education spending (in absolute and relative terms, as well as unit costs) in line with the 2007 PER recommendations. This cut in public support relied on the growth of private financing to support the continued development of higher education institutions. However, the share in Rwanda is still high compared with other Sub-Saharan African countries, where the average is 19 percent (see Table 6.1 below);
- (ii) The share of secondary education in the recurrent education budget has increased from 16 percent in 2001 to 23 percent in 2008. The Nine Year Basic Education strategy, in addition to the extension of basic education to *tronc commun*, is the main explanation. Fees were abolished at the *tronc commun* level, and thus additional

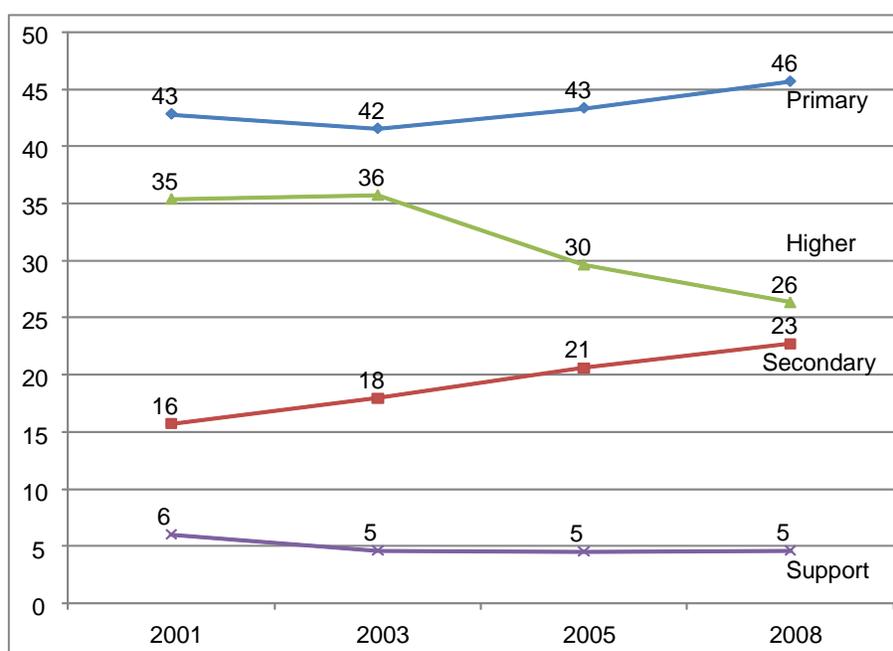
¹²⁴ The Public Expenditure Review (PER, 2007) provides information on the allocation of public recurrent expenditures across levels between 2001 and 2007.

¹²⁵ Throughout this chapter, "higher education" expenditure includes all higher learning institutions, Colleges of Education and Colleges of Training. Primary education expenditures include preprimary. See Table 6.3 for expenditure disaggregated by level.

resources were channeled into secondary schools through increased government capitation grants; and

- (iii) The share of expenditure allocated to primary education has increased from 43 percent in 2001, to 46 percent in 2008. If one takes the support budget allocated to primary education into account, Rwanda is investing nearly 49 percent of its recurrent budget in primary education. This is similar to the average in other African countries (see Table 6.1 below), and very close to the EFA-FTI indicative framework benchmark of 50 percent.

Figure 6.2: Distribution of Recurrent Education Expenditures, by Level, 2001-2008
Percent



Source: 2001-2005: PER, 2007; 2008: MINECOFIN.

Note: 'Primary' includes preprimary and preprimary. 'Secondary' includes *tronc commun*, upper secondary, TVET, and teacher training.

The government's commitment to redistribute resources across levels is therefore apparent in that the share of primary and secondary education in the public recurrent education budget has increased at the expense of higher education.

Further resources could be channeled to primary education, away from higher education. On the one hand the country is still far from achieving universal completion of primary education (only 54 percent of children attend Primary 6). On the other, Rwanda's spending on higher education is still well above the average of African countries. The government recognizes this challenge and is seeking ways to increase the share of funds allocated to basic education.

Table 6.1: Primary and Higher Education Shares of Public Recurrent Education Expenditure, for Rwanda and other African Countries, circa 2006

Percent

	Primary	Higher
Benin	50.7	22.1
Burkina Faso	60.3	22.2
Burundi	44.4	27.5
Eritrea	32.1	18.1
Ethiopia	54.9	18.9
Ghana	39.3	21.6
Kenya	40.5	20.0
Madagascar	57.1	18.7
Mozambique	48.0	21.9
Niger	60.0	13.3
Rwanda 2008	49.0	26.5
Tanzania	55.1	14.0
Uganda	47.2	12.2
Subsample average	49.1	19.2
EFA-FTI benchmark	50.0	—
Rwanda to Subsample Ratio	1.00	1.35

Source: World Bank 2009. For Rwanda, Table 6.2 in this report.

Note: For Rwanda, institutional support costs have been distributed across levels.

Private Spending in Education. The level of household contributions to education varies according to whether the child attends a public or a private institution. For public education, households tend to contribute to parent teacher associations, school insurance, school uniforms, teaching materials, and transportation. For private education, teacher salaries are often paid directly by parents, making household contributions even more substantial.

Table 6.2 reveals that the total estimated household investment in education amounted to RF 58.6 billion in 2008. This private contribution represents 42 percent of the cost of education, a sharp increase compared with 2000, when the rate was estimated at 29 percent.¹²⁶ The overall private contribution to education is higher in Rwanda than in other African countries, where it accounts for 32 percent of total education expenditure on average (Brossard et al., 2008).

Table 6.2: Household Spending and Public Education Expenditures, 2008

	Primary	Tronc Commun	Upper Secondary	Higher	Total
Household Spending per Child (RF)	5,272	109,761	118,078	321,390	554,502
Total Household Spending (Millions of RF)	11,547	20,118	12,369	14,583	58,616
Public Recurrent Spending (Millions of RF)	39,942	13,947	5,742	21,945	81,576
Total Spending (Millions of RF)	51,489	34,065	18,111	36,528	140,193
Share of Household Spending (%)	22.4	59.1	68.3	39.9	41.8
Share of Household Spending in 2000 (%)	19	59	—	—	29
Share of GDP (%)	0,5	0,8	0,5	0,6	2,4

Source: Authors' calculations based on data from the EICV, 2005/06; MINECOFIN macroeconomic indicators; 2000 figures estimated from CSR, 2003.

¹²⁶ Household spending on education has grown from 1.5 percent of GDP per capita in 2000, to 2.4 in 2008.

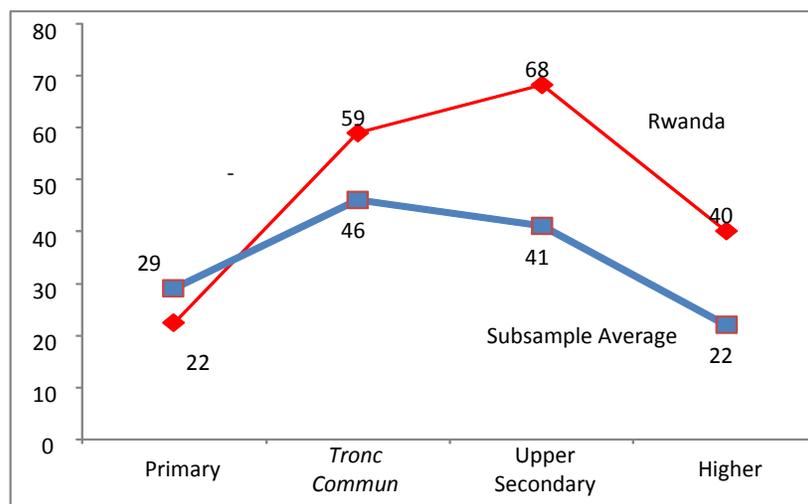
The relative household contributions draw a bell shaped curve, reflecting progression through the education levels, as shown in Figure 6.3. From 22 percent for primary, the share of household contributions reaches 68 percent for upper secondary, and decreases to 40 percent for higher education. The high contribution of parents at the secondary level reflects the significant proportion of private schools (28 and 54 percent in *tronc commun* and upper secondary respectively, in 2008), as well as the high prevalence of boarding facilities that constitute an additional cost for families.

Despite the abolition of primary school fess in 2003, the share of household investment in this level of education has actually increased from 19 percent in 2000 to 22 percent in 2008. Whereas school fees accounted for 23 percent of household education spending in 2000 (for children in public primary schools), the remaining 77 percent was devoted to uniforms (45 percent), books and school supplies (24.3 percent) and PTA contributions (6.4 percent).¹²⁷

At the higher education level major increases in parental contributions have occurred, which are linked to the development of the private sector: 57 percent of higher education students were enrolled in private institutions in 2008, compared with 32 percent in 2000. This significant level of household investment possibly reflects the greater expected returns of private higher education, as well as the fact that most students pursuing education to this level come from wealthier families (see the Chapter 3 discussion on schooling patterns).

Figure 6.3: Household Education Spending as a Share of Public Education Expenditure, for Rwanda and a Subsample of African Countries, by Level, 2008

Percent



Source: Brossard et al., 2008 for 16 Sub-Saharan African countries; Table 6.2 in this report for Rwanda.

Figure 6.3 indicates low household contributions toward higher education, relative to other levels. However the introduction of cost sharing and recovery (such as the student loan scheme) should

¹²⁷ CSR, 2003.

increase households' share. Indeed, under this latter scheme, loans could be considered as differed household contributions.

The achievement of universal primary education and the Nine Year Basic Education policy will involve alleviating the financial burden on households, particularly on the poorest families. The implementation of cost recovery mechanisms in higher education should make available further public resources to divert to basic education. However, any cost recovery program in higher education will have to ensure that it does not prohibit the poorest students from accessing postsecondary education.

Public Recurrent Expenditure in 2008

This section focuses on the allocation of public recurrent expenditure in 2008, the latest year for which data are available.¹²⁸ Several adjustments have been made to ensure the appropriate classification of resources among categories, including: (i) the distribution of administrative overhead costs across levels according to their respective weight, (ii) the reallocation of some *tronc commun* salaries to upper secondary education, and (iii) the reallocation of some social expenses to the administrative and pedagogical category for higher education (see Annex Note 6.1). In the following analyses, the education budget refers to this reorganized budget.

Table 6.3 presents 2008 recurrent education expenditures by level of education and category of expense. The following discussion focuses on primary, *tronc commun*, upper secondary and higher education.¹²⁹

Table 6.3: Amounts of Recurrent Education Expenditure, by Level and Category, 2008
Millions of RF

	Teacher and Staff Salaries	Administrative and Pedagogical	Social	Total	%
Preprimary	—	232	n.a.	232	0.3
Primary	22,599	17,241	102	39,942	48.5
<i>Tronc Commun</i>	7,061	5,050	1,836	13,947	16.9
Upper secondary	3,541	820	1,380	5,742	7.0
Teacher Training (CoEs)	243	1,465	n.a.	1,708	2.1
Technical (CoTs)	366	1,307	n.a.	1,673	2.0
University Education	3,262	7,476	7,826	18,564	22.6
Grants for Local Study	n.a.	n.a.	6,656	17,394	21.2
Grants for Study Abroad	n.a.	n.a.	1,170	1,170	1.4
Non formal	—	478	n.a.	478	0.6
Total	37,072	34,069	11,145	82,286	100.0
%	45.1	41.4	13.5	100.0	

Source: 2008 MINEDUC executed budget (includes MINALOC budget for education).

¹²⁸ Spending for education and training activities other than those channeled by MINEDUC and MINALOC (which account for 98.3 percent of the total education sector budget), are not reflected in the analysis.

¹²⁹ When CoTs and CoEs are excluded, we will use the term “university education.”

Teacher and Staff Salaries. As is the case in most countries, teacher salaries constitute the largest share of recurrent education expenditure in Rwanda (45 percent). The education system also employs administrative and management staff. To achieve effective performance, a certain balance between the two categories must be achieved.

The current categories of teachers are:

- (i) Permanent teaching staff, who are paid by the government and are considered to be civil servants;
- (ii) Contract teachers, who receive the same pay and benefits as an entry-level permanent civil service teacher, but their contracts are for one year and are not systematically renewable. Like their permanent peers, contract teachers are trained at the Teacher Training Colleges (TTCs);
- (iii) Temporary teaching staff, who are hired directly by schools.¹³⁰ These include replacement teachers who are paid by the district or by parent teacher associations; and
- (iv) Expatriate and volunteer teachers, who are paid directly by secondary schools.

Since 2007, the number of contract teachers has increased because of the higher demand for primary education resulting from the fee abolition. To avoid overall salary expenditure rising, contract teachers are paid through school capitation grants. Grant amounts are determined by the number of children enrolled, and cover administrative and pedagogical expenses, contract teacher pay and government teacher bonuses.

Until June 2008, all civil servant salaries were processed and managed by MIFOTRA, but since then pay has been managed at the district level for primary and secondary school staff. Wages for expatriates working at the upper secondary level (mainly in TTCs) are managed by MINEDUC.

Some discrepancies exist between MINEDUC school census data and payroll data for 2008 permanent staff numbers. For the primary level, the total school census figure is 32,082, of which 2,372 are administrative staff. The payroll data figure is 2,012, or 6.7 percent lower. The difference is even more striking for the secondary level, where the number of permanent staff was 9,706 according to the school census, against only 5,883 according to payroll data. The divergences are mainly due to the double counting of staff that work in both teaching and administrative capacities. Other possible explanations include: (i) the time difference between data records; the fact that the school census is performed in August whereas payroll data are gathered in May;¹³¹ and (ii) the delay in filing the information about newly appointed teachers at the district level.

¹³⁰ Tracking the amount of resources allocated to such teachers is difficult, because their pay data are subsumed in other categories within national statistics.

¹³¹ We were not able to obtain information on payroll staff for August 2008. Following the decentralization of the system in July 2008, consolidated data are not currently available.

The government, well aware of the problem of district delays in filing contracts and keeping records, has established an intra ministerial committee to regulate teacher salary arrears, including representatives of MINECOFIN, MINEDUC and MIFOTRA. In order to gauge the real level of staff salary expenditure, a new estimation of the salaries of non budgeted teachers is needed, particularly for the secondary level (see Table 5.1 presented earlier).

Given that salary data are not disaggregated between *tronc commun* and upper secondary, the respective share of each level has been estimated based on the respective pupil to teacher ratios, of 29 to 1 and 24 to 1, and enrollment figures.¹³² To distinguish between teaching and non teaching staff, the indicator on the share of administrative staff was used, derived from the 2008 school census data.¹³³ Finally, to ensure consistency with budget data, payroll data are used to assess the number of permanent staff working at each level (see Annex Table 6.2). The estimated distribution of staff and their related costs are represented in Tables 6.4 and 6.5, respectively.

Table 6.4: Number of Education Staff, by Level, Role, and Contract Type, 2008

	Teaching Staff	Non Teaching Staff	Total	Non Teaching Staff (%)
<i>Primary</i>				
Permanent	27,847	2,223	30,070	6.9
Contract	1,966	0	1,966	
Sub-total	29,813	2,223	32,036	
<i>Tronc Commun</i>	3,093	994	4,087	24.3
<i>Upper secondary</i>				
Permanent	1,359	437	1,796	23.6
Expatriate (1)	54	0	54	
Sub-total	1,413	437	1,850	
Teacher Training (CoEs)	41	33	74	44.6
Technical (CoTs)	70	30	100	30.0
<i>University</i>				
Local	1,272	999	2,271	40.3
Expatriate (2)	208	0	208	
Sub-total	1,480	999	2,479	
<i>Institutional support</i>				
Central (3)	n.a.	272	272	100.0
Decentralized (4)		60	60	
Sub-total		332	332	
Total	35,910	5,048	40,958	12.3

Source: Total staff based on MIFOTRA payroll, May 2008 and 2008 MINEDUC school census; authors' calculations for distribution of staff between teaching and non teaching roles, *tronc commun* and upper secondary.

Note: (1) Estimation based on related wage expenses and planned number of staff. (2) Estimation based on the data available from 6 HLIs in 2010. (3) AEAs and MINEDUC. (4) Districts: 2 staff per district (one director and one professional).

A total of 40,958 staff is estimated to be paid by MINEDUC and MINALOC, of which 5,048 (12.3 percent) hold non teaching positions. There are marked differences across levels, with the proportion of non teaching staff varying between seven percent in primary and 24 percent in secondary, reaching 40 percent in higher education. The relative proportion of non teaching staff

¹³² Based on data from the school census, 2008.

¹³³ For the secondary level, this is based on the revised administrative staff figure of 2,124, instead of 3,098.

in primary and secondary is lower in Rwanda than in other African countries. Data from Cameroon, Madagascar, Mauritania, Niger, Chad and Togo reveal shares of non teaching staff averaging 15 percent in primary and 31 percent at secondary level.

The number of staff working in universities is 2,479, of which 1,480 hold a teaching position. Among them, 1,026 are permanent, 142 are contract lecturers and 312 are temporary. Whereas contract teachers tend to work on a part-time basis, temporary staff work by the hour. The number of expatriate lecturers has been estimated at 208 in 2008, or around 20 percent of the total public permanent university teaching staff.¹³⁴

In terms of salary costs (including allowances and benefits), 36 and 9 percent of recurrent education expenditure are devoted to teaching and administrative wages, respectively (see Table 6.5). Teacher salaries represent the bulk of expenditure for primary (50 percent), upper secondary (47 percent) and to a lesser extent *tronc commun* education (37 percent). However they absorb less than 15 percent of total expenditure for other levels.

Table 6.5: Shares of Recurrent Education Expenditure, by Level and Category, 2008
Percent

	Staff Costs		Non Staff Costs		Share of Spending Other than Teachers' Wages
	Teaching Staff	Administrative Staff	Administrative and Pedagogical	Social	
Preprimary	—	—	100.0	—	100.0
Primary	50.1	6.4	43.2	0.3	49.9
<i>Tronc Commun</i>	37.1	13.5	36.2	13.2	62.9
Upper Secondary	47.4	14.3	14.3	24.0	52.6
Teacher Training (CoE)	7.7	6.5	85.8	0.0	92.3
Technical (CoT)	15.0	6.9	78.1	0.0	85.0
University Education	8.7	8.8	40.3	42.2	91.3
Non formal	0.0	0.0	100.0	0.0	100.0
Total	36.4	8.7	41.4	13.5	63.6

Source: 2008 MINEDUC executed budget.

Non Teacher Salary Expenditure. Data in Table 6.5 shows that a total of 64 percent of recurrent education expenditure is devoted to costs other than teachers' wages. The share varies across levels from 50 percent in primary to 92 percent in teacher training (CoEs). For the secondary level, the share amounts to 63 percent in *tronc commun* and 53 percent in upper secondary. For university education, the figure is 91 percent.

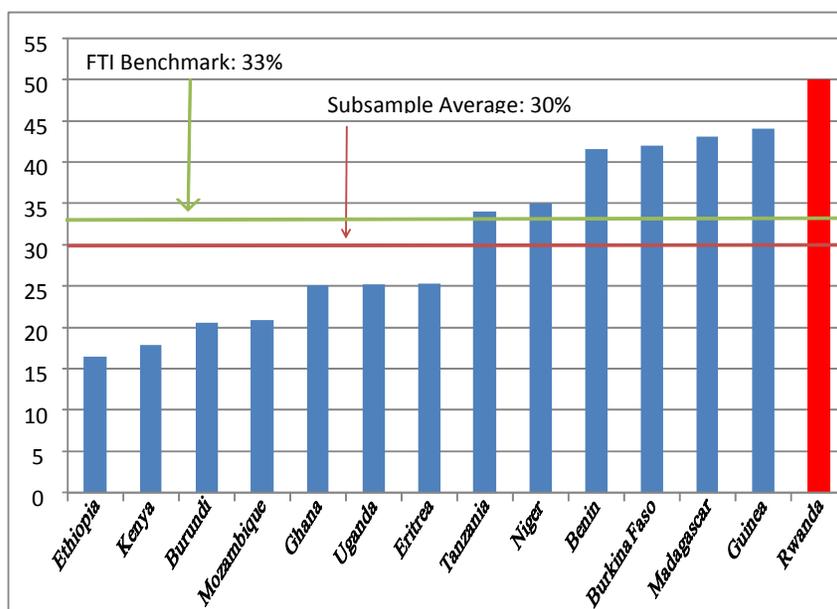
The level of expenditure devoted to costs other than teaching is relatively high in Rwanda. The figure for primary education (50 percent) is higher than the Sub-Saharan African subsample average of 30 percent, and well over the EFA-FTI indicative framework benchmark of 33 percent (see Figure 6.4 below). These figures suggest that Rwanda has reasonable scope to increase primary teachers' salaries in order to improve education coverage and recruit an adequate number

¹³⁴ Based on the 2010 review of expatriate teachers among the permanent teaching staff in 6 public HLIs, estimated at 20.3 percent, assuming that the share of expatriate teachers was constant over the 2008-10 period.

of motivated teachers, as well as make further progress in enhancing student learning conditions by lowering pupil to teacher ratios.

Figure 6.4: Share of Recurrent Expenditure Other than Teachers Salaries, for a Subsample of African Countries, circa 2008

Percent



Source: World Bank, 2009. For Rwanda, Table 6.4 in this report.

However, it is also important to assess how expenditure other than teacher salaries is being utilized (see Table 6.6). At primary, *tronc commun*, and higher education levels, it is mainly used for administrative and pedagogical expenses; at upper secondary and to a lesser extent at university levels, the main costs are social: school feeding for boarding schools, and higher education grants and loans.

Table 6.6: Breakdown of Recurrent Education Expenditure Other than Teachers' Salaries, 2008

Percent

	Administrative and Pedagogical	Administrative Staff	Social
Primary	87	13	1
<i>Tronc Commun</i>	58	21	21
Upper Secondary	27	27	46
Higher	51	9	39
Total	65	14	22

Source: Authors' calculations based on Table 6.2 and on Annex Table 6.3.

Administrative and Pedagogical Expenditure. In 2008, 41.4 percent of recurrent education expenditure was allocated to administrative and pedagogical costs. The breakdown of these by category is presented in Table 6.7. In primary education, more than half of the administrative and pedagogical budget is devoted to equipment, materials and maintenance, and about 24 percent to textbooks and curricula. Procurement of textbooks has been strongly supported by the provision of the EFA-FTI Catalytic Fund grant since 2007, with a total of RF 4.5 billion allocated to textbooks in 2008.

In *tronc commun*, girls' education is the highest expenditure after equipment (31.9 percent) and science and technology (24.5 percent). The 17 percent of total administrative and pedagogical spending in 2008, mainly devoted to gender sensitization activities, reflect MINEDUC's prioritization of the issue. At upper secondary, science and technology absorbs a great 67 percent of administrative and pedagogical spending, with information and communication technology accounting for another 20 percent.

The data also show the paucity of funds allocated to inspection (barely 1 percent) and training, which is almost nonexistent at upper secondary and absorbs only 11 percent of the primary education administrative and pedagogical budget. This is consistent with the observation made in Chapter 5, reflecting the low provision of in-service training.

Table 6.7: Breakdown of Administrative and Pedagogical Expenditure, by Category and Level, 2008
Percent

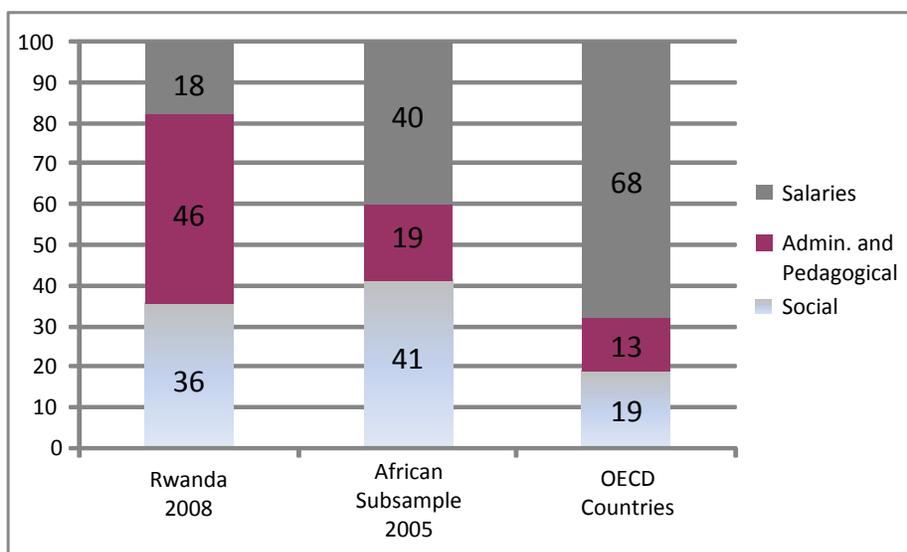
	Primary	<i>Tronc Commun</i>	Upper Secondary
Training	11.4	5.4	0.7
Curricula and Textbooks	23.7	13.5	3.2
Inspection	0.6	0.8	1.6
Equipment and Maintenance	52.4	31.9	0.4
ICT and Solar Panels	1.9	5.1	20.2
Science and Technology	7.6	24.5	67.1
Special Needs Education	1.2	0.1	0.4
Girls' Education	0.0	17.2	2.5
HIV, Health and Environment	0.1	0.0	0.4
School Sport	0.5	1.5	3.6
Catch-up Programs	0.7	0.0	0.0
Total	100	100	100

Source: MINEDUC 2008-2009 planned mini-budget.

Social Expenditure. Social expenditure accounts for 13.5 percent of total recurrent education expenditure and increases at each level. It is less than one percent for primary, 13 percent for *tronc commun*, 24 percent for upper secondary and 42 percent for higher education (or 36 percent solely for university expenses). Social expenditure in higher education includes grants and loans, 85 percent of which support attendance of local institutions, the remainder being to study abroad. For university education, Rwanda has lower social spending than other African countries, where the average is 41 percent (see Figure 6.5 below). On the other hand Rwanda devotes a higher

share of its recurrent higher education budget to pedagogical and administrative costs, (46 percent) to improve learning and teaching conditions.

Figure 6.5: Breakdown of Recurrent Education Expenditure, for Rwanda, a Subsample of African Countries and OECD Countries
Percent



Source: World Bank, 2009b and Table 6.4 for Rwanda.

It is widely known that higher education graduates enjoy better working conditions and pay than their co workers, thus resulting in higher private return.¹³⁵ The government has introduced public/private cost sharing of higher education expenses through a student loan scheme. This scheme has been designed to encourage students to enroll, especially in science and technology courses, in order to acquire competencies that are key to Rwanda's development strategy. Loans allow a sufficient number of students to access higher education to adequately respond to the demands of the labor market.

The government subsidizes 75 percent of costs for students studying scientific and technical courses, and 50 percent for other courses, in public higher education institutions.¹³⁶ The remaining costs must be borne by the student or his family (about RF 375,000 for a science course and RF 600,000 for an arts course). This gap can be fully covered by a student loan. However, whereas a fixed portion of the loan is given directly to the student for living expenses (RF 250,000), the remaining funds are channeled directly to the institution to fund recurrent pedagogical and administrative expenses. It is estimated that an average of 56.5 percent of the

¹³⁵ See the 2009 World Bank study on post basic education.

¹³⁶ Funds transferred to public universities are based on unit costs of RF 1.5 million for science courses and RF 1.2 million for arts courses.

funds disbursed by the Student Financing Agency of Rwanda can be considered as social expenses.

Financial means' testing addresses the equity issue, selecting students eligible for full financial support for higher education from poor households. Students from wealthier families on the other hand must pay part or all of their degree costs. Means' testing was introduced in 2008 and at first posed considerable challenges. In response, software was developed to ensure that the process is conducted with maximum fairness and minimum delay.

In 2008 the government began to recover monies loaned from individuals who had benefited from financial support since the 1980s. Loan recovery mechanisms were not adequate, however, so the student loan scheme is not yet fully fledged. With the establishment of the Student Financing Agency of Rwanda (SFAR) in 2003 and the introduction of the means' tested loan application process, parents and students have started to accept their role in funding higher education, although some continue to view the loans as grants. The challenge for the government is to continue to provide targeted financial support for higher education to the already large and growing number of neediest students, while ensuring that the loan recovery program is effective and fully operational.

Secondary education social expenditure mainly covers boarding schools' feeding programs. Currently an estimated 60 percent of secondary students are boarders (PER, 2007), although the government's target for 2015 is to reduce this proportion to 8 percent by increasing the number of secondary day schools. Issues of equity are also at stake here, especially in upper secondary, where the majority of those enrolled are wealthy students. In the spirit of the Nine Year Basic Education strategy, the government may need to reconsider the allocation of the majority of social expenditure to school feeding programs, considering the entire target population and other spending that may produce better learning outcomes. Providing school bursaries to the neediest students may be a more cost effective way of increasing and sustaining demand for secondary education among disadvantaged students.

Estimation of Average Unit Costs

Using data on total public education expenditure and student enrollment in public and government subsidized schools, recurrent expenditure per student can be calculated for each level of education, and compared against 1999 figures. Table 6.8 below displays student recurrent expenditure, the ratio to GDP per capita and the ratio to primary expenditure per student.

Unit costs rise as students progress up the education ladder: from RF 18,675 in primary to RF 105,091 in *tronc commun* and RF 118,741 in upper secondary, unit costs reach RF 1,059,559 in higher education (or RF 934,708 for university alone). In real prices, education unit costs increased at every level between 1999 and 2008. However in constant prices, the increase is more discreet, of 20 percent for primary education, but presenting a slight dip for all other levels. Despite impressive general enrollment growth, especially at the secondary level, the government has succeeded in maintaining unit costs at a constant level over the past decade. For higher

education, the decrease in the cost per student could be explained by improved efficiency as the system develops.

Table 6.8: Unit Costs, by Level, 1999 and 2008

	Primary	Secondary		Higher	
		<i>Tronc Commun</i>	Upper Secondary	University	Including CoEs and CoTs
2008					
Recurrent Spending (millions of RFs)	39,942	13,947	5,742	17,394	20,775
Number of Students	2,138,787	132,715	48,358	18,609	19,607
Unit Costs (RF)	18,675	105,091	118,741	934,708	1,059,559
As a Multiple of Primary Unit Costs	n.a.	5.6	6.4	50.1	56.7
As % of GDP per Capita	7.1%	39.9%	45.1%	355.2%	402.7%
As a Multiple of the 1999 Unit Cost	1.2	0.9	0.8	0.7	n.a.
1999					
Unit Costs (RF)	7,604	60,273	73,628	723,899	n.a.
As a Multiple of Primary Unit Costs	n.a.	7.9	9.7	95.2	n.a.

Source: 2008 MINEDUC executed budget. MINEDUC Statistical Yearbook, 2008; For 1999: CSR, 2003.

Note: Higher education excludes bursaries for students studying abroad. GDP per capita is estimated at RF 263,135 in 2008 (MINECOFIN).

In 2008, the level of public expenditures as a proportion of GDP per capita represented 7 percent per primary student, 40 percent per *tronc commun* student, and 45 percent per upper secondary student. For higher education, the value is nine times the upper secondary figure, at 403 percent.

Compared with other countries, primary level unit costs in Rwanda are among the lowest in Africa (see Table 6.9), and even more strikingly so when considering that Rwanda's GDP per capita is among the lowest in the region.

Table 6.9: Unit Costs, Rwanda and Selected African Countries, by Level, circa 2006

	Primary	<i>Tronc Commun</i>	Upper Secondary	Higher Education
Rwanda, 2008 (%)	7.1	40.0	45.2	402.7
African Subsample Average (%)	13.5	40.0	91.1	398.2
Rwanda to Subsample Ratio	0.5	1.0	0.5	1.0
<i>As a Multiple of Primary Unit Costs</i>				
Rwanda	1	5.6	6.3	56.2
African Subsample	1	3.0	6.7	29.5

Source: For African subsample: World Bank, 2009; for Rwanda: Table 6.8 in this report.

Note: The subsample of African countries includes the 13 countries listed in Figure 6.4.

Public expenditures per student correspond to only half the average of a subsample of African countries. Unit costs in upper secondary may be overestimated as they include TVET and teacher training streams, which are known to be more expensive. However this is possibly compensated by the fact that many staff are waiting to be registered on the payroll which has a dampening effect on the figures. The exact cumulative effect is unknown. In higher education and *tronc*

commun, values are similar to the average figures for the African subsample. Given that many education staff working in *tronc commun* are not registered on the payroll, the estimated unit costs may be understated by up to 33 percent, which could in this case mean that they are higher than for other African countries.

Primary student unit costs are disproportionately low, indicating an imbalance in the distribution of resources across levels. Unit costs are 6 times higher in *tronc commun* than in primary. Under the current pattern, achieving universal basic education may prove to be difficult, especially given the difficulties in improving completion rates in primary education. Reallocating resources across levels in the light of the above information is important both with respect to the fiscal sustainability of the sector, as well as for the development of post primary education.

Reconstructing Public Expenditure Unit Costs. The estimation of unit costs can also be conducted by examining the average conditions under which teaching and resources are mobilized. The calculation can be used as a simulation model to identify potential areas for improvement.

Using 2008 data, the results confirm that teacher salaries constitute a major share of unit costs at all levels except higher education, where administrative and pedagogical costs constitute the bulk of unit costs (see Annex Table 6.5). The teachers' salary component of unit costs depends on two factors: staff wages and pupil to teacher ratios. Each factor is discussed in further detail below.

Staff Wages. The analysis on staff pay is challenging because of the limited availability of data disaggregated by type of contract, level of education, qualifications held, etc. However, information on salaries according to grade can be extracted from the payroll data. Salaries in primary and secondary cycles are based on four grades of academic qualifications: none, certificate, diploma and degree. In theory, most primary teachers have either no qualification (A3) or a certificate level qualification (A2), whereas *tronc commun* teachers have a diploma (A1) and upper secondary teachers have a degree (A0). However, Table 6.10 reveals that the distribution is markedly different in reality.

Table 6.10: Distribution of Teaching Staff, by Qualification and Level, 2008

	Degree (A0)	Diploma (A1)	Certificate (A2)	None (A3)	Total
Primary	—	3	27,527	2,540	30,070
Secondary	1,500	967	3,404	12	5,883
Total	1,500	970	30,931	2,552	35,953
Share (%)	4	3	86	7	n.a.

Source: MIFOTRA payroll data, May 2008.

Teacher salaries vary considerably depending on their level of qualification. MIFOTRA guidelines stipulate that the average starting salary is RF 392,124 for a certificate qualified teacher, RF 1,426,764 for a diploma qualified teacher and RF 1,880,088 for a degree qualified teacher. In 2007, all certificate qualified teachers received a RF 12,500 bonus every month, or RF 150,000 per year, accounting for 38 percent of their gross salary. However at the same time, the

net monthly basic salary for degree holding teachers was increased from RF 50,000 to RF 113,000 (see Chapter 5). So although the primary teacher bonus has helped to reduce the wage gap between categories, certificate holding teachers still receive 2.6 and 3.5 times less wages than their diploma and degree holding counterparts, respectively. Table 6.11 summarizes the teacher salary information.

Table 6.11: Annual Gross Salary for Teachers, by Qualification Level, 2008
Rwandese Francs

	None	Certificate	Diploma	Degree
<i>Theoretical – Basic Wage</i>				
Gross Wage		392,124	1,426,764	1,880,088
<i>Current Estimation from Payroll Database</i>				
Primary	759,300	523,504	1,962,480	2,821,980
Secondary		861,986		

Source: Estimation based on MIFOTRA payroll data, May 2008 and MINECOFIN 2008 budget.

Note: Certificate level salary was used as the adjustment variable to fit within payroll salary data. Bonuses are excluded.

A review of actual salary expenditures across levels reveals considerable variations between levels and type of staff (permanent, contract based or expatriate). The average annual salary in primary is RF 671,729 and increases at each level of education, reaching a high of RF 2,931,081 in higher education (see Table 6.12). Average salaries in *tronc commun* and upper secondary are similar: RF 1,674,526 and RF 1,617,669, respectively (see Annex Table 6.4), because the allocation of teaching staff according to their qualification tends to be similar for both. As an illustration, a third of *tronc commun* teachers are degree holders, despite the fact that such teachers could be employed in upper secondary schools. This also explains why unit costs for *tronc commun* students are so much higher than for primary students.

Table 6.12: Annual Teacher Salaries, by Level, 1999 and 2008

	Primary	<i>Tronc Commun</i>	Upper Secondary
2008			
Average Annual Teacher Salary (RF)	671,729	1,674,529	1,923,775
As a Factor of GDP per Capita	2.55	6.36	7.31
	Permanent 2.59		Local 6.15
	Contract based 2.06		Expatriate 36.60
Change since 1999 (Constant Prices)	1,09	1,91	1,84
1999			
As a Factor of GDP per Capita	4.0	5.7	6.8

Source: MINECOFIN; 1999 figures from CSR, 2003.

Among primary teaching staff, there are important differences between permanent and contract teacher salaries, of RF 680,863 and RF 542,124 respectively. In upper secondary, expatriate

teachers in Teacher Training Colleges (TTCs) earn 6 times more than their Rwandese counterparts, although they are a minority within this group.

Regarding higher education faculty and staff salaries, the data do not distinguish between nationals and expatriates. However, the high salaries paid to expatriates in comparison with nationals have been identified as an issue among donor partners.¹³⁷ Although the recruitment of foreign teachers is a strategic step by the government to rebuild its human capital and build a firm foundation for developing a technologically advanced and skilled society after the genocide, the government has recently taken steps to replace expatriate teachers with nationals (PER, 2007).

Salaries in the education sector are low compared with those of other civil servants. Chapter 5 revealed that the net income of a degree holding teacher is almost three times less than that of other similarly qualified civil servants. For diploma and certificate level teachers, the pay is 1.6 and 1.8 times less respectively. Rwandese teachers' salaries are also systematically lower than those in other countries in the region (see Table 6.13). For example, primary teacher salaries are 2.6 times GDP per capita, compared with 4.8 times on average in the region. The ratio is below the EFA-FTI indicative framework benchmark, which is 3.5 times GDP per capita for primary teachers.

Table 6.13: Pupil to Teacher Ratio and Teacher Salary in Select African Countries, circa 2008

	Primary		Secondary		
			<i>Tronc Commun</i>	Upper Secondary	Total
	Pupil to Teacher Ratio	Teacher Wage (as a Factor of GDP per Capita)	Teacher Wage (as a Factor of GDP per Capita)	Teacher Wage (as a Factor of GDP per Capita)	Pupil to Teacher Ratio (in Public Schools)
Rwanda (2008)	62-67:1⁽¹⁾	2.6	6.4	6.2 (local)	27:1
FTI Benchmark	40:1	3.5	—	—	—
Subsample Average	50:1	4.8	7.2	10.7	31:1
Benin	47:1	3.6	3.0	5.2	25:1
Burkina Faso	50:1	5.2	9.3	13.0	30:1
Burundi	54:1	7.8	9.3	11.0	19:1
Eritrea	47:1	3.9	9.9	11.8	54:1
Ethiopia	72:1	6.8	8.1	11.9	50:1
Ghana	33:1	4.7	4.7	4.8	19:1
Kenya	40:1	5.3	—	10.6	32:1
Madagascar	48:1	2.9	4.3	7.7	24:1
Mozambique	67:1	5.2	9.4	23.8	36:1
Niger	40:1	5.5	9.4	10.2	30:1
Tanzania	52:1	3.8	5.2	—	29:1
Uganda	49:1	3.3	7.4	7.4	21:1
Rwanda/Subsample	0.77	0.53	0.83	0.65	0.87

Source: World Bank, 2009. Pupil to teacher ratio for Rwanda is based on 2008 MINEDUC school census.

Note: (1) The first figure includes head teachers, whereas the second one does not.

¹³⁷ Based on available information (the amount of expatriate teacher wages obtained from the development budget and the estimated number of expatriate teachers), the gross monthly expatriate teacher salary was estimated at RF 1.7 million (or USD 3,130). This figure is consistent with the available information on expatriate teachers' pay.

In constant prices, teacher pay has increased at all levels since 1999, although more timidly for primary teachers, rising 9 percent, than for secondary teachers, for whom it has almost doubled. The low level of primary education wages is however likely to have allowed for sustained growth in enrollment at this level, especially with the hiring of contract teachers as of 2007, who are paid entry-level wages. However, the low level of compensation also contributes to low motivation among the teaching staff, and is an acknowledged factor that hampers teacher recruitment and retention. Many contract teaching positions remain unfilled, and Teacher Training Colleges face serious challenges with respect to the recruitment of high performing teachers to satisfy sector demand. The adverse impact on the quality of teaching and thus learning outcomes cannot be overlooked.

Pupil to Teacher Ratios. According to the 2008 school census, the pupil to teacher ratio in primary schools was 67 to 1 (and 62 to 1 taking head teachers into account), which is above other countries in the region (50 to 1) and the FTI recommended value of 40 to 1. The implementation of the double shift initiative may address the problem in the short term, but may not be a viable long-term solution, especially considering the added stress and workload teachers will endure, and the possible impact on learning outcomes. In secondary education, the pupil to teacher ratio in public schools is estimated at 27 to 1 (29 to 1 in *tronc commun* and 24 to 1 in upper secondary), which is close, but slightly below the African subsample average.

The international comparison provides a context for the further analysis of unit costs. Rwanda's relatively low unit costs can be attributed to the low level of wages at all levels; and in the case of primary education, to high pupil to teacher ratios (see Table 6.13 above). There may be some scope to increase the share of primary teacher salaries, because 50 percent of public expenditure is allocated to non teacher salary items, a level much higher than the EFA-FTI indicative framework benchmark (33 percent). At the same time, reducing the pupil to teacher ratio is an important government commitment, particularly with respect to improving the student learning environment. Given that reforms have strong policy implications, further discussions will need to take place. These may be based on the output of well informed simulation models across education levels, to assess the fiscal sustainability of each policy option under consideration.

Conclusions and Policy Implications

Sustained Efforts to Increase Resources Allocated to Basic Education. Although Rwanda's investment in primary education is similar that of other African countries, and close to the EFA-FTI indicative framework benchmark, the government needs to continue its efforts to fast track the Nine Year Basic Education strategy, implying sufficient resources are allocated to primary and *tronc commun* levels. Given that the share of resources allocated to higher education is high compared with other African countries, the government will need to continue to consider ways to redistribute resources from higher education to basic education.

Allocation of Non Teacher Salary Recurrent Expenditure. In primary, *tronc commun*, and higher education, non teacher salary recurrent expenditure is mainly allocated to administrative and pedagogical expenses. At upper secondary and, to a lesser extent, higher education levels, the government devotes much of its resources to social spending (boarding school feeding programs,

and university loans and grants). Such social expenditure tends to be inequitable, particularly when taking into consideration that students that attain this level of education are generally from wealthier families. The recent phasing out of boarding schools in upper secondary is expected to result in a shift in resource allocation away from upper secondary. The higher education loan cost recovery mechanism and the financial means' testing system are key reforms initiated by the government in 2008. However, both require strong enforcement and adequate targeting to ensure that the neediest students are not left out. Savings achieved through social expenditure reforms should be channeled to the primary level, particularly to ensure that the poorest pupils have a chance to complete basic education.

Teacher Salaries. Teacher salaries in Rwanda remain low, especially in primary education, whether compared with other Sub-Saharan African countries or with the EFA-FTI indicative framework benchmark. Given that the share of non salary expenditure in primary education is high in Rwanda, resources may be redirected to improve teacher salaries at this level. Teacher salaries should also be increased to match the pay scale of non education civil servants. However, the financial sustainability of any salary reform must be evaluated within a comprehensive financial simulation model. This is especially important given the expected increase in the number of teachers, as well as their level of qualification, as the Nine Year Basic Education strategy and efforts to enhance the quality of education continue to be implemented.

Public Recurrent Unit Costs. Public recurrent unit costs are particularly low for primary education, because of low wages and high pupil to teacher ratios. On the other hand, unit costs are high for *tronc commun* students, apparently due to the over qualification of teachers at this level, where a third hold diplomas required to teach in upper secondary. As discussed in the previous chapter, schools at all levels need qualified and high quality teachers, but the distribution across the education system as a whole will need to be reviewed to ensure the effective implementation of the Nine Year Basic Education strategy.

Private Spending on Education. The estimated amount of household contributions to education was 42 percent of total education expenditure in 2008, a sharp increase since 2000. Private spending on education are highest for the secondary cycle. Perhaps more disconcerting is the finding that private spending in primary education has only marginally decreased as a result of the abolition of school fees in 2003/04. Families continue to contribute highly to costs other than school fees. The government may consider targeted financial support programs for the neediest students, with a focus on relieving the financial burden on households for expenses other than school fees, to ensure that such students are given the opportunity to complete basic education.

CHAPTER 7: CONCLUSION: MAKING A DIFFERENCE IN A CHANGING EDUCATIONAL CONTEXT

The government of Rwanda has been proactive in the education sector by setting the strategic direction and adopting policies in critical areas of the system. In recent years, the government has identified solutions to address long standing systemic problems and reorganized the system toward delivering the desired results. In particular, the government's efforts to improve service delivery through the Nine Year Basic Education strategy and the decentralization and deconcentration of the sector are laudable. As a result, notable progress has been made in several important areas since the 2004 CSR was published. At the same time, new challenges have emerged as the education system has expanded and the focus has shifted from ensuring access, to improving the quality of education. Key findings from this CSR are outlined below.

Meeting Capacity Building Needs

Maintaining a skilled and motivated staff will require a training strategy that takes into account the skills needed to implement the numerous policies and strategies approved in recent years. Thus the aims and objectives of any training initiative must necessarily be aligned with recent policy reforms, paying particular attention to capacity constraints and the increased demands placed on district and school staff. Staff will be more empowered to carry out their assigned tasks if their roles and responsibilities continue to be clearly defined and they receive appropriate and timely training. To improve the planning and management of staff training, a computerized database with the list of participants and nature of training received should be established and maintained by the central government, including previous training programs.

School management has been devolved to the districts and schools, with quality control oversight provided by the General Inspectorate of Education and districts. New and more comprehensive data produced by the Education Management and Information System need to be incorporated to quality assurance efforts. This should enable a shift from planning, to evaluating and reporting on the performance of the system on a regular basis. Districts and schools need training in administration and management in order to effectively contribute to the evaluation and reporting process, given that the education system is increasingly dependent on the bottom-up flow of accurate data and information. Ideally, district and school staff should acquire basic skills to collect and enter data, as well as to conduct simple analyses to inform schools in a timely fashion.

The high turnover of staff at all levels of education hampers the ability to plan and manage an effective education system on the basis of a coherent and consistent policy reform dialogue. This is due to the loss of institutional memory, and exacerbates existing human resource constraints. Given the current Rwandese context and the challenges posed by the ongoing decentralization process, training should be considered as an ongoing investment, on the understanding that too

much training is preferable to too little. This should help to embed capacity building in the overall management culture of the system.

Enhancing Access and Internal Efficiency

Rwanda's Nine Year Basic Education strategy aims to extend universal access to and completion of basic education to the *tronc commun* level. Universal access to primary education has almost been achieved. However, universal primary completion remains a significant challenge, as well as further enhancing access to and completion of basic education. The government will need to focus efforts on addressing the 2002/03 to 2008 weakening retention trend in basic education and upper secondary.

Access. Access to all levels of education improved between 1999 and 2008. The preprimary cycle recorded the highest relative increase in enrollment, although the level remains underdeveloped, as is the case in many other countries in the region. Rwanda's gross enrollment rates are higher than those of other Sub-Saharan African countries for primary and higher education, but lower for *tronc commun* and upper secondary. Whereas the expansion of the general, and Technical and Vocational Education and Training upper secondary streams contributed to increase overall enrollment for this level, the pedagogical stream, including teacher training, showed a decrease from approximately 15,000 to 4,500 students between 2001/02 and 2007.

Access rates at each level for a given school year, or the transversal schooling profile, show an upward trend between 2002 and 2008. The increase was particularly notable in Primary 1, where the intake rate increased from 178 percent in 2002/03 to 213 percent in 2008. The access rate to Primary 6 reflects the primary completion rate and grew from 43 percent in 2002/03 to 54 percent in 2008. It is still below the Sub-Saharan African average of 66 percent however. The completion rate for basic education was 22 percent in 2008, up from 14 percent in 2002/03.

Retention. As a result of greater student dropouts, the retention rates worsened between 2002/03 and 2008 at the primary level (from 42 to 28 percent), *tronc commun* (from 21 to 13 percent) and upper secondary (from 19 to 9 percent). Dropout can be mainly attributed to: (i) high repetition rates (on average, 17 percent of primary students were repeaters in 2008); and (ii) the fragility of school demand, particularly on behalf of the most vulnerable children (girls, children from rural areas, the poor and children with disabilities). The abolition of basic education school fees in 2003 allowed children from the poorest households to enroll. Consequently it has also attracted more children with greater learning difficulties and at risk of dropping out, and has negatively affected retention. However, this trend was also witnessed in East Asian countries that have since successfully expanded access to education in an attempt to reach the "last few." The challenge for the government is to ensure that targeted support is available for children with special needs.

Eliminating Disparities in Education

Rwanda has met the MDG on gender parity in basic education. Eliminating disparities along geographical lines and income levels remains a challenge. Since the 2004 CSR, access to school by orphans and vulnerable children has improved and is now on par with their counterparts.

Gender Parity. Gender parity has been achieved at the preprimary and primary levels, and is within reach at the *tronc commun* and upper secondary levels, although the share of girls in the latter declined from 51 percent in 1998/99 to 48 percent in 2008. Female enrollment in higher education is still lagging behind; however, women were considerably better represented in 2006 (42 percent of the student population) than in 1999 (33 percent).

Geographical and Wealth Parity. Analysis shows that disparities according to geographical location and income are greater than those related to gender, and worsen as students progress through the education system. At the end of primary education, 60 rural students are enrolled for every 100 urban students, whereas at the end of *tronc commun* this figure drops to 40. The wealth parity index at the primary level has improved from 0.78 in 2000 to 0.87 in 2006, and remained stable in other levels. However, at the higher education level, the parity index reaches 0.02, equivalent to a GER for students coming from the wealthiest quintile 49 times higher than the GER for students coming from the poorest quintile. Despite the abolition of basic education school fees, direct schooling costs remain a major obstacle for families from low income groups.

Orphans and Vulnerable Children. The prevalence of orphans and vulnerable children is high in Rwanda, at 33 percent of children aged 6-20 years and 25 percent of all primary school aged children (7-12 years). Although in 2000, attendance rates among orphans were systematically lower than those of children whose parents were both alive (CSR, 2004), the disparity had nearly disappeared by 2006.

Providing Quality Education for All

The government has shown strong political commitment to improving the quality of education, with a specific focus on providing quality basic education for all. Fulfilling this goal involves the improvement of both learning conditions and learning outcomes. Enhancing learning conditions implies the improvement of key school inputs, such as the distribution of basic resources to schools, and teaching practices in the classroom. Improvements in learning conditions are expected to ultimately result in enhanced student learning. This CSR focuses on the acquisition of basic skills in the early grades.

National Student Learning Assessment System. The discussion on student learning in this report relies on data from national examinations. As Rwanda moves forward with its plans to launch a more comprehensive national student learning assessment system, the government should be better able to determine whether the system is performing well in terms of learning outcomes, identify the strengths and weaknesses of the system, track the performance of subgroups, determine whether curricula are well designed and textbooks are relevant, and identify factors affecting student learning. Rwanda does not currently participate in any

standardized student learning assessments, therefore it is difficult to compare national examination results with those of other countries. The implementation of an effective student learning assessment system would also enable performance comparisons with other countries.

Equitable and Appropriate Distribution of Public Resources. An analysis of the distribution of public resources across a cohort of school aged individuals shows that: (i) the 72 percent of pupils that leave school after primary absorb 27 percent of public resources; (ii) the 5 percent who reach higher education absorb 40 percent of public resources; (iii) in addition to the amount absorbed by those completing primary school, the 12 percent of students that complete *tronc commun* will benefit from an extra 14 percent of public resources; and (iv) individuals completing upper secondary education (11 percent of the cohort) will benefit from an extra 19 percent of resources.

Rwandese primary, *tronc commun* and upper secondary schools are relatively well resourced in terms of inputs such as toilets and access to clean water, although in primary education, access to electricity in all provinces except Kigali is very low and pupil to teacher ratios remain high. Access to sufficient number of relevant and high quality textbooks at the secondary level remains a challenge, but recent changes to the textbook procurement system are expected to address this issue.

Improving the Management and Deployment of Teachers

The government has recognized teachers' critical role in enhancing student learning conditions, particularly when they are equipped with the required competencies and adequately motivated to deliver high quality education. The management and deployment of teachers, including the delivery of professional training and the provision of appropriate incentives, is a key challenge for any government agency tasked with overseeing an education system. In Rwanda, the challenge is further amplified by financing constraints and existing disparities in working and living conditions between urban and rural settings.

Human Resources and Management. Teachers are perhaps most heavily affected by changes in education policy. In the Rwandese context, several government initiatives introduced in 2009 have had a major impact on primary teachers, including double shifting, the move to English as the teaching language, subject specialization and the reduction of core subjects. These initiatives reflect efforts to fast track the Nine Year Basic Education strategy. Some are therefore considered to be temporary measures.

One point worthy of consideration for a regulatory framework will be to provide a clear, professional career path for teacher trainers, to enhance the quality of pre service teacher training. Experienced and highly competent school teachers should be identified and encouraged to join the teacher training stream. More generally, national professional standards that list the competencies required to become a teacher are required.

An effective ongoing teacher training system also needs to be developed and institutionalized at both central and district levels. MINEDUC could develop its own capacity to offer training as well as contract other institutions to provide training services. Each district could appoint a continuous professional development advisor, responsible for developing a professional development strategy and facilitating district and school level training activities, especially in teaching methods. The possibility of introducing school professional development clusters should also be explored.

School management urgently needs to be professionalized through three sets of measures: (i) the establishment of school management teams including head teachers, deputy head teachers and department heads; (ii) the grading of school management posts according to school size, with better pay and reduced teaching loads for school managers; and (iii) the recruitment by MINEDUC of full-time school management advisers, responsible for the provision of comprehensive management training. A national school management development program could be established with a full-time staff of two or three managers and experts based at MINEDUC, and at least initially, school management advisers in each of the five provinces.

Teacher Quality and Motivation. Rectifying imbalances in the spatial deployment of teachers is a top priority. Research is needed to understand why some schools are difficult to staff and to evaluate the cost effectiveness of possible remedial measures, which target both causes and effects. The current staff deployment mechanisms should be reviewed to ensure a more uniform and equitable distribution of teachers. It is also recommended that MINEDUC take greater control over the posting of newly appointed teachers in the short term, to address the rural/urban disparities.

Nearly all teachers at surveyed schools believe that they are poorly paid, which is the main reason mentioned for wanting to leave the profession. Indeed, the total net basic income of a certificate level primary school teacher is far below the living wage. The recently introduced performance bonus, paid through the school capitation grants, has increased the net pay by around a third. However, the net income of a certificate qualified teacher remains almost three times less than that of other similarly qualified civil servants.

The provision of long-term, subsidized housing loans is likely to be the single most effective measure to improve the livelihoods of teachers, especially at the primary level. It is therefore recommended that the feasibility of establishing a mortgage scheme for teachers, possibly based on a revolving fund with subsidized interest rates, be carefully examined.

Finally, non financial incentives should also be considered to enhance teacher motivation. One possibility is to strengthen teachers' professional organization capacities. A unit under the Rwanda Education Board's deputy CEO for teacher training and development could help to strengthen teacher networking and promote identification with the profession. The unit would publish a quarterly teachers' newspaper, broadcast a regular radio program for teachers, manage a national teacher award scheme, and generally promote opportunities for teachers to attend professional meetings, seminars, etc.

Teacher Deployment. Projecting teacher demand requires the estimation of: (i) existing vacancies, (ii) new teaching posts and (iii) the replacement of teachers. Primary school teacher requirement projections in major documents such as the Long Term Strategic Financing Framework, the Post Basic Education and Training report and plans to fast track the Nine Year Basic Education strategy are markedly different. All three projections for *tronc commun* and upper secondary are broadly similar.

The major determinants of teacher demand are: (i) the projected school enrollments by level, and (ii) the pupil to teacher ratio, determined by the teacher to class ratio and class size. For estimation purposes a scenario was retained that adjusts the teacher to class ratio according to the teaching load required by the new curricula.

On this basis, around 16,600 TTC graduates will need to be recruited for primary schools over the next 12 years, which is 50 percent higher than the current TTC output on average. A major complicating factor is that the annual recruitment demand for these teachers is highly variable over the period. The highest level of demand occurs during the next three to four years, with an annual requirement of around 3,400 TTC graduates; and the lowest occurs during the 2015-17 period, when recruitment demand is actually negative. In the short term, there will be no alternative but to make up the shortfall by recruiting unemployed TTC graduates and employing untrained teachers on short-term contracts.

In addition, a total of 36,000 *tronc commun* teachers will need to be recruited over the next 12 years, which implies an average annual College of Education output of about 3,000 graduates, six times the expected 2009 output. The enrollment capacity of the two existing Colleges of Education should therefore be increased as quickly as possible, and it may also be necessary to open another one to meet the burgeoning demand.

Mobilizing and Making Effective Use of Resources

The 2004 CSR highlighted the need for Rwanda to increase the allocation of resources to basic education. If one takes the support budget allocated to primary education into account, Rwanda is now investing nearly 49 percent of its recurrent budget in primary education. This is similar to the average in other African countries (see Table 6.1 presented earlier), and very close to the EFA-FTI indicative framework benchmark of 50 percent.

Redirecting non teacher salary recurrent expenditures away from social expenditures (boarding school feeding programs, and university loans and grants) at upper secondary and, to a lesser extent, higher education levels, should be a key priority task for the government. Such social expenditure tends to be inequitable, to the detriment of ensuring that the poorest pupils have a chance to complete basic education, as well as the improving learning conditions in the lower grades.

The estimated amount of household contributions to education was 42 percent of total education expenditure in 2008, a sharp increase since 2000. Private spending on education is highest for the secondary cycle. Perhaps more disconcerting is the finding that private spending in primary education has only marginally decreased as a result of the abolition of school fees in 2003/04. Families continue to contribute highly to costs other than school fees. The government may consider targeted financial support programs for the neediest students, with a focus on relieving the financial burden on households for expenses other than school fees, to ensure that such students are given the opportunity to complete basic education.

Improving Data Collection and Monitoring

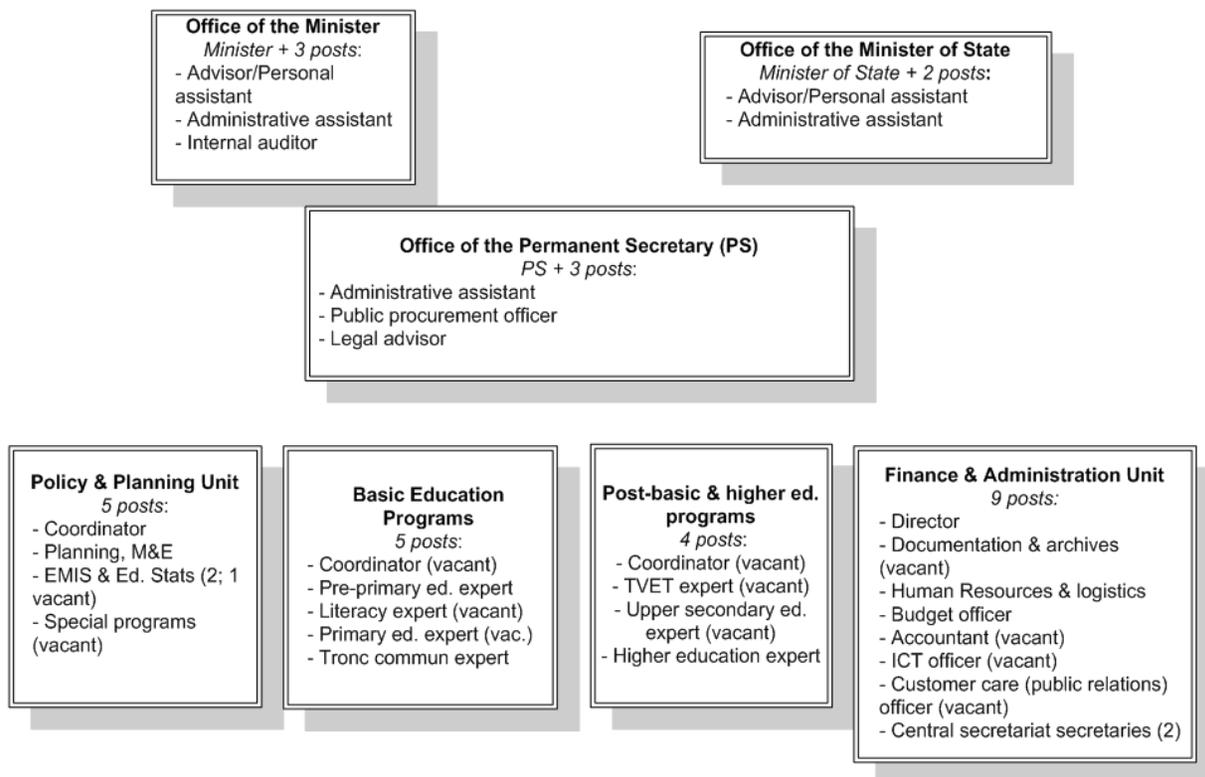
A decentralized system requires the establishment of an improved and effective monitoring system that tracks inputs and outcomes at all levels. Although data quality is a top concern in any country context, Rwanda also needs to prioritize the reduction of turnaround time between the collection of data and its application in the policy decision making process. The longer data supply chain resulting from the decentralization process will add to this challenge.

As access to education expands, the private sector is likely to play an increasingly important role in meeting the growing demand for schooling. The government must ensure that relevant data are disaggregated between public, government subsidized and private schools at each level, and include indicators on basic resources available, basic literacy and numeracy skills and national student learning assessment results. Such data and its regular analysis will allow the government to evaluate the respective strengths and weaknesses of the public and private sectors and ensure that each sector is delivering the services for which it has a competitive advantage.

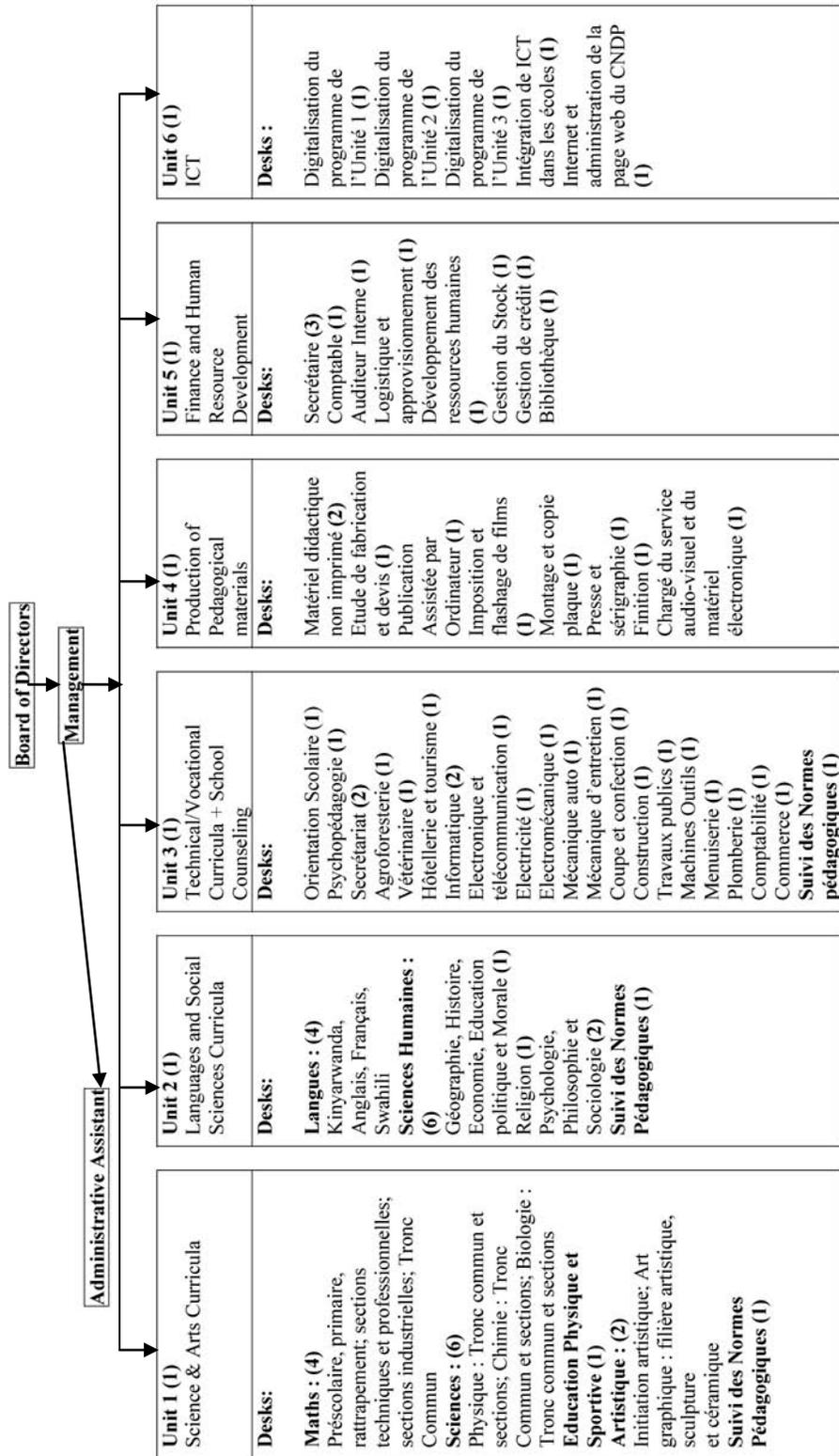
ANNEX TABLES AND FIGURES: CHAPTER 2

Annex Figure 2.1: Organizational Structure of the Ministry of Education, April 2009

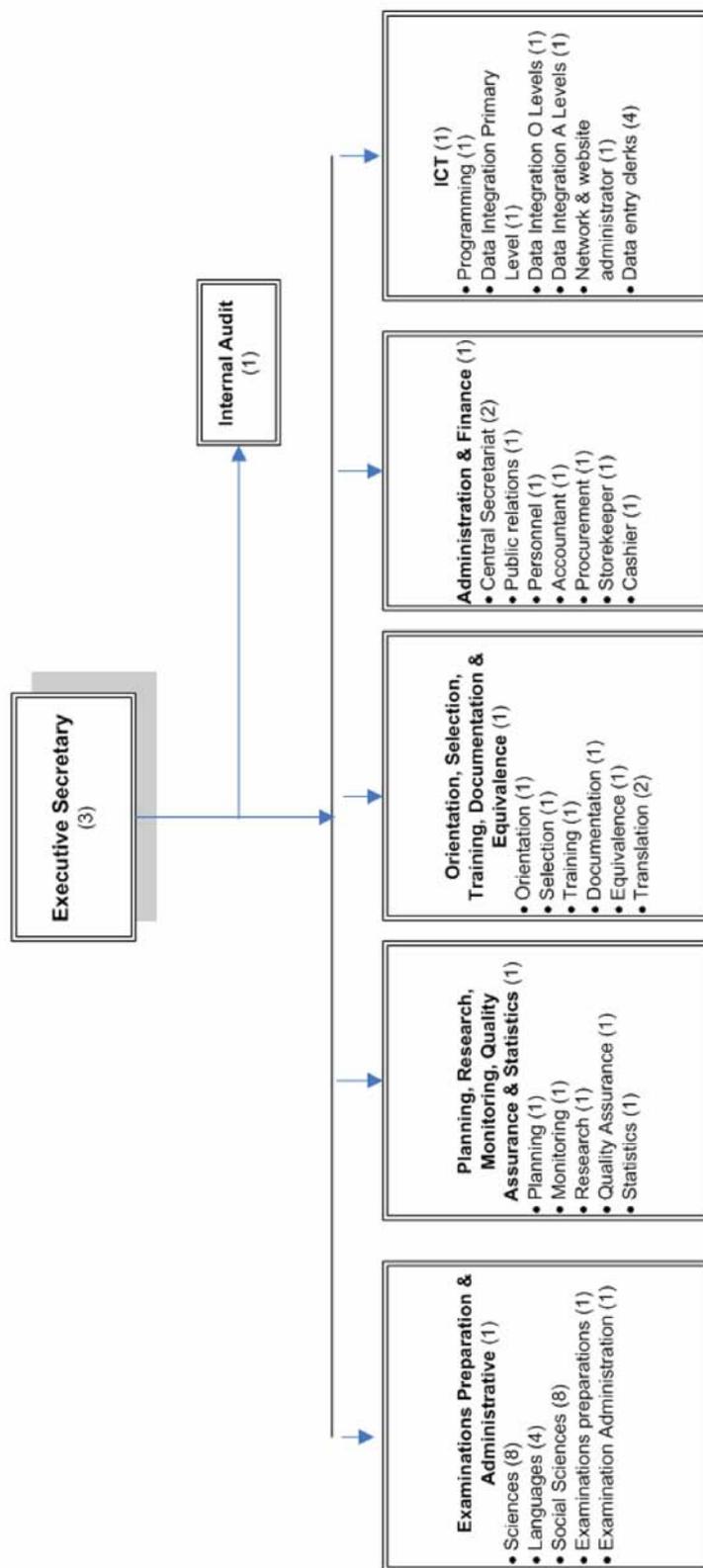
Source: <http://www.mineduc.gov.rw>



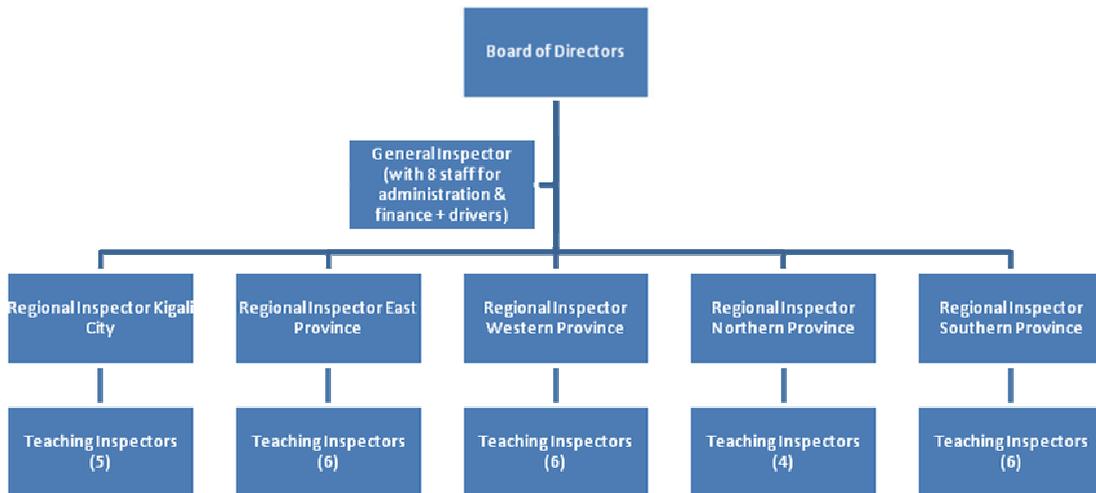
Annex Figure 2.2: Structure and Staffing of the National Curriculum Development Center (Number of Staff)



Annex Figure 2.3: Structure and Staffing of the Rwanda National Examinations Council

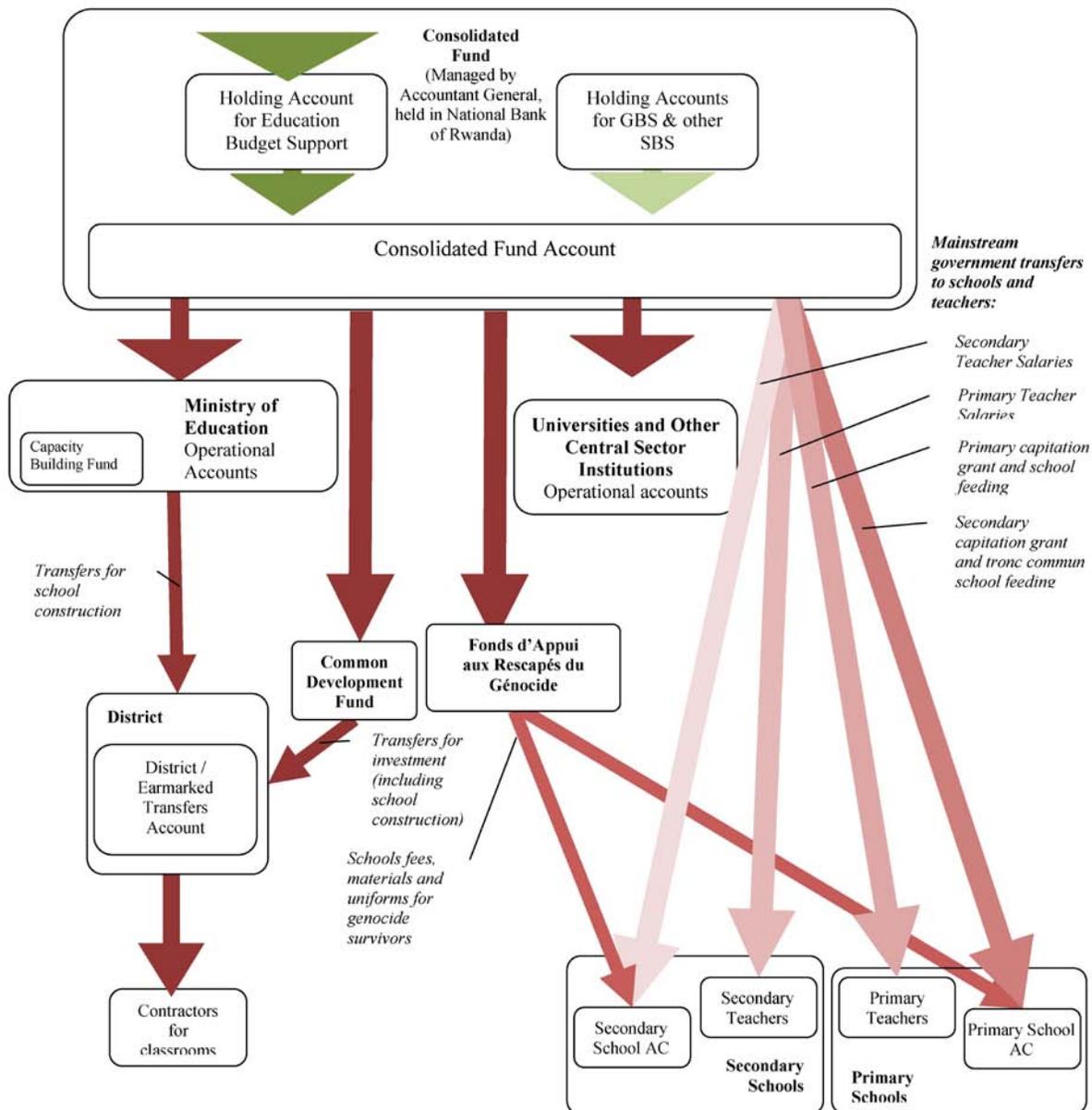


Annex Figure 2.4: Structure and Staffing of the General Inspectorate of Education

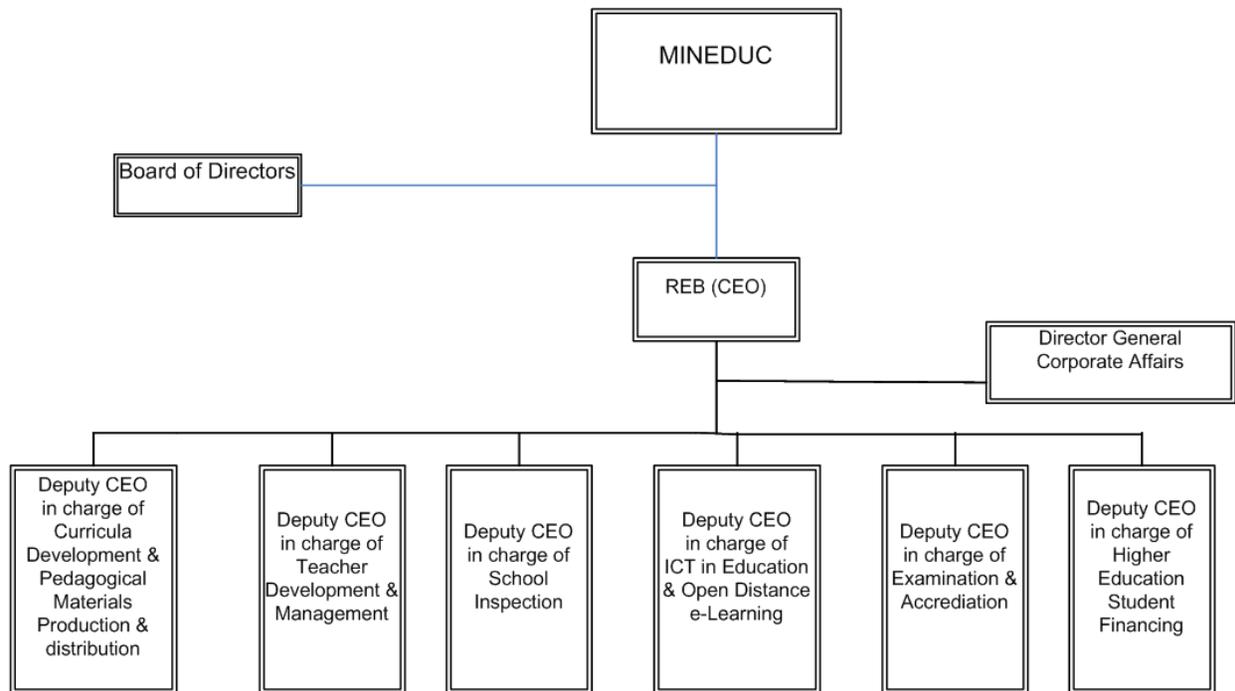


Annex Figure 2.5: Funding Flows for Mainstream Budgetary Channels

Source: ODI (Overseas Development Institute) & Mokoro. Sector Budget Support in Practice: Case Study, Education sector in Rwanda. Draft of January 13, 2009.

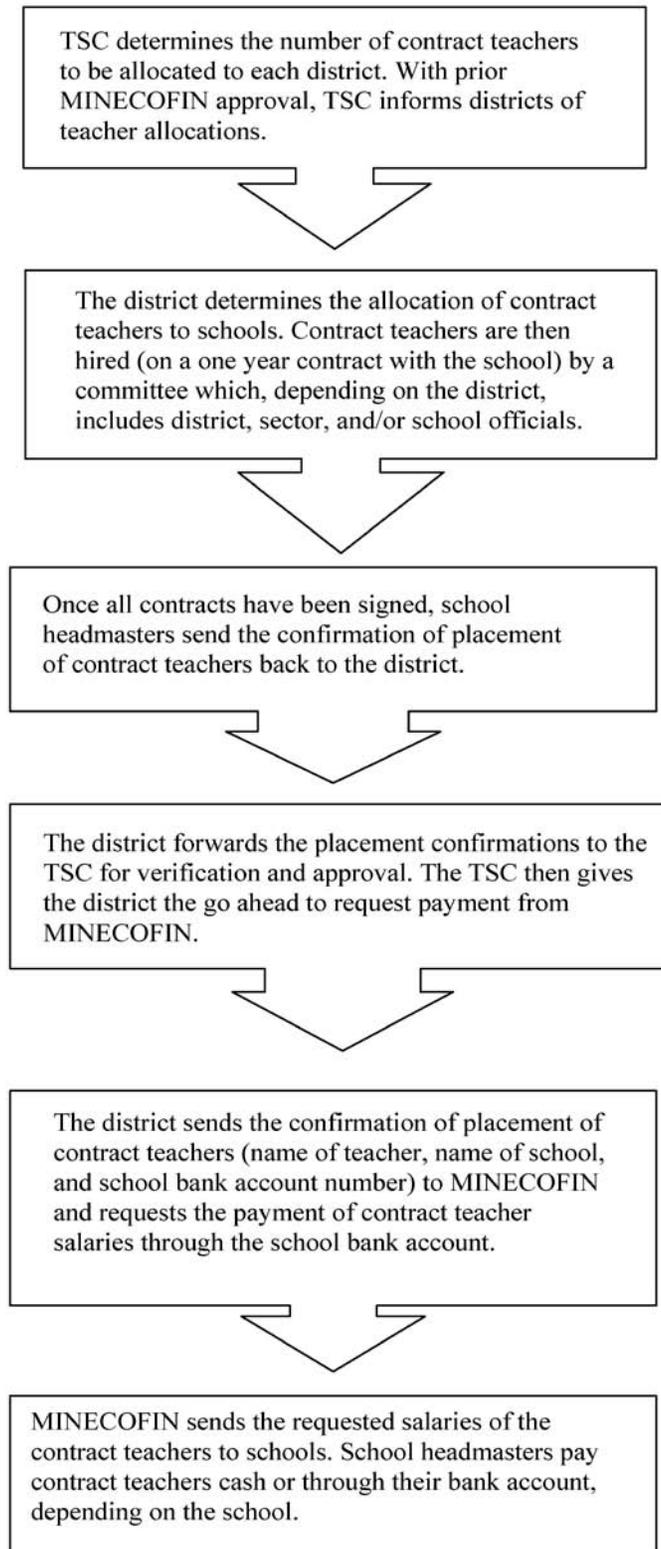


Annex Figure 2.6: Proposed Rwanda Education Board



Annex Figure 2.7: Hiring Practices for Contract Teachers in 2008

Source: Hassane & Ntagaramba, 2008.



Annex Figure 2.8: The Examination Process



Annex Table 2.1: People Interviewed

Name	Position
<i>Ministry of Education (MINEDUC) & its Semi-Autonomous government Agencies (AEAs)</i>	
Hon. Daphrose Gahakwa	Minister of Education
Hon. Thénosete Mutsindashyaka	Minister of State in Charge of Primary & Secondary Education
Dr. Mathias Harebamungu	Permanent Secretary
Mr. Narcisse Musabeyezu*	Inspectorate General of Education (IGE)
Mr. Ali Harerimana	Director of Finance & Administration, IGE
Prof. Geoffrey Rugege	Executive Director, Higher Education Council
Mr. John Rutayisire	Executive Secretary, Rwanda National Examinations Council (RNEC)
Mr. Peter Mujiji Njishi	Director of Administration & Finance, RNEC
Mr. Augustin Gatera	Director of Languages & Humanities Unit, National Curriculum Development Centre (NCDC)
Mr. Joseph Rusanganwa	Administrative Assistant, NCDC
Mr. Claver Yissa	Former Director of Planning
Mr. Sam Mulindwa*	Director of Planning
Prof. George K. Njoroge	Rector, Kigali Institute of Education (KIE)
Mr. James Ngoga*	Planning officer, KIE
Mr. James Rutebuka*	Head, Department of Primary Education, KIE
Mme Claire Mukayisa*	Director, Dept. of Administration and Finance
Mr. Partene Rwigema*	Ag Director for Primary and Secondary Education
Mr. Pierre Claver Uwimana	Advisor, Capacity Building (Capacity building pooled fund)
Mr. Johnson Ntagaramba	Teacher Service Commission
Mr. Paul Birungi Masterjrb*	Coordinator of the Country Status Report consultancy
Mr. Clément Mugabo	Planning & Budget, MINEDUC
Mme Victoire Munganyinka	Head teacher, Sovu Primary School
Mme. Petronilla Nyirangwiriza	Director, Muse Primary School
Mr. Jean de Dieu Kabera	Head teacher, Sovu <i>Tronc Commun</i> School
Mme Jeanine Mukaneza	Director, Kimisagara Primary School
Mr. François Sibomana	Director, Ecole Technique Officielle Muhima
Frère Camille Rudasingwa	Director, Rwamagana Secondary School
Mr. Denys Butera	Director, Kigeme Secondary School
Mr. Damascene Ntirenganya	Préfet des Etudes, Rurama <i>Tronc Commun</i> School
Mr. Gerard Rutali	Inspector, Kigali City
Mme Angélique Sentikizira	Head teacher, Rukira Primary School
Mr. Theophile Kanamugire	Head teacher, Ecole (privée) des Hirondelles, Kibungo
Mr. Martin Masabo*	Headmaster, Lycée de Kigali
Mr. Aloys Ndaruhutse	Director, Groupe Scolaire de Kabare
Ms. Catherine Van Even*	School Management Unit & VVOB
Mr. James Curry	EMIS Consultant & Agile Learning Company

Annex Table 2.1 Continued

Name	Position
<i>Higher Learning Institutions</i>	
National University of Rwanda	<ul style="list-style-type: none"> • Director of Human Resources • Deputy Director of Human Resource • Coordinator of Accounting Activities • Director of the School of Journalism and Communication • System Administrator at the Directorate of Planning & Development
Kigali Health Institute	<ul style="list-style-type: none"> • Director of Human Resources • Director of Finance
Kigali Institute of Science & Technology	<ul style="list-style-type: none"> • Vice- Rector of Administration and Finance • Director of Human Resources • Deputy Director of Human Resources • Administrative Secretary of the Directorate of Research, Publication and Consultancy
Kigali Institute of Education	<ul style="list-style-type: none"> • Director of Human Resources • Professor in the Centre for Academic Practice & Development
<i>Other, non MINEDUC Institutions Working with the Education Sector</i>	
Mr. Jean Marie Rutayisire	Director of Education, Youth, Sports & Culture, Karongi District
Mr. Charles Ukobucyeye	Director of Education, Youth, Sports & Culture, Huye (Butare) District
Mme Marie Claire Ntamakemwa	Affaires Sociales, Mbazi Sector
Mr. Jacques Bakundukize	Executive Secretary, Remera Sector
Mr. Francois Ruterana	Director of Human Resources & Support Services, Gasabo District
Mr. Victor Jemadari	Director of Education, Youth, Sports & Culture, Ngoma District
Mr. Vincent Ngabiyisonga	Director of Education, Youth, Sports & Culture, Gasabo District
Dr. Okwach Abagi	Senior Policy Advisor, Social Cluster, Strategy & Policy Unit, Office of the President
Mme. Lilianne Ineza	Affaires Sociales, Tare Sector
Mr. Marc Habimana	Acting Director of Education, Nyamagabe District
Mme Umutoni Hidaya	Affaires Sociales, Nyakabanda Sector
Mr. Jean Damascene Ndagijimana	Director of Education, Nyarugenge District
Mme Alphonsine Murekatete	Affaires Sociales, Rwamagana District
Mr. Daniel Kalinganire	Director of Education, Rwamagana District
Mr. Rubibi Nsenga	Executive Secretary, Kigabiro Sector
Mr. Emmanuel Nyirimana	Affaires Sociales, Kigabiro Sector
Mr. Deogratias Mwanafunzi	Acting Director of Education, Gicumbi District
Mme Alphonsine Mujawamariya	Affaires Sociales, Byumba Sector
Mr. Pascal Nyamurinda	Director, Byumba EER Primary School
Mme Emerence Ayinkamiye	Affaires Sociales, Rutsiro District
Mr. Innocent Habimana	Affaires Sociales, Gihango Sector
Mr. Serukiza Mugisha	Director, Groupe Scolaire Bumba

Annex Table 2.1 Continued

Name	Position
<i>Others</i>	
Mr. Aloysia Nyaransabimana	Vice-Mayor, Butare
Mr. Jacques Bakundukize	Executive Secretary, Remera Sector
Mr. Francois Ruterana	Director of Human Resources & Support Services, Gasabo District
Mr. Protais Rubibi	Auditor, Ngoma District
Dr. Peter Butera Bazimya	Director of Human Resources, Advisory Services, Research, Monitoring & Evaluation, Public Service Commission
Mr. Jérôme Kajuga	Director of Finance & Administration, CNRU
<i>Financing and technical partner agencies</i>	
Mr. Richard Arden	Senior Advisor, DfID
Ms. Iris Uyttersprot	Education Advisor, DfID
Dr. Ferid Hegazy	Senior Advisor TVET, GTZ

(* attended validation workshop of April 14, 2009)

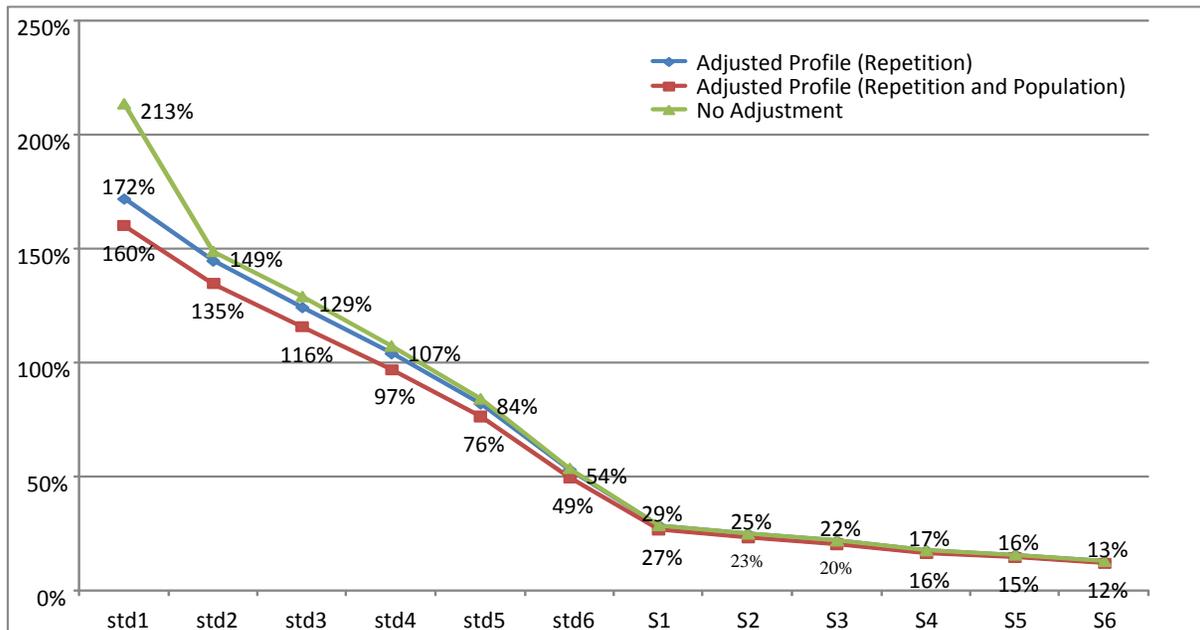
Annex Note 2.1 One-Page Survey Administered to Districts (21 out of 30 Districts Responded)

Question		Réponse	Code
1)	Nom du District		
2)	Vous êtes Directeur de l'éducation, de la jeunesse, des sports et de la culture. Quel pourcentage de votre temps consacrez-vous à l'éducation ?		
3)	Y a-t-il des chargés d'éducation dans votre District ?	Non Oui	
	• Si oui, combien ?		
4)	Combien y a-t-il d'auditeurs dans votre District ?		
5)	Combien d'établissements scolaires ont été audités en 2008 ?		
6)	Combien d'ordinateurs sont disponibles dans votre service ?		
	• Ces ordinateurs, sont-ils équipés de logiciels adéquats pour votre travail ?	Non Oui	
	• Disposez-vous de l'internet et de l'e-mail ?	Non Oui	
	• Fonctionne-t-il de manière satisfaisante ?	Non Oui	
7)	Avez-vous un jeu complet des règlements et des procédures nécessaires pour votre travail ?	Non Oui	
8)	Seriez-vous surpris d'apprendre que les mêmes procédures administratives (par ex. embauche d'enseignants) ne sont pas appliquées de la même manière dans d'autres Districts que le votre ?	Non Oui	
9)	Disposez-vous de toutes les informations nécessaires pour bien exécuter vos responsabilités ?	Non Oui	
	• Si non, quelles sont les informations (par ex., statistiques, réglementaires etc) qui vous manquent le plus ?		
10)	Combien de secteurs dans votre District ?		
11)	Combien de spécialistes en éducation dans les secteurs ?		
	Est-ce que ces spécialistes se consacrent exclusivement à l'éducation ?	Non Oui	
12)	Pour bien faire votre travail, qu'est-ce qu'il vous manque le plus ?		
13)	Dans votre District, combien y a-t-il des écoles :		
	<u>Publiques</u>	<u>Privées</u>	
	Ecoles primaires		
	Ecoles de base		
	Ecoles secondaires		
	Autres (précisez)		

ANNEX TABLES AND FIGURES: CHAPTER 3

Annex Figure 3.1: Transversal Profiles (Access Rates), Adjusted for Repetition and/or Population, and Non Adjusted, by Grade, 2008

Source: MINEDUC School Census 2008, DHS 2005 for repetition adjustment, and NISR 2005 population projections.



Annex Table 3.1: Computation of Transversal Profile (Access Rate), 2008

Source: MINEDUC School Census 2008, NISR 2005 Population Projections.

Primary	Enrolled (a)	Repeaters (b)	New Entrants (c) = (a) – (b)	School Aged Population (years) (d)	Access Rate (%) (e) = (c) / (d)
1	680,103	126,302	553,801	259,412 (7)	213
2	443,441	70,495	372,946	250,785 (8)	149
3	374,395	61,628	312,767	242,533 (9)	129
4	307,887	55,345	252,542	235,576 (10)	107
5	239,701	44,721	194,980	231,888 (11)	84
6	144,743	22,824	121,919	227,507 (12)	54

Annex Table 3.2: Construction of the 2008 Retention Profile (based on EMIS data)

Source: EMIS, various years, DHS 2005 for repetition structure at primary level, and authors' calculations.

		Estimated New Entrants Using EMIS Enrollment and DHS 2005 Repetition Rates at Primary Level		Effective Promotion Rate 2007/08 (%)	Survival Rate 2008 (%)
		2007	2008		
Primary	Std 1	420,288	447,296	—	100
	Std 2	363,114	363,157	86	86
	Std 3	302,482	301,538	83	72
	Std 4	244,428	245,247	81	58
	Std 5	195,519	189,830	78	45
	Std 6	115,894	120,949	62	28
<i>Tronc Commun</i>	S 1	56,994	64,036	55	15
	S 2	53,778	54,924	96	15
	S 3	44,952	47,669	89	13
Upper Secondary	S 4	37,107	37,829	84	11
	S 5	30,021	33,527	90	10
	S 6	25,995	27,486	92	9

Note: New entrants at primary level have been estimated using EMIS 2007 data and 2008 enrolment per grade figures to which the repetition structure reported by the DHS 2005 was applied. At the secondary level, the EMIS repetition structure was applied, as the DHS 2005 was not reliable because of small sample size.

Annex Table 3.3: Retention Profile, 2005 and 2006

Sources: EMIS 2005, 2006, EICV 2005/06, DHS 2005, and authors' calculations

N = 100 (Std 1)		Estimated new entrants using EMIS enrolment and DHS 2005 repetition rates at primary level (%)		DHS 2005 (%)*	EICV 2006 (%)
		2005	2006		
Primary	Std 1	100	100	100	100
	Std 2	84	88	91.3	91.8
	Std 3	72	78	80.1	82.0
	Std 4	61	70	64.4	68.9
	Std 5	49	59	47.9	54.0
	Std 6	32	44	31.6	40.8
<i>Tronc Commun</i>	S 1	18	24	14.6	22.8
	S 2	17	23	13.0	20.3
	S 3	14	20	11.5	16.4
Upper Secondary	S 4	13	20	9.3	13.2
	S 5	12	18	8.0	11.6
	S 6	11	17	6.5	11.3

Note: * DHS 2005 data at secondary level is not reliable due to small sample size.

Annex Table 3.4: Theoretical Distribution of Public Resources for a Cohort of 100 School Aged Individuals, 2008

Source: This report. GERs based on Tables 3.1 and 3.7; Public expenditure based on Table 6.4.

Education Level	Cohort			Public Resources				Cumulative Distribution (%)	
	GER/Intake Rate (%) (a)	Students' Final Level (%) (b)	Years Within the Cycle (c)	Average Annual Public Spending per Student (RF) (d)	Total cost at Final Level per Student (RF) (e)	Absorbed by the Cohort		Cohort (h)	Resources (i)
						(RF '000) (f)	(%) (g)		
Primary	100	72	6	18,227	109,361	7,874	27	72	27
<i>Tronc commun</i>	28	12	3	76,086	337,618	4,051	14	84	41
Upper Secondary	16	11	3	54,858	502,193	5,524	19	95	60
Higher	5	5	4	454,729	2,333,110	11,665	40	100	100

Note: GERs are used here as a proxy for access to each school level (a). For each level, we consider the proportion of individuals for whom it is the last level of schooling attended. This is the difference between the respective numbers of students enrolled in two subsequent levels (b). Public expenditures are estimated in Chapter 6. The figures here differ because they include public and private education (d). The number of years is theoretical, without taking repetition into account (c). For each level attained, we compute the accumulated resources absorbed by an *individual* leaving school at this level. For instance, someone leaving school after upper secondary, will have absorbed $18,227*6+76,086*3+54,858*3 = \text{RF } 502,193$ (e). Finally, in (f) we compute the accumulated public expenditure for each *group*, by multiplying the number of students finishing school at this level (b) by the cumulated cost per pupil (e). Columns (h) and (i) provide the cumulative distribution of the cohort by final level attended and its corresponding cumulated share of resources absorbed. For instance, 95% of the cohort's students (those having left school after primary, *tronc commun*, and upper secondary) will have absorbed 60% of public resources devoted to education. The 5% completing higher education will have absorbed 40% of resources.

Annex Table 3.5: Retention Model to Primary 6 and Secondary 3, by Location, Gender and Wealth Index, 2005/6

Source: Authors' calculations from EICV 2005/06 data.

	Retention to Primary 6 (19-24 years old)		Retention to Secondary 3 (21-25 years old)	
Pseudo-R2	8.3%		17.1%	
Predicted Probability	43.1%		14%	
Variable	Marginal Effect	Significance	Marginal Effect	Significance
Location				
Urban	0.092	***	0.055	***
Rural	Ref	—	Ref	—
Gender of Household Head				
Male	-0.052	***	-0.076	***
Female	Ref	—	Ref	—
Household Wealth Index				
Q1	Ref	—	Ref	—
Q2	0.101	***	0.067	...
Q3	0.221	***	0.067	...
Q4	0.273	***	0.194	***
Q5	0.344	***	0.311	***
Household Size	0.038	***	0.026	***
Child Gender				
Male	0.034	**	0.006	...
Female	Ref	—	Ref	—
Number of Times Repeated in Primary School	-0.032	***	-0.038	***
Number of Observations	3,449 (19-24 years old)	—	3,130 (21-25 years old)	—

Note: ***: significant at 1%; **: significant at 5%.

* The marginal effect is computed on the probability: for instance, according to this model, the probability for girls to survive in school until the Primary 6 is 3.4 percent lower than for boys, all other things being equal.

Annex Table 3.6: Statistics on the Sample Used for Access, Completion, and Retention Estimations, 2005/06

Source: Authors' calculations from EICV 2005/06 data.

Variable		Retention to Primary 6 (19-24 years old)	Retention to Secondary 3 (21-25 years old)
		Average	Average
Location	Urban	19.4	20.3
	Rural	80.6	79.7
Province	City of Kigali	9.6	10.4
	Kigali Ngali	10.4	10.9
	Gitarama	10.7	11.2
	Butare	9.4	8.9
	Gikongoro	5.8	5.2
	Cyangugu	6.4	6.8
	Kibuye	5.9	5.5
	Gisenyi	10.2	10.0
	Ruhengeri	9.8	9.8
	Byumba	8.1	8.0
	Umutara	5.3	4.5
	Kibungo	8.5	8.8
Gender of Household Head	Male	70.1	73.3
	Female	29.9	26.7
Household Wealth Index	Q1	14.6	12.6
	Q2	17.8	16.9
	Q3	19.3	19.5
	Q4	22.0	23.1
	Q5	26.3	27.9
	Household Size	5.9	5.4
Child Gender	Male	47.5	47.1
	Female	52.5	52.9
Number of Times Repeated in Primary School		0.7	0.6
OVC Status (19-20 years old only)			
	Mother Died Only	6.8	—
	Father Died Only	28.3	—
	Both Parents Dead	11.3	—
	Both Parents Alive	53.6	—
School Related Variables (on a Subsample of Districts)			
	Primary School in the Community	37.3	37.3
	Secondary School in the Community	8.5	8.3
	Closest Primary School Has Latrines	93.8	—
	Closest Primary School Has Water	61.3	—

Note: Data for provinces are based on the former political geography.

Annex Table 3.7: Probability of Access to and Completion of Primary and Secondary Education, by Province, 2005/06

Sources: Authors' calculations from EICV 2005/06.

(%)	Access to Primary	Primary Completion	Access to <i>Tronc Commun</i>	Completion of <i>Tronc Commun</i>	Access to Upper Secondary	Completion of Upper Secondary
Provinces						
City of Kigali	98	57	43	34	29	26
Kigali Ngali	96	40	21	17	14	10
Cyangugu	96	40	24	18	14	9
Kibuye	96	38	17	12	8	13
Gisenyi	92	29	16	9	7	7
Gitarama	95	39	21	16	11	9
Ruhengeri	95	26	15	9	7	9
Umutara	96	33	18	12	10	8
Kibungo	96	29	14	6	4	3
Butare	97	33	19	12	10	8
Gikongoro	97	34	16	12	11	12
Byumba	98	39	15	8	7	4
Total	96	37	20	14	11	9

Note: Data for provinces are based on the former political geography.

Annex Table 3.8: Retention to Primary 6, by Province and OVC Status, 2005/06

Source: Authors' calculations from EICV 2005/06 data.

	With Provincial Dummies		With OVC Status Dummies	
Pseudo-R2	8.8%		8.6%	
Predicted Probability	43.0%		43.5%	
Variable	Marginal Effect	Significance	Marginal Effect	Significance
Location				
Urban	—	—	0.095	***
Rural	—	—	Ref	—
Province				
City of Kigali	Ref	—	—	—
Kigali Ngali	-0.064	*	—	—
Gitarama	-0.052	...	—	—
Butare	-0.070	**	—	—
Gikongoro	-0.013	...	—	—
Cyangugu	-0.005	...	—	—
Kibuye	-0.002	...	—	—
Gisenyi	-0.096	***	—	—
Ruhengeri	-0.139	***	—	—
Byumba	-0.005	...	—	—
Umutara	-0.127	***	—	—
Kibungo	-0.155	***	—	—
Gender of Household Head				
Male	-0.054	***	-0.063	...
Female	Ref	—	Ref	—
Household Wealth Index				
Q1	Ref	—	Ref	—
Q2	0.109	***	0.098	*
Q3	0.235	***	0.259	***
Q4	0.294	***	0.324	***
Q5	0.379	***	0.333	***
Household Size	0.038	***	0.039	***
Child Gender				
Male	0.035	**	0.071	**
Female	Ref	—	Ref	—
Number of Times Repeated in Primary School	-0.033	***	-0.030	**
OVC Status				
Mother Died Only	—	—	-0.062	...
Father Died Only	—	—	-0.031	...
Both Parents Dead	—	—	-0.014	...
Both Parents Alive	—	—	Ref	—
Number of Observations	3,949 (19-24 Years Old)		1,392 (19-21 Years Old)	

Note: ***: significant at 1%; **: significant at 5%. The marginal effect refers to the percentage change in the probability of reaching Primary 6 in response to a one percent increase/decrease in the share of the corresponding variable, at the expense of a one percent decline/increase in the share of the reference: for instance, according to this model, the probability that girls survive in school until Primary 6 is 3.5 percent lower than for boys, all other things being equal.. Data for provinces are based on the former political geography.

Annex Table 3.9: Retention to Primary 6 and Secondary 3 based on the EICV 2005/06 Community Education Questionnaire

Source: Authors' calculations from EICV 2005/06 data.

	Retention to Primary 6		Retention to Tronc Commun 3	
Pseudo-R2	—		13.4%	
Predicted Probability	—		9.4%	
Variable	Marginal effect	Significance	Marginal effect	Significance
Gender of Household Head				
Male	-0.037	*	-0.038	**
Female	Ref	—	Ref	—
Household Wealth Index				
Q1	Ref	—	Ref	—
Q2	0.087	**	0.039	...
Q3	0.217	***	0.048	...
Q4	0.259	***	0.136	***
Q5	0.305	***	0.230	***
Household Size	0.044	***	0.025	***
Child Gender				
Male	0.53	***	0.017	—
Female	Ref	—	Ref	—
Number of Time Repeated In Primary School	-0.023	**	-0.021	***
School Related Variables	—	—	—	—
Primary School in the Community	0.016	...	-0.011	...
Secondary School in the Community	0.052	...	0.022	...
Closest Primary School Has Latrines	0.023	...	—	—
Closest Primary School Has Water	-0.018	...	—	—
Number of Observations	2,795 (19-24 Years Old)		2,159 (21-25 Years Old)	

Note: ***: significant at 1%; **: significant at 5%. According to this model, the probability of a child belonging to the 20% richest households to survive until Primary 6 is 30 percent higher than the same probability for a child belonging to the 20% poorest households, all other things being equal.

ANNEX TABLES AND FIGURES: CHAPTER 4

Annex Table 4.1: Primary Leaver Examination Candidates and Results, by Type of School and Province, 2008

Source: MINEDUC / RNEC, 2008.

	Number of Schools	Number of Candidates			Pass Rate (%)			Scores		
		Female	Male	Total	Female	Male	Total	Min	Max	Average
<i>Type of School</i>										
All	2,289	67,669	62,072	129,741	71	80	75	8.0	27.0	21.0
Public	517	15,463	14,882	30,345	71	80	76	8.0	26.6	21.2
Gvt. Subsidized	1,204	34,621	31,321	65,942	70	78	74	8.5	26.9	21.6
Private	80	2,832	2,487	5,319	77	81	78	7.9	26.4	20.3
Unaccounted for *	488	14,753	13,382	28,135	—	—	—	—	—	—
<i>By Province</i>										
East	445	13,621	13,239	26,860	73	83	78	8.0	27.0	21.0
North	418	13,005	11,641	24,646	70	77	73	8.0	27.0	22.0
South	636	18,563	15,726	34,289	70	77	73	8.0	27.0	21.0
Kigali	138	6,366	5,823	12,189	90	92	90	5.0	25.0	17.0
West	652	16,114	15,643	31,757	69	80	74	9.0	27.0	22.0
Total / Average	2,289	67,669	62,072	129,741	72	80	76	5.0	25.0	21.0

Note: * These figures include candidates that: (i) are not enrolled in school, referred to as *Candidats Libres*. These students may have failed the exam the previous year and decided to resit to obtain the diploma without attending classes again; and (ii) those from schools which did not specify if they were public, government subsidized, or private.

Annex Table 4.2: Logistic Regression Results for P6NE Pass Rate

Source: Authors' calculations, RNEC, and MINEDUC school statistics, 2008.

Factors	Odds Ratio	Std. Err. Robust	Z	P> z	[95% Conf. Interval]	
Private	0.96	0.14	-0.29	0.77	0.73	1.27
Textbook to Pupil Ratio	1.01**	0.00	2.59	0.01	1.00	1.02
Pupil to Teacher Ratio	1.00	0.00	0.61	0.54	1.00	1.00
Electricity	0.94	0.09	-0.70	0.48	0.78	1.12
Water	1.02	0.06	0.44	0.66	0.92	1.14
Mixed Toilet	0.83**	0.08	-1.95	0.05	0.68	1.00
Kigali ⁺	2.80**	0.41	7.06	0.00	2.10	3.72
PTA	1.16	0.14	1.22	0.22	0.92	1.46

Note: ⁺ dummy equal to 1 if school is located in the province of Kigali and 0 otherwise. ** significant at 5% level; * significant at 10% level.

Number of Observations	73,313
Wald chi2(8)	61.34
Prob > chi2 =	0
Log Pseudo Likelihood	-41,862.075
Pseudo R2	0.0102
Std. Err. Adjusted for Clusters (1308 Schools)	

Annex Table 4.3: Logistic Regression Results for A-Level Pass Rate

Source: Authors' calculations, RNEC and, MINEDUC school statistics 2008

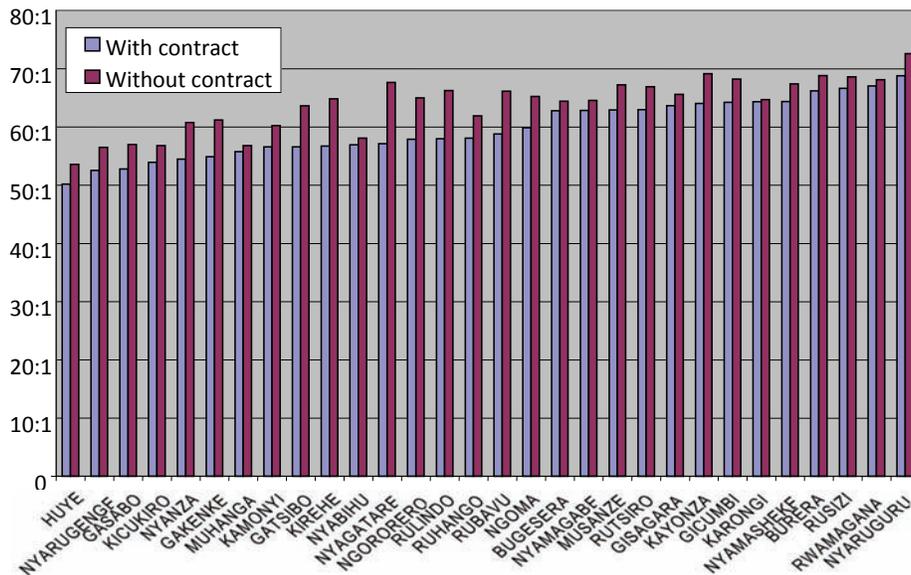
Factors	Odds Ratio	Std. Err. Robust	Z	P> z	[95% Conf. Interval]	
Private	0.27**	0.07	-5.13	0.00	0.17	0.45
Textbook to Pupil Ratio	1.11	0.30	0.41	0.68	0.66	1.88
Pupil to Teacher Ratio	1.00	0.01	-0.74	0.46	0.98	1.01
Electricity	2.50*	1.20	1.91	0.06	0.98	6.38
Water	2.10**	0.59	2.64	0.01	1.21	3.63
Kigali ⁺	0.62	0.19	-1.57	0.12	0.34	1.13

Note: ⁺ dummy equal to 1 if school is located in the province of Kigali and 0 otherwise. ** significant at 5% level; * significant at 10% level.

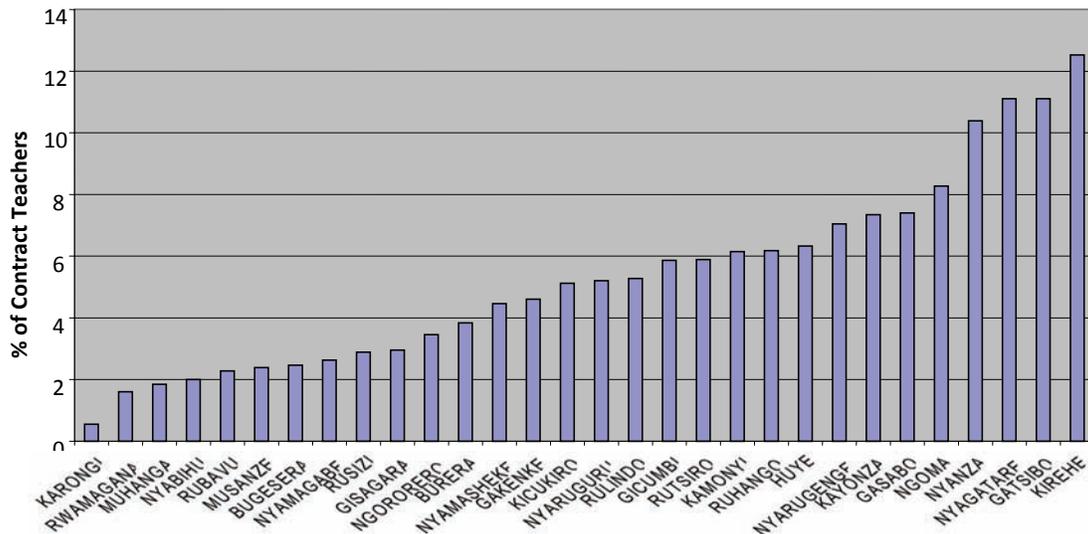
Number of Observations	23,627
Wald chi2(6)	55.13
Prob > chi2 =	0
Log Pseudo Likelihood	-6,206.49
Pseudo R2	0.0693
Std. Err. Adjusted for Clusters (240 Schools)	

ANNEX TABLES AND FIGURES: CHAPTER 5

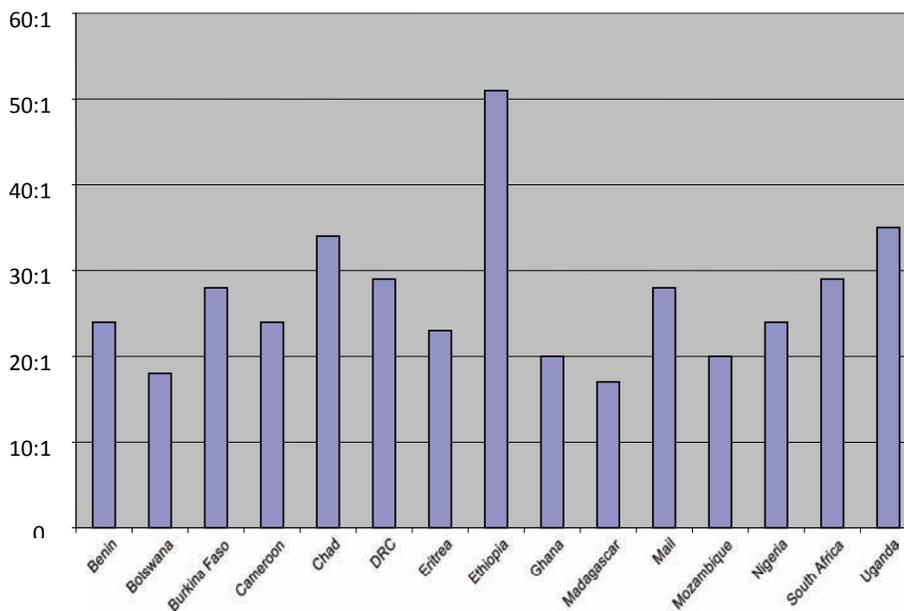
Annex Figure 5.1: Primary Pupil to Teacher Ratios, with and without Contract Teachers, by District, 2008



Annex Figure 5.2: Share of Contract Teachers at Primary Schools, by District, 2008

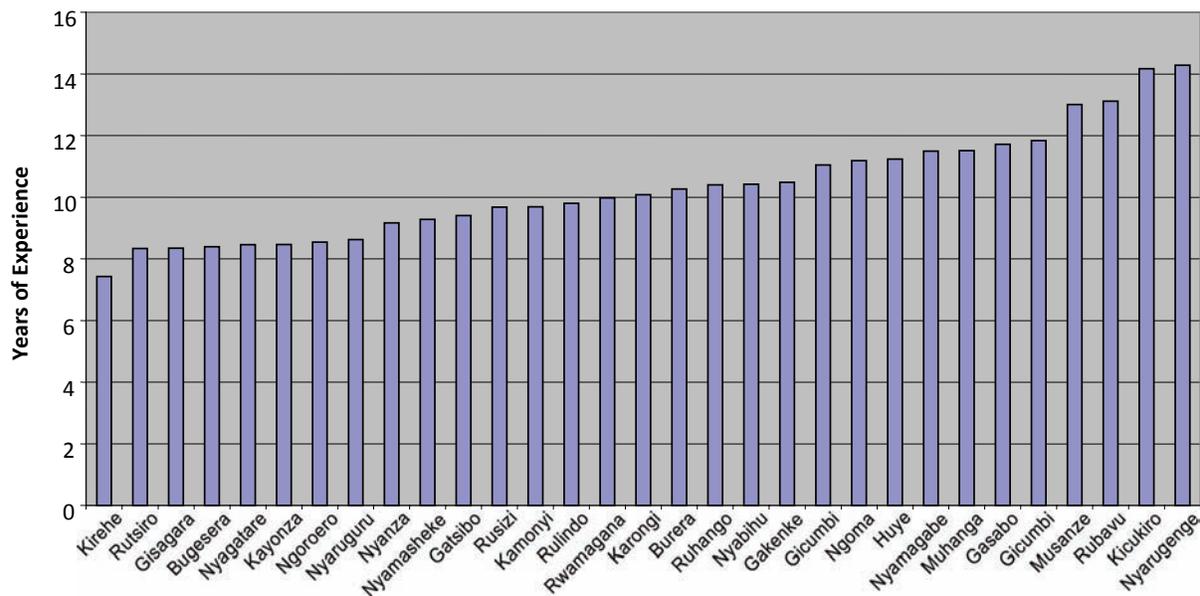


Annex Figure 5.3: Pupil to Teacher Ratios for Secondary Schools in Select African Countries, 2006



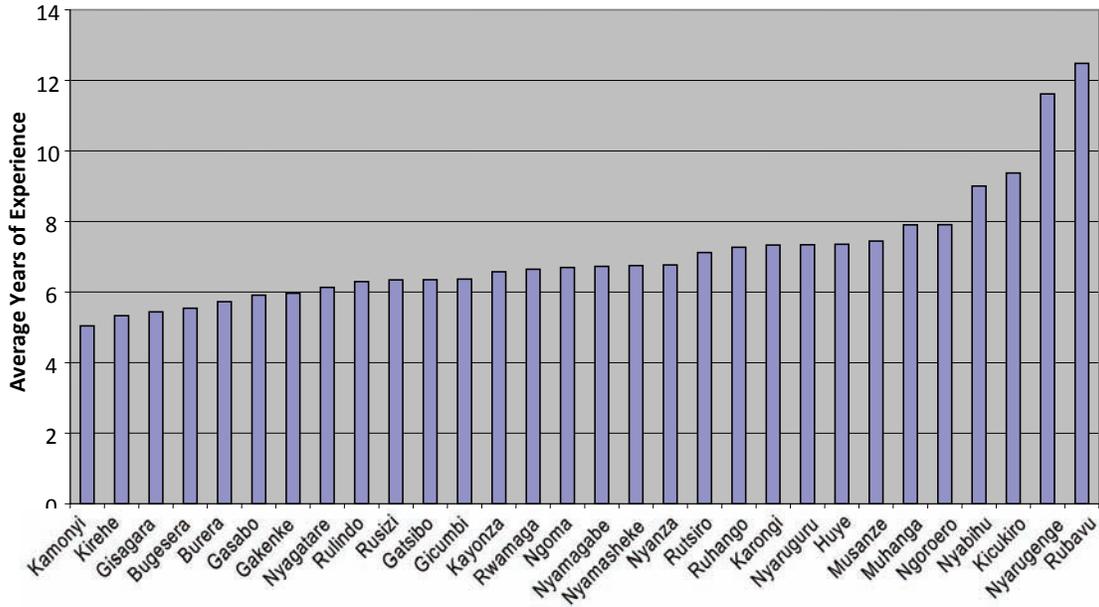
Annex Figure 5.4: Average Experience of Primary School Teachers, by District, 2007

Source: MIFOTRA payroll data

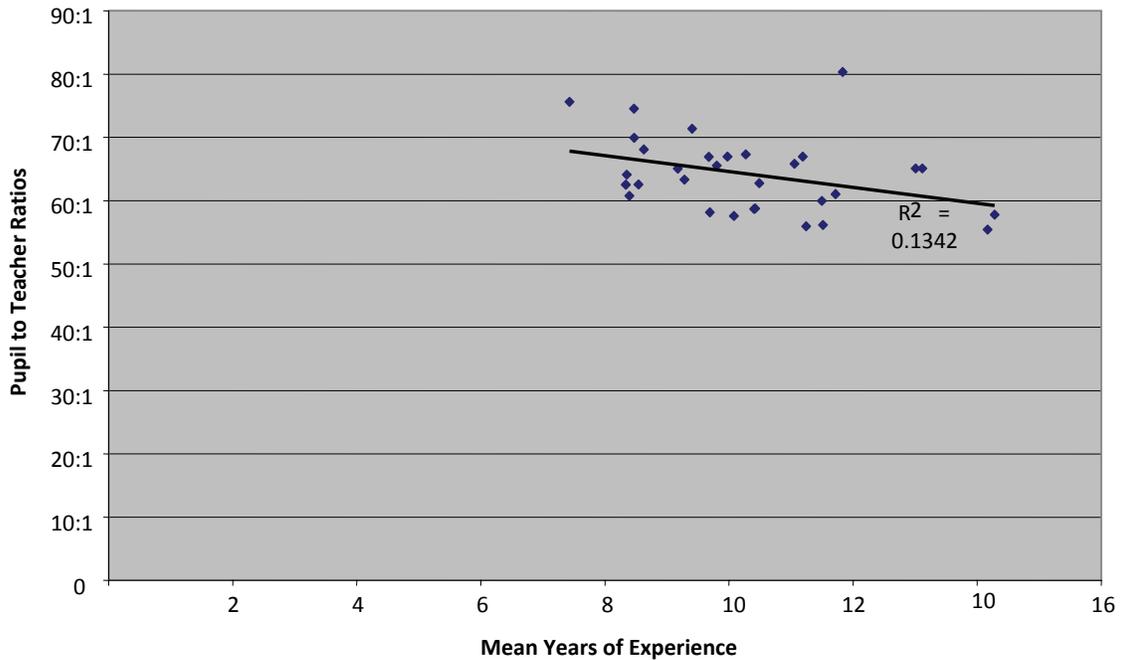


Annex Figure 5.5: Average Experience of Secondary School Teachers, by District, 2007

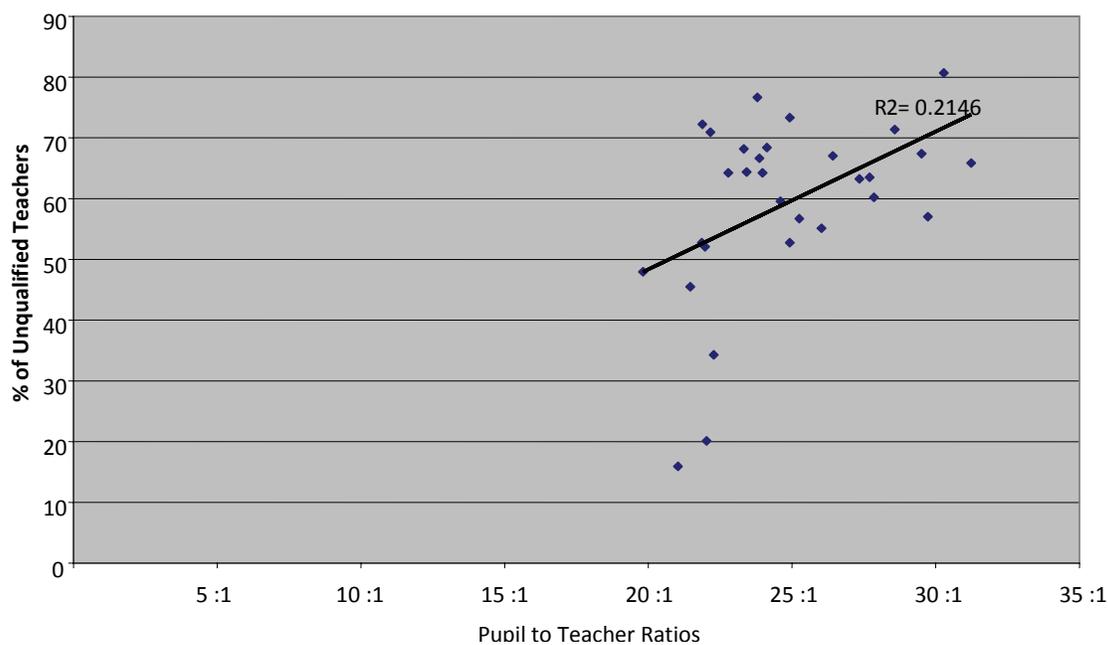
Source: MIFOTRA payroll data



Annex Figure 5.6: Scatter Plot of Pupil to Teacher Ratios and Average Years of Teaching Experience, for Primary Schools, 2007



Annex Figure 5.7: Scatter Plot of Share of Qualified Teachers and Pupil to Teacher Ratios for Secondary Schools, by District, 2007



Annex Table 5.1: Share of Single Teachers at Surveyed Schools, by District, 2008

Source: Teacher motivation survey

District	Female	Male
Burera	18	36
Musanze	24	37
Gasabo	26	32
Kicukiro	31	34
Gisagara	36	53
Rwamagana	38	18
Nyanza	40	39
Rusizi	47	40
Karonge	47	8
Kayonze	52	65

Annex Table 5.2: Normale Primaire Examination Candidates, by School, 2005-2007

Source: RNEC

	Ownership	2005	2006	2007
TTCs				
Bicumbi	Public	220	235	169
Byumba	LS	165	144	149
Gacuba	LS	164	164	180
Kavumu	Public	239	112	50
Kirambo	LS	85	127	174
Mbuga	LS	184	223	188
Mururu	LS	120	87	81
Rubengera	LS	159	176	155
Save	LS	130	120	77
Zaza	LS	156	157	126
Rukara	Public	0	0	66
<i>Subtotal</i>		<i>1,402</i>	<i>1,310</i>	<i>1,415</i>
Other Schools with NP Students				
Collège Adventiste de Gitwe	Private	32	51	46
ES St Francois Shangi	LS	34	44	38
Lycée Notre Dame de Citeaux	LS	22	28	20
GSND des Potres Rwaza	LS	31	28	30
Collège Ste Marie Kibuye	LS	30	39	39
Umutara TTC	Public	30	51	0
<i>Subtotal</i>		<i>179</i>	<i>241</i>	<i>173</i>
Private Candidates		3,355	2,610	1,579

Note: LS stands for libre subsidié, or government subsidized.

Annex Table 5.3: Average Marks of Students Taking the Normal Primaire Examination, 2005-2007

Source: RNEC

	2005	2006	2007
TTCs			
Bicumbi	3.04	3.47	3.12
Byumba	3.67	4.23	3.71
Gacuba	2.73	3.16	3.46
Kavumu	3.29	3.65	3.45
Kirambo	3.47	3.60	3.45
Mbuga	3.42	3.41	3.28
Mururu	3.56	3.87	3.53
Rubengera	3.29	3.45	3.17
Rukara	n.a.	n.a.	2.53
Save	4.48	4.09	3.78
Umutara TTC	1.96	1.80	—
Zaza	3.13	3.64	3.57
Other Schools with NP Streams			
Collège Adventiste de Gitwe	2.1	2.71	2.78
ES St Francois Shangi	4.86	4.84	3.84
Lycée Notre Dame de Citeaux	3.44	3.95	4.40
GSND des Potres Rwaza	3.29	4.34	3.70
Collège Ste Marie Kibuye	3.19	3.70	3.42
Private Candidates	1.93	1.80	1.70

Annex Table 5.4: Target Repetition and Pseudo-Dropout Percentages, by Grade, 2013-2023

Grade		Current (2008)	2013	2018	2023
<i>PRIMARY</i>					
P1	Repetition	34.0	10.0	10.0	1.0
	Pseudo-Dropout	13.0	5.0	5.0	0.0
P2	Repetition	15.9	5.0	5.0	1.0
	Pseudo-Dropout	17.0	10.0	2.0	0.0
P3	Repetition	16.5	5.0	5.0	1.0
	Pseudo-Dropout	19.0	5.0	5.0	0.0
P4	Repetition	18.0	5.0	5.0	1.0
	Pseudo-Dropout	22.0	5.0	5.0	0.0
P5	Repetition	18.7	5.0	5.0	1.0
	Pseudo-Dropout	38.0	5.0	5.0	0.0
P6	Repetition	15.8	5.0	5.0	1.0
<i>TRONC COMMUN</i>					
S1	Transition rate	55.0	75.0	100.0	100.0
	Repetition	7.9	3.0	3.0	1.0
	Pseudo-Dropout	4.0	2.0	2.0	0.0
S2	Repetition	11.0	2.0	2.0	1.0
	Pseudo-Dropout	11.0	3.0	3.0	0.0
S3	Repetition	8.4	3.0	3.0	1.0
	Transition rate	68.3	35.0	35.0	37.0
<i>UPPER SECONDARY</i>					
S4	Repetition	5.5	3.0	3.0	1.0
	Pseudo-Dropout	10.0	1.0	1.0	1.0
S5	Repetition	6.4	2.0	2.0	1.0
	Pseudo-Dropout	8.0	3.0	3.0	3.0
S6	Repetition	5.0	5.0	5.0	2.0

Annex Table 5.5: Age Profile of Primary and Secondary School Teachers, 2008

Source: EMIS

	<20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	>55
<i>PRIMARY</i>									
Female	87	1,893	5,698	4,220	2,600	1,620	1,095	722	878
Male	226	1,695	4,684	3,827	2,336	1,479	1,036	721	715
Total	313	3,588	10,382	8,047	4,936	3,099	2,131	1,443	1,593
<i>SECONDARY</i>									
Female	29	395	859	657	436	204	86	51	64
Male	58	659	1,938	1,871	1,650	956	396	223	183
Total	87	1,054	2,797	2,528	2,086	1,160	482	274	247

Annex Table 5.6: Target Teacher Staffing Parameters from ESSP and FTS

Source: ESSP, FTS, Teacher utilization survey 2009.

	Current (2008)	Modified ESSP (2014)	FTS target (2015)	Implied FTS (2015)		Modified FTS (2015)	
				LP	UP	LP	UP
PRIMARY							
Student to Class Ratio	62:1	45:1	n.a.	45:1	37:1	45:1	37:1
Teacher to Class Ratio	1:1	1.1:1	n.a.	0.5:1	0.5:1	0.65:1	0.75:1
Student to Teacher Ratio	62:1	42:1	42:1	90:1	74:1	69:1	49:1
TRONC COMMUN							
Student to Class Ratio	45:1	45:1	n.a.	45:1		37:1	
Teacher to Class Ratio	1.4:1	1.5:1	n.a.	n.a.		1.4:1	
Student to Teacher Ratio	29:1	30:1	32:1	n.a.		27:1	
UPPER SECONDARY							
Student to Class Ratio	38:1	41:1	n.a.	n.a.		30:1	
Teacher to Class Ratio	1.7:1	1.6:1	n.a.	n.a.		1.45:1	
Student to Teacher Ratio	24:1	25:1	27:1	n.a.		21:1	

Note: STR estimation based on 2008 MINEDUC School Census.

Annex Table 5.7: Data for Enrollment and Teacher Requirement and Recruitment Projections

Source: KIE Strategic Plan 2008-2012

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PRIMARY													
Enrollment Projections													
Primary Updated ESSP	2,190,270	2,159,694	2,159,261	2,164,775	2,193,391	2,259,917	2,279,739	2,258,719	2,214,208	2,174,844	2,148,292	2,151,294	2,174,215
Primary Modified ESSP	1,756,337	1,794,161	1,769,242	1,728,243	1,692,590	1,663,621	1,643,035	1,641,440	1,652,719	1,673,594	1,703,558	1,741,943	1,785,620
Primary FTS	—	—	2,076,706	—	—	—	—	1,791,163	—	—	—	—	—
Target STRs													
Updated ESSP	62	58	54	50	46	44	42	42	42	42	42	42	42
Modified ESSP	62	58	54	50	46	44	42	42	42	42	42	42	42
FTS	62	58	54	50	46	44	42	42	42	42	42	42	42
Lower Primary Implied FTS	62	76	90	90	90	90	90	90	90	90	90	90	90
Upper Primary Implied FTS	62	66	74	74	74	74	74	74	74	74	74	74	74
Lower Primary Modified FTS	62	66	69	69	69	69	69	69	69	69	69	69	69
Upper Primary Modified FTS	62	56	49	49	49	49	49	49	49	49	49	49	49
Total Teaching Posts													
Updated ESSP	35,327	37,236	39,986	43,296	47,682	51,362	54,279	53,779	52,719	51,782	51,150	51,221	51,767
Original ESSP	28,328	30,934	32,764	34,565	36,795	37,810	39,120	39,082	39,350	39,847	40,561	41,475	42,515
FTS	—	—	38,458	—	—	—	—	42,647	—	—	—	—	—
Implied FTS	35,327	29,761	25,641	25,824	26,385	27,476	27,897	27,716	27,124	26,588	26,229	26,283	26,580
Modified FTS	35,327	34,546	35,355	35,733	36,748	38,578	39,359	39,183	38,299	37,486	36,944	37,037	37,475
New Teaching Posts													
Updated ESSP	—	1,909	2,750	3,309	4,387	3,679	2,918	-500	-1,060	-937	-632	71	546
Original ESSP	—	2,606	1,830	1,801	2,231	1,014	1,310	-38	269	497	713	914	1,040
Implied FTS	—	-5,566	-4,120	182	562	1,091	421	-181	-592	-536	-359	53	298
Modified FTS	—	-780	808	378	1,015	1,830	781	-176	-885	-812	-542	93	438
Attrition Rates / Levels													
Resignation	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Retirement	160	160	160	160	160	160	160	160	160	160	160	160	160
Death and Illness	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5
Dismissal	1.6	1.6	1.6	1.5	1.5	1.4	1.3	1.2	1.1	1	0.9	0.8	0.8
Replacement	0	380	380	380	380	380	0	0	0	0	0	0	0
Updated ESSP: Attrition													
Resignation	300	317	340	368	405	437	461	457	448	440	435	435	440

Annex Table 5.7 Continued

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Retirement	160	160	160	160	160	160	160	160	160	160	160	160	160
Death and Illness	71	74	80	87	143	154	163	161	158	207	205	205	259
Dismissal	565	596	640	649	715	719	706	645	580	518	460	410	414
Replacement	0	380	380	380	380	380	0	0	0	0	0	0	0
Total Attrition	1,096	1,527	1,600	1,644	1,804	1,850	1,490	1,424	1,346	1,325	1,260	1,210	1,273
Implied FTS: Attrition													
Resignation	300	253	218	220	224	234	237	236	231	226	223	223	226
Retirement	160	160	160	160	160	160	160	160	160	160	160	160	160
Death and Illness	71	60	51	52	79	82	84	83	81	106	105	105	133
Dismissal	565	476	410	387	396	385	363	333	298	266	236	210	213
Replacement	0	380	380	380	380	380	0	0	0	0	0	0	0
Total Attrition	1,096	1,329	1,219	1,199	1,239	1,241	843	811	770	758	724	699	731
Modified FTS: Attrition													
Resignation	300	294	301	304	312	328	335	333	326	319	314	315	319
Retirement	160	160	160	160	160	160	160	160	160	160	160	160	160
Death and Illness	71	69	71	71	110	116	118	118	115	150	148	148	187
Dismissal	565	553	566	536	551	540	512	470	421	375	332	296	300
Replacement	0	380	380	380	380	380	0	0	0	0	0	0	0
Total Attrition	1,096	1,455	1,477	1,451	1,514	1,524	1,124	1,081	1,022	1,003	954	919	966
Annual Recruitment Demand													
Updated ESSP: New Posts	—	1,909	2,750	3,309	4,387	3,679	2,918	-500	-1,060	-937	-632	71	546
Updated ESSP: Attrition	—	1,527	1,600	1,644	1,804	1,850	1,490	1,424	1,346	1,325	1,260	1,210	1,273
Updated ESSP: Total	—	3,436	4,350	4,953	6,190	5,529	4,408	923	286	388	628	1,282	1,819
Implied FTS: New Posts	—	-5,566	-4,120	182	562	1,091	421	-181	-592	-536	-359	53	298
Implied FTS: Attrition	—	1,329	1,219	1,199	1,239	1,241	843	811	770	758	724	699	731
Implied FTS: Total	—	-4,237	-2,900	1,381	1,801	2,332	1,264	630	178	223	365	752	1,029
Modified FTS: New Posts	—	-780	808	378	1,015	1,830	781	-176	-885	-812	-542	93	438
Modified FTS: Attrition	—	1,455	1,477	1,451	1,514	1,524	1,124	1,081	1,022	1,003	954	919	966
Modified FTS: Total	—	675	2,285	1,830	2,529	3,354	1,905	905	137	191	412	1,012	1,404
Total Annual Recruitment	—	2,009	2,010	2,011	2,012	2,013	2,014	2,015	2,016	2,017	2,018	2,019	2,020
Updated ESSP	—	3,436	4,350	4,953	6,190	5,529	4,408	923	286	388	628	1,282	1,819
Implied FTS	—	-4,237	-2,900	1,381	1,801	2,332	1,264	630	178	223	365	752	1,029

Annex Table 5.7 Continued

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Modified FTS	—	675	2,285	1,830	2,529	3,354	1,905	905	137	191	412	1,012	1,404
TRONC COMMUN													
Projected Enrollments													
Updated ESSP	159,839	194,705	228,675	266,704	306,527	374,132	481,102	622,164	776,479	897,583	974,579	981,032	964,072
Original ESSP	184,859	204,323	227,866	255,382	287,509	324,433	366,849	412,695	462,067	515,120	571,590	631,099	694,664
FTS	—	—	278,107	—	—	—	—	468,785	—	—	—	—	—
Student to Teacher Ratios													
Updated ESSP	32	32	32	31	31	31	30	30	30	30	30	30	30
Original ESSP	32	32	32	31	31	31	30	30	30	30	30	30	30
FTS	—	—	31	—	—	—	—	32	—	—	—	—	—
Modified FTS	32	29	27	27	27	27	27	27	27	27	27	27	27
Total Teacher Posts													
Updated ESSP	4,995	6,085	7,146	8,603	9,888	12,069	16,037	20,739	25,883	29,919	32,486	32,701	32,136
Original ESSP	5,777	6,385	7,121	8,238	9,274	10,466	12,228	13,757	15,402	17,171	19,053	21,037	23,155
FTS	6,899	7,883	9,063	10,383	11,698	12,911	13,932	14,717	—	—	—	—	—
Modified FTS	4,995	6,714	8,469	9,878	11,353	13,857	17,819	23,043	28,758	33,244	36,096	36,335	35,706
Annual Additions													
Updated ESSP	—	1,090	1,062	1,457	1,285	2,181	3,968	4,702	5,144	4,037	2,567	215	-565
Original ESSP	—	608	736	1,117	1,036	1,191	1,763	1,528	1,646	1,768	1,882	1,984	2,119
FTS	—	—	—	1,320	1,315	1,213	1,021	785	—	—	—	—	—
Modified FTS	—	1,719	1,755	1,408	1,475	2,504	3,962	5,225	5,715	4,485	2,852	239	-628
Attrition Rates / Levels													
Resignation	1	1	1	1	1	1	1	1	1	1	1	1	1
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	0	0	0	0	0	0	0	0	0	0	0	0	0
Dismissal	1	1	1	1	1	1	1	0	0	0	0	0	0
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Updated ESSP Attrition													
Resignation	50	61	71	86	99	121	160	207	259	299	325	327	321
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	10	12	14	17	30	36	48	62	78	120	130	131	161
Dismissal	30	37	43	43	49	60	80	83	104	120	130	98	96

Annex Table 5.7 Continued

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Total Attrition	100	300	319	336	368	407	299	368	455	554	600	571	593
Modified FTS Attrition													
Resignation	50	67	85	99	114	139	178	230	288	332	361	363	357
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	10	13	17	20	34	42	53	69	86	133	144	145	179
Dismissal	30	40	51	49	57	69	89	92	115	133	144	109	107
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Total Attrition	100	311	342	358	394	439	331	407	504	613	665	633	658
Annual Recruitment Demand													
Updated ESSP: New Posts	—	1,090	1,062	1,457	1,285	2,181	3,968	4,702	5,144	4,037	2,567	215	-565
Updated ESSP: Attrition	—	300	319	336	368	407	299	368	455	554	600	571	593
Updated ESSP: Total	—	1,389	1,380	1,794	1,653	2,588	4,267	5,070	5,599	4,590	3,166	786	28
Modified FTS: New Posts	—	1,719	1,755	1,408	1,475	2,504	3,962	5,225	5,715	4,485	2,852	239	-628
Modified FTS: Attrition	—	311	342	358	394	439	331	407	504	613	665	633	658
Modified FTS: Total	—	2,030	2,098	1,766	1,869	2,943	4,293	5,631	6,219	5,099	3,516	872	30
Total Recruitment Demand													
Updated ESSP	—	1,389	1,380	1,794	1,653	2,588	4,267	5,070	5,599	4,590	3,166	786	28
Modified FTS	—	2,030	2,098	1,766	1,869	2,943	4,293	5,631	6,219	5,099	3,516	872	30
UPPER SECONDARY													
Projected Enrollments													
Updated ESSP	96,752	89,796	79,860	69,754	75,098	82,609	93,317	105,287	127,684	163,502	211,293	264,862	309,582
Original ESSP	84,692	89,618	92,695	95,636	98,701	102,669	107,319	114,992	125,782	139,529	154,557	170,732	188,106
FTS	—	—	72,124	—	—	—	—	96,602	—	—	—	—	—
Target STRs													
Updated ESSP	23	23	23	24	24	24	25	25	25	25	25	25	25
Original ESSP	23	23	23	24	24	24	25	25	25	25	25	25	25
FTS	—	—	27	—	—	—	—	27	—	—	—	—	—
Modified FTS	23	22	21	21	21	21	21	21	21	21	21	21	21
Total Teacher Posts													
Updated ESSP	4,207	3,904	3,472	2,906	3,129	3,442	3,733	4,211	5,107	6,540	8,452	10,594	12,383
Original ESSP	3,682	3,896	4,030	3,985	4,113	4,278	4,293	4,600	5,031	5,581	6,182	6,829	7,524

Annex Table 5.7 Continued

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
FTS	3,415	3,487	3,615	3,760	3,920	4,099	4,299	4,516					
Modified FTS	4,207	4,082	3,803	3,322	3,576	3,934	4,444	5,014	6,080	7,786	10,062	12,612	14,742
Annual Additions													
Updated ESSP	—	-302	-432	-566	223	313	291	479	896	1,433	1,912	2,143	1,789
Original ESSP	—	214	134	-45	128	165	15	307	432	550	601	647	695
FTS	—	72	128	145	160	179	200	217	—	—	—	—	—
Modified FTS	—	-125	-279	-481	254	358	510	570	1,067	1,706	2,276	2,551	2,130
Attrition Rates / Levels													
Resignation	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5
Dismissal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Updated ESSP Attrition													
Resignation	56	52	46	38	41	45	49	56	67	86	112	140	163
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	8	8	7	6	9	10	11	13	15	26	34	42	62
Dismissal	4	4	3	3	3	3	4	4	5	7	8	11	12
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Localization	0	50	50	50	50	50	50	50	50	50	50	50	50
Total Attrition	78	303	296	287	294	299	124	137	153	184	219	258	303
Modified FTS Attrition													
Resignation	56	54	50	44	47	52	59	66	80	103	133	166	195
Retirement	10	10	10	10	10	10	10	15	15	15	15	15	15
Death and Illness	8	8	8	7	11	12	13	15	18	31	40	50	74
Dismissal	4	4	4	3	4	4	4	5	6	8	10	13	15
Replacement	0	180	180	180	180	180	0	0	0	0	0	0	0
Localization	0	50	50	50	50	50	50	50	50	50	50	50	50
Total Attrition	78	306	302	294	302	308	136	151	170	207	248	295	348
Annual Recruitment Demand													
Updated ESSP	—	1	-136	-279	516	612	415	616	1049	1617	2,130	2,401	2,092
Modified FTS	—	181	23	-187	556	665	646	721	1,236	1,912	2,524	2,845	2,478

Annex Table 5.8: Target Degree Enrollment Specified in KIE Strategic Plan, by Type of School of Provenance, and Type of Degree Course Sought, 2008-2012

Source: KIE Strategic Plan, 2008-2012

	2008	2009	2010	2011	2012
<i>From Type of School</i>					
Government	2,540	3,550	3,650	3,850	3,850
Private	45	100	200	300	350
Subtotal	2,585	3,650	3,850	4,150	4,200
<i>For Type of Degree Course</i>					
Diploma	—	1,294	1,200	1,300	1,300
Evening	595	800	900	1,000	1,200
Total	3,180	5,744	5,950	6,450	6,700

Annex Table 5.9: Expected KIE degree graduates by qualification level and subject, 2009-2012

	2009	2010	2011	2012
Science	211	196	533	643
Arts and Languages	82	73	201	183
Social Sciences and Business Studies	157	133	227	268
B.Ed.	0	70	236	367
<i>Subtotal</i>	450	472	1,197	1,461

ANNEX TABLES AND FIGURES: CHAPTER 6

Annex Table 6.1: Education Sector Recurrent and Development Expenditures, 1999-2008

Source: MINECOFIN.

Millions of RF	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Recurrent Spending										
Nominal	21,738	22,347	25,341	33,012	38,134	41,672	46,071	56,758	75,423	81,631
In Constant 2008 RF	—	45,888	51,447	70,591	66,904	64,606	65,397	73,675	88,561	81,631
Development Spending										
Nominal	6,103	5,267	16,769	1,649	619	508	3,288	4,176	13,928	18,156
In Constant 2008 RF	—	10,816	34,044	3,525	1,086	787	4,667	5,420	16,354	18,156
Total										
Nominal	27,841	27,614	42,110	34,661	38,753	42,179	49,359	60,934	89,351	99,787
In Constant 2008 RF	—	56,704	85,491	74,116	67,990	65,393	70,064	79,096	104,915	99,787

Annex Table 6.2: Readjustment of Secondary Staff Allocation, by Level, 2008

Source: MIENDUC School Census 2008; MIFOTRA Payroll, May 2008.

	Total			<i>Tronc Commun</i>		Upper Secondary	
	School Census (Raw)	School Census (Adjusted)	Payroll	School Census (Adjusted)	Final Adjustment to Payroll	School Census (Adjusted)	Final Adjustment to Payroll
Permanent (all)	9,706	8,732	5,883	2,666	4,087	6,066	1,796
Teachers	6,608	6,608		4,590 *	3,093	2,018 *	1,359
Administrative staff	3,098	2,124		1,475	994	649	437

Note: * Based on estimated student to teacher ratios of 29:1 at lower secondary and 24:1 at upper secondary.

Annex Table 6.3: Salaries Included in MINEDUC Budget, by Level, 2008

Source: 2008 MINEDUC executed budget, including MINALOC contributions.

(RF million)	Teaching Staff (1)	Non teaching Staff (2)	School staff (3) = (1) + (2)	Institutional Support (4)	Total (3) + (4)
Primary	20,045	1,495	21,540	1,059	22,599
<i>Tronc Commun</i>	5,093	1,637	6,730	331	7,061
Upper Secondary	2,578	797	3,375	166	3,541
Teacher Training	132	107	239	4	243
Colleges of Technology	251	108	359	7	366
University	1,755	1,492	3,246	16	3,262
Total	29,855	5,635	35,489	1,582	37,072
Percentage	80.5	15.2	95.7	4.3	100.0

Annex Table 6.4: Average Teacher and Staff Salary, by Type and Level, 2008

Source: Derived from unit costs computation.

(RF)	Average Yearly Salaries
<i>Teachers at School Level</i>	
Primary	671,729
Permanent	680,863
Contract	542,218
Lower secondary	1,674,526
Upper secondary	1,923,775
Permanent	1,617,669
Expatriate	9,629,630
<i>University</i>	
Local	n.a.
Expatriate	20,517,733
<i>Administrative Staff at Central Level</i>	
Total	5,512,134
Central	4,565,399
Decentralized	9,804,000

Annex Table 6.5: Reconstructed Unit Costs, by Level, 2008

Source: From previous tables in this chapter.

	Primary	Tronc Commun	Upper Secondary	Higher
<i>Managed at Decentralized Level</i>				
Average Teacher Salary (RF) ⁽¹⁾	671,729	1,674,526	1,923,775	n.a. ⁽²⁾
Pupil to Teacher Ratio ⁽¹⁾	72:1	43:1	34:1	
Teacher Component of Unit Cost	9,363	39,021	56,227	
Average non Teacher Salary	680,879	1,560,605	1,501,230	
Students to non Teacher Staff Ratio	962	134	111	
Non Teaching Staff Component of Unit Cost	708	11,689	13,565	
School Feeding Component of Unit Cost	48	13,835	28,537	
Administrative and Pedagogical Component of Unit Cost	4,234	14,832	—	
District Component of Unit Cost	187	943	1,297	
Total Unit Expenditure at District Level	14,540	80,320	99,627	161,141
<i>Managed at Central Level</i>				
Total Unit Expenditure at Central Level (RF)	4,135	24,771	19,104	773,567
Unit Salary Expenditure (RF)	308	1,551	2,142	14,158
Unit Administrative and Pedagogical Expenditure (RF)	3,828	23,220	16,962	401,723
Unit Social Expenditure (RF)	—	—	—	357,686
Total unit expenditure (RF)	18,675	105,091	118,731	934,708
Salaries (RF)	10,566	53,203	73,232	175,299
Administrative and pedagogical (RF)	8,061	38,052	16,962	401,723
Social (RF)	48	13,835	28,537	357,686
Share				
Salaries (%)	56,6	50,6	61,7	18,8
Administrative and pedagogical (%)	43,2	36,2	14,3	43,0
Social (%)	0,3	13,2	24,0	38,3

Note: (1) Primary and secondary: The computation includes only payroll teaching and administrative staff, excluding those whose contracts have not been filed, which increases the pupil to teacher and pupil to staff ratios. (2) Higher education: the analysis could not be carried out because of the difficulty in distinguishing between salaries paid to teaching staff and to administrative staff. Higher Education excludes bursaries delivered to students studying abroad.

Annex Note 6.1: Information on Data Used and Adjustments Performed

Three sources of data have been used to compile the required information:

- (i) The MIFOTRA May 2008 payroll that provides information on the number of civil servant staff per grade working in primary and secondary schools and their related wages and allowances;
- (ii) The 2008 MINEDUC school census that provides information on the number of teaching and non teaching staff at primary and secondary levels (including contract teachers at the primary level) whether paid by the government or not;
- (iii) The MINECOFIN 2008 executed education budget that provides the global envelope for salaries and capitation grants and other related education spending at all levels.

Several adjustments had to be made to get more accurate estimates of expenditure by category: such as to salaries, administrative/pedagogical management and social spending:

- (i) The allocation of teachers among *tronc commun* and upper secondary is not known: we used the revised student to teacher ratios of 29 to 1 for *tronc commun* and 24 to 1 for upper secondary in 2008;
- (ii) We had to reallocate some salary spending across lower and upper secondary, as some upper secondary education staff salaries were mixed with those of lower secondary education staff in 11 out of the 30 districts. This reallocation was based on two methods that provided similar results:
 - The first one relied on the decentralized budget: in the 19 districts for which disaggregated information on salaries is available, the share of *tronc commun* wages accounted for 68.8 percent of the total. This share was applied to the total to come up with specific proportions for lower and upper secondary staff.
 - The second method relied on payroll data and 2008 school census data on the allocation of staff among lower and upper secondary levels, according to their grade. The share of lower secondary wages was 70.3 percent of the total. The results presented are based on this latter figure.
- (iii) We reallocated capitation grants among teacher salaries and administrative / pedagogical management spending, based on the assumption that all A2 teachers and contract teachers receive a monthly bonus of RF 12,500.
- (iv) We reallocated some funds disbursed by SFAR from social expenditure to administrative and pedagogical expenditure to reflect the fact that whereas a fixed part of student loans are given directly to students to support their daily expenses throughout the academic year (RF 250,000), the remaining funds are channeled to the institution where the student is registered to support current pedagogical and administration expenses. It is estimated that, on average, 56.5 percent of the funds disbursed by SFAR are devoted to students' living expenses.

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