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LIBERIA EDUCATION COUNTRY STATUS REPORT

Out of the Ashes - Learning Lessons from the Past to Guide Education Recovery in Liberia

December 2010

Education Sector, Africa Region
AFTED

THE WORLD BANK
Washington, D.C.

Education For All
Fast Track Initiative

MINISTRY OF EDUCATION
SHOW THE LIGHT
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REPUBLIC OF LIBERIA

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Out of the Ashes - Learning Lessons from the Past to Guide Education Recovery in Liberia

December 2010

THE WORLD BANK
Washington, D.C.

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Both the cover picture and the above are of Benla Community Public School, Kakata District, Liberia - Grade 3.

FISCAL YEAR
June 1 – July 30

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Foreword

In recent years, the development context for education has evolved in ways that demand greater analytical 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: some 70 million primary school-aged children are still out of school in the world, 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 Liberia 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 Liberia. It is the first sector-wide report produced on the education system in Liberia since the end of the war. A Policy Options Matrix follows the Executive Summary, which will provide government and partners with guidance on the key priorities to tackle.

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.

Liberia's country context is unique although it exhibits some common characteristics seen in other postconflict settings, namely:

- The large number of volunteer teachers and poor teacher deployment. Many teachers fled during the conflict, with their places taken by others, sometimes using the salary of the departed teachers, sometimes as volunteers. Given the post conflict situation, the deployment of teachers is partly a result of the disruption caused by the conflict, as more teachers left the most insecure areas.
- The late start at school: The number of much older children in school is probably also a result of the conflict, and should be a transitional phenomenon. Only 5.5% of six year old children are in Grade 1 yet a large number of them are in preschool.
- The low teacher pay and the flat pay scales are also postconflict phenomena, as all public servants were put on a very low and flat pay scale as part of the recovery plan.

This report highlights the country's significant education progress since the end of the 14-year civil war in 2003 and the challenges that need to be addressed. Policy options to the issues outlined in the report will be formulated through ongoing policy dialogue and reform. The key messages to retain from this CSR are that: Access is inequitable, and there is a need for determined pro-poor policies to reach those who do not complete primary school. Quality is poor, and the recent impact evaluation has shown that a very modest teacher training intervention can have a very significant impact on quality. Current levels of financing are low, and constrained by the national context. More financing for education will be needed, and difficult trade-offs between quality and expansion, and between subsectors, will be needed. However, within the scare resources context, efforts need to be made to decrease the costs of teacher housing and teacher education which are unsustainably high. The current emergency situation is disruptive, but may be an opportunity to establish new approaches, including greater involvement of communities, greater partnerships with NGOs, and decentralization of key decisions such as teacher recruitment.

The Liberia 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 Plan (ESP) and will inform the Medium Term Plan that the Ministry of Education is presently working on. Although the report offers comprehensive information on education in Liberia, 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 Liberia as widely as possible. 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 Liberia's education sector and that help build the country's human capital for the future.

Ritva Reinikka
Sector Director
Human Development Department
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The World Bank

Acknowledgments

This report is the result of a collaborative effort by the Government of Liberia and the World Bank to deepen our understanding of the current status of education in Liberia.

The main objective of the Liberia Education Country Status Report (CSR) is to provide the Ministry of Education (MOE) with a diagnostic analysis of the education sector to assist in building a shared understanding of the education sector. The CSR (i) provides the World Bank and other donors with the knowledge base necessary to produce a plan to guide the scope and nature of their future support to the sector, thus contributing to the harmonization of donors' activities in the sector; and (ii) builds capacity in the MOE in preparing sector-wide plans, therefore contributing to the effort to equip the ministry with the capability to design and monitor policies on a more sound basis.

The Liberian team consisted of Honorable Joseph Korto, Former Minister; James E. Roberts, Former Deputy Minister of Planning, Research and Development; Josephine Porte, Assistant Minister of Planning, Research, and Development; Eugene Jappah, Director of Planning; Anthony Nimely, Senior Planner; Cherbertue B. Quayeson, Director of Research; Dormu Farwanee, of the EMIS Unit; Saku Dukuly, of the TVET and Science Bureau; Lorpu Mannah, of the Girls' Education Unit; Mohammed Sheriff of the Curriculum Bureau; Wilhemina Chesson Browne, of the Finance Department; and Georgetta Cooper, Lydia Moore and Levi Zangai (Research Assistants).

The World Bank team consisted of Nathalie Lahire, Task Team Leader; Albert Dupigny, Extended Term Consultant; Ryoko Tomita Wilcox, Education Economist; Priscilla Elms, Human Development Specialist; Mathieu Brossard, Senior Education Economist; Koffi Segniagbeto, Education Economist; Mamy Rakotomalala, Senior Education Specialist and Rose Mungai, Economist/Statistician. Additional contributions include a background note on learning outcomes by Patrick Nkengne, Consultant.

Valuable support was provided by peer reviewers Geraldo Martins, Senior Education Specialist; Aidan Mulkeen, Head of Research at the National University of Ireland and Moukim Temourov, Senior Economist. The report also benefited from the much appreciated contributions of Peter Materu, Lead Education Specialist and Cluster Leader.

Finally, the team is grateful for the excellent editing work carried out by Barnaby Rooke.

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Acronyms

AED	Academy for Educational Development
ALP	Accelerated Learning Program
CAR	Cohort Access Rate
CCA	Common Country Assessment
CEO	County Education Officer
CSR	Country Status Report
CWIQ	Core Welfare Indicator Questionnaire
DAC	Development Assistance Committee, of the OECD
DEO	District Education Officer
DHS	Demographic and Health Survey
EFA-FTI	Education for All Fast Track Initiative
EGRA	Early Grade Reading Assessment
EMIS	Education Management Information System
EMT	Executive Management Team
ESP	Education Sector Plan
EU	European Union
FY	Fiscal Year
GCR	Gross Completion Rate
GER	Gross Enrollment Rate
GIR	Gross Intake Rate
GNI	Gross National Income
HDI	Human Development Index
HIPC	Heavily Indebted Poor Countries
IDA	International Development Association
IMF	International Monetary Fund
JHS	Junior High School
MRY	Most Recent Year
LSMC	Local School Management Committee
LSMC	Local School Management Committee
LTTP	Liberia Teacher Training Program
MDG	Millennium Development Goals
MDRI	Multilateral Debt Relief Initiative
MOE	Ministry of Education
NCHE	National Commission for Higher Education
NGO	Nongovernmental Organization
NHDR	National Human Development Report
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development

PEMFAR	Public Expenditure Management and Financial Accountability Review
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategic Paper
PTA	Parents and Teachers Association
PTR	Pupil to Teacher ratio
RALS	Rapid Assessment of Learning Spaces
SFE	Student Flow Efficiency
SHS	Senior High School
SMC	School Management Committee
TVET	Technical and Vocational Education and Training
UIS	UNESCO Institute of Statistics
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDESA	United Nations Department of Economic and Social Affairs
USAID	United States Agency for International Development
WAEC	West African Examination Council
WFP	World Food Programme

Executive Summary

Liberia, a small English-speaking country in West Africa is Africa's oldest Republic. Liberia has a population of approximately 3.5 million, and average population growth is estimated at 2.3 percent. The official school-age population (6-17 year-olds) constitutes approximately 30 percent of the entire population.

Liberia's 2009 Human Development Index ranking of 169 out of 182 countries is very low. Liberia is amongst the poorest countries in the world, with a Gross National Income per capita of US$ 150. The IMF and the World Bank approved a package of US$ 4.6 billion under the Heavily Indebted Poor Countries Initiative, reducing external debt to about 15 percent of GDP. GDP increased from US$ 685 million in 2006 to US$ 824 million in 2009 (in constant 2007 US$). Real GDP growth slowed to 4.6 percent in 2009 and is projected to rebound to 6 percent in 2010.

Liberia has made substantial political, economic and social progress since the end of the 14-year civil war in 2003. As a result of the conflict, the provision of basic services came to a halt, and a generation of young people have been left with seriously disrupted or no schooling. With the onset of peace, two rounds of free and fair elections lead to the installation of a reform-minded government in January 2006.

This government has taken important steps to improve accountability, improve budgeting and public expenditure management, developed and approved a civil service strategy, established political institutions and improved security. Since then, international companies are returning, infrastructure is being rebuilt, public services are being restored, many skilled and educated members from the diaspora are returning, and enrolment in all levels of education is increasing rapidly. Although plans to introduce decentralization exist, the current state of policy implementation is more one of deconcentration.

Total government internal revenue (excluding grants) increased by 199 percent in real terms from US$ 74.0 million or 13 percent of GDP in 2004 to US$ 221.4 million or 27 percent of GDP in 2009 (constant 2007 US$). Despite average real education spending increasing by 21 percent per year since 2004, as a percentage of GDP it is still low at 3.2 percent. The share of public recurrent expenditure allocated to education was 14 percent in 2010, projected to rise to 19 percent by 2015. In support of government efforts, donors provided a total of US$ 1,189 million to Liberia in 2008, of which only US$ 17.8 million were for the education sector, equivalent to US$ 20.7 per primary and junior high school (JHS) pupil.

This report is intended to fill a gap in terms of systematic diagnostic of the status of the education sector and provide the analytical foundation for future strategic planning and policy making. Data from the school census conducted in the 2007/2008 school year provide the backbone of the analysis although frequent reference is made to data from the 1990s allowing a pre and post conflict perspectives, as well as the analysis of progress made since the 2005 elections.

Student Enrolment

Overall, enrolment in Liberia since the early 1980s has increased dramatically: enrolment in preprimary has grown at an average of 6 percent, highlighting the unusual importance of this cycle; primary school enrolment has jumped from 53 to 94 percent over the period, reflecting an increasing demand for basic education and the fact that universal primary education became free and compulsory in 2003; JHS enrolment has almost tripled; the Accelerated Learning Program, a three year basic education course for overage youth, is growing by an average of 26 percent per year; and technical and vocational education and training (TVET) has grown from under 7,000 students in 1982 to over 18,000 in 2006.

Student Enrolment Trends, 1981-2008, by Cycle of Education

	1981	1984	2005/06	2007/08
Preprimary	91,394	96,813	358,210	491,564
Primary	155,166	146,476	488,438	539,887
Accelerated Learning Program (ALP)	N/A	N/A	47,668	75,820
Junior High School	34,365	40,307	98,448	102,642
Senior High School	22,243	25,359	33,776	55,600
Tertiary	…	…	…	27,954
Gross Enrolment Rate (GER) Preprimary	38%	37%	82%	103%
GER Primary School	53%	45%	94%	94%
GER Primary School + ALP	N/A	N/A	103%	108%
GER Junior High School	28%	29%	45%	43%
GER Senior High School	20%	21%	16%	24%

Source: MOE – Final Report of the 1984 National Policy Conference on Education and Training and National School Census Data 2005/06 and 2007/08.
Note: *ALP was established in 1999.
**Enrolment indicators based on school census data may be overestimated.

On the other hand, Senior High School (SHS) enrolments remain low at 55,600 students, due to a mixture of policy issues and inadequate funding, and average annual tertiary education growth has dropped from 17 to 7 percent since 1987, mainly due to the destruction of infrastructure during the civil conflict. The lower secondary gross enrolment rates (GERs) indicate that many young adults cannot continue education due to lack of access to school, cost of schooling, or necessity to earn income for the family.

The **age of school attendance** is also an important issue: most children start school very late, and only 5.5 percent of 6 year-olds are in primary school. On the other hand, almost 63 percent of those attending primary, 88 percent attending JHS, and 76 percent attending SHS, are overage. Those who have not attended school by the age of 15 are unlikely to ever do so.

Liberia's **schooling profile** is similar to the Sub-Saharan African trend: the gross intake rate (GIR), and completion rate (GCR) are 113 and 62 percent for primary; 44 and 35 percent for JHS; and 26 and 21 percent for SHS. The large difference between the primary and JHS completion rates is an indication of the challenge in achieving universal education. Grade repetition, drop-out and insufficient places are possible causes of the significant decrease in the access rate between primary and senior secondary.

Internal Efficiency

Accessing, staying and completing schooling in Liberia is a challenge, as in almost all Sub-Saharan African countries. Many students start school, but are unable to complete. Overall, the numbers suggest that much wastage occurs in school level education:

- The primary **repetition** rate is moderate, and gradually decreases from 8.4 percent for Grade 1 to 5.2 percent for Grade 6 (2007/08), averaging 5.9 percent.
- The survival rate shows that one in ten students **drop out** during Grade 1. Once they reach Grade 2, survival is reasonable until Grade 4, when high levels of drop-out resume to Grade 6. The survival rate is 60 percent for primary and 80 percent for JHS and SHS.
- **Transition** rates are 71 percent between primary and JHS, and 75 percent between JHS and SHS, meaning that transition from one cycle to the next is relatively smooth.

Globally, primary school level efficiency is low (32 percent of resources are wasted on drop-out and repetition); efficiency is higher for the JHS and SHS (17 percent of wastage).

Education Finance and Resource Distribution

The main **sources of education funding** are domestic resources, representing only 15.8 percent in 2006/07, support received from donors, representing the greatest share at 49.2 percent, and contributions from households, at 35 percent (2008 PEMFAR). The level of household contributions is an issue to be addressed: it represents a high share of family earnings, and at US$ 27 million, is greater than total public spending, of US$ 23 million.

Since FY 2005/06, the growth in the **government allocation to education** has been steady, averaging 26 percent per year. In FY 2007/08, the government spent US$ 23.6 million of its recurrent expenditure on education, or 2.9 percent of GDP, up from US$ 9.2 million in 2005.

However the **share of spending allocated to education** has varied little, as the increases largely mirror global increases in government expenditure. The share rose from 9.6 to 12 percent over the 2005-08 period, having reached a high of 13.5 percent in 2006. This is below the FTI benchmark of 20 percent and that of many other Sub-Saharan countries.

The **distribution of public education expenditure among levels** for 2007/08 shows that 29 percent was devoted to primary, much lower than the Sub-Saharan average of 44.4 percent; preprimary accounted for a relatively large share of 22 percent; secondary for 13 percent, which could be too low in the near future given the rapid increase in enrolments; TVET accounted for 16 percent, teacher training for a mere 2 percent, and higher education for 18 percent.

The **breakdown of recurrent education costs** for primary school shows that the largest share is devoted to personnel. In 2007/08, teachers' salaries represented 37 percent, whereas total personnel expenditure including nonteaching staff at school and officials at the MOE and local education offices accounts for 63 percent. Teacher salaries are low, and raises by level are minimal, meaning that teachers have little incentive to stay in the profession and/or to improve their qualifications. Although spending on teachers' salaries is much lower than the EFA-FTI benchmark of 67 percent, an extremely high proportion of teachers are volunteers (37 percent in primary) who are not on the payroll, making this an unfair comparison. Goods and services account for only 24 percent, leading to a paucity of teaching and learning materials and seating. The remaining 13 percent is transfers and subsidies.

Public **education spending per student** is currently determined largely by salaries, and the pupil to teacher and pupil to other staff ratios. There is a significant difference between unit costs for preprimary and primary education (US$ 13 and US$ 17 respectively) and those of JHS and SHS (US$ 40 and US$ 51 respectively). As these amounts do not take into account the contribution of volunteer teachers, household spending on education or the high non budgetary donor inputs, real unit costs are much higher.

Public Recurrent Spending per Student, by School Level, 2007/08

Level	Recurrent Spending per Student (US$)	Recurrent Spending per Student % of GDP per Capita	Ratio of per Student Spending to Primary
Preprimary	13	7.1%	80%
Primary	17	9.4%	100%
Junior High	40	21.0%	240%
Senior High	51	25.9%	300%
Teacher Training	1,148	504.7%	6750%
TVET	752	330.7%	4420%
Tertiary Education	224	98.5%	1320%

Source: Ministry of Education, Ministry of Finance and Budget Bureau Data

Unit costs for post school cycles are extremely high, reaching 300 percent of GDP per capita for TVET. Notwithstanding the fact that Liberia desperately needs trained and competent teachers, this level of spending appears to be unsustainable. The indication that per student spending for a teacher in training is over 67 times that for a primary student is of concern.

Pupil to staff ratios (PTRs) are however better in public higher education institutions than in schools. The PTR averages 40 to 1 for preprimary and primary, and 23 to 1 for secondary.

Capital expenditure is increasing as a percentage of overall public expenditure, reaching 10 percent in 2007/08. As a consequence of the large-scale destruction of educational institutions and the exploding enrolment the government is planning the construction of new schools, as well as teacher homes in rural areas, to entice teachers to take up positions and reduce the lack of competent and qualified staff in these areas. These plans will raise capital expenditure further.

Quality of Education: Service Delivery and Learning Outcomes

Fourteen years of conflict and prior neglect left education in a poor state: infrastructure was run down, competent and qualified teachers were in short supply, curriculums were outdated and textbooks and other teaching/learning materials were scarce. Some improvements have since been made but many challenges remain, complicated by the rapid increase in student intake.

The **availability and suitability of facilities** varies considerably. Only 40 percent of schools are built in brick and mortar; of 4,214 school buildings, 2174 have suffered damage and 583 were destroyed. The fact that the latter have yet to be rebuilt five years after the conflict indicates the magnitude of the classroom provision problem. Additional facilities such as reading rooms, libraries, workrooms for practical technical and vocational work and science laboratories are almost inexistent; latrines and sources of drinking water are insufficient, creating health hazards; and furniture for students and teachers is in short supply.

The **availability and suitability of teaching and learning materials** is low: both students and schools lack resources to buy them, especially in rural areas. Although textbooks have recently been procured, half of students do still not have one, and those in use are not specifically designed for the Liberian curriculum, meaning that the cultural content is inappropriate. Although a new curriculum has been developed, it is yet to be trial tested, and in the meantime, the curriculum currently in use dates back to the mid 1990s.

Class size varies markedly by area and level. Overcrowding is common in urban areas. According to the 2007/08 National School Census, average schools attended 123 students in preprimary, 138 in primary, 87 in JHS, and 170 in SHS. Average school sizes are quite small indicating the existence of a plethora of small schools.

The main issue with the **teaching staff** is the lack of adequate training for levels other than primary, as discussed below. The gender bias is strong in the profession: whereas 44 percent of preprimary teachers are female, only 12 percent of primary teachers are, and 4 percent of secondary teachers. Almost 82 percent of teachers teach various grades or levels. Finally, the majority of teachers are senior: less than 3 percent are under 30, whereas 38 percent are aged over 50 years.

Student Learning Outcomes

Basic reading skills in Liberia are poor. The average score on an Early Grade Reading Assessment carried out in 2008 was 43.7 percent; 75 percent of students achieved less than 55.2 percent; and approximately a third of Grade 2 and Grade 3 students were unable to read at all. Further research demonstrated that simple mechanisms like providing student performance feed-back to families and communities and performing student assessment improve achievements in oral reading fluency, reading and listening comprehension markedly.

Education cycle learning outcomes are measured through examinations conducted by the WAEC at the end of primary (Grade 6), JHS (Grade 9), and SHS (Grade 12). The overall pass rates for the Grade 6 and 9 exams improved between 2005 and 2007, reaching 85 percent and 98 percent respectively. Among those that passed, the average knowledge of the students was well beyond the required minimum, achieving mean scores ranging from 68.4 percent to 75.6 percent. For the Grade 12 exam on the other hand, the overall pass rate fell slightly over the 2005-07 period, to 65 percent. Performance was also less satisfactory, and few students received distinctions. For both the Grade 9 and 12 exams, participation by girls was significantly lower, at only 32 percent and 36 percent respectively.

Governance and Management of the Education System

Both the Education Law of 2001 and the draft Education Reform Act of 2010 indicate that a **decentralized education governance structure** is desirable. To date, this has not been achieved, primarily because of financial and human resource constraints. Accordingly, decentralization as it currently stands can be described as the deconcentration of responsibilities within a vertically integrated ministry rather than their devolution, where education officials are accountable to elected local representatives. Local offices are not yet mandated to take binding decisions nor do they have legal responsibility for the provision of education services.

Current education governance and management is provided through a **top down structure**. The Minister of Education is directly responsible for the supervision of all public schools and higher learning institutions, as well as policy formulation, regulation, and chairing all relevant national advisory boards. He is assisted by deputy ministers, who in turn rely on their principal assistants, that supervise a team of directors who head divisions or units.

The ministry has **county education offices** in each of the 15 counties, to whom district education officers report. District education officers are the direct link between schools, communities and parents, and the ministry. Their work in this respect is facilitated by the Parent Teacher Association Unit at the Ministry of Education (MoE) in Monrovia.

An **Executive Management Team** has been created within the MoE to broaden the decision-making base. However membership of the EMT is presently confined to just the Minister, his/her deputies and the Financial Controller, and the decisions taken are not often publicly communicated throughout the system.

Human Capacities

Serious **human capacity** gaps exist at the central and local levels of the MoE, creating governance and management challenges. many MoE officials are unable to perform their assigned roles, and some are in fact not aware of their responsibilities. This is a consequence of the civil conflict, the lack of human, financial, and logistical resources, and the lack of staff accountability and performance evaluation proceedures. Limited interaction between central ministry managers and county and district offices and schools, mainly due to poor physical and technical infrastructure, hinders the improvement of local management capacities.

With external support, the MoE has embarked on a Management and Functional Review, assessing the MoE's core functions, the effective management and delivery of education services, as well as strategic, financial and operational planning and performance management.

School Management

Each school should have a governing body or board, and a **Parents and Teachers Association** (PTA) involving parents, community leaders, teachers and representatives of the Local School Management Committee. Most do not, and those that exist often do not function properly. To remedy this situation, Liberia's PTAs combine the functions of a traditional PTA with some of the monitoring functions usually assigned to a school governing board management committee. They have been given powers to

monitor the use of school assets and resources, but lack the power to establish objectives and policies for the school, to approve its budget and to review progress against the budget, plans and targets.

The top chanllenges facing school management are the lack of trained teachers and instuctional materials (reported by 62 percent of survey respondents), followed by inadequate office facilities, logistics, the state of classrooms, the mobility of the DEO, the payment of teachers, and class overcrowding (23 percent).

Teacher management is a major challenge for the government. At the time of drafting this report, teachers were not being licensed, there were no written and agreed conditions of service, and salary payments were at a flat rate irrespective of experience partly because the country is still under the recovery process from the recently ended conflict. The records of teachers are inadequate.

Furthermore, **consistency in teacher allocation** is low. According to statistical analysis, only 43 percent of teachers are allocated in proportion with the number of students in primary, junior and senior high schools, which is well below the average of a sample of African countries (69 percent). Consistency is lowest for primary schools with fewer than 1000 students, reaching 34 percent, whereas it rises to about 67 percent for JHS and SHS.

Teacher training institutions in Liberia produce only primary school teachers. Enrolment in teacher training is low however, not exceeding 250 trainees per year. As a result, the annual number of graduates does not exceed 40, meaning that a large number of primary teachers are under prepared and unqualified (only 29 percent are trained). On the other hand, the lack of preprimary and JHS teacher training programs means that trained primary level teachers are found teaching all other levels. Of 22,000 primary teachers, only 14,000 teach primary classes. As a result, the teaching at other levels is inadequate and the quality unsatisfactory.

External Efficiency

Education in Liberia has strong positive effects on **human development**, through changing social behavior and the resulting living conditions, based on the Liberian Demographic and Health Survey (DHS 2006/07) data, which combines independent variables such as age, sex, geographical location, wealth index and health supply index.

Literacy is naturally positively correlated with education. Whereas 53 percent of women with Grade 6 are literate, the probability of being literate for those with no education is nil. After six years of education, just one extra year of schooling increases the probability of literacy by 10 percent. Surprisingly, only a small proportion of adults (4.2 percent) have ever participated in a literacy program outside of primary school.

Social behavior by primary education accounts for 46 percent of the behavioral changes considered: the use of contraception increases, families have fewer children, more births are professionally assisted, the prevalence of prenatal care is greater, the probability that a woman will take iron tablets during pregnancy is higher, both men and women's knowledge of HIV/AIDS is better, more people go for the HIV test, and first sexual encounters are delayed. Secondary education accounts for a further 38 percent of the social impact: more children are fully immunized, the odds of child stunting drop significantly, and the age of first marriage is higher, allowing women longer in school and improving their career prospects.

TVET specifically aims to prepare students for employment, including self-employment. The number of institutions has increased, to 110 institutions in 2006, with an enrolment of 18,030. A high percentage of economically active graduates (64 percent) are in paid employment; 20 percent work in the formal sector whereas 50 percent are in the informal sector. Despite the growing importance of informal employment and traditional apprenticeships, youth employment is still low because very few jobs exist in the formal economy.

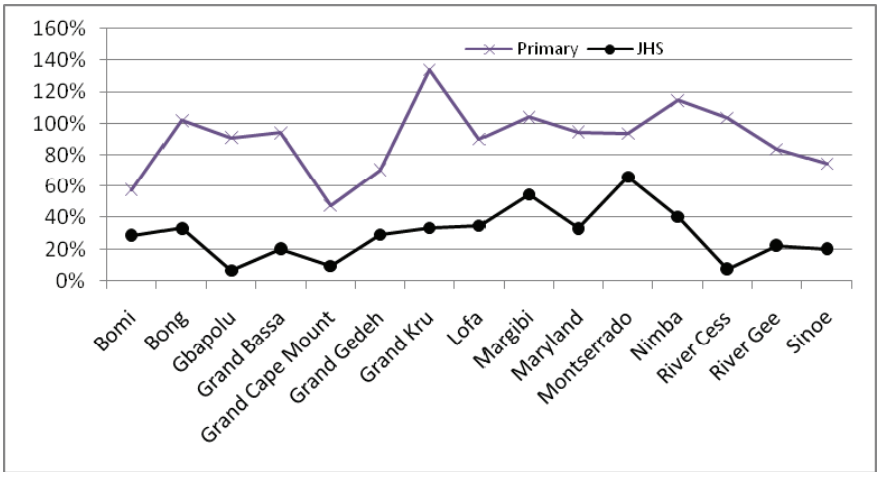
The **relevance of education to the labor market** is low. There is a sharp mismatch between training and labor market skill demands. The satisfaction level for training received is disappointing: 67.9 percent of respondents found that their training lacked relevance to their needs. Only 19 percent of the TVET trainees visited were employed in the trade they learnt whereas the remaining 81 percent are underemployed or unemployed. Of the latter, 53 percent are unemployed due to insufficient training, 28 percent are unemployed because their certificate is not recognized and 17 percent are unemployed due to a lack of demand for their type of training. Although 63.3 percent of the graduates interviewed want to set up their own business, they lack the necessary skills, start-up capital, and market information to do so.

Disparities

Although there are still **gender disparities** in school enrolment, the gap has closed by about 30 percent since 1981, and in relative terms, girls' enrolment in primary schools in Liberia is better than in many other Sub-Saharan countries. However, almost three times more women than men had no education (51.7 percent and 18.1 percent respectively). Access rate gaps between girls and boys increase slightly but significantly through primary; at the junior high level, the transition rate for girls is approximately 69 percent (4 percent lower than for boys). Additionally, the survival rate for boys at the JHS level is approximately 82 percent, five percent higher than that of girls. Girls are therefore increasingly disadvantaged as they progress through education. Indeed, close to three times more men (5.9 percent) have higher education than women (1.8 percent). The survey also demonstrates significant disparities by gender in terms of occupations.

There are large **regional disparities** in the GER at both primary and junior high schools, spanning from 47 to 134 percent for primary, and from six to 66 percent for JHS.

Primary and Junior High School GERs, by County, 2007/08
Percent



Wealth disparities significantly affect access rates. Poorer households spend proportionately more of their overall household income on schooling, and cannot afford to send their children to higher education. Despite free and compulsory primary education, the abolition of tuition fees has not been implemented nationwide. Families devote more than 20 percent of education spending to primary school fees. In addition to this, poor households devote 30.4 percent of total education spending to school uniforms alone.

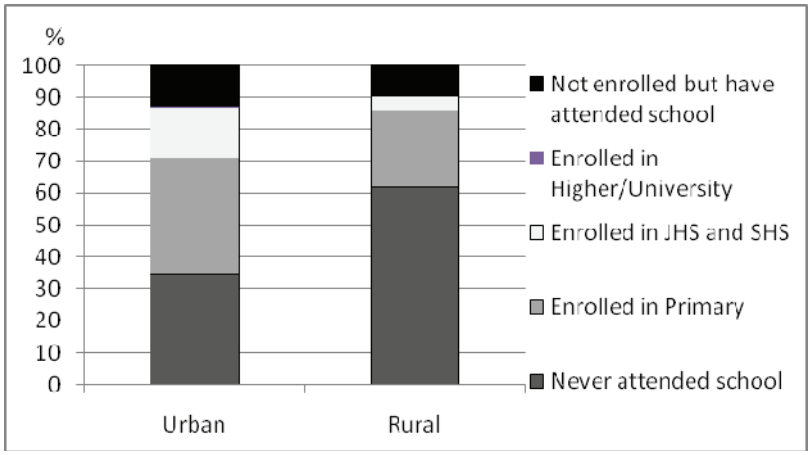
Urban-Rural disparities are also important. The share of out-of-school children is much higher in rural (61.8 percent) than in urban areas (34.8 percent). The shares of the population aged 6-24 years in primary school are 24.0 and 36.3 percent in rural and urban areas, respectively. For secondary, the shares are 4.8 and 15.8 percent, and in higher education they are 0.1 and 0.6 percent. The gender disparity in the allocation of public financial resources is notably high, but the urban-rural and regional disparities are much larger.

Disparities by level of education are also found in the distribution of resources. The cost of education increases markedly as students progress to higher levels. The 50 percent of students at the lower levels receive only 10 percent of available resources whereas the most educated 10 percent receive 45 percent of resources, which indicates significant inequities. On the basis of a benefit incidence analysis of public spending

for education conducted in 2007, preprimary, primary and JHS spending is pro-poor, whereas spending at the postsecondary level and for parts of the SHS level it is the contrary.

Liberia has high **Gini Coefficient** for the distribution of public financial education resources, of 0.58. This value is higher than the average for Sub-Saharan Africa and thus indicates that there is greater inequality in the distribution of financial resources for education in Liberia.

Share of Urban and Rural Children Enrolled or Out of School, 2007-08
Percent



Available data indicate that the distribution of resources is **inequitable in the distribution of public financial resources** for education. Those benefiting most are males living in the urban area of South-Central Liberia, that is those living in the capital city of Monrovia.

Policy Implications

In the face of **increasing demand for education** at all levels, the government needs to leverage the public-private partnership in order to make sure that economies of scale are achieved but that poor students are not kept out of the system, and the increase in enrolment in public schools is matched by an increase in seating and classrooms. The government may consider providing support to private and mission schools in areas with no public schools, so that they can provide places for students who would otherwise not be enrolled because of the cost of travel.

Lessons learnt from the experiences of other developing countries suggest that more than 13.2 percent of recurrent financial resources should be devoted to education. It is possible and necessary for Liberia to significantly increase **government education funding**. Present allocations to the different levels are worrying as they suggest underfunding of some levels, particularly secondary, with the consequent impact on quality. The monitoring system being introduced by the Ministry of Planning & Economic Affairs will help reveal the amounts of donor funds being channeled through NGOs and UN agencies, and how they are spent, to improve planning and resource allocation. There are indications that the financial resources provided can be better monitored and managed. In particular the free primary education grants and subsidies. The high percentage being spent on transfers and subsidies is of particular concern, and highlights the need for better tracking mechanisms. It is hoped that the financial management review will result in much needed improvements.

To improve the quality of education, a **salary scale for teachers**, preferably distinct from other civil servant scales, is essential if teaching is to be regarded as a profession worth pursuing and to improve teaching quality. The large number of volunteer teachers is of great concern. Further study is required to establish the sustainability of this model, the quality of the teaching they provide, their training needs, and the possible advantages of granting them permanent status.

Learning outcomes at all levels are of concern. EGRA results have proved to be useful. It is worthwhile assessing whether gains made through interventions in early grades are maintained in the medium term. All available information points to the need for a major review of the national school examinations conducted by the WAEC. In the meantime, it is important for teachers to take the results seriously and focus on students' weaknesses in class.

As a prerequisite to the full scale **decentralization** of the MoE, local government structures need to be in place, and the process must be fully aligned with the national decentralization policy and the guidelines of the Governance Commission. Additionally, large scale capacity building is necessary if the planned decentralization of education is to meet with success.

In terms of **school management**, it would be advantageous to reallocate teachers in proportion with the number of students. Employing teachers for specific levels of schooling is also important. Appropriate training for teachers of each level should be made available through cost-effective and high quality alternatives to the present single residential and in-service programs.

There is a need to design a simple way to equate **labor market demand for competencies** with training supply. For the formal sector, this could be done through employer advisory committees working with training organizations and tracer studies. The incentives and accountability structure for public training institutions could be modified to hold them accountable for results. There is a need to strengthen effective guidance and career counseling through qualified personnel counseling potential trainees in the choice of training programs that are relevant to the labor demand and the

needs of youth. At the tertiary level, the main issue is increasing enrolment in disciplines providing knowledge in areas in which Liberia has a shortage; a more strategic use of the existing study scholarship scheme would contribute greatly.

There is a need for the MoE to devise additional strategies that will address **gender disparities**. Making comprehensive scholarships available to Grade 5 and JHS girls could be very effective in improving retention. Keeping the cost of the scholarships at an affordable and sustainable level as well as preventing abuse/misuse would be the main challenges. Recruiting more female teachers into the system could also pay positive dividends.

Reducing the **geographical disparities** requires a strong and deliberate political commitment in terms of resource allocation. In addressing the challenges, in addition to the strategic construction and equipment of new schools, incentives would need to be offered to attract quality teachers to underserved areas and retain them.

It is difficult to fully address the impact of **wealth disparities** on education. However, better targeting of scholarships and ensuring greater allocation of government resources to levels and institutions with the greatest percentage of poor would help. Additionally, the MoE could commence a scheme in which the best schools retain a percentage of places for poor children sponsored by the government. The sponsorship need not involve cash but could be an additional classroom and/or books for a private or mission school, in exchange for a negotiated number of places over a period of years.

Policy Options Matrix

Primary Education

Rationale	Situation in Liberia	Policy Proposals	Financial ($) and Political (*) Costs	Expected Results
Increase the enrollment of official age (6 years) children and provide education to uneducated over aged people				
Students currently start education late, and finish in their late teens. Girls drop out when they are of marriageable age. Respecting official ages will favor completion for boys and girls.	Although the gross enrollment rate (GER) is very high (108%), enrollment for children aged 6 years is only 5.5%, meaning that many children of official age have not yet started school.	Children aged over 6 years should automatically enter primary school. The primary entrance exam should be abolished. Offer education to older uneducated children.	$$/* Financially challenging.	Higher primary completion and JHS entry rates. Increased adult literacy rates.
Reduce drop-out				
As enrollment is high and repetition is low, completion will significantly improve by reducing dropout rates.	Of every 100 students starting primary schooling only 60 reach the end of the cycle.	Investigate why Grade 1 to 2 and Grade 4 to 6 dropout rates are so high and tackle the related issues.	$$/* Possible resistance related to early marriage / pregnancy.	Dramatic increase in primary completion.
Narrow regional disparities				
Issues of equity, and equal learning conditions in particular, are important for social, political and economic stability.	The GER in North Western and South Eastern A is very low for both primary and JHS; in South Central it is high. Poverty and enrollment are inversely correlated. The distribution of the education budget among regions is inequitable.	Prioritize poor areas to increase primary and JHS GERs. Develop school level planning and community involvement, through school subsidy or grant programs. Create attendance incentives like conditional cash transfers and school lunch programs.	$$/** Transferring budgets from wealthy to poor regions may be politically sensitive.	Improved leaning conditions in poor areas. Higher primary and JHS GERs in North Western and South Eastern A.

Rationale	Situation in Liberia	Policy Proposals	Financial ($) and Political (*) Costs	Expected Results
Improve the quality of education, through teachers' qualifications and learning outcomes				
Teaching by trained/certified teachers improves learning outcomes.	Under 50% of Liberian teachers are trained, and currently there are no training programs for preprimary and JHS.	Quality training and certification of all teachers. Resume preprimary and JHS training programs. Increase primary teacher training capacity. Pilot more cost-effective programs such as distance learning.	$$/* Financially very costly, hence the need to seek cheaper training alternatives.	Better quality of education and student learning outcomes.
Inconsistent teacher allocation prejudices students from the areas and regions with fewer staff.	Teacher management is ineffective. 57% of teacher allocation is random.	Develop a teacher management and deployment plan. Develop an error-free human resource database including all MOE staff, and linked to the payroll.	$/* Minor to low financial cost.	Cost savings. Better management of the education system. Improved human resources and financial efficiency.
Regular monitoring of students' outcomes to see if they are actually learning.	The EGRA level reading comprehension in Grades 2 and 3 is low. The recent impact evaluation results show encouraging results when linking the EGRA with tailored teacher training focusing on reading. Most students passed the official WAEC exams, but few received a distinction.	Carry out EGRA assessments regularly at the classroom level, and encourage teachers to focus on students' weaknesses.	$/* Low cost.	Improved literacy and learning outcomes in the long term.

Notes: $: No or low cost, $$: Moderate cost, $$$: High cost;
*: Low political cost, **: Moderate political cost, ***: High political cost

Secondary Education

Rationale	Situation in Liberia	Policy Proposals	Financial ($) and Political (*) Costs	Expected Results
Ensure secondary education is available to every child, especially in poor rural areas				
Every primary school graduate must have access to a nearby secondary school. Secondary school levels need more budget support when enrollment rises rapidly.	Rising primary enrollment will put pressure on the expansion of secondary school. Three districts have no JHS, and 36 have no SHS. The public budget for JHS and SHS is lower than that of private and mission schools combined. Preprimary absorbs 22% of the budget; primary 29%, JHS 9% and SHS just 4%.	Consider providing support to private and mission schools with slack capacity. Resume JHS teacher training programs. Review the budget allocation to secondary education in the light of future enrollment. Gradually increase the current 13.2% of recurrent education expenditures to 20%.	$$$/* Very high financial cost. Some additional secondary enrollment is possible, given the low pupil to teacher ratio.	Better educated youth, with more knowledge and skills necessary to the labor market.
Reduce gender disparities				
Female students should enjoy equal secondary schooling opportunities.	GER Gender Parity Indexes have improved since 1981, but the GPIs remain low for JHS (0.81) and SHS (0.71).	Provide grants/scholarships to needy girls in targeted areas.	$$/* Moderate financial cost associated with grants, although low compared with the benefits.	Greater use of contraceptives, fewer children and better health for mother and children.

Notes: $: No or low cost, $$: Moderate cost, $$$: High cost;
*: Low political cost, **: Moderate political cost, ***: High political cost

Technical and Vocational Education and Training

Rationale	Situation in Liberia	Policy Proposals	Financial ($) and Political (*) Costs	Expected Results
Improve the quality of TVET training				
Ensuring that all children become literate and numerate adults generates social benefits including better health, and greater and more effective engagement in community life.	93% of TVET institutions are of poor quality due to understaffing, the lack of staff's pedagogical and technical skills, and the major destruction of infrastructure during the recently ended civil conflict.	Improve quality of training in all TVET institutions by upgrading the competencies of technical teachers and repairing infrastructure and equipment.	$$/* Moderately high financial cost.	Better trained and more qualified professionals.
Develop a labor market information system				
Providing TVET courses that are relevant to the labor market can lead to industrial development and better employment.	Only 19% of TVET trainees were employed in their trade whereas the remaining 81% were underemployed or unemployed.	Strengthen effective guidance and career counseling. Adopt a cost-effective Labor Market Information approach to collect and analyze labor market data. Institutionalize discussions with industry representatives.	$$/* Moderate financial cost.	Up-to date labor market information. Better TVET planning and program content.
Increase the labor market relevance of training				
Development is fueled by the provision of appropriate skills.	Both employers and graduates indicate that current training methods have little relevance to the labor market.	Link TVET courses to the labor market. Change incentives and make public institutions accountable for results, through performance contracts for example.	$/* Low financial cost.	Improved TVET graduate employability. Enhanced national development through the availability of required skills.

Notes: $: No or low cost, $$: Moderate cost, $$$: High cost;
*: Low political cost, **: Moderate political cost, ***: High political cost

Higher Education

Rationale	Situation in Liberia	Policy Proposals	Financial ($) and Political (*) Costs	Expected Results
Entice students to enroll on courses where Liberia has a shortage of skills				
Higher Education produces high level skills that are crucial to socioeconomic and technological development.	Although the higher education enrollment rate is reasonable, many students are enrolled in seminaries and bible training colleges, whereas Liberia has shortage in arts and business graduates.	Make more strategic use of the existing study scholarship scheme. Develop an enrollment strategy that encompasses programs at the school level.	$/** Some cultural resistance to abandon religious studies may occur.	Improved graduate employability.
Improve teaching standards at the University of Liberia				
Universities are key to furthering research to enable the development of new sectors of activity.	The University of Liberia accounts for 56% of university students but has just 18% of lecturers. Thereby, the student to teacher ratio is 82:1.	Increase the number of lecturers at the University of Liberia. Establish an attractive teaching environment, and raise wages gradually.	$$/* Moderate financial cost.	Improved quality of higher education.
Make higher education available to poorer students				
Offering higher education to the poor is an effective poverty reduction strategy, opening up improved career opportunities.	Most poor households cannot afford to send their children to university. They would have to devote 310% of total family spending to do so, compared with 30% for the wealthier families.	Introduce a targeted financial aid scheme for students from low-income backgrounds (full/partial scholarships).	$$ Moderate additional cost for grants. Positive political advantages.	Greater equity in higher education. Reduced national poverty.

Notes: $: No or low cost, $$: Moderate cost, $$$: High cost;
*: Low political cost, **: Moderate political cost, ***: High political cost

CHAPTER 1: INTRODUCTION AND COUNTRY CONTEXT

Key Findings

- Following 14 years of civil conflict (1989-2003), the social service sector, including education, is being rehabilitated.
- Liberia has a considerable school-aged population: those aged 6-17 years constitute 30 percent.
- Both government revenue and expenditure have increased remarkably in recent years.

A detailed and systematic diagnostic of the status of the education sector in Liberia is not currently available, although surveys such as the Core Welfare Indicator Questionnaire (CWIQ), Demographic and Health Surveys (DHS) provide some coverage,[1] and some reports focusing on specific aspects of the sector also exist.

This Country Status Report (CSR) is intended to fill the gap by providing the analytical basis for future strategic planning and policy-making.[2] It is based primarily on documents and data covering the 2000-08 period, with data from the school census conducted in the 2007/08 academic year providing the backbone of the analysis.[3] Frequent reference is also made to data from the 1990s and information received in 2009-10, providing pre and postconflict perspectives in addition to enabling the analysis of progress made since the 2005 elections.

This CSR covers all education levels. The extent of the coverage of each provides an indication of the relative availability of data by level as well as the priorities of the administrative team in office at the time of drafting the report. Thus, special education, nonformal and adult education, Technical and Vocational Education and Training (TVET) and higher education receive little coverage, with the exception of teacher

[1] The 2007 Liberia DHS is the third to be carried out. The first two were implemented in 1986 and 1999-2000. For the 2007 DHS, teams visited 298 samples across Liberia and collected data from a nationally representative sample of more than 7,000 women and 6,000 men aged 15-49 years.

[2] Parts of the analysis have already been employed in the drafting of the Education Sector Plan (ESP) that has been produced in parallel.

[3] A more recent school census was conducted in 2009 but data cleaning was still underway at the time of publication and so could not be used.

education. With the recently established Education Management Information System (EMIS) Unit and ongoing capacity-building activities, it is anticipated that more comprehensive and reliable data will soon become available and future analytical reports on education will improve on this first diagnostic.

This chapter first presents a brief history of Liberia and reviews its demography, human development, and achievements toward the Millennium Development Goals (MDGs) to date. Secondly, it outlines macroeconomic trends and the evolution of government revenue, expenditure and external aid both globally and in the education sector, since the end of the civil war. This context should help to understand both the state of the education system, product of the country's history and culture, and the room for its improvement, defined by the current political, demographic and macroeconomic context.

Political Geography

Liberia, a small English-speaking West African country, became independent on July 26, 1847 and is Africa's oldest Republic. Prior to independence, Liberia was a colony created for enfranchised slaves from the United States; with independence Liberia became a one-party state, and remained one until the overthrow of the American-Liberian government by a military coup d'état in 1980. Those who staged the coup accused the government of corruption and held it responsible for the underdevelopment of the country. However, corrupt practices by the coupists led to the outbreak of civil war in late 1989 and 14 subsequent years of chaos, plunder, and violence. The civil conflict finally ended in 2003 after claiming an estimated 270,000 lives and internally displacing more than one million people. Many more Liberians fled to neighboring countries such as Sierra Leone, Guinea, Côte d'Ivoire, Ghana and Nigeria, claiming refugee status (PRS, 2008).

As a result of the civil conflict, social service delivery, including the provision of education, was severely maimed. Schools and teacher training institutes were destroyed, and teachers and administrative staff fled. As a result, a whole generation of young people received seriously disrupted schooling, if any at all. With the onset of peace and the election of a reform-minded government in 2005, the conditions have been set to undertake an analysis of the current state of the education sector, in order to rebuild a system based on equity.

The country's political geography is organized into five regions (North Western, North Central, South Central, South Eastern A and South Eastern B), 15 counties and 136 districts (See Figure 1.1 below). The number of education districts differs from that of administrative districts; at the time of the 2007/08 National School Census, there were 90 education districts. Although it is the present government's

policy to decentralize, local officials continue to be appointed at the central level, so the current situation is more one of deconcentration than decentralization. In fact decentralization presently only exists on paper.

Figure 1.1: Map of Liberia

Demography

Liberia has a population of approximately 3.5 million people; 58 percent are under 20 years, and 52 percent are under 17 years (Population Census, 2008). Beyond Montserrado County where the capital Monrovia is located, the bulk of the population lives in the "Big Four" counties of Lofa, Bong, Nimba, and Grand Bassa. There are slightly fewer women (49 percent) than men. The average life expectancy is 45.3 years, being slightly higher for women. The population is composed of 18 indigenous ethnic groups in addition to the descendants of enfranchised American slaves who founded modern Liberia in the 1820s. Approximately 40 percent of the population is Christian, another 40 percent practices traditional African religions and the remaining 20 percent is Muslim. (CCA, 2006).

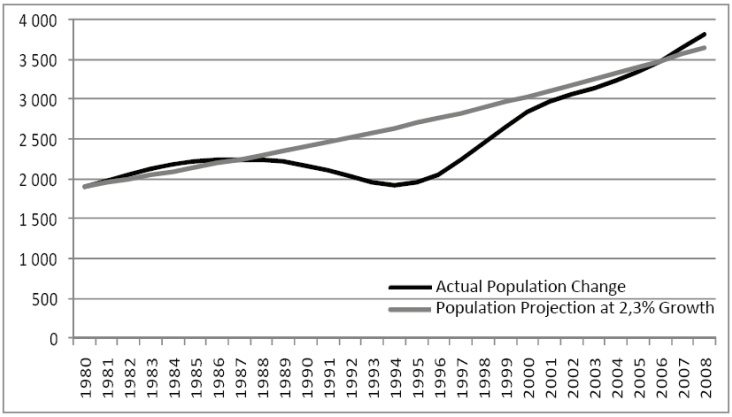
Table 1.1: Total and School-aged Population, 1995 – 2010

	1995	2000	2005	2010	Real Growth Rate (%)		
					1995-2000	2000-2005	2005-2010
Total Population (‘000)	1,949	2,832	3,344	4,115	7.8	3.4	4.2
2-5 Years (‘000)	258	369	427	505	7.4	3.0	3.4
(% of Total)	13	13	13	12	n.a.	n.a.	n.a.
6-11 Years (‘000)	324	466	550	667	7.5	3.3	4.0
(% of Total)	17	16	16	16	n.a.	n.a.	n.a.
12-14 Years (‘000)	142	204	240	297	7.6	3.2	4.4
(% of Total)	7	7	7	7	n.a.	n.a.	n.a.
15-17 Years (‘000)	129	187	219	270	7.6	3.3	4.3
(% of Total)	7	7	7	7	n.a.	n.a.	n.a.
Total School-Aged (‘000)	595	857	1,009	1,234	7,6	3,3	4,2
(% of Total)	31	30	30	30	n.a.	n.a.	n.a.

Source: Authors’ calculations based on UN’s Revised Population Estimate for Liberia, 2008.
Note: The high growth in total population figures is due to refugees returning home after the civil war.

The official school-aged population (6-17 years) constitutes approximately 30 percent of the population. Table 1.1 shows the total and school-aged populations between 1995 and 2010. It is important not to be misguided by the steep population growth between 1995 and 2005, mainly due to the influx of returning refugees over the period. In fact, as Figure 1.2 shows, the actual change in population is equivalent to an average growth rate of 2.3 percent (the effective 1980-87 rate) over the period. The breakdown of the total and school-aged population by gender and county can be found in Annex Table 1.1.

Figure 1.2: Actual and Projected Constant Population Growth, 1980-2008
Thousands



Source: Actual population figures from the UNDESA Population Division, 2009; Population projection based on authors’ calculation using the 1980 population census and the 1980-87 average population growth rate.

Hundreds of thousands left Liberia during the civil conflict. Table 1.2 illustrates the migration and refugee situation between 1985 (before the civil war started) and 2005 (after it ended). Those who fled the country returned mainly between 1995 and 2000. Most refugees had returned to Liberia by 2005.

Table 1.2: Migrants and Refugees, 1985-2005

	1985	1990	1995	2000	2005
International Migrant Stock					
Share of the Population (%)	3.7	3.7	10.2	5.7	2.9
Total	82,969	80,831	198,835	159,586	96,793
Annual rate of Change over the Next Five Years (%)*	n.a.	18.0	-4.4	-10.0	-0.1
Net Migration	0	-367,948	-522,683	527,170	62,452
Refugee Population by Country or Territory of Asylum	..	..	120,080	69,315	10,168
Refugee Population by Country or Territory of Origin	..	735,689	744,637	266,930	231,139

Source: World Development Indicators & Global Development Finance; * UNDESA Population Division, 2009 and UN database, 2008.

Human Development

The prolonged civil war badly damaged Liberia's human development. During the 14 years of civil conflict, insecurity was rife, the provision social services came to a halt, the economy collapsed and the standard of living dropped. In this context, the most important yet daunting task that faces the present government is to address the human development situation it inherited.

Liberia is among the poorest countries in the world, with a Gross National Income (GNI) per capita of US$ 150.[4] According to the 2006 National Human Development Report, 80 percent of Liberians live below the poverty line of US$ 1 per day. Poverty is especially high in rural areas but is also widespread in urban areas. The 2007 CWIQ Survey Report found that 64 percent (mostly from rural areas) consider themselves to be poor, and 48 percent are extremely poor. Disparities in the poverty profiles of the different regions of the country are marked (see Table 1.3 below).

[4] Calculated according to the World Bank Atlas Method, for 2007.

Table 1.3: Poverty Profile (Based on Consumption per Equivalent Adult), 2007
Percent

	Poverty Rates			Distribution of Poverty			Contribution to Poverty
	Urban	**Rural**	**National**	**Urban**	**Rural**	**National**	**National**
Location							
Urban	55.1	n.a.	55.1	30.9	n.a.	30.9	26.6
Rural	n.a.	67.7	67.7	n.a.	69.1	69.1	73.4
Region							
Gtr. Monrovia	48.5	n.a.	48.5	71.4	n.a.	22.0	16.7
North Central	57.5	68.9	68.1	8.1	48.2	35.8	38.3
North Western	82.4	75.5	76.3	3.7	12.8	10.0	12.0
South Central	74.4	55.9	58.9	8.9	19.9	16.5	15.2
South Eastern A	76.7	76.6	76.7	5.6	10.2	8.8	10.5
South Eastern B	79.2	65.9	67.2	2.3	9	6.9	7.3
Gender of Household Head							
Male	54.1	68.8	64.6	70.0	76.2	74.3	75.2
Female	57.2	64.1	61.6	30.0	23.8	25.7	24.8
National	**55.1**	**67.7**	**63.8**	**30.9**	**69.1**	**n.a.**	**n.a.**

Source: Liberia PRS, 2008.

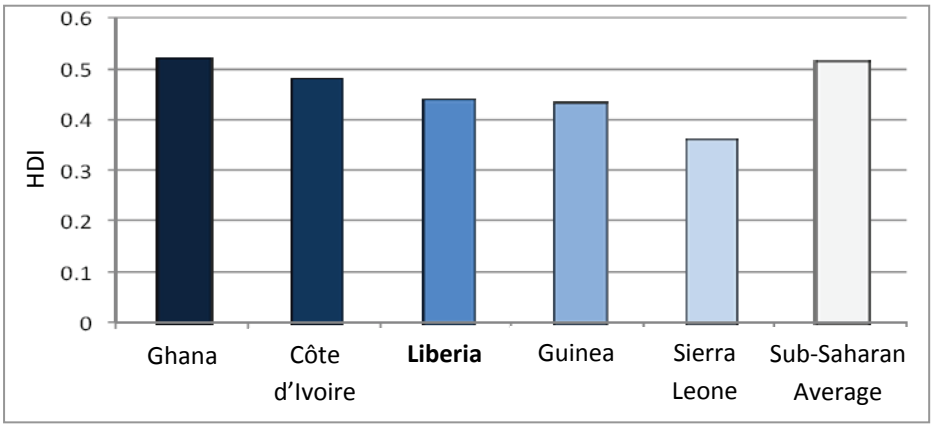
The Human Development Index (HDI) combines three dimensions:

1. Population health and longevity, through the life expectancy at birth index;
2. Knowledge and education, through the adult literacy rate (two-thirds weighting) and the combined primary, secondary, and higher gross enrollment ratio (one-third weighting); and
3. Standard of living, as measured by the natural logarithm of gross domestic product per capita at purchasing power parity.

Unsurprisingly, given its postconflict status, Liberia's 2009 HDI ranking is very low, at 169 out of 182 countries, and a value of 0.442. An index under 0.5 represents *low* human development whereas one of 0.9 or above represents *very high* human development. All twenty-four countries located in the *low* human development category are in Africa, except for one (Afghanistan). For the purpose of comparison, the HDI values for neighboring countries and the Sub-Saharan African average are presented in Figure 1.3 below. Liberia's state of human development, as described by the index, is typical of postconflict Sub-Saharan African countries, and below the subsample average.

Figure 1.3: HDI for Liberia, its Immediate Neighbors and Sub-Saharan Africa, 2007

HDI Values



Source: HDR 2009.

Millennium Development Goals (MDGs) and the HDI are highly correlated. Meeting MDGs will lead to higher HDI values. Table 1.4 below shows the MDG indicators for Liberia and their progress.

The government is committed to achieving its MDG targets. The 2008 poverty reduction strategy (PRS) fully takes the MDGs into account, and many of its detailed activities are intended to move Liberia toward meeting them. Liberia's PRS is built on 4 pillars – Security, Economic Revitalization, Governance and the Rule of Law, and Infrastructure and Basic Services. In prioritizing their needs during the PRS consultations, the public rated education as second only to roads.

With respect to the education sector, the 3-year PRS states that the government's overall goal "is to improve access to and the quality of relevant education at all levels, emphasizing the availability of Universal Primary Education and recognizing the needs of the disadvantaged, especially girls." This goal is declined into seven strategic objectives (for the full detail, please see Annex Note 1.1):

(i) Strengthen the curriculum;

(ii) Improve access to quality, safe, and hygienic schools;

(iii) Recruit and train qualified teachers;

(iv) Improve learning achievement and school completion rates;

(v) Strengthen the quality and accessibility of skills and vocational training;

(vi) Improve the quality of tertiary education while carrying out a limited and phased expansion and decentralization; and

(vii) Strengthen the overall governance, management, and financial basis of the education system.

Table 1.4: Selected MDG Indicators for Liberia, 1990-2008

	1990	1995	2000	2008
Goal 1: Eradicate Extreme Poverty And Hunger (2015 Target: Halve 1990 $1/day Poverty and Malnutrition Rates)				
Prevalence of Child Malnutrition (% of Children <5)	—	—	22,8	—
Population Below Minimum Level of Dietary Energy Consumption (%)	34,0	42,0	—	—
Goal 2: Achieve Universal Primary Education (2015 Target: Children Everywhere Will Be Able to Complete Primary)				
Percentage of a Cohort Reaching Grade 6 (%)	—	—	—	62,0
Goal 3: Promote Gender Equality (2015 Target: Gender Ratio in Education reaches 100)				
Ratio of Girls to Boys in Primary and Secondary Education (%)	—	—	73,0	86,0
Ratio of Young Literate Females to Males (% of those Aged 15-24)	—	84,0	—	—
Share of Women Employed in the Nonagricultural Sector (%)	—	—	11,4	—
Proportion of Seats Held by Women in National Parliament (%)	—	6,0	8,0	13,0
Goal 4: Reduce Child Mortality (2015 Target: Reduce 1990 <5 Mortality Rate by Two-thirds)				
Under Five Mortality Rate (per 1,000)	—	—	140,0	117,0
Infant Mortality Rate (per 1,000 live births)	157,0	157,0	157,0	71,0
Immunization, Measles (% of Children <12 Months)	—	—	52,0	64,0
Goal 5: Improve Maternal Health (2015 Target: Reduce 1990 Maternal Mortality by Two-thirds)				
Maternal Mortality Rate (Modeled Estimate per 100,000 Live Births)	—	—	1200,0	994,0
Births Attended by Skilled Health Staff (% of Total)	—	—	51,0	46,0
Goal 6: Combat HIV/AIDS, Malaria, and Other Diseases (2015 Target: Spread of AIDS Halted, and Prevalence Reversed)				
Prevalence of HIV, Total (% of those Aged 15-24)	—	—	1,4	—
Contraceptive Prevalence Rate (% of Women of Aged 15-49)	—	—	1,0	—
Incidence of Tuberculosis (per 100,000 People)	147,0	198,0	287,0	283,0
Tuberculosis Cases Detected Under Directly Observed Treatment (%)	—	31,0	26,0	51,0
Deaths Due to Malaria (per 100,000 Population per Year)	—	—	—	171*
Children <5 Years Sleeping Under Insecticide-Treated Bednets (%)	—	—	—	2.6**
Children <5 Years with Fever Who Received Antimalarial Treatment (%) ***	—	—	—	58.8

Table 1.4 Continued

	1990	1995	2000	2008
Goal 7: Ensure Environmental Sustainability				
Forest Area (% of Total Land Area)	—	—	36,0	—
CO2 Emissions (Metric Tons per Capita)	0,1	0,2	0,1	—
Access to an Improved Water Source (% of Population)	—	61,0	63,0	—
Access to Improved Sanitation (% of Population)	—	36,0	32,0	—
Goal 8: Develop a Global Partnership for Development				
Aid per Capita (Current US$)	75,0	57,0	23,8	101,2
Internet Users (per 100 People)	—	0,0	0,0	1,0
Mobile Cellular Subscription (per 100 People)	—	0,0	0,0	19,0

Source: IMF, 2010.
Note: *2006 data, **2005 data, and ***2007 data.

It is worthy of note that the prevalence of HIV/AIDS (See MDG 6) is very low in Liberia, at between 1.5 percent (DHS, 2007) and 1.7 percent (UNAIDS/WHO, 2008). Variations indicate a slightly higher prevalence by gender (1.8 percent for women aged 15-49 years, against 1.2 percent for men) and location (the rate is three times higher in urban areas at 2.5 percent than in rural areas at 0.8 percent). In terms of age, the DHS data indicate that the variations between teenagers and young adults are minor, as Table 1.5 shows.

Table 1.5: HIV/AIDS Prevalence amongst Youth Aged 15–24 Years, 2007

Age	HIV Positive Women		HIV Positive Men		Total HIV Positive	
	%	Number	%	Number	%	Number
15-19	*1.2*	*1,168*	*0.4*	*1,023*	*0.9*	*2,191*
15-17	0.6	690	0.3	612	0.5	1,303
18-19	2.2	478	0.6	410	1.4	888
20-24	*2.0*	*1,221*	*0.7*	*909*	*1.4*	*2,130*
20-22	2.1	740	0.2	532	1.3	1,272
23-24	1.8	482	1.4	377	1.6	859

Source: DHS, 2007.

Macroeconomic Trends

Liberia has a significant advantage in the production of natural resource-based products. The country enjoys an abundance of rainfall, and has a long coastline and ample land relative to its population. The forests are the most extensive of those remaining in West Africa. Before the civil conflict timber was the most important and valuable export after iron ore, and it is expected to return to prominence in 2011, now that a satisfactory regulatory framework has been established. Agriculture currently

accounts for the largest share of GDP, at about 42 percent: food crops include rice and cassava; fishing stocks are largely intact and increasingly protected; and Liberia is the second largest exporter of rubber in Sub-Saharan Africa and has the largest rubber plantation in the world, accounting for 78 percent of exports in 2008. After agriculture, the service sector is the second greatest contributor to the economy. Finally, manufacturing is relatively small, accounting for barely 12 percent of GDP.

However, the progress achieved remains precarious, and vulnerable to the negative impact of exogenous shocks. As a result of the global financial crisis, investments were postponed and export revenues dropped sharply in the rubber sector as external demand slackened**.** Real GDP growth slowed to 4.6 percent in 2009 as a result. Signs of recovery are apparent in 2010, and growth is projected to rebound to 6 percent. Sustained economic activity over the coming years will however depend on the size and timing of foreign direct investments in the commodity and agriculture sectors, and developments in large iron ore concessions in particular. Inflation has reflected external price volatility, rising during 2008 on account of food and fuel price increases, and then softening in 2009 as these trends reversed.

Table 1.6: GDP and Government Revenue and Expenditure, 2004-09

	2004	2005	2006	2007	2008	2009
GDP						
Total (Millions of Current US$)	460	530	612	735	843	874
Total (Millions of Constant 2007 US$)	586	614	685	735	785	824
Growth - Nominal (%)	12.1	15.2	15.5	20.1	14.7	3.7
Growth - Constant 2007 US$ (%)	1.0	4.7	11.6	7.3	6.8	5.0
Government Revenues						
Total - Domestic (Millions of Current US$)	58.1	82.7	85.6	148.2	206.9	234.9
Total – Domestic (Millions of Constant 2007 US$)	74.0	95.8	95.8	148.2	192.6	221.4
Grants (Millions of Current US$)	3.0	1.0	1.0	1.5	6.1	23.6
Grants (Millions of Constant 2007 US$)	3.8	1.2	1.1	1.5	5.7	22.2
Total - Domestic (% of GDP)	12.6	15.6	14.0	20.2	24.5	26.9
Total - Domestic (% of GDP in Constant 2007 US$)	12.6	15.6	14.0	20.2	24.5	26.9
Government Expenditure						
Total - Recurrent and Capital (Millions of Current US$)	50.6	81.4	82.0	134.7	197.1	248.9
Total - Recurrent and Capital (Millions of Constant 2007 US$)	64.5	94.3	91.8	134.7	183.5	234.6
Recurrent	46.9	72.1	75.7	117.5	173.2	215.1
Capital (All Grants, no Loans)	3.7	9.3	6.3	17.2	23.9	33.8

Source: IMF reports, 2008-2010.

Debt

Liberia receives a large amount of debt relief. In June 2010, The IMF and the World Bank approved the final stage of debt relief amounting to a total of US$ 4.6 billion in nominal terms, reducing the external debt liability by more than 90 percent to about 15 percent of GDP. The decision was reached after Liberia met the requirements for achieving the Enhanced Heavily Indebted Poor Countries (HIPC) Initiative completion point. The IMF's share of this debt relief amounts to about US$ 730 million (in June 2007 present value terms), which is among the Fund's largest country commitments under the Enhanced HIPC Initiative, representing over one-fifth of the total financial support to the process. Liberia has also qualified for the Multilateral Debt Relief Initiative (MDRI), and the European Union special debt relief initiative. MDRI debt relief and assistance would reduce nominal debt service by an annual average of US$ 13.7 million over a period of 20 years, which would cover all remaining debt service obligations on eligible credit balances to the IDA, the IMF, the African Development Bank, and the EU.[5]

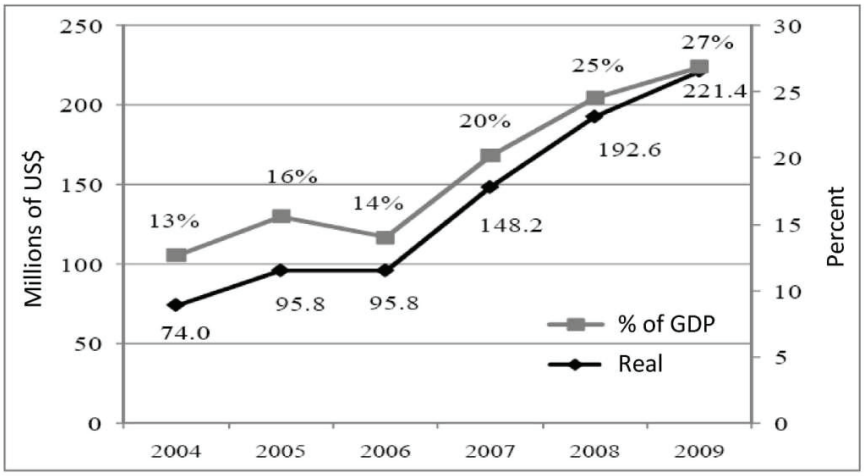
The government is striving to improve the financial system and its management, but there is still room for improvement. In the medium term, borrowing will remain constrained and sustained high levels of external grant financing will be needed for reconstruction and the building of accountable state institutions. As part of its efforts to improve accountability, the government has taken important steps to improve budgeting and public expenditure management; however the persistent weaknesses of these systems have prevented development partners from providing substantial budget support to date. In addition, the government has developed and approved a civil service strategy which seeks to improve the management of its human resources; and significant steps have been taken to establish political institutions.

Government Resources

Government revenue has risen remarkably since the end of civil war. The growth in public revenue and expenditure since 2004 is presented in Figure 1.4 below. Total government domestic revenue (excluding grants) increased from US$ 74.0 million or 13 percent of GDP in 2004 to US$ 221.4 million or 27 percent of GDP in 2009 (in 2007 constant US$). This represents an increase in revenue of 199 percent in real terms over the period, at a much faster rate than that of real GDP (See Table 1.6 above).

[5] IDA/IMF, 2010.

Figure 1.4: Growth in Domestic Revenues, 2004-09
Millions of Constant 2007 US$



Source: PEMFAR, 2008.

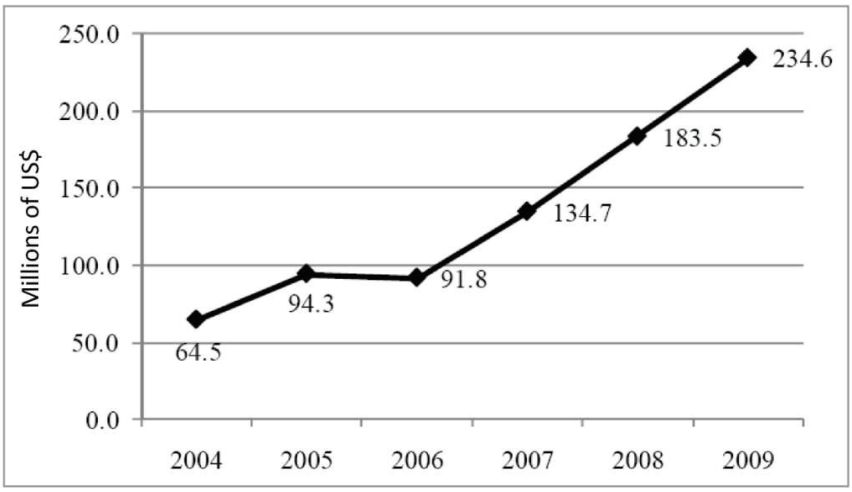
The Expenditure Framework

The Composition of Global Expenditure

Government expenditure increased significantly between 2004 and 2009, but budget execution has not progressed at the pace it should. This is due to the habitual late submission and approval of the budget, lack of capacity within the executing entities, bottlenecks in voucher processing, and difficulties in meeting the requirements of the Procurement Act. In addition, actual expenditure has tended to deviate from the planned budget over the last few years. The budget is therefore not an appropriate measure of fiscal performance.

Figure 1.5 below displays the expenditure trend over the 2004-09 period. With a cash-based balanced budget, the significant increases in expenditure during FY2006 and FY2007 resulted from an increase in revenues as government procedures improved and economic activity, particularly imports, picked up.

Figure 1.5: Total Government Expenditure, 2004–09
Millions of 2007 Constant US$



Source: IMF Country Report No. 05/167 and World Bank Liberia Public Expenditure Review.

Between academic years 2006/07 and 2007/08, public expenditure has increased much faster than GDP, reaching 26 percent of GDP (See Table 1.7). It is worth noting that Social and Community Services, including mainly education and health, have caught up with the greatest category, Administrative Services in terms of their share of global expenditure.

Table 1.7: Functional Classification of Public Expenditure, 2004/05 to 2007/08
Percent of GDP

	2004/05	2005/06	2006/07	2007/08	2004/08	
					Average	Share
Administrative Services	6.0	3.2	7.1	7.0	5.4	34.1
Security Services	5.6	3.5	3.1	3.5	4.1	25.6
Social and Community Services	**3.0**	**2.9**	**5.6**	**7.0**	**3.8**	**24.1**
Economic Services	1.3	0.5	1.5	1.6	1.1	7.0
Other Services	0.4	0.8	1.7	4.5	1.0	6.1
Debt Services	0.3	0.3	0.9	2.5	0.5	3.1
Total	**16.6**	**11.2**	**20.0**	**26.1**	**15.9**	**100.0**

Source: Table drawn from the 2008 PEMFAR.

Expenditure on salaries almost doubled between 2006/07 and 2007/08 in real terms, although this represents less than a three percent relative increase. The share of expenditure devoted to staff wages is still relatively low, at 33.2 percent (See Table 1.8). The large projected increase in transfers and subsidies between 2007 and 2008, from US$ 18.2 million to US$ 31.4 million aims to finance the modernization of the administration.

Table 1.8: Economic Classification of Public Expenditure, 2004/05 to 2007/08
US$ Millions

	2004/05	2005/06	2006/07	2007/08	Distribution of Expenditure (%)	
					2006/07	2007/08
Wages and Salaries	42.3	29.4	**37.7**	**63.5**	**30.7**	**33.2**
Goods and Services	16	15.4	44.4	58.3	36.2	30.4
Transfers and Subsidies	6	9.8	**18.2**	**31.4**	14.8	16.4
Public Debt Interest	1.4	1.4	5.8	18.2	4.7	9.5
Domestic	1.4	1.4	4.6	14.3	3.7	7.5
External	0	0	1.2	3.9	1.0	2.0
Capital Expenditure	10.6	3.7	16.6	20	13.6	10.5
Total	**76.3**	**59.6**	**122.7**	**191.5**	**100.0**	**100.0**

Source: Ministry of Finance.

Education Expenditure

Education expenditure remains low as a percentage of GDP, in spite of the significant increase. Notwithstanding the fact that average real spending for education has risen by 21 percent per year since 2004 (PEMFAR, 2008), the increase has largely reflected global increases in public expenditure. Even though the government has committed to increase pro-poor spending and raise the social services budget (including health and education) to a quarter of government expenditure, the Ministry of Education (MOE) received only 11.8 percent of total expenditure in 2007/08, equivalent to about 3.2 percent of GDP (See Table 1.9 below). This is lower than the average of four to five percent of GDP common in other low-income countries in the subregion and elsewhere.

A comprehensive and detailed discussion of the distribution of government expenditure and household spending on education, including comparisons with other Sub-Saharan countries, and of the overall financing of education in Liberia can be found in Chapter 3.

Table 1.9: Government Education Expenditure, 2004-08

	2004/05	2005/06	2006/07	2007/08
Total Education Expenditure				
Current US$ (Millions)	7.2	9.2	13.0	23.6
Constant 2007 US$ (Millions)	9.2	10.7	14.1	23.6
Percentage of GDP (%)	1.6	1.7	2.1	3.2
Percentage of Total Government Expenditure (%)	9.0	9.4	9.6	11.8
Recurrent Education Expenditure				
Current US$ (Millions)	7.0	8.3	12.5	22.1
Constant 2007 US$ (Millions)	9.0	9.7	13.6	22.1
Percentage of GDP (%)	1.5	1.6	2.0	3.0
Percentage of Total Government Expenditure (%)	9.7	9.5	10.2	13.2
Percentage of Domestic Government Resources (Tax and Nontax) (%)	9.1	10.8	8.9	12.7
Capital Education Expenditure				
Current US$ (Millions)	0.2	0.8	0.5	1.5
Constant 2007 US$ (Millions)	0.3	0.9	0.5	1.5

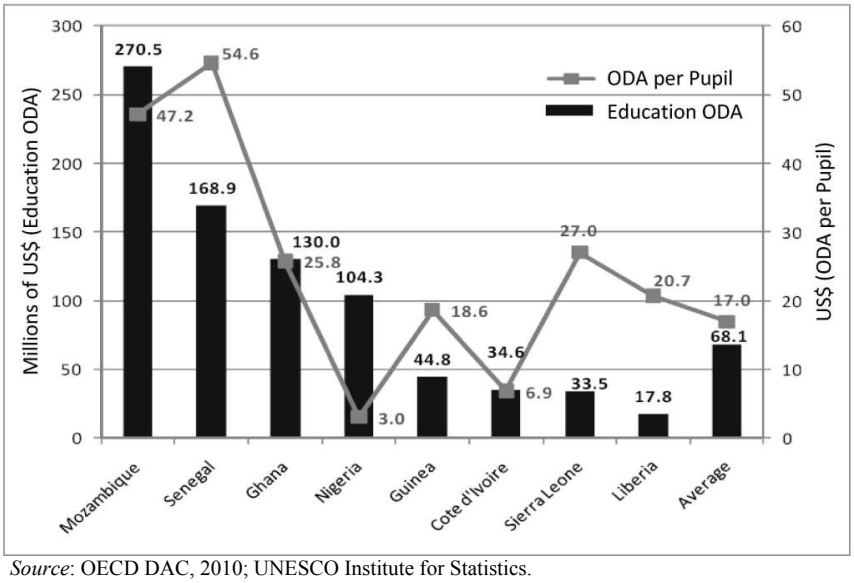
Source: Ministry of Finance.

External Aid

Contributions from Development Partners

In support of government efforts, donors provided US$ 1,189 million to Liberia in 2008 for all sectors combined, up from US$ 698 million the previous year (OECD International Development Statistics). However, it is difficult to obtain comprehensive and reliable quantitative information on the magnitude of support received from development partners, which is necessary to predict resource flows to the various sectors. Indeed, only a small share of aid is channeled through the budget. Support to projects being implemented by line ministries "is not recorded in the budget estimates or in fiscal reports, and so it is difficult to estimate the magnitude of this. … Unfortunately, although efforts are underway to put in place a system for recording donor aid disbursements and commitments, this is not yet fully operational and only fragmentary data are currently available. … A large share of the aid received by Liberia has been spent outside of the government budget partly because donors have lacked confidence in the capacity of public institutions to manage the aid efficiently" (PEMFAR, 2008). To date, budget support has been provided only by France and IDA. Over the past two years, IDA has offered US$ 21 million of budget support, a negligible amount compared to the global aid envelope. Germany, the EU and IDA have also contributed to a multidonor trust fund that is subject to World Bank procedures.

Figure 1.6: Primary and Lower Secondary Education ODA, Total and per Pupil, 2008



Source: OECD DAC, 2010; UNESCO Institute for Statistics.

The amount of ODA allocated to the education sector is lower than in neighboring countries. The key active education sector donors/partners in Liberia include: the EU, UNESCO, UNICEF, USAID, the World Bank, WFP, and the Soros Foundation/Open Society Institute. Despite the number of donors, Liberia is considered to be a *donor orphan*. For 2008, Liberia received US$ 17.8 million ODA for the education sector, equivalent to US$ 20.7 per primary and junior high school pupil (See Figure 1.6). Over 2009, the donor spending for the sector doubled to about US$ 35 million: US$ 12 million from USAID for teacher training, reading assessment, girls' scholarships, and short and long-term training programs to improve the management and technical skills of mid-level professionals; US$ 10 million from WFP for school feeding programs; and US$ 12 million from the UNICEF / Soros Foundation Open Society Institute pooled fund. Donor commitments for 2010-12 are projected to reach US$ 127 million.

Projected Public Resource Mobilization

Over the next five years, Liberia can expect stable growth, but will continue to be limited in its borrowing. Table 1.10 below shows the key macro level parameters alongside the EFA-FTI Indicative Framework values when relevant. The medium-term IMF outlook is one of positive growth and fiscal performance, projecting a sustained recovery over the 2010-14 period with real annual GDP growth of 10.2 percent (13 percent in nominal terms), and domestic revenue above 30 percent of GDP. Also, as noted above, Liberia reached the HIPC completion point in 2010.

Despite this positive outlook, Liberia will have a cash based finance system for some time to come and will continue to be under debt distress following the HIPC completion. As a result, the IMF also foresees a situation of continued limited global revenues, due to borrowing constraints. The share of public recurrent expenditure allocated to education is projected to rise from 13.2 percent in 2010 to about 20 percent in 2015.

Table 1.10: Projected Macro and Fiscal Indicators, 2010-15

	2010	2011	2012	2013	2014	2015	FTI
Total Revenue (% of GDP)	34.7	34.4	32.2	32.4	33.2	33.3	n.a.
Domestic Revenue (% of GDP)	31.9	30.9	28.4	28.1	28.4	28.4	14-18
External Grants (% of GDP)	2.9	3.4	3.8	4.3	4.8	4.9	n.a.
Total Public Expenditure (% of GDP)	33.8	35.0	33.9	33.8	34.8	34.3	n.a.
Recurrent Education Expenditure (% of Total Recurrent Expenditure)	13.2	14.5	16.2	17.1	17.8	18.7	20.0

Source: IMF, 2010.

Summary

Liberia has made substantial political, economic and social progress since the end of the 14 year civil war in 2003. As a result of the civil conflict, the provision of basic services came to a halt due to the widespread destruction of infrastructure, the interrupted provision of basic supplies, and the flight of human capital. Two rounds of free and fair elections in 2005 led to the installation of a new government in January 2006. Since the security situation has steadily improved, large international mining companies are returning, infrastructure is being rebuilt, public services are being restored, many skilled and educated members of the diaspora are returning, and enrollment in all education levels is increasing rapidly as a result.

GDP increased from US$ 685 million in 2006 to US$ 824 million in 2009 (in constant 2007 US$). Education expenditure as a percentage of GDP also increased from 1.7 percent in 2005/06 to 3.2 percent in 2007/08. Donor contributions are rapidly increasing, both in global terms, and for the education sector in particular. As such, Liberia is making steady progress.

However, the economy and security situation remain fragile. Given the enormous challenges that rebuilding the economy and social services pose, the country will have to ensure that all available resources are used efficiently. With the majority of the population aged under 20 years and widespread youth unemployment, education and training will play a key role in maintaining peace and stability, as well as contributing to economic growth. It is therefore important that Liberia should meet the education expenditure benchmark of four to five percent of GDP that is common among other low-income countries in the subregion.

CHAPTER 2: STUDENT ENROLLMENT AND INTERNAL EFFICIENCY

Key Findings

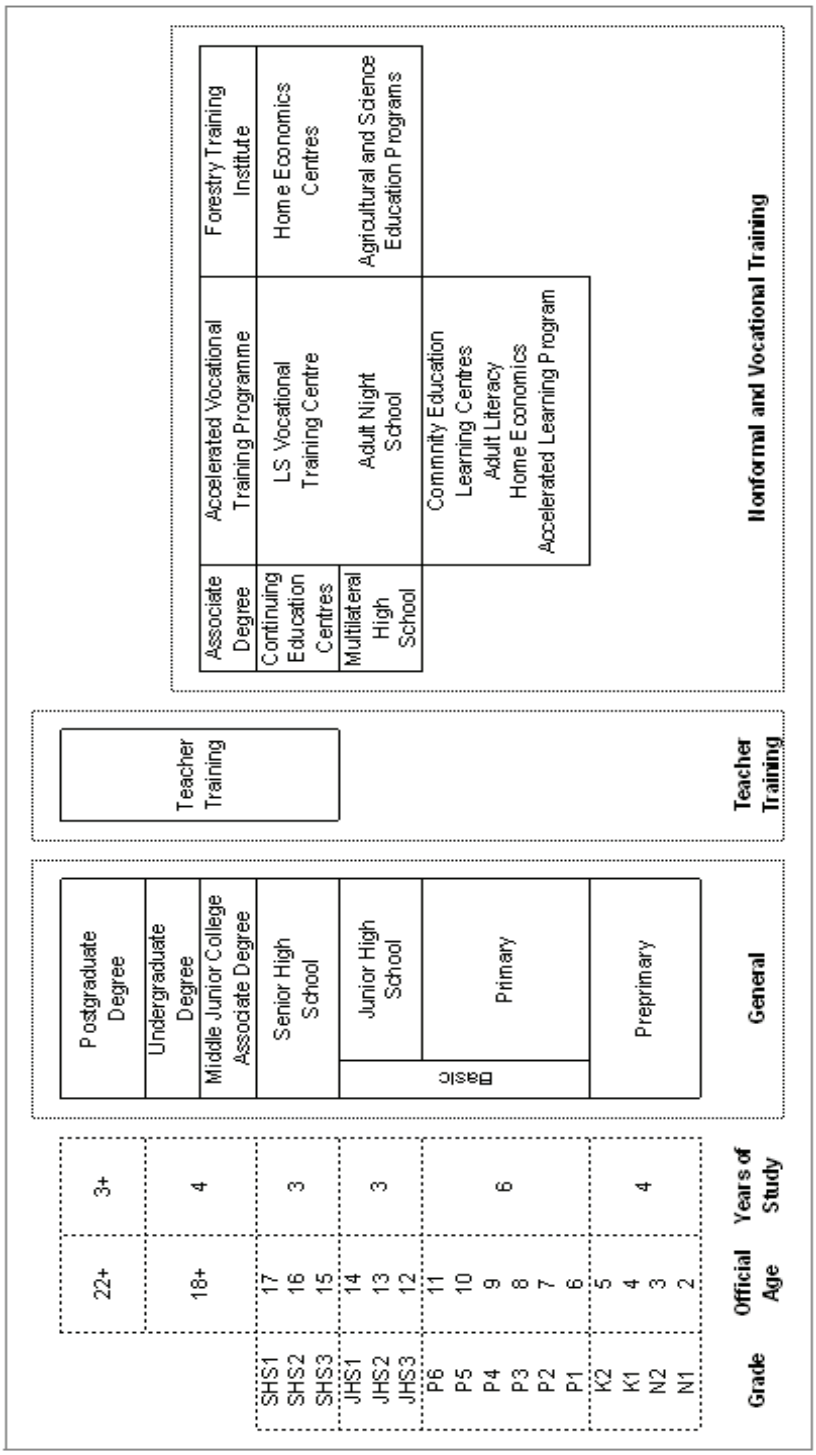
- The official primary enrollment age is six years; however most children of this age still attend preprimary school or are not in school;
- This is reflected in the ages of children attending secondary school, who are also much older than the official ages;
- Enrollment in Liberia has increased for all levels over the years;
- Preprimary and primary gross enrollment rates are high, but those for the secondary levels must still be improved; and
- Primary school repetition and drop-out cost the system 32 percent of resources in 2007/08.

As noted in Chapter 1, prior to the 2007/08 National School Census very little data with which to perform a thorough analysis of the education sector existed. In order for the government to outline a way forward for the sector, it must first take stock of the status quo in terms of coverage and efficiency. The first part of this chapter provides an overview of the sector, reviewing enrollment and coverage trends; the second part evaluates the internal efficiency of the system by analyzing repetition, transition and completion rates. To provide a historical perspective of enrollment trends, data from the following four sources are used: 1989 MOE Annual Report, 2003/04 Rapid Assessment of Learning Spaces, and the 2005/06 and 2007/08 National School Censuses.

Overview of the Education System and Education Providers

The structure of the Liberian education system is typical of the Sub-Saharan African region and is referred to in Anglophone countries as the 6-3-3-4 system (See Figure 2.1 below). It involves six years of primary schooling, three years of junior high school (JHS), three years of senior high school (SHS) and four years of higher education.

Figure 2.1: Structure of the Liberian Education System



Source: Draft Liberia Revised Education Policy Statements, 2008.

Most schools are multilevel. Nearly 60 percent of schools combine preprimary and primary levels; those offering only primary education are a mere 0.8 percent. Preprimary, primary and junior high levels are all offered in 14.2 percent of schools; the full secondary cycle is offered in only 1.2 percent; and barely 0.9 percent offer both primary and the full secondary cycle. Although this multilevel school model helps reduce the cost of education, it also limits the number of students that can be admitted into a given level, as various levels operate per shift.

Liberia's education system is similar to those of other Anglophone countries in Sub-Saharan Africa (such as Ghana, Nigeria and Sierra Leone), but has some unique features. Of particular interest are the Accelerated Learning Program (ALP) described in detail later in this chapter, the importance of preprimary education, and the large number of preprimary, primary and junior high schools.

There are four main categories of schools: public, community, private, and mission schools.

1. Public schools are created, operated and fully financed by the government. In the greater Monrovia area a public *school system* (see below) has been created and achieved renown: the Monrovia Consolidated School System (MCSS), offering both primary and secondary education.
2. Community schools are created and run by communities. The government often assumes control after a brief period, although most retain their *community* epithet. It is general practice to group community and public schools together for projecting enrollment and financing trends, as community schools are invariably absorbed into the state school system.
3. Mission schools are created and run by institutions with religious affiliations, including Christian and Muslim faith-based entities. They do not rely on government funding although some receive subsidies.
4. Private schools are created and run by secular individuals and/or groups, including private sector organizations and large corporations, without financial support from the government. Some belong to a *school system*, a group of schools operating in the same location or catering to a specific group, such as the children a particular mining company's workers. All school systems are established by specific legislation, and with the exception of the MCSS, are private.

Private, mission, and community schools are now major providers of education and training services as Table 2.1 below shows. In particular, above the preprimary level, nonpublic education providers account for 43 percent of primary schools, 60 percent of junior high schools, and 71 percent of senior high schools.

Table 2.1: Distribution of Schools by Provider and Level, 2007/08
Percent

	Preprimary	Primary	Junior High	Senior High
Public	62	57	40	29
Private	16	18	27	30
Mission	8	12	25	37
Community	14	13	8	4
Total	100	100	100	100

Source: School Census, 2007/08.

Private, mission, and community schools generally determine their fees independently of the MOE and have no compulsory government representatives on their boards.

Liberia has made education a high priority, adopting a universal primary education policy and qualifying basic education as a human right. The Education Law of 2001 made primary education free and compulsory as of 2003, defining the official age range for this level as 6 to 11 years. Basic education is defined as including the 9 years of primary and JHS education, as well as adult education where necessary, and the law states that "All citizens shall have the right to basic education as a human right."

On the whole, children attending school are much older than the official school ages specified for each grade and level. This situation is not surprising given the long years of civil conflict and the scarcity of provisions in some areas of the country.

National examinations determine students' promotion to the next education level. National exams are conducted by the West African Examinations Council (WAEC) at the end of the 6th (and at the end of Accelerated Learning Program), 9th and 12th grades. Passing these give students access to JHS, SHS and higher education institutions, respectively.

Technical and Vocational Education and Training (TVET) is available at different levels, starting with the most basic skills training in primary level institutions. It is also being offered in some secondary schools and higher education institutions.

Enrollment Trends

Enrollments have increased dramatically for all levels since the early 1980s, although most students are overage. This section compares pre 1989 and post 2003 historical data, given that no reliable and accurate education data are available for the interim period because of the civil war.[6] Table 2.2 presents historical enrollment data for each level.

Table 2.2: Student Enrollment Trends, by Level, 1981-2007/08

	1981	1984	2005/06	2007/08
Preprimary	91,394	96,813	358,210	491,564
Primary	155,166	146,476	488,438	539,887
Accelerated Learning Program *	n.a.	n.a.	47,668	75,820
Junior High School	34,365	40,307	98,448	102,642
Senior High School	22,243	25,359	33,776	55,600
Higher	—	—	—	27,954
Gross Enrollment Rate (GER) Preprimary	38%	37%	82%	103%
GER Primary School	53%	45%	94%	94%
GER Primary School + ALP *	N/A	N/A	103%	108%
GER Junior High School	28%	29%	45%	43% **
GER Senior High School	20%	21%	16%	24%

Source: National Policy Conference on Education and Training Final Report, 1984; National School Census Data, 2005/06 and 2007/08.

Note: * The Accelerated Learning Program or ALP was established in 1999. ** The JHS GER dropped from 45 percent in 2005/06 to 43 percent in 2007/08, because although the population aged 12-14 years increased by 20,000 over the period, JHS enrollment increased by only 4,000.

Preprimary Enrollment

Enrollment in preprimary schools has increased dramatically over the years, and presently stands at 491,564 pupils. The general picture is one of rapid increase in global terms between 2005/06 and 2007/08, at 19 percent, where the decrease in enrollment in mission schools is generously compensated by a significant increase in public and community school attendance. As Table 2.3 below shows, in the prewar period between 1981 and 1984 the overall increase was minimal, although enrollment in mission schools increased markedly. By 2005/06, the enrollment growth rate had reached an annual average of six percent, higher than the population growth rate.

[6] The available enrollment estimates for the 1990s differ substantially among sources, and even the MOE figures are not coherent, so it was decided to make only limited use of them in this section.

Table 2.3: Preprimary Enrollment and Average Annual Growth, by Provider, 1981-2007/08

	Enrollment				Average Annual Growth		
	1981	**1984**	**2005/06**	**2007/08**	**1981-84**	**1984-2005/06**	**2005/06-2007/08**
Public	60,459	49,588	198,689	305,985	-6%	6.8%	24%
Mission	12,915	35,143	47,724	39,474	40%	1%	-9%
Others	18,020	12,082	111,797	146,105	-11%	11.2%	15%
All	**91,394**	**96,813**	**358,210**	**491,564**	**2%**	**6.4%**	**17%**

Source: Liberia Education and Human Resources Sector Assessment, 1988; School Census, 2005/06 and 2007/08.

However, 63 percent of children enrolled in preprimary are over the official age range of two to five years (School Census Report, 2007/08). The Grade 1 entrance examination acts as a barrier to primary school, inflating the preprimary school ranks while pupils resit the test.

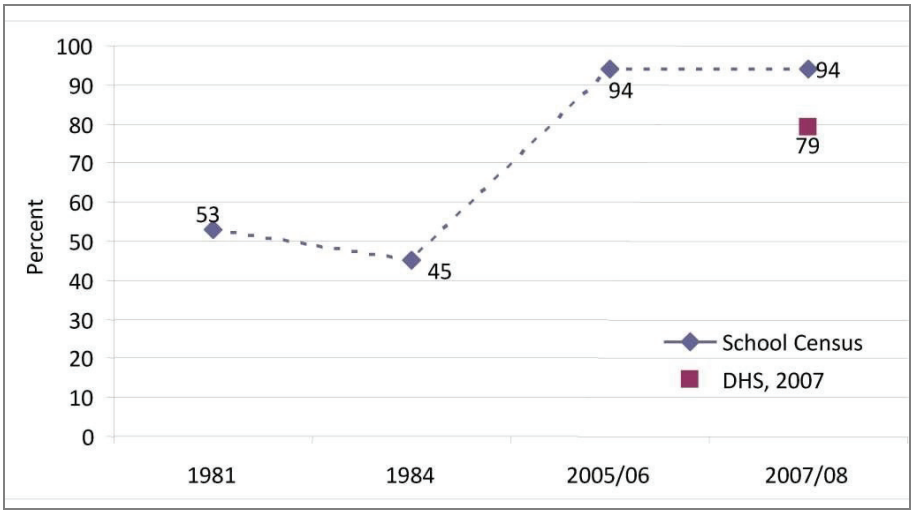
Primary School Enrollment

The growth in primary school enrollment has also been significant since the mid-1980s, although not as dramatic as preprimary enrollment growth. Figure 2.2 below displays the evolution of the primary GER (excluding ALP), based on school census data.[7] Between 1981 and 1984 a decrease in public school enrollment took place. The reason for this is unknown.

As is the case for preprimary enrollment, Table 2.4 below shows significant increases in community school enrollment for the primary level, especially since 2005/06, and the concomitant drop in mission school enrollment.

[7] These enrollment indicators may be overestimated, as is illustrated by the 2007/08 primary GER based on DHS data; this is only 79 percent, compared to the school census estimate of 94 percent. This report nevertheless relies on the school census for historical data, given that DHS data are only available for 2007.

Figure 2.2: Primary GER Trend (Excluding ALP), Based on School Census and DHS Data, 1981-2007/08
Percent



Source: National Policy Conference on Education and Training Final Report, 1984; National School Census Data, 2005/06 and 2007/08; DHS, 2007.

In spite of the great increase in enrollment, only 5.5 percent of children aged six years attend primary school and almost 63 percent of children enrolled are above the official age range of six to eleven years (School Census Report, 2007/08). The small proportion of children aged six years in Grade 1 is coherent with the large number of overaged children in preprimary schools, as seen above. The fact that so many children of working age are still in primary school has implications for the development of the nation and Liberian's quality of life.

Table 2.4: Primary Enrollment and Average Annual Growth, by Provider, 1981-2007/08

	Enrollment				Average Annual Growth		
	1981	**1984**	**2005/06**	**2007/08**	**1981-84**	**1984-2005/06**	**2005/06-2007/08**
Public	104,229	91,597	260,499	308,748	-4%	5.1%	9%
Mission	26,700	26,902	80,168	62,316	0%	5.3%	-11%
Private	—	—	97,386	98,816	—	—	1%
Community	—	—	50,385	70,007	—	—	19%
Private+ Community	24.237	27,977	147,771	168,823	5%	8%	7%
All	**155,166**	**146,476**	**488,438**	**539,887**	**-2%**	**5.9%**	**5%**

Source: Liberia Education and Human Resources Sector Assessment, 1988; School Census, 2005/06 and 2007/08.

Junior High School Enrollment

JHS enrollment has almost tripled since the early 1980s (See Table 2.5). In terms of distribution by provider, JHS shows the opposite trend to preprimary and primary; for this level mission schools are the ones to have witnessed greatest growth, while the number of community schools had dropped sharply.

Table 2.5: JHS Enrollment and Average Annual Growth, by Provider, 1981-2007/08

	Enrollment				Average Annual Growth		
	1981	**1984**	**2005/06**	**2007/08**	**1981-84**	**1984-2005/06**	**2005/06-2007/08**
Public	21,683	20,348	34,022	40,667	-2%	3%	10%
Mission	8,803	9,366	19,180	26,091	2%	3.5%	17%
Private	—	—	22,927	28,216	—	—	11%
Community	—	—	22,319	7,668	—	—	-41%
Private+ Community	3,879	10,593	45,246	35,884	41%	7%	-11%
All	**34,365**	**40,307**	**98,448**	**102,642**	**6%**	**4.3%**	**2%**

Source: Liberia Education and Human Resources Sector Assessment, 1988; School Census, 2005/06 and 2007/08.

On the other hand, only a fraction of junior high school-aged children are enrolled in this level, in a logical continuation of the age lag noticed in preprimary and primary education. As a result, 88 percent of enrolled JHS students are above the official age range of 12 to 14 years. The majority of JHS students are aged 15 to 20 years (School Census Report, 2007/08).

Senior High School Enrollment

Senior high school enrollment has been historically low, although some growth has taken place. SHS enrollment presently stands at 55,600. Unlike earlier levels, the greatest growth has been over the 2005/06 to 2007/08 period (See Table 2.6 below). This is most likely due to the reopening of many senior high schools following the first postwar elections in 2005.

The fact that enrollment in mission schools is growing faster than in public schools is worth noting, following the opposite trend to that of preprimary and primary. The data shows that enrollment in private senior high schools is recently also growing at a much faster rate than in their public and community counterparts.

Table 2.6: SHS Enrollment and Average Annual Growth, by Provider, 1981-2007/08

	Enrollment				Average Annual Growth		
	1981	**1984**	**2005/06**	**2007/08**	**1981-84**	**1984-2005/06**	**2005/06-2007/08**
Public	13,157	11,161	10,489	16,212	-5%	0%	27%
Mission	6,457	8,980	10,530	20,335	13%	1%	39%
Private	—	—	9,255	16,581	—	—	34%
Community	—	—	3,502	2,472	—	—	-15%
Private+ Community	2,629	5,218	12,757	19,053	26%	4%	22%
All	**22,243**	**25,359**	**33,776**	**55,600**	**5%**	**2%**	**28%**

Source: Liberia Education and Human Resources Sector Assessment, 1988; School Census, 2005/06 and 2007/08.

Similarly to other levels, SHS has a high proportion of overage students. Seventy six percent of students in SHS are above the official age range of 15 to 17 years; the majority is aged 18 to 20 years (School Census Report, 2007/08).

Accelerated Learning Program Enrollment

The Accelerated Learning Program (ALP), aimed at overaged youths, compresses six years of basic education into three years of tuition. It was established in 1999, designed for those who never attended or completed primary schooling, to cater for the high number of young adults who would view six years in school as a disincentive. It is implemented by different partners on behalf of the government. Enrollment in the program presently stands at 75,820 but this figure conceals important regional variations. Indeed, the program was not operational in one county at the time of writing this report.

Prior to the 2005/06 school census, data on the ALP was included in primary school data, hence the short timeline available for analysis (See Table 2.7 below). In recent years, ALP enrollment has increased overall by an annual average of 26 percent. Mission schools are the only establishments having witnessed a drop in numbers.

As the proportion of overaged youth in the system gradually decreases, the nature of the Accelerated Learning Program is expected to evolve toward adult education providing vocational and business skills training as well as literacy classes.

Table 2.7: ALP Enrollment and Average Annual Growth, by Provider, 2005/06-2007/08

	Enrollment		Average Annual Growth 2005/06-2007/08
	2005/06	2007/08	
Public	38,990	65,345	30%
Mission	3,458	2,301	-17%
Private	2,577	3,788	23%
Community	2,643	4,386	29%
All	**47,668**	**75,820**	**26%**

Source: School Census, 2005/06 and 2007/08.

Higher Education Enrollment

Since the end of the civil war the number of institutions offering diplomas and degrees has increased. Until the 1970s, higher education was mainly provided by the University of Liberia, founded in 1862 as the Liberia College, and Cuttington University, founded in 1889 and known as Cuttington University College until fairly recently (See Table 2.8). Some other institutions have now acquired university status although the University of Liberia and Cuttington University remain the only graduate degree awarding establishments. Since the end of the civil conflict many charters have been awarded to new diploma and degree awarding institutions offering substandard education. The National Commission for Higher Education (NCHE) has started to close some of the institutions offering insufficient quality, but is encountering resistance. The enrollment figures for institutions recognized by the NCHE as providing higher education degrees in 2007/08 were:

Table 2.8: Enrollment for Higher Education, by Degree Type, 2007/08

	Enrollment	%
Postgraduate Degree (University of Liberia)	17,502 (15,556)	63 (56)
Undergraduate Degree	8,536	31
Associate Degree	1,743	6
Diploma/Certificate	173	1
Total	**27,954**	**100**

Source: National Commission for Higher Education Secretariat.

Even including enrollment in other higher education institutions, the University of Liberia still accounts for 56 percent of all students enrolled in the eight institutions awarding a bachelor's degree or above. The percentage of students in higher education that actually graduate is very low.[8] It is important to investigate the reasons behind this

[8] Enrollment and graduation figures for various higher education courses are presented in Annex Table 2.4.

low graduation rate, as a first step to ensuring that those who undertake a course of higher education graduate within the official curriculum period.

The University of Liberia has the highest student to lecturer ratio, of 82 to 1. Despite having the majority of students, the University of Liberia accounts for only 18 percent of lecturers among the institutions recognized by the NCHE. This ratio should however be treated with care, as most institutions offer more part-time courses, and a significant proportion only offer an undergraduate degree or a Master's degree of uncertain quality.

During the 14 years of civil conflict, higher education was at a virtual standstill and almost all institutions ceased to function (See Table 2.9). As a result, higher education data for the 1990 to 2003 period are either unavailable or unreliable. Given the predominance of the University of Liberia in terms of student numbers, its enrollment trend is largely representative of global enrollment for this level. Some smaller institutions have seen significant enrollment growth in recent years however, such as the Stella Maris Polytechnic, whose student population increased by 46 percent between 2006/07 and 2007/08.

Table 2.9: University of Liberia Enrollment, 1985-2007

Enrollment			Average Annual Growth	
1985	**1987**	**2007**	**1985-87**	**1987-2007**
2,998	4,073	15,556	17%	7%

Source: Liberia Education and Human Resources Sector Assessment, 1988; National Commission for Higher Education Secretariat.

Teacher Training Enrollment

Inadequate enrollment in and graduation from teacher training courses have not improved since the prewar period. The Education and Human Resources Sector Assessment of 1988 lamented that "a large number of elementary teachers are under-prepared and unqualified." The same report noted that in 1987 only 35 teachers graduated from the two university level teacher training institutions. Presently, four university level institutions train teachers, but total enrollment in their programs does not exceed 250 students, and the annual number of graduates does not exceed 40.

The main program is the Liberia Teacher Training Program (LTTP), which was implemented in October 2006 by the Academy for Educational Development with USAID funding. The LTTP is a comprehensive program with the dual objective of addressing the critical shortage of qualified teachers and the institutional capacity to produce new ones. As such, it prepares teacher trainers and offers preservice and in-service training for primary teachers. Currently, the LTTP is implemented in seven

counties (Montserrado, Nimba, Lofa, Grand Gedeh, River Gee, Maryland and Margibi). The program aims to strengthen the capacity to deliver education by:

(i) Supporting the MOE in developing a strategy to improve the teacher training system and in curricula reform;

(ii) Successfully training primary school teachers to "C" certificate level[9] through preservice training at Rural Teacher Training Institutes (RTTI) and through in-service training in seven counties;

(iii) Strengthening the teacher professional development system at the University of Liberia College of Education and in the RTTIs by upgrading staff, reforming curricula, developing materials, and conducting training;

(iv) Strengthening school level management and community support for education; and

(v) Carrying out research on policy and program effectiveness to help define new policies and systems.

Table 2.10 provides information on the number of teacher trainees assigned to active positions through the LTTP.

Table 2.10: In-Service and Preservice Teacher Trainees, 2009/10
Number of Trainees

	Male	Female	Total
In-Service Program			
Cohort 1 (2007/08)	249	58	307
Cohort 2 (2008/09)	468	80	548
Subtotal of Graduates Assigned to Teaching Positions	**717**	**138**	**855**
Cohort 3 (2009/10 Enrollment)	514	118	632
Total of In-Service Trainees (Graduates and Enrollees)	**1,231**	**256**	**1,487**
Preservice Program			
Cohort 1 (2008/09) - Graduates Assigned to Teaching Positions	411	38	449
Cohort 2 (2009/10 Enrollment)	448	77	525
Total of Preservice Trainees (Graduates and Enrollees)	**859**	**115**	**974**

There are currently 19,031 trained teachers, including 8,957 primary and 4,755 JHS teachers. On the other hand, there are 25,231 untrained teachers, including 13,257 primary, 3,413 JHS, and 8,148 preprimary teachers. This high proportion is due in part

[9] The "C" certificate is the minimum acceptable teacher qualification set by the government/MOE. Also known as Primary School Teacher's Certificate, this entry level for specialization in the teaching profession, is a stepping stone to various teacher qualifications including the "B" Certificate, the "A" Certificate, and Bachelors and Masters Degrees in Teacher Education.

to the difficulty of obtaining qualifications. To be accepted on the one year in-service program to obtain the B certificate, candidates must have the WAEC certificate and pass a written test administered by the LTTP in primary level English and Maths. Unfortunately, a large number of teachers do not currently hold a WAEC certificate and thus cannot benefit from further training. Save the Children and Concern Worldwide are currently introducing a course to upgrade the knowledge of the weaker teachers and prepare them for the WAEC certificate, removing this barrier.

The preservice primary teacher training program was suspended during the civil conflict, and has only recently resumed. It is conducted by RTTIs, all three of which were destroyed. The Kakata and Zorzor RTTIs were rehabilitated in the third quarter of 2008. In November that year they admitted their first set of students since the late 1980s, which graduated in June 2009; the first postwar class of trained and certified elementary teachers to do so in 20 years. The total enrollment of these two operational institutions is 441. The third RTTI is scheduled to be completed by 2010.

As in the past issues are being raised about the quality of the trainee intake into the RTTIs and concerns expressed about the duration of the training given the quality of the intake. The RTTI preservice program is for one year and the selection criteria are the same as for the in-service program: those who do not have a WAEC certificate and pass the LTTP written test are not accepted. On the other hand, RTTIs try to admit all of those who do fulfill the admissions criteria.

Technical and Vocational Education and Training Enrollment

In Liberia, the responsibility for TVET is shared among four ministries: Education, Youth and Sports, Agriculture and Labor and Employment. A committee with membership from all four has been established to coordinate and optimize the use of available resources, although it is yet to fully achieve its aims. As is the case for higher education, reliable and useful data on TVET for the civil conflict years are scarce. The available estimates indicate some growth in TVET enrollment and number of institutions since the 1980s, and a change in the distribution of providers: by 2006, the majority of TVET was provided by non government providers (54 percent by private institutions, 16 percent by NGO and 14 percent by mission).

Table 2.11: TVET Institutions and Enrollment, 1982 and 2006
Numbers of Providers and Students

Year	No.	Enrollment
1982	47	6,698
2006	110	18,030

Source: National Policy Conference on Education and Training, 1984; Situational Analysis of the TVET System in Liberia, 2006.

In fact Table 2.11 underestimates the number of institutions offering and individuals following technical and vocational training. Individuals benefiting from on-the-job vocational training, such as nursing assistants in hospitals, and those receiving some form of technical training in their school program are not included.

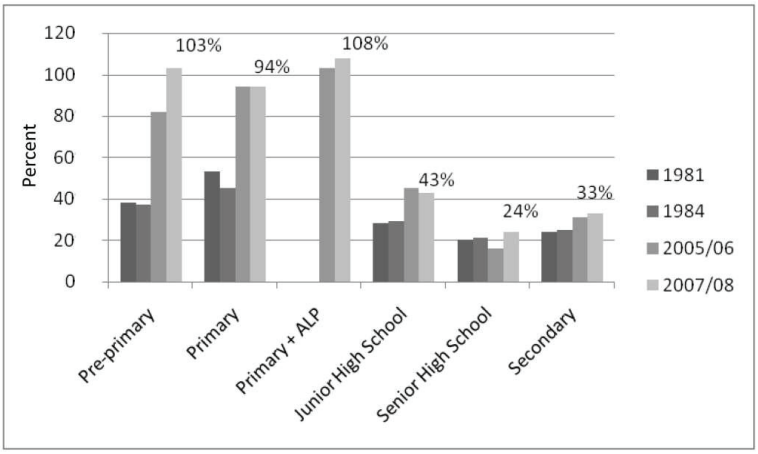
The demand for TVET is increasing. With old mines reopening, new mines, industries and large mechanized farms being established, and new hotels being built, the demand for individuals with the required technical and vocational skills is increasing and enrollment in institutions offering TVET programs is expected to rise accordingly.

Enrollment Rates

Gross Enrollment Ratio (GER)[10]

All available data are consistent in that prewar GERs were low, and postwar GERs are higher, for all levels up to SHS. The GERs are particularly high for the preprimary and primary levels (See Figure 2.3). The two main reasons for the noted high values are the increasing demand for education, the high proportion of late starters, and the number of pupils resuming their education after the civil conflict.

Figure 2.3: Gross Enrollment Ratios, 1981-2007/08
Percent



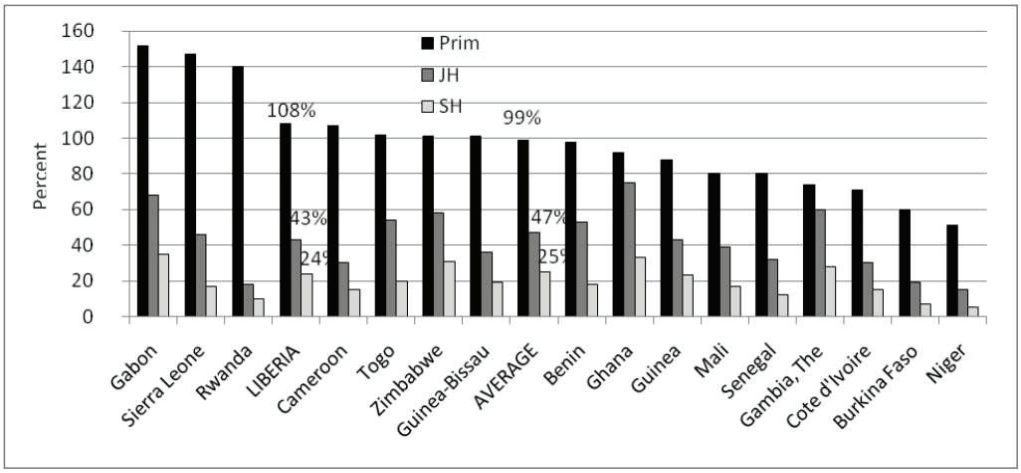
Source: National Policy Conference on Education and Training Final Report, 1984; National School Census Data, 2005/06 and 2007/08.
Note: Secondary is the sum of both JHS and SHS.

[10] The UNESCO Institute of Statistics (UIS) defines the GER as the "total enrollment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school-year."

The lower 2007/08 GERs for JHS (43 percent) and SHS (24 percent) reflect the choice of many young adults to enter the job market upon completing primary. This is particularly common among female students who, already in their early twenties, opt to start families, also explaining the lower female GERs and decreasing Gender Parity Indexes (See Chapter 7). The fact that a large number of individuals do not continue their education beyond the primary level makes it extremely important that the government provide a primary education of quality, given that a literate and numerate nation is a prerequisite for the achievement of development goals.

Education coverage as measured by the GER differs widely amongst Sub-Saharan countries. Countries that have recently emerged from extended conflict tend to have high primary GERs, but even amongst these countries there are notable differences. Beyond the primary level, coverage tends to be much lower and variations are largely due to the different policies being implemented. Figure 2.4 shows how Liberia compares to a sample of selected Sub-Saharan countries.

Figure 2.4: Primary, JHS and SHS Gross Enrollment Ratios, for a Sample of Selected Sub-Saharan Countries, 2007/08
Percent



Source: World Bank; National School Census Data, 2007/08.
Note: Liberia GER includes Primary and ALP.

School Access

Grade 1 Gross Intake

Intake rates are measures of access to schooling. The gross intake rate (GIR) is defined by the UNESCO Institute of Statistics (UIS) as "total number of new entrants in the first grade of primary education, regardless of age, expressed as a percentage of the

population at the official primary school-entrance age." A less frequently employed indicator is the Cohort Access Rate (CAR) which has been defined as "the share of children who have ever attended school by a certain age." The MOE school census data show a moderate increase in new entrants to Grade 1 between the 2005/06 to the 2007/08 school years. This was matched by an increase in the GIR, as Table 2.12 shows.

Table 2.12: Grade 1 New Entrants, GIR and CAR, 2005/06 and 2007/08

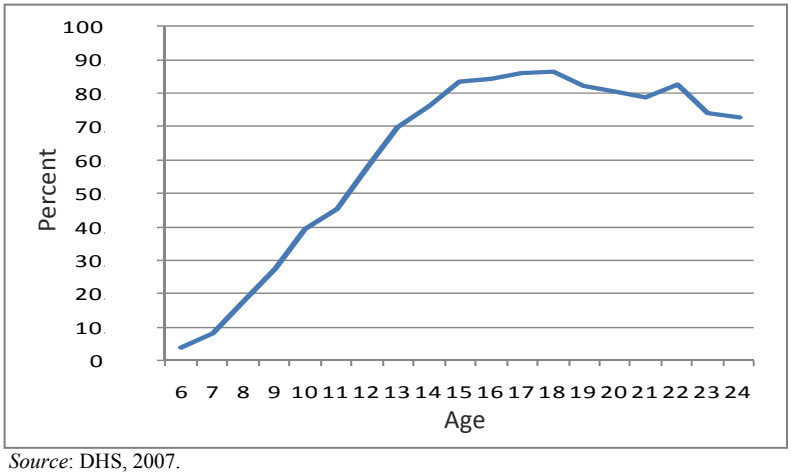
Year	G1 New Entrants	GIR	CAR
2005/06	104,628	109%	—
2007/08	119,427	113%	91%

Source: National School Census, 2005/06 and 2007/08 and CWIQ, 2007.

Schooling Profile

Most Liberian children start school at a very late age. Figure 2.5 illustrates that only 5.5 percent of children aged six years are enrolled in primary school. This share increases sharply until the age of 15 years, indicating that older children enter school. This increase ceases for children above 15 years, suggesting that those who have not attended school by this age are unlikely to ever do so. The slight increase from ages 15 to 17 years could be the effect of the Accelerated Learning Program. The decline noted for those over 18 years indicates that the older generation has less access to school.

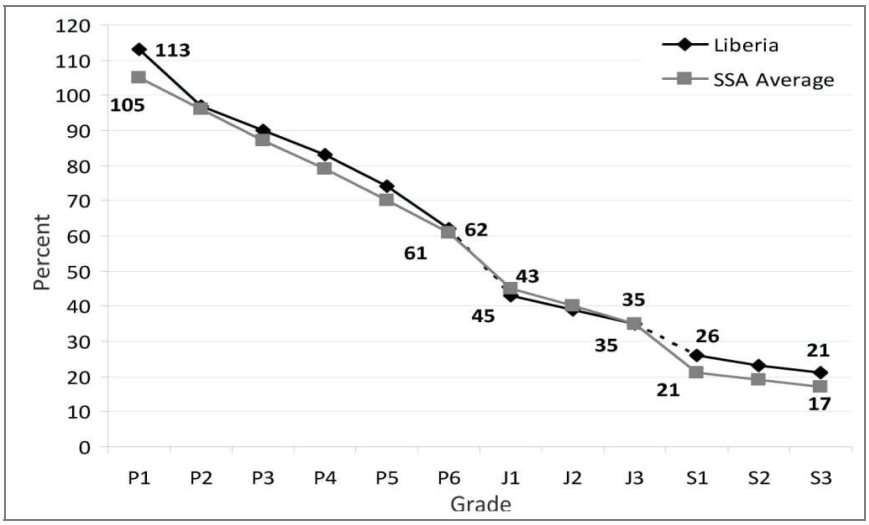
Figure 2.5: Share of Population Aged 6 to 24 Years Having Ever Accessed School, 2007
Percent



Source: DHS, 2007.

Figure 2.6 shows the schooling profile for Liberia from Primary Grade 1 (P1) to the last grade of senior high school (S3). The schooling profile presents the progression of students through grades and the transition between primary and secondary education. As such, it is based on the Gross Completion Rate (GCR), defined as "the number of students, regardless of age, completing the final year of each level of education divided by the population of the official completion age of the level." The proxy measure usually used for the number of students completing the final year is the number of final year students less the number of repeaters. Unlike the GER, the schooling profile calculation is not inflated by repetition.

Figure 2.6: Primary and Secondary Schooling Profile, Liberia and Sub-Saharan Average, 2007/08
Percent



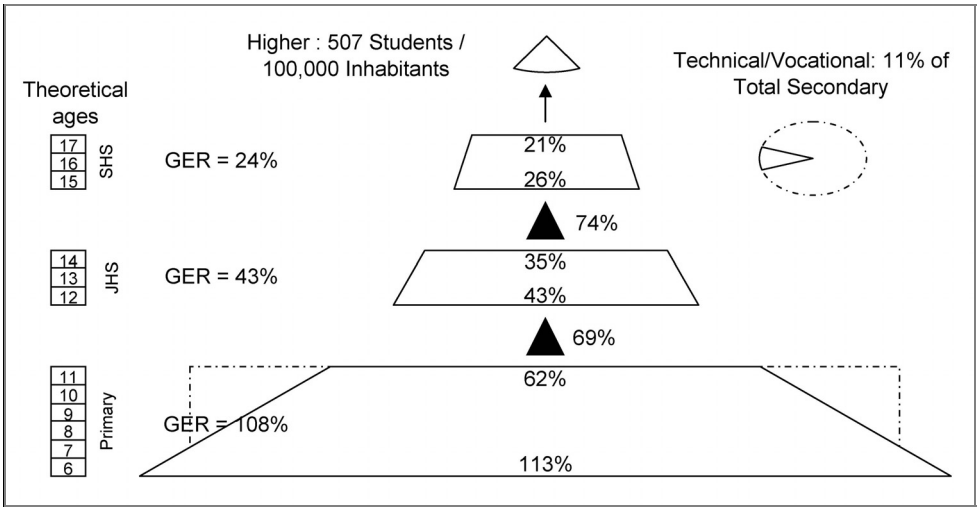
Source: EMIS, 2007/08.
Note: Primary includes ALP.

The schooling profiles show that as drop-out increases at each level, the GCR becomes lower. The first data point of the schooling profile (P1) is equivalent to the primary GIR, of 113 percent in Liberia. Figure 2.6 also shows data points equivalent to the primary GCR (P6) of 62 percent, the JHS GIR (J1) of 43 percent, the JHS GCR (J3) of 35 percent, the SHS GIR (S1) of 26 percent, and SHS GCR (S3) of 21 percent.

Liberia's schooling profile is very similar to the Sub-Saharan African average. The considerable difference between the primary and junior high school GCRs is an indication of the systemic issues that must be faced to achieve universal basic education as per the 2001 Education Law. Furthermore, the achievement of the EFA

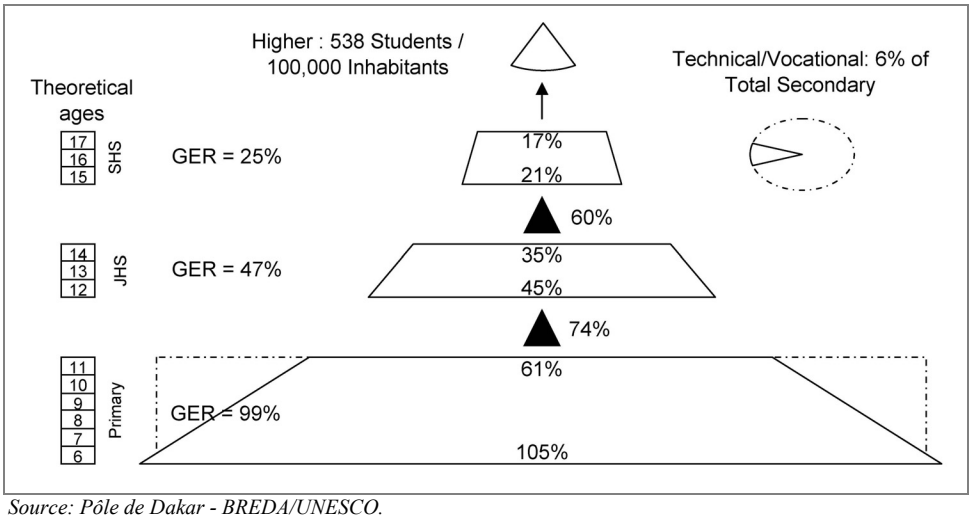
and MDG targets of 100 percent primary completion by 2015 appears to be a major challenge, despite the much improved current primary GCR: from an estimated 21 percent in 2000, it reached 62 percent in 2007/08.

Figure 2.7: Educational Pyramid for Liberia, 2007/08



Source: Pôle de Dakar - BREDA/UNESCO.
Note: GER for primary also includes ALP.

Figure 2.8: Educational Pyramid for Sub-Saharan Africa, 2006/07

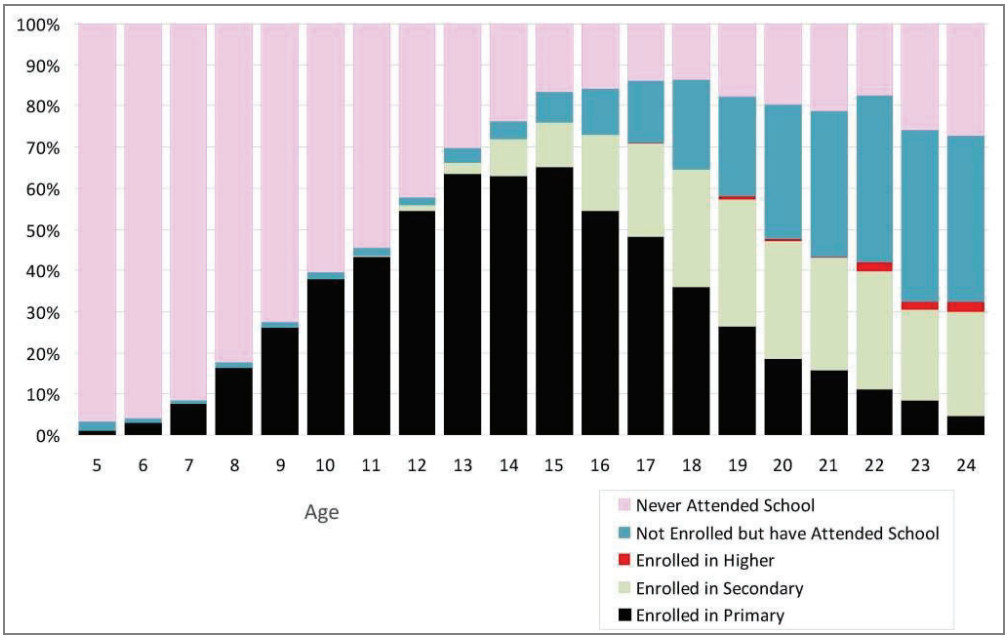


Source: Pôle de Dakar - BREDA/UNESCO.
Note: Numbers are weighted.

In addition to drop-out, grade repetition and the lack of school capacity are significant causes that explain the declining schooling profile. The educational pyramids in Figures 2.7 and 2.8 above summarize the different results obtained in the sector in terms of access, retention and completion of primary and secondary education, as well as higher education and TVET coverage, for Liberia and Sub-Saharan Africa respectively.

Figure 2.9 shows the schooling status of all individuals aged 5 to 24 years. It shows that many children start primary school at a late age, and that an average of 50 percent of teenagers is still in primary school. More importantly, the figure shows the proportions of children who have had some or no access to school, by age. It is concerning that an average of 20 percent of the teenage and young adult population has never attended school. The chances of having some education appear to be improving, given that the share of youth in school or having attended school is higher for those aged 16 to 17 years (85 percent) than for those aged 23 to 24 years (72 percent), which could mean that the younger generation faces a higher probability of access to school.

Figure 2.9: Schooling Status of Youth, by Age, 2006/07
Percent



Source: DHS, 2006/07.

Internal Efficiency

In order for all children to have access to and complete school, internal efficiency is critical. It entails ensuring that adequate resources and infrastructure are available and used effectively. Inefficiency is greatest when drop-out and repetition are high because they result in resources being utilized without obtaining the desired results.

Primary and Secondary Student Flow Patterns

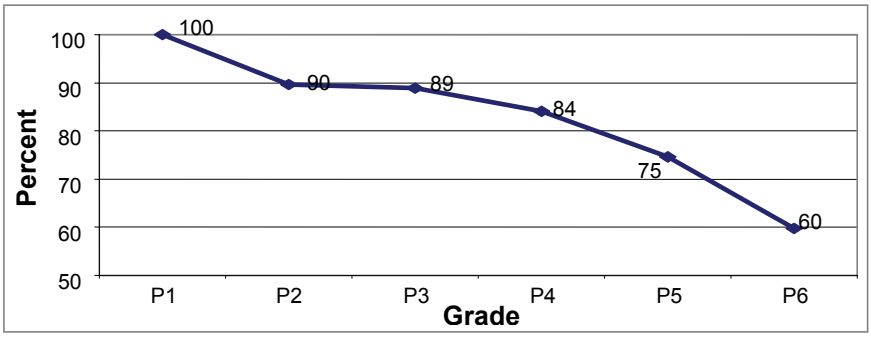
Accessing, pursuing and completing school in Liberia is a challenge, as in almost all Sub-Saharan African countries. Many children start but are unable to complete even basic education. This section provides an analysis of student's movement through the school system. Student flow patterns allow us to evaluate the system's internal efficiency by comparing the resources that the system actually consumes to produce its annual output of graduates with the resources that it would have spent in the absence of grade repetition and dropout.

The Liberian repetition rate is moderate. It is in fact slightly lower than that of neighboring Sierra Leone which operates a fairly comparable education system. Repetition rates should ideally tend toward zero. High repetition rates reveal education system internal efficiency issues and may reflect poor teaching standards. The first years of each cycle appear to pose the greatest difficulty to students. For 2007/08, the highest repetition rate was that of Primary Grade 1. More than 8.4 percent of students repeated this grade despite previously passing the national school entry examination. The second and third highest repetition rates were SHS Grade 1 (7.7 percent) and JHS Grade 1 (6.7 percent) respectively. The repetition rates gradually decrease through the primary cycle, the lowest of 12 years of schooling being Primary Grade 6 (5.2 percent). The average primary repetition rate was 5.9 percent.

The primary survival rate is 60 percent. The extent to which students are retained in the system to the end of a level is measured by the survival rate. The UIS defines the survival rate by grade as the "percentage of a cohort of pupils enrolled in the first grade of a given level or cycle of education in a given school year who are expected to reach successive grades."[11]

[11] Survival rates should normally refer to the schooling careers of true cohorts as the members make their way through the school system. However such tracking is difficult because of the data requirements and complex calculations. An alternative approach, used in this case, is to construct pseudo cohort survival profiles based on cross-sectional data for two adjacent school years (06/07 and 07/08). This method involves grade-to-grade transition rates that are then linked to obtain the pattern for the entire cycle.

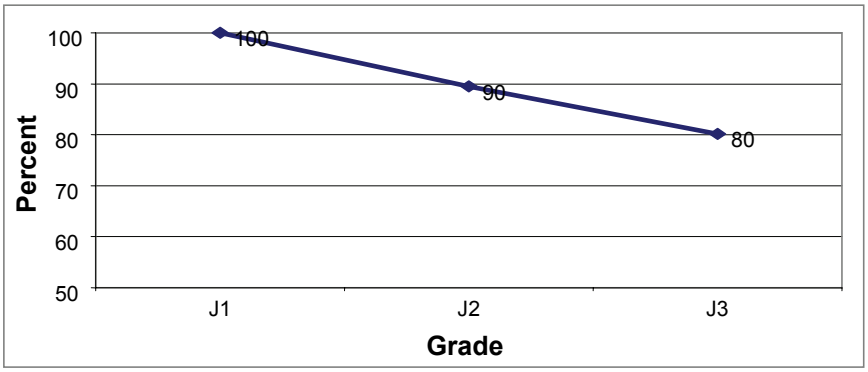
Figure 2.10: Primary Survival Profile, 2006/07-2007/08
Percent



Source: MOE EMIS data.

Figure 2.10 shows that one out of ten students drop out during Grade 1. Of those students that reach Grade 2, few drop out until Grade 4. The drop-out rate between Grade 4 and Grade 6 is again high, where a further 29 percent of the cohort is lost. These survival rates suggest that the Grade 1 drop-out rate is likely to be a demand rather than a supply issue, where students were unable to catch up in class or were required for family productive activities. It would be interesting to analyze the reasons of dropouts between Grades 4 and 6.

Figure 2.11: Junior High School Survival Profile, 2006/07-2007/08
Percent



Source: MOE EMIS data.

The JHS and SHS survival rates are each 80 percent. Figure 2.11 indicates that out of every 100 students starting JHS school, 80 reach the end of the cycle. Although it is true that primary retention is lower than secondary retention, the shorter duration of the JHS and SHS levels needs to be taken into account. This provides an indication of the efficiency of a system, the achievable ideal being that all those that begin a cycle reach the end. It follows that the lower the survival rate, the lower the system's efficiency.

The relatively low primary survival rate is typical for a poor country but improvements are attainable by reducing the high incidence of drop-out and repetition.

The transition rate between primary and JHS is 69 percent, and between JHS and SHS is 74 percent. These transition rates from primary to JHS and from JHS and SHS are similar to those in primary school. This means that transition from one education level to another is relatively smooth. Although grade repetition contributes to lower transition rates, Liberia's transition rates are reasonably high.

With the considerable increase in primary enrollment over the last three years, and the particular situation of overage students returning to education, if repetition rates remain moderate and survival and transition rates are moderate or high, the education system could face a crisis in the very near future. Immediate and appropriate actions must be taken to provide for the significant increase in student flows in post primary.

Efficiency Index

Using information from the 2007/08 school census the student flow efficiency values were calculated (See Table 2.13).[12] The methodology employed results in an underestimate of primary schooling efficiency because of assumptions about system stability and the completion of primary education in a 6 year period.

Table 2.13: Primary, JHS and SHS Efficiency Indexes, 2007/08
Efficiency Index

Level	Drop-out Related Efficiency	Repetition Related Efficiency	Overall Level Efficiency
Primary	0.72	0.93	0.68
Junior High	0.89	0.94	0.83
Senior High	0.89	0.94	0.83

At the primary level, a total of 32 percent of resources were spent on drop-out and repetition, suggesting that there is much inefficiency at this level and that a great deal of wastage occurs. Drop-out contributes more than repetition to the weak efficiency of the system.[13] This is understandable, considering the household costs associated with education, as homes cannot simultaneously support the schooling of both overaged youth resuming school after the civil conflict, and official-age children starting school.

[12] The detailed calculation of efficiency indexes can be found in Annex Tables 2.1 and 2.2.

[13] Both wastage factors are correlated however. Numerous repetitions contribute to increase drop-out, in particular due to the age factor: numerous repetitions mean that students already in their teens become young adults before finishing primary, and work and family take on greater priority, especially for young women.

As the number of overaged youths in the education system drops, the importance of primary drop-out is also expected to reduce and efficiency to increase.

Seventeen percent of resources were spent on drop-out and repetition in the secondary cycle. The small number of students who make it to the junior high and senior high levels is more resistant to drop-out, where repetition is lower and efficiency is higher. As is the case for the primary level, drop-out is the main contributor to inefficiency at the secondary level; the cost of schooling and issues related to the age of the students, most of whom are aged 17 years and above, are the main causes.

Overall, the numbers above suggest that considerable wastage occurs in education. Given the scarcity of available resources, there is an urgent need to improve internal efficiency. However, some care has to be taken to simultaneously address education quality. Efficiency at producing low quality students is just as costly to the system, because more resources would have to be spent to later get them up to the required standard.

Summary and Policy Implications

The team writing this report was fortunate that the EMIS Unit in the MOE was operational, and provided access to data from a recently completed school census. **Data issues** nevertheless meant that several months had to be spent on a thorough data cleaning exercise and that earlier data had to be treated with caution. The lesson learnt from the team's experience is that the MOE must improve supervision and monitoring of the data collection and entry process to optimize time and limited resources.

The education situation in Liberia is similar to other Sub-Saharan African countries. The Gross Enrollment Ratios, Gross Intake Ratio and Gross Completion Ratio in Liberia do not significantly differ from the SSA averages (See earlier Figures 2.7 and 2.8). The education system is also structured in a similar way to those in other Anglophone countries in the Sub-Saharan region.

Lack of clarity in the normative framework and in MOE guidelines create different understandings of the preprimary completion age and the starting age of primary schooling, which contribute to inconsistencies in the quality of education and to the large number of overage children at all levels.

Liberia has a long history of **non governmental education provision**. In the face of increasing demand for education at all levels, the government needs to leverage the public-private partnership in order to make sure that economies of scale are achieved but that poor students are not kept out of the system. The increase in public school enrollment has not been matched by an increase in seating and classrooms. This has contributed to overcrowding in public primary schools whereas nearby private and mission schools have unused spaces available. Given the resources required for establishing new schools, the government should consider supporting private and

mission schools in areas with no public schools so that they can provide places for students who would otherwise not be enrolled. This is especially necessary for the junior and senior high school levels for which government provides fewer places than private and mission schools combined.

The impact of the **Accelerated Learning Program** has not been assessed since its establishment in 1999. It is important to evaluate the learning performance of ALP graduates against that of regular primary school graduates, the flow of ALP graduates into JHS and SHS, and their learning performance at the secondary level.

Enrollment at all levels has been increasing tremendously since the end of the civil conflict. Even so, the number of primary school-aged children that are out of school is high. Many secondary school-aged children have had no education at all. Providing both universal primary school access and alternative options for those who were denied the chance of schooling is a great challenge given limited government resources. Addressing this situation successfully requires a well focused and clear strategy as well as the strong commitment of all education partners. Coordinated action as well as resolute and informed leadership by the government will be essential. Arrangements to ensure that rural families are able to send their young children to school safely will have to be implemented.

In terms of primary enrollment, barriers to the admission of children aged six years should be removed, and action taken to ensure that special needs are addressed and that children from vulnerable groups are not excluded.

With increasing primary enrollment and high transition rates, there will be dilemma between the quality and coverage of secondary and higher education levels. As more and more children complete primary school, the pressure to expand the capacity of secondary and higher education will be significant. However, in the short to medium term, there is still room for rapid expansion given the low PTR levels in JHS. The government plays a key role in enabling equitable access to the poor.

Liberia has a creditable level of enrollment at the tertiary level relative to the size of its population and to that of the body of students enrolled at lower levels. The main issue is the nature of the programs on offer. Many students are enrolled in seminaries and bible training colleges. At the universities, the arts and business programs dominate others. The challenge is to increase enrollment in those disciplines where Liberia has shortage of knowledge. A more strategic use of the existing study scholarship scheme coupled with an enrollment strategy that also encompasses programs at the school level needs to be put into place by the government.

Student flow efficiency is low. For every 100 children starting primary school in Grade 1, only 60 complete the level. Repetition rates are above five percent for all grades. Approximately 32 percent of resources at the primary and 17 percent at the secondary levels were spent on drop-out and repetition in 2007. The Student Flow

Efficiency value was just 35 percent in the same year (See Annex Table 2.3). Despite the improvements on earlier years, these figures suggest that the system is inefficient and wasteful of scarce resources. Furthermore, Liberia could not provide primary school access to all children aged 6 to 11 years in 2009, therefore the achievement of the MDG/EFA Goal 2 by 2015 will require drastic measures and efforts to get all children into school as early as possible while minimizing wastage.

CHAPTER 3: EDUCATION FINANCING

Key Findings

- The government spent 13.2 percent of recurrent expenditure on education in 2007/08, below the EFA-FTI benchmark of 20 percent.
- Total household spending on education (US$27 million) was higher than government spending (US$23 million) in 2007/08.
- The percentage of recurrent primary education spending on teachers' salaries is low (36.2 percent) due to the large number of volunteer teachers (37 percent).
- Teacher salary variations by level are minimal.
- The pupil to teacher ratio is 40 in preprimary and primary and 23 in JHS and SHS.

Chapter 1 included some macro information about government resources. This chapter focuses specifically on the financing of education, examining spending on education by source, trends, distribution of public spending, and per student spending.

National Education Expenditure by Source

The main sources of education funding in Liberia are support received from external partners, household contributions, and domestically generated resources. It is estimated that in 2006/07 contributions from donors accounted for about 49.2 percent of education financing, household contributions amounted to 35 percent, and government funding represented the balance, of only 15.8 percent of total spending on education.

Donor Support

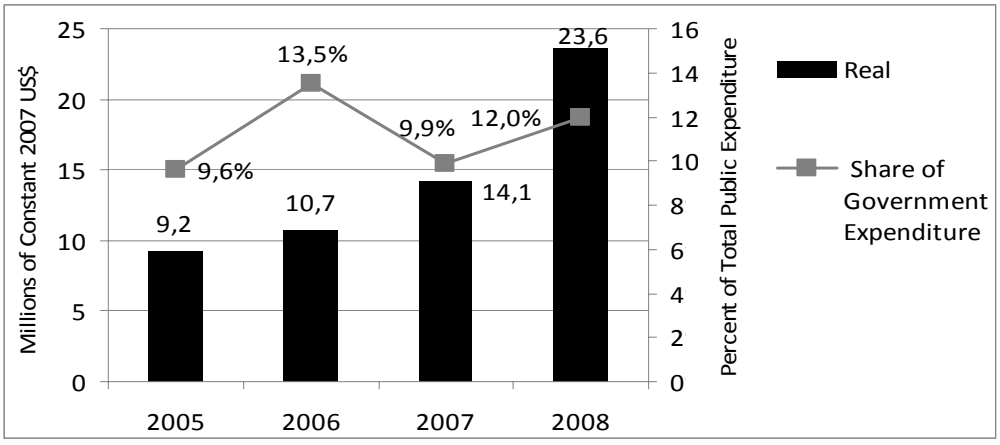
At 49.2 percent of total education financing, Liberia receives significant support from the donor community. External aid was estimated to be over three times the total government expenditure in 2006/07 (PEMFAR, 2008), although, the exact amount of donor education funding is difficult to determine as only some of the

funding is provided as budget support. A significant amount is channeled through NGOs and UN agencies. The Ministry of Planning & Economic Affairs has recently assumed the challenge of collecting data on external funding and it is hoped that the extent of the financial support provided by the donor community will be known as of the final quarter of 2009.

Public Expenditure

Since FY2005/06, government expenditure on education has been growing steadily, at an average real rate of 26 percent per year (PEMFAR, 2008 - See Figure 3.1). However these increases have largely mirrored overall increases in government expenditure and hence do not indicate that education has been given greater policy priority.

Figure 3.1: Public Education Expenditure, Real and as a Share of Total, 2005-08
Millions of Constant 2007 US$ and Percentage of Total Government Expenditure



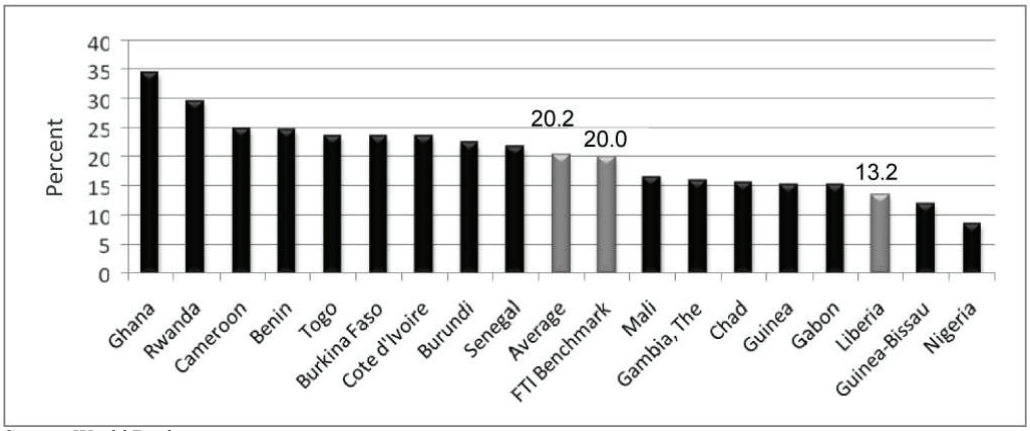
Source: Ministry of Finance Annual Fiscal Reports, 2004/05, 2005/06, 2006/07 and 2007/08 as in PEMFAR, 2007.

In FY2007/08, Liberia's education expenditure was below the average of neighboring countries, and the EFA-FTI benchmark:

1. In terms of the education allocation within the total budget, Liberia devoted 13.2 percent to education, below the EFA-FTI benchmark of 20 percent, and below the spending level of many Sub-Saharan countries (See Figure 3.2). The government spent a total of US$ 22,794,473 on education in 2007/08. Liberia's low GDP makes it difficult to reach the 20 percent benchmark.

2. As a percentage of GDP, Liberia's education expenditure in 2007/08 was worth approximately 2.9 percent (PEMFAR, 2008). This is also below other postconflict African countries such as Burundi (5.1 percent in 2005), Rwanda (3.8 percent in 2005), Mozambique (3.7 percent in 2004), and Sierra Leone (3.8 percent in 2005).

Figure 3.2: Share of Public Recurrent Education Expenditure, Selected Sub-Saharan Countries, 2007/08
Percent of Total Recurrent Public Spending



Source: World Bank.

The distribution of education expenditure across levels shows that Liberia devotes 29 percent of total public education expenditure to primary education. This is also significantly lower than the Sub-Saharan African average of 44.4 percent. The analysis was carried out for 2007/08, sharing administrative and support costs among the different levels (See Table 3.1 below).

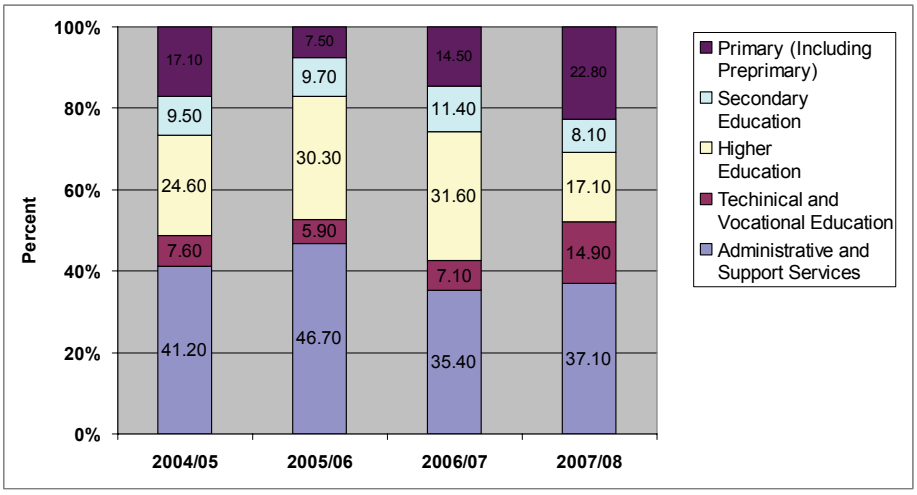
Table 3.1: Distribution of Public Education Expenditure, by Type and Level, 2007/08
US$

	Recurrent					Capital
	Personnel	Goods & Services	Transfers & Subsidies	Total	%	
Preprimary	3,155,840	1,197,923	640,187	4,993,949	22%	802,191
Primary	4,205,751	1,592,439	869,960	6,668,150	29%	1,040,481
Junior High	1,302,844	638,278	16,062	1,957,183	9%	427,823
Senior High	638,980	313,043	7,878	959,901	4%	209,826
TVET	392,785	589,118	2,595,580	3,577,482	16%	23,428
Teacher Training	236,877	294,753	0	531,630	2%	95,750
Higher Education	50,468	86,330	3,969,379	4,106,177	18%	53,202
Total	**9,983,545**	**4,711,884**	**8,099,045**	**22,794,473**	**100%**	**2,652,701**

Source: Ministry of Education, Ministry of Finance and Budget Bureau Data.
Note: This table includes teaching and administrative costs at schools, the MOE, and local education offices.

The distribution of public funds across the different levels of education has varied over time as Figure 3.3 shows. For the 2004/05 to 2007/08 period, administrative and support services and higher education consumed most of the budget with school teaching apparently receiving a surprisingly small share. Given that administrative and support service requirements vary considerably by level, their appropriate allocation to each level can significantly affect the global distribution of expenditure.

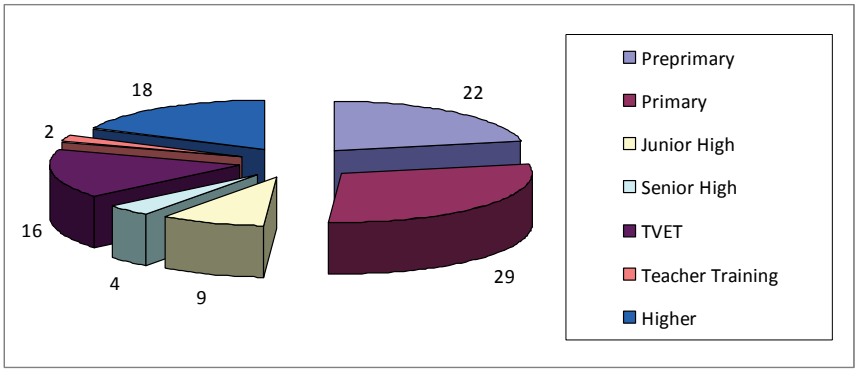
Figure 3.3: Distribution of Public Education Expenditure, by Level, 2004/05–2007/08
Percent



Source: PEMFAR, 2007 and authors' calculations.
Note: Administrative and support services finance institutions responsible for managing the education system (departments of the MOE); the expenses mainly include staff salaries and goods and services.

Figure 3.4 shows the distribution of public education spending in 2007/08 across all levels in further detail, including the appropriate imputation of administrative and support costs.

Figure 3.4: Distribution of Public Education Expenditure, by Level, 2007/08
Percent



Source: Ministry of Education, Ministry of Finance and Budget Bureau data.

The share of recurrent education expenditure allocated to primary education was 29 percent, more than double the allocation to secondary education of 13 percent (junior and senior high levels combined). Public spending on secondary education could be too low in the near future given the rapid increase in junior and senior high school enrollments. The relatively large share of funds allocated to preprimary education (22 percent) is worthy of note.

Household Spending

Households contribute significant amounts to education, especially when considered in relation to family earnings. Even with *free* primary education, parents still have to assume nonfee costs associated with schooling, such as books and uniforms. Also, schools often turn to parents for cash to cover their running costs: the school grant program created by the government to contribute to operational school funding and make up for the loss of fee income as a result of the free education policy is not yet fully functional, and the school grants often arrive late.

At the secondary level, students in public junior high schools pay approximately US$ 8.50 per year in fees, plus two dollars in examination and transcript fees. At the senior high school level students pay approximately US$ 11 per year in fees, plus a further

three dollars for examination, transcript and computer class fees. Private and faith-based secondary schools typically charge much higher fees, many in the range of US$ 120 to US$ 150 per year.

In addition to school fees, students in grades 6, 9, and 12 must pass the national WAEC examinations to proceed to the next level. The 2009/10 school year examination fees were US$ 8.50 for the junior high school entrance examination, US$ 12.70 for the senior high school entrance examination, and US$ 16.90 or US$ 21.10 for the end of secondary examination, according to the number of subjects sat (eight or nine, respectively). All of these expenses must be covered by the student's family, with the exception of the junior high entrance examination fee in the case of public school students, which is supported by the government (for which the WAEC was paid approximately US$ 214,000 in 2009/10).

Table 3.2: Public and Household Spending on Education, 2007/08
US$ millions

	Household Spending	Government Spending	Total Spending	Share of Financing by Households (%)
Primary Education	11.6	12.0	23.6	49%
Secondary Education	9.4	7.0	16.4	57%
Higher Education	6.0	4.0	10.4	58%
Total	**27.0**	**23.0**	**50.4**	**54%**

Source: Authors' estimates, based on the CWIQ Survey, 2007.

Even considering the government subsidies, the total spending by parents on the education of their children is estimated to be greater than total public expenditure. Table 3.2 shows the figures for public and household spending on education for 2007/08. Private household contributions to primary and secondary education are of 49 percent and 57 percent respectively. For 2008 for instance, Ministry of Finance data indicate that total public expenditure was US$ 23 million whereas total private spending was estimated at US$ 27 million.

Recurrent Costs

Recurrent education costs represent 90 percent of the total, capital costs making up the remaining 10 percent. At the school level, the largest part of recurrent and capital costs is spent on personnel, at an average of 39 percent (See Table 3.3 below), followed by transfers and subsidies (32 percent) and goods and services (19 percent).

Table 3.3: Distribution of Public Education Expenditure, by Level, 2007/08
Percent

	Recurrent				Capital
	Personnel	**Goods & Services**	**Transfers & Subsidies**	**Total**	
Preprimary	54	21	11	86	14
Primary	55	21	11	87	13
Junior High	55	27	1	82	18
Senior High	55	27	1	82	18
TVET	11	16	72	99	1
Teacher Training	38	47	0	85	15
Higher	1	2	95	99	1
Total	**39**	**19**	**32**	**90**	**10**

Source: Ministry of Education, Ministry of Finance and Budget Bureau Data.

The paucity of teaching and learning materials and the shortage of student seating partly reflects the low share of spending on goods and services at the school level. For higher education and TVET, the share of transfer and subsidies is 72 percent and 95 percent respectively. How institutions spend the transfers and subsidies received is uncertain because they have the autonomy to use these funds as they see fit. It is very likely that a significant proportion covers the cost of personnel not paid directly by the government, as it is improbable that personnel costs in higher education institutions should be fully covered by just one percent of expenditure. In primary education, salaries account for 55 percent of spending, a proportion similar to that for preprimary, junior high, and senior high levels.

Teacher Cost Estimates

Volunteers represent an extremely high proportion of teachers (46 percent in preprimary, 37 percent in primary, 18 percent in JHS, and 11 percent in SHS). Volunteer teachers are not on the payroll, but may receive some support from the community or from school funds. There is much pressure to regularize the status of these teachers, which presents major challenges, but the MOE has indicated the government's intention to add volunteer teachers to the payroll.

Approximately 50 percent of recurrent education expenditure is devoted to school staff salaries. Teachers' salaries account for 37 percent of recurrent education expenditure on average, and non teaching staff salaries for 10 percent. A further 16 percent is devoted to other personnel expenses. The overall proportion of recurrent education expenditure devoted to personnel is 63 percent for preprimary and primary, and 67 percent for secondary education. (See Table 3.4 below).

Table 3.4: Share of Recurrent Education Expenditure for Personnel, by Level, 2007/08
Percent

	Teachers' Salaries	Total School Staff Salaries	Total Personnel Expenditure
Preprimary	38.6	48.0	63
Primary	36.2	45.1	63
Junior High	37.7	47.3	67
Senior High	37.2	47.3	67

Source: Authors' estimates based on Ministry of Education, Ministry of Finance and Budget Bureau data.
Note: Total personnel expenditure includes all school staff, teaching and non teaching, as well as government MOE and local education office officials. The cost of volunteer and privately funded teachers is not included.

The proportion of administrative staff is relatively high for all levels (See Table 3.5). This category of non teaching staff comprises county and district education office employees in addition to school administrative staff. Senior higher school devotes the highest share of their staff budget to administration, at 18 percent, which is indicative of the lack of recruitment controls at this level. The proportions of non teaching staff at the preprimary and primary levels are lower, at nine and 12 percent respectively. The Junior High cycle devotes 15 percent of the staff budget to administration, which is more than in primary and preprimary because it includes the staff involved in the management of professional and technical schools.

Table 3.5: Distribution of Public and Community School Staff, by Type and Level, 2007/08
Number of Staff

	Preprimary		Primary		Junior High		Senior High	
	Number	%	Number	%	Number	%	Number	%
Teaching Staff								
Volunteers	4,398	42	3,449	33	373	15	88	9
Civil Servants	3,396	33	4,191	40	1,250	52	570	58
Other Private Funded	1,676	16	1,697	16	411	17	146	15
Sub-total	**9,470**	**91**	**9,337**	**88**	**2,034**	**85**	**804**	**82**
Non Teaching Staff								
Administrative Staff	973	9	1,219	12	373	15	181	18
Total	**10,443**	**100**	**10,556**	**100**	**2,407**	**100**	**985**	**100**

Source: Authors' estimates based on Ministry of Education and Ministry of Finance data.

Most of the school budget is devoted to personnel, and especially teachers. Table 3.6 shows the total payroll for preprimary, primary, and secondary schooling. Given the government's intention to add volunteers to the payroll, the table also estimates the global staff cost assuming that the volunteers earn the same salary as civil servant teachers (numbers in parenthesis). Given the high proportion of volunteer teachers in Liberia, this implies a serious increase in future costs.

Table 3.6: School Salary Costs Assumed by the Government, for Teaching and non Teaching Staff, by Level, 2007/08
US$

	Non Teaching Staff		Teaching Staff			Total Salary Expense
	Average Annual Salary	Total Salary Expense	Average Annual Salary	Total Salary Expense	Ratio to GDP per capita	
Preprimary	483	469,967	568	1,927,060 (4,426,992)	2.99	2,397,027 (6,824,019)
Primary	490	597,081	576	2413249 (4,400,640)	3.03	3,010,330 (7,410,970)
Junior High	502	187,225	590	737,943 (957,570)	3.11	925,168 (1,882,738)
Senior High	534	96,310	627	357,439 (412,566)	3.30	453,749 (866,315)

Source: Authors' estimates based on Ministry of Education, Ministry of Finance and Budget Bureau data.
Note: This table does not include non school personnel. Numbers in parenthesis are hypothetical, including estimated salaries for volunteer teachers at the same rate as for civil servant teachers. GDP per capita is US$ 190.

The salary scale for teachers is uniform across levels. Although average teacher salaries do increase in line with the level of schooling, the variations are minor. This is because of the basic flat salary scale applied in the civil service (indeed, there is no salary scale for teachers), the fact that most schools are multilevel and teachers cover various cycles, and the greater proportion of less well paid under qualified staff, which draws down the average salaries at the higher levels.

A primary school teachers' salary is three times Liberia's GDP per capita. This is slightly lower than the EFA-FTI benchmark of 3.5 times. It is advisable to raise primary school teachers' salaries given the positive impact to be expected on the achievement of the EFA and MDG education goals, through helping to attract and retain better quality teachers in the system.

Table 3.7: Relative Value of Average Teacher Salaries, for Selected West African and Post Conflict Countries, Latest Available Year
Ratio of Salary to GDP per Capita

	Primary Teacher's Salary	Junior High Teacher's Salary
Sudan	1.3	2.2
Guinea	1.7	2.9
Zambia	2.9	3.7
Madagascar	2.9	4.3
Liberia	**3.0**	**3.1**
Uganda	3.3	7.4
EFA-FTI Benchmark	**3.5**	**n.a.**
Rwanda	3.9	5.9
Sierra Leone	3.9	5.9
Guinea-Bissau	4.4	6.6
Lesotho	4.4	9.0
Gambia, The	4.5	6.5
Ghana	4.7	4.7
Senegal	4.7	5.5
Côte d'Ivoire	4.8	7.7
Nigeria	4.9	7.2
Burkina Faso	5.2	9.3
Niger	5.5	8.5
Togo	6.1	8.9
Burundi	7.8	9.3

Source: Authors' estimates based on World Bank data, 2008; Ministry of Education, Ministry of Finance and Budget Bureau data.
Note: Data for Liberia is from 2008, for other countries the latest available year was used, from the 2005-08 period.

Liberia pays its teachers less, in relation to GDP, than most neighboring and postconflict countries, for both primary and junior high school levels (See Table 3.7). The purchasing power of teachers' salaries is low in Liberia, which has implications for the quality of teachers recruited, given the relatively small pool of prospective candidates and the competition for their services.

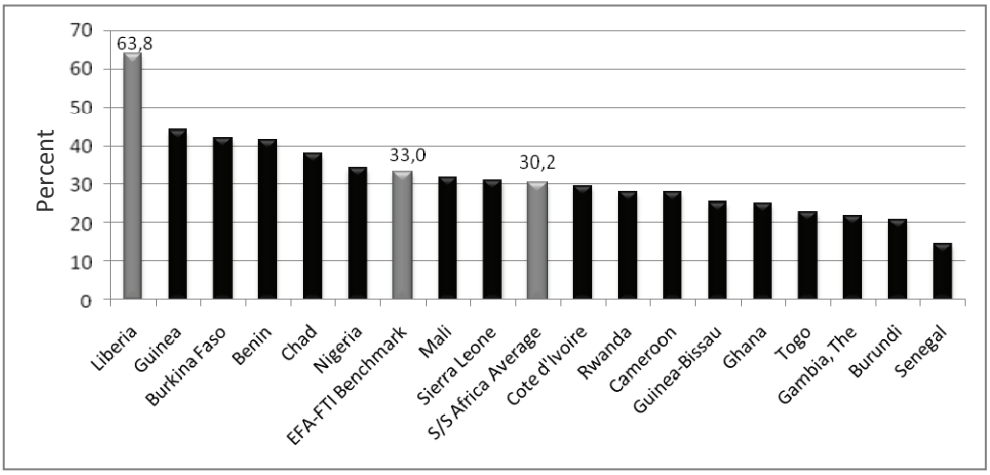
Non Teacher Salary Costs

Achieving the right balance between what is spent on salaries and what is spent on other teaching/learning inputs is difficult. Liberia currently devotes just over one-third of recurrent education expenditure to teaching and learning materials and other necessary inputs. For primary education however, the proportion is almost the double, at 63.8 percent. This is well beyond the EFA-FTA benchmark of 33 percent for the

primary level, and above the Sub-Saharan African average. Figure 3.5 compares Liberia's share of recurrent expenditure spent on inputs other than teachers' salaries with those of selected West African and postconflict countries.

Figure 3.5: Share of Recurrent Primary Education Expenditure Devoted to Expenses Other than Teachers' Salaries, Selected West African and Postconflict Countries, MRY

Percent



Source: Authors' estimates based on World Bank, Ministry of Education and Ministry of Finance data.
Note: Data for Liberia is from 2008, for other countries the latest available year was used, from the 2005-08 period.

Liberia's extremely high proportion of spending devoted to expenses other than teaching salaries at the primary level is probably artificial. Indeed, the figures of teacher salary spending are vastly underestimated as a result of the great number of volunteer teachers (37 percent of all primary teaching staff), inflating the supposed share of non teaching expenditure as a result. If all 3,449 primary volunteer teachers were to be paid as civil servants, the percentage of primary education recurrent spending other than teachers' salaries would drop to 34 percent, close to the EFA-FTI benchmark.

Further factors are expected to have an indirect deflationary impact on the share of recurrent expenditure devoted to non teaching salary items: (i) as more teachers undergo training and obtain qualifications, the average salary will increase; (ii) student enrollment in public schools is expected to grow and result in the need for more teachers and other inputs; and (iii) the teachers' salary scale, to be introduced imminently, is anticipated to raise wages for all levels.

In JHS and SHS levels, Liberia also appears to be spending more on inputs other than teachers' salaries than almost all other West African and postconflict countries. The shares of spending on inputs other than teachers' salaries for JHS and SHS are 62.3 percent and 62.8 percent respectively. Although there is no EFA-FTI benchmark for these levels, Liberia's percentage is much higher than Sub-Saharan African averages, of 38.6 percent for JHS and 40.6 percent for SHS.

Per Student Spending

Without taking the real cost of volunteer teachers into account, the cost of education per student in 2007/08 started at US$ 13 for preprimary, was US$ 17 for primary, US$ 40 for JHS, and US$51 for SHS[14] (See Table 3.8).

Table 3.8: Public Recurrent Spending Per Student, by Level, 2007/08

	Amount (US$)	Share of GDP Per Capita (%)	Ratio to Primary Per Student Spending (Factor)
Preprimary	13	7.1	0.8
Primary	17	9.4	1.0
Junior High	40	21.0	2.4
Senior High	51	25.9	3.0
Teacher Training	1,148	504.7	67.5
TVET	752	330.7	44.2
Higher Education	224	98.5	13.2

Source: Ministry of Education, Ministry of Finance and Budget Bureau data.

Preprimary and primary per student spending levels are quite close, due to their being little difference in teaching practices between the two levels. Junior and senior high school per student spending levels are significantly higher. This is due mainly to the generous pupil to teacher ratio resulting from the use of specific subject teachers at the secondary level, the relatively high proportion of other staff, and more expensive teaching/learning materials.

[14] Including the additional estimated cost of volunteer teachers, these figures would rise by half, but still be underestimates: the estimated unit costs do not take household expenditure and donor inputs into account, which are predominantly targeted at school level education. Conversely, the difference between school per student spending and that of teacher training, TVET, and higher education is likely somewhat lower than Table 3.7 suggests.

The high per student spending outside and beyond the school system is striking. Per student spending on teacher training is above 500 percent of GDP per capita, and allegedly costs up to 67.5 times more than primary education. This is due to the cost of reopening the three residential public teacher training institutions, the low initial enrollment of only 463 students, the recruitment of lecturers from the Liberian diaspora at relatively high salaries, and high running costs. Notwithstanding the fact that Liberia desperately needs trained and competent teachers, the level of spending on teacher training per student appears to be unsustainable and urgent action needs to be taken to reduce it.

TVET per student spending is also high, at over 300 percent of GDP per capita, and up to 44.2 times more than for primary education. This is primarily due to the high staff salaries and materials and equipment maintenance and servicing costs that are inherent to technical and vocational training.

Regardless of the level, per student spending is currently most largely determined by the staff payroll. The pupil to teacher and pupil to other staff ratios, as well as the average salaries of teachers and non teaching staff all contribute to determine the total payroll and directly influence annual per student spending. Some consideration is therefore given to these factors here.

Teachers salaries are low, but the government granted them an increase in 2009. Volunteer teachers aside, all teachers in public institutions are employed on permanent civil service terms. There is no provision for temporary or contract teachers, even unqualified. Salaries are based entirely on academic qualifications, with no variation related to experience or on-the-job performance. Teacher salaries have however been steadily increasing, from US$ 35 per month in 2005, to up to US$ 100 per month in 2009.

Table 3.9: Average Annual Teacher and Non Teacher Salaries, by Level, 2007/08
US$

	Preprimary	Primary	JHS	SHS	Ratios	
					JHS to Primary	SHS to Primary
Non Teachers	483	490	502	534	1.04	1.09
Teachers	568	576	590	627	1.04	1.09

Source: Authors' estimates based on Ministry of Education and Ministry of Finance data.

At present the teacher salary structure is very flat, with minimal differentiation between different qualification levels. The ratio of the average secondary teacher's salary to the average primary teacher's salary is only 1.04 to 1 as Table 3.9 shows.

Student to teaching staff ratios are better in secondary than in primary schools, as shown by Table 3.10. In preprimary and primary, there is one teacher on average for every 40 pupils, while at the secondary level, the average is of one teacher to every 23 students. In terms of non teaching staff, the higher load related to secondary school administration is confirmed, as one member of staff is required for every 115 students on average, whereas in primary education, one administrative staff is sufficient for every 310 pupils. The lower the pupil to staff ratios, the higher the per student spending, all other things being equal.

Table 3.10: Pupil to Teacher and Pupil to Other School Staff Ratios in Public Institutions, by Level, 2007/08
Ratios

	Preprimary	Primary	JHS	SHS
Pupil to Teacher Ratio (PTR)	39.9 to 1	40.5 to 1	23.8 to 1	23.2 to 1
Pupil to Other School Staff Ratio	385.2 to 1	310.7 to 1	129.7 to 1	103.5 to 1

Source: Authors' estimates Based on Ministry of Education data.
Note: PTR includes all teachers (volunteer teachers, civil servants and other private funded teachers).

Compared with most West African and postconflict countries, Liberia spends a lower proportion of its GDP on education (See Table 3.11 below), and less than the Sub-Saharan African average, which is most likely due to the large number of unaccounted volunteer teachers. Although direct comparisons of per student spending among West African and postconflict countries should be considered with care due to the differences in GDP and different computing methods, the table does offer some useful perspectives. Unsurprisingly, the data suggest that per student spending is higher in higher education than at the school level. The table also shows that for most countries in West Africa, there is a marked difference between the cost of primary and lower secondary education; where this is not the case, as for Liberia, the structure and staffing of the two levels are similar. For many countries there is an increase in per student spending between lower and upper secondary levels, that is not noted for Liberia. This is probably due to the fact that teachers at the lower and upper secondary levels earn similar wages in Liberia, and the level of special equipment and materials needed in Liberian junior high schools is very similar to that needed for senior high schools.

Table 3.11: Per Student Spending for Selected West African and Postconflict Countries, by Level, Latest Available Year
Percentage of GDP per Capita

	Education Level				GDP per Capita (US$)
	Primary	JHS	SHS	Higher	
Ghana	19	35	55	297	560.9
Burkina Faso	17	19	63	244	429.9
Gambia, The	16	26	47	253	307.1
Burundi	15	64	136	363	110.5
Senegal	15	16	113	246	760.9
Nigeria	14	20	25	111	797.0
Benin	13	11	32	134	545.1
Sub-Saharan Africa Average	**11**	**29**	**57**	**314**	**1,699.7**
Mali	11	26	117	187	490.1
Guinea-Bissau	11	17	31	124	185.0
Togo	10	19	32	148	344.1
Liberia	**9**	**21**	**26**	**98**	**176.3**
Sierra Leone	9	29	30	340	252.5
Rwanda	8	51	63	790	263.5
Cameroon	7	32	37	80	1,008.2
Guinea	6	11	9	153	361.3
Chad	5	19	25	420	624.9
Côte d'Ivoire	5	19	19	220	927.9

Source: Authors' estimates based on World Bank Data, 2008 and Ministry of Education, Ministry of Finance and Budget Bureau data.
Note: Data for Liberia is from 2008, for other countries the latest available year was used, from the 2005-08 period.

Capital Costs

Capital expenditure is increasing as a percentage of overall public expenditure as a consequence of the large scale destruction of educational institutions during the civil conflict and the exploding enrollment, both requiring considerable investment in infrastructure. Donor partners are providing much of the funding for school construction but the level of work required is such that significant amounts of government funds are also being utilized to this end.

In early 2009, the MOE's Division of Educational Facilities estimated the cost of building a school at US$102,920. This amount is for the construction of a 2 block, 6 classroom primary/junior high school, including a principal's office, a teachers' preparation room, a reading room, an 8 unit VIP latrine block and a well with a hand pump, and includes the cost of planning (1.8 percent), a contingency fund (5 percent), and management and supervision costs (13 percent).

The various estimates of the cost per classroom include: (i) the cost of an empty primary/junior high school classroom, at US$ 3,433, excluding everything but the cost of the preliminary work; (ii) the cost of a furnished classroom, at US$ 5,044, including furniture for students (US$ 25 per student), classrooms (US$ 40 per set), the principal's office, the teacher preparation room and the reading room; (iii) the cost of an empty classroom including school latrines and drinking water, at US$ 17,153; and (iv) the cost of a furnished classroom including school latrines and drinking water, at US$ 18,318. This last estimate, calculated by dividing the estimated school construction cost by the number of classrooms, appears to be the most acceptable.

The MOE is also planning the construction of a number of teacher houses in rural areas, at an estimated cost of US$ 20,000. This is for a basic 2 bedroom house with an external VIP toilet and a kitchen. This project aims to quell the lack of suitable accommodation in rural areas, cited by many urban school teachers as the reason for not taking up rural positions. As such, the goal is to attract more trained and qualified teachers to rural areas, and improve the quality of rural education. The sustainability of building teacher housing will have to be assessed in the light of other demands for infrastructure, and an evaluation of whether there are more cost-effective ways of attracting teachers to rural schools.

Summary and Policy Implications

Lessons learnt from the experiences of other developing countries suggest that 20 percent of recurrent expenditure should be devoted to education. Liberia currently allocates 13.2 percent of its budget to the sector, which has been constant despite budget increases in real terms. To increase education spending to 20 percent may not be immediately possible in Liberia given the many competing priorities and the limited available funds, which have been further reduced by the ongoing global financial crisis. Additionally, other factors such as enrollment rates and corruption in the system can have just as significant an impact on the achievement of education goals. Nevertheless it is possible and necessary for Liberia to significantly increase the education budget, both to confirm the government's commitment to providing education for all, and in recognition of the fact that progress and achievements in all sectors are directly or indirectly dependent on education.

Fund allocations among levels and the monitoring of spending should be improved. Present allocations among levels suggest the under funding of some levels, particularly secondary, with the consequent impact on quality. How funds received as transfers and subsidies are utilized, including those under the free public primary education program, is not fully known or appropriately monitored, which leaves room for their inappropriate use and minimal returns on investment. In particular, it is hoped that the monitoring system being introduced by the Ministry of Planning & Economic Affairs will provide greater visibility and transparency of the probably considerable amounts of donor support being channeled directly to NGOs and UN agencies, and how these amounts are being spent.

Households spend more on education than the government. Given the high level of poverty in Liberia and the fact that costs increase as students progress through grades, a cost reduction strategy would be an effective way to improve retention, completion and transition to higher levels, especially for poor children. The government has made a start by introducing fee-free primary schooling for public and community schools. At the post primary level, fee scholarships targeting very poor families are worth considering.

Post school per student spending is unsustainably high, especially for teacher training and TVET. Given the urgent need for trained and competent teachers, teacher training alternatives that are cheaper than the RTTIs and of similar or better quality need to be found and utilized. The experiences of other Anglophone countries in the subregion suggest that an appropriately tailored distance learning program and a cumulative modules program may be the best options.

The secondary pupil to teacher ratio should be increased. Secondary teachers appear to be underutilized on the basis of the relatively low pupil to teacher ratios and average workload, making it possible for many teachers to have more than one job. Increasing the secondary pupil to teacher ratio should reduce per student spending without significantly affecting quality.

The number of volunteer teachers, reaching 46% in primary, is a potential structural issue of importance. Further analysis is required to estimate (i) how long they work as volunteers before receiving proper training and acquiring civil servant status; (ii) to what extent they are financially supported by communities; (iii) if they are motivated by long-term teaching careers, even with volunteer status; and (iv) what proportion are qualified to teach. Liberia's education system will only be sustainable if these volunteers are trained and offered reasonable career prospects.

It is worth establishing a specific salary scale for teachers to contribute to staff motivation and retention, which directly affect the quality of education. The slight related cost increase is considered to be amply justified given the potential of the profession to bring about positive change, stability and development at this point in the country's history. Despite the fact that personnel is the single largest school expenditure, teachers' salaries offer little purchasing power and are unattractive to the kind of quality individuals the system urgently needs. Best practices suggest that salary scales should reflect the level taught, qualifications held, and experience acquired, none of which are factored into current teacher wages. It is believed that such a scale is under study by the public service authority, but as yet nothing has been made public.

Available data indicate that inputs other than teachers' salaries absorb most of education spending. Given the state of schooling in Liberia following the civil conflict and the beginning of free primary education, this is understandable. However, quality teaching and learning materials might be wasted without quality teachers able to make good use of them. Once the deficiencies caused by the civil conflict have been

addressed, the need to devote a high share of expenditure to non salary inputs should diminish and a more realistic and sustainable situation nearer to the EFA-FTI benchmark be achieved.

The estimated cost of furnished, standard MOE concrete classrooms are high, even without taking management and supervision fees into account. Given the amount of infrastructure required and the financial resources available, the MOE should seriously consider less expensive alternatives of similar quality, plenty of which are available in neighboring countries, on the Internet and through local construction experts.

The MOE needs to consider how to attract teachers to rural schools. The sustainability of the current option being considered, of building rural teacher accommodation, should be revised in the light of total infrastructure needs and to evaluate whether a cheaper alternative for attracting teachers to rural areas might exist.

CHAPTER 4: QUALITY OF EDUCATION, SERVICE DELIVERY AND LEARNING OUTCOMES

Key Findings

- Many schools destroyed or damaged during the civil conflict sill need repairs or reconstruction.
- The pupil to textbook ratio is 2 to 1 and many students do not have learning materials either.
- Just 40 percent of primary school teachers are trained or certified and only 12 percent are female.
- The average score of the Early Grade Reading Assessment was 43.7/100.
- WAEC examination average pass rates in 2007 were 89 percent for Grade 6, 99 percent for Grade 9, and 80 percent for Grade 12. However, almost no students received a distinction.

Fourteen years of civil conflict and many years of prior neglect left most educational institutions in poor condition at the onset of peace. In addition, competent and qualified teachers were in very short supply, school curricula were outdated, and textbooks and other teaching/learning materials were lacking. Since then some improvements have been made but many challenges still remain, such as the proliferation of substandard institutions in some areas, the absence of much needed facilities in others and the dearth of trained and competent teachers. All of this is complicated by the rapid increase in numbers accessing and completing primary education.

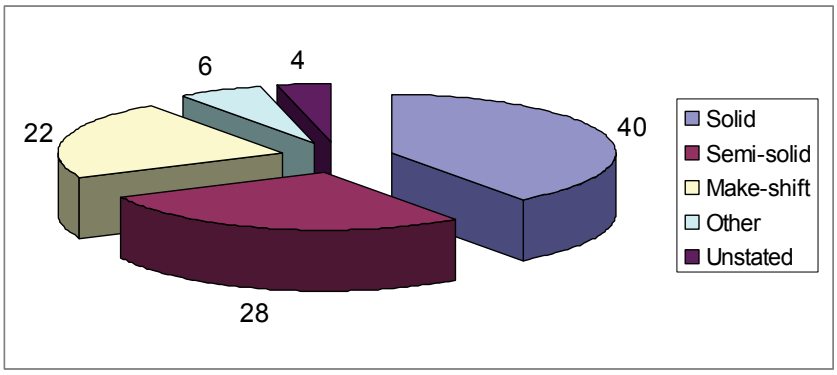
Data on student enrollment and the efficiency of the education system have been analyzed and discussed in Chapter 2. Chapter 3 looked at education financing, and in particular at the public and household spending and unit costs by level. In this chapter the focus is on the quality of education. In particular, attention is given to the inputs and conditions that influence learning outcomes and hence the quality of education provided. It also outlines learning outcomes in early grades and for the end of each school cycle.

Learning Conditions in Preprimary, Primary and Secondary Schools

Availability and Suitability of Infrastructure and Facilities

Schools differ markedly in terms of their physical condition. The majority of schools are not purpose built. In fact, many are converted homes. Some have been reasonably maintained but the majority is in need of renovation and/or repair. Figure 4.1 and Table 4.1 below provide a summary of the situation.

Figure 4.1: Distribution of School Infrastructure, All Education Levels, by Type, 2007/08
Percent



Source: National School Census Report, 2007/08.

Only 40 percent of schools are built with solid materials, showing the dire state of school infrastructure (See Figure 4.1). These schools are built of cement/concrete or reinforced clay/mud blocks; *semi-solid* schools are partly built of thatch; *make-shift* institutions are built wholly of thatch, sticks and tarpaulin; and *other* schools are housed in churches and mosques.[15] Furthermore, the majority of schools throughout the country are in need of repairs (See Table 4.1 below).

[15] It is difficult to assess school conditions by education levels because most schools in Liberia offer a selection of cycles.

Table 4.1: Number of Schools, All Education Levels, by Condition, 2007/08
Number

	Intact/New /Repaired	Minor Damage	Major Damage	Destroyed	Unstated	Total
National	1,201	1,761	413	583	256	4,214

Source: National School Census Report, 2007/08.

The fact that 583 schools destroyed during the civil conflict have yet to be rebuilt indicates the magnitude of the classroom availability problem. The situation is compounded by the fact that very few schools have specialist rooms such as reading rooms/libraries and hardly any secondary schools have a workroom dedicated to practical technical/vocational work, or a science laboratory. Moreover, visits to schools with purpose built laboratories revealed that most have been converted to classrooms as a consequence of the increasing demand for schooling and the high costs associated with providing, running and maintaining laboratories.

In addition to the poor state of the infrastructure, most schools lack the ancillary facilities necessary to provide a safe and sanitary learning environment. Many schools lack toilets/latrines and sources of drinking water; and those with toilets tend to have too few to allow for separate male, female and staff facilities. In rural areas particularly, many schools rely solely on streams and rivers for their water supply and yet lack basic storage containers. Thus, there is much potential for student and staff health problems in schools.

Lastly, furniture for students and teachers is in short supply. Apart from the availability issue, the design and quality of the furniture should be improved, as that currently being used has a very short life span.

Availability and Suitability of Teaching and Learning Materials

Most students cannot afford learning materials, and the problem is acutest for poor families in rural areas, where schools also lack the resources to provide them. The availability and quality of teaching and learning materials in schools vary significantly. Whereas some mission schools are well-equipped, most rural community schools possess poor facilities and materials; indeed, many rural schools even lack black-boards. Due to poverty, most students are unable to make up for this lack of materials. For many very poor children, just purchasing exercise books and writing materials is a financial burden, despite the fact that they are available locally in large quantities and at low cost.

Half of students still do not have textbooks. Apart from basic teaching and learning materials, Liberia also faces significant challenges in terms of curricula development and textbook availability. The curriculum in use at the time of drafting this report dates back to the mid-1990s. A new curriculum has been developed but is yet to be trial

tested. Textbooks have recently been procured, bringing the pupil to textbook ratio down to 2 to 1; previously, a textbook had to be shared among three primary pupils, and the same ratio applied for SHS. The situation was even slightly worse at the JHS level, where the student to textbook ratio was approximately 4 to 1.

Liberia uses textbooks that were written for other Anglophone countries. Even the latest textbooks procured by the government were not written specifically for the Liberian curriculum; instead, the MOE chose among a selection of textbooks written for other countries those it believed to be best suited to the national curricula. Although they cover much of the Liberian curriculum, the names and examples will often be unfamiliar to Liberian children.

Class Size and Pupil to Teacher Ratio

Classroom size varies markedly from one geographical area to another and from one level to another. Making sense of quoted classroom sizes is difficult because the majority of classrooms are of nonstandard sizes and many cannot be fully utilized because of their state of bad repair. As a result, average classroom size is not a particularly appropriate indicator. During school visits nationwide, the authors have noted that classroom sizes tend to be much higher in urban areas, with the associated greater tendency to overcrowding.

School sizes also vary considerably. Table 4.2 shows average school sizes to be quite small (from 87 students per junior high school to 170 students per senior high school) reflecting the existence of a plethora of small schools. The figures do conceal important variations however: some county capitals have very large schools. This dispersion of institutions favors student access by reducing travel time, especially in rural areas.

Table 4.2: Average School Sizes, by Level, 2007/08
Number of Students

	Preprimary	Primary	JHS	SHS
National	123	138	87	170

Source: National School Census Report, 2007/08.

The real pupil to teacher ratio is very difficult to measure. MOE records do not indicate the level for which teachers are employed. Most teachers teach at more than one level in the same school, or may teach more than one shift; some are doubly employed in public and private schools. Much double counting of teachers occurs as a result. On the other hand, teachers may only give a few classes per level, and for only a small part of the week. All of the above affect the reported pupil to teacher ratios

(PTRs). Table 4.3 presents the pupil to teacher ratios based on responses to the 2007/08 school census questionnaire.

Table 4.3: Pupil to Teacher Ratios, by Level, 2007/08

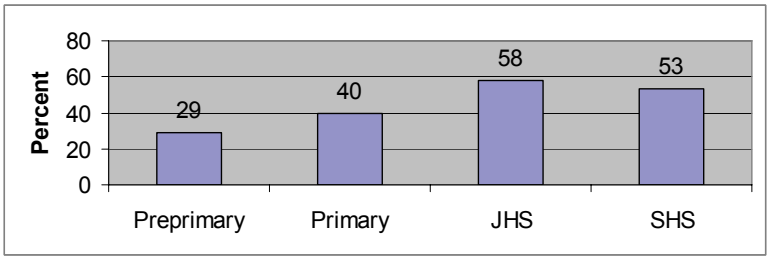
	Number of Students	Number of Teachers	PTR
Preprimary	374,896	9,469	39.6 to 1
Primary	378,632	9,338	40.5 to 1
JHS	48,335	2,034	23.8 to 1
SHS	18,684	804	23.2 to 1
Total	**820,547**	**21,645**	**37.9 to 1**

Source: National School Census data, 2007/08.
Note: Teachers are not double counted. Estimates include all teachers (volunteer teachers, civil servant teachers and privately funded teachers). These PTRs are for public and community schools only.

Characteristics of School Personnel

Few teachers are trained or certified. For the primary cycle, the proportion is of barely 40 percent, and reaches a high for JHS, at 58 percent (See Figure 4.2). Unfortunately in Liberia, even those teachers who are trained may not be adequately trained. Many are not necessarily trained for the level at which they teach or may have only followed an emergency crash course of a couple of months provided by an NGO. There is presently no training program for teachers at the preprimary level and training for JHS teachers is yet to resume. Finally, very few teachers are trained to teach at the senior high level because of the general lack of appeal of the profession to high school graduates.

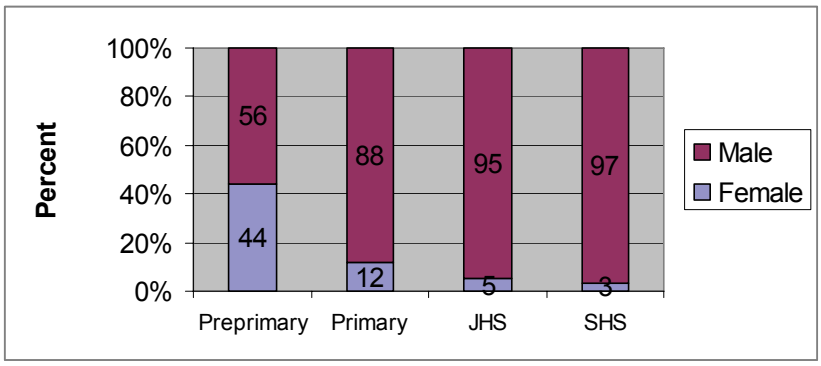
Figure 4.2: Share of Trained/Certified Teachers, by Level, 2007/08
Percent



Source: National School Census Report, 2007/08.

The great majority of Liberian teachers are male (See Figure 4.3), from 88 percent of primary teachers, to 97 percent of SHS teachers. This reflects the low attractiveness of the profession to women, the gender-biased nature of residential teacher training programs, and the little efforts made to recruit female teacher trainees. Deliberate and conscious efforts to address these fundamental issues have only begun in the last two years.

Figure 4.3: Gender of Teachers, by Level, 2007/08
Percent



Source: National School Census Report, 2007/08.

Few teachers are specialized by level. The majority teaches various grades and levels; only 18.4 percent of civil servant teachers teach a single grade (EMIS 2008). In terms of level, 62 percent of primary teachers are exclusive to the cycle (similar to SHS), while 38 percent also teach preprimary, JHS and SHS. At the junior high school level, only 38 percent of teachers are specialized in the cycle.

The majority of teachers are senior. Although Liberia has a young population with approximately 55 percent of the population under the age of 21 years, less than three percent of teachers are under 30, whereas 38 percent are over 50 and approximately 66 percent are between 40 and 54 years (Housing and Population and Census, 2008). The explanation is that most teachers were recruited prior to the civil conflict and the RTTIs only resumed operations in 2008. Given the average life expectancy of 45.3 years (World Development Indicators Database, May 2007), there is an urgent need to attract younger people into the profession.

Barriers to Improving School Performance

To improve the performance of Liberia's schools, certain barriers should be removed and their removal should be monitored. There barriers have been identified including the perspectives of education administrators, parents and teachers. The administrators' opinions are contained in the latest County Education Officers report and are summarized in Table 4.4. Both school level constraints and issues related to the CEO have been included. It is not possible to differentiate between primary and secondary schools because often only general statements are reported. The top challenges mentioned are the lack of trained teachers and instructional materials.

Table 4.4: Constraints to Improving School Performance, According to CEOs, 2008
Number, and Percentage of Times Mentioned

	No.	%
Lack of trained teachers	8	62
Lack of instructional materials	8	62
Inadequate office facilities	7	54
Inaccessibility/logistics	6	46
Inadequate/state of repair of classrooms	5	38
Mobility of DEO	4	31
Payment of teachers	4	31
Overcrowded classes	3	23

Source: County Education Officers Quarterly Report, Sep-Dec 2008; Department of Instruction, Ministry of Education, January 2009.

Early Grade Reading Assessment Student Learning Outcomes

USAID carried out an Early Grade Reading Assessment (EGRA) in Liberia in July 2008. EGRA assessments use empirical data to track progress toward improvements in the quality of early grade reading instruction, with particular focus on early skills and the ultimate goal of promoting fluent reading and comprehension. The aim in this instance was to assess students' reading skills when they begin primary education. With a Cronbach's alpha of 0.80, the test is a reliable instrument to measure students' achievement; a value greater than 0.70 is satisfactory.[16]

[16] Cronbach's alpha is a coefficient of reliability. It is commonly used to measure the reliability of a psychometric test score for a sample of examinees. One is the highest alpha value and some professionals request more than 0.7 to use the test as an instrument.

The tests include various fundamental reading activities:

(i) Print orientation while reading (3 items);

(ii) Letter identification (100 items);

(iii) Phonetic awareness (10 items);

(iv) Reading familiar words (50 items);

(v) Reading unfamiliar words (50 items);

(vi) Passage reading and comprehension (5 items); and

(vii) Listening comprehension (3 items)

The evaluation was based on a sample of 840 students from 47 schools. The sampling approach first used a simple random sample of nationally representative schools, proportional to enrollment. Then 10 students per grade were randomly picked for both Grades 2 and 3 in each selected school, among all the classes of that grade.

General Results

The average score on the EGRA test was 43.7/100, below the level deemed satisfactory.[17] Although still being below the threshold of 50 percent correct answers, Grade 3 students achieved a better average score (47.6/100) than Grade 2 students (40.0/100).

The distribution of students' scores around the mean shows that the total score and the score by grade follow a normal distribution, meaning that almost the same number of students achieve scores above and below the mean (See Table 4.5 below):

(i) The weakest 25 percent of students achieved less than 32.6/100.

(ii) 50 percent of students achieved less than 42.8/100

(iii) 75 percent of students achieved less than 55.2/100

(iv) The best 25 percent of students achieved a score higher than 55.2/100.

[17] Each of the 221 items was awarded a point per correct answer. The total score out of 221 was then rescaled to 100 to facilitate the interpretation of results.

Table 4.5: Distribution of EGRA Scores, by Grade, Gender, and Type of School, 2008
Scores out of 100

	25% of scores are below …	50% of scores are below …	25% of scores are above …
Grade			
Grade 2	30.3	38.9	50.2
Grade 3	35.4	47.1	58.8
Gender			
Boys	33.0	44.8	55.7
Girls	31.7	40.3	54.3
Type of School			
Public	31.2	39.8	51.6
Private	34.8	46.6	57.5
Mission	44.8	54.6	65.6
Community	29.9	39.8	54.7

Table 4.5 highlights disparities in terms of gender and type of school: on average, boys perform slightly better (45.1/100) than girls (42.0/100); and students from mission schools (51.3/100) outperform their private school (47.5/100) and public and community school (41/100) counterparts.

Results by Domain of Competence

This section examines the results obtained for each of the seven fundamental reading activities listed above:

1. **Orientation point while reading is mastered by 83.2 percent of students** (See Table 4.6). This basic exercise assesses whether students know where to start reading a paragraph, which direction to follow and where to continue reading at the end of a line.

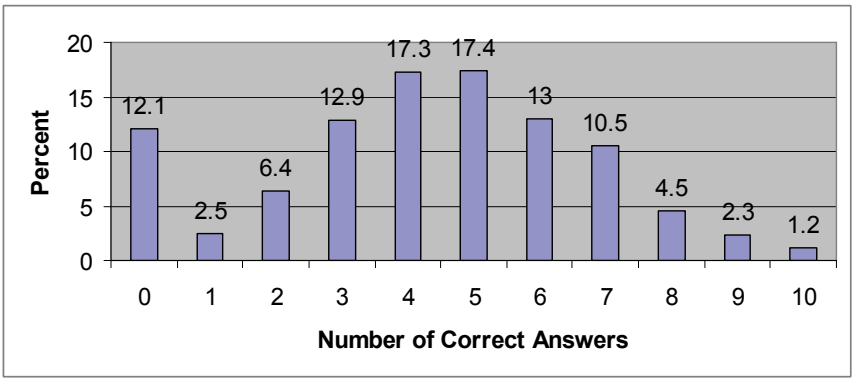
Table 4.6: Share of Students who Master Reading Orientation, 2008
Percent

	Share that knows where to start reading	Share that knows where to start reading and in which direction
Grade 2 Students	90.4	84.2
Grade 3 Students	89.8	82.3
Total	90.1	83.2

2. **Letter identification posed a problem to students for nine letters of the alphabet.** Their ability to read letters naturally and without hesitation was assessed through a straightforward repetitive letter recognition exercise. For the nine problematic letters, the share of students who could not identify a letter at least once varied between 22 percent and 86 percent.

3. **Phonetic awareness was good for 87.9 percent of students** (See Figure 4.4). This prereading skill was assessed by asking students to identify a word among three starting with a different sound. In Grade 2, 15 percent could not find the odd one out, and nine percent of students were unsuccessful in Grade 3.

Figure 4.4: Phonetic Awareness, Combined Grade 2 and Grade 3 Results, 2008
Percentage of Students per Number of Correct Answers

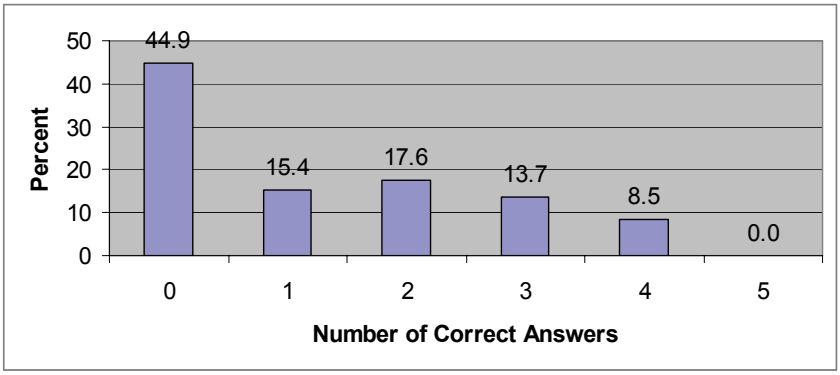


4. **Reading familiar words was impossible for 22 percent of students.** This exercise assessed children's ability to process 50 familiar words quickly. The average score of 16.7/50 is low, although naturally Grade 3 students performed better (20.0/50) than Grade 2 students (13.7/50). Twenty eight percent of Grade 2 students and 15 percent of Grade 3 students could not recognize a single word from the list.

5. **Reading unfamiliar words was impossible for 81 percent of students.** This exercise assessed students' ability to fluently decode 50 unknown or invented words. The average score of 2.5/50 is very low, and the improvement from Grade 2 (1.5/50) to Grade 3 (3.6/50) is minimal. Eighty seven percent of Grade 2 students and 75 percent of Grade 3 students could not decipher a single word.

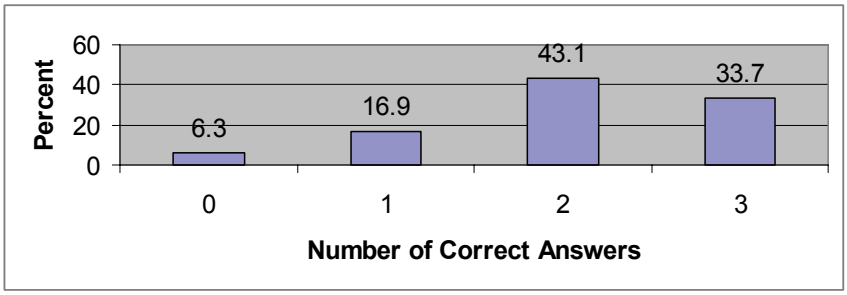
6. **Reading comprehension skills are virtually inexistent in 45 percent of students** (See Figure 4.5 below). The ability to read and understand a 60 word passage was evaluated through five questions about the story. No student answered all five questions correctly and 45 percent on average could not answer any question (52 percent for Grade 2 and 37 percent for Grade 3).

Figure 4.5: Reading Comprehension, Combined Grade 2 and Grade 3 Results, 2008
Percentage of Students per Number of Correct Answers



7. **Listening comprehension skills are average** (See Figure 4.6). This prereading skill was assessed by asking children three factual questions about a three sentence story read to them. An average of six percent of students could not answer any question (7 percent for Grade 2 and 5 percent for Grade 3), showing a better level than for reading comprehension. A third of students answered all questions correctly, and a further 43 percent achieved two correct answers out of three.

Figure 4.6: Listening Comprehension, Combined Grade 2 and Grade 3 Results, 2008
Percentage of Students per Number of Correct Answers



Determinants of Students' Achievement

In parallel to the test, surveys were carried out to collect information on students' characteristics and contexts through a student questionnaire, and on the school context through a headmaster questionnaire. The results of these surveys helped to determine

personal, family or school context factors affecting students' achievement in the reading assessment, that are important to understand in terms of policy formulation.

The methodology used was to run a regression of the EGRA scores against variables reflecting students' characteristics and context. Students' results at the Grade 1 entrance examination were used as control proxies, given that no test at the beginning of the school year was available. Three regression models were constructed, for the total sample (Model 1), Grade 2 students (Model 2), and Grade 3 students (Model 3). The detailed results of the regressions can be found in Annex Table 4.1 The value of R2 is ranges from 0.15 to 0.23 according to the model, meaning that the factors included in the model can explain 23 percent of the variation in students' EGRA scores, at best. Due to this limitation, one should be cautious when interpreting the regression results, and be aware in using them for policy formulation that a considerable part of the score variations are still to be explained.

The exercise nevertheless provided some relevant and helpful results:

(i) Boys perform better in Grade 3 but there is no gender disparity in Grade 2. Logically, Grade 3 results are better than Grade 2 results, reflecting the additional year of teaching received. Grade 3 girls, all other characteristics being equal, achieve lower scores. In Grade 2, there is no significant difference in the level of learning by gender.

(ii) Mission school students have significantly higher levels of acquisition, regardless of their grade. The models show insignificant variations in the mean scores of students from private, community, and public schools.

(iii) Children who live in a family in which English is spoken often and students who read at home both obtain better results. These findings emphasize the need for reading practice, although teachers' attitudes toward reading are also a determinant factor.

(iv) Non repeaters perform better than repeaters. In Liberia, 30 percent of Grade 2 students and 32 percent of Grade 3 students have already repeated a grade. The logic behind repeating of improving students' knowledge appears to be unfounded, as repeaters obtain significantly lower scores. As such, the regression results corroborate that while being associated with high costs for the education system and families, the way repetition is currently being implemented does not help solve the issue of education quality, as several previous studies have demonstrated.

The remaining variables included in the regression could not explain variations in students' scores, including having attended a nursery school, attending a school with more than 50 percent of female teachers, or having sufficient and adequate materials and resources.

International comparison of EGRA results

To provide an overall sense of reading skills in the countries where early grade reading assessments have been carried out, Table 4.7 shows the share of students tested who scored a zero on the oral reading fluency assessment, which asks students to read a simple paragraph in the language in which they are being taught to read.

Table 4.7: International Comparison of EGRA Findings, 2008-09

	Language of Assessment	Sample Size	Non Readers (%)	Youth Literacy Rate, (%)	Education Spending (% of GDP)
Liberia, June 2008 – End of Grade 2, National Sample	English	1,426	35	71.8	2.7
Gambia, June 2009 – End of Grade 2, National Sample	English	788	54	n.a.	2.0
Guyana, Oct 2008 – Beginning of Grade 3, National Sample	English	898	29	n.a.	6.1
Haiti, May 2009 – Beginning of Grade 3, Regional Sample of Two Districts	French	399	49	n.a.	n.a.
	Creole	426	48	n.a.	n.a.
Honduras, Oct 2008 – End of Grade 2, Rural Sample of PROHECO Schools	Spanish	615	29	93.9	n.a.
Kenya, Oct 2009 – End of Grade 3, Sample of Central and Luo-Nyanza Provinces	English	2,000	14	80.3	7.0
	Kiswahili	2,000	19	n.a.	n.a.
Mali, April 2009 - End of Grade 2, National Sample by Language Group	French	411	94	n.a.	n.a.
	Bamankan	464	83	38.8	3.8
Nicaragua, April 2008 - Beginning of Grade 3, National Sample, Excluding Small Rural Schools	Spanish	2,218	1	87.0	n.a.
Senegal, May 2009 - End of Grade 3, National Sample	French	687	18	50.9	5.1
Uganda, Oct 2009 - End of grade 2, Regional Sample in Central and Lango Subregions	English	971	70	86.3	3.8

Source: EGRAs (complete reports for each country available at www.eddataglobal.org); EdStats 2010, most recent data available.
Note: Non readers are students who could not read a single word of a simple paragraph.

In Liberia, 35 percent of children could not read a single word. This is a better performance than some countries such as Mali (83-94 percent) and Haiti (50 percent), but well below others such as Nicaragua (1 percent) and Kenya (9-25 percent).[18]

Results of an Experimental Intervention

An experimental intervention was designed to improve students' reading skills. Several sets of EGRA assessments were carried out as part of the *EGRA Plus Liberia* experimental project, whose goal was to support MOE efforts to improve the quality of primary education and the teaching of reading in early grades, and produce scientific evidence on the feasibility of rapid and significant gains in learning through pedagogical and governance interventions.

The results of mid-term and final assessments in experimental and control schools were compared with those of a baseline study performed in 2008. The latter involved 176 schools and 2,957 students. Scores were far below those expected[19] and confirmed that Grade 3 students outperform those in Grade 2 in all exercises; boys outperformed girls in almost all exercises.

In order to accurately measure the impact of the intervention, an experimental design was developed that involved randomly assigning schools to one of three groups of approximately 60 schools each:[20]

(i) The control group schools received no *treatment* and were allowed to operate just as they were doing at the time of the baseline study, though their reading levels were assessed at baseline, mid-term, and final points;

(ii) The light treatment group schools informed communities and parents about students' reading achievements in addition to assessment, to test the impact of information and the application of standards on school achievements, as an "information for accountability" experiment; and

[18] One would normally compare "scores of reading fluency" instead of the percentage of students who scored a zero. However this is not appropriate for EGRA test because of differences in how local assessors interpret individual student results, as well as differences in language structure (word length and orthography) that influence reading acquisition, it is not appropriate to compare average oral reading fluency rates across languages and countries (Trudell and Schroeder, 2007 as referred in Research Triangle Institute 2010).

[19] The results follow. Letters a minute identified: 54.9 (Grade 2), 66.4 (Grade 3). Familiar and unfamiliar words identified: 6.1 and 1.6 (Grade 2), 12.7 and 3.0 (Grade 3). Words per minute correctly read: 14.5 (Grade 2), 25.1 (Grade 3); although approximately a third of students were unable to read any of the words correctly, possibly because the test was in English whilst the students spoke Liberian out of the classroom and at home.

[20] The large sample size allowed greater precision in the estimation of differences between grades and genders.

(iii) The full treatment group school teachers were trained in how to continually assess student performance, and provided with frequent school-based pedagogic support, resource materials and books, in addition to assessment and community awareness.[21]

The final impact evaluation highlighted the following findings:

(i) Great differences in results were achieved according to the treatment received (See Table 4.8). For both boys and girls, for both Grade 2 and Grade 3, the light treatment schools reached their target in oral reading fluency, as did the control schools. More importantly, for both genders and both grades, the full treatment schools increased their performance by several multiples of the target. The results were similar for reading comprehension.

Table 4.8: EGRA Experimental Intervention Results, by Treatment, Grade and Gender, 2008
Percent

	Treatment	Grade 2		Grade 3	
		Boys	Girls	Boys	Girls
Oral Reading Fluency	Control	1.95	69.64	31.96	66.02
	Light	16.05	62.64	11.32	48.71
	Full	204.70	306.08	105.28	138.80
Reading Comprehension	Control	-4.65	40.80	17.38	48.34
	Light	12.04	45.24	18.13	49.30
	Full	199.73	225.39	102.29	143.98

(ii) The project impact was much greater than the standard inter-grade improvement. Standard inter-grade improvement was measured through the control group, for which Grade 3 scores were significantly higher than Grade 2 scores. However the improvement was much greater for the light and full treatment groups, showing the project's ability to boost children's' learning by much more than one grade. There were no significant gender variations, except in unfamiliar word fluency, in which girls outperformed boys.[22]

(iii) The full treatment group increased students' achievement for every subtask, often substantially. The light treatment group increased student achievement in letter fluency, unfamiliar word fluency, reading comprehension, and listening comprehension.

[21] EGRA Plus Liberia Data Analytic Report; EGRA Plus Liberia Mid-Term Assessment, 2009.
[22] The EGRA Plus program may have had a slightly larger impact for girls because their scores were lower at the baseline.

(iv) Impacts were largest in letter fluency, and smallest in listening comprehension.

Table 4.9 shows the treatment groups results relative to the control group, using true effect sizes, and improvements in terms of units of standard deviation.

Table 4.9: EGRA Experimental Intervention Effects and Effect Sizes, by Treatment Group and Subtask, 2009

	Treatment Group	Program Effect	P-value	Effect Size
Letter Fluency	Light	6.7	<.001	.24 SD
	Full	21.0	<.001	.74 SD
Phonemic Awareness	Light	0.3	.07	No effect
	Full	3.4	<.001	1.27 SD
Familiar Words	Light	-1.4	.22	No effect
	Full	15.6	<.001	.85 SD
Unfamiliar Word	Light	-1.4	.02	-.15 SD
	Full	12.8	<.001	1.40 SD
Oral Reading Fluency	Light	-1.1	.51	No effect
	Full	24.3	<.001	.92 SD
Reading Comprehension	Light	1.2	.55	No effect
	Full	30.1	<.001	.98 SD
Listening Comprehension	Light	1.1	.51	No effect
	Full	12.7	<.001	.38 SD

Note: SD stands for standard deviation.

WAEC Examinations Student Learning Outcomes

Student learning outcomes are presently measured mainly through the examinations set by the West African Examination Council (WAEC), that Liberia joined in 1974. The WAEC is a quasigovernmental institution funded by national governments and candidates' fees, mainly devoted to conducting school exams. The Grade 6 and Grade 9 examinations are national, based on national teaching syllabuses. At Grade 12, WAEC conducts an international test called the West African Senior School Certificate Examination (WASSCE), based on a published international examination syllabus and including some country specific subjects. Contrary to other countries, Liberia still stages a national Grade 12 examination because it believes its candidates are not yet of the WASSCE standard.

A classic evaluation of students' achievement through tests would be based on a random selection of students. In using the WAEC exam results for this purpose, we are exposing our analysis to a certain bias: the participation in WAEC exams is voluntary,

and subject to the payment of fees.[23] These qualities create non random selection criterion, as students sitting the exam can reasonably be expected to be (i) confident in their ability to succeed, and (ii) able to assume the cost of the exam. As a result, our sample is probably composed of the best and wealthier students.

Each of the WAEC examinations (Grade 6 exam for entry to JHS; Grade 9 exam for entry to SHS; and Grade 12 exam for admission to higher education) and their results for Liberia between 2005 and 2007 are examined below.

WAEC Grade 6 Examination Results

A total of 85 percent of Grade 6 students sat the WAEC exam in 2007, up from 76 percent in 2005 and 78 percent in 2006. Whereas the proportion of students entering the exam varied little between 2005 and 2006, that of 2007 is surprisingly high, the reason for which is unclear. About half the candidates came from Montserrado County where the capital Monrovia is located, and that accounts for approximately 32 percent of the population. More candidates from public schools (43 percent of all candidates in 2007) sit the WAEC Grade 6 examination than candidates from private, mission and community schools individually. Together candidates from public and community schools slightly outnumber those from private and mission schools. Boys represented 57.4 percent of participants, and girls 42.6 percent.

Scores at the national level show high success rates. As Table 4.10 shows, the percentage of success per subject varies between 87 percent and 92 percent, in science and mathematics respectively.[24] On average, the pass rate was 89.8 percent.

Table 4.10: WAEC Grade 6 Examination Results, by Subject, 2007
Percent

	Scores				Success
	Mean	Std. Dev.	Min	Max	Rate
Mathematics	72.518	10.100	0	92	92.2%
Sciences	68.431	9.533	0	90	86.7%
Social Studies	75.624	11.754	0	98	91.8%
Languages	73.542	11.989	0	94	88.5%

Source: WAEC Office, Liberia.
Note: Number of observations: 25,760.

[23] Fees per candidate are $900 or US$ 13 for Grade 9 (four subjects), and L$ 1,200-1,500 or US$ 17-22 for Grade 12 (eight or nine subjects).
[24] A student passes the WAEC Grade 6 examination if he/she obtains a T-score of 60 or above in a minimum of three subjects.

Students' average knowledge is well beyond the minimum required, in all subjects. The lowest mean scored is in science (68.4 percent) and the highest is in social studies (75.6 percent). The mean scores in mathematics and languages are 72.5 percent and 73.5 percent respectively. These scores are higher than those generally expected for these kinds of tests. The results suggest that in 2007 either candidates were better prepared, or the tests were easier, or a decision was taken to lower the pass requirements; however no evidence could be found that candidates were better prepared in 2007 and the pass requirements were identical to those for 2006. The difference in the success rate by gender was insignificant.

WAEC Grade 9 Examination Results

As was the case for the Grade 6 examination, the number of candidates sitting the WAEC Grade 9 examination increased substantially between 2006 and 2007, from 74 percent to 98 percent (up from 68% in 2005). The 24 percent increase in the proportion of students sitting the exam between 2006 and 2007, reaching almost 100 percent, is quite remarkable. This may have been the result of candidates expecting the tests to be easier in 2007 or a deliberate government strategy to retain students in secondary education, as no public announcement of a change in the pass requirements is reported for the years under review.

Table 4.11: WAEC Grade 9 Examination Results, by Subject, 2007
Percent

	Scores				Success
	Mean	**Std. Dev.**	**Min**	**Max**	**Rate**
Mathematics	68.553	7.094	56	97	99.4%
Sciences	68.972	6.759	53	91	98.8%
Social Studies	68.407	5.014	52	79	98.4%
Languages	70.187	6.033	51	86	98.4%

Source: WAEC Office, Liberia.
Note: Number of observations: 20,480.

Students' average knowledge is well beyond the minimum required, in every subject. Table 4.11 shows excellent success rates, which vary between 98 percent for social studies and languages, and 99 percent for mathematics and sciences. The lowest mean score is in social studies (68.4) whereas the highest is in languages (70.2). The mean score in mathematics is 68.6. Again, these results are very high in comparison to what is generally observed for these kinds of tests. Although there was a significant gender difference in terms of participation (62 percent boys and 38 percent girls), the variation in exam scores was insignificant.

WAEC Grade 12 Examination Results

For the Grade 12 end of secondary school and higher education admission examination, candidates sit tests in 8 or 9 subjects, grouped according to the options below:

(i) Group I: English Language/Language Arts (Compulsory subject)

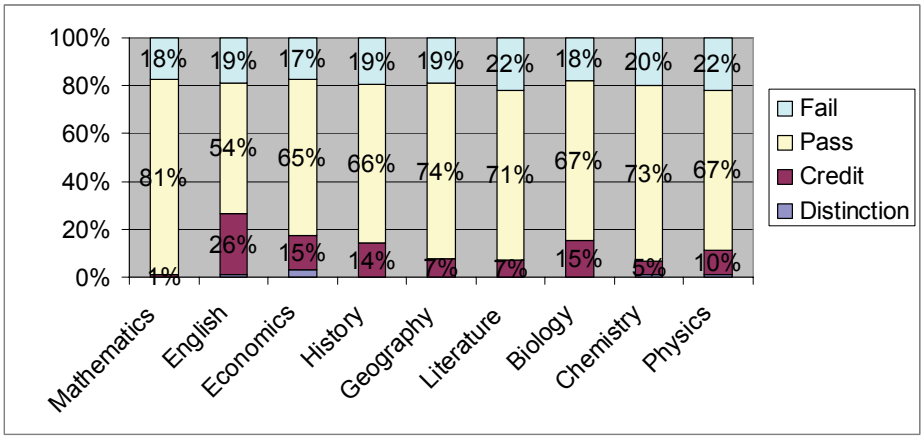
(ii) Group II: Economics, History, Geography, English Literature (Optional subjects)

(iii) Group III: Mathematics (Compulsory subject)

(iv) Group IV: Biology, Chemistry, Physics (Optional subjects)

A candidate is awarded the exam if (i) they obtain passes in the compulsory subjects of English Language and Mathematics as well as in at least one Group II and one Group IV subject; or (ii) they obtain passes in the compulsory subjects as well as in any other 4 subjects. The overall results are ranked into three divisions according to the quality of the results per subject.

Figure 4.7: WAEC Grade 12 Examination Distribution of Results, by Subject, 2007
Percent



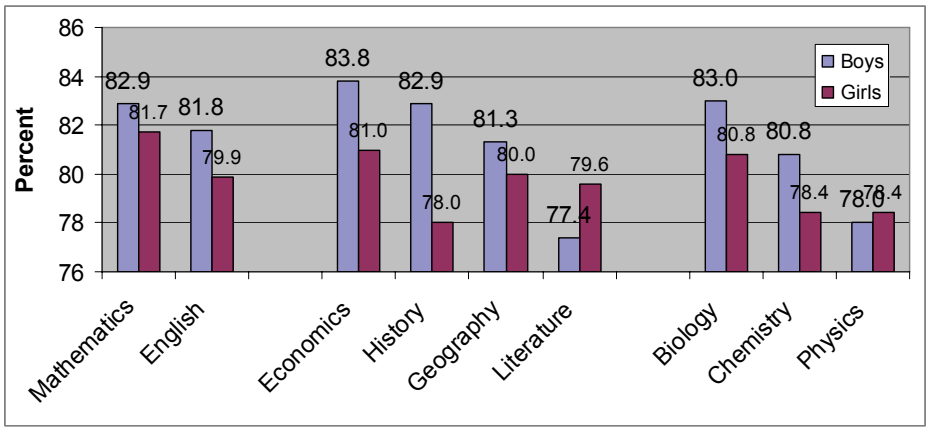
The overall participation dropped between 2005 and 2007 from 70 percent of Grade 12 students to 65 percent, in an opposite trend to that noted for the Grade 6 and Grade 9 examinations. A gender gap in participation also appears to be widening: 67 percent of boys sat the exam in 2007, against only 62 percent of girls.

Over 78 percent of students sitting the examination passed, a considerable share. Figure 4.7 above shows that success varies little according to the subject. In Mathematics and English, which are the compulsory subjects, the percentage pass rates are 83 percent and 81 percent respectively. In Literature and Physics the pass rates are slightly lower, at 78 percent.

Despite the high success rates per subject, extremely few students received a distinction in any subject. The majority of the 80 percent of students who pass just meet the required minimum; 11 percent on average receive a *Credit*, an average of 20 percent fail, and almost none receive a distinction (with slight exceptions for economics – 3 percent of distinctions; and English, chemistry and physics – 1 percent on average).

There were gender disparities in both participation and results. Students participating in the Grade 12 WAEC exam consisted of 64 percent of boys and 36 percent of girls. On average, the boys' success rate of 81.3 percent was greater than that of girls (79.8 percent). The subjects where girls outperformed boys were Literature and Physics (See Figure 4.8).

Figure 4.8: WAEC Grade 12 Examination Pass Rates, by Subject and Gender, 2007
Percent



Summary and Policy Implications

The impact of the civil conflict on education infrastructure in Liberia has been long lasting. Many areas of the country lack schools: three of the 92 districts possess no junior high schools and 36 lack senior high schools. Among the existing schools, only 40 percent were found to be solid and 70 percent are in urgent need of rebuilding or repairs (School Census, 2007/08). Toilet facilities are inadequate and the availability

of drinking water is a problem. The disparities in the quality and availability of infrastructure between counties and districts is cause for concern.

This situation is partly explained by the limited use that has been made of the information provided by school censuses, surveys such as the CWIQ and reports such as this CSR to address the sector's challenges in a planned and strategic manner. The recently completed education sector plan should help redress this policy gap, if it is satisfactorily implemented. The tendency to allow political considerations to determine intervention areas can only exacerbate existing disparities and increase the possibility of social instability.

The fact that the education budget does not provide for the maintenance and repair of school buildings is a further contributing factor. It would be wise to add a line to the budget for this purpose, or to enable part of the funds flagged for construction to be used for maintenance and repairs.

The MOE has recently reviewed the school curriculum, although further work is necessary. The ministry has also procured a significant number of new primary level textbooks, and a donor has provided textbooks for junior high school. The challenge is now to ensure that sufficient textbooks are available for each student to possess a set, and to budget for replacement and additions given that books get damaged/lost and to cater for new students as enrollment increases.

The pupil to teacher ratios in JHS and SHS allow for further increases in class size, at 23.8 to 1 and 23.2 to 1 respectively. Given that the annual increase in Grade 1 enrollment, JHS and SHS pupil to teacher ratios are expected to increase in the future. In the meantime, some teachers could be transferred to the primary level in order to reduce the high number of volunteers.

Teacher characteristics are globally suboptimal. The lack of specialization due to multilevel teaching is a concern because it affects the quality of teaching. The lack of young and female teachers is also of concern, as these characteristics are deemed important to respond to the needs of the younger and increasingly female population entering the school system.

There is a need for a major review of national school WAEC examinations. The nature of the tests, the examination syllabuses on which they are based, the way in which the examinations are conducted, the mode of scoring and the process by which results are released and communicated require attention. Until the review is conducted and appropriate action taken, doubts will continue to exist on the usefulness and reliability of the examinations.

Early learning outcomes are unsatisfactory. EGRA results have proved to be useful and encouraging in terms of identifying weaknesses in early reading skills and demonstrating that it is possible to improve results. It is worthwhile assessing whether learning gains achieved through early grade interventions in the medium/long term, at last until the end of primary.

WAEC examination pass rates and results are positive, although no students achieved a distinction. It is important for teachers to take the results seriously and focus on students' weaknesses in class.

CHAPTER 5: GOVERNANCE AND MANAGEMENT OF THE EDUCATION SYSTEM

Key Findings

- Despite the government's efforts, the education system has not yet been decentralized;
- About 38 percent of primary school teachers are multilevel;
- At primary school, teacher allocation is inconsistent with the number of students; and
- Resource allocation among counties is consistent with the number of students.

The importance of governance in Liberia is reflected by the fact that "strengthening governance and the rule of law" is one of the four pillars of the Poverty Reduction Strategy (PRS). The PRS places particular emphasis on decentralization, stating that "the Government recognizes that many of the governance problems of the past have their roots in the excessive concentration of power in the Executive and in Monrovia."

In this regard, the PRS calls for "progressively decentralizing government functions across the counties" and commits the government to "work to build capacity within local government and progressively shift economic and political power to the counties and communities, so they will be empowered to participate effectively in decision making and take control of local issues and development processes." In line with the PRS, a decentralized governance structure is desired for the education sector, and this aim is supported by both the Education Law of 2001 and the draft Education Reform Act of 2010.

Although the government has started on the track to decentralization, and is currently producing a comprehensive decentralization policy, further progress has so far been hindered, primarily by resource constraints. Individuals qualified to run a decentralized system are also rare, and there is a persistent political conviction that decentralization may not produce more gains than losses.

This chapter offers a detailed examination of the existing education sector governance and management structures, and offers recommendations of possible future directions.

For the purpose of this analysis, governance relates to the structures, mechanisms, processes and institutions that make effective and efficient management of the education system possible, and which provide the framework for monitoring, evaluating, improving and shaping the system for the benefit of society and individuals. Management, on the other hand, refers to the use of available resources and the capacity to achieve defined targets and goals. An education system depends on the quality of its governance and management in the broadest sense. It follows that statements about the quality of a system reflect the quality of its governance and management.

Legal Framework of the Education Sector

The major legal instruments and policies governing education in Liberia are:

(i) The 1986 Constitution;

(ii) The Education Act of 2002;

(iii) The 1989 Act establishing the National Commission of Higher Education (NCHE); and

(iv) The Provisional Ruling (Council Decree No. 56) on Technical and Vocational Education and Training (TVET), although this is likely to soon be repealed and replaced by a new instrument.

The 1986 constitution includes only two references to citizens' right to education, that are found in Articles 6 and 15 (b). Article 6 states that *"The Republic shall, because of the vital role assigned to the individual citizen under this Constitution for social, economic and political well-being of Liberia, provide equal access to educational opportunities and facilities for all citizens to the extent of available resources. Emphasis shall be placed on the mass education of the Liberian people and the elimination of illiteracy."* Article 15 (b) grants individual citizens *"... the right to hold opinions without interference and the right to knowledge…"* In this instance, the right to knowledge might be interpreted as the right to education.

The Education Act of 2002 (Education Law of A.D. 2001), was passed into law in January 2002, repealing the 1972 law and all its amendments. The Law is divided into five chapters: The General Policy Framework; The Education System of Liberia; The Ministry of Education; The Conduct of Schools and Staff; and The Advisory and Regulatory Bodies for the Education and Training Sector. The law has a number of shortcomings and is in the process of being replaced by the Education Reform Act of 2010 which is currently in the draft stage.

The 1989 National Commission of Higher Education Act mandates the NCHE to:

(i) Formulate broad policy guidelines for the establishment of higher education institutions;

(ii) Monitor, evaluate and accredit all higher education institutions;

(iii) Approve new programs of higher education for funding after having confirmed their relevance to national development; and

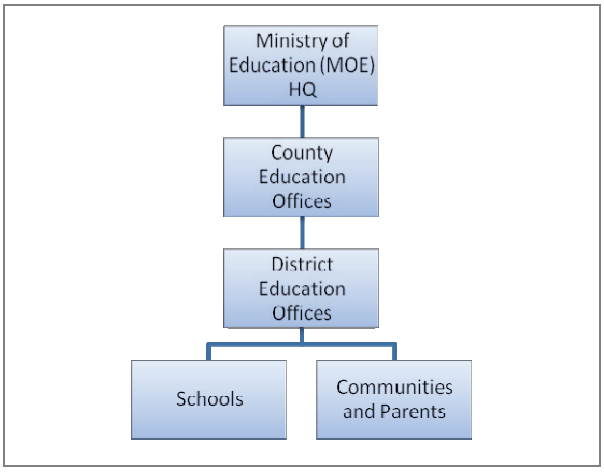
(iv) Review existing programs at higher education institutions to prioritize study programs on the basis of national needs.

This Act has been found to be inadequate to address the present challenges of higher education in Liberia and is in the process of being revised. In particular, the quality assurance functions of the NCHE need further strengthening and the overlap between the governance roles played by the MOE, NCHE and Association of Liberian Universities (ALU) needs to be minimized.

Education Governance and Management Structure

Current education governance and management is organized according to a top down structure headed by the MOE (See Figure 5.1).

Figure 5.1: Education System Global Governance and Communication Structure, 2010

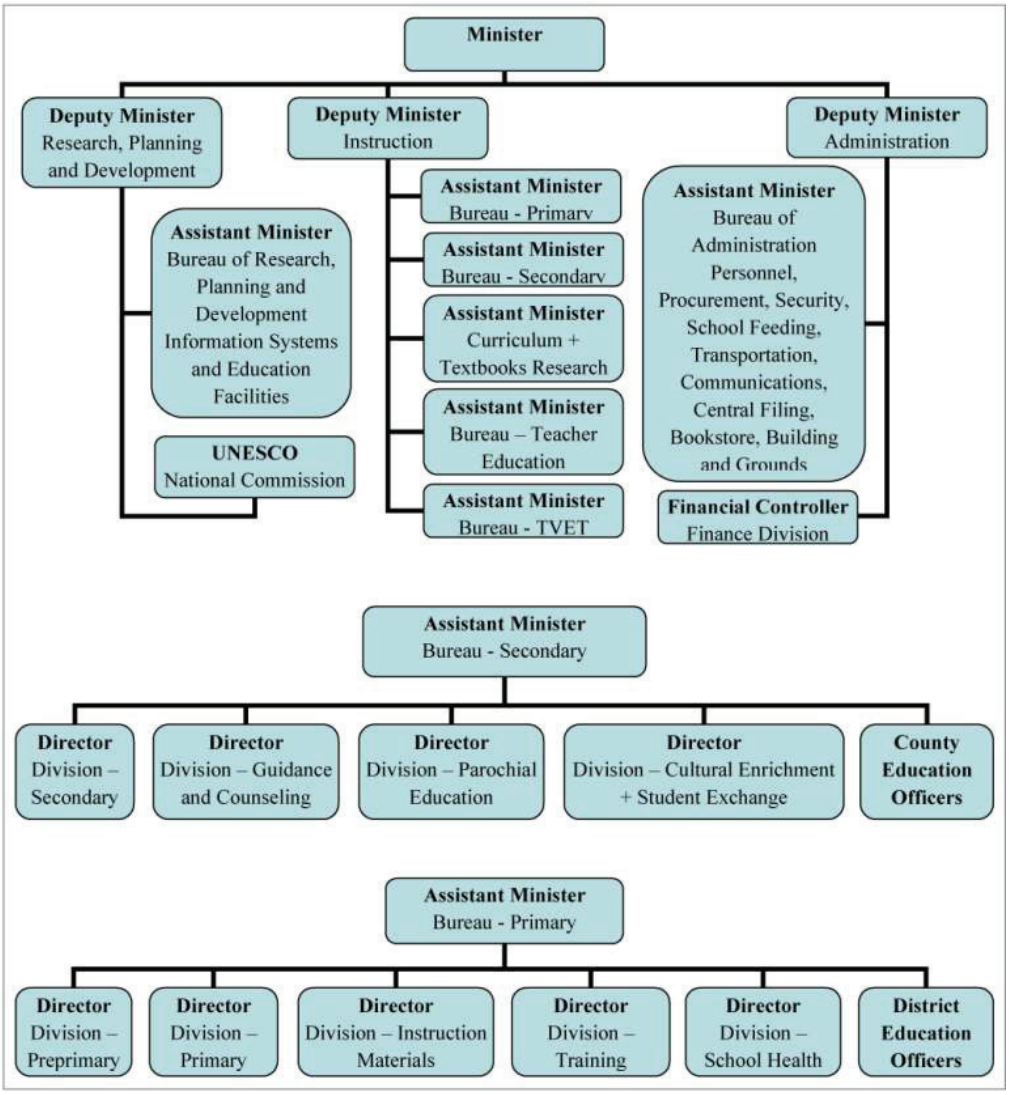


Source: Ministry of Education.

The central ministry supervises county education offices in each of the 15 counties. District education officers serving each of the educational districts report to the county education officers. The district education officers are the direct link between schools, communities and parents, and the ministry. A Parent Teacher Association Unit at the MOE also allows for direct communication with parents.

The organizational structure of the central ministry, as it exists on paper, is shown in Figure 5.2 below. However in reality some of the divisions, such as the division of parochial education, are no longer functional.

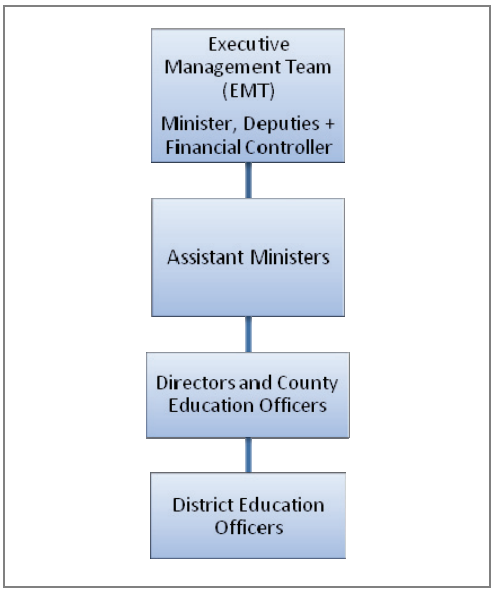
Figure 5.2: Organizational Structure of the Ministry of Education, 2010



Source: Ministry of Education.

In practice, an Executive Management Team (EMT) has been created, including the minister, his deputies, and the Financial Controller, as an attempt to broaden the decision making basis. As such, consideration is being given to enlarging the EMT and making it more inclusive, and to the challenges that such a committee might pose for decision making. In theory, the assistant ministers respond directly to the EMT, and supervise the work of the ministry directors, and county education officers (See Figure 5.3). In fact, the arrangement is frequently criticized by MOE staff, who feel that meetings are rarely held on scheduled dates, inordinate amounts of time are spent on issues that should be dealt with at lower levels, information flows to and from the EMT are minimal, decisions taken and their basis are inadequately communicated within the ministry, and are sometimes arbitrarily changed resulting in confusion.

Figure 5.3: Ministry of Education Governance Hierarchy, 2010



Source: Ministry of Education.

Roles and Responsibilities

The Education Act states that **the Minister of Education** shall *"have full power over and supervision of all public schools and institutions of higher learning to the extent provided by the law and permitted by their charters; formulate policies and regulations to govern the conduct and operations of all schools in Liberia and serve as chairperson ex-officio on relevant national advisory boards or extra-ministerial national councils, tribunals and committees."*

The three **Deputies for Administration, Instruction, and Planning, Research and Development** are *"the principal assistants to the Minister of Education and shall perform such specific duties as may be assigned or delegated to them by the Minister of Education under the Education Law of Liberia."*

The Deputy Ministers' principal assistants are the **assistant ministers,** of which there were nine at the time of drafting this report. Their work is to *"serve as head of one of the various bureaus of a department" and to "perform such specific or general duties as may be assigned or delegated by the respective Deputy Minister and the Minister of Education."*

Each assistant minister is supported by a team of **directors** who head divisions or units. The directors and their deputies and assistants are the real technocrats of the MOE. Whereas the minister, his deputies and assistant ministers are all political appointees, directors and other staff of lower rank are civil servants.

County and District Education Officers (CEOs and DEOs) are the representatives of the MOE at the county and district levels. The rank of CEOs is equivalent to that of ministry directors; DEOs are lower in seniority. The CEO's key responsibility is *"to supervise the implementation of all relevant national education policies, regulations, decisions, programs and development projects through District Education Officers, as directed by the Ministry of Education."* The DEO's key responsibility is *"to supervise the implementation of all relevant national education policies, regulations, decisions, programs and development projects through public and private school presidents, principals and their facilities as directed by the Ministry of Education."*

As mentioned earlier, the MOE has not yet decentralized, despite the Education Law, that calls for *"...a high degree of decentralization by the delegation of a wider scope of authority and responsibilities to the "grassroots" (that is, counties and districts) with strong county and district education offices (CEOs and DEOs) representing the Ministry of Education (MOE)."*

In recognition of this requirement the MOE has established offices in every county and education district, but the local offices are not yet mandated to take binding decisions. More importantly still, the local government structures do not have legal responsibility for the provision of education services. As such, the MOE is more decentralized in theory than it is in practice, and decentralization as it currently stands is closer to the deconcentration of responsibilities within a vertically integrated ministry than to the effective devolution of responsibilities, making education officials accountable to elected local representatives.

Governance and Management Capacities

Limited human capacity at the central MOE level results in unresolved governance and management challenges. The present situation of limited capacity is largely a consequence of the civil conflict and resulting lack of human, financial, and logistical resources. These constraints are compounded by the fact that many MOE officials are unable to perform their assigned roles, partly as a result of being unaware of the role they are supposed to play. This is not surprising given that many were not given job descriptions when appointed, their performance is not evaluated, and due to the general lack of staff accountability. The MOE is trying to redress this situation with the assistance of its partners, recognizing that the weak human capacity within the MOE is a serious constraint in implementing and enforcing education policies.

Human capacity at the county and district levels is also low, and suffers from limited interaction with central managers. Visits to county and district education offices and discussions with education officers and other senior MOE staff members have underlined the serious human capacity gaps that exist at the local level of the MOE. In addition to the human capacity challenges, decentralized management capacity is currently restricted by limited communication and contact between central ministry managers, county and district office staff, and schools, due to poor physical and technical infrastructure. As presently staffed it will not be possible to substantially devolve any functions to county or district education offices.

Governance of schools is insufficiently regulated, and has changed little over the past 50 years. According to the Education Law, each school *"shall have a Governing Body or Board, Parents and Teachers Association (PTA) or Committee which shall include parents, community leaders, teachers and representatives of Local School Management Committee (LSMC)."* However, these guidelines are adopted or rejected at the discretion of the proprietors and heads of schools. Most schools do not have governing boards and/or functional PTAs, and a random check of those claiming they do revealed that a good number are inoperative and/or are not functioning as required by the existing legislation.

PTAs are de facto hybrid bodies which combine the functions of a traditional PTA with monitoring functions which might be assigned to school governing boards or school management committees. However, PTAs as currently constituted are not mandated to perform governance functions; they have only been given powers to monitor the use of school assets and resources. School governing bodies have considerably greater powers to establish school objectives and policies, to approve budgets and to review progress against the budget, plans and targets. For the primary level, the current thinking of the MOE is to use School Management Committees (SMCs) as the major governing body for each school, but in reality SMCs presently operate as umbrella type PTAs at the district level, rather than separate governing bodies for each school.

The MOE has initiated a management and functional review with external support. Care has been taken to ensure that the review is consistent with the procedures validated by the Governance Commission, the Civil Service Agency and the Inter-Ministerial Committee. The review will assess the MOE's core functions and its ability to deliver education services. It also assesses the extent to which current arrangements promote effective management and the provision of education services, as well as strategic, financial and operational planning and performance management.

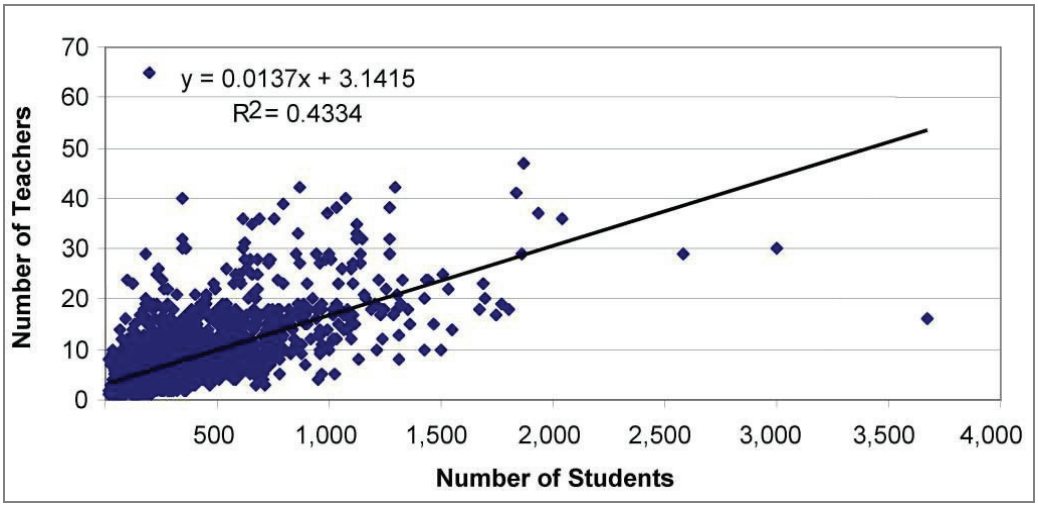
Teacher Management

Teacher management efficiency and organization show scope for improvement. The Education Law of 2001 calls for the licensing of teachers and for salary and conditions of service to be commensurate with qualifications and experience. At the time of drafting this report however, teachers were not being licensed, there were no written and agreed conditions of service, and salary payments were at a flat rate irrespective of experience. Apart from the information provided by the annual school census, there is no consolidated record of the number and qualifications of teachers in the system. Teachers are arbitrarily employed without any reference to the MOE, and the number of teachers per school bears no relation to the school size or its number of students. The problem may be affected by the many years of civil conflict, but there are signs that a similar crisis would have been inevitable even in the absence of the conflict, because of an apparent inability to implement policies and/or to act on the contents of the Education Law.

Consistency of Teacher Allocation

Only 43 percent of the variation in the number of teachers can be explained by the number of students for primary, junior and senior high school levels. Figure 5.4 below shows the relationship between the number of teachers and students in all public and community schools and depicts patterns of teacher allocation among schools. The regression analysis quantifies this relationship. R2, known as the coefficient of determinations, allows for an assessment of the extent to which the number of teachers is proportional to the number of students enrolled. It shows that 43 percent of the variation in the number of primary and secondary teachers is explained by differences in the number students. Therefore 57 percent of the variation reflects random allocation. This degree of randomness is well above the average of a sample of African countries (31 percent), for which information was available.

Figure 5.4: Teacher Allocation in Public and Community Primary, Junior and Senior High Schools, 2007/08
Ratio



Source: Author's construction based on data from EMIS, 2007.
Note: Volunteer teachers are not included.

There is some variation in the consistency of teacher allocation between levels. (See Annex Figures 5.1 to 5.4). For primary education, an average of approximately 56 percent of the variation in the number of teachers per school is due to random allocation. Disparities in teacher allocation for smaller schools (with less than 1,000 pupils) are even more striking, at 66 percent. For secondary education (JHS and SHS combined), the unaccounted share of the variation in teacher allocation is significantly lower, at 33 percent, considering only specialized teachers (those teaching just one level). For junior high schools alone, the share of random allocation is similar, at 35 percent.

The degree of randomness for the primary level is worse than for neighboring countries but is close to the average for junior high (See Table 5.1 below). For primary schools, Liberia's degree of random teacher allocation is double the average of a sample of Sub-Saharan African countries. At the junior high school level, 65 percent of the variation in the number of teachers can be explained by school sizes, meaning that about 35 percent of the variation is due to random allocation, just slightly over the sample average of 32 percent.

Table 5.1: Degree of Randomness in Teacher Allocation, Primary and JHS Public Schools, for a Sample of Sub-Saharan African Countries, Latest Year Available
Percent

	Primary		JHS	
	Degree	**Year**	**Degree**	**Year**
Benin	39	2007	41	2007
Burkina Faso	22	2007	17	2007
Burundi	50	2004	59	2004
Cameroon	45	—	59	—
Central African Republic	24	2005	22	2005
Chad	34	2004	54	2004
Congo, Dem. Rep.	42	—	43	—
Congo, Rep.	38	2005	49	2005
Cote d'Ivoire	33	—	45	—
Ethiopia	29	—	23	—
Gabon	26	—	31	—
Ghana	29	—	31	—
Guinea	7	2004	35	2004
Guinea-Bissau	20	2006	7	2006
Lesotho	18	—	35	—
Liberia	**56**	**2008**	**35**	**2008**
Madagascar	28	—	26	—
Malawi	42	2007	28	2008
Mali	27	—	51	—
Mauritania	22	2004	21	2004
Mozambique	15	—	22	—
Namibia	15	2006	22	—
Niger	19	—	27	—
Rwanda	21	—	39	—
Sao Tome and Principe	3	—	13	—
Senegal	19	2005	22	2005
Sierra Leone	29	2004	33	—
Togo	37	2006	17	2006
Uganda	34	—	17	—
Zambia	20	—	29	—
Average	**28**	—	**32**	—

Source: World Bank, Africa Region Education Unit Database.

Improving the supply and deployment of teachers is necessary for each student to benefit from equitable monitoring. The Education Sector Plan contemplates a series of measures to overcome teacher allocation inequities such as providing hardship funds for teachers working in remote areas, conducting a payroll audit and establishing a database to include teachers' qualifications, experience, and other relevant information. However the lack of a teacher specialization policy ending multilevel teaching effectively limits the attainment of equity in students' access to teachers, both in terms of quality and number.

Teacher training institutions in Liberia produce only primary school teachers, which entails that the latter teach at all levels. For example, of the 396 primary teachers in Bomi county, 270 teach only primary classes whereas 96 teach preprimary in addition to primary, and more unsatisfactory still, 25 teach JHS in addition to primary. In Montserrado county, 10 teachers were found simultaneously teaching preprimary, primary, JHS, and SHS classes.

Table 5.2 shows that only 62 percent of trained primary teachers are devoted to only that level of schooling. Of those that teach more than one level, almost half (17 percent of the total) teach at least one secondary level, be it JHS or SHS, for which they are under qualified.

Table 5.2: Primary School Teachers, by Levels Taught and County, 2007/08
Number

	Levels Taught								Total
	Primary Only	**+ Pre**	**+ JHS**	**+ SHS**	**+ Pre + JHS**	**+ Pre + SHS**	**+ JHS + SHS**	**+ Pre + JHS + SHS**	
Bomi	270	96	25	0	3	0	2	0	396
Bong	1,306	365	227	2	14	0	11	0	1,925
Gd.Bassa	655	406	66	3	11	0	4	0	1,145
Gd. Cape Mt.	341	199	51	0	4	0	6	0	601
Gd.Gedeh	341	267	81	0	3	0	0	0	692
Gd.Kru	329	232	151	0	14	0	0	0	726
Lofa	1,011	223	127	0	2	0	2	4	1,369
Margibi	753	136	243	3	22	0	9	0	1,166
Maryland	551	201	45	0	2	0	4	9	812
Montserrado	5,219	572	1,445	27	35	1	108	10	7,417
Nimba	2,127	666	728	1	48	1	37	2	3,610
River Cess	298	180	27	0	1	0	0	0	506
Sinoe	310	448	116	0	31	0	2	0	907
River Gee	226	279	71	0	1	0	2	0	579
Gbarpolu	161	202	24	1	14	0	0	0	402
National	**13,898**	**4,472**	**3,427**	**37**	**205**	**2**	**187**	**25**	**22,253**

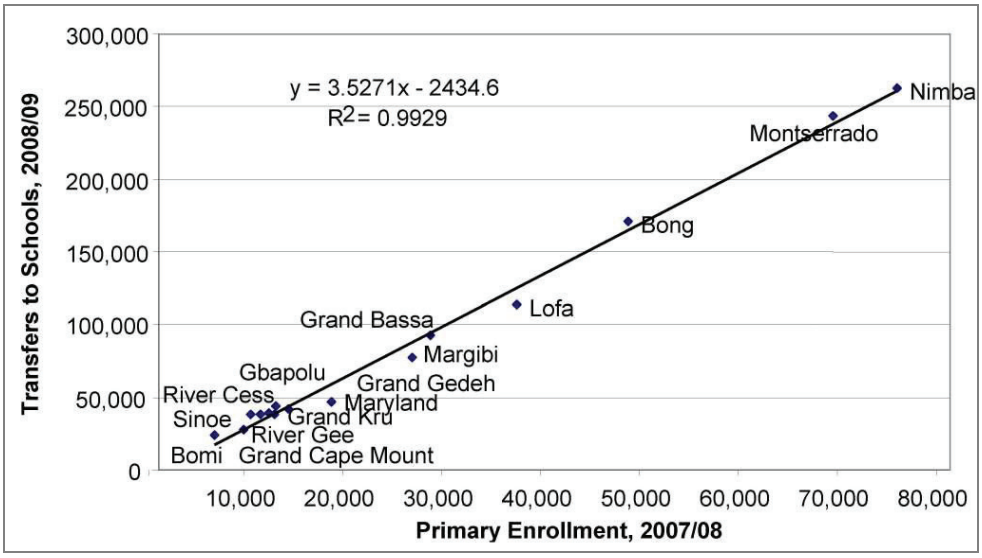
Source: National School Census Report, 2007/08.

Resource Management

This section focuses on the resources that allow the education system to function and to deliver the desired results, and conversely how resource shortfalls can adversely affect the performance of the system.

Since the abolition in 2006 of school fees for all children enrolled in public primary schools, the government is devoting part of the education budget to transfer resources to schools in compensation for the loss in revenues. Using the 2008/09 budget projections by county, the following regression quantifies the relationship between budget allocation and the number of students. Figure 5.5 shows that the allocation of education resources is geographically consistent and equitable in terms of student numbers.

Figure 5.5: Education Budget Allocation and Number of Students, for Public and Community Schools, by County, 2007/08
Ratio



Source: Budget Projections, 2008/09; School Census, 2007/08.

The budget allocation per student shows minor variations. It ranges from US$ 2.7 per student per year in Maryland to US$ 4.3 per student per year in Bomi (See Table 5.3 below).

Table 5.3: Budget Transfers to Free and Compulsory Public Primary Schools, by County, 2008/09
US$

	Number of Students	Budget Allocation	
		Total	Per Student
Bomi	5,650	24,130	4.3
Bong	47,482	171,152	3.6
Gbapolu	11,885	44,275	3.7
Grand Bassa	27,506	92,443	3.4
Grand Cape Mount	9,295	37,895	4.1
Grand Gedeh	13,096	41,862	3.2
Grand Kru	11,645	37,818	3.2
Lofa	36,252	113,873	3.1
Margibi	25,620	77,582	3.0
Maryland	17,402	46,975	2.7
Montserrado	68,231	243,527	3.6
Nimba	74,714	262,362	3.5
River Cess	10,221	37,948	3.7
River Gee	8,560	28,060	3.3
Sinoe	11,196	39,497	3.5
Grand Total	378,755	1299,399	3.4

Source: Budget Projections, 2008/09; School Census, 2007/08.

Textbooks and Teaching/Learning Materials are in short supply. Until primary students' textbooks in the core subjects of English Language, Mathematics, Social Studies and Science were procured and supplied to schools in the 2009/10 school year, schools in Liberia had functioned without government provided text books since the early 1990s.

Summary and Policy Implications

It is apparent that significant improvements in both education governance and management are necessary to achieve Liberia's development aspirations and poverty reduction goals. Decentralization in particular cannot be attained without improving human capacity at both the central and local levels, for which a well structured capacity-building program must be designed and executed. A further prerequisite for the large scale decentralization of the MOE is that necessary local government structures be created, in line with the national decentralization policy and the guidelines of the Governance Commission. Rushing the decentralization process will only have undesirable consequences for education in Liberia.

Most documents on education available at the MOE are either of limited scope or outdated, which has made sectorwide planning and management difficult.

There is still reluctance to change a governance and management structure that has not served the nation well. There are divisions and units within the MOE that are barely functional and whose duties could be readily handled by others. The distribution of personnel between the central ministry and local offices is imbalanced; the MOE has far more staff than all the districts combined, even though the bulk of the work with schools is performed at the district level; the MOE even has one dismantled unit that still has staff on the payroll. Given the government's commitment to decentralizing the delivery of education services, the understaffing of District Education Offices needs urgent attention while at the same time streamlining personnel at the central MOE by reviewing roles and functions.

The usefulness of a plethora of politically appointed assistant ministers and civil servant directors should be carefully examined. There is every indication that a reduction in the number of political appointees would not negatively influence the effectiveness and efficiency of the MOE. Reducing headquarter staff will be especially necessary when the decentralization process truly begins, as many of the present MOE functions will be devolved to counties and districts.

Accountability at the county and district levels must be improved, and corrective measures taken. DEOs and CEOs need training to perform many of their functions correctly and effectively, and the means of transportation that will make school visits possible and fruitful. Close monitoring of their activities will however be necessary to avoid CEOs spending excessive amounts of time in their Monrovia homes and using official vehicles for traveling to/from their assigned county as opposed to supervising and monitoring the operation of schools.

The governance structure of the MOE, of which the EMT is the premier body, is not working effectively. The communication of EMT decisions needs to be improved. The new administration that took office at the time of drafting this report is aware of the shortcomings and has pledged to bring about the needed changes. Until then, the EMT needs to adhere to its schedule of meetings, prepare and circulate agendas and minutes well in advance and hold monthly briefing meetings for MOE staff members.

Teacher allocation is inconsistent. Overall, 57 percent of the variation in the number of teachers per school is not related to the number of students enrolled, a much higher rate than in other African countries, where the average is 31 percent. It would be efficient to reallocate teachers on the basis of the number of students. Employing teachers for specific schooling levels would also make a significant contribution to the quality of teaching, and facilitate the estimation of future staff requirements. To make this feasible, appropriate teacher training should be made available for each level, through cost-effective and high quality alternatives to the current residential and in-service programs. To attract and retain high caliber recruits, new conditions of service

for teachers including a fully structured salary scale should be introduced. Specific incentives for teaching certain subjects and in certain areas would also help to achieve a more equitable distribution of education staff.

Although the MOE has done well to keep the system functioning with the level of financial support it receives, there are indications that the available financial resources could be better managed. In particular the school grants and subsidies dispensed under the free primary education policy need to be much better monitored and administered. It is hoped that the financial management review being funded by the EU at the time of drafting this report will result in much needed improvements.

CHAPTER 6: EXTERNAL EFFICIENCY

Key Findings

- Education brings about social behavioral change, related to family planning, healthcare, literacy, age at first marriage, and so on;
- Despite an increase in the number of TVET institutions, most have poor quality instructors and infrastructure;
- TVET training is lacks relevance to labor market needs;
- The majority of TVET graduates visited were underemployed or unemployed; and
- Most TVET graduates feel that they need further training to improve their skills.

This chapter examines the external efficiency of education and its impact on people's lives. Whereas internal efficiency is the relationship between educational inputs and educational outputs, external efficiency is the relationship between educational inputs and educational outcomes. The analysis of educational efficiency is not confined to economic considerations, given that educational outputs and outcomes also relate to the social and political dimensions of national development.

Improved access to education is generally associated with obtaining better remunerated work, reducing the likelihood of poverty and social exclusion, improving productivity and enhancing individuals' health. There is ample evidence that these advantages hold for Liberia. The following paragraphs will analyze the impact of education on peoples' income and behavior.

Impact of Education on Social Behavior and Human Development

This first section will essentially focus on the social impact of general and higher education, to establish the link between schooling and a number of social outcomes, particularly for women, with regard to contraceptive use, use of iron tablets during pregnancy, childbirth, knowledge of HIV/AIDS, and so on. The data also enables the determination of the contribution of each grade and level of schooling to behavioral changes. So the second section performs a cost-benefit analysis of each level of schooling; it is known that an extra year of education will not produce the same benefits at the primary, secondary or higher education levels.

The estimations are based on the Liberian Demographic and Health Survey. The DHS was conducted from December 2006 to April 2007, using a nationally representative sample of over 7,000 households. Econometric models were utilized to conduct the analyses, combining independent variables such as age, gender, geographical location, wealth index and health supply index in order to produce comparable results. Table 6.1 summarizes the key results.

Table 6.1: Impact of Education on Social Behavior in Liberia, by Education Level, 2007

		Highest Grade completed								
		None	Primary			Secondary			Higher	
	Avg.		P2	P4	P6	J2	S1	S3	H2	H4
Probability of female literacy (%)	**68.9**	0.0	9.7	30.7	53.0	73.6	89.7	98.3	100.0	100.0
Use of contraceptives (%)										
All	**19.8**	6.1	7.4	9.8	13.0	16.8	21.1	25.5	30.1	34.5
Women	**22.9**	6.0	8.4	12.2	16.7	21.6	26.3	30.3	33.3	34.6
Men	**19.2**	4.6	6.4	8.4	11.0	14.3	18.6	24.1	31.1	39.7
Use of Iron Tablets During Pregnancy (%)	**94.6**	83.1	85.4	88.6	91.9	94.8	97.2	98.9	99.9	100.0
Use of Tetanus Toxoid During Pregnancy (%)	**91.1**	78.2	78.8	82.1	86.4	90.8	94.6	97.3	99.0	100.0
Probability of Antenatal Consultation (%)	**98.5**	94.5	96.6	98.0	98.7	99.0	99.0	98.9	98.7	98.7
Assistance at Delivery by Skilled Attendant (%)	**71.2**	34.6	37.7	45.1	55.4	67.7	78.8	89.1	96.5	99.6
Fertility Rate (Total Number of Live Births)										
Interviewees Aged 20-29 Years	**1.9**	3.1	2.5	2.2	2.0	1.9	1.8	1.7	1.4	..
Interviewees Aged 40-49 Years	**6.7**	7.7	7.7	7.6	7.4	7.0	6.4	5.7	4.8	..
All Interviewees	**2.8**	4.1	3.5	3.1	2.8	2.7	2.6	2.6	2.5	..
Woman's Age at First Birth										
Interviewees Aged 20-29 Years	**18.9**	18.2	18.1	18.2	18.3	18.5	18.8	19.2	19.6	20.1
Interviewees Aged 40-49 Years	**19.3**	19.4	19.1	18.9	18.8	18.8	19.0	19.3	20.0	20.9
All Interviewees	**19.1**	17.5	17.6	17.8	18.2	18.6	19.2	19.8	20.5	21.3
Use of Vitamin A for 2 Months After Birth (%)	**95.6**	83.2	85.4	88.9	93.0	97.3	100.0	100.0	100.0	100.0
Full Immunization of Children Under Five Years (%)	**32.3**	24.3	25.5	27.3	29.3	31.5	33.7	35.6	37.1	38.0
Stunting for Children Under Five Years (%)	**30.2**	41.5	42.4	41.2	38.4	34.2	29.2	23.8	18.5	13.6
Breastfeeding Practices (%)	**47.3**	56.8	58.1	57.6	55.5	52.0	47.5	42.0	35.9	29.4
Woman's Age at First Marriage										
Interviewees Aged 20-29 Years	**18.8**	17.0	16.9	17.0	17.4	18.0	18.7	19.6	20.6	21.7
Interviewees Aged 40-49 Years	**20.0**	18.4	18.2	18.3	18.6	19.1	19.9	20.8	21.9	23.3
Interviewees Aged 15-49 Years	**19.7**	16.4	16.5	16.9	17.6	18.4	19.4	20.6	21.8	26.3
Woman's Age at First Sexual Encounter										
Interviewees Aged 20-29 Years	**16.0**	15.7	15.9	16.1	16.2	16.3	16.2	16.1	15.8	15.4
Interviewees Aged 40-49 Years	**16.6**	16.0	15.9	15.8	15.9	16.3	16.4	16.9	17.5	18.2
Interviewees Aged 15-49 Years	**16.4**	15.4	15.5	15.7	15.9	16.2	16.5	16.7	17.0	17.4

Table 6.1 Continued

	Avg.	Highest Grade completed								
		None	Primary			Secondary			Higher	
			P2	P4	P6	J2	S1	S3	H2	H4
Man's Age at First Sexual Encounter										
Interviewees Aged 20-29 Years	**17.4**	17.2	17.1	17.1	17.2	17.2	17.3	17.5	17.6	17.8
Interviewees Aged 40-49 Years	**18.3**	18.4	18.4	18.4	18.3	18.3	18.2	18.2	18.1	18.2
Interviewees Aged 15-49 Years	**17.5**	16.6	16.7	16.8	17.0	17.2	17.5	17.8	18.1	18.4
Knowledge of HIV/AIDS (Maximum Score is 6))										
All	**2.3**	1.2	1.7	2.1	2.3	2.5	2.6	2.6	2.6	2.6
Male	**2.4**	1.0	1.6	2.0	2.4	2.6	2.7	2.7	2.7	2.7
Female	**2.4**	1.4	1.8	2.1	2.3	2.5	2.6	2.6	2.6	2.7
Tested for HIV/AIDS										
All	**8.6**	0.1	1.5	2.5	3.4	4.8	7.1	10.6	15.8	23.2

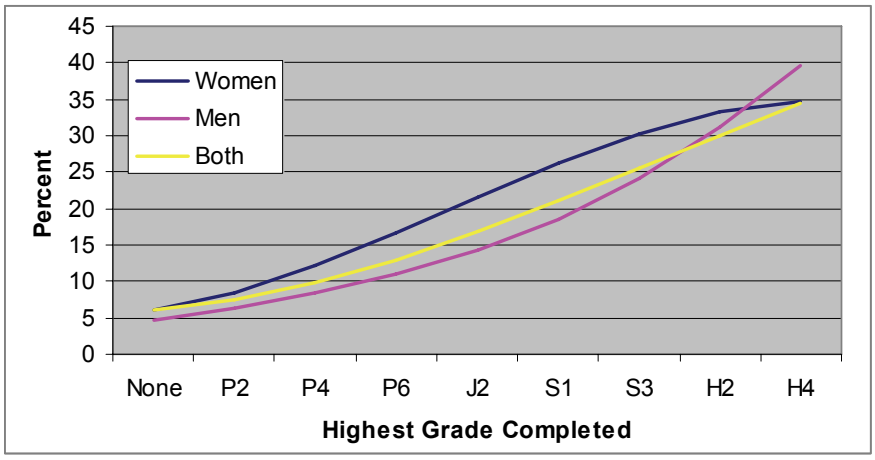
Source: Author's calculations using the Liberia DHS, 2007.

Use of Contraception

Contraceptive practices vary according to gender and education. Education has a strong positive effect on effective contraceptive use and on the choice of family size. The data show that 55 percent of women and 45 percent of men do not use any form of contraception. The pill is the most common form of contraception used by women whereas for men it is the condom. More educated people may be able to reduce the probability of conception more cheaply and effectively than less educated couples. Given that many contraceptive techniques of varying effectiveness are available at any given time, the selection of a contraceptive method is highly attributable to education.

The probability of contraceptive use rises with the grade of education completed (See Figure 6.1 below). At lower levels women are more likely to use contraception, but at higher levels men are more likely than women. With primary education the probability of women using contraception is significantly higher (16.7 percent) than for men (11 percent). However with higher education the probability of women using contraceptives is 35 percent in comparison with 40 percent for men. This may be attributed to several factors: (i) HIV/AIDS awareness campaigns are more common, and more effective, encouraging the use of condoms by men. As shown later, knowledge of HIV increases with education. (ii) Men are financially more independent and unwilling to have children out of wedlock, and thus take precautions. (iii) Attitudes have changed and men take greater responsibility for their fertility. When marital status was included in the model, the results showed that contraceptive use was negatively correlated to marriage, for men and women alike.

Figure 6.1: Probability of Contraceptive Use, by Gender and Education Level, 2007
Percent

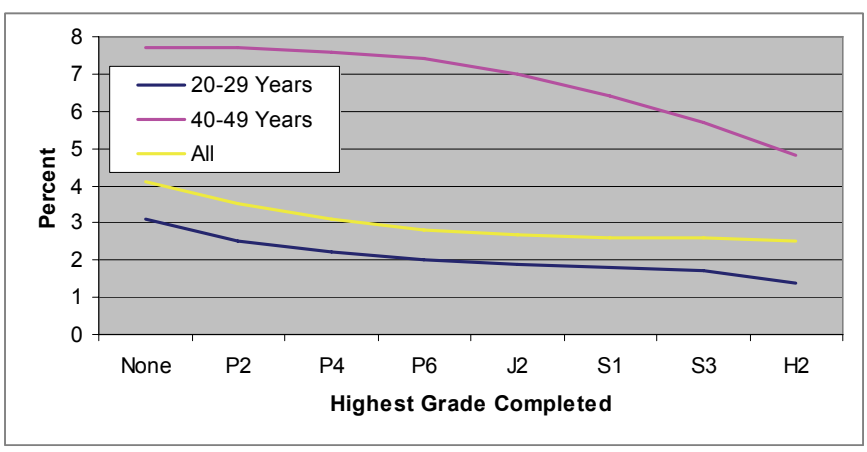


Source: Authors' calculations based on data from the DHS, 2007.

Fertility Rates

Fertility rates (the total number of children ever born to a mother) show that educated women tend to have fewer children than uneducated women. Education contributes to reduce the total number of births per mother, while improving their living standard. Liberian women (aged 15 to 49 years) have three children on average.

Figure 6.2: Fertility Rates, by Mothers' Age-Group and Education Level, 2007
Number of Children Ever Born



Source: Authors' calculations based on data from the DHS, 2007.

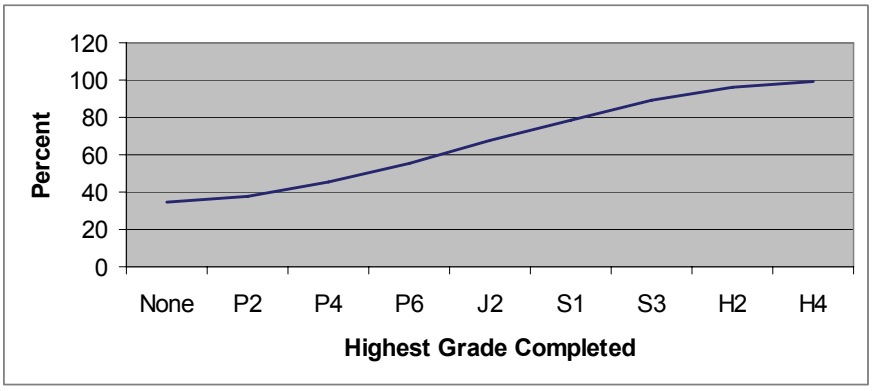
All other factors being constant, uneducated women have four children on average, and the fertility rate drops with every extra year of education (See Figure 6.2 above). Education has a larger impact on child birth among older women (aged 40 to 49 years), achieving a drop from 8 children on average for women with no education, to five for those having completed SHS. Fertility rates are lowest among women aged 20-29 years having completed secondary education, reflecting a generational shift.

Assisted Childbirth

Education has a strong positive impact on mothers' decision to be assisted in childbirth by a skilled professional (doctor, nurse/midwife or physician's assistant). On average, 44.7 percent of women aged 15 to 49 years seek assistance by a skilled birth attendant during delivery. However, the variation according to the level of education is significant: only 34.6 percent of uneducated women seek assistance, compared with close to 100 percent of those with higher education (See Figure 6.3 below). This finding indicates that two out of three uneducated women are unlikely to be assisted at delivery.

Surprisingly, with primary cycle completion the probability is 18 percent higher than for uneducated women. For secondary school completion the marginal effect is 34 percent, indicating a higher efficiency rate of secondary school in terms of improving motherhood behavior. The returns are even higher for each additional educational achievement. These figures advocate for universal primary education at very least, given the significant impact on childbirth on child mortality and maternal health and mortality.

Figure 6.3: Share of Women Assisted in Childbirth by Skilled Health Workers, by Education Level, 2007
Percent

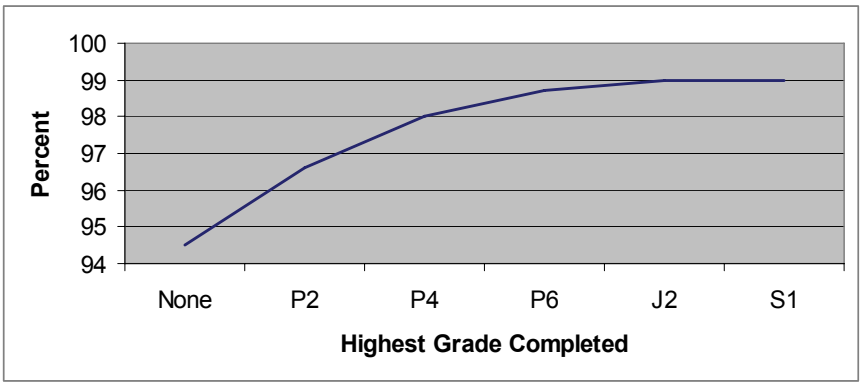


Source: Authors' calculations based on data from the DHS, 2007.

Prenatal Consultation

The choice to benefit from prenatal consultation is heavily influenced by wealth and education. The likelihood of using prenatal care is positively associated with women's level of education, ranging from 94 percent for women with no education to 99 percent for those having completed JHS (See Figure 6.4).

Figure 6.4: Probability of Use of Prenatal Care, by Mothers' Education Level, 2007
Percent



Source: Authors' calculations based on data from the DHS, 2007.

The contrast between the very low probability of being assisted in childbirth by a skilled professional and the very high use of prenatal care is worthy of note. This would occur if prenatal care was free or subsidized, but child delivery was not. Given the high probability of benefiting from prenatal care regardless of education, the marginal effect of primary education completion is minor, equivalent to a four percent increase, from 94.5 percent to 98.7 percent. The marginal effect of JHS completion is insignificant, equivalent to less than half a percentage point.

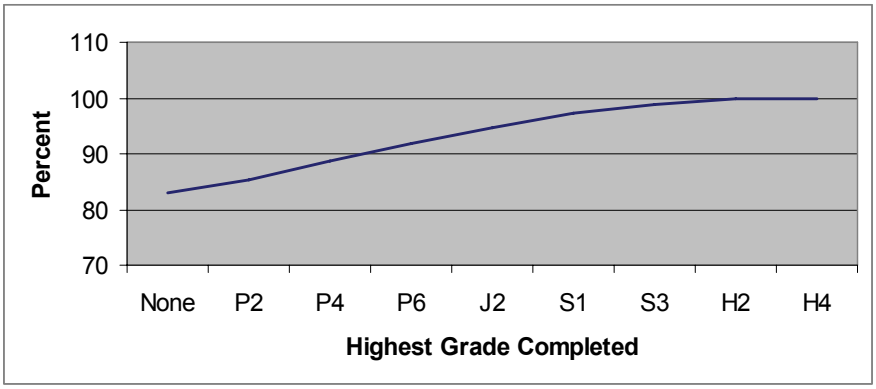
The choice to use prenatal care is much more heavily influenced by wealth, and is negatively correlated to age. This negative correlation implies that older women are less likely to seek prenatal care, which may be related to their lower education levels.

Use of Iron Supplements during Pregnancy

Education increases the probability of taking iron supplements during pregnancy. Although an average of 88 percent of women did so, the likelihood varies significantly according to the level of education (See Figure 6.5 below). Uneducated women are 9 percent less likely to use iron supplements, at 83 percent, than women having

completed primary education, at 92 percent. The probability reaches 100 percent for mothers with higher education. The relatively high use of iron supplements even among uneducated woman can be attributed to the ready availability of iron tablets through health campaigns, and the sensitization of women in prenatal consultations.

Figure 6.5: Probability of Taking Iron Supplements during Pregnancy, by Mothers' Education Level, 2007
Percent



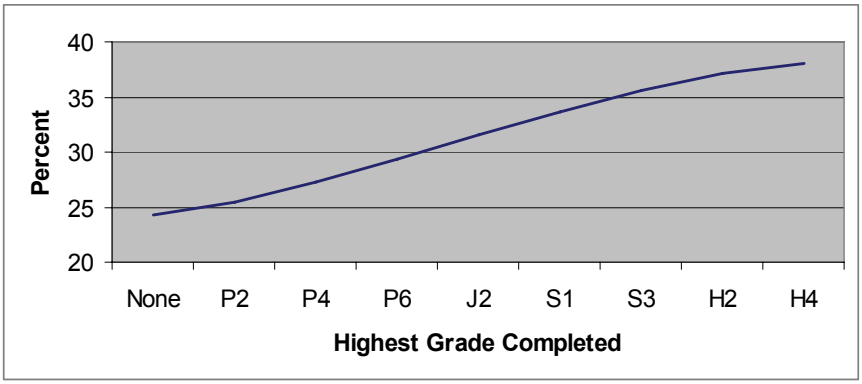
Source: Authors' calculations based on data from the DHS, 2007.

Child Immunization

Education is positively correlated to child immunization.[25] Educated mothers are twice as likely to have their children fully immunized as uneducated mothers (See Figure 6.6 below). Surprisingly, the marginal effect of primary education completion is only moderately significant at five percent, and that of secondary completion is similar, at six percent. The rate of application of each successive vaccine progressively decreases over time, which has an effect on full immunization rates: 72.8 percent of children receive the first vaccine, BCG, but only 41.2 percent receive the last vaccine, the third DTP jab.[26] It is worthy of note that despite the low share of births delivered by skilled professionals, the BCG immunization rate is high; this indicates that those mothers who give birth unassisted nevertheless take their children for vaccination after birth.

[25] Both the vaccination card and mothers' reports were used to define child immunization as children under five being vaccinated with BCG (Bacillus Calmette-Guerin), measles, and three doses of DTP (Diphteria, Tetanos and Pertussis) and polio.
[26] The decrease is fairly progressive, as demonstrated by the share of children receiving each vaccine: Polio-1, 78.4 percent; Polio-2, 67.6 percent; Polio-3, 42.4 percent; DTP-1 69.4 percent; DTP-2, 59.2 percent; and measles, 55.6 percent.

Figure 6.6: Probability of Children under Five Being Fully Immunized, by Mothers' Education Level, 2007
Percent

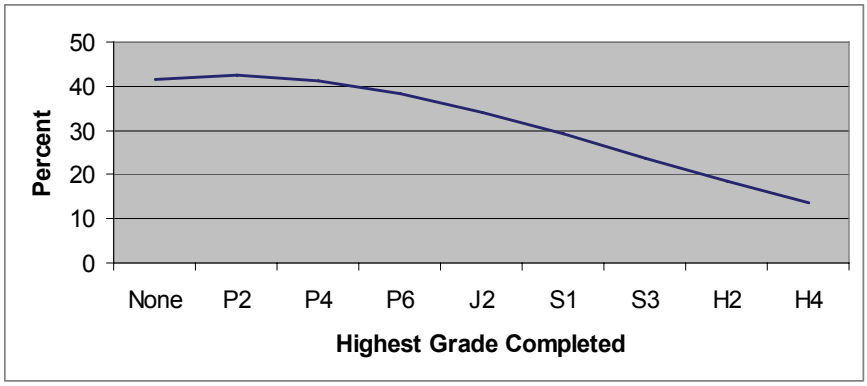


Source: Authors' calculations based on data from the DHS, 2007.

Child Stunting

The odds of stunting are 8 times higher for children born of uneducated women than for those whose mothers have a university degree. Child stunting is associated with poor child development and increased mortality. Although the marginal effect of primary cycle completion is virtually insignificant at three percent, the marginal effect of secondary school completion is considerable, at 15 percent, lowering the probability of stunting to 23 percent (See Figure 6.7). Secondary education is clearly more efficient in this respect.

Figure 6.7: Probability of Child Stunting, by Mothers' Education Level, 2007
Percent

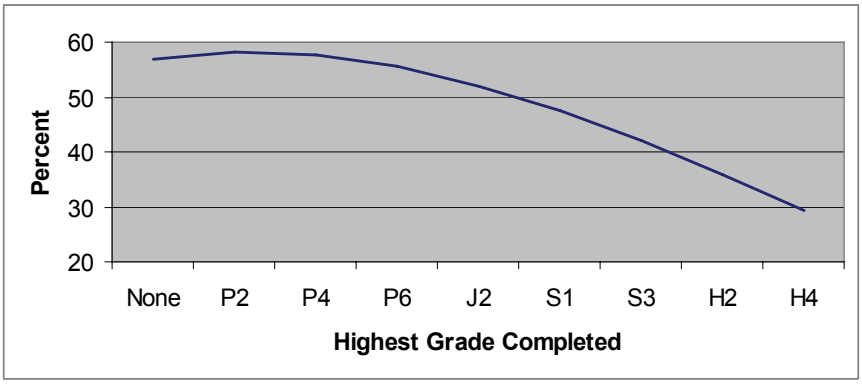


Source: Authors' calculations based on data from the DHS, 2007.

Breastfeeding

Breastfeeding is also negatively correlated with mother's education. Breastfeeding's major positive impact on child health was established long ago. Research has identified many socioeconomic and cultural factors that influence mothers' choices in this respect, and education has been found to be one of the more important. In this instance however, the probability of breastfeeding decreases significantly with educational achievement, from close to 60 percent for uneducated mothers to less than half for those with higher education. Adding other variables to the model, such as the age of the mother and length of breastfeeding, did not change the outcome.

Figure 6.8: Probability of Breastfeeding, by Mothers' Education Level, 2007
Percent



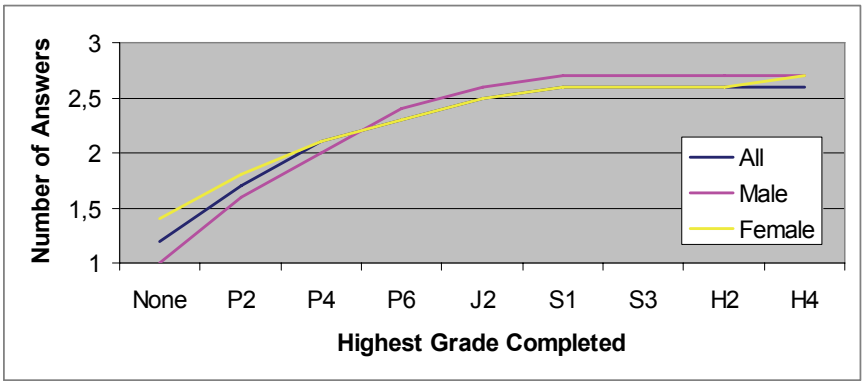
Source: Authors' calculations based on data from the DHS, 2007.

Educated women are less likely to breastfeed, possibly because women with low education do not have access to alternatives such as powdered milk, and because they are socially closer to elders with traditional motherhood practices. A further explanation may be that pursuing education makes breastfeeding impractical for mothers, and the common lack of refrigeration does not allow women to pump and preserve breast milk for their children's consumption while they are in class. This theory is supported by Figure 6.8, that shows that most of the marginal effect is at the post primary levels, where women are in childbearing age.

Awareness and Knowledge of HIV/AIDS

Knowledge of HIV/AIDS is positively correlated with education.[27] The number of methods of transmission cited by survey respondents having completed secondary education (2.32 on average) is almost double that cited by those with no education (1.25 on average - See Figure 6.9). Most of the improvement in knowledge occurs as a result of primary education. During primary education more women are knowledgeable about HIV/AIDS than men but this trend then reverses and men with secondary education show slightly better knowledge. Although women are often targeted by AIDS prevention campaigns, especially during prenatal consultations, which may explain their better initial score, there is no doubt that these figures show how far schooling can help people enhance their knowledge of the disease.

Figure 6.9: Knowledge of HIV/AIDS Transmission Methods, by Gender and Education Level, 2007
Number of Transmission Methods Known



Source: Authors' calculations based on data from the DHS, 2007.
Note: The maximum possible score was six.

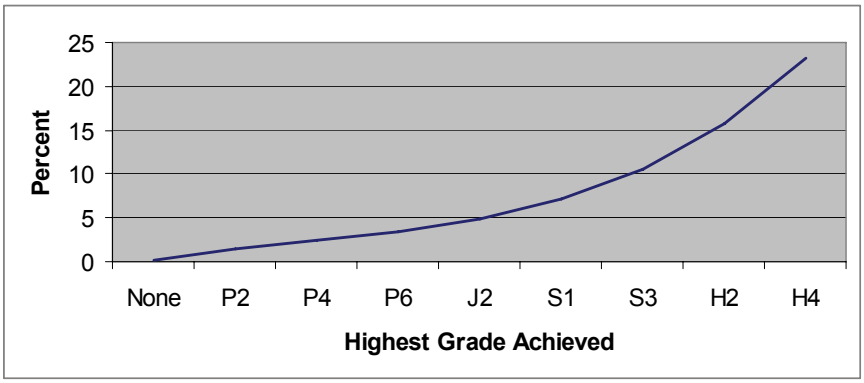
From the survey, 90.7 percent of respondents aged over 15 years had heard of HIV. There is some variation by area of residence, urban dwellers being over ten percent more aware of HIV/AIDS than their rural counterparts. However, only 30.5 percent of the total adult population was able to correctly answer 4 out of the 6 HIV knowledge questions, and no respondent was able to correctly answer more than 4 questions. This shows that the population is still relatively ignorant about how HIV/AIDS is transmitted, with 29.4 percent of women and 32.9 percent of men lacking basic knowledge, meaning that the risk of infection still remains high.

[27] The survey asked general questions on having heard about HIV/AIDS, and specific ones to assess respondents' knowledge about the six methods of HIV transmission.

HIV Testing

Despite the high awareness of AIDS and low knowledge about HIV transmission, a very small share of the population has been tested for the disease. A deeper understanding of the reasons for this apparently contradictory situation is necessary. The data does however show that HIV/AIDS testing is more frequent the higher the level of education (See Figure 6.10). The probability of the uneducated getting tested is barely 0.1 percent, whereas it increases to 3.4 percent for those with complete primary education. There are significant gender variations: the probability at primary completion is 1.7 percent for women and more than double for men, at 4.1 percent); with higher education nearly five times more men than women get tested (2.0 percent women against 10.9 percent men).

Figure 6.10: Probability of HIV/AIDS Testing, by Gender and Education Level, 2007
Percent

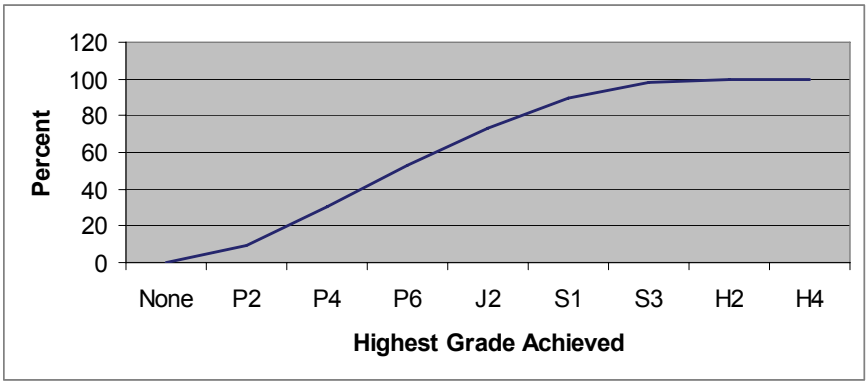


Source: Authors' calculations based on data from the DHS, 2007.

Literacy

Literacy is of course positively correlated with education. All other factors (age, wealth index, geographical location) being equal, education has a strong positive effect on literacy. The marginal effect of primary education is 47 percent, which increases to 10 percent per year thereafter, until 100 percent literacy is achieved by those completing secondary education (See Figure 6.11 below).

Figure 6.11: Probability of Female Literacy, by Educational Level, 2007
Percent



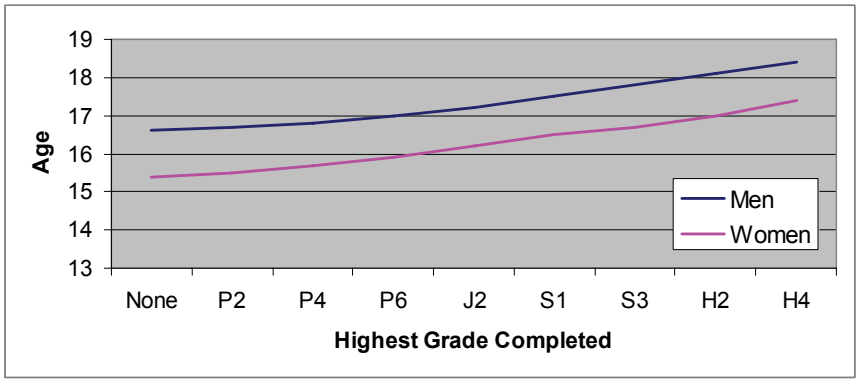
Source: Authors' calculations based on data from the DHS, 2007.

Despite the positive correlation, female adult literacy is low (53 percent can still not read upon completing primary education) and attention should be given to improve it. Literacy (defined as reading, writing and arithmetic) is probably the most important outcome expected from education, especially from the primary cycle. Only 30.2 percent of all women surveyed were able to read a complete sentence in any language, undoubtedly indicating that priority should be given to adult literacy programs and activities. Surprisingly, only a small proportion of adults (4.2 percent) have ever participated in a literacy program outside of primary school.

Age of First Sexual Encounter

Education delays first the sexual encounter. Figure 6.12 below, shows a positive correlation between education and the age of the first sexual encounter. The probability of having an early sexual encounter is higher for those with no education, at ages 15.5 years for women and 16.5 years for men. With primary education the first sexual encounter is delayed by six months, for both sexes. With secondary education, the encounter is delayed by another 9 months on average. The issue with early sexual encounters is the higher risk of pregnancy for women, which affects schooling completion, occupations, income, and chances of marriage as well as the quality of both the mother and the children's life.

Figure 6.12: Age of First Sexual Encounter, by Gender and Education Level, 2007
Years

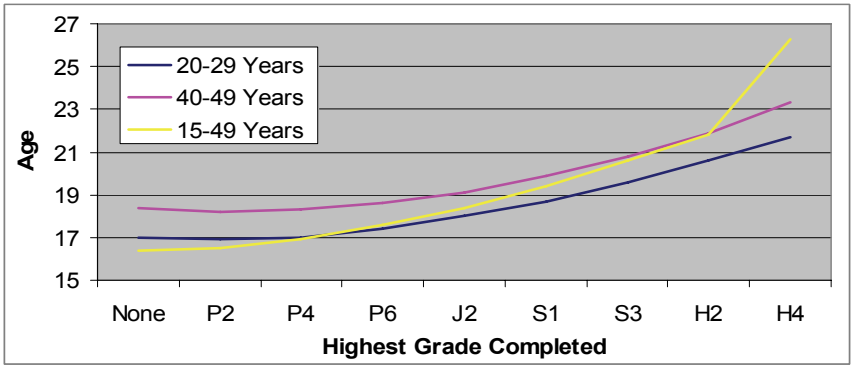


Source: Authors' calculations based on data from the DHS, 2007.

Age of Marriage

The level of education is positively correlated with the timing of marriage, for both men and women. However in this instance it is believed that the causal relationship is the opposite to that noted up until now: it is possibly the later age of first marriage that enables youth to pursue their schooling for longer. Figure 6.13 shows that the average age of marriage for uneducated women is 16 years, which rises to 18 years at the end of primary, 20 years at the end of secondary, and can reach 27 years for women with higher education. Early marriage may therefore be associated with early school drop-out. Residence is also a factor in determining the age at first marriage, with the average being higher in urban areas.

Figure 6.13: Women's Age at First Marriage, by Age Group and Education Level, 2007
Years



Source: Authors' calculations based on data from the DHS, 2007.

The interval between age at first sex and age at first marriage defines the period of exposure to premarital sexual activity. As shown in Table 6.2, the interval increases with age. Despite the fact that youth with higher education experiment with sex early (although later than uneducated youth) they tend to get married later. The table shows that men wait longer than women both for their first sexual encounter, and marriage.

Table 6.2: Average Duration of Premarital Sexual Activity, by Gender and Education Level, 2007
Years

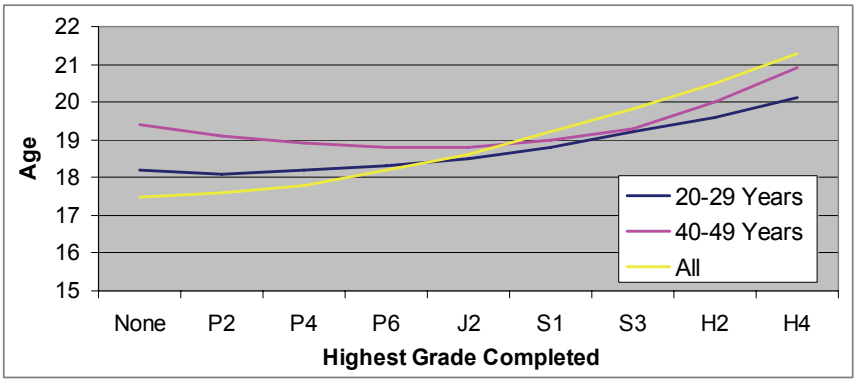
	Women			Men		
	Age at First Sexual Encounter (a)	**Age at First Marriage (b)**	**Duration of Prenuptial Sexual Activity (b) minus (a)**	**Age at First Sexual Encounter (a)**	**Age at First Marriage (b)**	**Duration of Prenuptial Sexual Activity (b) minus (a)**
0	15,40	16,40	1,00	16,64	16,88	1,48
P2	15,53	16,54	1,01	16,68	18,36	2,83
P4	15,72	16,93	1,22	16,81	19,69	3,98
P6	15,94	17,56	1,62	17,00	20,88	4,94
J2	16,20	18,38	2,18	17,24	21,91	5,71
S1	16,50	19,39	2,89	17,52	22,80	6,29
S3	16,83	20,55	3,73	17,82	23,53	6,70
H2	17,18	21,85	4,67	18,12	24,12	6,94
H4	17,55	23,25	5,70	18,43	24,56	7,01

Source: Authors' calculations based on data from the DHS, 2007.

Age at First Childbirth

Women with higher education tend to have their first child much later than women with a lower level of education. On average, uneducated women have their first child at age 17.5 years (See Figure 6.14 below).

Figure 6.14: Women's Age at First Birth, by Education Level, 2007
Years



Source: Authors' calculations based on data from the DHS, 2007.

Women with higher education on the other hand tend to wait until they are over 21 years. It has long been believed that early birth causes young women who would not otherwise do so to drop out of school, thus curtailing their education and career prospects.

Social Outcomes by Level of Education and Cost-Benefit Analysis

This section examines the social outcomes of education from an economic viewpoint, comparing the contribution of each level of schooling to the global outcomes, and the cost of each year of schooling with its benefits (See Table 6.3 below). This analysis is relevant for at least two reasons: (i) for policy makers it is useful to know which level of schooling is the most effective in reducing poverty and improving human development, to inform choices regarding the allocation or reallocation of public resources; and (ii) different levels of schooling involve different costs; the efficiency of government spending is measured by comparing actual spending with the minimum spending theoretically sufficient to produce the desired output.

Table 6.3: Impact of Different Education Cycles on Social Behaviors, 2007
Percent

	Share of Total Effect Attributable to Each Level:			Total
	Primary	Secondary	Higher	
Behaviors where Primary Education has the Greatest Effect				
Prenatal Care	100.0	0.0	0.0	100
Fertility Rate	83.5	16.8	0.0	100
Knowledge about HIV/AIDS	69.0	27.7	3.3	100
Use of Vitamin A first 2 Months after Birth (%)	58.3	41.7	0.0	100
Adult Female Literacy	53.0	45.2	1.7	100
Use of Iron Supplements During Pregnancy	52.1	41.4	6.5	100
Behaviors where Secondary Education has the Greatest Effect				
Child Stunting (%)	11.1	52.3	36.6	100
Childbirth Assistance at by Skilled Health Professional	32.0	51.8	16.2	100
Use of Tetanus Toxoid	37.6	50.0	12.4	100
Use of Contraceptives	37.4	47.6	15.0	100
Full immunization of Children under Five (%)	36.5	46.0	17.5	100
Women's Age at First Birth	17.6	43.8	38.7	100
Woman's Age at First Sexual Encounter	27.6	36.8	35.7	100
Behaviors where Higher Education has the Greatest Effect				
Woman's Age at First Marriage	11.7	30.3	58.0	100
Impact and Efficiency Indicators				
Average Social Impact	47.4	37.2	15.4	100
Unit Cost (% of GDP per Capita)	8.4	44.8	110.3	n.a.
Total Spending (Units of GDP per Capita)	0.5	2.7	4.4	n.a.
Education Efficiency Index (= Impact / Spending)	0.944	0.138	0.035	n.a.

Source: Authors' calculations using data from the DHS, 2007.
Note: Unit costs are recurrent costs as a percentage of GDP per capita at current 2007 US$, provided by the government of Liberia budget supplement estimates; GDP per capita was estimated at US$ 190 in 2007; Total spending is the unit cost of each cycle multiplied by the length of the cycle.

Primary schooling has the greatest impact on six of the 14 social behaviors studied. On average, the primary cycle represents almost half of the total social impact of education at 47.4 percent, whereas secondary education accounts for 37.2 percent (See Table 6.3). The primary cycle has a high impact on social indicators like the use of prenatal care, the fertility rate, knowledge of HIV/AIDS, literacy, and the use of iron tablets during pregnancy and Vitamin A after birth. For these indicators, between 50 percent and 100 percent of the total impact is acquired with Grade 6 completion. Conversely, the primary cycle has a low impact on indicators like the age at first childbirth, the age of marriage, and child stunting. For these indicators, its contribution varies from 11 percent to 17 percent.

On the other hand, secondary education has the greatest impact on contraceptive use, immunization, stunting, women's age at their first sexual encounter and at first birth, the use of tetanus toxoid, and being assisted in childbirth. Higher education's largest impact is on women's age at marriage, but also contributes significantly to reduce child stunting, and increase women's age at first sexual encounter and birth.

Each cycle's global contribution to behavioral change and the associated costs are shown at the bottom of Table 6.3. The last row indicates the efficiency of each cycle of education. Overall, the primary cycle is the most cost-effective in achieving behavioral change, with an efficiency index of 0.94; secondary education is almost seven times less cost-efficient, with an index of just 0.14, and higher education could be considered to be comparatively cost-inefficient, with a very low index of 0.03.[28]

Relevance of Education to the Labor Market

An individual's level of education, employment prospects and standards of living are interdependent. Table 6.4 shows the distribution of DHS respondents by their level of schooling and occupation. It shows that 33.0 percent of respondents had no education, 31.8 percent had at least partial primary education, 31.2 percent had at least partial secondary education, and 4.1 percent had higher education. It also shows that people with no education or incomplete primary education are over proportionately employed in the agriculture sector (76 percent), the household (60 percent), sales (52 percent), and manual jobs (44 percent). At post primary levels of education, the agriculture sector becomes less important, employing just 18 percent of respondents.

Table 6.4: Distribution of Survey Respondents, by Main Occupation and Education Level, 2007
Percent

	Level of Education						Total
	None	Incomplete Primary	Complete Primary	Incomplete Secondary	Complete Secondary	Higher	
Unemployed	5.5	34.0	8.1	39.7	8.5	4.2	100
Prof., Tech., Managerial	3.6	1.3	1.0	13.7	43.4	37.0	100
Clerical	0.0	1.5	2.0	13.0	54.6	28.9	100
Sales	29.3	22.5	7.4	25.0	12.1	3.8	100
Agriculture							
Self-employed	47.3	30.2	5.1	14.8	2.4	0.3	100
Employed	41.7	33.5	5.6	16.8	2.3	0.2	100
Household & Domestic	22.4	37.8	0.5	26.4	8.5	4.4	100
Services	18.4	14.7	4.6	25.8	29.8	6.8	100
Skilled Manual	26.2	17.9	6.3	34.2	12.3	3.1	100
Unskilled Manual	12.7	31.9	10.2	36.4	6.3	2.5	100
Other	2.0	10.8	0.5	27.6	39.8	19.4	100
Total	**33.0**	**26.0**	**5.8**	**21.6**	**9.6**	**4.1**	**100**

Source: Authors' calculations based on data from the DHS, 2007.

[28] Although efficiency indexes give useful hints of potential inefficiencies, they must be interpreted with care, ideally in combination with qualitative information.

Secondary education opens opportunities in the clerical (employing 55 percent of respondents), professional, technical and managerial (employing 43 percent) and services (employing 30 percent) sectors. With higher education the likelihood of working in the former two sectors increases further still.

The risk of being unemployed is particularly high for those with incomplete primary or secondary education. Those who have reached higher education represent the smallest share of the unemployed, at 4.2 percent, whereas 39.7 percent of the unemployed dropped out of secondary and 34 percent dropped out of primary. Those with complete primary and secondary education represent only 8.1 percent and 8.5 percent, respectively.

Table 6.5: Distribution of Main Occupations, by Education Level and Gender, 2007
Percent

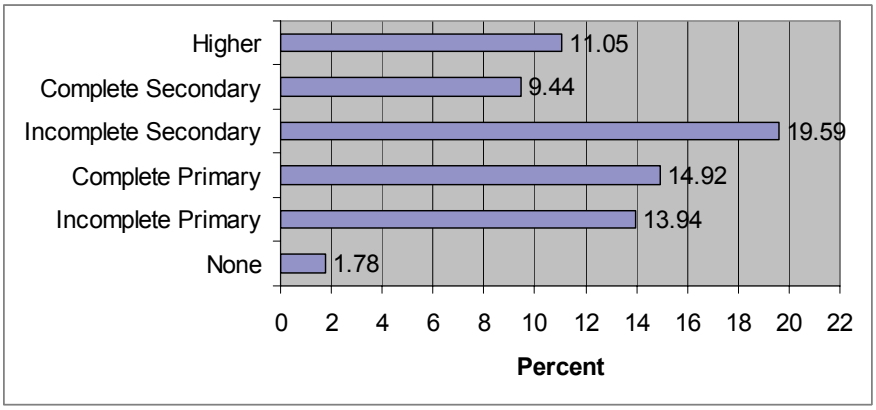
	Level of Education											
	None		Incomplete Primary		Complete Primary		Incomplete Secondary		Complete Secondary		Higher	
	M	F	M	F	M	F	M	F	M	F	M	F
Unemployed	5,5	n.a.	34,0	n.a.	8,1	n.a.	39,7	n.a.	8,5	n.a.	4,2	n.a.
Prof., Tech., Managerial	2,0	8,5	1,2	1,6	1,3	0,3	12,8	16,5	43,3	43,5	39,4	29,7
Clerical	0,0	0,0	1,9	0,0	2,3	1,1	15,5	3,2	55,3	51,7	25,0	44,0
Sales	9,4	36,5	16,2	24,8	8,6	6,9	36,0	21,0	20,4	9,1	9,4	1,7
Agriculture												
Self-employed	28,4	65,1	34,4	26,1	6,6	3,7	25,3	4,9	4,8	0,2	0,6	0,0
Employed	24,9	66,3	39,5	24,8	6,2	4,7	25,7	3,8	3,5	0,5	0,3	0,0
Household & Domestic	0,0	30,6	13,2	46,7	1,9	0,0	55,1	15,9	13,2	6,7	16,6	0,0
Services	15,3	32,8	13,3	21,5	4,6	4,5	26,5	22,4	32,7	16,1	7,7	2,8
Skilled Manual	25,9	29,9	17,3	23,5	5,8	11,9	34,9	26,8	13,2	3,2	3,0	4,8
Unskilled Manual	5,6	59,3	35,1	10,8	11,8	0,0	39,4	16,5	5,7	10,4	2,4	3,0
Other	2,4	0,0	8,6	19,3	0,7	0,0	31,0	14,0	39,9	39,3	17,3	27,4
Total	**18,1**	**51,7**	**26,9**	**24,8**	**6,5**	**4,8**	**29,6**	**11,6**	**13,0**	**5,2**	**5,9**	**1,8**

Source: Authors' calculations based on data from the DHS, 2007.
Note: M = male; F = female.

The survey demonstrates significant gender disparities in the various occupations. A distribution by gender in Table 6.5 shows that over 1.5 times more men than women are educated (51.7 percent of women are uneducated, compared with 18.1 percent men). The disparity is particularly strong for higher education, followed by close to three times more men than women (5.9 percent of men, compared with 1.8 percent of women). The gender disparities by occupation are greatest among the uneducated: more than twice as many women as men occupy sales, agriculture, household, services, and unskilled manual positions. The differences are slighter among the better educated, and indeed having at least completed primary education, a higher proportion of men than women work in sales, the agricultural sector, and unskilled manual jobs.

The risk of being unemployed does not bear a direct relation to the level of education. Figure 6.15 analyzes the unemployment rate in more detail, differentiating by level. Unemployment rates are highest for those with complete primary (15 percent), incomplete secondary (20 percent), and higher education (11 percent). Interestingly the unemployment rate is lowest for those with no education at all, and then rises progressively to its highest point, for those who drop out of secondary education. For those with complete secondary, it drops to 9 percent, the lowest rate bar that of the uneducated. The survey did not consider end of primary examination results, but a possible explanation for unemployment being higher for those that complete the cycle than for those that drop out may be that a high proportion of Grade 6 students failed their exams or obtained poor results, making them unattractive candidates.

Figure 6.15: Unemployment Rates, by Education Level, 2007
Percent



Source: Authors' calculations based on data from the DHS, 2007.

These initial figures do however conceal the fact that more education increases the likelihood of being formally employed (not working for family or self-employed). Table 6.6 below clearly shows a positive relationship between education and formal employment; the rate of those employed by a third party rises constantly, to reach more than 40 percent for those having completed secondary education. On the other hand, the majority of uneducated people are self-employed (84.4 percent). The rate of self-employment drops constantly, to reach only 38.8 percent for those with higher education. The likelihood of being employed in a family business or capacity is highest for those having dropped out of their primary or secondary education. Gender disparities show that women with higher education are 15 percent more likely to be formally employed than men.

Table 6.6: Distribution of the Population by Education Level, Type of Employer and Gender, 2007
Percent

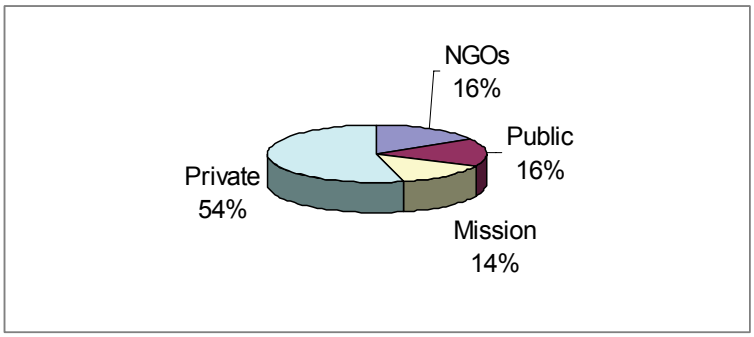
	By Family Member			By a Third Party			Self-employed		
	All	Male	Female	All	Male	Female	All	Male	Female
No Education	**7.9**	5.4	14.0	**7.7**	3.0	18.9	**84.4**	91.5	67.1
Incomplete Primary	**21.1**	14.7	27.2	**10.2**	3.0	17.1	**68.8**	82.3	55.7
Complete Primary	**24.5**	19.2	28.5	**13.5**	1.8	22.2	**62.1**	79.0	49.3
Incomplete Secondary	**13.8**	8.3	16.2	**20.2**	5.7	26.3	**66.0**	86.0	57.5
Complete Secondary	**6.0**	3.7	6.9	**40.4**	21.3	47.5	**53.6**	75.1	45.6
Higher	**4.0**	4.3	4.0	**57.2**	44.7	60.7	**38.8**	51.0	35.3
Total	**13.0**	**8.6**	**17.2**	**16.3**	**5.0**	**27.3**	**70.8**	**86.4**	**55.5**

Source: Authors' calculations on the basis of data from the DHS, 2007.

Relevance of TVET to the Labor Market

This section attempts to analyze existing data to draw a preliminary picture of the value and relevance of TVET graduates' qualifications and competencies to the labor market. The main sources for this analysis are the ILO's tracer study of TVET institutions conducted in 2008[29] and the MOE's situational analysis of the TVET system.

Figure 6.16: Distribution of Specialized TVET Institutions, by Proprietor, 2006
Percent



Source: Situational Analysis of TVET, 2006.
Note: Schools which offer technical and/or vocational subjects as well as other subjects, are not included.

Private institutions represent approximately 54 percent of all specialized TVET institutions (See Figure 6.16), yet they are currently virtually unregulated. They exercise discretion in deciding their curriculum, are independent in determining the

[29] The study covered 215 TVET graduates: 60 percent were of certificate/diploma level, 31 percent of 8th and 10th grade level, and about 10 percent below 8th grade level.

quality and duration of their courses, and the relevance to the job market of their programs is uncertain.

About 93 percent of TVET institutions offer poor quality training as a consequence of the quantity and quality of staff (the few instructors available lacked either the required pedagogical or technical skills), as well as the major destruction of infrastructure and equipment during the civil conflict.

Enrollment and Graduation by Training Type and Gender

Between 2004 and 2007, 6,932 TVET students graduated in the eleven counties, of a total of 8,359 enrolled. Table 6.7 illustrates the enrollment and graduation of TVET students by training types and gender.

Table 6.7: TVET Enrollment and Graduation, by Course and Gender, 2004-07
Number and Percent

	Enrollment					Graduation				
	Total	Male		Female		Total	Male		Female	
		Nº	%	Nº	%		Nº	%	Nº	%
Computer Skills	**2,643**	1,447	17,3	1,196	14,3	**1,939**	1,043	15,0	896	12,9
Tailoring	**1,125**	300	3,5	825	9,8	**927**	187	2,6	740	10,6
Carpentry/ Furniture/Wood Work	**643**	622	7,4	21	0,2	**544**	525	7,6	19	0,2
Building Construction	**470**	404	4,8	66	0,8	**469**	437	6,3	32	0,5
Auto Mechanics	**454**	454	5,4	0	0,0	**420**	420	6,0	0	0,0
Secretarial Studies	**412**	96	1,1	316	3,7	**398**	87	1,2	311	4,4
Cosmetology	**367**	104	1,2	263	3,2	**325**	105	1,5	220	3,2
Masonry	**321**	321	3,8	0	0,0	**308**	308	4,4	0	0,0
Tie and Dye	**307**	65	0,8	242	2,8	**244**	59	0,8	185	2,6
Agriculture	**306**	200	2,3	106	1,2	**253**	167	2,4	86	1,2
Business Education	**294**	147	1,7	147	1,7	**294**	189	2,7	105	1,5
Home Economics	**193**	56	0,7	137	1,6	**109**	20	0,3	89	1,2
Metal Work	**182**	180	2,2	2	..	**136**	134	1,9	2	..
Pastry/Baking	**134**	3	..	131	1,5	**93**	2	..	91	1,3
Electricity	**132**	131	1,5	1	..	**130**	130	1,8	0	0,0
Electronics	**94**	94	1,1	0	0,0	**94**	94	1,3	0	0,0
Airline/Office management	**64**	8	0,1	56	0,7	**64**	8	0,1	56	0,8
Agro Processing	**56**	33	0,4	23	0,3	**56**	33	0,5	23	0,3
Professional Mechanical Driving	**45**	45	0,5	0	0,0	**40**	40	0,6	0	0,0
Plumbing	**44**	44	0,5	0	0,0	**44**	44	0,6	0	0,0

Table 6.7 Continued

	Enrollment					Graduation				
	Total	Male		Female		Total	Male		Female	
		Nº	%	Nº	%		Nº	%	Nº	%
Theology	**26**	15	0,2	11	0,1	**26**	15	0,2	11	0,1
Small Enterprise Development	**21**	12	0,1	9	..	**7**	4	..	3	..
Social Counseling	**11**	5	..	6	0,1	**8**	3	..	5	0,1
Vulcanizing	**5**	5	..	0	0,0	**4**	4	..	0	0,0
TOTAL	**8,349**	**4,791**	**100**	**3,558**	**100**	**6,932**	**4,058**	**100**	**2,874**	**100**

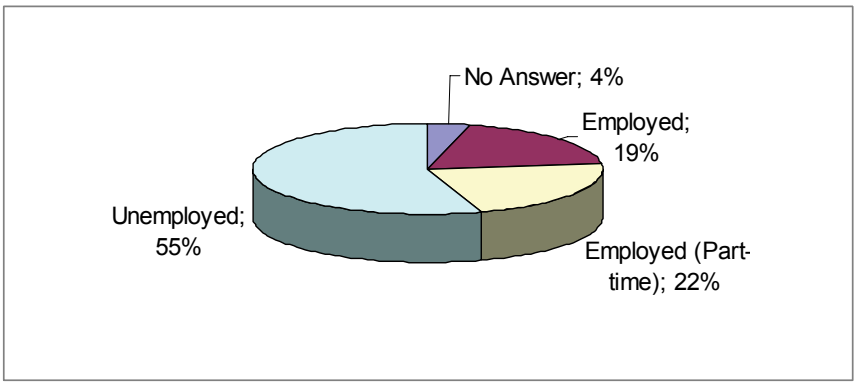
Source: ILO Tracer study, 2008.

Computer studies attracted most interest, accounting for 15 percent of male and 12.9 percent of female graduates. For women, tailoring (10.6 percent) accounted for the second largest share of graduates. In contrast, the next most favored training courses by men were carpentry (7.6 percent of graduates), and building construction (6.3 percent).

Employment Status of TVET Graduates

Only 19 percent of the TVET trainees surveyed were employed in the trade they learnt whereas the remaining 81 percent were underemployed or unemployed. (See Figure 6.17). The best employed graduates were those trained as tailors, agricultural extension workers, cosmetologists, masons, home economists, construction workers, agricultural production workers and secretaries. The least employed were trained in the fields of auto mechanics, electrical installation, electronics, computer and IT, metallurgy and metal work, goldsmiths and furniture making and wood-work.

Figure 6.17: TVET Graduates' Employment Status, 2008
Percent



Source: ILO Tracer Study, 2008.

Of those in employment, approximately 64 percent of TVET graduates are in paid employment (See Table 6.8). Of the TVET graduates surveyed, 20 percent are employed in the formal sector, whereas 50 percent work in the informal sector.[30] The formal sector jobs include office assistants, cleaners, receptionists, store keepers, account clerks and security guards.

Table 6.8: Employment Status of Active TVET Graduates, 2004-07
Percent

Type of Employment	Percent
Paid	64.0
Self-employment	4.6
Helping at Home	14.8
Not Stated	27.9
Total	**100.0**

Source: ILO Tracer Study, 2008.
Note: Survey sample was 215 graduates.

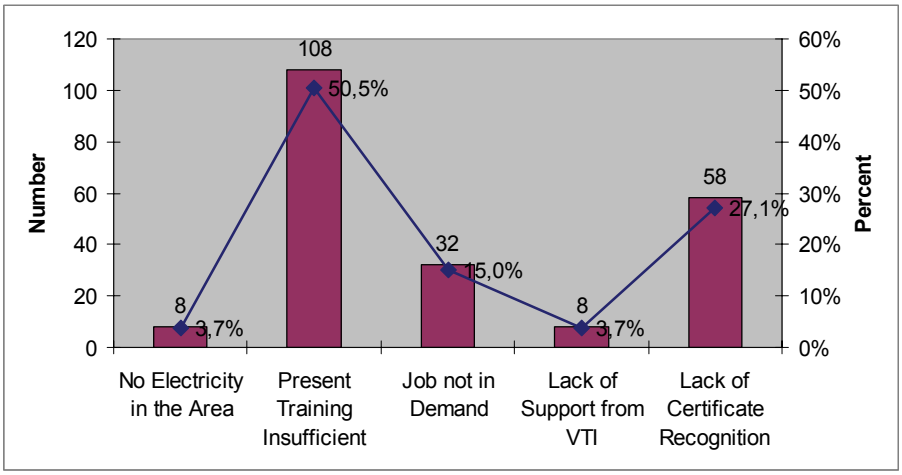
Despite the growing importance of informal employment and traditional apprenticeships, youth employment is still low, partly because very few jobs exist in the formal economy. It is necessary to build pathways between the informal sector and the TVET system and improve coordination and management to allow students to move in and out of the workplace while acquiring skills through different modalities. This is often referred to as a lifelong learning system.

However the principal reason for TVET graduates' unemployment is the insufficiency of training. The data presented in Figure 6.18 below show that for a sample of 214 graduates, 50 percent are unemployed due to insufficient training, 27 percent are unemployed because their certificate is not recognized and 15 percent are unemployed due to a lack of demand for their type of training.[31] Evidently, the demand for labor is weak and volatile.

[30] The ILO defines informal employment as self-employed or independent workers (excluding administrative workers, professionals, and technicians), unpaid family workers, and employers and employees working in establishments with less than 10 staff. The definition excludes paid domestic workers..

[31] Getting accurate information on labor is difficult because hiring decisions by employers are uncoordinated. Demand for TVET graduates was inferred through direct interviews with employers, graduates and secondary data.

Figure 6.18: Reasons for Unemployment, 2008
Number of Respondents



Source: ILO Tracer Study, 2008.

According to the findings, the major reasons for unemployment are inadequate training, lack of standardization and certification recognition, no targeted training and the incapability of TVET graduates to apply the skills acquired.

Relevance of Training to Graduates' Perceived Needs and the Labor Market

The level of graduate satisfaction with TVET training courses is low. Table 6.9 indicates that the vast majority (67.9 percent) of all respondents found the training programs "less relevant" to graduates' perceived needs, against 23.2 percent who found it very relevant. This points to a sharp mismatch between the training on offer and labor market skill demands.

Table 6.9: Perceived Relevance of Training Courses to Graduates' Needs, 2008

	Count	Percent
Very Much	89	23.2
Less Relevant	261	67.9
No answer	34	8.9
Total	**384**	**100.0**

Source: ILO Tracer Study, 2008.

The irrelevance of training could be attributed to a general lack of information exchanged between employers and trainers, and the lack of prospective employers' input into curriculum design and training delivery in particular. The analysis revealed that most training programs are supply oriented rather than demand oriented, the focus having largely been on emergency programs for the reintegration of youths after the end of the civil conflict. Unfortunately, these programs often failed to take labor market information and youths' needs into account.

Relevance of training could be improved through the introduction of a simple form of regulation, establishing industrial advisory committees to set competency standards and develop certification instruments to be used by training organizations to design curricula and teaching materials.

As a result of the low relevance of training, 89 percent of graduate respondents indicated that they needed further training to upgrade their skills (See Table 6.10). This also confirms that more than half of the graduates are underskilled. Some of the graduates responded that they needed additional training to *"get a better job"* and *"get acquainted with basic skills for their job."* This again appears to reflect a mismatch between the skills acquired and those in actual demand, as well as a mismatch between the skills taught and the graduates' career objectives.

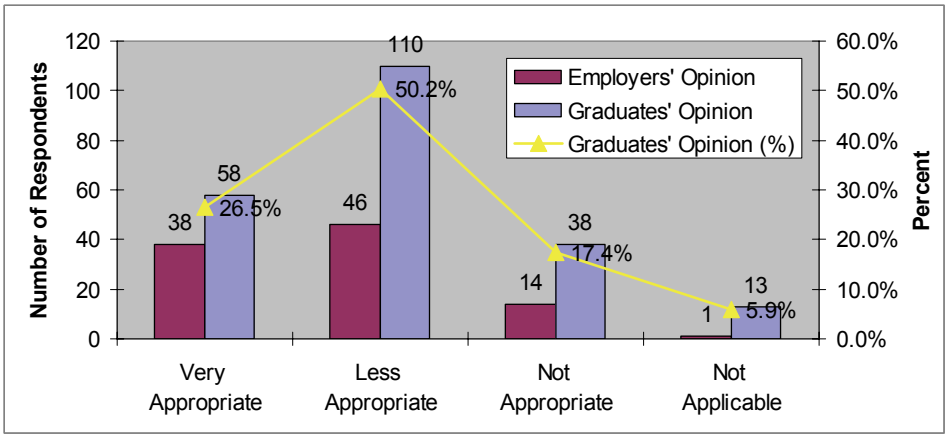
Table 6.10: TVET Graduates' Perceived Need for More Training, 2008

More training needed	Count	Percent
Yes	191	89.0
No Need	16	7.4
Indifferent	6	2.7
No answer	2	0.9
Total	215	100.0

Source: ILO Tracer Study, 2008.

The majority of both employers and graduates believe that training methods bear no relationship to labor market requirements. The data in Figure 6.19 below show both employers and TVET graduates' opinions on the relevance of training methods to the labor market. Most employers (46 percent) and graduates (50 percent) regard the training methods employed in TVET institutions as not particularly relevant to labor market needs.

Figure 6.19: Adequacy of Training Methods to the Labor Market, Employers' and Graduates' Opinions, 2008
Number of Respondents



Source: ILO Tracer Study, 2008.

The choice of training offered and the content of TVET curricula could improve. Apparently Liberia has no up-to-date labor market information system and thus relevant information was not available for the training centers or employers to determine their training programs. Both could be better informed by strengthening links between employers and training organizations, such as through employer advisory bodies, regular tracer studies of graduates, the collection of employer information, and so on. In addition, it is worth noting that the career guidance and counseling programs provided by the Ministry of Labor require more and better qualified personnel, as well as equipment to provide services that will aid youth to improve their employability.

Entrepreneurship Development and Self-employment

To improve youth employment rates, TVET institutions might offer graduates training in starting their own business. Table 6.11 below shows that 63.3 percent of the graduates interviewed want to set up their own business, but explained that they do not have the necessary skills or start-up capital to do so. It was also discovered that respondents lack information on the labor market even if they have their own business. Respondents expressed their concerns: *"how do we sell our product in case we are able to start business"* and *"we are afraid to get a loan."*

Table 6.11: Survey Responses on Will to Start Own Business, 2008

	Count	Percent
Yes	138	64.1
Not Sure	73	34.0
No answer	4	1.9
Total	**215**	**100.0**

Source: ILO Tracer Study, 2008.

Summary and Policy Implications

It is clear that education levels affect and influence social behavior and mothers' habits. More years of schooling result in greater use of contraceptives, fewer children, better health for both mothers and their children, reduced child mortality through assisted childbirth and so on. The very important role played by education in shaping decisions and behavior is clearly demonstrated, as it influences the general household living standard, and especially health, which in turn affects labor productivity.

There is a need to design a simple system to understand the competencies sought by the labor market. For the formal sector, this could be done through employer advisory committees working with training organizations.

The quality of training in TVET institutions needs to be improved. For the informal sector, which covers the majority of the employed today in Liberia, there is a need to understand the weaknesses of the traditional apprenticeship system and improve it. Furthermore, second-chance education options and adult literacy programs would help promote the trainability of the labor force, particularly adults affected by the civil conflict. In addition to technical subjects, curricula should therefore include functional literacy and numeracy classes to improve the fundamental skills that many graduates currently seem to lack.

To improve the employability of TVET graduates, there is a need to strengthen the effective guidance and career counseling of potential trainees, especially in the choice of training programs that are relevant to the labor market demands and the needs of youth. For improved employability of youth it is important to diversify training programs according to emerging growth sectors.

Policy must be based on regular labor market information. Training is currently rigid and unresponsive to market forces, contributing to TVET graduates' unemployment. There is a need to change the incentives and results accountability structure for public training institutions, to entice them to make use of the available informal and formal networks to improve the relevance of their courses, including employer advisory committees and tracer studies. Private providers already have incentives to respond effectively to market demands, and if they fail to do so regardless, public information about the quality of the service they offer should lead to a change in their behavior.

CHAPTER 7: DISPARITIES

Key Findings

- There are large disparities in primary and JHS Gross Enrollment Ratios across counties;
- There are large iniquities in the allocation of public education resources by gender, area of residence and region;
- Although gender disparities in enrollment still exist at all levels, improvements since 1981 have been significant;
- Poorer households spend proportionately more on education in relation to their overall budget, especially on higher education; and
- Despite the free primary education law, primary school tuition fees have not been completely abolished.

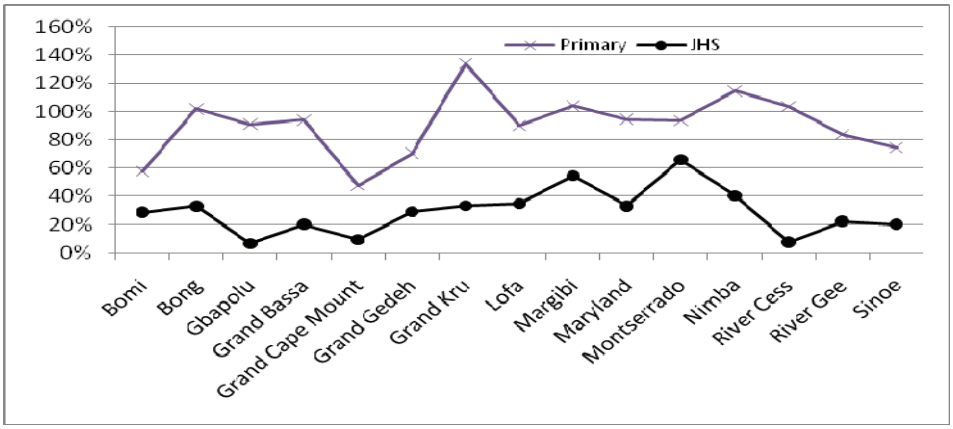
Regional Disparities

There are large disparities in the GER across counties, at both primary and JHS levels. GERs span from 47 percent (Grand Cape Mount) to 134 percent (Grand Kru) for primary education, and from six percent (Gbarpolu) to 66 percent (Montserrado, where Monrovia is located) for JHS. The primary GER is close to or more than 100 percent in many counties, but in Bomi, Grand Cape Mount, Grand Gedeh, River Cess, River Gee, and Sinoe, it is still low. The Education Law declares that basic education (including primary and JHS) should be the right of every citizen. However, the amplitude of these ranges indicates that some counties have relatively advanced education systems, whereas others are far behind even in terms of primary enrollment.

The GER disparities can also be clearly observed by region (See Figure 7.1 below). The enrollment rate in the North Western (Bomi, Gbarpolu, and Grand Cape Mount) and South Eastern A (River Cess and Sinoe) regions are very low for both primary and junior high schools whereas that in the South Central region (Montserrado and Margibi) is high. The regions with low enrollment rates have high poverty rates and the region with highest enrollment is the wealthiest.[32]

[32] As Table 1.4 in Chapter 1 shows, the North Western and South Eastern A regions have the highest poverty rates in the country (76.3 percent and 76.7 percent respectively) whereas in the South Central region it is 58.9 percent.

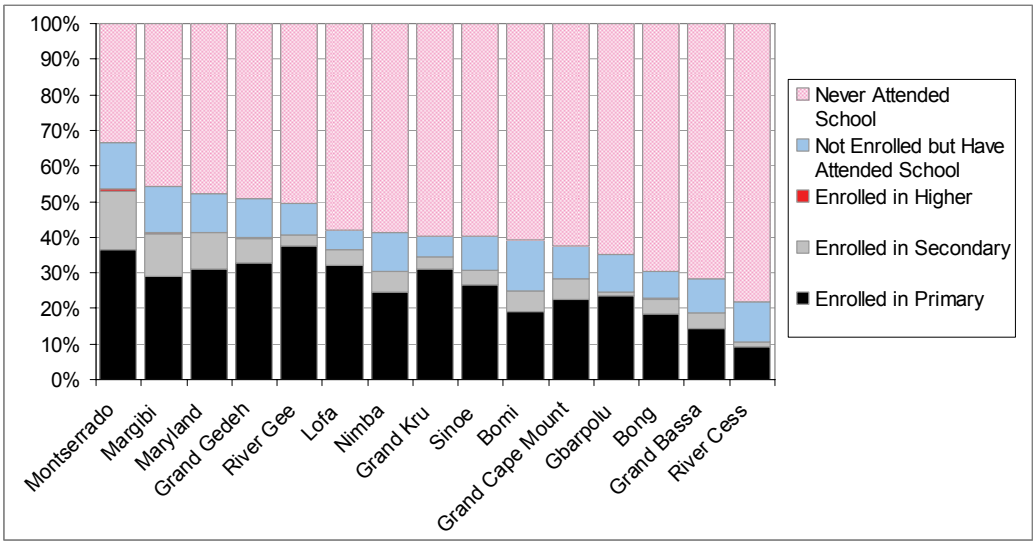
Figure 7.1: Primary and Junior High School GERs, by County, 2007/08
Percent



Source: School Census, 2007/08.

The disparities in access to school among counties are also significant. Figure 7.2 presents the schooling status of the population aged 6 to 24 years.

Figure 7.2: Schooling Status of Youth (Population Aged 6-24 Years), by County, 2007
Percent

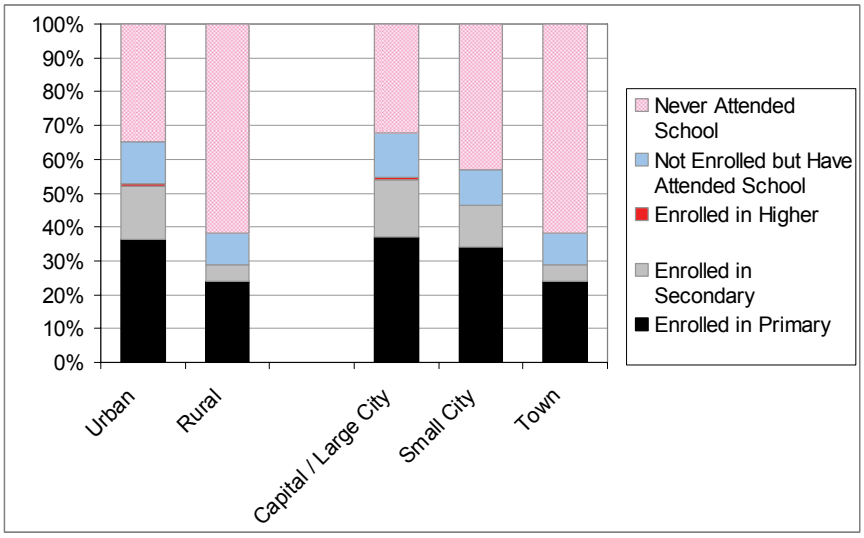


Source: DHS, 2007.
Note: Preprimary is not included.

There are large disparities among counties in the proportion of youth (the population aged six to 24 years) who have never attended school. For example, in River Cess, 78 percent has never attended school, whereas in Montserrado it is 33 percent, less than half. For the share of youth enrolled in primary school, River Gee (37.4 percent) and Montserrado (36.6 percent) have the highest rates. Similarly, for secondary school (JHS and SHS combined), Montserrado has the highest enrollment rate (16.4 percent) and River Cess (1.35 percent) and Gbarpolu (0.97 percent) have the lowest.

The share of unenrolled children is higher in rural (61.8 percent) than in urban areas (34.8 percent – See Figure 7.3). Although many children start Grade 1 at a late age in both urban and rural areas, rural children tend to start even later than urban children. The share of youth in primary school is 24.0 percent in rural areas and 36.3 percent in urban areas. Similarly, enrollment is lower in rural areas than in urban areas for both secondary school (4.8 percent and 15.8 percent respectively), and higher education (0.1 percent and 0.6 percent respectively). The schooling status of youth in rural and urban areas shows that the disparities are high at all school levels. Moreover, the disparities in the shares of enrolled and unenrolled youth are very similar by area of residence: the highest share of children are found in schools in the capital and large cities, and the lowest enrollment is found in towns.

Figure 7.3: Schooling Status of Youth, by Area of Residence, 2007-08
Percent



Source: DHS, 2007.
Note: Preprimary is not included.

Social Disparities

This section examines the effect of social criteria such as gender and family income on the rates of school participation and household education expenditure.

Gender Disparities in Enrollment

Although there are still gender disparities in school enrollment, significant improvements have occurred since 1981. Table 7.1 shows the enrollment Gender Parity Index (GPI)[33] for all education levels, in real terms. An enrollment GPI value of one indicates gender parity; the higher the index, the closer female enrollment is to male enrollment. Gender disparity increases with each level of education. Based on enrollment, there is now practically no gender disparity in preprimary education. In primary education, the GPI is 0.88, which is reasonably close to gender parity, whereas in senior high school the index of 0.69 indicates that there are still many more male students than female students. For all school levels the enrollment GPI has improved by about 30 percent since 1981, which is a great step towards girls' education.

Table 7.1: Enrollment Gender Parity Index, by Level, 1981 and 2007/08
Gender Parity Index

	Preprimary	Primary	JHS	SHS
1981	0.75	0.59	0.43	0.38
2007/08	0.96	0.88	0.79	0.69

Source: National Policy Conference on Education and Training; 1984; National School Census, 2007/08.

In order to assess the extent of gender disparities in education more precisely, it is necessary to calculate the GERs for girls and boys separately to ensure that the comparison is proportionally representative to their respective population sizes. The GPI for primary school (irrespective of whether ALP is included) is 0.91, which indicates that a slightly lower proportion of girls are enrolled. For junior and senior high schools, the GER disparities are larger (GPI indexes of 0.81 and 0.71, respectively), indicating that the proportion of girls attending school decreases faster than the proportion of boys, as they progress through the education system (See Table 7.2 below).

[33] The enrollment GPI is calculated by dividing female enrollment by male enrollment for each level of education.

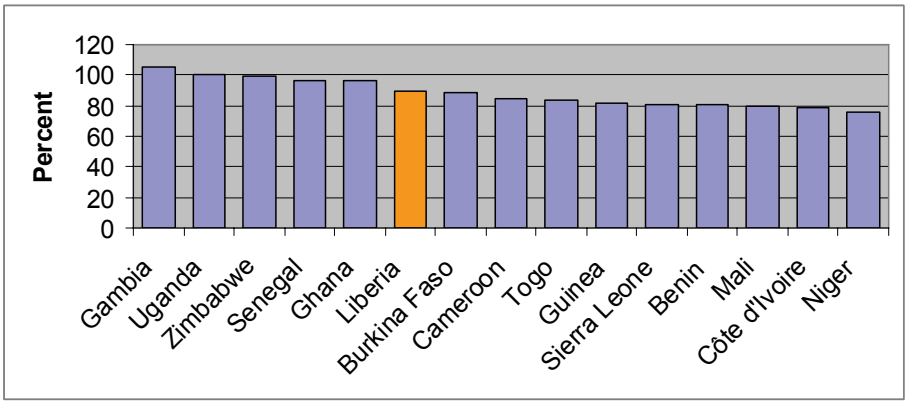
Table 7.2: Gross Enrollment Ratio GPI Values, by Level, 2007/08

	Primary	Primary Including ALP	JHS	SHS
Male GER	99%	113%	47%	29%
Female GER	90%	103%	38%	21%
GER GPI	0.91	0.91	0.81	0.71

Source: School Census, 2005/06 and 2007/08.

In relative terms, girls' enrollment in primary schools is better in Liberia than in many Sub-Saharan African countries. Figure 7.4 displays the primary level GER Gender Parity Indexes for selected Sub-Saharan African countries. It is possible that the large scale migration to the capital city of Monrovia as a result of the civil conflict has contributed to the relatively high enrollment of girls and the consequently high GPI value. Residence in Monrovia may contribute to girls' enrollment because it offers improved access to schools and security compared with isolated and forested rural areas. It should however be noted that different national policies and practices influence girls' enrollment and hence the GPI, meaning that the basis for comparison among countries are not always equal.

Figure 7.4: Primary GER GPI Values, for Selected Sub-Saharan African Countries, MRY
GER Gender Parity Index

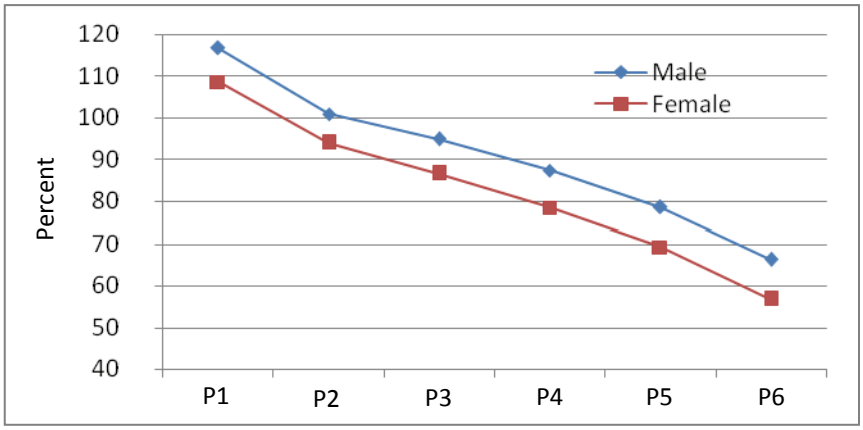


Source: World Bank Data.
Note: Data for Liberia is from 2008; for other countries the latest available year was used over the 2005-08 period.

Gender Disparities in Access and Completion Rates

Given the gender disparities in enrollment and GER, gender disparities in access rates are not to be unexpected. It is worth noting from Figure 7.5 that the girls' access rate is about 10 percent lower than that of boys, and this gap is present throughout primary school. In fact the gap increases slightly with progress through the cycle. The values clearly indicate that girls are at a disadvantage relative to boys, both in terms of their Gross Intake Rate (Primary Grade 1 access rate is a proxy for this) and their Gross Completion Rate (Primary Grade 6 access rate is a proxy for this). This disadvantage is compounded by a further gap in transition rates, of approximately 69 percent for girls and 73 percent for boys. Then, the survival rate for boys in JHS is approximately 82 percent whereas that of girls is a lower 77 percent. It stems from the foregoing that girls are cumulatively disadvantaged as they progress through the schooling system and that measures need to be put in place throughout the different stages of schooling to better address the gender disparity in education.

Figure 7.5: Primary Access Rates, by Grade and Gender, 2007/08
Percent



Source: School Census, 2007/08.

In fact, disparities in access rates are greater by area of residence and income than by gender (CWIQ, 2007). Table 7.3 below suggests that girls living in cities have higher chances of attending primary school than when living in rural environments; however, the area of residence has no incidence for secondary school access. The table also illustrates that the greatest impact on the probability of primary school access is wealth; the difference in the Q1 and Q3 GPIs reaches 0.40.

Table 7.3: Primary and Junior High School GER GPI Values, by Area of Residence and Income Quintile, 2007

	Area of Residence		Income Quintiles				
	Urban	Rural	Q1	Q2	Q3	Q4	Q5
Primary	1.10	0.89	0.77	0.83	1.17	1.14	0.91
JHS	0.73	0.74	0.81	0.64	0.58	0.82	0.90

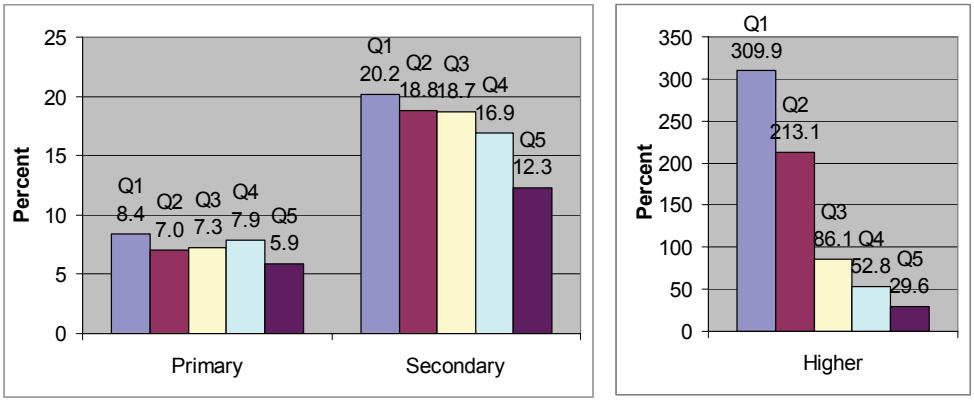
Source: CWIQ, 2007.

Household Education Expenditure by Income Quintiles

Poorer households spend more on education relative to their total household expenditure. Figure 7.6 shows the difference between the poorest and the richest households' per student expenditure on education, as a share of per capita household expenditure. For poor households to send children to school requires a much greater effort and commitment to that of their wealthier counterparts.

Figure 7.6: Household Education Spending per Student, by Level and Income Quintile, 2007

Percent of per Capita Household Spending



Source: Authors' estimates.

The differences in the share of household spending devoted to education between income quintiles are extremely high for higher education. For example, households in the lowest expenditure quintile report spending 309.9 percent of their total expenditure on the higher education of one child, compared with 29.6 percent for households in the highest income quintile. With a cost per student of 309.9 percent (Q1) and 213.1 percent (Q2) of household spending per capita, many poor households simply can not afford to enroll their children in higher education. The minor variation in per student spending on primary education is in part explained by the fact that the cycle is now fee free.

Table 7.4 provides a breakdown of education spending for households from each income quintile, and also presents education spending per quintile as a percentage of total household expenditure.

Despite the fact that primary education should be free by law, primary school tuition fees have apparently not been abolished nationwide. Table 7.4 shows that all income quintiles devote more than 20 percent of household education spending to primary school fees, indicating that many households are still required to pay for school in some form.

In addition to school fees, students must still assume the cost of many necessary school items. Poor households (Q1) spend 30.8 percent of total education spending on school uniforms whereas rich households (Q5) spend just 13.6. Thus the cost of education is not constant. The Table shows that the three poorest quintiles opt to send their children to technical secondary school, and spend more on this level than the two wealthier quintiles. The latter on the other hand spend considerably more on professional training and higher education, reaching 15.4 percent for the wealthiest households (Q5), compared to barely 4.5 percent for the poorest (Q1), reflecting the latter's' financial incapability of sending their children to university.

Table 7.4: Household Education Expenditure, by Expense Type, Income Quintile and Area of Residence, 2007
Percent

	Residence		Income Quintile					Total
	Urban	Rural	Q1	Q2	Q3	Q4	Q5	
School Uniforms and Raincoats	31.1	12.7	30.8	28.7	22.6	16.1	13.6	**19.0**
School Books	3.7	2.3	4.1	2.7	2.1	2.5	3.1	**2.8**
Stationery, etc.	11.2	5.8	9.4	10.6	8.7	6.6	6.7	**7.7**
Bags and Knapsacks	4.0	3.1	3.3	4.0	3.1	3.4	3.3	**3.4**
Other School Materials	1.2	0.7	0.7	1.0	1.2	0.7	0.8	**0.8**
School Fees – Preschool	6.5	8.3	6.3	6.4	7.2	7.7	8.6	**7.7**
School Fees – Primary School	20.5	25.6	23.3	24.4	25.3	24.5	22.6	**23.9**
School Fees - General Secondary	15.1	25.5	16.4	16.8	19.6	23.3	25	**21.9**
School Fees – Technical Secondary	1.2	1.1	1.4	1.4	1.6	1.0	0.9	**1.1**
School Fees – Higher Education	4.4	13.4	3.9	3.7	7.7	12.0	13.9	**10.3**
Professional/Vocational Training Fees	1.1	1.5	0.6	0.4	1.0	2.1	1.5	**1.4**
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Household Education Spending								
Millions of US$	**—**	**—**	**2**	**3.4**	**4.7**	**7.2**	**9.7**	**27**
Education's Share	**2.1**	**5.1**	**3.8**	**3.5**	**3.6**	**4.1**	**2.9**	**3.4**

Source: Estimates based on the CWIQ Survey, 2007.

Equity in the Distribution of Public Education Resources

The available data consistently indicates that the distribution of public financial resources for education is highly inequitable. Those benefiting the most are male students living in the urban area of the South Central region, mostly in the capital city of Monrovia. Table 7.5 for FY 2006/07 clearly shows the disparities.

Table 7.5: Share of Public Education Resources, by Gender, Locality and Region, 2006/07
Percent

	Distribution of the Population Aged 5-25 Years (b)	Consumption of Education Resources		
		Share (a)	Ratio (a) / (b)	Index
By Gender				
Male	50.4	69.3	1.37	2.22
Female	49.6	30.7	0.62	1.00
By Area of Residence				
Urban	32.3	62	1.92	3.44
Rural	67.7	38	0.56	1.00
By Region				
North Central	35.0	22.5	0.64	1.13
North Western	9.7	5.6	0.58	1.00
South Central	39.5	61.6	1.56	2.73
South Eastern A	8.9	5.6	0.63	1.10
South Eastern B	6.8	4.7	0.69	1.21

Source: Estimates based on CWIQ, 2007 and Ministry of Finance, Annual Fiscal Report, 2006/07.

The gender disparity in the consumption of public financial resources is notably high (See Table 7.5). Education spending per boy is 2.2 times higher than per girl. The gender disparity is explained by the fact that more girls leave school than boys, and earlier. This means that the percentage of girls in the system decreases with each level of education, whereas public per student spending increases in line with the more costly inputs necessary at higher levels. The consequence is that much less is spent on girls' education.

However disparities by area of residence and region are much larger still. Education spending per urban child is 3.4 times higher than per rural child, and spending per student living in Monrovia (South Central region) is 2.7 times that per student living in North Western region. In the case of the location disparities, the relative difficulty of access to rural schools may discourage children from pursuing education, while urban per student spending continues to rise.

The distribution of education resources by level and grade of education is also inequitable, as Table 7.6 shows.

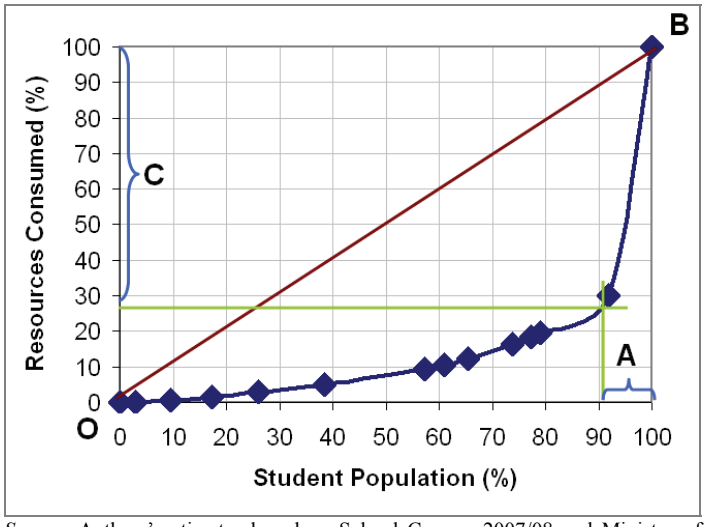
Table 7.6: Share of Public Education Resources, by Level and Grade, 2007/08

	Grade	% Cohort			Unit Costs ($US)		Public Resources Consumed			
		2007/08 Schooling Profile	Drop-out (%)				By Level		Cumulative	
			By Level	Cumu-lative	By Level	Cumu-lative	Total (US$)	Total (%)	$US	%
Primary	P1	100.0%	2.9%	**2.9%**	17.00	17.00	0.49	0.11%	0.49	**0.11%**
	P2	97.1%	6.6%	**9.5%**	17.00	34.00	2.24	0.49%	2.74	**0.60%**
	P3	90.5%	7.8%	**17.3%**	17.00	51.00	3.98	0.87%	6.22	**1.46%**
	P4	82.7%	8.8%	**26.1%**	17.00	68.00	5.98	1.31%	9.96	**2.77%**
	P5	73.9%	12.3%	**38.4%**	17.00	85.00	10.46	2.28%	16.44	**5.05%**
	P6	61.6%	18.8%	**57.2%**	17.00	102.00	19.18	4.18%	29.63	**9.23%**
JHS	J1	42.8%	3.7%	**60.9%**	40.00	142.00	5.25	1.15%	24.43	**10.38%**
	J2	39.1%	4.6%	**65.5%**	40.00	182.00	8.37	1.83%	13.63	**12.20%**
	J3	34.5%	8.3%	**73.8%**	40.00	222.00	18.43	4.02%	26.80	**16.22%**
SHS	S1	26.2%	3.4%	**77.2%**	51.00	273.00	9.28	2.02%	27.71	**18.25%**
	S2	22.8%	1.9%	**79.1%**	51.00	324.00	6.16	1.34%	15.44	**19.59%**
	S3	20.9%	12.8%	**91.9%**	51.00	375.00	48.00	10.47%	54.16	**30.06%**
Higher	H1-H4	8.1%	8.1%	**100.0%**	896.00	3959.00	320.68	69.94%	368.68	**100.00%**
Total	n.a.	n.a.	n.a.	**100.0%**	n.a.	n.a.	458.50	100.00%	368.68	**100.00%**

Per student spending increases markedly by grade. Whereas Primary Grade 1 represents only 0.1 percent of public education expenditure, Primary Grade 6 consumes 4.2 percent. The most expensive school grade is the last year of SHS, representing 11.2 percent of the total, although higher education consumes 17.5 percent of resources per year on average. In total, primary education represents 9.2 percent of expenditure, JHS represents 7.0 percent, SHS 13.8 percent, and higher education represents 69.9 percent.

The Lorenz curve shows the extent of inequity in the distribution of public financial education resources (See Figure 7.7), by comparing the proportion of resources spent by level to the proportion of students enrolled in that level. The plot is the cumulative share of education resources consumed against the cumulative share of the cohort.

Figure 7.7: Public Education Financial Resources, Lorenz Curve, 2007/08
Percent



Source: Authors' estimates based on School Census, 2007/08 and Ministry of Finance data.

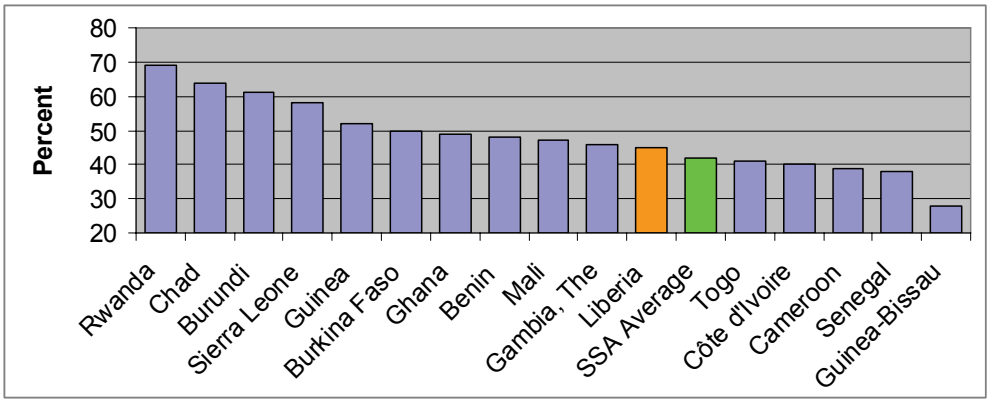
The 60 percent least educated individuals are allocated just 10 percent of available education resources. For the sake of reference, the line O-B materializes a perfectly equitable distribution of public education resources.[34] The Lorenz curve for Liberia therefore indicates significant inequities. The 10 percent most educated students (A on the curve) receive 73 percent (C on the curve) of resources.

[34] In fact, a perfect distribution never occurs in this sense, because of the higher cost of university education.

Liberia's Gini Coefficient for the distribution of public education resources, an additional measure of inequity, is high.[35] The Gini Index for Liberia derived from the Lorenz Curve shown above is 0.73. This value is higher than the average for Sub-Saharan Africa and thus indicates that there is greater inequality in the distribution of financial resources for education in Liberia than on average for other countries in the region.

An indication of how Liberia compares with other countries is shown in Figure 7.8. In fact, the allocation of education resources is even more inequitable in many countries in the region than in Liberia, as measured by the share allocated to the 10 percent most educated individuals.

Figure 7.8: Education Resources Allocated to the 10 Percent Most Educated Students, Select Sub-Saharan African Countries, MRY
Percent



Source: Authors' estimates based on World Bank, Ministry of Education, and Ministry of Finance data.
Note: Data for Liberia is from 2008; for other countries the latest available year was used over the 2005-08 period.

The 2008 PEMFAR reports that *"a benefit incidence analysis of public spending for education conducted with the 2007 CWIQ data show that public spending on education is pro-poor."* However that same analysis also shows that at the postsecondary level and for parts of senior high school it is the opposite. Furthermore, and as indicated in the PEMFAR, public spending appears to be pro-poor at the lower school levels because of the relatively large proportion of poor children attending public schools at those levels.

[35] According to the World Bank, the Gini index measures the extent to which the distribution of income (or in some cases consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index score of zero implies perfect equality whereas a score of one implies perfect inequality.

Summary and Policy Implications

Access to educational opportunities and survival, completion and transition rates are all influenced by gender, the wealth of parents, and geographical location. Even though gender disparities exist and increase by grade (the enrollment GPI is 0.96 for primary, 0.88 for JHS, and 0.69 for SHS) income and location disparities are greater and have a stronger negative impact on the well-being of the nation.

Notwithstanding this reality, the effects of wealth and area of residence appear to be greater for girls than boys. There are marked and troubling gender disparities in the intake, enrollment and completion rates as well as the Gender Parity Indexes by education district. The extremely high relative cost for a poor family (Q1) of sending their child to university (309.9 percent of per capita household spending) is effectively prohibitive, and implies that the poorest quintile of the population do not have access to higher education.

Liberia has adopted a Girls' Education Policy aimed at girls' access to and completion of school. Among other things, girls in primary schools in rural areas are given food baskets to take home. Even though the latter has helped to enroll more girls in primary school, their survival rate continues to be below that of boys and enrollment at the junior and senior high school levels still lags far behind that of boys. The MOE needs to devise additional strategies that will address these shortcomings. Making comprehensive scholarships available to girls who reach Grade 5 could help with their completion of primary whereas junior high school scholarships for girls in districts with enrollment rates below predetermined levels have been shown to be very effective in increasing girls' enrollment in a neighboring country. Keeping the cost of the scholarships to an affordable and sustainable level as well as preventing abuse and misuse will be the main challenges. Given the small number of female teachers at all levels of education above preprimary, recruiting more female teachers could also pay positive dividends (See Chapter 4).

Reducing disparities due to the area of residence is possible and necessary; a strong and deliberate political commitment in terms of resource allocation is required. The danger in not addressing the disparities is the possibility that in time some ethnic groups will feel aggrieved and splits along the lines that appeared during the conflict could reemerge. Furthermore, the targets for the development of the country spelt out in the poverty reduction strategy (PRS) cannot be achieved if some parts of the country enjoy the benefits of education significantly more than others. In addressing the challenges, in addition to the strategic building and location of new schools, incentives must be offered to attract and retain quality teachers to underserved areas.

It is difficult to fully address the disparities in education due to differences in wealth, however the pro-poor targeting of scholarships and allocation of government resources would help. Additionally, the MOE could commence a scheme in which the best schools retain a percentage of places for poor children sponsored by the government. The sponsorship need not involve cash but could be an additional classroom and/or books for a private or mission school, in exchange for a negotiated number of places over a period of years.

CHAPTER 1 ANNEXES

Annex Table 1.1: Total and School-aged Population, by Gender and County, 2008
Numbers

County	Ages	Total	Male	Female
Bomi	All	84,119	42,940	41,179
	6-17 Years	22,838	12,020	10,818
Bong	All	333,481	164,859	168,622
	6-17 Years	89,411	47,151	42,260
Cape Mount	All	127,076	65,679	61,397
	6-17 Years	36,910	19,604	17,306
Gbarpolu	All	83,388	43,906	39,482
	6-17 Years	25,616	13,223	12,393
Grand Bassa	All	221,693	110,913	110,780
	6-17 Years	57,604	30,057	27,547
Grand Gedeh	All	125,258	64,994	60,264
	6-17 Years	38,747	20,598	18,149
Grand Kru	All	57,913	29,648	28,265
	6-17 Years	18,467	9,955	8,512
Lofa	All	276,863	133,611	143,252
	6-17 Years	82,222	42,503	39,719
Margibi	All	209,923	105,840	104,083
	6-17 Years	61,803	30,677	31,126
Maryland	All	135,938	70,855	65,083
	6-17 Years	48,007	25,347	22,660
Montserrado	All	1,118,241	549,733	568,508
	6-17 Years	338,461	157,962	180,499
Nimba	All	462,026	230,113	231,913
	6-17 Years	139,932	73,730	66,202
River Cess	All	71,509	37,224	34,285
	6-17 Years	21,180	11,545	9,635
River Gee	All	66,789	34,863	31,926
	6-17 Years	22,388	12,149	10,239
Sinoe	All	102,391	54,767	47,624
	6-17 Years	31,289	17,115	14,174
Total	**All**	**3,476,608**	**1,739,945**	**1,736,663**
	6-17 Years	**1,034,875**	**523,636**	**511,239**

Source: Population and Household Census of Liberia, 2008.

Annex Note 1.1: Education Goals as per the Poverty Reduction Strategy
Source: Quoted from the Poverty Reduction Strategy, 2008

The government's overall goal for education is to improve access to and the quality of relevant education at all levels, emphasizing the availability of Universal Primary Education and recognizing the needs of the disadvantaged, especially girls. To achieve this goal, it will aim to achieve seven strategic objectives:

1 Strengthen the curriculum. Curriculum reform is an essential part of the education reform initiative. The Government is planning to develop and introduce a compulsory core curriculum (language and arts, mathematics, science and social studies56) that will be implemented nationwide, together with an optional/complementary curriculum with regional variations. The new curriculum will be adopted by September 2011.

2 Improve access to quality, safe, and hygienic schools. The Government will respond to county feedback and build 240 new primary classrooms (40 primary schools) and 54 new secondary classrooms (4 schools), rebuild or repair 200 existing primary classrooms (33 primary schools) and 72 secondary classrooms (6 secondary schools), provide 14,150 chairs, build 82 latrines and install 82 wells and hand pumps.

3 Recruit and train qualified teachers. During the PRS period the Government will re-open three Regional Teacher Training Institutes to train between 650 and 1000 new teachers annually. It will extend the field-based in service training to five counties in 2008/2009, nine counties in 2009/2010 and fifteen counties in 2010/2011, and will construct 105 teacher houses in hardship locations.

4 Improve learning achievement and school completion rates. Although enrolment rates have increased, they remain low, especially for girls. But enrolment rates are only a start. Many children drop out of school, and only a small number successfully transition from primary to secondary schools. Increasing the number of classroom and school supplies, revising the curriculum, expanding the number of qualified teachers and providing school feeding programs should all help improve enrolment and retention rates. During the PRS period, the Government aims to increase the primary school net enrolment rate from 37.3 to 44.8 percent as an initial step toward achieving Universal Primary Education by 2015. It will aim to improve the ratio of girls to boys in primary school from 0.96 to 0.98, and in secondary schools from 0.78 to 0.83, with the ultimate target of achieving the relevant MDGs by 2015. It will purchase and facilitate the publication of textbooks to improve the learner/textbook ratio in four core subjects and across all public schools to 2:1. Most importantly, the Government will provide feeding for at least 600,000 students and take-home rations for 30,000 adolescent girls, using locally produced food where feasible.

5 Strengthen the quality and accessibility of skills and vocational training. The Government will work to improve the quality and accessibility of skills training and adult education to provide for the large number of unskilled and unemployed youths nationwide, including young women. Specifically, it will:

- refurbish and equip four existing multi-lateral high schools, and the two existing vocational and technical institutions (Booker Washington Institute and LSVTC) so that they can offer skills training;
- lend support to literacy and skills training in youth centers, including the training of young people as literacy and skills teachers in their communities; and
- increase the number of skills training center graduates each year by 50 starting from 2010.

6 Improve the quality of tertiary education while carrying out a limited and phased expansion and decentralization. Specifically, the Government will aim to ensure that:

- all institutions of higher learning review and revise their curricula under the leadership of the MoE and the National Commission for Higher Education (NCHE);
- a revised national accreditation scheme is operational and being enforced by a strengthened NCHE;
- qualified and experienced faculty and administrators are trained and recruited; and
- arrangements are initiated for the establishment of at least one new institution of higher learning outside of Monrovia.

7 Strengthen the overall governance, management, and financial basis of the education system. Apart from completing a National Education Policy now under preparation, the MoE is continuing its efforts to upgrade the quality of the staff in planning, procurement, and financial management. One key action will be the continued reduction of "ghost" names on the sector's payroll and the establishing of a teacher database. Other actions to be undertaken include:

- reviewing and amending the Education Act;
- reviewing and revising the organizational structure, reporting lines and positions, responsibilities and functions of officials of the Ministry of Education;
- reviewing the salaries of teachers and introducing salary scales based on qualification, experience, performance, position/responsibility, teaching subject, place of teaching;
- producing and training relevant staff on the use of an M&E framework and evaluation sheets;
- revising and upgrading the qualifications and experience needed by quality assurance officers (County Education Officers, District Education Officers and supervising authorities at MoE headquarters);

- resourcing and otherwise better enabling CEOs and DEOs to fulfill their roles and responsibilities; and
- commencing annual pre-notified inspection of schools and publishing reports for public consumption every 2 years.

CHAPTER 2 ANNEXES

Annex Table 2.1: Primary Level Student Flow, 2007/08
Percent

Grade	Share of Students Reaching Each Grade Excluding Repetition	Share of Students Reaching Each Grade Including Repetition and Drop-out
G1	100	109.2
G2	90	96.4
G3	89	95.1
G4	84	89.5
G5	75	79.5
G6	60	63.3
Total	**498**	**533**

Annex Table 2.2: Cumulative Student Years Required to Produce 60 Grade 6 Completers, 2007/08
Student Years of Education

Including Only Drop-out	Including Drop-out and Repetition	Excluding Drop-out and Repetition
498	533	360

Note: Dividing 360 by 498 gives a drop-out related efficiency index of 0.72, whereas dividing 498 by 533 gives a repetition related efficiency index of 0.93 and dividing 360 by 533 results in an overall efficiency index of 0.68, as shown in Table 2.13.

Annex Table 2.3: Student Flow Efficiency Indexes for Selected Sub-Saharan African, Countries, Latest Available Year

Percent

	Latest Available Year		First Available Year	
	Index	**Year**	**Index**	**Year**
Average	**39**	**n/a**	**35**	**n/a**
Benin	19	2007	28	2000
Burkina Faso	31	2007	45	2000
Burundi	26	2006	33	2003
Cameroon	44	2006	55	2003
Chad	26	2005	19	2000
Cote d'Ivoire	47	2007	50	2000
Gambia, The	44	2006	57	2000
Ghana	47	2007	37	2000
Guinea	29	2007	31	2000
Guinea-Bissau	22	2006	14	2000
Liberia	**35**	**2007**	**25**	**2000**
Mali	38	2006	44	2001
Senegal	33	2006	38	2000
Togo	35	2007	47	2000

Annex Table 2.4: Higher Education Enrollment and Graduation, 2005-2007
Numbers

	Graduation						Enrollment						
	2007			2005			2006			2007			
	M	F	T	M	F	T	M	F	T	M	F	T	%
Business &Public Administration	601	200	801	576	186	762	5,686	2,001	7,687	5,601	1,876	7,477	49%
Liberia College	178	60	238	141	11	152	1,996	901	2,897	2,013	946	2,959	19%
Teacher's College	24	13	37	13	5	18	242	70	312	250	71	321	2%
Law School	112	22	134	50	6	56	—	—	—	273	49	322	2%
Medical School	11	2	13	3	4	7	—	—	—	59	17	76	0%
Science College	112	22	134	111	18	129	68	6	74	1,412	380	1,792	12%
Engineering College	—	—	—	—	—	—	603	9	612	595	8	603	4%
College of Agriculture and Forestry	38	3	41	51	0	51	678	43	721	697	45	742	5%
GP: Regional Science	—	—	—	18	7	25	68	6	74	68	7	75	0%
College of General Studies	0	2	2	0	3	3	587	196	783	536	186	722	5%
GP: Political Sc. Intl. Relations	—	—	—	5	0	5	81	8	89	100	11	111	1%
GP: Education	—	—	—	18	1	19	70	16	86	73	16	89	1%
Total	**1,076**	**324**	**1,400**	**986**	**241**	**1,227**	**10,079**	**3,256**	**13,335**	**11,677**	**3,612**	**15,289**	**100%**

Note: GP stands for Graduate Program

CHAPTER 4 ANNEXES

Annex Table 4.1: Results of the Regression of EGRA Scores against Students' Characteristics and Context Variables, 2009

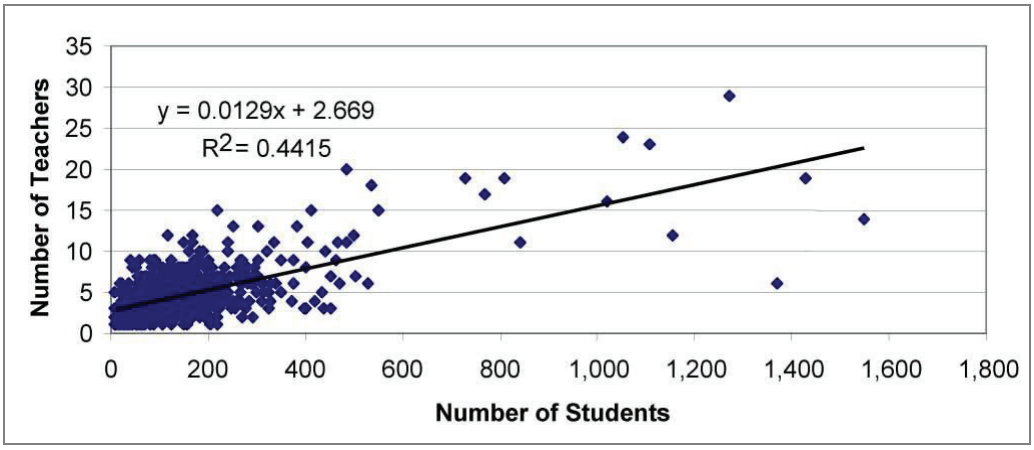
Variables	Model 1 (All students)	Model 2 (Grade 2)	Model 3 (Grade 3)
Grade 3	0.46 ***	-	-
Girl	-0.20 **	-0.01	-0.39 ***
Mission School	0.65**	0.70 *	0.69 **
Private School	0.17	0.17	0.18
Community School	0.11	-0.07	0.21
Family Speak English	0.23 **	0.19	0.30 **
Somebody Read to the Student at Home	0.03	-0.02	0.08
Student Read at Home	0.36 ***	0.40 ***	0.31 **
Attended Nursery School	0.04	0.11	0.07
Student Ever Failed a Grade	-0.17 **	-0.07	-0.31 ***
Student Studies after School	0.04	-0.01	0.06
Student Eats before Going to School	-0.04	-0.16	0.03
Student Eats at School	-0.01	0.04	-0.01
Student Missed School	-0.02	-0.08	0.02
Teacher Practices Letter Sounds	0.10	-0.01	0.28 ***
Student Reads in Class	0.07	-0.02	0.16
Best Teacher Teaches Grade 2	-0.05	-0.18	-
Best Teacher Teaches Grade 3	0.08		0.03
Headmaster Expects Grade 2 to Read Fluently	0.31	0.37 *	-
Headmaster Expects Grade 3 to Read Fluently	-0.00	-	-0.22
School Was Inspected Last Year	-0.21	0.03	-0.38
School Has Enough Resources or Materials	-0.14	-0.29	-0.06
More than 50% of the Teachers are Women	-0.24	0.14	0.32
Intercept	-0.51 ***	-0.50 **	0.04
N	708	366	338
R2	0.2056	0.1450	0.2364
Prob > F	0.0000	0.0000	0.0000

Source: Authors' calculations.
Note: The file contains 840 observations. But the model runs on 708 observations. This is because some variables have missing values and therefore, STATA automatically drops them when running the model. *** Significant at the level of 1 percent. ** Significant at the level of 5 percent. * Significant at the level of 10 percent.

CHAPTER 5 ANNEXES

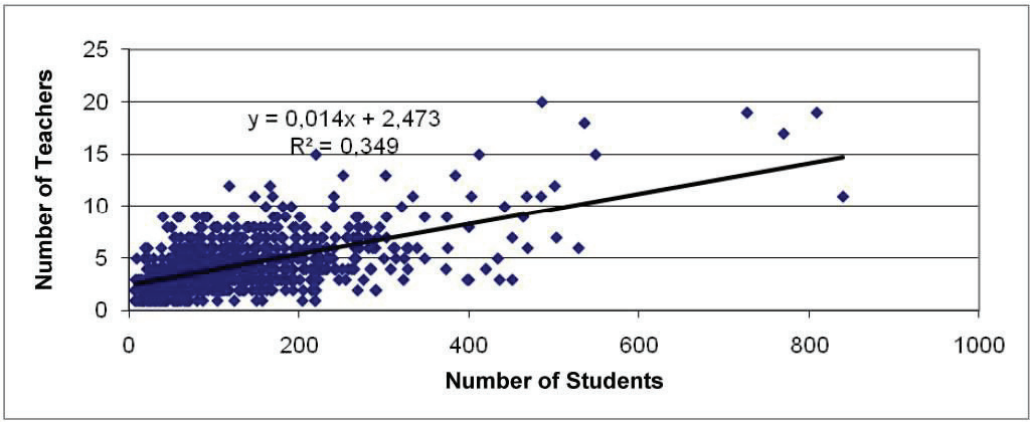
Annex Figure 5.1: Teacher Allocation in Public and Community Primary Schools, 2007/08

Ratio



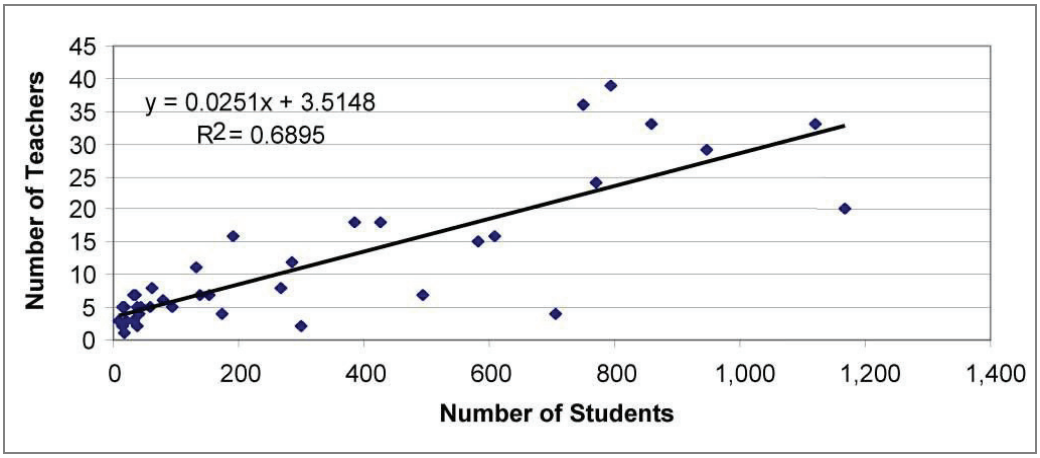
Source: Authors' construction based on data from EMIS, 2008.
Note: Volunteer teachers are not included.

Annex Figure 5.2: Teacher Allocation in Public and Community Primary Schools with Fewer than 1,000 Students, 2007/08
Ratio



Source: Authors' construction based on data from EMIS, 2008.
Note: Volunteer teachers are not included.

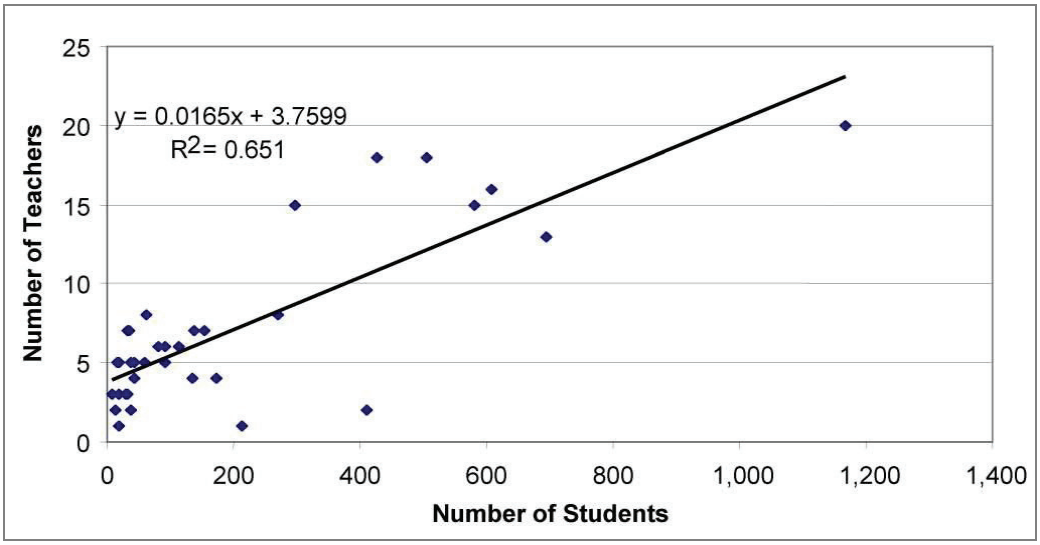
Annex Figure 5.3: Teacher Allocation in Public and Community Secondary Schools, 2007/08
Ratio



Source: Authors' construction based on data from EMIS, 2008.

Annex Figure 5.4: Teacher Allocation in Public and Community Junior High Schools where Teachers only Teach One Grade, 2007/08

Ratio



Source: Authors' construction based on data from EMIS, 2008.

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