

69945

Republic of Yemen Education Status Report: *Challenges and Opportunities*

SUMMARY



THE WORLD BANK

Republic of Yemen



February 2010

A joint publication of the International Bank of Reconstruction and Development/The World Bank and the Republic of Yemen

Printed by Middle East and North Africa (MENA) Region,
World Bank, 1818 H Street, NW, Washington, DC 20433 USA

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Cover photographs:

Top left: Young girls in a primary school, Thula, Amran Governorate, Yemen.

Photographer: Tony Doggett, USAID Basic Education Project 2004–0808.

Right: Student of Technical Education and Vocational Training Institute, Sana'a, Yemen.

Source: Ministry of Technical Education and Vocational Training.

Bottom center: Doctor in the laboratory of the University of Science and Technology Hospital, Sana'a, Yemen.

Photographer: Ayesha Vawda.

Design and typesetting of English version: Naylor Design, Inc.

Typesetting of Arabic version: Translation Services Unit (GSDTI), World Bank.

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Acknowledgments

Preparation of this report involved a great deal of collaborative work between the Government of Yemen and the World Bank.

The Yemeni technical team was led by a Supervisory Committee, chaired by H.E. Abdulkarim Al-Arhabi, Deputy Prime Minister for Economic Affairs and Minister of Planning and International Cooperation. This supervisory team included Excellencies Dr. Abudulsalam Al-Joufi, Minister of Education; Dr. Ibrahim Hugari, Minister of Technical Education and Vocational Training; and Dr. Saleh Ba-Surrah, Minister of Higher Education and Scientific Research. Under the guidance of the Supervisory Committee, the Yemeni counterpart team was led by the Education Status Report Technical Team headed by Dr. Mutahar Al-Abassi, Deputy Minister for Development Plans, Ministry of Planning and International Cooperation. The Technical Team comprised Dr. Mohammed Al-Mutahhar (Vice Minister of MOHESR), Abdullah Haza (MOPIC), Nabila Al-Jerafi (MOPIC), Dr. Hamoud Al-Seyani, (MOE), Hamoud Naji (MOE), Ahmed Mohamed Hajar (MOF), Aziz Al-Hadi (MOHESR), Dr. Adnan Al-Sonuwi (MOHESR), Abdulghani Ahmed Saif (MOLA), Abdulrahman Abduljaleel Saif (MOCSI), Mohammed Ahmed Mudhaffar (MOT EVT), and Murshed Abdullah Murshed (SCEP).

The World Bank team was led by Ayesha Vawda, Task Team Leader, and Lianqin Wang, Co-Task Team Leader. The data compilation, verification, and analysis were led by Shinsaku Nomura. Team members included Elizaveta Bydanova, Laura Gregory, Saida Mamedova, Benoit Millot, Alain Mingat, Gillian Perkins, Ayid Sharyan, Md. Shamsuzzoha, and Zafiris Tzannatos. Asma Al-Hanshali led the logistical arrangements for all capacity building workshops and the national dissemination. The report also benefited from feedback from Mourad Ezzine, Amit Dar, Elizabeth King, Xavier Devictor, Peter Materu, Harry Patrinos, Peter Buckland, Benson Ateng, Steen Lau Jorgensen, Michael Drabble, and Abdulrehman Al Sharjabi. Hongyu Yang, and Restituto Cardenas organized a World Bank quality enhancement review of the report.

A large group of stakeholders provided invaluable feedback on this report. However, extensive feedback and written comments were provided by Dr. Abdulsalam Al Joufi (Minister of Education), Dr. Ibrahim Hugari (Minister of Technical Education and Vocational Training), Dr. Mohammed Mutahar (Vice Minister of MOHESR), Dr. Ahmed Al Asbahi (Shura Council and Minister of Education 1980–83), Asia Al Mashreqy (Director General, Inclusive Education, MOE), Dr. Hamoud Al Seyani (Advisor, MOE, who coordinated comments from MOE staff), Aziz Al Hadi (Advisor, MOHESR, who coordinated comments from MOHESR staff), Dr. Ali Qasim (Deputy Minister, MOHESR), Dr. Mohammed Sarhan Al-Mekhlafi (Professor, Sana'a University), Hadi Abu Luhum (Deputy Minister, MOT EVT), Abdulhakeem Al-Shamiri (Head of Department, Curriculum Department, MOT EVT), and Abdul Aziz Alahnomi (Budget Manager, Finance Department, MOT EVT, Sana'a office). Detailed comments also were provided by members of nongovernmental organizations and Development Partner agencies. The team would like to recognize the contributions made by Susan Ayari (Education Donor Coordinator, USAID), Dr. Rudolf Pfeifer and his team (GTZ), Claire Vallings (DFID), Roberta Contin (CHF International), Sharon Beatty (KfW), and Han Blom (Netherlands Organization for International Cooperation in Higher Education, or Nuffic). The team also would like to recognize Maaïke van Vliet (First Secretary of Education, Royal Netherlands Embassy) for her continued sense of realism and her commitment to keep the children of Yemen at the forefront of all analyses and decisionmaking. The team also is grateful to all of the participants in the July 5, 2009 national dissemination workshop.

The analyses presented in this report benefited from background papers prepared by Dr. Hassan Ali Abdulmalik (Student Flow Analysis), Dr. Mohammed Sarhan Al-Mekhalafy (Capacity Assessment), Dr. Tawfiq Al-Mekhalafy (TIMSS analysis), Dr. Ali Al-Qurshi (Student Flow Analysis), Dr. Ahmed Al-Shami (Capacity Assessment), SOUL organization (Marginalized Children) led by Dr. Afrah Al-Zouba, Dr. Akram Atran (Student Flow Analysis), and Dr. Eliezer Orbach (Capacity Assessment). This report also benefited from data provided by Jamal Ghailan (MOE), Faisal Ghaleb (MOE), Abdulmalik Al-Qubati (MOE), Yousif Al-Radae (MOF), Faisal Al-Adeeb, (LAEO), Dr. Sailan Al-Obeidi (Director of SCEP), and Tarek Al-Mawri (SCEP). UNICEF cofinanced the survey on the educational status of marginalized children, and GTZ supported capacity building efforts for data analysis.

Workshops and training events held during the preparation of this report greatly informed the analysis and the dialogue. A week-long training for Institutional Capacity Assessment took place in

Addis Ababa, Ethiopia, in February 2008. The Post-Basic Education Reform for Graduate Employability and Economic Growth workshop was held in Sana'a, Yemen, on March 15–16, 2008. A 2-week intensive training on undertaking diagnostic analysis was held in Sana'a from June 15–25, 2008. A 5-member Yemeni team also benefited from participation in the Education for Development and Competitiveness: Linking Education and Training to the Labor Market course organized by the Middle East and North Africa Region Human Development Group (MNSHD) in Rabat, Morocco, from January 17–22, 2009. We wish to record our special thanks to the GTZ for supporting the capacity building event of June 2008, the World Bank Institute (WBI) for facilitating the seminar of March 2008, and the MNSHD team and WBI for organizing the regional training in February 2009. This report was edited by Alicia Hetzner.

Abbreviations and Acronyms

AES	Annual Educational Survey
BEDP	Basic Education Development Project
CCT	Conditional cash transfer
CSO	Central Statistical Organization; civil society organization
DDP	Development Data Platform
DEC	Development Economics Vice Presidency (World Bank Group)
DfID	Department for International Development (UK)
DPT	Diphtheria, pertussis, and tetanus
ECD	Early childhood development
ECE	Early childhood education
EFA	Education For All
EMIS	Education management information system
FTI	Fast Track Initiative (EFA)
FOE	Faculty of Education
GCC	Gulf Cooperation Council
GDP	Gross domestic product
GER	Gross enrollment ratio
GNI	Gross national income
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation)
ICT	Information and communications technology
IDA	International Development Association
IEA	International Association for the Evaluation of Educational Achievement
KfW	Kreditanstalt für Wiederaufbau (German-government-owned development bank)
LAEO	Literacy and Adult Education Organization
M&E	Monitoring and evaluation
MDG	Millennium Development Goal
MENA	Middle East and North Africa
MICS	Multiple Indicator Cluster Survey

MLA	Monitoring Learning Achievement
MNSHD	Middle East and North Africa Region Human Development Group
MOCSI	Ministry of Civil Service and Insurance
MOE	Ministry of Education
MOF	Ministry of Finance
MOHESR	Ministry of Higher Education and Scientific Research
MOLA	Ministry of Local Administration
MOPIC	Ministry of Planning and International Cooperation
MOT EVT	Ministry of Technical Education and Vocational Training
NBEDS	National Basic Education Development Strategy
NER	Net enrollment ratio
NQF	National Qualifications Framework
Nuffic	Netherlands Organization for International Cooperation in Higher Education
OECD	Organisation for Economic Co-operation and Development
PCR	Primary completion rate
QA	Quality assurance
SCEP	Supreme Council for Education Planning
SFD	Social Fund for Development
TEVT	Technical education and vocational training
TIMSS	Trends in International Mathematics and Science Study
TTI	Teacher Training Institute
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
UNPD	United Nations Population Division
USAID	United States Agency for International Development
WBI	World Bank Institute
Yrls	Yemeni rials

Overview

This report is motivated by two main considerations. First, after three decades of Yemen's impressive continuous expansion of education, the time is ripe to assess the outcomes of its education system and document its strengths and challenges. Second, in the long run, Yemen is poised to be more integrated in the regional and global economy. At this juncture, it is only wise to reflect on whether the recipes that have enabled past successes will be sufficient and relevant to sustain these successes and to build on them to take up looming new challenges.

The Government of Yemen requested the World Bank to assist its efforts to forge a holistic approach to developing the education sector. These efforts would include strengthening linkages among the different levels of education, comprehensively addressing systemic issues, and enhancing the efficiency and effectiveness of the system as a whole.

Moving to this approach is a two-stage process. The first phase consists of analytical work to provide a solid diagnosis and an analytical platform to uncover the most critical and sensitive areas for intensive dialogue leading to the second phase. The second phase would be to develop an Integrated Vision for the Education Sector. The vision must begin with a broadly shared understanding of the goals of the education sector as a whole, the key issues and constraints within it, and the tradeoffs required to overcome them.

This report addresses the first phase of the work. It provides a diagnostic summary of the education system and offers a menu of options to address the issues identified and to advance the system. The government and World Bank teams were formed, and this report was developed with close collaboration in the areas of data collection, fact-finding and verification, and analysis of the available information. This process engendered a significant level of capacity building, particularly in data analysis.

Key Findings

In the last 30 years, Yemen has impressively expanded education, halving the illiteracy rate from 90 percent to 45 percent. Between 1977, when the earliest complete data are available, and 2000, enrollments in basic education increased by 6 times—from approximately half a million to over 3 million. From 2000–01, growth in basic education enrollments continued at a rate of 22 percent to over 4 million in 2007–08. Also between 2000–01 and 2007–08, enrollments in technical education and vocational training (TEVT) increased by 15 times, from under 8,000 to approximately 23,000. Meanwhile, higher education grew by 35 times between 1977 and 2000—from nearly 5,000 to 175,000. Higher education continued to increase by 34 percent to over 230,000 in 2007–08. Given Yemen’s demographic, geographic, and economic challenges, this expansion is truly remarkable.

However, it would be wrong to see this increase in education provision purely in abstract quantitative terms. Beyond the numbers lie questions about whether Yemen could have achieved greater increases using the same resources over the same time period, whether the balance of expansion among the different levels of education has been the most appropriate, and whether more qualitative improvements could have been achieved using the same resources.

This report suggests two broad directions for addressing these questions:

1. *More public investment is needed in basic education.* As the bedrock of development, basic education cannot make a breakthrough unless it is heavily and effectively supported by the government. This fact is especially true in a country such as Yemen, which is populous and geographically diverse, and has a low gross national product and a small private sector. This report finds that the government’s effective support to basic education is constrained by inadequate financing, ineffective management (especially teacher deployment), and lack of governance. The report suggests that it would be useful to explore ways to allocate more public funds to basic education by (a) relying more on the contributions of private firms to fund TEVT, and (b) adopting a more balanced public/private approach to finance and provide higher education.
2. *More public resources also are needed for quality improvement and less for quantitative expansion at the post-basic education levels.* Public universities need to greatly improve their graduates’ skills and their programs’ relevance to the labor market, advance the

teaching force, modernize the curriculum, establish a sound quality assurance (QA) system, and upgrade teaching and learning facilities. Nevertheless, the pressure to expand higher education is immense and expected to increase as more students complete basic education. This report argues that it would be useful for higher education to expand by (a) removing undesirable controls that apply to both the demand for higher education (specifically, the one-year waiting rule and age limits on enrollment) and the private supply of universities (that are restricted from providing certain fields of study), and (b) regulating the “fee-for-services” parallel programs to ensure quality in public universities.

There is no doubt that Yemen’s developmental stage and the status of its education system require that more of everything should be done. However, doing more of everything is not an option. Thus, the government should prioritize what is desirable in the long run, what is feasible in the short run, and how best to align all national resources (public and private) to achieve the chosen objectives.

The analysis and diagnostics of this report provide some informed bases for setting priorities and policies. These should be assessed further by the government and stakeholders. Moreover, assessment should become a continuous exercise over time whose findings can be used to review and, if needed, amend earlier decisions and actions on an ongoing basis.

The choices can be made only by Yemen itself. The findings of this report provide the foundation for relative confidence in making the recommendations summarized below for each level of education, as well as the underlying rationale for these recommendations.

At the basic education level, government’s role in expanding access is critical. Broadening access does not mean simply to increase the supply of basic education (for example, more schools in remote areas). It also means to encourage and promote the demand for education by the households that privately value education less than is deemed socially desirable (the poor, those in rural areas, the marginalized, parents of girls). Priority actions outlined in the report include:

- Aggressively pursue the achievement of the National Basic Education Development Strategy (NBEDS) goals, giving special attention to expanding enrollment in grades 1–6. Measures to achieve fiscally sustainable universal education include: rationalization of school sizes, that is, providing smaller schools close to communities for grades 1–6 with multigrade teachers; and providing larger, well resourced schools (in terms of laboratories and domain and subject specialist teachers) for grades 7–12 at

reasonable distances from communities to cover bigger catchment areas.

- Prioritize the fundamentals of a good quality early education. The early years are the most crucial for setting the solid foundations for a good education for life. Therefore, it is important that the focus of education in these years be to ensure that children acquire the basics of a good education (such as reading with comprehension and writing without making mistakes), rather than cover wide content. This priority also calls into question the current automatic promotion policy for the first three grades, which is likely to erode the quality of early education.
- Ensure the timely distribution of textbooks to schools. This is an easily achievable target identified in this report and is bound to increase the learning outcomes of students, which is an objective on its own. On-time arrival of textbooks and teacher guides also can help households that may see schooling as a wasteful, time-consuming activity for their children to value education more, thus increasing these children's participation in the locally available education services.¹
- Explore solutions for the professionalization and deployment of teachers on the basis of different needs in rural and urban areas and align remunerations to support these needs. Nationwide, there are as many as 100,000 candidate teachers who apply for only 10,000 positions. Nevertheless, while there appear to be enough teachers who can teach, rural areas experience serious teacher shortages. A solution must exist. One solution could be to suitably change current rules that govern employment in the public sector and decentralization and to offer teachers financial incentives to deploy to underserved areas.

At the technical education and vocational levels, policies should balance the high costs of provision and the likely synergies between the public and private sectors against the labor market outcomes and the trainees and graduates. Even ignoring the high unit costs of providing TEVT, the overall impact of expanding TEVT would be negligible if the current enrollment of 23,000 trainees in TEVT centers only doubled or tripled compared to the annual inflow of more than 200,000 job seekers or to the skills needs of many among the 4 million existing workers. In other words, even if TEVT (in its

1. This report finds that demand-side constraints are not insignificant, that is, there are families (especially the marginalized) who would not send their children to school (especially girls) even if schooling were available. This means that "demand-side" incentives (such as conditional cash transfers) for poor families to enroll and keep their children in basic education should be considered along with the expansion of education supply.

current form) were expanded, its impact would be limited because it is not addressing the real needs of the country, specifically the labor market. In this context:

- Policies should focus less on the expansion of the public training centers and more on systemic aspects that affect the whole labor market. One such policy is to make TEVT more privately funded, demand driven, and institutionally managed by the employers.²
- Instead of an expensive activity that helps its few graduates to find jobs, TEVT should become a seamless component of Yemen's overall human development effort. To accomplish this goal (a) age restrictions for attending TEVT should be removed; and (b) the sector should use competency-based training open to job seekers, existing or retrenched workers, and anyone at any age who aspires to acquire skills and increase his/her productivity and wages.

In the long run, Yemen is bound to start moving toward the knowledge economy and compete in international markets. Consequently, its higher education policy direction can be no other than to both expand enrollments *and* increase the quality and relevance of offerings. However, current policies deviate from this direction and, in fact, appear self contradictory. For example, enrollments in public universities are both restricted (by enforced delay of entry by one year after graduation from secondary education) and encouraged to expand (via parallel education). Enrollments in private universities are both expanding (by allowing private universities to operate) but also restricted (in what courses they can offer).³ Under these conditions, it would be useful to:

- Abolish the “one-year waiting rule” for admission to university after the completion of secondary education.
- Not constrain the expansion, or limit the course offerings, of private universities, although the courses should be subject to sound certification, licensing, and accreditation procedures.
- Evaluate the usefulness of offering parallel courses in public universities. The parallel course approach may lead to an oversupply of the limited courses that public universities can and want to offer, while causing a national undersupply of higher education

2. Such a policy is already proposed for the operations of the Skills Development Fund.

3. The restriction on what courses private universities can offer is not necessarily based on quality considerations but on whether “there already are too many graduates from such courses.” Although this justification is valid in ill-focused quantitative terms, it disrespects the choices of households and deprives the country of the expansion of its most productive sector: education.

services by crowding out the private sector. Parallel education also can lead to perverse incentives (for example, nontransparent licensing of private universities) as well as wasted resources (from a social point of view).

High quality education services cannot be expected in Yemen without strong coordination across the Ministries of Education (MOE), Finance (MOF), Civil Service and Insurance (MOCSI), Local Administration (MOLA), Higher Education and Scientific Research (MOHESR), and Technical Education and Vocational Training (MOT EVT). Coordination can support the achievement of sectoral objectives by ensuring that all stakeholders play their parts in changing the rules of the game and aligning the financing and the incentives structures to get results, as opposed to controlling or inhibiting one another. Improved coordination among these bodies could result in five benefits that could directly address education quality challenges:

1. Enhance the quality of current and future teachers
2. Align incentives for civil service employment
3. Provide concerted efforts to increase and sustain the provision of teachers to rural areas
4. Reduce the incentives for teachers to migrate from rural to urban areas
5. Better match the pre-service training of teachers in universities to what is required in schools.

Overall, this report does not negate the positive and, in many respects, impressive outcomes of past education policies. On the contrary, it persuasively documents these achievements. Given what has been learned through years of experience in education reform, this report indicates that the Government of Yemen can make adjustments in setting educational priorities and in making decisions to achieve these objectives. Combined with the right managerial, institutional, and financial arrangements, these objectives could increase the impact of education in the economy, labor market, and society overall.

Republic of Yemen Education Status Report: Challenges and Opportunities

Summary

Since unification in 1990, the Government of Yemen has launched 3 consecutive 5-year economic reform plans, put in place new laws and policies, and prioritized financing to restore public services including education.

These efforts have yielded many positive results, including a reduction in the incidence of poverty (from 40 percent to 35 percent between 1998 and 2006).⁴ Given that Yemen's fertility rate remains one of the highest in the world, it is quite remarkable that Yemen has not only maintained but also enhanced educational coverage for a large part of its population. In fact, substantial increases have been made in enrollment growth at all levels, especially for girls and difficult-to-reach rural communities. The illiteracy rate has been halved from 90 percent (1973) to 45 percent (1994). During this period, improvements also were made in immunization coverage, and polio was eradicated in 2009.⁵

The challenges are many, however. The geography (that is, difficult and diverse terrain and scattered population across a large number of small communities) and low infrastructure connectivity pose difficulties for service delivery, particularly education. Yemen has a large proportion of children and youth (70 percent were less than 25 years old in 2007).⁶ Their numbers are expected to grow significantly over the next two decades, placing strong pressure on scarce public resources for education.

The Yemeni labor market consists of a large informal and agricultural sector, a small private sector with a few dominant traditionally

4. Government of the Republic of Yemen and others 2007.

5. Almost full population coverage has been achieved for polio vaccination (Government of the Republic of Yemen and others 2007).

6. World Bank 2009a.

family-owned enterprises, and low demand for skilled labor. Of the entire working population of 4.5 million, approximately 90 percent are working in the informal sector; approximately 41 percent in the agriculture sector; and 44 percent in the services sector, which is dominated by agriculture-related activities.

Although the labor force grows by approximately 3.5 percent, or by 200,000 new job seekers each year, the number of jobs opening up in the public and private sectors are too few to absorb this labor at present. And, going forward, even if Yemen could maintain its historical annual rate of economic growth of approximately 4 percent, it is highly unlikely that job creation would be large enough to absorb the ever-increasing labor supply. Between 2003 and 2007, the number of registered applicants for posts in the civil service and public sector almost tripled from 54,000 to 155,000, whereas employment increased by only 4 percent during the same 4 years. The rate at which new private establishments are created across the economy in a single year is only 4 percent. Job creation in these new establishments also is low (2.5 new jobs per 100 establishments excluding the owners). In the oil sector, which dominates the Yemeni economy, jobs are extremely limited—for example, in 2004, this sector provided employment for barely 18,000 workers in total.

The role of the private sector is paramount for job creation. The oil sector is capital intensive, and the government sector, prudently, is not growing rapidly. Therefore, job creation in Yemen is highly dependent on the growth of the private sector. But the private sector is still very small. Moreover, the environment for greater private investment remains weak.

The smallness of the labor market and the large population of young job seekers results in underemployment and unemployment, particularly among the young. The prevalence of informality and unsophisticated production techniques result in low demand for skills. Low demand in turn results in low productivity and high unemployment, even among the better educated.

In addition, despite recent achievements, Yemen faces serious social issues including extremely weak health services, malnutrition, limited rights for women and minorities, and widespread use of qat (a stimulant). Yemen is a poor country. Its 2007 GNI per capita of \$870 was the lowest in the MENA region and close to the IDA countries' average of \$803.⁷ Although Yemen's GDP

7. World Bank 2009b. The World Bank's International Development Association (IDA) includes 78 of the poorest countries. They are eligible for interest-free credits and grants for programs that boost economic growth, reduce inequalities, and improve people's living conditions.

increased markedly between 1997 and 2007, its reliance on oil and gas revenues combined with the smallness of the domestic production base and effects from the global economic crisis create the need for a well-thought-out and massive developmental effort in the coming years. The government has recognized these problems and set out an ambitious “Strategic Vision 2025,” which focuses on economic growth.

Between 1998 and 2007, six education strategies to address educational development challenges were developed. They were the National Strategy for Literacy and Adult Education (1998), the National Basic Education Development Strategy (2002), the National General Secondary Education Strategy (2007), the Technical Education and Vocational Training Strategy (2004), the Higher Education Development Strategy (2006); and the Children and Youth Strategy (2007).

Despite many strategies, one coordinated vision for education is missing and needed. Each subsectoral strategy has aimed to increase access, equity, and improve quality and efficiency of education delivery quite independent of what is happening in the other education subsectors and the realities of public financing for education. As a result, there are major disconnects between the strategies and investments of the various subsectors. For example, the need for good quality basic education teachers who can teach multiple grades is principally unmet by the teacher education programs at the Faculties of Education, which continue to produce subject specialist secondary school teachers in large quantities. And, even after years of receiving in-service teacher training, basic and secondary education teachers may not be considered qualified because the in-service training program is not linked to the pre-service teacher training program that confers on a professional a degree or certificate of qualification as a teacher. In fact, regulations and practices that determine student flow decisions and practices through the education system (which are set independently by the three education ministries that mandate subsector interventions) are inhibiting skill building of the labor force by creating unnecessary bottlenecks. While all three education ministries aim to establish coordination mechanisms among them, efforts to set up such a council have been unsuccessful. Therefore, a national dialogue leading to one integrated vision irrespective of the number of ministries is required. Such a vision would articulate the education and skills needs of the economy and the society and a prioritized method of addressing these needs.

Objectives and Audience of This Report

The development of the government's vision for education must begin with a broadly shared understanding of the goals of the education sector as a whole, the key issues and constraints within the sector, and the tradeoffs required to overcome them. This report was conceptualized in such a context to serve as an informed basis for the development of the education vision. Therefore, this report aims to provide critical diagnostics and analyzes key aspects of basic and secondary education, technical education and vocational training (TEVT), and higher education in Yemen. Through these analyses, the report means to uncover the most important areas for policy development for the education vision. Due to data limitations, not all sectors could be analyzed in equal levels of detail.

The report is written with a wide audience in mind, including policymakers and managers with direct responsibilities for dealing with the country's overall education vision and the strategies in the various ministries. The analytical results of this report are intended to assist their policy debates while developing the vision. This report also should interest Yemen's development partners and various stakeholders.

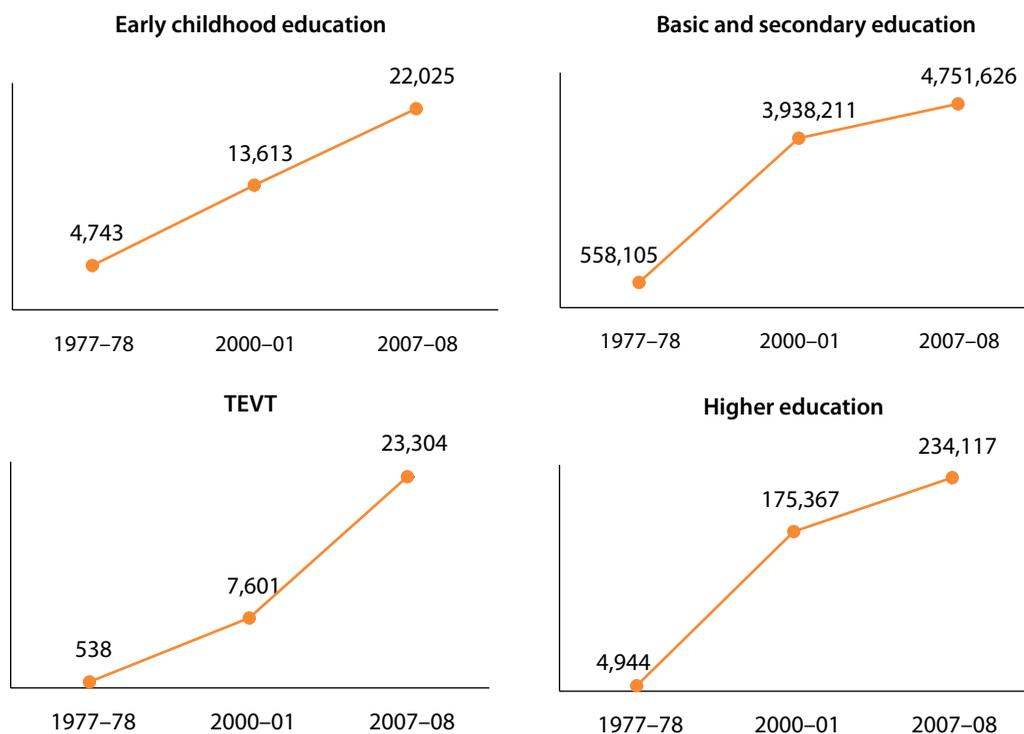
The main findings of the report are summarized below. Details and additional information are contained in the complete report.

Access to Education and Student Flow

Yemen's education system has grown significantly, particularly over the last 30 years. Between 1977, when the earliest complete data are available, and 2000, enrollment in basic education grew more than 6-fold; secondary enrollments grew 22-fold; and university enrollment grew 35-fold (figure 1). Since 2000, TEVT has increased the fastest. Due to the opening of community colleges, enrollment in post-secondary TEVT increased 15-fold. In contrast, development of early childhood education (ECE) has been slow for the last 30 years.

Yemen has experienced impressive gains in gross enrollment ratios (GERs) for all levels of education, especially for girls.⁸ Nevertheless, international comparisons reveal that Yemen still lags behind other low-income countries at the primary level of education for both boys and girls. Despite its average 3 percent annual population growth

8. Due to Yemen's low prevalence of birth registration, age data in administrative records or household surveys usually are not accurate. Therefore, in Yemen, the gross enrollment ratio (GER), as opposed to the net enrollment ratio (NER), is commonly used.

Figure 1. Growth of the Education System in Yemen, 1977–78 to 2007–08

Sources: SCEP 2008, MOE AES 2007–08.

during the last decade, Yemen experienced an impressive gain in GER, especially for girls in primary education. The latter improved from 49 percent in 1998–99 to 76 percent in 2007–08 (table 1). On the other hand, while boys' primary GERs increased from 86 percent to 94 percent during the same period, the rate actually declined for secondary education. At 83 percent in 2005–06, Yemen's primary GER is low compared to the average for low-income countries (94 percent) and Education For All (EFA) Fast Track Initiative (FTI) countries (98 percent) (table 2). The lower (or upper basic in Yemen) and upper secondary (or secondary in Yemen) GERs are better than the averages for low-income countries and close to the FTI countries' average.

Enrollment rates vary significantly across governorates, especially among girls. Boys' enrollment rates are relatively similar across Yemen's governorates. The difference in girls' enrollment rates between the governorates with the highest and lowest enrollments is 52 percentage points (Sana'a City 84 percent, Saadah 32 percent, national average 56 percent). Among many factors, poverty may play an important role in schooling.

Table 1. Gross Enrollment Ratios (GERs), 1998–99 and 2007–08 (%)

	Males		Females		Total	
	1998–99	2007–08	1998–99	2007–08	1998–99	2007–08
Early childhood education	0.8	1.2	0.7	1.0	0.7	1.1
Primary education (grades 1–6)	85.6	94.5	48.9	76.0	67.7	85.4
Basic education (grades 1–9)	80.4	84.5	42.2	63.7	61.8	74.3
Secondary education (grades 10–12)	45.7	43.3	16.2	22.9	31.4	33.8
University	14.6	18.0	3.8	7.5	9.4	13.2

Source: MOE data; UN population data, May 2009.

Note: Data for universities is for 2006–07.

Despite the increased access to education, enrollment of girls and those from poorer families are still lagging. When compared internationally, GERs for Yemeni females are consistently lower than those of their peers in low-income countries and FTI countries (table 2). Access to grade 1 has improved significantly over the last decade, but at least 25 percent of the girls in Yemen never enroll in school. Overall, 94 percent of boys and 76 percent of girls (85 percent for all) eventually join grade 1. Those who never enroll are more likely to be poor, girls, and living in rural areas.⁹ Rural areas face particularly large challenges from both the demand and the supply sides. For example, rural families are less likely to send their children to school because of economic constraints. Additionally, in rural areas, poor nutrition is likely to contribute to late entry to schools that are located at significant distances from communities. Finally, there are very few female teachers in remote areas. Because girls tend to join schools at a later age than boys, the combination of the distance to school and the lack of a female teacher in the school makes parents uncomfortable in sending their daughters to schools, especially in the later grades. In 2005, 17 percent of girls were not enrolled in school because of a lack of female teachers.

School survival rates are low. Only half of those who enter grade 1 reach the end of basic education, and only 38 percent reach the end of secondary education. The survival pattern by gender shows that, of the 100 boys who enter grade 1, 68 reach grade 6; 57 reach grade 9; and 43 reach grade 12 (figure 2). Of the 100 girls who enter grade 1, 56 reach grade 6; 40 reach grade 9; and 31 reach grade 12. Because of the high repetition¹⁰ and dropout

9. Of all of the out-of-school children in Yemen, 87% live in rural areas, a disproportionately large number since approximately 71% of the total population of Yemen live in rural areas.

10. Repetition rates vary by grade but generally are very high (between 5.0% to 9.5% for boys and 3.9% to 7.1% for girls).

Table 2. International Comparison of Gross Enrollment Ratios (GERs) by Level, 2005–06

	Primary	Lower secondary	Upper secondary	Tertiary
All students				
World average	105	78	53	25
MENA average	105	79	65	25
Low-income average	94	48	27	6
FTI average	98	55	34	15
Yemen	83	50	34	12
Females				
World average	102	76	51	26
MENA average	103	79	70	30
Low-income average	89	44	25	5
FTI average	95	53	32	15
Yemen	72	34	23	6

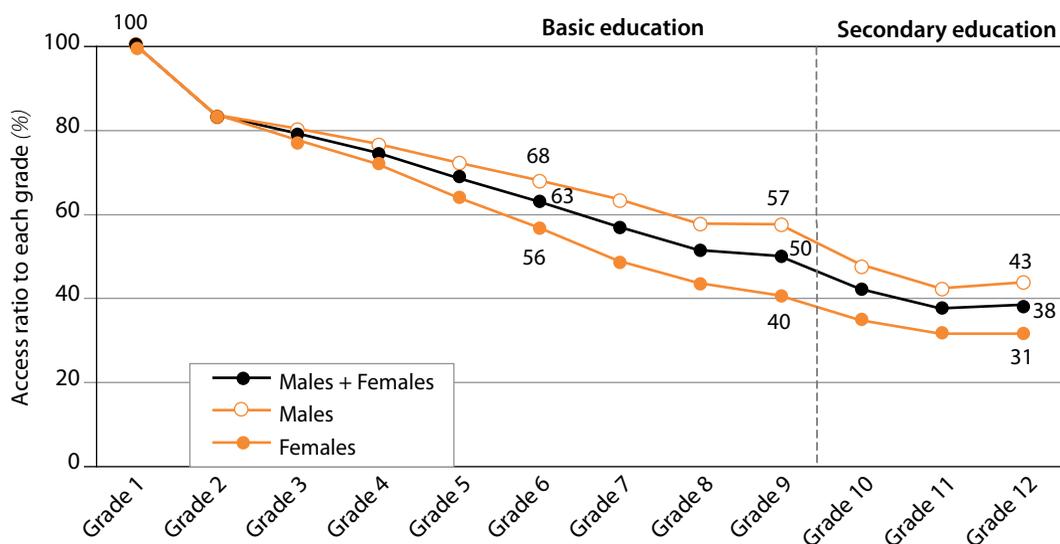
Source: EdStats April 2009; authors' calculations for Yemen using MOE AES 2005–06.

Note: Of the 35 FTI countries identified by the FTI Secretariat, 24–30 are used in the calculation of averages for each level.

rates, the average years invested per grade 6 completer is 8.8 years (8.1 years for boys and 9.9 years for girls), and per grade 9 completer is 15.9 years (14.7 years for boys and 18.0 years for girls), which is twice the nominal number of years of schooling in the case of girls. To ensure that students stay in the system, the government has an automatic promotion policy in the first 3 grades. Despite the policy, the grade 1 dropout rate for both boys and girls is the highest among all 12 grades of general education (approximately 19 percent for both), followed by grade 9 (18.1 percent for males, 16.1 percent for females).

Given that many children never enter school, that many others drop out of school early, and that the population of school-age is expected to rapidly increase, Yemen is not likely to achieve the goal of Education For All—to ensure that all boys and girls complete a full course of primary schooling—by 2015. The primary completion rate (PCR), that is, the number of non-repeaters in grade 6 as a percentage of the population aged 11 years,¹¹ was 60 percent in 2006–07 (70 percent for boys and 49 percent for girls). The current growth trend of the PCR is an annual 1.5 percentage points for girls and minus 1.2 percentage points for boys. If this trend continues until 2015, it is unlikely that Yemen will achieve the Millennium Development Goal (MDG) target of 100 percent PCR.

11. The PCR is part of the EFA FTI Indicative Framework Benchmarking Tool and is often used to monitor whether a country is on or off track to achieve EFA.

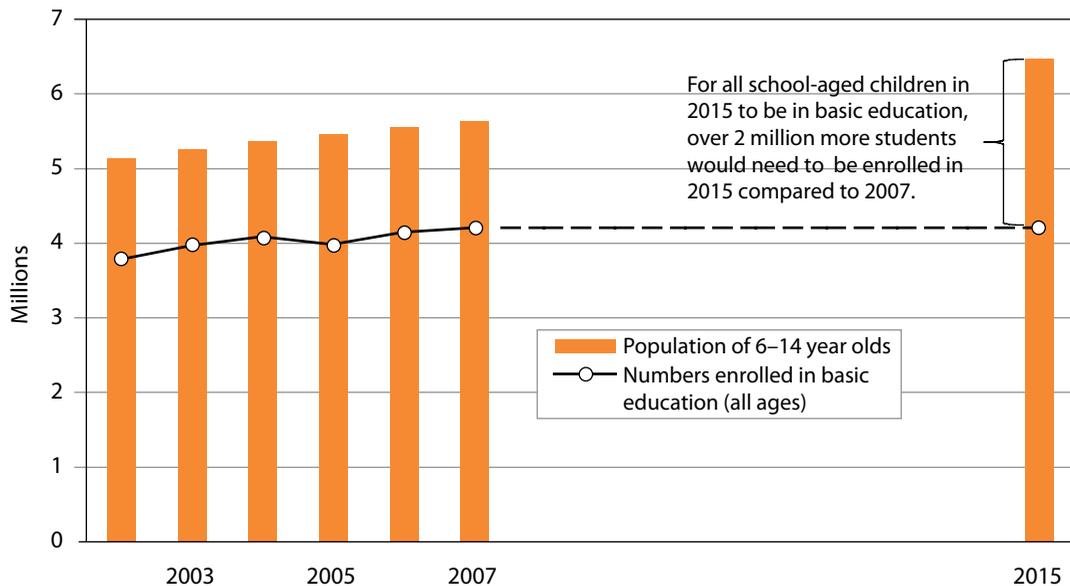
Figure 2. Estimated Student Flow Profile by Gender, 2007–08 (%)

Source: Authors' calculations using AES 2006–07 and 2007–08.

The rapid population growth puts significant pressures on the system. In 2015 the projected school-aged population is considerably greater than the population estimate for 2007. Therefore, to enroll all school-aged children in basic education (grades 1–9) in 2015, the number enrolled that year would have to be over 2 million more than the number enrolled in 2007 (figure 3).

The regulatory structure of Yemen's education system limits students from moving between general education and vocational education, prevents lifelong learning, and may promote dropping out of the educational system. For example, once entering the TEVT track, a student is not allowed to enter a university, even after completing a degree at a community college. Even if a person chose the academic secondary track, the Secondary Education Certificate should have been obtained more than 1 year earlier (that is, not the same year) but fewer than 4 years before applying to university. A person must be no more than 20 years old to join a post-basic TEVT institute and no more than 25 years old to join a post-secondary TEVT institute. Given the late age of entry and the high incidence of repetition in basic schooling, the average Yemeni child just out of basic education may be too old to join a post-basic TEVT institute. The age limits and health tests set by the TEVT institutes restrict students who may be above 25 years old; second-chance students (such as those who joined Alphabetical Programs, in which the

Figure 3. Population Growth Challenges Reaching Universal Basic Education (Grades 1–9) by 2015



Sources: Authors' calculations using SCEP 2008, MOE AES 2007–08 and UN population estimates.

average age of the enrollees is 15–30 years); disabled students; or mid-career professionals from benefiting from skills enhancement. Furthermore, often the entrance requirements for TEVT are so time consuming that by the time a student has found out that he or she did not qualify to join a TEVT institute, it is too late in the year to apply for the academic secondary program, creating a disincentive to continue education.

Given the restrictive nature of student flow regulations, information to help students make the most informed decisions about which educational track to pursue and which field to study is critical, yet lacking in Yemen. Although the grade 12 national examination results are published in the newspaper, no publicly available information exists for parents and students about the performance of schools. This information can guide students to choose a good school—a decision that will affect the rest of their academic and working lives. Information to guide students about schooling options appears to be scattered and not easily available for decisionmaking. In a survey conducted for this study, most MOE personnel said that they had read the regulations governing student flow. However, most could not locate the regulations in their offices. Similarly, most headmasters and school teachers said that they had heard about

these guidelines but had never seen or read them. Two-thirds of the male grade 9 students interviewed said that neither the school nor their parents were aware of, or had guided them about, schooling options beyond basic education. This lack of information often unexpectedly limits students' career development options because of the restrictive and disconnected nature of regulations across the system. Moreover, from the perspective of the education system, students' lack of guidance and access to the relevant regulations lead to over-production of graduates in subjects that give no value added to the labor market.

The critical role of the private education sector to absorb much larger numbers of students, especially in post-basic education, is intensifying. In higher education, private universities have begun to take increasing numbers of students. Fee-paying parallel programs in government universities also have rapidly increased enrollments.¹²

Quality of Education

Evidence from all levels of education shows low levels of student learning and weak linkages between education and the labor market. In basic education, the Monitoring Learning Achievement Survey (MLA)¹³ and the Trends in International Mathematics and Science Study (TIMSS) provide evidence of low learning achievement. For the MLA surveys, the average scores for both boys and girls in rural and in urban areas were less than 40 percent of the total in 2002 (for both grades 4 and 6), and less than 50 percent in 2005, with even lower scores at the grade 6 level. In TIMSS 2007, of all 36 participating countries in the grade 4 assessment, Yemen ranked lowest in both mathematics and science (figure 4).¹⁴ In

12. Parallel programs enable students who do not meet the university entrance requirements to enter university on a fee-paying basis to attend classes that usually are held in the afternoons.

13. The MLA tested students in grades 4 and 6 and covered topics in mathematics, science, life skills, and Arabic.

14. This result needs to be assessed with qualification. In truth, Yemen was the only low-income country to participate in the grade 4 examination, and Yemeni students had had no experience in sitting for multiple-choice examinations. Thus, Yemen's participation was more important for developing the national capacity for student assessments than for benchmarking the performance of Yemeni students against their peers in other countries. Nevertheless, when the scores of all countries are ranked in relation to their wealth (GNI per capita), Yemen's results are lower than could be expected, especially in science. The poor performance of Yemeni students is partially attributed to their inability to read the test questions. Yemeni students did better in the questions that were based on figures rather than on text.

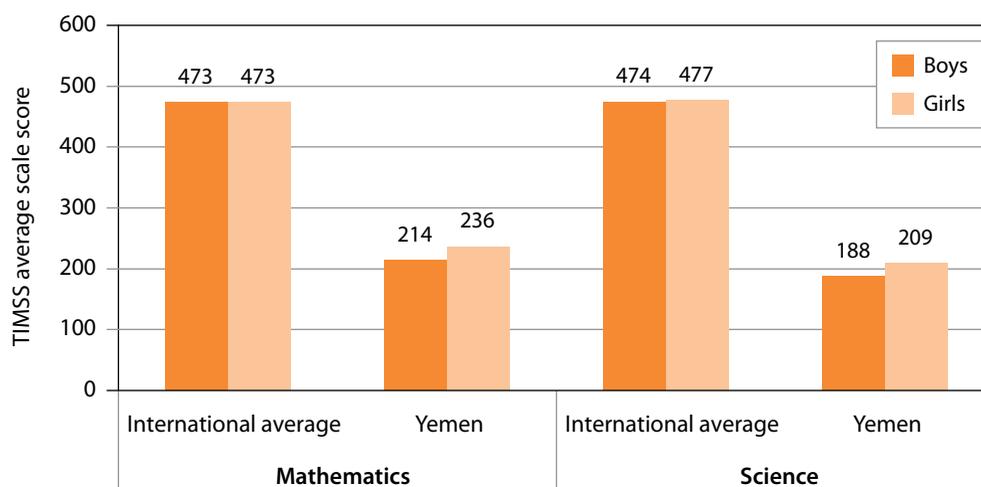
2006–07, of the students who had entered 2-year post-secondary TEVT institutes 2 years earlier, only 57 percent graduated. From the limited tracer studies conducted for the development of TEVT in Yemen, it is clear that employers consider most TEVT provision to be supply-driven, inadequate and irrelevant to the skill needs of enterprises. Finally, unemployment rates in Yemen are highest for those with high levels of education (54 percent among university graduates). Yet, local graduates are not the preferred candidates for vacancies in the formal sector, partially resulting from low quality and inadequacy of skills among university graduates. Recently, in an effort to mobilize resources in response to the social demand for higher education, public universities have started fee-based “parallel programs” usually offered in the afternoon. The widespread expansion of parallel programs is further deteriorating the quality of higher education by offering less than optimal education conditions (including overstretched teaching staff and limited teaching and learning facilities and materials).

Learning achievements of girls and urban students are higher than those of boys and rural students. TIMSS and MLA results show that the learning achievement of girls is higher than that of boys in basic education, and those in urban areas do better than those in rural areas at the same education level. The difference between the scores of Yemeni boys and girls in TIMSS (22 points for mathematics and 21 points for science) was one of the largest among all participating countries.

Although low, learning achievements appear to be improving in primary education. Between 2002 and 2005, the average scores on the MLA improved by 10 percentage points in grade 4 and by 5 percentage points in grade 6. These improvements occurred for boys and girls, and for students in urban and rural areas.

Low learning achievements already are present at the earliest levels and in the most basic skills, pointing to an urgent need to focus on getting the fundamentals right early in the education system. Detailed analysis of the TIMSS test results suggests that most Yemeni students were unable to read by grade 4. Low levels of reading literacy in lower grades continue to affect reading literacy through life. Among the adult female population, only 62 percent of grade 5 completers (68 percent urban, 58 percent rural) were able to read a simple sentence easily. More than 20 percent of women with 6 years of education were unable to read a simple sentence easily. The early grades are the most crucial years for setting solid foundations of a good education for life. Therefore, the

Figure 4. TIMSS 2007 Average Scale Scores for Mathematics and Science in Grade 4, by Gender



Sources: IEA 2008a and b.

Note: TIMSS scores are on a scale with a mean of 500. The international averages for boys and girls were calculated using the mean scores for girls in each of the countries and the mean scores for boys in each of the countries. This methodology explains why the international averages for boys and girls are not 500.

focus of education in these years should be to ensure that children acquire the fundamentals of good education—such as reading with comprehension and writing without making mistakes—rather than to continue to cover wide content matter. Low reading ability by grade 4 also calls into question the nation’s automatic promotion policy pursued in the first three grades.

The rapid expansion of the education system strains financial and human resources and may have contributed to the quality issues. The basic and secondary education system expanded significantly in the context of the “Yemenization” of the labor force. The system could not afford to wait until a cadre of qualified Yemeni teachers could be produced, so it ended up recruiting a large number of unqualified teachers. Many of these teachers remain active in the system. As for general education, the challenge in staffing the very rapidly burgeoning TEVT sector has been addressed by hiring a large number of TEVT graduates as instructors in the TEVT institutes, perpetuating the lack of linkages with the labor market. The rapid expansion of parallel programs in public universities was caused in part by pressure to meet the social demand for higher education and in part by the need to mobilize additional resources for higher education. Parallel programs compromise the

quality of the regular programs because the teaching staff have heavier teaching loads and therefore less time to develop courses, undertake research, and attend in-service trainings. Students in parallel programs also are receiving lower quality education because critical educational facilities (libraries, laboratories) are closed during the afternoon.

The low student learning achievement is due in part to weak implementation of the curricula and to inappropriate teaching methods. The current general education curriculum is quite good and “student centered and discovery” based. However, the elements that would make it fruitful in the classroom are missing. Teachers are not trained in the student-centered methodology. Textbooks and teachers’ guides reach basic and secondary schools too late in the academic year to be useful for learning. Textbooks have many factual errors, grammatical mistakes, and inaccurate and inappropriate practical exercises. Given that the curriculum encourages self-study and “discovery” methods, which require access to adequate learning materials, school libraries are an essential facility for students to obtain reading resources. In 2007–08, only 7 percent of basic schools, 21 percent of basic-secondary combined schools, and 38 percent of secondary schools had libraries. The situation is much worse in rural areas, in which only 3 percent of basic schools, 22 percent of secondary schools, and 10 percent of combined schools have libraries. There also are huge differences among governorates. No official information is available on the use of these libraries, but anecdotally it appears that library use in schools is limited. Unavailability of laboratories, such as for science and computers, is equally an issue, especially in rural schools. These inadequacies render the element of discovery ineffective for most students.

Lack of implementation of the competency-based approach for curriculum and program development is equally problematic for the quality of vocational training. TEVT instructors are not selected on the basis of their experience in the labor market so their capacity to modify the program on the basis of market needs is very limited. Weak linkages to labor market demand and lack of emphasis on gaining industry experience are exacerbated by the fact that most teachers in TEVT institutions are recent graduates of TEVT centers and have little outside experience. Furthermore, because linkages with the labor market are not sought, there is no entry point for real-life work-life situations to be a part of the learning experience. Finally, the equipment in most TEVT centers is nonexistent, outdated, or nonfunctional.

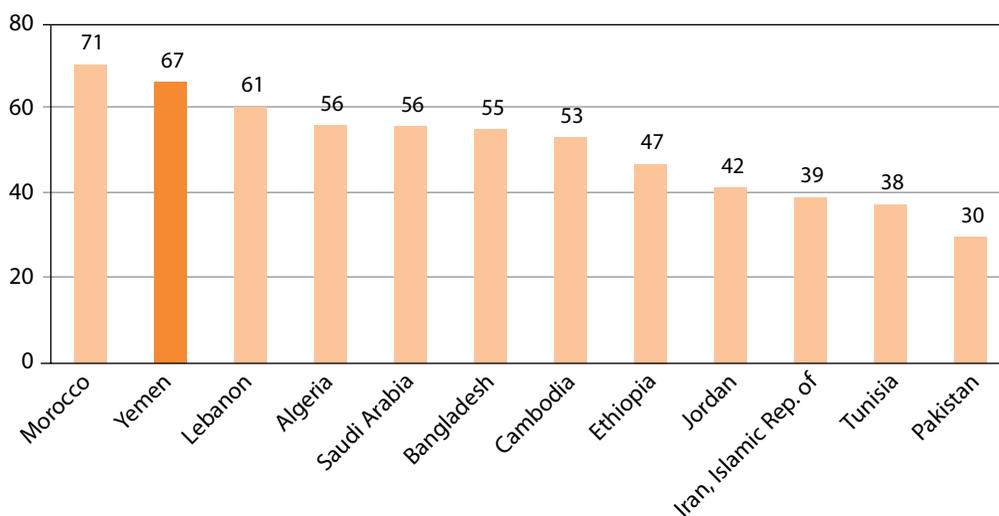
Curriculum upgrading, the development of information and communications technology (ICT), and applied scientific research remain nascent in Yemeni universities. The curriculum content of Yemen's higher education is theory based. Opportunities for practical application and field training are rarely available. And no public university discipline in Yemen has made a systematic review and development of its curricula for many years. The government has emphasized the importance of ICT for the country. And yet learning and teaching methods of the country's higher education institutions currently do not address this inevitable technological progress. There is a dearth of scientific research in Yemeni universities. Approximately 30 referred journals are published. Research is not aligned with the nation's social and economic development needs.

In public universities, resources have been more readily available for new buildings than for staff, equipment, or library books. The lack of electronic infrastructure for academic staff and for students¹⁵ limits students' access to global resources, especially since knowledge creation within the country is limited. Teaching and learning materials are even less accessible to students in parallel programs offered at public universities. To ensure quality in higher education, the issues of parallel programs must be addressed with policies appropriate to the conditions. International evidence shows that a rapid expansion of parallel programs severely deteriorates the quality of higher education. Since the capacity of public universities has reached its limit, promoting private universities is one way to meet the demand for higher education in Yemen.

Offerings in public universities focus on humanities and social sciences and are out of alignment with what is taught in secondary education. Both social (arts, social science, and humanities) and natural sciences (science, engineering, and mathematics) are important for a country's societal, cultural, and economic development. The key is to find a balance so that the higher education system produces an appropriate proportion of graduates who meet the human resource needs of the economy and the society. The majority of Yemeni secondary education students are studying natural sciences. However, the majority of students at universities study humanities and social sciences. The proportion of students in social sciences at Yemeni universities increased from 30 percent in 2003–04 to 67 percent in 2006–07. This proportion is much higher than that found in most countries in the region (figure 5). This phenomenon has caused not just a high unemployment rate among college

15. For example, the student to computer ratio is 400:1.

Figure 5. International Comparison of University Students in Social Science Disciplines, 2006 (%)



Source: Authors' calculation based on data from World Bank EdStats database, April 2009 and SCEP 2006–07.

Note: Yemen data are for 2006–07.

graduates who majored in social science but also a serious shortage of informed human capital in the sciences.

Yemen's teacher force in general education is large, predominantly male, and mostly unqualified. In 2007–08, there were approximately 199,000 teachers in government basic and secondary schools, of whom 77 percent were male and 66 percent were in rural areas. The minimum educational qualification to become a teacher in Yemen is a post-secondary teaching diploma from a Teacher Training Institute.¹⁶ Almost 40 percent of the current pool of teachers is unqualified. Most of these unqualified teachers are found in rural schools (76 percent) and teaching in basic education (91 percent). Only 35 percent of the teachers teaching in grades 1–6 meet the minimum qualification requirements of the MOE, that is, they hold

16. According to the MOE Decree No. 37 of 1998, the eligibility criteria for a teacher are to (1) be more than 18 years old; (2) have an educational qualification not less than a post-secondary diploma from a Teacher Training Institute (TTI), and (3) pass the entrance examination for the required job through competition. Only when no qualified candidates are available, can candidates with lower qualifications (graduates of general secondary schools) be recruited, especially in rural areas. Preference is given to those who have training in the field of education. In practice, and due to the high number of graduates being produced by the FOEs with bachelor's degrees (which prepare teachers for secondary education), the minimum educational qualification is applied primarily to the teachers expected to teach grades 1–6. A first degree from a university, preferably a FOE, is preferred for teaching grades 7–12.

Table 3. Teachers' Academic Qualification in Basic and Secondary Education Schools, 2005–06

	Below secondary	Secondary	Post- secondary diploma	University and above	Total (%)	Qualified teachers (%)	Total number of teachers
Number of grade 1–6 teachers	45,850	18,094	21,018	13,803			98,765
% of grade							
1–6 teachers	46	18	21	14	100	35	98,765
Male teachers	52	14	22	11	100	33	73,632
Female teachers	29	30	19	23	100	41	25,133
Rural teachers	52	17	21	9	100	31	70,048
Urban teachers	33	21	22	25	100	47	28,717
Number of grade 7–12 teachers	9,140	3,894	17,194	55,153			85,381
% of grade							
7–12 teachers	11	5	20	65	100	65	85,381
Male teachers	12	4	22	62	100	62	68,246
Female teachers	6	7	13	74	100	74	17,135
Rural teachers	13	5	23	59	100	59	55,341
Urban teachers	6	4	14	75	100	75	30,040

Source: MOE AES 2005–06.

post-secondary diplomas or higher qualifications (table 3). Decree No. 37 also allows exceptions to enable female teachers to teach in rural areas with fewer than the minimum qualifications. However, the proportion of “unqualified” (that is, teachers who do not meet the minimum qualification criteria according to the MOE decree) is higher among male teachers than among female teachers. Only 33 percent of male teachers have the minimum qualifications or more to teach, as opposed to 41 percent of the female teachers.

With the increasing number of female students in rural areas, the demand for female teachers continues to rise. However, this demand is largely unmet by civil service recruitment. Between 2000 and 2007, the MOCSI recruited 3,000 unqualified female teachers and 2,900 unqualified male teachers. Given that these numbers represent 28 percent of female teachers and 9 percent of the male teachers hired during that period, it seems that there is still an under-recruitment of female teachers. Despite the need and the waivers granted in the regulatory system for the recruitment of female teachers, the needs for female teachers in rural areas are largely unmet. Part of the reason is that not enough rural girls are completing secondary education and obtaining higher degrees for teaching. Furthermore, most female graduates of Faculties of

Education (FOEs) seek careers in urban schools for a variety of reasons. Attempts to provide wage premiums to encourage female teachers to reside in rural schools have been unsuccessful. It also is well known that even though most vacancies for rural positions are opened annually, a large majority of the recruits to these positions opt out and request transfers to urban schools within a few months of being recruited into these rural posts.

To tackle this problem and to encourage adequacy and stability of staffing, particularly in rural schools, in 2007 the MOE initiated a Decree (and the Cabinet of Ministers ratified it) to link the post of a teacher to a school rather than to an individual. In other words, if a person is recruited into a position at a particular school, s/he does not retain that Civil Service position if s/he leaves that school position. However, implementing this Decree has met with limited success. Part of the reason is the historic distribution of responsibilities and lack of complementary objectives and coordination among the MOE, the MOCSI, and the office of the Governor. Even if the MOE mandates a position in a school, the Governor's office can influence teacher postings quite independently. The MOE has a limited role in ensuring that the appropriate number of teachers is available in a governorate because of poor coordination among the MOE, which sets policy; and the MOCSI and the MOF, which allocate budgets and recruit teachers. There also is a high degree of corruption in teacher recruitment and promotion practices.

To meet the current needs for teachers, there may be a benefit in revisiting the policy on the minimum qualifications of teachers and teacher remuneration. A good education system relies heavily on its teachers to promote learning. Therefore, despite the supply constraints that it faces, the MOE must give professionalizing the teaching force the highest priority in the system. Professionalization includes articulating and instituting solid competencies for teacher qualification, including raising the entrance standard to pre-service teacher preparation programs and adequate compensation for teachers. To meet the supply needs of the system in the short and the medium term, the government could look into the feasibility of two options:

1. New MOE recruits in rural areas, who, in practice, have lower qualification requirements, could be offered the opportunity to obtain their qualifications through summer courses in degree-granting programs at teacher training institutes. The government may want to withhold civil service status (and also civil-service-level wages) from these teachers until they have received their degrees. The government also may want to specify

the duration of this “confirmation” period. An example would be 10 years of service to obtain the bachelor’s degree, after which, if the degree has not been conferred, the teacher would be let go.

2. The system needs could be fulfilled by teachers who are not expected to ultimately be part of the civil service. The teachers in this stream would have their own salary scale and could be recruited on a temporary contractual basis. These teachers also would not be expected to eventually get a bachelor’s degree. However, similar to the first group (1 above), these teachers would be covered through the in-service training program. If these teachers wanted to join the civil service, they would be expected to apply and compete. By hiring rural teachers under this separate program, there would be less of a need to compel urban trainees to move to rural areas, which has been very difficult. This separate stream also could increase the number of female teachers in the system.

There is a serious mismatch between the number of teachers required and the number and qualifications produced each year through the pre-service programs at FOEs. This discrepancy adds to the pool of educated unemployed in the country. Pre-service programs at FOEs are overproducing humanities graduates and many basic and secondary teachers teach subjects in which they are not specialized. In 2004–05, more than 60 percent of FOE graduates specialized in the humanities subjects, and less than 30 percent graduated with a specialty in the science subjects. In contrast, approximately 64 percent of secondary schools offer only science tracks (23 percent offer both streams, 13 percent offer humanities only). According to an analysis, only 49 percent of teachers are teaching the subjects in which they specialized in university.¹⁷ This phenomenon is growing because increasing proportions of secondary students are choosing the scientific stream and schools are expected to open science streams despite an inadequate number of science teachers. Despite significant needs for multigrade teachers, universities do not offer any courses for multigrade teaching. Thus, multigrade teachers are chronically lacking in the teaching force. Although there will be an increased need for grade 1–6 teachers to achieve the MDGs, pre-service programs at FOEs are not preparing teachers to be able to teach these grades. Skills acquired at the FOEs do not necessarily match the needs of schools because FOEs do not use materials that teachers use in basic and secondary schools. TTIs can provide practical training experiences to new teachers as well as life-long learning opportunities for existing teachers.

17. De Feiter and Anaam 2007.

In-service teacher training in Yemen has great value added. Since approximately 2003, the MOE has provided, through externally financed projects, a high level of in-service training to raise the country's teaching skills. At this stage of development of Yemen's education system, most teachers are teaching in remote areas in which they lack linkages with other teachers, and many have not been trained for their current work. In this situation, in-service training and mentorship seems to have an impact on classroom interactions as well as on student learning.

Teacher absenteeism and low actual time on task are other factors related to Yemeni student learning outcomes. A 2006 survey of a sample of basic education schools found that 19 percent of the teachers were absent on one day in April, reducing actual student learning time to 81 percent. Seventy-five percent of the absences were without prior approval. The MOE took serious steps to curb the phenomenon of teacher absenteeism, including widespread information dissemination to the public concerning the problem and deduction of salary equivalent to the period of unexcused absence. It is likely that absenteeism has been limited as a result. However, given that the number of actual teaching days is limited (due to frequent holidays and time spent on monthly examinations) combined with student absenteeism (of which no accurate estimates exist), the actual time on task is even less than 81 percent.

Class size varies greatly across Yemeni schools. Rural schools have smaller classes on average. For example, rural basic schools have an average of 23 students. However, while 23 percent of urban basic schools have class sizes exceeding 50 students, close to 45 percent of urban students are studying in these overcrowded classes, which can severely affect the quality of education acquired. At secondary and basic-secondary combined schools, 44 percent and 53 percent of urban students, respectively, attend classes with more than 50 students.

The skill linkage among general education, TEVT, and higher education is weak. This weakness is exacerbated by the lack of flexible pathways among these subsectors.

The development of a quality assessment system and quality assurance (QA) system is urgently needed. At the basic and secondary levels, no national student assessment is yet in place, although discussion is ongoing. The current public examination system needs to be fully revamped to solve all of the significant issues, including technical quality and integrity of examiners. The

TEVT and higher education levels have few standards for assessing student learning. The attempt to establish a QA system for higher education is still in its infancy.

Public Spending on Education: Allocation and Efficiency

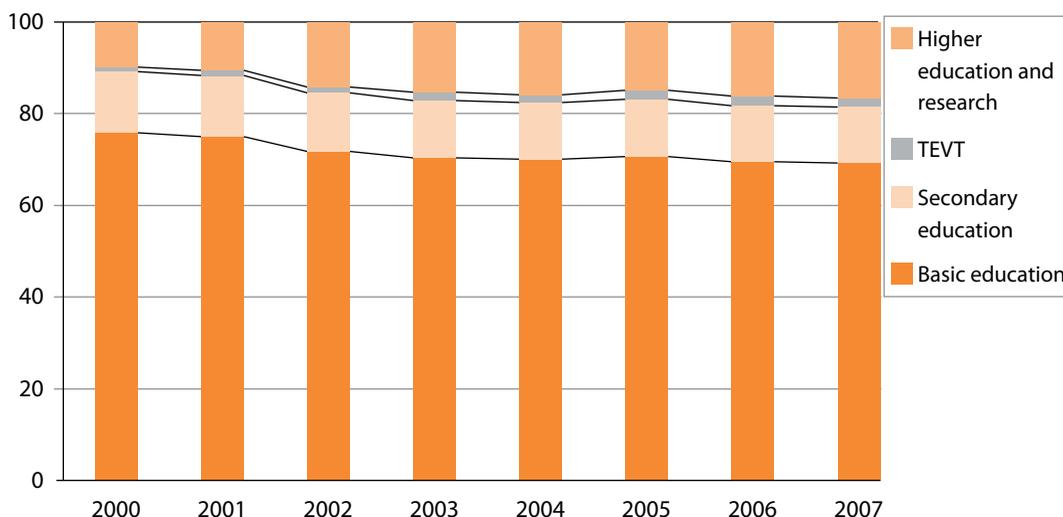
Despite overall increases in the level of public spending, the share of public spending on education as a percentage of GDP declined in recent years. Public expenditure on education increased 125 percent between 1997 and 2007. However, the drop in oil prices and depleting reserves will strain sustaining this increased spending in the future, notwithstanding the need for expansion at basic education level. In fact, as a share of total public recurrent spending, education decreased from over 19 percent between 1998 and 2004 to 16 percent in 2007. This figure is much lower than the 20 percent reference point set in the EFA FTI Indicative Framework.¹⁸

Moreover, the government's allocation of public funding across the different levels of education has changed in recent years and has put more emphasis on TEVT and higher education (figure 6). Although basic and secondary education has the highest share of total expenditure, it dropped from 85 percent in 2000 to 78 percent in 2007. In contrast, recurrent expenditure on TEVT and higher education almost quadrupled between 1997 and 2007.

The cost of education per student increases with the level of education, and the unit cost of TEVT remains the highest. An analysis of the recurrent expenditure per student by subsectors shows that the unit cost is lowest for basic education (Yrls 36,195), followed by secondary education (Yrls 49,286), higher education (Yrls 121,297), and TEVT (Yrls 195,941).¹⁹ The trend of recurrent unit costs over 7 years differs from 1 subsector to another. The unit cost of basic and secondary education remained relatively constant (with some decrease since 2001). The unit cost of higher education increased during that period, while that for TEVT decreased. One of the reasons why per-student expenditure for TEVT dropped was the rapid enrollment growth rate that this subsector had experienced (the number of students almost tripled between 2001 and 2007),

18. The FTI Indicative Framework provides a set of indicators that Development Partners are asked to use as the basis for monitoring progress toward universal primary completion.

19. Currency unit (2007 average, DEC alternative conversion factor): 1 Yemeni rial = US\$0.005; US\$1 = Yrls 198.95.

Figure 6. Recurrent Government Expenditure on Education by Level, 2000–07 (%)

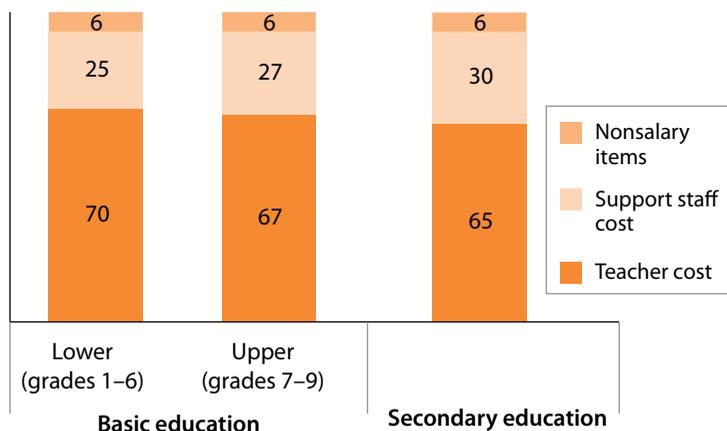
Source: Authors' calculations using MOF Final Account data from 1997–2007.

combined with a relatively small recurrent expenditure share in the overall TEVT budget.

Yemen spends relatively little on educational inputs in basic and secondary education other than teachers' salaries. Given the requirements of the current “discovery-based” curriculum, not prioritizing teaching and learning materials is particularly problematic. Teachers' remuneration accounts for 69 percent, 67 percent, and 65 percent of total recurrent spending in primary, upper basic, and secondary education, respectively. Administrative costs account for 25 percent, 27 percent, and 30 percent, respectively, for the same levels (figure 7). As a result, on average, only 6 percent of recurrent spending is for nonsalary items in all 3 levels of general education, which is a particularly low figure. The system may be spending too much on administrative and support staff and needs to reallocate funding to nonsalary items that improve the operation of schools and that could help to improve the quality of the services offered.

The high wage bill for teachers and the low level of efficiency and student learning outcomes point to the need to redesign the teacher remuneration system. A high proportion of expenditures on teachers may be justified if the system needs are met and efficiency gains are utilized. However, as mentioned earlier, absenteeism among teachers is high; time on task is low; teacher deployment leaves many areas underserved; and the majority of urban students

Figure 7. Recurrent Expenditure on Teachers, Support Staff, and Nonsalary Items by Education Level, 2007 (%)



Sources: Author's calculation using MOE payroll and AES; TEVT and higher education expenditure from MOF.

are studying in classes that are unmanageable for teachers. Moreover, rural students are studying with teachers who are struggling to teach more than 1 grade at a time; and female teachers are distinctly absent from rural schools, thus limiting girls' enrollment, retention, and completion. It also is believed that the system contains many "ghost" workers who may be on the payroll but may not be in schools.

In this situation, reducing the pay of the teachers or reducing the number of teachers in the system may not introduce any improvements in the system. Yemen needs to reduce teacher absenteeism, increase time on task, reduce teaching loads in urban areas, and deploy teachers on the basis of student enrollment numbers, gender, and education levels. To address these issues, one option is to give some teachers who already are on the payroll higher salaries and bonuses for extra hours worked or for qualifications gained. In addition, teachers in urban schools could be paired with teaching assistants (who could be hired on contract and operate permanently outside the civil service and paid lower wages) to lessen workloads.

The key to achieve fiscally sound universal education necessitates rationalizing school sizes, providing smaller schools close to communities for grades 1–6 with multigrade teachers, and providing larger, well-resourced schools for grades 7–12 at reasonable distances from communities. From international experience,

a school enrolling 100 students can “normatively” operate with 3 teachers, each of them teaching 2 grades. In Yemen, a school enrolling 100 students uses on average 4.2 teachers. As a consequence, while the cost of teacher salary per student could “normatively” be Yrls 22,320, the actual (estimated) figure is 40 percent higher. To move closer to the normative estimates, the MOE will need to train a large number of teachers to teach multiple grades who will be mobilized in rural areas. In addition, the MOE could encourage small schools that offer only grades 1–6, which should be located close to communities. Efficiency gains and educational quality can be facilitated if separate, middle-sized, well-resourced schools are established for grades 7–12 and located possibly a little farther from individual communities. The teaching and learning resource needs are similar for grades 7–12. The former include libraries, laboratories, and teachers who are familiar with the subject matter, as opposed to solely general education. One analysis indicated that, to have a viable secondary school offering the 2 mandatory academic streams, a secondary school needs to have at least 180 students.²⁰ The analysis also showed that efficient workloads of 22 teaching periods per week would allow only 10 teachers per school. Currently, the number of subjects in the school timetable is considerably larger than that (approximately 17), thus requiring more teachers. However, at present, only 21 percent of the secondary schools have more than 180 students (13 percent of rural and 47 percent of urban schools). The majority of secondary schools operate with less than 40 students.²¹ Thus, promoting medium-to-large-sized schools that offer grades 7–12 may be a way to address the high unit cost and low provision of adequate facilities and teaching and learning resources that plague many schools in Yemen.

Although public spending on education is not extremely unequal in Yemen, distribution of education resources in relation to the distribution of enrollments reveals several levels of inequity in the distribution of public resources. One way of examining equity is the Gini coefficient for public spending on education in relation to the distribution of enrollments. This estimate is 0.51 in Yemen, which, although not too high (a number close to 1 indicates a very inequitable system), is higher than the average of 0.30 for both MENA and Asian countries. Another way of examining equity is to assess education access at the different education levels. Since access to schooling implies access to the public resources mobilized

20. World Bank 2008a.

21. World Bank 2008a.

to finance the services, social disparities in enrollments turn into social disparities in the appropriation of public resources. Overall, the distribution of public resources is most equitable at the primary education level, with inequality increasing by education level. Another way to assess equity is through analyzing the distribution of the population aged 5 to 25 by education status (level of schooling) according to gender, location, and income group. This analysis indicates considerable differences in enrollment patterns among different social groups. These different patterns lead to a significant disparity in public resource allocation (figure 8). For example, in secondary education, the relative chances of having been enrolled are 1.9 times larger for males than for females, 2.4 times larger for urban than for rural dwellers, and 4.0 times larger for people from the 40 percent richest part of the population than people from the 40 percent poorest part of the population. Comparing the 20 percent richest and the 20 percent poorest, the former has 10 times more chance than the latter to have been enrolled at the secondary level of schooling.

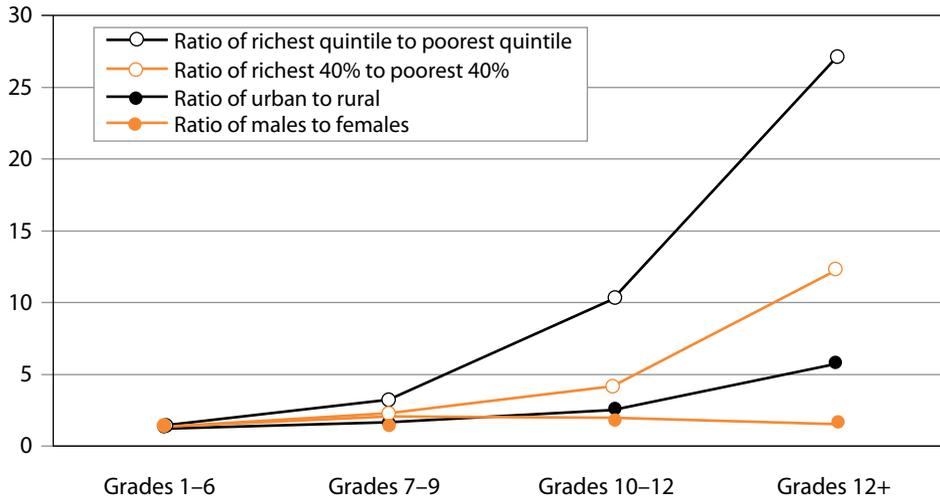
Impact of Education on Social and Economic Development

Education offers significant social benefits to individuals and society. As the level of mothers' educational attainment increases, the use of maternal health services increases rapidly, as does the health status of children. A composite index of social benefits from education shows that the net social benefits are largest for primary education, which produces the highest benefits at lowest unit cost (figure 9).

Education is positively associated with poverty reduction. Families in which the head of household is more educated are less likely to be poor, particularly in rural areas—home to the majority of the poor (66 percent). After completing primary education, a pupil's probability of being poor in a rural area drops from 100 percent to 60 percent. After completing university, it plummets to 27 percent.

Education has an overall positive effect on labor earnings. However, this effect applies mainly to graduates from primary education and universities. An additional year of schooling increases a child's eventual wages on average by 2.7 percent. Specifically, wages increase by as much as 13 percent for primary school graduates compared to illiterates; and by 34 percent for university graduates, compared to secondary school graduates (the latter figure excludes Yemen's very high post-graduate-school

Figure 8. Ratio of Receiving Benefits from Public Spending of “Advantaged” to “Disadvantaged” Group by Education Level, 2006



Source: Authors' calculations using MICS 2006.

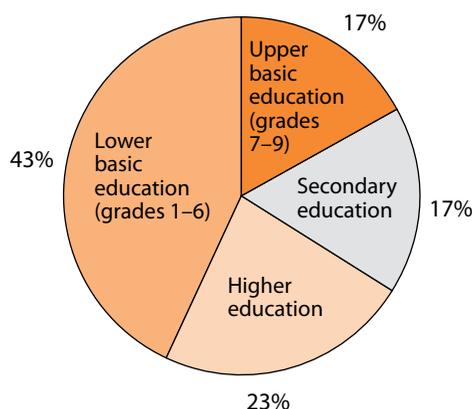
unemployment). The effect of other levels of education on wages is minimal.

In contrast, 1 additional year of work experience increases wages by more than 200 percent that of education (5.9 percent compared to 2.7 percent). Yemen's is a rather unconventional result because in a typical labor market the effect of schooling on wages is generally greater than that of experience. There are common explanations for the apparent low effect of education on wages in Yemen.²² Nonetheless, one implication of this finding is that poorer families do not have substantial incentives, nor do they encounter mentors who encourage them, to enroll and keep their children in schools. As poor families perceive the situation in Yemen, the demand for child labor today is high, compared to the low reward of education in the future.

Given the slow employment creation and the low basic skills required by most of the in-country labor market, post-basic graduates, who are increasing in numbers, experience great difficulties

21. Three such explanations are (1) the nature of jobs in Yemen is rather simple and requires general skills. Thus, additional education adds little to productivity and the willingness of employers to pay higher wages; (2) the quality and relevance of education is low; and (3) there is an excess supply of educated workers so employers do not need to offer higher wages to attract them.

Figure 9. Relative Size of Education's Social Impact by Level of Educational Attainment, 2006 (%)



Source: Author's calculations based on MICS 2006.

Note: The relative size of the social impact is standardized with total impact size (from illiterate to university) being 100. The numbers shown in the table are the share of impact for obtaining a higher level of education.

in securing employment. Yemen has a very small private sector, which cannot absorb many job seekers—even if the education system produced the needed skills. Moreover, public sector jobs are more attractive than private sector jobs because the former pay higher wages and have less demanding employment conditions. In broad terms, the number of unplaced applicants for jobs in the public sector (57 percent of those with graduate degrees) can be taken as an indicator of the excess supply of educated labor. Table 4 shows that nearly 90 percent of more than 150,000 civil service applicants have been educated at the post-secondary level. In fact, graduates from higher levels of education have the greatest difficulty in finding jobs. This difficulty has been increasing over time and is particularly prevalent among those who studied humanities and social sciences (including commerce and administration, arts, and law).

Labor market solutions for Yemen should be sought not only in the education system but also in macroeconomic policies and private sector development. Most skilled emigrants from Yemen take jobs in low-wage countries. The emigration rate of skilled workers from all other MENA countries is highest in the rich (OECD) countries, rather than in low-wage countries, such as the Gulf Cooperation Council (GCC). Yemen is the only exception, with skilled emigration to non-OECD countries, including the GCC, being highest. This finding indicates that, despite the costs associated with emigration, Yemeni

Table 4. Unplaced Applicants to the Civil Service by Highest Level of Education Completed, 2007

	Number			Distribution (%)		
	Male	Female	Total	Male	Female	Total
University (Bachelor's)	57,048	32,305	89,353	55	62	57
Diploma	37,432	11,494	48,926	36	22	31
Secondary education or equivalent	2,478	6,691	9,169	2	13	6
Post-basic education/vocational course	6,267	1,785	8,052	6	3	5
Master's	52	4	56	0	0	0
Doctorate	13	3	16	0	0	0
High diploma	5	2	7	0	0	0
Total	103,295	52,284	155,579	100	100	100

Source: SCEP 2006–07.

skilled workers can find jobs elsewhere but not in their own country. In other words, labor market solutions for Yemen should be sought: (1) not only in the education system (2) but also in macroeconomic policies that determine the overall level of labor demand in the economy and (3) in the policies that promote private sector development (such as improvements in the business environment, investment climate, infrastructure, and ICT).

For the foreseeable future, good universal basic education seems to be the most productive and strategically sound public investment decision in Yemen. Most employment in Yemen (90 percent) is informal and likely to remain so for many years. According to the Vision 2025 goals, the labor market structure is unlikely to change significantly for the next 15 years. Thus, unless there is a significant change in the structure of the economy, most of the jobs created in Yemen in the next 15 years will require the skills and knowledge that a good primary education system should be able to provide.

Governance and Management of Education

Some of the governance and management issues that are constraining effective and efficient delivery of education in Yemen are broader national issues that are not restricted to education. If successful, a number of national programs being implemented to strengthen governance and public service delivery—such as the National Reform Agenda, civil service modernization, and anticorruption initiatives—will greatly enhance the education sector's performance. A number of issues could be addressed through governance and management changes, including incentives facing all

actors in the system. These changes could enhance the quality, equity, and efficiency of education in Yemen.

A specific issue for education is the weak coordination of the many government bodies engaged in education planning, budgeting, curriculum, standards, qualifications, and information management. These government bodies include the Ministry of Education (MOE), Ministry of Technical and Vocational Training (MOT EVT), Ministry of Higher Education and Scientific Research (MOHESR), Ministry of Finance (MOF), Ministry of Civil Service and Insurance (MOCSI), Ministry of Local Administration (MOLA), Supreme Council for Education Planning (SCEP, which produces annual statistical reports on education), plus the relevant governorate and district authorities.

The three education ministries share a number of constraints in exercising their core functions: (1) there is a traditional tendency for significant policy decisions to be set independently above the level of the ministry; (2) the funding for educational institutions is under the direct control of the MOF and bypasses the education ministries; and (3) staffing of the education ministries and education institutions is under the direct control of the MOCSI. Therefore, the education ministries are not able to change the structure of incentives to achieve their aims and promote capacity building as they see best. Given the wide-ranging problems that it causes, particularly in the recruitment, training, and management of teachers, the necessity to resolve this by now is well understood.

While some form of consolidation of the education ministries often is discussed, consolidation is not in itself a solution to the lack of effective communication and coordination. Interministerial committees have been created to aid coordination, but communication and collaboration at the policy and technical levels have been lacking. The roles, responsibilities, and incentives for staff to collaborate on cross-cutting issues are not always clear.

As advanced by the Local Authority Law since 2000, decentralization of financial and administrative authorities to the governorate or district level is a policy applying to all sectors, including education. However, significant problems are hampering progress for basic and secondary education. These problems include a lack of detail and apparent contradictions in the legal framework; differences between written laws and actual practice; continuing adherence to traditional centralized principles;

and the lack of effective training, required equipment, materials, and communication.

There is very little independence at the school level in Yemen.

International evidence supports, under certain conditions, the move to devolve authority to the level of institutions. In particular, TEVT would benefit from more autonomy to respond to the changing needs of employers and students. Although the universities generally are more autonomous, line-item control of their expenditures by the MOF is a key constraint, resulting in universities' lack of responsiveness to changing conditions and needs.

The private sector, which could provide a significant role, is hampered by the regulatory framework.

The private sector potentially could absorb part of the excess demand for secondary education, particularly in urban areas. However, in 2007–08, the private sector accounted for just 3 percent of enrollments. Excessive licensing requirements, the dual requirement of approval from both the MOE and the local authority, and the high tax rate (35 percent of income) are barriers that contribute to low private provision.

The roles of stakeholders on the “demand” side of governance, including students, parents, civil society, and employers, are underdeveloped.

There is little provision for stakeholder groups to hold education providers accountable, contribute to oversight and monitoring, provide information on education needs and priorities during policy discussions, or disseminate information and raise public awareness. There have been some promising governmental and nongovernmental initiatives in schools involving community participation and parent councils fulfilling these functions, which could be built on. There also has been a recent growth in civil society organizations (CSOs) focused on governance, including for education. However, employers continue to be given a negligible role, due in part to the long-standing distrust between the public and private sectors.

The financial resource management is overly rigid, unpredictable, and lacking in transparency.

The MOF determines the budget allocations with no flexibility for shifting priorities, if needed, at the local level. In particular, MOF's role in budgeting for universities is seriously constraining freedom to plan and innovate. Allocations to universities typically are based on the previous years. Furthermore, because MOF officials in public universities have many incentives (including personal gains) to return unused funds at the end of the fiscal year, there is a perverse incentive in

the system not to spend, despite clearly identified needs. There is a lack of transparency in the delivery of salaries (due to associated commissions for delivery of the salaries and unknown deductions). Although the government is tackling this issue across the entire civil service, providing pay stubs that provided their salary details to all teachers at the end of each month would be a quick improvement to the system.

There are additional issues regarding the management of student admissions and assessment, including a lack of fairness and transparency. Policies and procedures for student admissions and registration are poorly documented and frequently not followed. The basic and secondary education examination system is poorly planned and managed and subject to corruption. In higher education, the MOHESR has developed plans to create a semi-autonomous Accreditation and Quality Assurance Council for universities to address the lack of information on examination procedures and quality standards. It will take some time for the effects of this council to show.

Information is crucial for accountability and also so that sound policies and resource allocations are made in an effective and timely manner. Information is essential to evidence-based decisionmaking. Improving the capacity for monitoring, evaluation, and information management can increase effectiveness and efficiency. Overall, Yemen will need to develop and use better information systems that will inform policy, improve implementation, and increase accountability among public officials.

Policy Implications in Advancing the Education Sector

Yemen faces the development crossroads with strengths but also weaknesses. Building on the former and mitigating the latter is a high-stakes challenge. How this challenge is taken on today will determine the shape of future events. The diagnosis offered in this report highlights the multiplicity of issues facing Yemen's education sector and provides suggestions for actions. These actions would take into account the trade-offs—between quality and quantity, between expansion and consolidation, between basic and tertiary education, between general education and TEVT—in the context of the limited resources available for education among Yemen's many developmental needs. The remaining section of this Summary highlights some directions for policy suggested by this analysis, followed by a detailed matrix of policy options (appendix 1).

Achieve the EFA Goals by Aggressively Expanding Access to Basic Education, Paying Particular Attention to the Gender and Regional Challenges

Achieve the first six years of basic education. Few priorities are as strategic and clear as the need to achieve universal primary education. Public resources must be realigned with this goal. Achieving universal enrollment requires that both supply factors (availability of schools and teachers) and demand factors (reasons for not enrolling in available schools) are addressed simultaneously. Supplying adequate facilities, and above all, supplying textbooks and teacher guides in the hands of the students and teachers at the right time is still far from being accomplished. Moreover, addressing demand-side factors that prevent the less privileged groups in marginalized areas from enrolling in school no longer can be ignored.

Focus on building the fundamentals of good quality education. Expanding coverage cannot be at the expense of quality. In addition to ensuring that all children enroll in school, measures will need to be taken to ensure that they graduate within the normal timeframe and acquire the necessary basic skills. If most children cannot read by grade 4—and since this is a pervasive problem following Yemeni citizens throughout their lives—a greater emphasis will be required on getting the fundamentals of a good education right in the early years. Accomplishing this may necessitate elimination of the current automatic promotion policy. It also means that, at the start of the academic year, all teachers need to be in their schools, trained to appropriately teach the curriculum; and all correct textbooks and teacher guides are in the hands of students and teachers. Clear standards are needed for student learning achievements, teaching and learning hours, and teachers' professional qualifications. In particular, support is required for pre- and in-service teacher training (including multigrade teaching, subject matter, and pedagogy), and in curriculum implementation so that the teaching and learning process in the school can be sufficiently upgraded. Assessment of students and the education system also require support, from transformation of the current examination system to enhancement of school-based and national assessment systems.

At the Post-Basic Education Level, Factor in Labor Market Conditions in Yemen and Abroad

As the economy grows, demand for and rewards to educated labor are bound to expand. They can provide private incentives for post-basic

education (including TEVT), freeing scarce public resources to focus increasingly on areas in which public investments yield the highest social returns. The expansion of post-basic public education should be better aligned with labor market demand; provision of private education should be increased; and methods of cost recovery in public education should be explored. The public sector also can and should support able students from underprivileged families to pursue additional education.

Prioritize quality and relevance. The diagnostic analysis in this report demonstrates clearly that the education system does not equip students with the skills needed for the domestic, regional, and international labor markets. This lack of skills calls for refocusing post-basic education on quality and relevance, which should take precedence over expansion at the post-basic education levels. The issue of quality and relevance is as pervasive in TEVT and higher education as it is in secondary education. As observed in most developing countries, equipping both teachers and students with a higher level of ICT and English proficiency greatly enhances further trainability and future employability.

Establish flexible education and training pathways, and focus on skills creation for the whole labor market, not just for job seekers. Maintaining pathways and bridges among different streams and disciplines, as well as between general and vocational tracks, is critical in the organization of modern post-basic education. This applies to the post-secondary level, in which the choice between higher education and TEVT should not be irreversible. This flexibility will require that the three education ministries articulate pathways among the streams and disciplines. In the medium to long term, Yemen's education ministries also must establish a National Qualifications Framework (NQF) to bring together the skills levels that link TEVT and general education from secondary to higher education.

Focus on quality and relevance enhancement measures in TEVT. Expanding the enrollments in public TEVT (which is offered today to approximately 23,000 students) will not make a dent in the: (1) massive inflow of job seekers (more than 200,000 annually); (2) retraining needs of many of the more than 4-million-person workforce; or (3) specific needs of private employers. Given the high unit costs of TEVT, expanding enrollments also will divert significant public resources from achieving the basic education targets. Instead, the public resources for TEVT should focus on system-wide improvements such as the management of the Skills Development Fund and the aforementioned establishment of the

NQF. Additional measures can include: (1) giving incentives to the private sector to play a greater role in expanding enrollment and types of training in TEVT; (2) establishing closer links with the labor market in all key aspects including curriculum and program design, development and implementation, student internships in industry, and attracting teaching staff from industry; and (3) introducing institutional assessments of public institutions along with a transparent accreditation system for private training institutions.

Focus on quality and relevance enhancement measures in higher education. The recent expansion of the higher education system through the introduction of the parallel system in public universities and the creation of private universities shows that there is both a strong demand for higher education and possibilities for cost recovery and private funding. Similar to TEVT, the public higher education system should explore the synergies that exist within this private demand and supply. The public system can play a transparent licensing and accreditation role for the private sector and focus more on improving quality and relevance, and less on expansion. A comprehensive QA system, such as the NQF, that embraces both public and private institutions should be established to enhance the curriculum and other teaching and learning aspects; and to more closely align the higher education system with the skills needs of the labor market. The parallel programs in public universities would need to be revisited. Left as they are, they could create perverse incentives for regulating the operations of private universities while not producing qualifications and skills that differ substantially from those already provided, which are known to lead to massive graduate unemployment. Finally, the “one-year waiting” rule for those who have selected to enter universities after secondary education has no justification. The rule amounts to personal and social waste and easily can be abolished.

Align allocation of public education spending with sectoral priorities and diversify the sources of education funding. Practically all policy suggestions discussed in this report have a financial impact that should be approached holistically within a medium- to long-term horizon, factoring in both demographic and economic prospects. It is true that more of everything needs to be done in the education system as a whole because the developmental deficit in Yemen is large when arrayed against the needs and the relatively slim prospects for fast economic growth. So, some priority setting is necessary at least for the immediate future.

Continue to allocate more to basic education, while maximizing efficient use of public resources. Achieving EFA requires a bigger share of recurrent spending in education than is currently allocated. Efficiency gains are possible without compromising the unconditional priority to be given to quality. The most obvious inefficiency is the low student-teacher ratios in almost all subsectors, particularly in TEVT and higher education. These low ratios point to an excess of teaching staff in the system. This imbalance must be tackled together with better teacher deployment policies in basic and secondary education because many schools are in fact overcrowded. Savings also can be made by reducing nonteaching staff. Consolidation of the extremely small schools also would help, especially at the post-primary level. The savings would enable the procurement of pedagogic inputs, scientific equipment, establishment and maintenance of libraries; as well as the provision of incentives to teachers willing to work in hardship conditions and rewards for performance.

Diversify spending by tapping into households' willingness to spend on post-basic education. When the prospect for additional fiscal increase is limited, diversification of resources to fund education becomes a necessity, especially where the benefits of education incur more directly to individuals. Clearly, governments alone can no longer bear all the rising costs of increasing enrollments as well as enhance quality. Consequently, a balanced public/private sharing of the costs of education at the post-basic level is a trend observed across the world. However, any policy to introduce cost recovery measures must take into account the diversity of the student population and build in carefully designed student aid schemes to support students from poor families, such as needs-based scholarships or some forms of student loans.

Partner with the private sector. Relying more on the private sector for the provision and financing of education at all levels, TEVT and higher education in particular, also is a promising route, so long as a balanced system of safeguards and QA measures are in place.

Strengthen Governance and Management of the Education Sector to Articulate and Implement Reforms

Effective governance and management are critical for the delivery of education services. In addition to the technical conditions and the financial consideration attached to the suggested reforms, legal frameworks for governance of the sector need to be articulated. They would clearly delineate the roles and responsibilities

of the ministries, local governments, education institutions, and private sector. The development and implementation of such frameworks requires effective coordination across and within the ministries.

Develop a clear legal and regulatory framework. At least three frameworks need to be developed. (1) The overall legal framework for decentralization is outside the mandate of the education ministries. Their respective responsibilities would have to be clarified at the central, governorate, and district levels by setting up reporting lines and introducing job descriptions for ministry staff at all levels. (2) TEVT and tertiary education institutions also would need a clearer legal and regulatory framework to give them the requisite autonomy over admissions, pedagogic, administrative, and financial matters; and to hold them responsible through transparent performance-based allocation mechanisms and well-defined quality control. (3) A modern legal and regulatory framework for private education providers that would encourage private investments and facilitate a healthy coexistence between private and public institutions is necessary.

Support effective coordination among the three education ministries. Interministerial coordination should be strengthened by assigning selected technical-level representatives of relevant ministries to working groups in each of the areas that require coordination. These working groups should be guided by a high-level interministerial steering committee and have access to and support from experts. The outputs of the groups should benefit from stakeholder consultation before being passed to the Cabinet for decision. Working groups could be organized around such themes as: (1) a budgetary allocation, (2) teacher training and teacher management, (3) post-secondary planning (including TEVT, higher education, and the private sector), (4) curriculum, and (5) information management. Many of these issues also would require institutionalizing an effective collaboration with other ministries, such as the MOF, MOCSI, and MOLA.

Strengthen the coordination across the MOF, MOCSI, MOE, and MOHESR. Improved coordination across these bodies could enhance the quality of current and future teachers, align incentives for civil service employment, provide concerted efforts to sustain the provision of teachers to rural areas, and reduce the incentives for teachers to migrate from rural to urban areas. The involvement of key stakeholders also could improve quality and efficiency.

Establish an education management information system (EMIS) that will produce reliable and timely information for more effective policy design and enhanced accountability. The education subsectors are facing common data issues. Planning, monitoring, evaluating, and effectively managing the education system calls for pertinent, accurate, and timely data. The establishment of an EMIS is greatly needed. As the education sector becomes more decentralized, ensuring good policies and greater accountability at the local level will become increasingly more critical to achieve the education goals.

Proper, logical sequencing of the reform. Several of the policy reforms suggested above can start and be implemented without delays. Others will have to be introduced gradually, and/or at a later stage. Political, practical, and financial considerations together contribute to decisions whether to go full-scale with a reform or whether a period of experimentation is needed, followed by a rigorous evaluation. The policy matrix in appendix 1 provides more detailed policy options, with short-term and long-term recommendations.

Despite significant progress made in the past years, the challenges facing the Yemeni education sector are daunting—yet not out of reach. If priorities are clearly established, and the necessary reforms discussed, decided, and implemented in the right sequence, the reforms can be accomplished. The country already has shown its resilience and its capacity to turn challenges into opportunities. It is time that education benefits from this capacity, so that Yemen can build its future on a solid foundation of human capital.

Appendix

A. Within the Education System

Topic	Strengths	Weaknesses
Coverage and provision	<ul style="list-style-type: none"> • Despite very significant demographic and geographic challenges, enrollments at all levels of education, especially for girls, not only maintained but also improved • Reduction of number of out-of-school children from 2.2m in 1999 to 1.8m in 2005 • Strong social demand for education, especially from better-off families and for higher education • Improved retention rates for girls who reach secondary education 	<ul style="list-style-type: none"> • Low primary completion rate • Not likely to reach MDGs by 2015 given low enrollment and retention and high population growth rates • 1.8 million children still out of school • Increasing number of marginalized children, street children, and working children • Primary GER still low by international standards but post-basic GERs approximately same as low-income country average • Primary GER very low for girls compared to low income countries • Rural areas, girls, and poor faring significantly worse at all levels • Stagnation of boys' enrollment • High repetition and dropout at all levels • Focus very much on the supply-side (expanding public sector provision), especially at post-basic education levels • Strong constraints on demand side (lacking female teachers and good sanitary facilities in rural areas in basic and secondary, poverty constraints at all levels, low returns to education) • Too much reliance on public provision; weak and unsupportive regulatory environment for private sector at all levels • Inadequate facilities in many basic education schools with poor sanitary facilities • Mismatch of what students learn in secondary (mostly science) and what they end up choosing to study in university (mostly humanities and arts) • High rates of rural-to-urban migration putting pressure on the system to reach the rural underserved and growing marginalized communities in urban areas

Appendix 1

Policy Matrix for Education Reform in Yemen

Short-term policies	Long-term policies 5 years and beyond
<ul style="list-style-type: none">• Prioritize primary education over other levels for public financing• Launch a strong national educational media campaign (start school on time and stay in school until at least grade 6)• Subsidize education (expand conditional cash transfers (CCTs) to cover poor boys in basic and secondary)• Recruit more female teachers in rural areas• Where supply is an issue, build more schools/classrooms with appropriate facilities• Rationalize expansion of public higher education and public TEVT• Reexamine usefulness of parallel programs in public universities	<ul style="list-style-type: none">• Build on expanded coverage in primary education• Professionalize teaching force: recruit teachers outside civil service; recruit teachers with lower qualifications and provide appropriate in-service training to fill supply gap in remote areas• Tie in ECD strategy to get the more difficult-to reach children into the system; possibly finance ECD for the poor and ease restrictions for private ECD provision• Without expanding MOE's ECD provision, provide scholarships for poor children (who have the most to gain from ECD) to attend high-quality private ECD centers• Remove restrictions on private financing with appropriate quality assurance at all levels• Reorient higher education financing priorities for the public sector: more cost recovery with targeted scholarships for the poor• Remove unnecessary restrictions on private universities

continued

A. Within the Education System *(continued)*

Topic	Strengths	Weaknesses
Quality	<ul style="list-style-type: none"> • Participation in international tests resulting in useful benchmarks for learning outcomes • Student-centered and discovery-based curricula in place in basic and secondary education • Ambitious teacher training program in basic and secondary education • Cabinet Decree establishing the QA system for higher education 	<ul style="list-style-type: none"> • Low learning achievements at all levels, starting in primary education • Inability of students to read in early grades, which affects their educational outcomes throughout life • High repetition and dropout rates at all levels • Outdated teaching methods at all levels rendering ineffective a reasonably good general education curriculum • Teacher inputs plagued with high proportion of unqualified teachers, high degree of absenteeism, uneven geographical distribution, low time on task, "ghosts," negative teaching behaviors • Large urban class sizes against multiple-grade classes in rural areas • Quality inputs (good teachers, universities, libraries, laboratories, lab technicians) lacking at all levels, with particular disadvantage to rural areas • Good-quality (that is, error-free) and appropriate textbooks and teaching and learning materials not available in basic and secondary schools • Effective assessment system absent, yet spending too much time on assessing students • Not enough employer participation in TEVT curriculum, delivery, and assessment • Lack of systematic monitoring and evaluation at all levels • Large class sizes in universities
Financing and efficiency	<ul style="list-style-type: none"> • Public spending for pro-poor basic education • Government commitment and relatively high public expenditure on education • Donor fund availability • Possibilities for cost recovery 	<ul style="list-style-type: none"> • Education's share of total government expenditure declining over time • More so for basic education, contrary to government's commitment to EFA • Government financing is linked to international oil price • Public spending too high on administrative staff cost and too low on goods and services • TEVT too expensive • Low internal efficiency at all levels • Public financing inequitable at higher levels • Low student-teacher ratios in primary education • Inefficient resource allocation to schools (does not appear to affect students' learning outcomes)

Short-term policies	Long-term policies 5 years and beyond
<ul style="list-style-type: none"> • Eliminate automatic promotion policy in grades 1–3 • Strengthen resource availability: libraries, teaching and learning materials, equipments, labs • Ensure timely provision of textbooks in all schools, add libraries in rural schools • Provide intensive in-service training and capacity building of teachers, inspectors and principals to play their part in changing interactions in the classroom • Tracer studies feeding back into policy dialogue • Curriculum review and renewal in higher education • Lay the foundations of the QA system for higher education • Implement restructuring of the Skills Development Fund under private sector management • Remove restrictions from private universities to train and qualify teachers • Realign teacher remuneration system to meet system needs 	<ul style="list-style-type: none"> • Introduce a National Qualifications Framework • Curriculum diversification, streaming and linkages between academic and vocational secondary • Professionalization of the teaching force for basic and secondary education (including: establishment of pre-and in-service teaching standards, upgrading the entrance requirements into Faculties of Education (FOEs) for basic and secondary school teachers; introduction of high quality basic education teacher preparation program at FOEs; making teacher pay commensurate with education and experience and hardship of post and introducing incentives and wage premia for certification) • Complete overhaul of the FOEs in public universities—curriculum, teaching and learning, qualifications, and enabling the private sector to compete in terms of quality standards. • Establish student learning standards • Monitor results (student learning assessment system, core indicators, regular tracer studies) • Implement QA system for higher education • Remove restrictions on private universities • Introduce minimum years of labor market experience requirement to recruit TEVT instructors, recruit more part-time staff from the labor market • Encourage and fund research and provide salary incentives for research in higher education
<ul style="list-style-type: none"> • Rationalize school size: smaller schools near communities for grades 1–6; larger and better resourced schools for grades 7–12 • Increase spending on primary education • Increase cost recovery at post-basic levels • Train multi-grade teachers to serve in small schools in remote areas 	<ul style="list-style-type: none"> • Use small schools for primary education and merge provision of grades 7–12 to the extent possible • Redeploy teachers • Improve efficiency of salaries by improving teacher and staff deployment based on needs • Increase allocation to goods and services by limiting spending on administrative staff • Reduce the teacher wage bill by exploring options for differentiated pay for differentiated employment contracts • Introduce efficiency incentives in post-secondary institutions through reform of governance and finance

continued

A. Within the Education System *(continued)*

Topic	Strengths	Weaknesses
Management and governance	<ul style="list-style-type: none"> • Consultative processes for participation of stakeholders in sector strategy development • Public-private partnerships beginning to be developed in TEVT • Law revised for Skills Development Fund to allow more autonomy under private sector management (pending approval of Parliament) 	<ul style="list-style-type: none"> • Multiple agencies involved—3 education ministries, local administration authorities, Ministries of Civil Service, Finance, Planning and International Cooperation, TEVT, and other ministries—but no coordination • Decentralization framework designation of responsibilities unclear; capacity lacking at local levels; monitoring weak • Private sector unnecessarily controlled by government, not involved enough in TEVT, perceived negatively by higher education • MOF control of finance by line item depriving post-secondary institutions of flexibility and incentives to plan, innovate, or increase efficiency • No job descriptions, limited accountability of ministry staff • Rules and procedures for admissions and examinations not effectively or equitably enforced; perception of widespread corruption • Information management weak—for both accountability and policy • Legal environment unfriendly for private investors
Overall sector vision	<ul style="list-style-type: none"> • Detailed subsector strategies that can serve as basis for development of integrated sector vision and strategy 	<ul style="list-style-type: none"> • No sectoral vision • All subsector strategies vying for limited public funds • Limited opportunities for lifelong learning and continuing education, dead-end paths (especially by attending TEVT), entrance rules facilitating dropout from the system • Higher levels not linked to labor market • Over-investment by public sector in post-basic education even though labor market requires basic skills that a good general education system should provide • Wasteful 1-year wait rule between secondary and higher education • Limited role for private sector in education • Lack of concerted message for education and prioritization of public funds perpetuating a dual society through education and employment opportunities

Short-term policies	Long-term policies 5 years and beyond
<ul style="list-style-type: none"> • Review ambitiousness of priorities, targets, and implementation plans and commit to realistic ones • Establish working groups of technical staff to address key areas needing urgent coordination • Define responsibilities of ministry staff at all levels; introduce job descriptions • Review laws and regulations for post-secondary private providers • Implement revised Skills Development Fund law 	<ul style="list-style-type: none"> • Increase coordination among the 3 education ministries • Establish new finance and governance arrangements for post-secondary institutions; phase out civil service status of staff • Introduce incentives for greater role of private providers
<ul style="list-style-type: none"> • Formulate one integrated vision for all education subsectors including ECE • Prioritize needs and focus on getting the basics right • Abolish 1-year waiting rule for university enrollment • Prioritize focus of public resources • Encourage resource mobilization by private sector at all levels; take private funds into account in allocating public funds 	<ul style="list-style-type: none"> • Build pathways to enable life-long learning system • Ease TEVT entrance requirements to orient system toward a culture of lifelong learning and skill enhancement of labor force • Support sector reforms through lens of a qualifications framework that enables flexibility

continued

B. Outside the Education System

Topic	Strengths	Weaknesses
Economic environment	<ul style="list-style-type: none"> • Still some oil revenues • Private sector reforms being undertaken 	<ul style="list-style-type: none"> • Low economic growth • Large investment projects with low impact on employment
Civil service environment	<ul style="list-style-type: none"> • Reform programs and initiatives ongoing 	<ul style="list-style-type: none"> • Non-meritocratic appointment practices • Overstaffing and inadequate compensation • Work culture discourages initiative, teamwork, information sharing, accountability
Labor market	<ul style="list-style-type: none"> • Mobile labor force (including willingness to migrate, internally and abroad) • Oversupply of educated young workers in local labor markets 	<ul style="list-style-type: none"> • Dual (public/private) labor market • Over-reliance of jobseekers on public sector employment • High unemployment rates, especially among the more educated • Lack of quality labor statistics • Low wage/employment incentives for investment in education among the poor • Education impact on wages generally small
Social	<ul style="list-style-type: none"> • Increasing acceptance of female education and work performed by women • Strong family and social networks • Targeted public support through well-functioning programs (the Social Fund for Development and the Public Works Program) 	<ul style="list-style-type: none"> • High malnutrition, which affects educational attainments (intake and performance) • Unrealistic work attitudes and expectations of jobseekers and workers • Social restrictions on deployment of female teachers • Early marriage • Increasing poverty and potential inequality

Short-term policies	Long-term policies 5 years and beyond
<ul style="list-style-type: none"> • Start adopting broad-based, labor-absorbing macro investment policies • Aggressively promote private sector development in all sectors, including education 	
<ul style="list-style-type: none"> • Transparently recruit teachers from among the most qualified • Ensure rules and penalties for absenteeism apply 	
<ul style="list-style-type: none"> • Introduce career guidance in school curricula • Undertake study on internal and external migration • Facilitate emigration (negotiate agreements in receiving countries) • Introduce annual labor force surveys to assess priorities and labor policies 	<ul style="list-style-type: none"> • Better align public sector wages and employment conditions with local labor market conditions
<ul style="list-style-type: none"> • Implement minimum legal age for marriage rule • Urgently tackle malnutrition at early childhood level • Initiate public information campaign on benefits of education, especially for girls 	

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