Lao People's Democratic Republic
Skills & Knowledge for Greater Growth and Competitiveness in Lao PDR

Skills for Quality Jobs and Development in Lao PDR

A Technical Assessment of the Current Context

November, 2013
Standard Disclaimer:

This volume is a product of the staff of the International Bank for Reconstruction and Development/ The World Bank. The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Copyright Statement:

The material in this publication is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The International Bank for Reconstruction and Development/ The World Bank encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly.

For permission to photocopy or reprint any part of this work, please send a request with complete information to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA, telephone 978-750-8400, fax 978-750-4470, http://www.copyright.com/.

All other queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, The World Bank, 1818 H Street NW, Washington, DC 20433, USA, fax 202-522-2422, e-mail pubrights@worldbank.org.
Skills for Quality Jobs and Development in Lao PDR

A Technical Assessment of the Current Context

For Distribution
November 11, 2013

Human Development Department
Social Protection and Labor Unit
East Asia and Pacific Region

Document of the World Bank
# TABLE OF CONTENTS

**ABBREVIATIONS AND ACRONYMS** ......................................................................................................................... vi

**ACKNOWLEDGEMENTS** ........................................................................................................................................ viii

**EXECUTIVE SUMMARY** .......................................................................................................................................... ix

**INTRODUCTION TO THE REPORT** .......................................................................................................................... 2

1. The Lao PDR Country Context .......................................................................................................................... 2
2. Rationale and Objectives of the Report ........................................................................................................... 4
3. Analytical Framework ........................................................................................................................................ 5
   3.1 Understanding the Analytical Framework ................................................................................................. 5
   3.2 The Black Box in the Skills Production Process .................................................................................... 6
4. Roadmap of the Report ...................................................................................................................................... 7

5. Data Sources and Methodology ......................................................................................................................... 8

**PART I: UNDERSTANDING THE SUPPLY AND DEMAND OF SKILLS IN LAO PDR** .................................................. 10

1. The Supply Side: Current and Future Workers ............................................................................................ 10
   1.1 Overview of the Formal Educational System .......................................................................................... 10
   1.2 Educational Profile of the Lao Workforce ............................................................................................... 13
      1.2.1 Returns to Education ...................................................................................................................... 18
   1.3 Skills Profile of the Lao Workforce ........................................................................................................ 20
      1.3.1 Cognitive Skills .............................................................................................................................. 20
      1.3.2 Technical Skills .............................................................................................................................. 30
      1.3.3 Non-Cognitive Skills ...................................................................................................................... 37
   1.4 International Comparisons ....................................................................................................................... 53
      1.4.1 International Comparison of Educational Attainment .................................................................. 53
      1.4.2 International Comparison of Cognitive and Technical Skills ....................................................... 54
      1.4.3 International Comparison of Non-Cognitive and Behavioral Skills ........................................... 58

2. Wages and Earnings ........................................................................................................................................ 59

3. The Demand Side: Labor Force and Skills Utilization ................................................................................... 62
   3.1 Understanding the Labor Market in Lao PDR .......................................................................................... 63
   3.2 Understanding the Demand for Skills: Employer Survey ....................................................................... 66
   3.3 Skills Constraints and Shortages in Lao PDR .......................................................................................... 67
      3.3.1 Overview of Workers by Occupation ............................................................................................. 68
      3.3.2 Skills Constraints and Shortages .................................................................................................... 70
   3.4 Skills Used by the Current Workforce .................................................................................................... 73
      3.4.1 Types of Skills Demanded in the Job Market ................................................................................. 75
      3.4.2 Views from Employers on Skills Formation in Lao ...................................................................... 77

4. Assessing Mismatches ................................................................................................................................... 78
   4.1 Perceived Adequacy of Education ......................................................................................................... 78
   4.2 Perceived Adequacy of Skills ............................................................................................................... 81
TABLES

TABLE 1. INTERNAL COMPARISON OF COGNITIVE SKILLS ................................................................. 21
TABLE 2. DESCRIPTION OF TECHNICAL SKILLS ........................................................................... 31
TABLE 3. DEFINITIONS OF KEY PERSONALITY SKILLS ................................................................. 38
TABLE 4. FIRMS’ HIRING EXPERIENCE IN 2011-2012 .................................................................. 70
TABLE 5: SUMMARY OF INSTITUTIONS AT THE POST-SECONDARY LEVEL & SAMPLE SELECTION 99
TABLE 6: TOTAL ENROLLMENT (UNDERGRADUATE & ABOVE) ...................................................... 100
TABLE 7: TOP TEN PROGRAMS (BY OFFERING) ............................................................................. 102

BOXES

BOX 1. WORKER SKILLS IN CIVIL SERVICE, COMMUNICATION AND FINANCE SECTORS ............ 44
BOX 2. MOST PEOPLE IN LAO REMAIN ACTIVE IN THE AGRICULTURE SECTOR ......................... 63
BOX 3 MALAYSIA HUMAN RESOURCES DEVELOPMENT FUND .................................................... 132
FIGURES

FIGURE 1. ANALYTICAL FRAMEWORK ................................................................. 5
FIGURE 2. THE BLACK BOX OF SKILLS PRODUCTION .................................... 7
FIGURE 3. PRIMARY DATA SOURCES INCLUDED IN THE TOOLBOX ................ 8
FIGURE 4. OVERVIEW OF LAO’S NATIONAL EDUCATION SYSTEM ................. 11
FIGURE 5. STUDENTS’ ENROLMENT IN PUBLIC INSTITUTIONS ....................... 12
FIGURE 6. EDUCATIONAL ATTAINMENT (URBAN AND RURAL AREAS) ........... 14
FIGURE 7. EDUCATIONAL ATTAINMENT AS YEARS OF EDUCATION ............. 15
FIGURE 8. EDUCATIONAL ATTAINMENT BY VILLAGE TYPE ......................... 15
FIGURE 9. YEARS OF EDUCATION BY THE EDUCATION LEVEL OF PARENTS .... 16
FIGURE 10. EDUCATIONAL ATTAINMENT OF WAGE EARNERS BY VILLAGE TYPE 17
FIGURE 11. EDUCATIONAL ATTAINMENT BY ECONOMIC INDUSTRY ................ 17
FIGURE 12. OCCUPATIONAL CATEGORIES BY EDUCATION LEVEL .................. 18
FIGURE 13. ANNUALIZED RETURNS TO EDUCATION ....................................... 19
FIGURE 14. RETURNS TO EDUCATION BY EDUCATION LEVEL 2008-2012, FOR WAGE WORKERS 20
FIGURE 15. INTENSITY OF COGNITIVE SKILLS USE .................................... 22
FIGURE 16. INTENSITY OF WRITING SKILLS BY EDUCATION LEVEL AND GENDER 22
FIGURE 17. EDUCATION LEVEL AS A DETERMINANT FOR COGNITIVE SKILLS .. 23
FIGURE 18. INTENSITY OF USING COGNITIVE SKILLS BY THE EDUCATION LEVEL OF PARENTS 24
FIGURE 19. DISTRIBUTION OF ALL SCORES (%) ............................................ 25
FIGURE 20. DISTRIBUTION OF SCORES BY GENDER (%) ............................... 26
FIGURE 21. ASSESSMENT SCORES FOR COGNITIVE SKILLS (0-100) BY EDUCATION LEVEL 26
FIGURE 22. DISTRIBUTION OF ASSESSMENT SCORES BY EDUCATION LEVEL (%) 27
FIGURE 23. ASSESSMENT SCORE POINT (0-100) DIFFERENCE TO EMPLOYED PEOPLE FOR COGNITIVE SKILLS ........................................................... 28
FIGURE 24. COGNITIVE SKILLS USED BY ECONOMIC SECTOR AND GENDER ....... 29
FIGURE 25. COGNITIVE SKILLS USED, BY OCCUPATION AND GENDER (%) .......... 30
FIGURE 26. FREEDOM TO MAKE DECISIONS, BY GENDER, EDUCATION AND ECONOMIC SECTOR .............................................................. 32
FIGURE 27. INTENSITY OF USING TECHNICAL OFFICE EQUIPMENT ............... 33
FIGURE 28. INTENSITY OF USING TECHNICAL OFFICE EQUIPMENT .................. 33
FIGURE 29. PHYSICAL LABOR (LIFTING MORE THAN 50 POUNDS) BY GENDER ...... 34
FIGURE 30. PHYSICAL LABOR (LIFTING MORE THAN 50 POUNDS) BY OCCUPATION AND GENDER ................................................................. 34
FIGURE 31. RETURNS TO TECHNICAL SKILLS .................................................. 35
FIGURE 32. TECHNICAL SKILLS AND AUTONOMY BY WEALTH ASSET INDEX (0 POOR-100 WEALTHY) ............................................................ 36
FIGURE 33. VARIOUS TECHNICAL SKILLS BY PARENTAL EDUCATION LEVEL, BY GENDER ................................................................. 37
FIGURE 34. LEVEL OF CONSCIENTIOUSNESS, BY GENDER .............................. 39
FIGURE 35. LEVEL OF EXTRAVERSION, BY GENDER AND OCCUPATION ........ 40
FIGURE 36. LEVEL OF OPENNESS TO NEW EXPERIENCES, BY GENDER AND OCCUPATION ................................................................. 40
FIGURE 37. ECONOMIC RETURNS TO A KEY PERSONALITY TRAIT “OPENNESS TO NEW EXPERIENCES”, FOR WOMEN ................................................. 41
FIGURE 38. AGREEABLENESS BY OCCUPATION, MALES .................................. 42
FIGURE 39. GRIT BY WAGE QUINTILES ............................................................ 43
FIGURE 40. EFFECTS OF BEHAVIORAL SKILLS ON WAGES ............................ 43
FIGURE 41. COMPARISON OF AVERAGE YEARS OF SCHOOLING ....................... 53
FIGURE 42. FIELD OF STUDY OF TERTIARY EDUCATED GRADUATES .............. 54
FIGURE 43. COMPARISON OF USAGE OF COGNITIVE SKILLS, VARIOUS COUNTRIES (%) ................................................................. 55
FIGURE 44. INTERNATIONAL COMPARISON OF CORE LITERACY ASSESSMENT IN THE ETS ASSESSMENT .............................................................. 55
FIGURE 45. INTERNATIONAL COMPARISON OF TECHNICAL SKILLS—COMPUTER USE ................................................................. 56
FIGURE 46. INTERNATIONAL COMPARISON OF TECHNICAL SKILLS—PRESENTATION AND SUPERVISION .............................................................. 57
FIGURE 47. INTERNATIONAL COMPARISON OF THINKING, LEARNING AND PHYSICAL TASKS AT WORK ................................................................. 57
FIGURE 48. INTERNATIONAL COMPARISONS OF NON-COGNITIVE (PERSONALITY) SKILLS ................................................................. 58
FIGURE 49. INTERNATIONAL COMPARISONS OF NON-COGNITIVE (BEHAVIORAL) SKILLS ................................................................. 59
FIGURE 50. WAGES FOR HIGHER SKILL WORKERS ACROSS LAO AND IN THE TOP 6 LABOR MARKETS ................................................................. 60
FIGURE 51. EARNINGS DISTRIBUTION AMONG WAGE (LEFT) AND SELF-EMPLOYED (RIGHT) WORKERS ................................................................. 61
FIGURE 52. SELF-EMPLOYED AND UNPAID WORK AS A SHARE OF THE LABOR FORCE IN 2010 ................................................................. 61
FIGURE 53. PERCENTAGE OF WAGE WORKERS (15-64 YRS. OLD) WITH WRITTEN CONTRACTS ................................................................. 62
FIGURE 54. UNEMPLOYMENT RATE AND UNDEREMPLOYMENT RATE, 2012 ................................................................. 65
FIGURE 55. LABOR MARKET STATUS ................................................................. 66
FIGURE 56. LABOR FORCE PARTICIPATION RATE ............................................. 66
FIGURE 57. SKILLS CONSTRAINTS ARE A MAJOR CONSTRAINT AROUND THE WORLD ................................................................. 67
FIGURE 58. BIGGEST OBSTACLE FACED BY FIRMS, BY SIZE ................................ 68
FIGURE 59. SHARE OF WORKERS IN ESTABLISHMENTS BY OCCUPATION ............................................................... 69
FIGURE 60. SHARE OF WORKERS BY OCCUPATION AND ECONOMIC SECTOR ..................................................... 69
FIGURE 61. GROWTH IN EMPLOYMENT BY OCCUPATION .......................................................................................... 70
FIGURE 62. TYPES OF PROBLEMS FIRMS ENCOUNTERED IN MANUFACTURING .................................................. 71
FIGURE 63. TYPES OF PROBLEMS FIRMS ENCOUNTERED RETAIL AND SERVICES ........................................... 72
FIGURE 64. TYPES OF PROBLEMS, BY FIRM SIZE .............................................................................................. 72
FIGURE 65. TYPES OF SKILLS FREQUENTLY USED BY SKILLED WORKERS ....................................................... 73
FIGURE 66. TYPES OF SKILLS FREQUENTLY USED BY SEMI-AND-UNSKILLED WORKERS ............................. 74
FIGURE 67. USED OF COMPUTER SKILLS ........................................................................................................ 74
FIGURE 68. TOP SKILLS EMPLOYERS EXPECT NEW SKILLED WORKERS TO HAVE AND RETAIN ................. 75
FIGURE 69. TOP SKILLS EMPLOYERS EXPECT NEW LESS SKILLED WORKERS TO HAVE AND RETAIN .......... 76
FIGURE 70. IMPORTANCE OF THE BIG FIVE PERSONALITY TRAITS ................................................................. 76
FIGURE 71. IMPORTANCE OF GROUP OF SKILLS, BY OCCUPATION ................................................................. 77
FIGURE 72. FIRMS REPORTING THAT THE EDUCATION SYSTEM DOES NOT CREATE THE RIGHT SKILLS .... 78
FIGURE 73. SELF-REPORTED APPROPRIATENESS OF EDUCATIONAL QUALIFICATIONS .............................. 79
FIGURE 74. SELF-REPORTED APPROPRIATENESS OF EDUCATIONAL QUALIFICATIONS, BY SECTOR ...... 79
FIGURE 75. SELF-REPORTED APPROPRIATENESS OF EDUCATIONAL QUALIFICATIONS, FOR HIGHLY SKILLED OCCUPATIONS ........................................................................................................ 80
FIGURE 76. EDUCATIONAL ATTAINMENT OF MOST SKILLED WORKERS, BY OCCUPATION ..................... 81
FIGURE 77. EDUCATIONAL ATTAINMENT OF LESS SKILLED WORKERS, BY OCCUPATION ............................ 81
FIGURE 78. PERCEIVED USEFULNESS OF SKILLS ACQUIRED THROUGH THE FORMAL EDUCATION SYSTEM (NON-AGRICULTURAL WORKERS) .................................................................................. 82
FIGURE 79. PERCEIVED USEFULNESS OF SKILLS BY PERCEIVED EDUCATIONAL FIT IN THE JOB ................. 82
FIGURE 80. PERCEIVED USEFULNESS OF SKILLS BY PERCEIVED EDUCATIONAL FIT IN THE JOB, BY SECTOR ...... 83
FIGURE 81. READING SKILLS OF CURRENT WORKERS, BY OCCUPATION ......................................................... 84
FIGURE 82. WRITING SKILLS OF CURRENT WORKERS, BY OCCUPATION .......................................................... 85
FIGURE 83. NUMERACY SKILLS OF CURRENT WORKERS, BY OCCUPATION ...................................................... 85
FIGURE 84. COMPUTER SKILLS OF CURRENT WORKERS, BY OCCUPATION .................................................... 86
FIGURE 85. FOREIGN LANGUAGE SKILLS OF CURRENT WORKERS, BY OCCUPATION .................................... 87
FIGURE 86. PROVISION OF TRAINING ................................................................................................................ 88
FIGURE 87. TYPES OF TRAINING PROVIDED AT WORKPLACE ............................................................................. 89
FIGURE 88. LABOR PRODUCTIVITY IN MANUFACTURING .................................................................................... 90
FIGURE 89. LABOR COSTS PER WORKER IN MANUFACTURING ............................................................................ 91
FIGURE 90. PERCENTAGE OF GOVERNMENT BUDGET ALLOCATED TO TVET AND HIGHER EDUCATION .... 97
FIGURE 91. PROGRAMS’ CERTIFICATION LEVEL ................................................................................................. 101
FIGURE 92. SELECTION OF STUDENTS INTO SCHOOLS AND PROGRAMS ........................................................... 103
FIGURE 93. EXISTING ENROLMENT CONSTRAINTS ............................................................................................ 104
FIGURE 94. HOW ARE INDIVIDUAL PROGRAMS ESTABLISHED OR TERMINATED? ...................................... 105
FIGURE 95. ADVISORY BOARDS AND QUALITY CONTROL MECHANISMS ....................................................... 106
FIGURE 96. ENROLLED STUDENTS PER TEACHING STAFF ................................................................................ 107
FIGURE 97. AVERAGE STUDENT INSTRUCTOR RATIOS ACROSS THE WORLD .................................................. 108
FIGURE 98. APPOINTMENT OF THE MEMBERS .................................................................................................. 109
FIGURE 99. ROLE OF THE GOVERNING BOARD ................................................................................................ 109
FIGURE 100. RECRUITMENT AND APPOINTMENT OF INSTRUCTORS ............................................................... 110
FIGURE 101. ABILITY TO DISMISS INSTRUCTORS AND STAFF ....................................................................... 110
FIGURE 102. FREEDOM TO SET SALARIES ......................................................................................................... 110
FIGURE 103. STUDENT SERVICES AVAILABLE .................................................................................................. 111
FIGURE 104. TOTAL ANNUAL BUDGET PER ENROLLED STUDENT .................................................................. 112
FIGURE 105. PUBLIC EXPENDITURE PER PUPIL AS % OF GDP PER CAPITA – TERTIARY ................................. 113
FIGURE 106. PUBLIC EXPENDITURE PER PUPIL AS % OF GDP PER CAPITA – SECONDARY ............................ 113
FIGURE 107. MAIN CONSTRAINTS WITH RESPECT TO INSTRUCTORS ............................................................. 115
FIGURE 108. OCCUPATION TYPE OF TVET GRADUATES (EXCLUDING INSTRUCTORS) ................................ 117
FIGURE 109. SCHOOL-TO-WORK TRANSITION OF TVET GRADUATES ........................................................... 117
FIGURE 110. FIELD OF STUDY OF CURRENTLY EMPLOYED TVET GRADUATES ............................................. 118
FIGURE 111. CURRENT JOB SATISFACTION AMONG CURRENTLY EMPLOYED GRADUATES ............................ 120
FIGURE 112. SELF ESTEEM IN CURRENT JOB AMONG EMPLOYED GRADUATES (“FEELING CAPABLE”) ....... 120
FIGURE 113. USEFULNESS OF MOST RECENT EDUCATION ................................................................................ 121
FIGURE 114. ANALYTICAL FRAMEWORK AND PRIORITY AREAS ................................................................ 125
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of Southeast Nations</td>
</tr>
<tr>
<td>BA</td>
<td>Bachelor</td>
</tr>
<tr>
<td>ECD</td>
<td>Early Childhood Development</td>
</tr>
<tr>
<td>ETS</td>
<td>Educational Testing Services</td>
</tr>
<tr>
<td>GIZ</td>
<td>Deutsche Gesellschaft für Internationale Zusammenarbeit</td>
</tr>
<tr>
<td>HE</td>
<td>Higher Education</td>
</tr>
<tr>
<td>HRDME</td>
<td>Human Resource Development</td>
</tr>
<tr>
<td>HTVED</td>
<td>Higher, Technical and Vocational Education</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labor Organization</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>IVET</td>
<td>Integrated vocational education and training</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>LFS</td>
<td>Labor Force Survey</td>
</tr>
<tr>
<td>LSW</td>
<td>Labor and Social Welfare</td>
</tr>
<tr>
<td>LDR</td>
<td>Lao Development Report</td>
</tr>
<tr>
<td>LECS</td>
<td>Lao Expenditure and Consumption Survey</td>
</tr>
<tr>
<td>LSB</td>
<td>Lao Statistics Bureau</td>
</tr>
<tr>
<td>MIS</td>
<td>Management Information System</td>
</tr>
<tr>
<td>MOES</td>
<td>Ministry of Education and Sports</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
</tr>
<tr>
<td>MOLSW</td>
<td>Ministry of Labor and Social Welfare</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Government Organization</td>
</tr>
<tr>
<td>NTC</td>
<td>National Training Council</td>
</tr>
<tr>
<td>NUOL</td>
<td>National University of Laos</td>
</tr>
<tr>
<td>NSEDP</td>
<td>National Socio-Economic Development Plan</td>
</tr>
<tr>
<td>PDR</td>
<td>People's Democratic Republic</td>
</tr>
<tr>
<td>STEP</td>
<td>Skills Towards Employment and Productivity</td>
</tr>
<tr>
<td>TVET</td>
<td>Technical Vocational Education and Training</td>
</tr>
<tr>
<td>TV</td>
<td>Television</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>VE</td>
<td>Vocational Education</td>
</tr>
<tr>
<td>VEDC</td>
<td>Vocational Education Development Centre</td>
</tr>
<tr>
<td>VET</td>
<td>Vocational Education and Training</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vice President:</th>
<th>Axel von Trotsenberg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector Director:</td>
<td>Xiaoqing Yu</td>
</tr>
<tr>
<td>Country Director:</td>
<td>Annette Dixon</td>
</tr>
<tr>
<td>Sector Manager:</td>
<td>Jehan Arulpragasam</td>
</tr>
<tr>
<td>Task Team Leader:</td>
<td>Ximena Del Carpio</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

This task was led by Ximena Del Carpio (Task Team Leader) with guidance from Lars Sondergaard (Country Sector Coordinator). Main authors of the report are (in alphabetical order) Ximena Del Carpio (Senior Economist), Yuki Ikeda (Economist-ETC), and Michele Zini (Economist-ETC).

Key inputs were provided by a team comprising (in alphabetical order): Lucilla Bruni, (Young Professional), Dilaka Lathapipat (Education Economist), Bob McGough (Consultant), Bob McLaughlin (Consultant), Omporn Regel (Senior Education Specialist), Michelle Riboud (former sector manager in education-Consultant), Ami Thakkar (Consultant), Joshua Seth Wimpey (Private Sector Development Analyst), and Claudia Zambra (Consultant).

Special thanks to Michele Zini for acting as de-facto Co-TTL throughout the task, to Yuki Ikeda for her innumerable contributions in the analytical sections. The team is very grateful to Bob McLaughlin and Ami Thakkar for their leadership in the data collection and field work. The team is also very thankful to the colleagues in the STEP team of the Human Development Anchor, namely Valerie Evans, Gaëlle Pierre, Maria Laura Sanchez Puerta, Alexandria Valerio, for all their intellectual and financial support; and World Bank colleagues in the Lao Country office and Washington DC for their ideas and support: Christian Bodewig, Genevieve Boyreau, Somneuk Davading, Emmanuela Di Gropello, Konesawang Nghardsaysone, Richard Record, Prateek Tandon, Mauro Testaverde, and Sophavanh Thitsy.

The work was conducted under the overall general guidance of Xiaoqing Yu (Sector Director) and Jehan Arulpragasam (Sector Manager). The team appreciates excellent advice provided by Annette Dixon (Country Director), Keiko Miwa (Country Manager) and three peer reviewers—Jee-Peng Tan (Lead Education Specialist and Advisor, HDNED), Ana Maria Oviedo (Economist, LCR Social Protection and Labor) and Dhushyanth Raju (Senior Economist, SAR Education)—and for very useful comments provided by other World Bank colleagues and participants to the Lao Development Report Learning Fora held in Vientiane in early 2013, the ADB team in Lao PDR, and the GIZ team in Lao PDR.

The team is very grateful to the Government of Lao PDR, especially Mr. Sengsomphone Viravouth, Director General Department of Planning, Mr. Vannalek Leuan, Head of Administration Division TVED Department, and others in the team from the Ministry of Education, and the various department heads from the Ministry of Labor and Social Welfare for their support throughout this task. The World Bank team recognizes the excellent work done by Indochina Research Laos (IRL) and Enterprise Development Consultants (EDC) in the data collection.

We also thank Nishi M. Widge for editing the report, Anita Soukhaseum and Maya Razat for providing excellent administrative support.

The findings, interpretations, and conclusions expressed in this document are those of the authors and do not necessarily reflect the views of the Executive Directors of the World Bank, the governments that they represent, or the counterparts with whom they consulted or engaged during the study process.
INTRODUCTION

Lao has embarked on an ambitious plan to transform its economy, reduce poverty, and graduate from least developed country status by 2020. The country has experienced favorable developments, mostly related to its steady economic performance and increased regional and global economic integration. Most notably, growth in the country’s natural resource sectors has led to an incipient shift in the structure of the economy, bringing with it some employment opportunities outside of agriculture. Yet, despite economic growth and rapid changes in the structure of the economy, most people lack the human capital—namely education and skills—to forego agricultural activity and partake in the growing industrial and services sectors. Consequently, wage earners comprise a mere 15 percent of the total workforce; the rest remain largely in agriculture.

There has been some commitment by the Government to improving education through increased spending at all levels, but the results to date are modest at best. Enrolment rates for primary school have risen in recent years, but dropout rates have increased and literacy rates actually dropped by 1.7 percent since 2009, to 80 percent in 2011. Tertiary education, especially the Technical and Vocational Education and Training (TVET) sector, has received greater attention and resources, partly borne from the need to address skills deficiencies in the immediate term. It appears, however, that few firms seek to recruit from TVET institutions; instead, many resort to hiring university graduates or importing skilled workers from neighboring countries at higher costs. It is important therefore to better understand the mismatches between skills produced by these institutions, and skills demanded by employers, to direct future investments more effectively.

Improvements in the quality and quantity of higher education have not kept pace with evolving labor market needs, despite the Government’s efforts (particularly through the TVET system) to narrow skill gaps. Decreases in enrolment and literacy, reported shortages of adequately skilled technical workers, and a large population of under-skilled workers at all levels, all have a negative impact on competitiveness. Thus, in order for Laos to maintain growth rates, the country will need to make critical improvements to its human resources. Doing so will require implementation of bold and creative policies that address the quantity and quality of education, while ensuring that the content of that education fulfills the economy’s needs.

Objectives

The objectives of this report are 1) to provide critical information to the Government about existing skills gaps in Lao; 2) to provide the Government of Lao PDR (GoL) and the steering committee that will revise the Human Resource Development Strategy 2000-2020 (and link it to the 8th NSEDP) with evidence of the current skills situation in the country, to better inform decisions and human resource planning for the future; and 3) to provide the GoL, the World Bank, and other development partners a baseline of skills indicators against which to measure progress going forward.

Summary of Main Findings

Lao’s economic growth has led to increased demand for workers at all skill levels, but employers have a difficult time finding workers to meet that demand. The lack of skills among the workforce is the most commonly cited constraint. Across different sectors, the notion of “inadequate skills” translates practically into two distinctive problems: the first is a quality problem,
whereby applicants and current workers are not adequately trained to meet work-related requirements (there are very few skilled workers, and even their skills are mismatched with employers’ expectations). Some employers, but only a small percentage of them, are resorting to worker training as a way to bring their workers up to speed. The root cause of the mismatch, however, is in the education system itself, where the focus should be not only on improved quantity (i.e. increased enrolment, better survival rates, etc.) but also on quality to enhance the workforce’s basic skills (i.e. cognitive skills) and equip tertiary students with relevant, job-specific technical skills. The second problem relates to quantity, whereby firms are faced with a shortage of workers. This is true for high-skilled jobs, where employers are hiring workers with much lower qualifications than needed, but also for elementary jobs. The manufacturing sector in particular faces a lack of applicants, and, in addition to that, about 53 percent of its workers remain engaged to a certain degree in the agriculture sector (implying they could be seasonal workers)—in the service sector, by contrast, only 29 percent of workers are still engaged in agricultural work.

These results highlight the need for an integrated human development strategy to address skill deficiencies in the labor market, with special emphasis on producing the ‘right’ skills for a transitioning economy. An integrated strategy should comprise the entire education and training system, from early childhood to on-the-job training, with a clear set of goals and relational guidelines for all stakeholders involved. Policy recommendations are grouped into four priority areas that can serve as the pillars of an integrated strategy, drawing on examples and programs in other countries facing similar challenges.

**Priority 1: Increase the limited flow of students progressing to higher education levels, in part due to high dropout rates among students (especially in rural areas) in primary school or between primary and secondary school.**

Although more resources are being devoted to improving skills production in Lao, over one third of the working age population has zero or minimal formal education and limited command of basic skills. The lack of significant progress in educational attainment is surprising given the Government’s strong emphasis in the last decade on improving access to education for all and its commitment to providing equitable access to secondary education. This limitation is particularly evident among women and rural inhabitants. With their limited education and skills, these groups are most likely to remain in subsistence farming or become self-employed in low value-added activities, and unlikely to seek wage employment.

Encouragingly, the returns to higher education are positive in Lao, and estimates range from three to four percent for each extra year of education. For women, the returns for each additional year could be as high as seven percent. More education not only endows workers with better skills, but also with opportunities to access better jobs that provide higher returns on their investment. The exception, as seen in Figure 2, is for vocational education which rendered negative returns, as it may not be producing the level and quality of skills that employers are willing to reward; this could explain in part why many vocational graduates end up in lower skill level industries and jobs. Nevertheless, over half of all wage earners have a vocational or university education, and workers with higher education are more likely to pursue wage employment than self-employment. In other words, higher education is sought after by employers, and people who invest in their education do so with the objective of working in wage employment.
No matter how much the tertiary education system improves, the pool of students from which it draws remains very limited. This is exacerbated by the fact that, as in other countries, Lao shows a clear intergenerational transmission of low educational attainment from parents to children and, as such, parental education has a strong influence on educational attainment and skills development. Children with a parent who has no education or incomplete primary school are likely to end up with less than five years of education.

Recommendations: As Lao continues to grow economically and focus its efforts on alleviating poverty, it will be important to specifically target children of less educated parents by providing them with a set of incentives that will allow them to continue their education beyond current levels. This will break the cycle of low education (and poverty) that would subsequently limit their opportunities in the labor market. One way to incentivize students to stay in school is through conditional cash transfer (CCT) programs. Many countries use CCT programs and other similar incentive-oriented mechanisms to improve a broad set of outcomes (for example, nutrition and health) by conditioning transfer payments on school attendance and/or on continued investments in education. The GoL could draw from experiences in other countries (Brazil, Pakistan, etc.) and customize CCT programs to its needs by, for instance, providing larger transfers to the most vulnerable populations, such as girls in rural areas. CCT programs and educational stipends could also be used to assist poor students in completing post-secondary studies. Stipends and quotas, which are already being used in some TVET programs, could explicitly target less advantaged students once a mechanism to identify them is put in place.

Students in areas with limited access to secondary education (such as rural areas) are also more likely to exit the system after completing primary school; higher dropout rates, in turn, contribute to lower educational outcomes (and skills attainment) in rural and less well-off areas. Increasing the availability of schools (especially at the secondary level in rural areas) would reduce the cost of attendance and decrease dropout rates between primary and secondary school.

Priority 2: Increase the level of cognitive skills among the population by improving the quality of the education system.

Although the labor market rewards higher education, evidence suggests that more education does not necessarily translate into better skills, or skills that are aligned with labor market needs. The failures of the education system are observable in terms of skills quality even at post-secondary levels. Even though a large share of university and vocational graduates works in higher value-added sub-sectors of the economy (the service sector is the biggest absorber of skilled workers) and in higher skill demanding occupations such as management, professionals and technicians, there is a non-negligible share of highly educated workers that works in less skill demanding occupations and low-value added sectors such as agriculture and sub-sectors in manufacturing.

Among higher skilled occupations, the pattern of recent hires reveals a preference for university graduates over vocational graduates (implying a greater mismatch of skills to educational attainment for the latter group). Employers perceive that university
graduates are better trained than vocationally educated workers with the skills required to be efficient managers or professionals, especially as it relates to literacy and technical skills (namely ICT and presentational skills). This finding is important in light of the GoL’s increased focus and investment on the TVET sector, and implies that there is much work to be done to improve its quality. Large variability in the quality of TVET education provides no guarantees for employers about the types and quality of skills of graduates.

Notably, labor costs have been rising over the last few years despite the low levels of skills, in part due to a 20 percent rise in the minimum wage in 2012. Without improved worker skills (and therefore labor productivity) to justify them, rising labor costs have strained the economy. For example, manufacturing firms in Lao have not seen improvements in labor productivity between 2009 and 2012 despite substantial economic growth during that period. Rising costs coupled with stagnant worker skills has rendered them less competitive in international markets, in spite of their labor costs remaining relatively low compared to other countries; within Lao, some firms choose to operate informally to avoid having to pay statutory minimum wages. On the other hand, analysis shows that firms with higher shares of skilled workers (these are workers likely already earning above the minimum wage) had labor productivity increases between 2009 and 2012. Although low labor costs could potentially allow underproductive firms to be competitive, the rising costs plus stagnant skills has rendered them less competitive overall. The implication is that low quality skills are hindering Lao’s growth potential.

Indeed, Lao’s skills profile overall paints a concerning picture. Although a large number of people in Lao are able to read, the passing rate on the ETS literacy assessment (67 percent) is significantly lower than for people in other comparable countries, such as Vietnam, Bolivia, Sri Lanka, and Yunnan Province, China. Most people with a postgraduate education passed the assessment, but Lao consistently underperformed at all educational levels compared to the other countries. The same proportion of postgraduates in Lao obtained perfect scores on the exam as people with only primary schooling in Vietnam. Lao also presents the lowest intensity of use of technical skills among the five countries, and the lowest computer usage at work. This is crucial in the services sector where ICT use is most prevalent and where a large segment of the educated population currently works.

Figure 2. International Comparison of ETS Core Literacy Assessment

As the international comparison would imply, although most people in Lao with primary education have basic literacy skills, they seldom use them. Their lack of practice may factor into the core literacy assessment results. About 69 percent of people in Lao say they can read without difficulty (84 percent in urban areas), but having these skills does not guarantee their use, as less than 12 percent of males and nine percent of females in urban areas read more than five pages of text in one year. In other words, people know how to read and write but they rarely do so. About 60 percent of the population could not pass the section of the assessment that tested their reading comprehension and ability to decipher text. In neighboring Vietnam and Yunnan (China), over 90 percent of people passed the same core literacy assessment, demonstrating a significant skills development gap in Lao.
People with higher education levels performed better on the more complex section of the ETS assessment (core literacy), indicating that the formal education system delivers critical cognitive skills in a progressive manner. On the other hand, results show that vocabulary skills are largely acquired in primary and lower secondary school, and even though they can improve with further education, the core set of vocabulary skills are acquired earlier rather than later. Results from the assessment indicate that the formative years (early childhood development, primary and lower secondary education) are when most vocabulary and basic reading skills are acquired.

Institutional factors are also important determinants of educational quality, as detailed in Part II. Feedback and assessment mechanisms, and even administrative reviews, are notably lacking among institutions of higher education. Institutions also do not collect information on the external efficiency of graduates (placement rates, school-to-work transition, salaries, and so on), and therefore lack information on outcomes and performance. Governance structures also tend to be fairly centralized and Government-led, and as such schools have little autonomy. This even pertains to the selection of members of boards, rectors, and presidents, and also in the appointment of instructors. While public institutions have some freedom to recruit instructors, the appointment process is led mostly by the Government. Institutions are even limited in their ability to dismiss non-performing staff and set salaries.

Resources and budgets for institutions of higher learning are limited, and show no ties to performance (as there are no mechanisms in place to measure performance). Per student allocations from the government are low compared to neighboring countries, but schools have no other forms of revenue, nor are they able to set tuition fees. The quality of instructors (particularly their pedagogical and industry-specific skills) is arguably the most important constraint for the institutions interviewed for this report.

Recommendations: One way to improve educational quality, particularly at the post-secondary level, is to make the governance structures of post-secondary institutions more flexible and relevant. For example, institutions would benefit from the ability to directly appoint or elect their presidents and boards, the freedom to set their teacher and staff salaries, and the ability to pay performance bonuses to their staff as per their criteria. Schools would also benefit from greater financial autonomy, and funding should be more directly linked to school performance. Financial autonomy could also imply institutional freedom to set tuition fees; for example, schools could tailor fees in accordance with their cost structure, or even introduce higher fees for more affluent students to subsidize the less affluent ones. Funding could be allocated to institutions more transparently and on the basis of objective criteria (for instance, formula-driven and based on observable characteristics such as graduation and placement rates, and using input and output indicators).

Educational quality is very much a product of its human resources; investing more heavily in these actors could improve institutions’ quality. There is a clear need for more (and better) teachers, giving preferential access to women, and investing more in instructor training (especially in-house to develop schools’ capacities) and pedagogical skills to improve teaching methods, particularly in higher education. The Government may also consider the development and enforcement of the Lao Qualifications Standard (LQS) system, so as to improve the quality of higher education institutions uniformly across the country. The Government should establish (or strengthen) the LQS system to comply with international qualification standards.
that can be applied equally across the country, and specifically include modalities for widespread monitoring of implementation.

At lower levels of education, there should be concerted efforts to improve the quality of education in rural areas (which, due to lower access and availability, poor internal efficiency, equity and relevance, tend to produce students with lower levels of skills and display higher dropout rates). One potential avenue is through increased ownership and coordination of reforms by strengthening coordination between students, instructors, and communities (similar to Colombia’s Escuela Nueva (‘New School’) program. Rural instructors would also benefit from increased access to teacher training.

**Priority 3: As Lao’s economy moves forward, skills taught in the higher education system will need to become better aligned with labor market needs.**

The most salient concern among employers is that the current workforce (and also new applicants) has insufficient or inadequate skills. Over 60 percent of employers who tried to hire new workers in the last 12 months experienced problems when hiring, and this was the case irrespective of the occupational category. Though only 18 percent of firms tried to hire people for professional categories, about 64 percent of them encountered similar problems. Even for unskilled categories of workers, such as for elementary occupations, a striking 70 percent of firms could not find workers to fill existing openings. This phenomenon is not exclusive to Lao; employers in many neighboring countries, such as Indonesia, Vietnam, Thailand and Malaysia, also consider skill constraints an important issue. Yet, unlike in Lao, the issue of skills relative to other problems (for example, taxing and competition) is lower in other countries. Medium and large firms are the most affected in Lao, as 24 percent of them see skills as a very important constraint.

There is large heterogeneity in what firms refer to by ‘lack of skills’, as previously noted; some refer to a quantity problem (shortage of people) while others refer to a quality issue (skills mismatches). Among those firms asking for better quality, the threshold of skills sophistication remains low. For some employers, such as those in labor intensive sectors like manufacturing, the main constraint is their inability to find workers (of any skill level) to apply for vacancies; in other words, their issue is one of quantity. This problem has been exacerbated by continued growth in the natural resources sector, which attracts skilled and unskilled workers in large numbers, away from manufacturing for example (due to higher wages). Most notable, however, is the fact that these firms are unable to attract workers from the agriculture sector. In other sectors, the main constraint for employers is their inability to find skilled workers, i.e. workers who are either equipped for the tasks required, or who are willing to accept (lower) wages that are commensurate with their actual skills (not their education); their issue is one of quality. Firms in the retail and services sectors, for instance, face a significant disconnect between wage expectations and wages offered (even more significant than a lack of applicants). In other words, workers’ skills are too low to merit the positions and wages they think they deserve. Moreover, wage expectation mismatches between employers and workers are most salient in the higher skilled occupational categories.

**Figure 3. Importance of Skills, by Occupation**

Source: Lao Enterprise-STEP Survey, 2011-12
There are clear perception mismatches between workers and employers about their levels of skills. Fifty percent of workers with primary education perceive their educational levels to exceed the requirements of their jobs. The estimate is higher, 66 percent, for workers with secondary education levels. About 29 percent of workers with vocational training feel overqualified; the rest report being well matched or under-qualified for their jobs. About half of university educated workers feel they are adequately trained and half feel they are overqualified. None of the university graduates perceive themselves to be under-qualified. Most jobs in Lao seldom require sophisticated skills, and most employers typically do not expect their workers to work autonomously, perform intellectual tasks, or innovate. This is true across all economic sectors; however, it appears to be more salient in manufacturing, where a large segment of workers feel they are overqualified for their jobs.

Most wage workers (non-agricultural) with vocational and university level education, and a large share of workers with secondary level, perceive their skills to be moderately or very useful to their jobs. Though most workers (86 percent) felt they had obtained very or moderately useful skills in the educational system, only 13 percent felt that their skills were not adequate for their jobs. In other words, these workers felt that even though they had the right educational level, they did not have the right skills to perform. This low number is misaligned with employers’ perceptions of workers’ skills.

Figure 4. Perceived Usefulness of Skills Obtained

Source: Lao STEP Household Survey, 2011-12

As Lao enters its second phase of educational reform, it is important to assess whether changes in the skills supply side are yielding positive outcomes on how higher learning institutions function, and the employability of graduates. There is limited and mostly informal interaction between institutions on one side, and employers and students on the other, and the development of curricula and teaching materials generally lacks inputs from students and employers. Firms have no formal mechanisms to provide schools with feedback about programs taught, or on quality of teaching. Overall, the education system appears to be disconnected from labor markets, student needs, and industries, with clear implications for potential skills mismatches. This is evidenced, for example, by the types of programs offered, and the fact that many students flock to the same subjects in spite of greater demand for workers in other subjects. Finance and accounting, business administration and languages have large enrolment numbers (probably reflecting student demand), but many (more technical and higher priority) programs such as automotive, electronics and construction are small in size and/or have declining enrolment rates. The higher education and TVET sectors remain largely supply-driven, inefficient, and unlikely to fulfill the country’s demand for skills without meaningful reform.

On the other hand, the tracer study of graduates (Part II) revealed that, in spite of
these problems, about 60 percent of the TVET-graduates surveyed are currently employed, mostly in the public sector. There are few differences between the returns to a degree in business administration, a popular subject, as opposed to a less popular subject such as science sectors (at least among 2012 graduates). And, lastly, employed graduates find their most recent education very useful or at least useful, and assess the provision of services and the education received quite highly, including the quality of instructors. This finding contradicts the fact that about half of all employed graduates think of themselves as not capable or only somewhat capable in their current jobs, and that half report not using or only partly using the knowledge and skills acquired. One explanation could be that while students are happy with the education received, as well as with the quality of instructors and the content of the courses, labor markets are demanding different skills—for instance, more job-specific skills, ICT and technical skills, and soft-skills among others. These skills are currently not being taught to many TVET graduates and this situation results in TVET students being somewhat unable to eventually do their jobs (thereby feeling incapable at work), or result in graduates finding jobs that do not require the skills they possess.

**Recommendations:** The higher education system should be better aligned with labor market needs. One way to achieve this is through closer interaction between the private sector and post-secondary institutions to render the system truly demand-driven. Employers have much to contribute, for instance in the design of programs and curricula, providing feedback to assess courses (particularly courses with low demand) and skills taught. Another option is for the Government to encourage partnerships between institutions and firms to design relevant programs, or facilitate private-public partnerships between large employers and schools. The National Training Council, which is established but not functional, would be the natural candidate for an ‘intermediary’ role.

Monitoring and evaluation capacity, supported by better labor market information, is critical for effective and relevant skills development. Information needs to be generated through periodic labor market surveys, consultations, and tracer studies about skills demand and absorption, and the benefits of investment in worker skills. One useful policy initiative, which is currently under discussion, is to create a Labor Market Information System (LMIS) to effectively assess, estimate, and monitor demand for a wide range of skills, and to track the ease of job placement for different programs (this can be used as a proxy for the quality of skills-forming institutions). This data could be used to inform secondary and post-secondary students (and parents) about employment outcomes and career choices. Social marketing could be used to promote programs and courses with high social returns, steering students away from high-demand (but lower return) areas such as business administration to ‘high-need’ areas. Marketing techniques (social and other) could also be used to help improve the image and standing of the ‘classic’ TVET sector, which the evidence above would characterize as low.

**Priority 4: Promote lifelong learning and skills upgrading by increasing the incentives and opportunities of workers to skill up, and employers to invest in the skills of their workers.**

Rapid economic growth has brought about higher demand for different skill sets—from basic to more specific cognitive, technical, and job-specific. Employers are dissatisfied with the level of skills being produced by the higher and vocational education system, with marked concerns across the board but more so with respect to practical skills. They have a clear view of the skills they desire in distinct occupational categories, including, for example, cognitive skills like the ability to read well for highly skilled occupations.
Job-specific technical skills are mostly expected from new entrants into skilled non-manual, and skilled manual jobs. Desirable skills for low-skilled occupations include the ability to work independently and good communication skills; cognitive skills are not a priority. Among the most commonly studied (the Big Five) personality traits, conscientiousness and emotional stability are the two most desirable traits for all occupations.

Although university education is a stated preference for workers in skilled occupations, a non-negligible share of recent hires and typical workers in highly skilled jobs only have secondary education (or lower). This indicates that many employers are willing to forego educational qualifications for work experience and skills (thus promoting from within or hiring workers with job-specific skills regardless of their education). Another explanation is that the pool of applicants is so limited that employers are forced to hire people with lower qualifications.

Skills mismatches are a problem, but skills shortages are likely to be even more salient as the country continues to grow and employers need to hire more post-secondary level graduates for highly skilled wage jobs. Only one-third of “untapped” workers (workers who are self-employed in a non-agricultural activity) have post-secondary degrees. Thus, the lower educational attainment of the self-employed is likely to be a severe constraint for growth if the demand for skilled labor increases in the coming years.

Few employers have taken a proactive stance toward remedying skill deficiencies and mismatches by resorting to worker training. This practice remains fairly uncommon in Lao—two-thirds of all firms (mostly larger ones) are reluctant to provide training of any kind, mainly because the benefits are unclear. Other reasons include financial shortcomings, physical limitations (distance and time constraints), lack of information on what training programs yield better returns, inadequacy of available training, and limited knowledge about the quality of training institutions. The effect of employer-provided training in Lao appears, in fact, to be neither positive nor negative. This is hardly surprising, as evidence shows that much of the training provided focuses on remedying skill deficiencies, rather than improving or building on existing skills. In other words, employers are using their training budgets to remedy or build skills that workers should already have, rather than teaching them new skills. Given that many lower skilled workers exit the education system early, it is important to focus on developing and honing skills earlier (in the education system), rather than later.

Figure 5. Provision of Training

![Figure 5. Provision of Training](image)

Source: Lao Enterprise-STEP Survey, 2011-12

In addition to limited training of workers, a noteworthy finding is that there are limited opportunities for all workers, including those with higher education, to use and improve their skills at work. In other words, employers do not seem to adequately utilize workers’ literacy skills (when workers do in fact have them). Most people with higher levels of education are being absorbed into occupations in the public and services sectors such as managers, professionals, technicians, military officers, and clerical jobs. Others with high skills are absorbed by the manufacturing sector and the resource (non-agricultural) sectors, like mining and hydro. Across all sectors, though, a significant share is not required to use
literacy skills regularly at work. In fact, data show that 20 percent of males and 30 percent of females with high education levels are seldom asked to read or write, thus limiting their ability to practice and strengthen their literacy skills. Another example of unused skills is in the area of ICT and computers, where workers report limited use, even among the professional and technical categories of workers. It remains unclear whether employers are misusing skills by allocating people to the wrong tasks, or whether most industries still have very basic literacy requirements (industry in Lao indeed appears more physical/manual in nature than intellectual). An alternative explanation is that employers do not trust their workers’ skills.

Recommendations: There are several ways in which the Government could help both employers and workers overcome constraints associated with worker training, lifelong learning and skills upgrading. To address financial constraints, the Government could consider subsidies to workers and/or employers, along the lines of what other countries like Philippines and Malaysia have instituted. Training subsidies may provide incentives for employers to invest in training, but should target individuals and firms that would not otherwise do participate (smaller firms in particular) and which could clearly benefit from it. Funds for these types of programs could be derived from the social fund established for social development and poverty alleviation.

The Government could also directly fund training programs for unskilled adults and self-employed (informal) workers with limited skills. For instance, training in life skills, which are critical in the transition from rural to urban labor markets, could be one option to consider. Ideally, programs would provide basic life skills as well as job-specific skills so that people could transition from self-employment to wage employment and, in the case of internal migrants, help them adapt to urban conditions and be better equipped to find suitable work. Programs could either be outsourced to private sector providers who are paid upon successful outcomes, and/or they can be provided by selected secondary or vocational schools that would be similarly remunerated.

Policy reforms and improvements in the implementation of existing policies could also be considered as a way to make regulation more responsive to innovative public-private partnerships that encourage pre-employment training, employer-sponsored training, and on-the-job training. The Lao Skills Development Fund (LSDF) was established for this very purpose by collecting training levies from employers that they could then access for training; however, it has yet to become functional. Administering this type of fund is a complex and time-consuming undertaking, and much caution should be taken to ensure that employers see the benefits of their contributions. The experiences of Malaysia and the Philippines could be useful to learn from—where their training funds are a good example of government, firm, and industry collaboration in training.

Lastly, information is clearly one of the most salient constraints faced by both sides—by strengthening a LMIS or the LQS (or both), and by making standards mandatory for all institutions, the Government would address some information-related barriers (see priority 3), and could also monitor the quality of skills and education providers (see priorities 2 and 3).
INTRODUCTION TO THE REPORT

1. The Lao PDR Country Context

Lao PDR has experienced a decade of high levels of economic growth as a result of its rapidly growing industrial and services sectors, and the decline of its agricultural sector. Lao has embarked on an ambitious plan to transform its economy with the aim of reducing poverty, achieving the Millennium Development Goals (MDGs), complying with the Asian Free Trade Agreement, and graduating from least developed country status by 2020. This ambitious agenda is set against a country context that has seen both favorable developments and challenges. Favorable developments are mostly related to its steady economic performance. Economic growth continues along a positive path, with a projected average annual growth rate of 7.6 percent in the medium term (World Bank, 2012c), rendering the country one of the fastest growing in Asia. The steady development of its export sector, particularly in minerals and hydropower, and growth in the construction, manufacturing, and service sectors, has led to an incipient shift in the structure of the economy; although this has led to the creation of new jobs, the shift to employment away from agriculture is happening at a much slower pace. The remaining challenges stem in large part from the structure of the economy, which is still mostly agricultural, and relatively low levels of availability and quality of services in the country, including health and education.

Despite increased growth in the economy and diversification in economic activity, the Lao workforce is still predominantly active in subsistence agriculture. About 2.9 million in the working age population were employed in one of four main sectors: agriculture, services, non-resource manufacturing, and natural resources. The workforce is overwhelmingly employed in the agriculture sector at 70 percent, followed by the services sector at 20 percent. Wage earners comprise a mere 15 percent of the total workforce; of those, 65 percent are employed in the services sector and only eight percent work in agriculture (LFS 2010). Despite rapid changes in the structure of the economy, most people lack the resources—including the education and skills—to forgo agricultural activities and partake in the growing industrial and services sectors.

With dramatic changes in demographic composition in the near future, and changing employment dynamics, will come a greater demand for employment opportunities and also for skilled labor. Lao’s current population of 5.75 million people is expected to increase to about 7.6 million by 2020. The working age population (15-64 years), which reached 3.6 million in 2010 (LFS 2010), is expected to grow at a faster rate during that same period, to reach 4.1 million in 2015 (MOES, 2006). Although the country’s population is disproportionately concentrated in rural areas, Lao is displaying the fastest growth in urbanization in Asia, a trend that is expected to continue for years to come.  

Education quality, enrolment, and completion rates, even at the primary level, remain significant barriers to skills attainment. As of 2012, Lao PDR was not on track to achieve its education MDG targets (School Based Management in Lao PDR, 2013). The quality of education, for which students’ aptitudes in literacy and numeracy are often used as a proxy, is also of great

---

1 One caveat is necessary. Even though Lao PDR is indeed displaying the fastest rate of urbanization in the region, it is unclear how much of this trend is due to population movements from rural to urban areas, and how much is related to administrative changes in the country (e.g. village consolidation) or to changes in the definition of urban and rural villages.
concern, and pertains directly to the objectives of this study inasmuch as these skills will later inform the performance and productivity of the workforce. The Government has demonstrated some commitment to improve education through increased spending, with modest results (School Based Management in Lao PDR, 2013). Learning outcomes have improved in recent years, but language and especially mathematics skills are still lacking for most students with a primary education. Net enrolment rates have consistently increased at an average rate of 1.1 percent annually to 95.2 percent in the 2011/12 academic year, making universal primary enrolment a reachable target by 2015 (Ministry of Planning and Investment, 2013). Dropout rates, however, remain high, particularly after first and second grades, with improvements thereafter (School Based Management in Lao PDR, 2013). In spite of increased enrolment rates, literacy rates dropped 1.7 percent since 2009, to 80 percent in 2011.

There is a growing concern in the country that the supply of adequately skilled workers lags and will continue to lag far behind the demand from employers. Two prominent issues are at the forefront: first, there is a shortage of technically skilled workers and university graduates, and second, a large segment of the trained labor force remains under-skilled. The performance of Lao’s vocational and higher education sector has long been a concern, and evidence suggests a considerable mismatch between the skills being taught through the current system and the requirements of the labor market, as well as a considerable absence of critical skills such as literacy and numeracy in the country. A report by the MOES (2008) finds that demand from existing (and potential) students for training is decreasing in high-demand skill areas and areas where skill shortages are the greatest (such as carpentry, plumbing, sawing, and dress-making), while demand for training in less relevant skill areas (such as accounting, office management, and business management) is increasing despite the fact that graduates in these areas struggle to find employment. Technical Vocational Education and Training (TVET) schools in particular respond more to students’ skill demands than employers’ demands. It is hardly surprising that few firms appear to recruit workers or have any relationship with formal institutions developing skills and providing professional training. Instead, many firms currently resort to “importing skills” from abroad by hiring workers from neighboring countries at higher costs. Firms report a shortage of an “adequately trained workforce” and lament the lack of “labor market orientation of the vocational education system” (HRDME, 2010).

Overcoming constraints such as limited human resources, weak capacity, and skills shortages will be fundamental for further economic expansion. Lao PDR will have to absorb a growing number of workers in the coming years and endow them with the skills that a rapidly changing economy requires. Similarly, filling the skill shortages that reportedly exist in sectors such as construction, furniture making, and automobile and machinery repair, will be fundamental to sustaining growth momentum. Most importantly, reforming the country’s skills development policies and strengthening the vocational and higher education systems are primary concerns as the country prepares to enforce the 2015 ASEAN Economic Community Agreement that will deepen economic integration in the region.

Increased regional integration will also reinforce the need for skills training in the face of greater competition. Beginning in 2015, ASEAN will allow for the free movement of skilled labor among member countries. This provides another incentive to the Government to assess the skills and knowledge of its labor force and improve its suitability to fulfill the needs of the current economic environment. This policy will not only allow skilled workers from Lao PDR to seek opportunities in other countries, but will also raise the level of competition for jobs internally as the pool of candidates widens. If Lao PDR’s workforce is not equipped with the relevant skill sets, it will become increasingly difficult for job seekers to find suitable employment.
Lao PDR has stated as one of its strategic goals to move away from low-income status and to improve the quality and relevance of skills of its labor force. In 2007, the Ministry of Education and Sports (MOES) issued a new Strategic Plan for developing the TVET system and meeting national economic development needs (Boupha, 2008). In 2011 a formal request was forwarded to the World Bank from the Ministry of Education and Sports (MOES) with the request to help the Lao Government in addressing skills shortages in the Lao workforce so that the country could fulfill one of the central pillars of the 7th National Socio-Economic Development Plan 2011-2015 (NSEDP), and the country partnership and assistance strategies with the World Bank and other developing partners. In parallel to the plans made by the MOES, the Ministry of Labor and Social Welfare (MOLSW) issued a strategic plan outlining its plans to build the right skills in the labor force in order to gradually meet ASEAN standards, and thus transition towards a more export-oriented and industrialized society (Lao-LSW Strategic Plan, 2010). The longer-term target (2016-2020) set out in the plan is to prepare most of the Lao workforce with industry-relevant skills, as well as skills that are adaptable and permit people to transition across sectors.

Availability of skills is fundamental to sustaining growth, fostering economic development, and reducing poverty. This seems like a critical moment for Lao to invest in education and skills to ensure the country’s competitiveness. The fundamental shifts in the economy, away from agriculture, demand bold and creative policies that could help to formalize the connection between education and competitiveness with an agenda focused on 21st century skills. These skills must aim to increase workers’ overall productivity and hence wages (in both the formal and the informal sectors), and promote self-employment and small-business creation among the less well off. Similarly, a greater supply of industry-relevant skills will increase firms’ productivity and profitability, thereby increasing the overall competitiveness of the economy. Greater competitiveness and higher wages will then contribute to increasing growth and reducing poverty (ADB, 2008).

Despite the importance of skills for economic development, the current higher education and TVET systems are unable to fulfill the demands of the labor market. The combination of fast-paced growth, structural transformation away from agriculture and towards industry, and increasing openness to trade, will likely result in a dramatic increase in the demand for higher-end skills in Lao over the next decade. The main issue highlighted throughout the analysis in this report, especially Part II, is that the education system is currently unable to produce the skilled workforce needed for further development. The Government thus faces added pressure to expand access to training, align training systems to market demands, and improve the quality of higher education and TVET systems.

The compilation of studies assembled for this two-part report has three key objectives. The first objective is to provide critical information to the Government to be able to address existing skill gaps in Lao in order to meet its economic growth goals. The analysis in Part I of the report fills existing knowledge gaps on the current demand for and distribution of skills among Lao PDR’s labor force; Part II of the report aims to fill knowledge gaps related to skill formation in the formal post-secondary system of education (namely the TVET system). The second objective is to provide the government of Lao PDR and the steering committee that will revise the Human Resource Development Strategy 2000-2020 (and linking it to the 8th NSED P) with evidence of the current skills situation in the country, to better inform decisions and human resource planning for the future. The third objective is for the Government, the World Bank, and other development partners to have a baseline of skills indicators in Lao against which to measure
results going forward. Parts I and II of this report will also serve as inputs in the forthcoming Lao Development Report (LDR).

3. Analytical Framework

The study was conducted on the basis of a supply-demand framework to respond to the dynamics of the skills market in Lao PDR. The premise of the proposed framework is that market and government failures lead to the creation (and exacerbation) of mismatches in the supply and demand of skills in Lao. These failures are largely due to the fact that education and skills development policies are created by policymakers who fail to take into account how labor markets work and fail to harness the presence and role of non-public sector actors (for example, training providers and employers). Figure 1 presents an illustration of the different components of the conceptual framework and how the analysis presented in both Parts of the report is structured.

Figure 1. Analytical Framework

Source: Author’s Illustration

3.1 Understanding the Analytical Framework

The left-hand panel of the analytical framework (in Figure 1) represents the ‘Market for Education and Training,’ and the right-hand panel represents the ‘Labor Market.’ In the market for education and training there are skill providers (or suppliers of training and education) such as public and private institutions, as well as employers who conduct in-house training or finance off-site training. Those who receive the education and training are the direct or indirect users (or demanders) of the services; these are mainly young students or potential students and their parents (who sometimes get involved in the education decision making process), as well as workers (or potential workers) already in the labor force but seeking further training. Users and providers come together in the ‘Skills Production’ process, represented as a black box in the framework. This black box is illustrated in Figure 1, and explained in detail below.

Failures stemming from providers and users having limited or no relevant information to make adequate decisions on curricula or educational investments, as well as weak incentives, affect the efficiency of the education and training market. Such failures often lead to underinvesting in education and training and to the under-provision of quality services. There are three types of information that affect users’ investment decisions: information on the returns to education and
 training (quantity), information on the quality of training providers (quality), and information on what content/subject to study (type). On the provider side, failures related to limited information and weak incentives affect how actors perform; for instance, inadequate policies, inappropriate governance, and weak institutional arrangements affect how the education and training system functions (quantity and quality). Limited information and weak incentives to coordinate between employers and education providers hinder alignment between education and training services and labor market needs; they also affect the system’s efficiency—namely the interplay between public and private sector providers (quantity and quality) (World Bank, 2012).

In the right-hand panel of the analytical framework (in Figure 1), which is broadly speaking the labor market, suppliers and demanders of skills end up meeting in what we define as the ‘Skills Utilization’ process. This process in Lao PDR is complex and variable due to the heterogeneity of firm types and workers. The labor market is made up of skills suppliers and skills demanders. People currently working (or in the labor force), eligible to work, entering or seeking to enter the labor force, and preparing for the labor force in the future, provide (or supply) their skills as workers to the employers. Employers (in the public or private sector) in the Lao economy and employers abroad hire people who have the skills they need to succeed in their business; thus employers “demand” skills. In the framework this process is represented by a grey box. Like the skills production process, the skills utilization process in Lao PDR is complex and variable due to the heterogeneity of firms (for example, size, status, sector) and types and availability of workers (for example, skill levels, distinct geographic location). Like in the education and training market, there are clear market failures stemming from ineffective policies, weak coordination, limited information, and inadequate incentives.

3.2 The Black Box in the Skills Production Process

The complexity of the skill production process is largely due to the all-encompassing nature of the education and training process. This process ranges from pre-primary to on-the-job-training, and covers all formal and informal educational systems that a person is exposed to throughout their life. The dynamics of educational attainment are an important factor underlying skills acquisition. Early childhood development through primary schooling has a significant impact on individuals’ abilities to retain information and develop other skills later in life. It is widely acknowledged that the skills, both cognitive and non-cognitive, learned by children in their first five years of life, shape their aptitude for developing other skills in the future. On the other hand, it is important to note that primary enrolment and even primary completion are not necessarily indicators of full cognitive skills development (that is, literacy or numeracy).

There are different types of investments that individuals can make in their lifetimes in order to acquire the combination of skills—cognitive, non-cognitive (namely social, emotional, and personality), and technical—that contribute to attaining social and economic success. These investments are reflected in the pyramid illustrated in Figure 2. A person typically starts with pre-primary education, which can include formal early childhood development centers (ECD) or less formal approaches in the village, community, or in a private home by a mother, sibling or caretaker. The next level in the pyramid is the primary education level; typically this refers to formal education in a public or private institution. In Lao PDR, a large proportion of the population (more than 35 percent) exits the formal education system at that level. A smaller proportion of people go on to the next level, which is secondary (lower and upper) education.
A growing body of evidence shows that skills are not only determined by parental heritage (genes) and environmental influences but also by educational investments at different stages of a person’s life cycle, mainly during childhood (Cunha, Heckman, and Schennach, 2010). Many studies document the importance of cognitive skills, largely obtained through educational experiences, as a determinant for labor market outcomes, social outcomes, and overall success in life (Heckman 1995; Murnane, Willett and Levy, 1995; Cunha and Heckman, 2007). As shown in Figure 2, the bulk of cognitive skills are obtained early in life, from pre-primary school through the end of secondary school. Studies show that there are critical and sensitive periods in a person’s life where these skills are formed (Cuhna and Heckman, 2007); for instance, most basic cognitive (and non-cognitive) skills are more easily acquired at early stages in life (Knudsen et. al, 2006), and a person’s intellectual quotient (or IQ) becomes stable by the age of 10 (Hopkins and Brecht, 1975). Cognitive and non-cognitive learning continues after childhood and adolescence; and specialized cognitive learning in the form of technical skills also takes place at the post-secondary level and through vocational (on-and off-the job) training.

4. Roadmap of the Report

To address all the issues raised in the Introduction Section, various analytical pieces have been compiled and assembled into a two-part report that is organized as follows. The rest of the Introduction Section includes a methodology, data sources, and analytical approach sections. The report is then assembled into two parts. Part I is titled ‘Understanding the Supply and Demand of Skills in Lao PDR. Part I use primary data sources that allows the authors to distinguish between

---

2 It is important to differentiate between remedying cognitive skills deficits in adulthood and acquiring new cognitive and technical skills in adulthood. The evidence on the effects of adult education programs to remedy cognitive deficits later in life is not very encouraging, and the economic returns to secondary level completion, university attendance, and on the job training are lower for less able persons (Carneiro and Heckman, 2003; as cited in Cunha and Heckman, 2007).
different types of skills encompassing three broad categories: cognitive, non-cognitive, and technical. Part I includes five main Sections with various sub-sections. Part II of the report is titled ‘Assessing the Post-Secondary Education Institutions and the Outcomes of Recent TVET Graduates.’ Part II includes four main Sections with various sub-sections. The report concludes by highlighting key challenges, potential reforms and interventions for Laos to make improvements to the quality of its present and future workforce.

5. Data Sources and Methodology

A number of data sources and instruments, as listed in the ‘toolbox’ (Figure 3), were used to inform this analysis. These instruments include a set of primary sources (collected by the World Bank in collaboration with the Government of Lao and local data collection firms) and a set of secondary sources (collected by others for purposes other than to measure skills). Primary sources include: the Skills Towards Employment and Productivity (STEP) household survey, theSTEP employer survey, the Educational Testing Services (ETS) Cognitive Test, the Enterprise Survey, the Institutional Survey of higher education institutions, and the Tracer Survey of Graduates (Figure 3). Secondary sources, described elsewhere, include: the Labor Force Survey (collected by the International Labor Organization or ILO and the Lao Statistics Bureau or LSB) and the Lao Expenditure and Consumption Survey or LECS III and IV (collected by the LSB with the support of the ILO).

Figure 3. Primary Data Sources Included in the Toolbox

![Figure 3. Primary Data Sources Included in the Toolbox](source: Author’s Illustration)

The STEP Skills Measurement project is an initiative of the Human Development Network, Social Protection and Labor Unit of the World Bank, created to more accurately measure skills supply and demand in developing countries. The STEP tools used for this project include a set of core surveys and implementation materials that allow users to build databases on skills that can be used for country-level policy analysis and comparisons across countries. As clearly specified in the documentation provided by the STEP team (see Sanchez Puerta et. al, 2013), there are two core survey instruments that collect information on the supply and demand for skills. These surveys draw heavily from specialized surveys used in other country contexts (developing and developed) and are tailored to each country context, in this case to the local Lao PDR context.

Each data set serves a specific role, and all these data combined help to shed light on the existing policy and market failures in Lao. The STEP household survey data, the Labor Force Survey data and the LECS III and IV data are used to assess the current levels of educational attainment (and changes over time) and occupational participation in Lao by different socio-demographic characteristics. The STEP household survey data are used to delve deeper into actual skills
attainment (see details below). The Institutional Survey Data and the Tracer of Graduates are used to analyze how TVET institutions function and the types of students they graduate. The STEP employer data and the Enterprise survey data are used to analyze the labor market demands. Each primary data source (STEP, Enterprise and Institutional Surveys and Tracer Study of Graduates) is described in detail in Annex 1 and see analytical approach in Annex 2.
PART I: UNDERSTANDING THE SUPPLY AND DEMAND OF SKILLS IN LAO PDR

Part I will describe the market for skills in Lao as laid out in the Analytical Framework. The first section describes the left-hand side of the Analytical Framework: the Market for Education and Training in Lao as it relates to the skills production process. It begins by profiling the educational attainment, as well as the actual skills profile, of Lao’s working age population (15 to 64 years old), including those with little or no formal education. There is scarce knowledge about the latter subset (workers with little or no education), or its skills profile. Limited insight into this group, which is the largest share of the labor force, imposes a great limitation on policymakers’ ability to address skill gaps in a comprehensive manner. The analysis also sheds light on the levels of non-traditionally measured skills (technical and non-cognitive skills) and assesses their effect on wages. To provide a contextual analysis, Lao’s workers’ skills are compared with those in other countries.

The second section will focus on the demand side, or how formal education affects skills utilization and labor market outcomes (the right-hand side of the Analytical Framework). It provides an overview of Lao’s labor market, skills utilized by the current workforce, skills that employers seek out in actual and potential employees, and how these skills affect labor productivity. Part I concludes with a discussion of skills mismatches and their implications, and a summary of the main findings.

1. The Supply Side: Current and Future Workers

As mentioned in the introduction, the principal focus of the report is on labor market skills; as such, much of the analysis and discussion focuses on skills of the working age population (people in the workforce or entering the workforce), and skills obtained in the vocational system, in post-secondary education, and on the job. The authors make a concerted effort to point out, whenever possible, the importance of early childhood, primary and secondary education in the production of fundamental cognitive and non-cognitive skills, and to encourage improvements in the mid-to-longer term (though education is not the focus of the report). Given the Government’s urgent need to address skill deficiencies in Lao in the short- to medium-term, a large part of the discussion (mainly in Part II) centers on the post-secondary level, namely a more qualitative analysis of the outcomes of recent higher education graduates, and recommendations for making the vocational education system more effective in terms of skills production.

1.1 Overview of the Formal Educational System

The formal education system in Lao—from kindergarten to university level—takes at least nineteen years to complete.

Figure 4 shows in greater detail Lao’s formal and informal educational system, including the number of years associated with each educational level. The education system in Lao PDR starts with kindergarten or pre-school, when children are as young as three years of age; however, few children attend this level of education largely because the availability of pre-schools is limited and non-compulsory. The next level is primary school; this level of education is compulsory (since 2003) and students receive a certificate upon completion. This is followed by lower secondary school, which is four years long, and those who pass the lower secondary examination...
are eligible to go on to either general upper secondary school or one of the vocational or technical tracks. The next level is higher education, which includes universities and higher vocational institutions. It is important to note however that some vocational courses (due to their targeted nature) can be accessed by students that have not completed lower secondary or even primary education. Overall, the system is maturing but access to education in Lao PDR is broadest at the primary level and more constrained at higher levels mainly due to factors such as distance, lack of resources, language, and cultural aspects that limit some groups more than others (World Bank, 2010; AusAid, 2011).

**Figure 4. Overview of Lao’s National Education System**

There have been some improvements in educational attainment in Lao PDR over time, but the average completion rate for primary school remains at 70 percent, lower than the desired 95 percent. Recent studies show that Lao PDR may not meet its education targets by 2015. The 7th NSEDP outlines the Government’s intent to meet the education MDG by 2015, that is, achieve universal primary enrolment and reduce gender disparities in primary completion. Although primary completion rose from 2002 to 2010, only 58.5 percent of females completed primary school in 2011, compared to 68.7 percent of their male peers. According to the 7th NSEDP Mid-Term Review, the average primary completion rate in 2011/12 was 70 percent (Minister of Planning and Investment, 2013). This represents a six percent increase (averaging male and female) from 2011, but is still well below the 95 percent target for 2015, which is unlikely to be met. The slow progress in graduating people across educational levels has detrimental implications for the Lao economy; evidence shows that low educational attainment is highly
correlated with low wages and limited labor market opportunities, which in turn translate into decreased productivity and higher poverty.

Even if some progress is made in educational attainment, few studies assess specifically whether educated people have the skills required to fulfill the demands of the labor market. The most common approach in the economic literature is the use of educational level as a proxy for skill level with some variation in terms of the categories of educational attainment used in skills related analyses. Recent studies in Lao focus on measuring educational attainment and how household socio-economic conditions affect educational outcomes. Unfortunately, due to data limitations, the majority of analyses to date utilize years of formal education as a measure for skills, rather than directly assessing actual skill sets. This approach limits how much can accurately be said about actual types of skills, and also fails to take into account skills that are obtained outside of the formal education system (for example, in the workplace).

As it relates to higher and vocational education and training in Lao, there has been rapid growth in enrolment and several reforms made in the last two decades. In 1995, the Government started a reform process of the public and private higher education system that led to an increasing number of new private providers (both in TVET and in the university/college arena), and an increasing number of public education centers. Under the guidance of the Department of Higher, Technical and Vocational Education (HTVED)—the body within the MOES in charge of managing, coordinating, and monitoring higher education—total enrolment in public and private higher education institutions more than tripled in the 1997-2005 period alone (World Bank, 2012). Data from the Ministry of Education and from UNESCO (2013) shows that between 2007 and 2015, enrolment in the public vocational education and training system will increase from about 31,000 to 50,000, while enrolment in public universities will double over the same period—from about 31,000 to 60,000 (Figure 5).

Figure 5. Students’ Enrolment in Public Institutions

Source: Author’s calculations using various sources

---

3 As described in the introduction section of the report, existing data sources include: (i) national household surveys (LECS), (ii) a national training needs survey and tracer study conducted by the Ministry of Education in 2007; (iii) a firm survey conducted by ADB in 2010 (following some earlier work by Gesellschaft für Internationale Zusammenarbeit (GIZ) covering a selected number of sectors; (iv) enterprise surveys conducted by the World Bank in 2005 and 2009 which allowed an assessment of firm performance; and (v) reports on specific sectors such as banking and tourism. An additional survey is currently ongoing in the garment sector.
Improvements in the quality and quantity of higher education, however, have not kept pace with evolving labor market needs, despite the government’s efforts (particularly the TVET system) to narrow skill gaps. Even though only a subset of students in Lao select vocational education as their higher education option, the vocational system of education and training has enjoyed a revived interest among stakeholders (and in other countries facing similar skills challenges) in part because international agencies working on education and skills (e.g. World Bank, various UN agencies) advocate to use the vocational education and training system to promote economic prosperity by providing people with access to a specialized education, increasing the skills levels of workers, and positively affecting competitiveness (Comyn and Barnaart, 2010). To that end, the government and donors have invested resources to revamp the TVET system in Laos so that it is able to emulate successes observed in other contexts. However, a recent report focused mostly on the TVET sector, highlights the persistence of low quality of teaching and instructors, poorly developed curricula, lack of funding (that results in inadequate facilities and equipment, as well as lack of incentive to perform), and low access to training in non-urban areas (traditionally where the poorest and most vulnerable live) that contribute to the lack of efficiency in these institutions (Planco Consulting, 2012). These issues are particularly well documented for vocational education. It is likely that these deficiencies contribute to students viewing vocational training as a ‘second best option’ compared to university/college education, and employers do not trust the training provided by these institutions. Anecdotally, enrolment rates in skills development and training and VET institutions seem to be declining in high-demand skill areas and in areas where skill shortages are the greatest. At the same time, colleges and universities have witnessed a dramatic increase in enrolment rates, especially within programs that offer few job opportunities (for example, business administration or management), suggesting that students’ preferences (perhaps driven by social pressures) are driving enrolment rates more than labor market needs.

The centralized manner in which the higher education system operates is one of several explanations for the lack of flexibility and inefficiency of the higher education system in Lao. Like universities, the vocational training system in Lao remains traditionally supply-driven, with the Government taking on a predominant role in all aspects of policymaking and implementation. For instance, in reforming the TVET sector, employers have until recently been under-consulted in the setting up of new training centers, in the development of new curricula and, more generally, in establishing nationwide frameworks for skills development (Planco Consulting, 2010). Indeed, few firms appear to have any relationship with formal public skills development institutions. Relatively less is known about universities and colleges offering associate/bachelor’s degrees and above, especially in the private sector, the number of which has dramatically increased in recent years.

1.2 Educational Profile of the Lao Workforce

There have been slight improvements in educational attainment since 2002. Currently, though, over 30 percent of men and 40 percent of women have no formal education. This section includes information on the educational and skill levels of people broken down by type of village, gender, age group, parents’ education level, industry, and occupation. Figure 6 shows that there was slight improvement in educational attainment between 2002 and 2011, which is mainly due to a decrease in the number of people with no education or dropping out at the primary level. More people also completed primary school in 2010 than in 2002, and positive changes are more pronounced for males than females. Focusing on secondary education in the two more recent years of available data (2010 and 2011), it is clear that completion rates for males revolve around 40 percent (the range is 31-40, depending on the data source) and 31 percent for females.
Significant improvements in higher education enrolment and completion are also observed since 2002, but with a slight recent reversal in university enrolment. With respect to vocational education and university level combined, males’ enrolment increased from nine percent of the working population in 2002/03 to about 20 percent in 2011. The estimate for women is much lower at 11 percent in 2011, but still much higher than in 2002/03 (five percent). Comparing the two most recent periods of data available, enrolment in vocational schooling increased for both males and females, but simultaneously decreased in universities for both genders (Figure 6). This could be partially explained by recent reforms to the higher education system, which favor increasing financial support for students entering TVET while indirectly decreasing the number of quotas available for university education. The Government set a goal to enroll 25 percent of upper secondary students in the vocational stream by 2015, which may be having some impact on the already small pool of students who pursue post-secondary education. Increases in TVET enrolment are thus one result of the greater emphasis by the government, accompanied by financial incentives for students and increased support from donors, such as the Asian Development Bank, which aim to increase the provision of vocational education in key areas such as construction, furniture making, machinery repair, and business administration (ADB, 2010; UNESCO, 2011).

There has also been some progress in the number of years that students complete in the formal education system. This coincides with the increased length of the general education cycle from 11 to 12 years in 2009. Exposure to formal education, measured in years of educational attainment, is another way, besides completion of levels, to gauge progress (the two are highly associated). One can assume that the longer a person is exposed to formal education the more likely that person is to have been exposed to (and thus possess) cognitive skills. Exposure for males and females living in urban areas has increased by one year from 2002 to 2011 (Figure 7). Progress on this front for people living in rural areas with road access was more limited; males saw a minimal increase of less than half a year, from 5.5 years to 5.9 years, while women saw an increase of half a year, from 3.5 years to four years. Males without road access saw a decline in exposure over the same period, while women saw an increase from 1.8 years to 2.5 years. The increases observed among urban populations mainly coincide with the Government’s reform of the education system in 2009, which expanded the school cycle from 11 to 12 years (MOES,

---

4 Quota students are exempt from paying fees and supported by the government though small living allowances; others pay modest fees. In 2010, about 50 percent of public university students were quota students.
Unfortunately, the effect of the reforms was not widely felt by people with already limited access to secondary schools.

**Figure 7. Educational Attainment as Years of Education**

There are clear differences in educational attainment between rural and urban areas. Failure to expand schools, especially secondary schools, to rural and remote areas contributes to persistent disparities in educational attainment between urban and rural areas, and also between genders (where females have lower attainment) (Figure 8). Less than 50 percent of all working age females achieve primary school completion in rural areas, compared to 62 percent of males. One reason for this is that when access to school is limited, women are less likely to be allowed to walk long distances or to attend schools that require living outside the home. A mere five percent of females in rural areas obtain a vocational or university education, and males fare only slightly better at 15 percent; the overwhelming majority of them pursue vocational rather than university studies. Secondary completion rates exhibit even larger gaps: 75 percent of males in urban areas complete secondary school, but only 43 percent in rural areas, and less than 30 percent of females in rural areas finish secondary school, compared to 62 percent in urban areas. Contextual factors including poverty also play a role in low participation in secondary schools in rural areas, where poverty is most salient.

**Figure 8. Educational Attainment by Village Type**

Regardless of location (urban or rural), there is a clear intergenerational transmission of education from parents to children, and most markedly between mothers and daughters (Figure
9). Educational attainment is a primary determinant of long-term economic success, which in turn is a determinant for social mobility in the future (Baum and Ma, 2007). For instance, evidence from around the world finds that a person’s educational outcomes are partly determined by the education levels of their parents (Björklund and Salvanes, 2010). Thus, the intergenerational transmission of low educational attainment, from parent to children, is a key indicator of educational inequality, which results in barriers to opportunities in the labor market. For males and females in Lao, having a parent with university level of education is correlated with having a similar level, or at least over 12 years of education. The same is true for people with parents who have low levels of education; for instance, a male with a parent with no education or incomplete primary school is likely to end up with less than five years of education. The estimate is around four years for a female. For males, having mothers with vocational education level is less favorable than having mothers with secondary level. For females, the relationship is clearer: the higher the parent’s education level, especially the mother, the higher the number of years of education the female is likely to have.

Figure 9. Years of Education by the Education Level of Parents

![Figure 9](image)

Source: Author’s calculation with STEP

Wage earners have the highest educational profile among Lao’s population. People with higher education levels are typically employed by a company instead of being self-employed. Over 50 percent of all wage earners have completed vocational school or university—54 percent female and 59 percent male. Female wage earners in particular are much more educated than the rest of the female population, even in rural areas where they still lag behind men in educational attainment. For example, Figure 8 shows that in rural areas the average completion rate for primary school for all females (working for a wage, self-employed, unemployed and doing other activities) is only 47 percent, whereas the estimate for females living in rural areas but strictly working for wages (Figure 10) is 78 percent. The difference between wage earners and non-wage earners (self-employed and others) at higher levels of education are also striking; for instance, about 60 percent of women working for wages and living in urban areas have vocational or university education, three times higher than when all women in urban areas are included. These findings may indicate that people who invest in more education prefer to have the security of wage employment, or receive higher returns from wage employment, than from self-employment. Another interpretation is that having lower educational attainment limits a person’s access to wage employment.
As seen in many other countries, the service sector is the greatest absorber of skilled workers. Most male university graduates work in high-skilled jobs in services, and some in manufacturing (Figure 11). The same is true for women. A large share of men and women with vocational education also seek employment in higher skill demanding jobs in services, namely public administration, health and education. In the manufacturing sector, about 21 percent of all male workers have degrees, and in agriculture, 10 percent of males have vocational degrees. One could argue that unless these men are performing technical work in these jobs, they are likely to be overqualified for jobs in these industries. Most vocationally trained women seek employment in services, but not all jobs in the services sector are high skilled; there is a large diversity in the types of occupations that women fulfill within the same industry.

### Figure 11. Educational Attainment by Economic Industry

Six distinct occupational categories\(^5\) of workers are used throughout Part I: 1) highly skilled jobs, which include professionals, managers and technicians (and armed force officers); 2) clerical and service jobs, which include secretarial jobs, administrative jobs, customer service representatives (not sales), and office workers; 3) sales jobs; 4) skilled agricultural jobs, which include any

---

\(^5\) The six categories cluster various occupations in each group, making them have a less homogeneous group of people in each one.
agriculture related wage work; 5) tradesmen and plant operators, which include jobs running machinery and equipment, craft related jobs, and drivers; and 6) elementary jobs, which include unskilled jobs like janitorial/cleaners, packagers, and custodians. The first two categories include higher skill activities while others are less skill demanding.

Within each sector, people employed in more high-skilled occupations, i.e. professional, managerial and technical, typically have university or vocational education levels; other occupational categories are much more mixed. As shown in Figure 12, most men and women with a university and vocational education hold higher skilled occupations. There are large differences in educational levels between men and women in clerical and service occupations, where most females have a secondary education, while most men have a vocational degree. Skilled agricultural workers are largely uneducated (over 50 percent of females in this sector have no education). In the manufacturing sector, the profile of workers is the most mixed, and a much higher percentage of males in the industry have university or vocational education (23 percent) than females (9 percent), likely because they work in distinct occupational categories; more males as managers and professionals and more females as clerical and plant workers. Some of the gender differences in occupational choices observed within each industry point to a clear sorting between men and women.

Figure 12. Occupational Categories by Education Level

![Figure 12](image)

Source: STEP Household Survey 2011/12

1.2.1 Returns to Education

Empirical analysis reveals that the labor market rewards higher levels of education with positive returns to educational investments. The estimation\(^6\) of the returns to years of education in Lao uses a simple analysis of average earnings for different levels of education. This more rigorous measurement of the returns to education in Lao reveals that over the last five years, wage workers earned higher wages by three to four percent for each additional year of schooling (on average). Higher levels of education in Lao not only command higher wages, but also yield positive returns on investment. Although this estimations approach only provides an average return, since the data available do not allow for differentiation of returns by distinct people across the wage distribution or people with distinct abilities, getting more education clearly pays off in Lao.

\(^6\) The analytical approach section describes the mincer approach used to measure returns to education in Lao.
The labor market rewards men and women for their educational investments differently, with women achieving greater returns to education than men. Regardless of the data source, average returns to education (when all workers are included) remain positive, and above three percent. Using the STEP data set, returns to education for women in 2011 are much higher than with any other data source, at around 6.9 percent (compared to 5.2 and 2.2 with other sources). For males, estimates also differ by data source. Returns for males are around 2.5 percent (compared to 3.4 percent and two percent with other data sources). In sum, returns to education for male wage workers range from 1.9 to 3.4 percent, while those for female wage workers range from 2.2 to 6.9 percent. A plausible explanation of a practical nature is that educated women who stay in the labor market, despite cultural pressures to leave (for example, for family reasons), are especially capable, as reflected by their wages; their opportunity cost of staying home is too high. One possible technical explanation for the wide range observed for women is that there is a smaller sample size of female wage workers relative to male wage workers, making it more difficult to estimate returns with precision (Figure 13).

**Figure 13. Annualized Returns to Education**

![Graph showing annualized returns to education](image)

*Source: Author’s calculations with various data sources*

Despite the fact that returns to education increase as the person completes more education, it is unclear whether more schooling translates into more, better, and employer-relevant skills. Most people with university degrees in Lao work in higher skilled occupations and in higher value added sectors, such as services, where wages are also typically higher than in other sectors (with notable exceptions in the resource sectors like mining). However, although higher education levels are necessary to get a higher paying job, they appear to be insufficient, and in some cases (mainly at the vocational level) the labor market does not compensate workers as expected for the years invested. In fact, a non-negligible subset of highly educated people works in lower skill demanding sectors and occupations, such as clerks or sales. Figure 14 shows an example of this, in that the economic returns for people with a vocational education, using STEP survey data, are lower than the economic returns for a secondary education. In other words, wage workers who completed secondary school see positive returns to their investments; however, the extra years they paid for vocational education render negative returns. This contradicts results obtained with LFS data (red line), which show positive returns, though the difference between secondary and vocational is mild compared to the difference between vocational and university. This finding may indicate that the vocational system is not producing the level and quality of skills that employers are willing to reward; and could explain in part why many vocational graduates end
up in lower skill level industries and jobs. Part II corroborates this finding, and examines it in greater detail through its analysis of recent graduates of the vocational education and training system.

**Figure 14. Returns to Education by Education Level 2008-2012, For Wage Workers**

![Graph showing returns to education by education level 2008-2012 for wage workers.]

*Source: Author’s calculation using multiple data sources*

### 1.3 Skills Profile of the Lao Workforce

#### 1.3.1 Cognitive Skills

Rapid economic growth in the past decade in Lao has brought about technological transformation, which imposes higher demand for different skill sets—from basic to more specific cognitive, technical, and job-specific. As shown in the conceptual framework, skills are acquired throughout a person’s lifecycle. In less sophisticated industries (namely subsistence agriculture), basic skills acquired in primary school are sufficient, but as industry becomes more complex and local markets face increased exposure to global markets, skill requirements also change. These new skill requirements include the ability to write well, operate computers, manage complex machinery and equipment, communicate effectively with people (co-workers and clients), and speak foreign languages (namely English), among others. This section describes the extent to which Lao workers have been able to adapt to changing skill demands and whether they have (and effectively utilize) the skills required for a growing economy.

##### 1.3.1.1 Self-Reported Intensity of Cognitive Skills Usage

Among all basic cognitive skills, numeracy skills are most commonly used at home and work by people of all educational levels—reading and writing are infrequently used by most. Table 1 describes a measure based on the frequency of use of reading, writing and numeracy skills in order to assess how intensely people use them. Given that skills are dynamic, adapting to changes in technology and the structure of the economy, they need to be regularly used, kept up and strengthened throughout a person’s daily life at work or home. The bulk of the working age population uses basic numeracy skills such as calculating prices, costs, and even fractions, decimals, and percentages. More specifically, over 20 percent of males and females in urban

---

7 Using the STEP cognitive self-assessments for literacy and numeracy skills, which consist of an individual ranking system (described in Table 1), the analysis measures the level of cognitive skills of the Lao working age population. Literacy rankings correspond to the amount of reading and writing that individuals undertook in the previous 12 months. Numeracy rankings correspond to the number of numerical skills that each individual utilized in the same period.
areas perform multiplications and divisions, and about 10 percent of males in urban areas use complex mathematics (Figure 15). Numeracy skills are in high demand and employers report asking workers to use them (at various degrees and levels of frequency) in their daily work.

Table 1. Internal Comparison of Cognitive Skills (Literacy—Reading And Writing, and Numeracy)

<table>
<thead>
<tr>
<th>Measure</th>
<th>The longest document a respondent has read/written over the past 12 months</th>
<th>Number of the following numeracy skills a respondent possesses (e.g. 2 skills = 2 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Never read/written</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1 page or less</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2 to 5 pages</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>6 to 10 pages</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>11 to 25 pages</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>More than 25 pages</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Author’s description of the ranking system used

People living in urban areas are more likely to read, write, and use numeracy skills, and use them more intensely, than rural residents. There are striking differences in the level and usage of basic cognitive skills—reading, writing and numeracy—between the working age population living in urban and rural areas of Lao (Figure 15). This is hardly surprising given the low levels of educational attainment observed in rural areas. This is also a worrisome finding because basic cognitive skills such as reading, writing, and mathematics, which are mostly acquired through the formal educational system, influence academic achievement, labor market outcomes, and other social behaviors of workers (Heckman et al. 2006; Urzúa 2008; Hanushek and Wößmann 2008, 2012). The lack thereof decreases the work opportunities for people in rural areas, which furthers geographical inequality in Lao.

Apart from geographical differences, gender differences are also observed in the intensity of use of basic skills. Generally, males living in urban areas read, write and use math skills more intensely than all females (though marginally so compared to women in urban areas) and males in rural areas (Figure 15). Less than 12 percent of males and 9 percent of females read more than five pages of text in a year (indicating a score of 2 or less in the ranking).

The gap in numeracy skills usage between males and females is lower than the literacy gap; for instance, about 60 percent of both male and female respondents without formal education claimed to use at least two math skills in the past year. But there is a striking difference in how much males and females with university education use numeracy skills; about 67 percent of males use them significantly (top two categories in the ranking measure) while only 44 percent of females do the same. The homogeneity of use among workers with lower education categories is probably due to the fact that these workers perform similarly basic tasks; however, the same is not true for skilled workers, where the tasks performed by males and females differ broadly between and within occupational categories.
As expected, university graduates report reading and writing more often in their daily lives than less educated people; but very few of them use their literacy skills intensely, which points to a potential misuse of their skills at work. A person with a high level of education is expected to possess high cognitive skills, to use them more often, and to regularly benefit from them. In Lao, this is true for university graduates who report exercising their cognitive skills (by reading and writing) the most, compared to less educated people (Figure 16). However, the intensity is still surprisingly low; only a mere five percent of male and four percent of female university graduates read 25 pages or more in the previous 12 months. A growing economy with high hopes to move up the global value chain needs its best trained people to not only have the right skills, but also to maintain and upgrade them. The fact that only a small subset of Lao’s university graduates practices their literacy skills may indicate that many of them are likely working in professions that do not challenge them or allow them opportunities for professional growth.

Empirical analysis confirms that the relationship between educational attainment and cognitive skills usage is positive; the higher the education level of an individual, the higher the intensity of use. Figure 17 shows that compared to people with no education or primary education, those with secondary, vocational, and university education are significantly more likely to read, write, and use mathematics on a regular basis. For instance, university graduates report reading three times as much as secondary school graduates and twice as much as people with vocational training.
similar estimate is shown with respect to writing. Interestingly, people who had early childhood education but did not complete any other level of education report reading more intensely than those with no education and/or primary school completed. This shows that reading habits are likely formed early in life. Also, empirical analysis shows that people with any of three levels of post-primary education self-report using more complex math concepts than people with no education or primary level only. As expected, people with university level report using math most intensely.

**Figure 17. Education Level as a Determinant for Cognitive Skills**

![Education Level as a Determinant for Cognitive Skills](image)

Parental education and habits related to academic endeavors influence the habits of their children towards reading and writing later in life. As previously mentioned, the evidence of the influence of parents’ education on their children’s educational attainments is well established. But it is also important to highlight that parental influence on children goes beyond academic achievement and into learning and habits. In other words, parental educational practices at home serve as models for children. In Lao, parental education is directly associated with the educational attainment of children and subsequently how much reading their offspring partake in as adults. Figure 18 shows that males and females with educated parents have a reading intensity score above 2. On the other end of the spectrum, the offspring of parents with low levels of education are likely to read very little: males have an intensity score of around 1.5 when the mother has no formal education or primary level, and females have a score of 1 when the mother has no formal education, and 1.7 when the mother has completed primary school. These results give clear indications to policymakers that in order to break the cycle of transmission of low skills from parents to children, it will be imperative for them to proactively target children with undereducated parents.
1.3.1.2 Core Literacy Assessment

Low reading and writing intensity among all cohorts is likely a contributing factor to the low results obtained in the core literacy assessment taken by a subset of the working age population. As stated in the methodology section, a random subset of working age people took an assessment to measure literacy skills (vocabulary, sentence completion, and core literacy). The assessment measures skills attainment, beyond skills usage, among different groups in the population. Based on the distribution of all the scores obtained (the cut-off point for ‘passing’ the assessment was set at 33 percent), results show that most people in Lao cannot decipher text—even though a significant number of people (83 percent) have basic vocabulary skills, 71 percent passed the sentence completion section, and about half (53 percent) passed the core literacy assessment (Figure 19). These results illustrate a dire situation with respect to the command of literacy skills among the working population in Lao. For instance, the fact that 20 percent could not pass a basic vocabulary assessment indicates that a large segment is not suitable for even a basic job. These results also highlight the point that even when people possess the skills, their lack of usage or practice may render them unable to use them over the course of time.

---

8 The cut-off point was set at 33 percent instead of the standard 50 percent, because that section of the assessment reflects basic skills that most people should be able to command with minimal education levels. But this cut-off is arbitrary and meant for illustration purposes.
Although younger people report using basic cognitive skills more often and more intensely in their daily lives, they perform similarly to older generations in the literacy assessment. Literacy—reading and writing—and numeracy skills are critical components of a person’s human capital and evidence from around the world shows that a good command of these critical skills directly contributes to positive labor market outcomes. In the self-reported reading and writing section, younger people report reading and writing more intensively than older generations; however, the differences in their respective exam scores in reading and core literacy are not statistically significant. This finding raises further doubt about the quality of education, particularly alleged improvements in the quality of education achieved in the recent past.

Gender differences in the cognitive assessment results are minimal, and much smaller than differences in reported skills usage. There are clear differences of intensity of use of writing skills between males and females: 20 percent more females than males with university level education report writing between two to five pages of text in the last 12 months. Estimates get progressively worse for lower education levels. Females with vocational training have a reading intensity comparable to females with secondary education level. Writing intensity proved to be even lower than reading across the board; over half of all males wrote one page or less, and that number increased to 70 percent for females. These large differences, however, are not reflected in the basic literacy assessment scores. Most assessment takers passed the vocabulary section, with marginal differences between males and females (Figure 20). The sentence completion section, which requires a more complex set of skills (for example, identification of words, knowledge of grammar) yielded less positive results for all, and slightly lower for females, with a 32 percent failure rate. The core literacy section was clearly the most complex for all assessment takers; about 40 percent of assessment takers scored zero (out of eight) possible points. Interestingly, both males and females performed about equally poorly in this section. As such, even if men read and write more than women, they are likely using very basic levels of skills for tasks that do not require strong reading comprehension. This might explain why they score higher than women in medium literacy skills, but not in more complex literacy skills.

---

9 For this exercise, the analytical team set a passing line at 33 (out of 100) and then standardized the line to zero for illustration purposes. The interpretation is then, everything above the zero line is passing and anything below is not passing.
Although university graduates use their literacy skills at a lower rate than expected, the ETS assessment confirms that they do in fact have higher cognitive skills than the less educated. There are significant differences in assessment scores between people with no education or primary education, and people with secondary education. This may indicate that people acquire many critical cognitive skills during their formative years in school, and additional skills at the post-secondary level. One interesting finding is that vocabulary skills (and to a lesser extent reading abilities) seem to be acquired in primary and lower secondary school, and strengthened thereafter. This is evidenced by small differences in the vocabulary section results between people with secondary school and people with higher levels, but large differences compared to people with lower levels of education. More complex literacy skills seem to be acquired at all levels of education; this is apparent from the steepness of the ETS core line which represents the section of the assessment that requires people to decipher text, use their memory to retain information, and answer questions based on the information read (Figure 21). These findings may have important implications on the timing for imparting these skills; vocabulary and reading, for instance, should be taught as early as possible (even in early childhood) given their cumulative nature, thus better equipping people to tackle core literacy skills.
Despite university graduates’ overall better assessment performance, a non-negligible subset of them could not pass the core literacy cognitive assessment. This result indicates that despite high levels of education, some people are unable to tackle more complex literacy related tasks. One percent of university graduates failed the vocabulary and reading assessments and seven percent failed the core literacy assessment. On the other side, a high percentage passed with very few or no errors at all; 86 percent in the reading section and about 76 percent in the core literacy section (orange bar in Figure 22).

There are no significant differences in assessment performance between vocational and secondary graduates; most passed the reading assessment and about 75 percent passed the core literacy exam. The pass rate for the reading assessment for people with only primary level is 70 percent, and only 19 percent had no (or few) errors. However, the majority of them failed the core literacy assessment, indicating that they can read but have difficulty comprehending and discerning text in a useful manner. As expected, only 10 percent of people with no formal education passed the core literacy assessment. From this analysis it is clear that neither primary nor secondary schools are endowing the workforce with most core literacy skills, especially in rural areas.

**Figure 22. Distribution of Assessment Scores by Education Level (%)**

Differences by labor market status are also evident in the ETS assessment results, and results from an econometric analysis (Figure 23) yield surprising differences; benchmarked against employed people (assuming employed people are at 0), students perform better than all other groups, but unemployed people perform about 35 percent better than employed people in their ETS core literacy scores. An interesting finding in the descriptive analysis is that people actively looking for employment (classified as unemployed) report that they read more intensely and do more writing than employed people or students. ETS results also confirm that on average, unemployed people in Lao perform better than employed people in the core literacy assessment and the reading portion of the assessment. This result may seem counter-intuitive, as the standard expectation is that better skilled people are more likely to be employed. One possible explanation is that unemployed people are more likely to read the newspaper to find employment opportunities, and perhaps even improve their skills to access better jobs. Students also perform better than people who are employed, indicating that not only are they reading more in school,
but also that their education makes them better skilled than the average workers in the labor market. Inactive people, defined as those not actively looking for a job or studying, perform worse than all other groups on the ETS assessment.

**Figure 23. Assessment Score Point (0-100) Difference to Employed People for Cognitive Skills**

![Graph showing differences in assessment scores between employed and non-employed groups for ETS Vocabulary, ETS reading, and ETS core skills.]

The economic sector in which a worker is employed is correlated with how much (or how little) workers are asked to use literacy skills. Most people working in the agricultural sector and about half (average of males and females) of those in the manufacturing sector do not read or write on the job (Figure 24). Numeracy skills, however, are more utilized in the workplace across all economic industries. Even among the lowest skilled occupations, most respondents used at least one numerical skill. Service industry workers, who are also the most highly educated, use the most cognitive skills overall, and have a much higher level of literacy skills than the other two industries. Even so, over 50 percent of people working in services read and write one page or less, a finding that is consistent with the tracer survey data that shows that many workers report not making much use of the skills acquired in school (see Part II). Females, in particular, read and write significantly less. Skills use is particularly divergent among males and females in the manufacturing industry, which could once again be the result of the different types of occupations that they pursue within the industry (for instance, managers versus production line workers). The fact that the manufacturing sector does not intellectually challenge its workers may be part of the reason why the sector cannot attract the workers it needs (see demand side section), especially people with higher education levels. It remains unclear, though, whether the sector is unable to find the high-skilled workers it needs, or if it simply operates with low technology and thus has low literacy skill requirements.
A subset of managers, professionals and technicians are not required by their employers to read or write on the job. The need for a skilled workforce is a perennial issue in most countries; employers want their workers to have more adequate skills and often complain about the lack thereof. But employers do not always make good use of the skills available; in Lao, most economic activity requires very low utilization of reading and writing skills, a finding which is broadly in line with the tracer survey findings presented in Part II. Despite employers wanting their workers to have higher levels of literacy, numeracy and non-cognitive skills, about 20 percent of males and 30 percent of females in highly skilled occupations are seldom asked (or trusted) to use literacy skills in their jobs. Going beyond reading and writing, one way to interpret this general finding is that the education system may not be endowing workers with the skills that employers need. It may instead provide them with a set of less relevant skills which go largely unused.

Over half of all workers across occupations other than elementary and skilled agricultural jobs are required to do mathematical computations that include fractions, division, and even advanced algebra. However, across all occupations, male workers face more challenging numeracy tasks than females in the same occupational categories (Figure 25). In Lao, like in other developing countries, employment shifts away from agriculture and towards manufacturing and services industries are coupled with shifts within the industries themselves. In order for workers in Lao to continue to be relevant to industry needs, they not only have to command core cognitive skills that are relevant across sectors, but they also need to upgrade their (cognitive and other) skills to be able to shift across tasks as job requirements change. It appears that employers trust their male workers with more sophisticated numeracy skills, but they are still either not imposing more complex literacy tasks in higher skilled demanding occupations, or they are unable to find people suited to perform them.
1.3.2 Technical Skills

Technical skills, as described and analyzed in this section (and defined in Table 2), refer to being able to use (and using them regularly) equipment that requires training. Using technology at work includes knowing how to use computers (and software programs), and telecommunication devices such as fax machines, telephones, transmitter radios, among others. These technological tools are typically associated with work performed in an office setting by non-manual workers. Having mechanical skills refer to being able to drive vehicles such as cars, trucks and three wheelers. Another set of skills refers to being trained to work on and/or repair electronic equipment and heavy machinery. The analysis in this section assumes that if a person is able to use these distinct and complex machines and equipment they most likely had specific training that not only equips them with a specialized skill but also enables them to be more productive.

In most cases workers with higher technical skills are less likely to rely purely on their physical strength or perform strictly manual work. On the opposite side, if a person is required to use physical force it is very likely that he or she has no specialized training and his or her skill is purely based on physical attributes (namely strength). Lastly, having autonomy at work is defined as having the ability to make decisions with minimal oversight and being trusted to use intellectual skills rather than having to rely on a set of given instructions to perform (often repetitive) tasks. Having more autonomy at work is interpreted to be a good indication of having a set of intellectual skills that are trusted by employers. This section focuses mainly of these sets of skills: autonomy and technology skills, and physical work.
### Table 2. Description of Technical Skills

<table>
<thead>
<tr>
<th>Key Technical Skills</th>
<th>Summary Description of Technical Skill and Questions Used to Derive Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technology Use</strong></td>
<td>Use of technology at work (higher = more use)</td>
</tr>
<tr>
<td></td>
<td>Do you regularly use communication devices at work?</td>
</tr>
<tr>
<td></td>
<td>Do you use communication devices outside of work?</td>
</tr>
<tr>
<td></td>
<td>Do you use computer at work?</td>
</tr>
<tr>
<td></td>
<td>Have you used a computer in the past 3 months?</td>
</tr>
<tr>
<td><strong>Mechanic Use</strong></td>
<td>Use of vehicles at work (higher = more use)</td>
</tr>
<tr>
<td></td>
<td>Do you drive a car, truck or three-wheeler outside of work?</td>
</tr>
<tr>
<td></td>
<td>Do you drive a car, truck or three-wheeler at work?</td>
</tr>
<tr>
<td><strong>Machinery Use</strong></td>
<td>Use of machinery at work (higher = more use)</td>
</tr>
<tr>
<td></td>
<td>Do you repair or maintain electronic equipment at work?</td>
</tr>
<tr>
<td></td>
<td>Do you operate or work with any heavy machines at work?</td>
</tr>
<tr>
<td><strong>Autonomy at Work</strong></td>
<td>Working autonomously (higher = more freedom)</td>
</tr>
<tr>
<td></td>
<td>How often do you have to undertake tasks that require at least 30 minutes of thinking at work?</td>
</tr>
<tr>
<td></td>
<td>How much freedom do you have to decide how to do your work in your own way?</td>
</tr>
<tr>
<td></td>
<td>How often does the work involve carrying out short, repetitive tasks?</td>
</tr>
<tr>
<td></td>
<td>How often does the work involve learning new things?</td>
</tr>
<tr>
<td><strong>Physicality at Work</strong></td>
<td>Physical activity at work (1 = lifts over 50 lbs, 0 is not)</td>
</tr>
<tr>
<td></td>
<td>Do you lift or pull anything with weight at least 50 pounds at work?</td>
</tr>
</tbody>
</table>

A small share of people with university degrees is given autonomy to use their decision-making skills at work. Most people that acquire higher levels of education want work that makes good use of their skills, allows them freedom to act on their ideas, and rewards them accordingly. A ranking of autonomy and technical skills (where 1 is low autonomy and use of technical skills and 3 is high) reveals that the level of autonomy to make decisions and think creatively at work is indeed positively correlated with education levels. For instance, a larger share of women with university education, compared to lower education levels, report being able to make decisions and be creative at work. Nonetheless, the data also shows a concerning picture regarding how

---

10 In the technical skills ranking, Level 1 indicates someone with no use or very limited use of technical equipment such as computers and telecom at work or home, Level 2 is someone who uses it with a minimal to average intensity, and Level 3 is assigned to someone with average to regular usage rates.
little autonomy to think and learn people are allowed in their jobs, including people with vocational and university education. Figure 26 shows that well over 55 percent of men and women with higher education levels report having very low (Level 1) autonomy. This could be interpreted in various ways, but two possible explanations are that jobs in Lao do not require much thinking, and/or employers do not trust their workers, even university graduates, to think on their own.

Most women that report being allowed to think, learn new things, and make decisions freely at work are in the service sector; the share is low, however, at around 10 percent. For both males and females the service sector seems to be where jobs with more freedom to make decisions, act on ideas, and obtain new skills are more readily available. For females, a worrying picture emerges in the manufacturing sector, where almost all of them are performing repetitive tasks and doing very little (or no) new learning. It is likely that most women in the manufacturing sector are working in jobs with an assembly line structure—most striking is that few of them hold managerial positions in the sector, where they are free to make decisions.

**Figure 26. Freedom to Make Decisions, by Gender, Education and Economic Sector**

Workers with higher levels of education use technical skills, such as managing computers and telecommunications equipment (among other types), and use them more intensely than others. Using technical equipment at work, from calculators to computers, typically requires a person to have at least a basic level of technical skills. As in the cognitive section, the analysis in this section not only focuses on whether a person uses technical equipment at work (indicating at least a basic level of technical skills) but also with what intensity he or she uses it (indicating the level of command of the skill). It is clear that educational level correlates with use of technical equipment at work; workers with higher levels of education use technical equipment more than others. Over 80 percent of university graduates, males and females, use technical equipment frequently. Only 10 percent of males (and five percent of females) with secondary education uses technical equipment at work intensely; most use it but on a limited basis (Figure 27).
Knowing how to use technical equipment is often associated with higher wage premiums; this is true in Lao, where people with higher technical skills have better remunerated jobs. The evidence points to clear wage premiums in developing countries for computer knowledge. Evidence shows that when there is a shortage of computer skills, as is the case in Lao, employers are willing to pay higher salaries to workers with those skills. In Ecuador, for instance, controlling for an extensive set of observables, a study finds that earnings between users and non-users of computers at work differ by around 20 percent (Oosterbek and Ponce, 2011). Studies from other developing countries find that use of even basic technology, such as calculators, telephones, fax machines, and other office equipment, yields positive wage premiums (Di Nardo and Pischke, 1997; Drolet and Morissette, 1998). Figure 28 shows that males and females in Lao reporting high intensity in the use of computers (Level 3) are mostly concentrated in higher skill level occupations. The opposite is true for workers in elementary occupations.

Physical work is typically associated with lower levels of intellectual skill and more physical strength. In Lao, however, physical jobs are commonplace, even among people with higher education. Figure 29 shows that there is a correlation between the level of education and the use of physical strength at work, where around 90 percent of men with no education do heavy lifting (more than 50 pounds) at work regularly. The estimate is similar for male workers with primary and secondary levels of education. It is somewhat lower for males with vocational education, at
around 60 percent, and 20 percent for workers with university degrees. Nonetheless, it is surprisingly higher than would be expected for higher levels of education, which can be interpreted loosely as an indication of high physicality of jobs across all education levels. The estimates for females are lower, as would be expected, but about 35 percent of female vocational graduates are expected to do heavy lifting in their jobs.

**Figure 29. Physical Labor (Lifting More Than 50 Pounds) by Gender**

There are clear sectoral and occupational differences in the use of physical labor at work, but these activities are not uncommon for higher skilled workers. Most physical work is concentrated in the agricultural sector, at over 90 and 70 percent for males and females, respectively (Figure 30). In the manufacturing sector, 92 percent of males do physical work compared to 32 percent of females. Interestingly, women in the services sector do slightly more physical work than women in the manufacturing sector, indicating that they work in physical occupations within that sector. For instance, about 50 percent of women in sales-related occupations report doing heavy lifting at work. Among highly skilled occupations, 30 percent of males and 18 percent of females report also doing heavy lifting or physical work.

**Figure 30. Physical Labor (Lifting More Than 50 Pounds) by Occupation and Gender**

Among all the technical skills reviewed, having ICT-technology skills and being able to drive a motorized vehicle are the two technical skills with the highest returns to wages. No other technical skill has a significant effect on wages. Figure 31 shows the estimation results derived
from an exercise measuring each skill’s effect on wages, which finds that ICT skills offer the highest rate of return. Driving a motorized vehicle, such as a car, truck, forklift or other, also provides a significant return. Even though the return is positive for machinery operating skills, the estimate is not statistically significant. The same is true for the other two skills, autonomy and physical labor. In Figure 31, the dark blue bar does not take into account (or control for) a person’s educational background, while the red bar (controls for or) takes education into account.

**Figure 31. Returns to Technical Skills**

![Figure 31](image)

**Source:** STEP Household Survey 2011/12

**Note:** Series 1 excludes education level as a control variable, series 2 includes it.

As technical skills are critical to obtaining quality jobs with higher incomes, they should receive greater emphasis by educational institutions, with a special focus on the poor. Skills development is typically advocated as a tool for improving the labor and welfare outcomes of the working poor. Figure 32 breaks down the population (at the individual level) by wealth groups, where the people in the group between 0 and 20 have the least assets and the people in the 80 to 100 group have the most. From this figure it is clear that people with higher technical skills are also among the wealthier groups; very few people, male or female, in the wealthier groups (60-100) report having technical skills at Level 1. The fact that the poorest also have the least technical skills is unsurprising, as being poor is also correlated with having lower education levels. However, knowing that the relationship between wealth and this critical set of skills is still so prevalent gives good insight to policymakers that if the working poor and vulnerable groups are not directly targeted, they are unlikely to escape the vicious circle of inadequate education, poor training, low productivity, and poor quality jobs with low wages. Interestingly, there is no clear correlation between autonomy at work and wealth, though the reasons for this are unclear.
Much like wealth, parental educational levels also influence a person’s job category, and how much or how little physical work a person is required to do at work. Parents with university education are less likely to have offspring who undertake heavy physical labor at work, and more likely to have tech savvy offspring. As shown in Figure 33, about 28 percent of females and 55 percent of males with university educated fathers work in jobs that require them to use physical strength. The estimate is slightly lower for people with highly educated mothers. For offspring of fathers with primary (or no formal) education, the estimate is much higher, about 90 percent for males and 75 percent for females.

The exact opposite is true when it comes to the use of technical skills; about 70 percent of males and 75 percent of females with highly educated fathers use technology at work, whereas the estimate is nearly half of that for offspring of parents with low education (Figure 33). Interestingly, the estimate for having autonomy at work for people whose parents are highly educated is only slightly higher than that of people with lower educated parents; the same is true for people with mechanical skills (able to drive a car, truck or larger vehicle, and doing so regularly). This indicates that autonomy at work and driving skills are less correlated with parental education.
1.3.3 Non-Cognitive Skills

While foundational cognitive skills and technical skills are both critical to improve efficiency and outcomes, non-cognitive skills, or soft skills, are critical for workers to be more adaptable to a changing environment and to act with professionalism. In this section, non-cognitive skills are divided into two comprehensive groups, one which includes key personality traits, and the other which includes behavioral traits.

Non-cognitive skills are in high demand by employers in Lao, and are correlated with earning higher wages. Various studies (Heckman et al. 2006; Mueller and Plug 2006; Urzúa 2008; Glewwe et al. 2011) find a clear relationship between employment and occupation status (Borghans et al. 2008; Heckman, Stixrud, and Urzúa 2006; Urzúa 2008) and non-cognitive skills. There are studies that argue that in the long-run, soft skills are a better determinant of labor market outcomes than hard skills (Goff and Ackerman, 1992), but this is debatable, especially in developing contexts where hard skills are not widely available.

1.3.3.1 Personality Traits

Personality traits are part of the non-cognitive set of skills, also sometimes referred to in the literature as “soft” skills (as defined in Table 3). These traits are broken down further into the “Big Five” skills, which are often measured across countries. The Big Five represent broad domains or dimensions used to describe human personality, and they emerged as a robust model
for understanding the relationship between personality and various academic behaviors. The Big Five are: 1) Openness (inventive/curious vs. consistent/cautious), 2) Conscientiousness (efficient/organized vs. easy-going/careless), 3) Extraversion (outgoing/energetic vs. solitary/reserved), 4) Agreeableness (friendly/compassionate vs. cold/unkind), and 5) Neuroticism (sensitive/nervous vs. secure/confident). The following section presents measures of people’s intensity in each trait, whereby a higher score is better; for instance, a low level of intensity in one trait is classified as Level 1, while high intensity in that trait is classified as Level 4.

Table 3. Definitions of Key Personality Skills

<table>
<thead>
<tr>
<th>The Big Five Factors</th>
<th>Personality Facets that make up each Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness to Experience</td>
<td>Imagination, Artistic Interests, Depth of Emotions</td>
</tr>
<tr>
<td>Conscientiousness 'Work Ethic'</td>
<td>Sense of Competence, Orderliness, Sense of Responsibility</td>
</tr>
<tr>
<td>Extraversion</td>
<td>Warmth, Gregariousness, Assertiveness, Activity Level, Excitement-Seeking, Positive Emotions</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>Trust in others, Sincerity, Altruism, Compliance, Modesty, Sympathy</td>
</tr>
<tr>
<td>Natural Reactions (Analysis uses Emotional Stability)</td>
<td>Anxiety, Angry Hostility, Moodiness/Contentment, Self-Consciousness, Self-Indulgence, Sensitivity to Stress</td>
</tr>
</tbody>
</table>

Evidence largely derived from the literature in industrial psychology shows that there is a relationship between personality traits and performance at work (see Barrick, Mount and Judge, 2001). A person’s job performance can be determined by situational and personality factors; the work environment is an example of a situational factor, whereas the actions and reactions a person has towards particular situations at work, how resourceful they are, how well they tackle problems, whether they complete tasks, and how they interact with others, are all factors related to someone’s personality (Boshoff and Arnolds, 1995). Studies in different contexts show that conscientiousness is one of the best predictors of job performance in the United States of America and Europe (Salgado, 1997). Others also highlight the importance of extraversion and conscientiousness as good predictors for job success across occupational categories (Tokar and...

---

11 The theory based on the Big Five factors is called the Five Factor Model (FFM). The Big Five framework of personality traits are described in Costa and McCrae, 1992.
Subich, 1997 and Schneider, 1999). Though conscientiousness often emerges as a good predictor, the relationship of other Big Five categories is still not well established, and some advocate caution when extrapolating the results to different contexts because they tend to be context-specific. Either way, it is important to understand, at least descriptively, what the relation is between the Big Five personality traits and other factors.

In Lao, higher levels of conscientiousness are found among males with vocational education, but with only subtle differences compared to others (Figure 34). Conscientiousness is a trait that refers to people with self-control, who are organized, able to carry out tasks in an orderly fashion, determined, hard-working, and persistent. Conscientious people are typically very focused on achieving a goal and exhibit behaviors that can be (negatively) perceived as compulsive or fastidious. It is easy to assume that this trait is most often identified in highly educated people, as they have shown perseverance in their education. However, this is not always the case—in fact, the group with the highest share of “highly conscientious” (Level 4) people in Lao is males with vocational education (25 percent) and males with no formal education or partial primary education level (around 22 percent). But a similar (or even larger) share of people with no education/partial primary has scores of 1 and 2 combined. Even though few university graduates have Level 4, the largest share obtained a Level 3, and very few have Levels 1 or 2. One interpretation of this result is that even if university graduates are not extremely conscientious, most of them have relatively high levels, thus making someone in this group more likely to have this trait than not.

Figure 34. Level of Conscientiousness, by Gender

Extraversion and job performance (for which occupational task is a proxy) are clearly correlated in Lao; more extroverted people are more likely to work in highly skilled jobs, especially in the services sector. Extraversion is often defined as being socially engaging, assertive, and able to relate easily to others. An extrovert is sometimes characterized as someone with a positive outlook, which influences a positive outcome. As a result, some argue that this trait is most suitable for managers who have to inspire positive attitudes in others, and customer service providers because their job requires constant interaction with people. In Lao, the relation between extraversion and occupation is positively correlated for males; the more skilled the job, the more extroverted the person (Figure 35). The relation is also positive for women, but less accentuated. Among all highly skilled males, over 90 percent score either a Level 3 or 4, whereas among elementary workers, only about half score a Level 3 or 4.
Openness to new experiences and ideas is often viewed as a necessary trait in order to accept change and promote innovation. Males in the services sector score higher than males in other sectors, and women in general, regarding this trait. A person who is open to new experiences and new ideas is often associated with being an innovator or someone who embraces variety. Openness is defined as intellectually curious, interested in variety, willing to try new things, and welcoming change. The evidence on the relationship between openness and being a successful worker is mixed; for instance, Johnson (1997) and other studies find that successful workers have lower scores in openness. On the other hand, some studies find that this trait is associated with success but generally only for some specific occupations, such as being a trainer (Vinchur et al. 1998). For instance, people in the manufacturing and agricultural sectors, especially in lower skilled occupations that perform repetitive tasks, may not need this trait as much as people in the services sector where they face change more often. In Lao, more than 75 percent of males in the services sector score a Level 3 or 4, whereas only 60 percent of males (or less) have similar scores in the agricultural and manufacturing sectors (Figure 36). For women, estimates are equal in services and manufacturing but strikingly lower in agriculture (only 40 percent).

Little is known about the relationship between income and openness. In Lao, however, being open to change has a positive effect on income. Someone who is not open to change is very conservative and uncomfortable with unfamiliar people/places/things and unconventional experiences. Descriptive data show that wealthier people in Lao are also more likely to be more
conservative (or less open to change). However, women who are more open to change are also likely to earn higher wages. This result essentially measures the return that women receive by having more of that skill. The precise exercise measures what the effect of openness is on wages (as a proxy for wealth), and it takes into account factors such as geographic location, sector of work, age and experience, and education level. The effect is larger for women than men.

**Figure 37. Economic Returns to a Key Personality Trait “Openness to New Experiences”, for Women**

There are clear differences in how agreeable people are depending on their educational level; and although this skill is highly valued in lower skilled workers, they exhibit the lowest levels of agreeableness. An agreeable person is fundamentally sympathetic to others and eager to help them. Agreeable people are accepting of others and believe in their good intentions; a disagreeable person on the other hand, is likely to dispute others’ opinions and be skeptical of their intentions. Some studies find that because agreeable people tend to be cooperative (rather than competitive) in nature, they are excellent team members and likely to succeed in team work oriented tasks and environments (Judge et al., 1999). Team work emerges in Lao as one of the most important characteristics sought by employers, especially in lower skilled occupations. Descriptive data, however, shows that lower skilled workers are in fact less agreeable and that most males (and females to a lesser extent) in higher skilled occupations are more agreeable, with a Level 4 or 3 (Figure 38). Employers want all workers to be team players, but especially workers with limited cognitive skills; therefore, whenever possible, it is ideal to instill this skill in students at the start of the educational cycle, rather than attempt to remedy it later in life or at higher educational levels. As shown in Figure 37, however, there are no measurable effects on the returns to wages (and therefore limited incentives) from having more of this skill.
1.3.3.2 Behavioral Traits

There are five different behavioral non-cognitive skills that often get cited in the psychology literature as being potential determinants for success at work, and in life more generally. These are: having grit, being able to make decisions, having well developed interpersonal skills, having an adequate level of risk tolerance, not being shortsighted about the future, and not having a hostile attitude toward others and things. Each of these behavioral traits have merit of their own, but they seldom garner enough attention, especially in the design of educational curricula, which some argue could be strengthened by focusing on these skills early in the educational experience. In this section, only a few of these are discussed, mainly the ones that are most demanded by employers: Grit, Decision making, and Risk taking.

Grit is associated with perseverance and being motivated toward achievements in the long-term. Having grit allows a person to overcome obstacles and challenges and to be resilient. In some contexts, grit alone can predict academic success, for example high school grade point average in the US, even for disadvantaged groups (Duckworth and Quinn 2009; Strayhorn, 2013). Others find that grit also predicts happiness and life satisfaction (Singh and Jha, 2008).

Women earning higher wages have more grit than people in all other wage groups. Women exhibit more grit than men altogether, and indeed women in the highest wage quintile (wages are broken down into 5 quintiles, from lowest to highest) have twice as much grit as men in that same wage group (Figure 39). Among males, the highest and lowest wage earners have the highest levels of grit, whereas those in the second quintile have the least grit. For males, grit gives positive returns; an exercise measuring the rates of return of grit on wages, accounting for other socio-demographic factors, shows that for males, more grit is associated with higher wages. For women, however, empirical results show that when accounting for other socio demographic factors, the relationship is still positive but not statistically meaningful. Thus, unlike for men, having more grit does not translate into higher wages (for women) (Figure 40).
Decision making is a trait that requires balance and measure. When a person is too quick to make decisions, they may not fully think these through, acting impulsively with imperfect information. On the other hand, being unable to make decisions can be very inefficient as it may paralyze a process that requires fast action. In psychology, the decision making process is regarded as a cognitive process resulting in the selection of a course of action among several alternative scenarios (Wang, 2007).

There is a clear and positive correlation between the ability to make decisions and higher education levels (and thus among higher skilled workers). In Laos, descriptive data show that people with university degrees have high levels of decision making whereas people with lower levels of education, especially females, are less able to make decisions. A similar finding is true among managers and professionals, compared to workers employed in elementary occupations.
This result is not surprising; the challenge is to help workers along all skill levels to strike the right balance with respect to this skill.

Male students and young people are more likely to take and accept risks than older cohorts and employed people. Indeed, older people in Lao are almost entirely intolerant to risk taking, which is understandable given that they usually have less time to make up for losses if risks lead to negative outcomes. Risk aversion relates to one’s willingness to be exposed to uncertainty, and to attempt to reduce that uncertainty. Data shows that older people consistently were more reluctant to accept a bargain with an uncertain payoff, over another bargain with a more certain, but possibly lower expected payoff. Being too much of a risk taker, however, is also not optimal; as with decision making, helping people strike a measured approach to risk taking from early on can probably help them have a more stable outcome later in life.

Box 1. Worker Skills in Civil Service, Communication and Finance Sectors

The education and health sectors absorb a disproportionately large number of skilled workers. Workers in education and health comprise 12.2 percent of total employment in non-agricultural sectors, but they absorb as much as 33.4 percent of all vocational and university graduates working in non-agricultural sectors (information and communication and finance also have high concentrations of highly educated people). Because of their highly skilled profile (Figure 1a), the majority of workers in these sectors work as managers, professionals, technicians, or members of the armed forces (Figure 1b).

Skilled workers in the health sector, however, have the lowest literacy levels, compared to the education and other skill-intensive sectors (Figure 2). All skilled occupational categories in the health sector obtained the lowest average literacy skills scores (compared to education and other skill-intensive services), which may be the result of their having the highest share of vocationally trained workers within their pool of highly-skilled workers. This points once again to a clear division between the level of skills obtained in university (on the high end of the spectrum) and vocational schools (on the low end of the spectrum).
In terms of non-cognitive skills, health workers have stronger grit, thoughtfulness in decision making, and interpersonal skills, but tend to discount their future more heavily and are less likely to take risks, than the other two groups (Figure 3). As discussed, having grit is having a commitment to achieve a goal, and thoughtfulness in decision making and interpersonal skills are identified as good predictors for labor market success. However, health workers are reluctant to take financial risks, and heavily discount the value of their future incomes; these characteristics indicate lower trust in their own abilities and lower levels of patience than workers in education and other skill-intensive service sectors.

Figure 3. Behavioral Skills of Highly Skilled Workers in Skill-Intensive Service Sectors

Source: STEP Household Survey 2011/12
1.4 International Comparisons

1.4.1 International Comparison of Educational Attainment

Compared to other countries in East Asia and the Pacific, the average years of schooling in Lao (for people over 15 years old) is low at around 5 years in 2010 (Figure 41). The average number of years of schooling in Lao is only slightly higher than in Myanmar and Papua New Guinea: the first one a country with limited openness to the world, and the second one a country suffering from on-going violence. This comparison indicates that access to education in the last decade has expanded in Lao, but the pace has been significantly slower than in other countries with similar starting points in 1995 (for instance, Vietnam).

Figure 41. Comparison of Average Years of Schooling

![Comparison of Average Years of Schooling](image)

Source: World Bank, 2013a, drawing from World Bank, 2012e

A comparison of tertiary education among several Asian countries shows that in Lao and Cambodia, half of all tertiary degrees in 2010 were in the social sciences, business and law (Figure 42). These high levels of concentration in one area of study not only affect the quantity of graduates in non-social and business administration fields, but it also affects the quality of those graduates (which are mass produced with varying degrees of quality) and their ability to be absorbed by the labor market. Other countries, especially more developed countries like Korea, Japan and Malaysia, have a much more diversified pool of graduates, with higher representation of science and engineering graduates.
1.4.2 International Comparison of Cognitive and Technical Skills

At the general level, people in Lao report being able to read, write, and use numbers at similar rates to people in comparable countries around the world. The STEP methodology was applied to various countries around the world, which allows for cross-country comparisons. The analysis presented in this section is based on preliminary data obtained from Bolivia, Vietnam, Sri Lanka, and the Yunnan Province in China, in addition to Lao PDR. Cognitive self-assessments reveal that as in all countries, with the exception of Sri Lanka, over 85 percent of people in Lao read at home or at work. The estimates for writing and numeracy are similarly high in Lao, and higher than all other comparable countries (Figure 43).

The intensity of reading in Lao is much lower than in comparable countries in the region, and elsewhere, but with similar patterns among gender and age groups. Nearly three-fourths of respondents fall into the low intensity of reading bracket. Even at the highest educational levels, reading intensity is still much lower in Lao than in other countries—only six percent of university graduates and four percent of current university students had high levels of reading intensity, compared to 62 percent and 72 percent, respectively, in Vietnam. Vietnam and Bolivia, like Lao, also show higher reading intensity for males than females. All countries exhibit similar patterns of cognitive skills use by age, whereby younger people read more than older ones, and where higher levels of education impact both the likelihood, and to a lesser degree the intensity, of cognitive skills use.

---

12 Comparisons across countries are based on descriptive data, with results that have not been weighted or scaled.
Although a large number of people in Lao are able to read and do so, their passing rate for the literacy assessment is significantly lower at all educational levels than in other comparable countries. Only 67 percent of people in Lao passed the assessment, compared to 83 percent in Bolivia, 86 percent in Sri Lanka, 95 percent in Vietnam, and 99 percent in Yunnan Province, China. Most people with a post-secondary education passed the assessment in Lao, but only 35 percent achieved perfect scores, compared to 81 percent in Vietnam. Lao also underperformed at lower educational levels—only 32 percent of people with secondary schooling achieved perfect scores, compared to nearly 65 percent in Vietnam. In fact, people with only primary schooling in Vietnam performed almost on par with post-graduates in Lao (the same proportion obtained perfect scores) (Figure 44).

Lao also presented the lowest intensity of use of technical skills among the five countries surveyed. As industries grow, so do the skill requirements from workers to remain competitive. One key technical skill whose demand is one the rise is computer use. This is especially
important in the services sector where ICT use is most prevalent and where a large segment of the educated population currently works. Unfortunately, compared to other countries, computer use at work in Lao is the lowest at less than 15 percent, compared to Vietnam (35 percent) and Yunnan (55 percent) (Figure 45). With respect to computer use at work and home, only 20 percent of people in Lao use computers at all, whereas the estimates for other countries exceed 35 percent, and go as high as 63 percent in Bolivia. It is unclear whether employers in Lao do not have computers for workers to use or whether workers do not have adequate enough skills in this area to be entrusted with computers. Either way, it indicates that compared to other countries, ICT is not as commonplace in industry in Lao as it is in other developing economies.

**Figure 45. International Comparison of Technical Skills—Computer Use**

![Graph showing computer use at work and all across countries](image)

*Source: STEP Household Survey 2011/12*

Communication skills are viewed as a critical technical skill by most employers in Sri Lanka and Vietnam. Although employers in Lao share this view, they seldom rely on their workers to use communication skills in their work. Foundational skills such as communication skills (writing and speaking) are typically first acquired through the formal education system and improved over time. These skills are critical to the success of any worker and they are often viewed as a must have skill for a person to progress in his or her career. The STEP survey asks whether a person has to make formal presentations at work, to clients or coworkers. Results show that over 50 percent of workers in Vietnam and Sri Lanka (urban area only) are expected to command this skill and make presentations to colleagues, clients, or peers; in Lao (urban area only) only 10 percent of workers are asked to use presentation skills (Figure 46). It is clear from employer surveys in Lao (see next section) and employers in other comparable countries that being able to present ideas orally and in writing and communicate well at work are valued skills. However, in Lao, unlike other countries, this skill is either not readily available or goes unutilized due to employers’ lack of trust.

Another proxy for employers’ trust is the amount of freedom they give their employees to perform independently and/or supervise other workers. In Lao and Bolivia, only around 35 percent of workers report being trusted by their employers to supervise others. In Sri Lanka and Yunnan the estimate is higher, between 40 and 45 percent.
Compared to other developing contexts, workers in Lao do the least critical thinking and learning new things at work and report the highest estimate of physical work. Using a measure between 0 (indicating that no learning, thinking or physical work are done) and 3 (doing large amounts of learning, thinking and physical tasks), it is clear that workers in Lao are the group that is least intellectually challenged and/or stimulated at work. Workers in Bolivia and Sri Lanka report having to do critical thinking three times as much as workers in Lao (Figure 47). Workers in all other contexts report a significantly higher rate of learning new things at work than in Laos. However, most workers in Laos report having to perform physical challenges at work; the estimate of physical work is lower for all other countries.
1.4.3 International Comparison of Non-Cognitive and Behavioral Skills

As previously mentioned, behavioral and personality traits play a crucial role in explaining wage differences and labor market outcomes. According to a study by Allport (1937), personality traits persist over time and are non-situational. Using the Big Five Taxonomy (agreeableness, emotional stability, openness to new things, conscientiousness, and extroversion), as defined in the previous section, allows us to gauge how the personality of Lao workers compares to the personality of workers in other countries. Knowing how workers fare on these traits matters because evidence points to a relationship between them—especially agreeableness and conscientiousness—and positive reciprocity and trust (Dohmen, Falk, Huffman and Sunde, 2008).

Based on this analysis it is clear that workers in Lao are less agreeable and less open to new ideas than workers in all other countries surveyed. Their level of conscientiousness and extroversion is lower than all countries except Vietnam (Figure 48). Even though each context and culture is different, it is interesting to find that Lao workers self-report having lower levels of these personality traits, especially those traits (agreeableness and conscientiousness) which seem correlated with trust and reciprocity.

Figure 48. International Comparisons of Non-Cognitive (Personality) Skills

Lao’s workers also have less grit and are less likely to take risks than workers in other comparable countries. Having grit is having a commitment to achieve a goal and is identified as a predictor for labor market success (Duckworth et al. 2007). While there is large heterogeneity in the level of grit among Lao’s workers (see previous section), compared to other countries, workers in Lao have significantly less grit (Figure 49). Similarly, Lao workers are significantly less likely to take risks than workers in other countries, especially in Yunnan, China. People in most countries including Lao have high discount rates for the future, indicating that they have lower levels of patience than people in Vietnam. A study by Benjamin, Brown, and Shapiro (2006) shows that cognitive abilities have an inverted association with discount rates; in other words, people with high cognitive abilities are more patient (high low discount rates). Similarly, people with high levels of risk aversion are associated with having low levels of scholastic aptitude, indicating that they are less willing to take risks because they have low trust in their abilities. Laotians have the lowest tolerance for risk and the lowest level of decision-making ability compared to people in the other countries analyzed.
Figure 49. International Comparisons of Non-Cognitive (Behavioral) Skills

![Bar chart showing comparisons of non-cognitive skills across different countries](chart.png)

Source: STEP Household Survey 2011/12

2. Wages and Earnings

Earnings in Lao vary widely across economic sectors, occupational categories, and geographic areas—higher skilled professions in urban areas yield the highest wages. It is not unusual to find higher skilled workers and better educated people in Vientiane (the capital) and other urban areas than in rural and remote areas. It is not surprising, therefore, that professionals in Vientiane earn higher wages than skilled agricultural wage workers in Luang Namtha in the north. For instance, Figure 50 shows that the wages\(^{13}\) for highly skilled workers such as managers, professionals, and technicians, are higher than they are for clerical and service workers. The figure also confirms that there is a geographical dimension to wages; wages (especially for highly skilled occupations) in the top six provinces\(^{14}\) where wage employment is most active are higher than wages in the rest of the country. These patterns are likely due to skilled workers sorting themselves into cities where they find better job opportunities, encounter higher demand for their skills (which is rewarded by better wages), and have better information flows about jobs and wages, which allow them to move across jobs and increase their earning potential (Rossi-Hansberg, 2012). Generally, increased wage premiums in urban areas influence internal migration; even though the majority of the population still lives in rural areas, some internal movement, likely motivated by economic reasons, has been observed in Laos in the last decade. It can be argued that people in rural areas who pursue educational levels beyond primary school typically do so to be better equipped if and when they migrate to larger cities to access better remunerated wage work in the non-agricultural sector.

---

\(^{13}\) Wages here are average net payments earned by individuals aged between 25 and 55 years working in non-agricultural sectors by occupation.

\(^{14}\) The six provinces are Vientiane capital, Savannakhet, Champasak, Luang Prabang, Luang Namtha, and Khammouane.
There are significant differences in earning patterns between wage workers and the self-employed, where wage workers bring in higher salaries on average. From the analysis previously shown it is clear that low and unskilled workers have a lower probability of working in a firm as wage workers, especially in the higher paying sectors of the economy which require workers to have some formal education completed.

The left panel of Figure 51 shows the distribution of (nominal hourly) wages (in logs) while the right hand side panel shows the distribution of net profits earned (converted to hourly wage and logs for comparability) by self-employed workers. The red line on the left represents the minimum wage line for 2010 (adjusted to 2012 prices, and prior to the recent 25 percent rise) and the right side line is the new minimum wage line. Relative to the minimum wage line for 2012, about 16.3 percent of self-employed people across the non-agricultural economy have earnings below the minimum wage; the estimate is 18 percent in the services sector, where a large number of self-employed people work. On the other hand, less than 5 percent of wage workers earn below the minimum wage across the economy, and the estimate is lower in the services sector (Figure 51).

---

15 As in other parts of the report, the hourly wage rates for wage workers are computed by dividing monthly, weekly, or daily net incomes from wage/salary by hours worked during that period. The maximum weekly hours worked are assumed to be 112. The hourly net profits of the self-employed are computed by dividing monthly or weekly net profits generated by their business by hours worked during that period. Again, the maximum weekly hours worked are assumed to be 112.

16 The red lines in the figures show the minimum wage rates in 2011 (left) and 2012 (right). The Lao government has increased the nominal monthly minimum wage rate for workers by 20 percent, from 290,000 kip in 2011 to 348,000 kip in 2012. Applying the average inflation rate in 2012, 4.34 percent (adjusted for inflation), the minimum wage rate in 2011 is considered to be equivalent to approximately 302,600 kip in the 2012 price level. The average inflation rate in 2012 was computed using the headline inflation rate between January and October 2012 from Lao PDR Economic Monitor, November 2012, The World Bank.

17 The share of workers to the left of the red line was smaller prior to the minimum wage rise in 2012.
The minimum wage applies legally to all employees and employers who carry out activities in labor units, and also to persons working under employment contracts that are three months or longer. A written contract not only states the specific terms of the person’s employment, as well as other non-wage benefits, but it also entitles workers to protection from individual and collective dismissal. The Lao government also benefits from decreasing informality by increasing the number of people whose incomes can be taxed, the “tax base”.

In Lao, in the non-agricultural economic sectors, approximately 90 percent of workers are classified as self-employed or unpaid workers. Given that a large share of self-employed workers earn below the minimum wage, their likelihood of working informally (without a contract and the protection from labor law) is significantly higher. This share is the highest among East Asian countries (World Bank, 2013) (see Figure 52) indicating that despite increases in economic growth and economic activity in Laos, only a small portion of workers are able to fully share in the prosperity of the country.
Formal employment is typically concentrated among wage workers; however, in Laos, the share of workers without a formal contract (or working informally) is around 62 percent (Figure 53). The estimate is similar for men and women but informal wage labor is more common among younger cohorts (15 through 24 years of age). Wage workers with lower education levels are less likely to have a formal job; this is more evident in the manufacturing sector where only 22 percent of workers have a formal labor contract compared to 43 and 47 percent in the services and resources sector, respectively.

Out of all relevant factors that can influence whether a person has a formal job or not, having higher levels of education (and more years of education) vastly reduces the probability of having an informal job (see Annex 2). Having higher levels of education, even in the manufacturing sector which is notorious for hiring workers without a contract, eliminate the chances of not having a formal job. This finding indicates that employers in the manufacturing sector (and resources sector) provide very different work contracts to workers based on their education levels.

**Figure 53. Percentage of Wage Workers (15-64 Yrs. old) with Written Contracts**

<table>
<thead>
<tr>
<th></th>
<th>All wage workers</th>
<th>Male</th>
<th>Female</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-44</th>
<th>45-65</th>
<th>Urban</th>
<th>Rural w/ road</th>
<th>No educ or primary d/o</th>
<th>Primary</th>
<th>Secondary</th>
<th>Vocational</th>
<th>University</th>
<th>Resources</th>
<th>Manufacturing</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>With contract</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Without contract</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Labor Force and Child Labor Survey 2010*

### 3. The Demand Side: Labor Force and Skills Utilization

The following section explores in greater depth the right-hand side of the Analytical Framework, which corresponds with the Labor Market in Lao. The main activity analyzed in this section is
the process of Skills Utilization, whereby Skills Suppliers (in this case workers and new labor force entrants) feed the demand for skills by employers (public, private, international). The section begins with a brief description of the Skills Suppliers (the labor force) to contextualize the demand side. It then analyzes the demand for jobs and skills, and particularly the mismatches between skills supply and demand in this side of the Framework. Finally, the section examines actions taken by employers (such as training of workers) to remedy the existing skills gaps.

3.1 Understanding the Labor Market in Lao PDR

As a low-income agrarian economy, Lao PDR has experienced very low unemployment rates in recent years; the unemployment rates in 2007/08 and 2012 were only 0.5 percent and 0.4 percent, respectively. As shown in Figure 54, except for youth aged 15 to 24, the unemployment rate for all age groups in 2012 was less than 0.5 percent. This low level of unemployment reflects the fact that nearly 80 percent of the working age population in the country is involved in agriculture to some extent, whether full time or part time. Many families have at least one member working in agriculture while others work in wage employment (full-time or part-time). In many cases heads of households (typically classified as self-employed) report being full-time agriculture workers while other members of the family report being unpaid family workers in the family farm. Thus, in rural areas unemployment rates are half the rate estimated in urban areas in large part because most people are economically (or unremunerated but) active in the farm. Box 2 shows that in Laos a significant portion of wage workers also work in agriculture at some point during the year, especially if they work in the manufacturing sector.

Box 2. Most People in Lao Remain Active in the Agriculture Sector

In Laos, nearly 80 percent of the working age population in the country is involved in agriculture to some extent, whether full time or part time. This is an interesting finding given that many of these workers report having a job “also” in one economic sector outside of agriculture. Only 23 percent of people report not working in agriculture at all. On the other hand, about 18 percent of people worked in the farm all 12 months of the year, likely working only in farm work. The rest of the people in working age years worked less than 12 months in agriculture but more than 1 month, thus, one can assume that many of these people likely also worked outside of agriculture.

Figure 1. Number of working months in agriculture in the last 12 months

Source: Lao PDR Expenditure and Consumption Survey IV (2007/08)

---

18 To be consistent with STEP 2011/12, rural areas without access to road are not included for the unemployment rate in 2007/08.
19 This is discussed in greater detail in Box 2 below.
20 Unemployment rates in rural and urban areas in 2012 are not presented, since any unemployed person in a rural area was not captured in the STEP survey.
Among the workers whose main job in the last seven days was in manufacturing, 53 percent of them have done some agricultural work over the last 12 months, while only 29 percent of workers in the service sectors have spent positive months in farming. It implies that about a half of manufacturing workers are likely to be seasonal workers or have changed the sector of main work recently, while service workers tend to stay in the same sector through the year.

**Figure 2. Number of working months in agriculture in the last 12 months**

The difference between styles of working in manufacturing and services is reflected in the difference in types of obstacles for hiring that firms in these sectors typically face. As discussed in Section 3.4, the lack of skills and insufficient number of applicants are the biggest obstacles for hiring workers in manufacturing, while the constraints for firms in the retail and services sector have more to do with mismatches about wage expectations than a lack of applicants. If a half of manufacturing workers perceive that the current job in manufacturing as just a temporary job during the agricultural off-season, it is not surprising that many employers are facing the problem of insufficient number of applicants. Furthermore, a high turnover rate is likely to discourage firms from investing in employee training, and which will in turn deprive workers of the opportunity to improve their skills.
When the sample is restricted to the ratio of unemployed workers to wage workers (excluding self-employed or unpaid workers), the unemployment level is much higher. By eliminating self-employed workers from the denominator, and in the context of Lao PDR, it is natural to assume that most unemployed workers likely reside in urban areas where they can find wage or salaried jobs. Considering only workers employed in wage and salary jobs, the unemployment rate rises to 2.7 percent.

The underemployment rate, which is defined as the share of workers who work less than 30 hours a week in a primary job and/or other jobs, is about 16 percent for both male and female workers (Figure 55). The rate in urban areas, however, is much higher than in rural areas. A comparison with neighboring Vietnam shows that urban underemployment is also much higher in Lao than in urban areas in Vietnam. One possible explanation is that average working hours tend to be longer in agricultural jobs, which would account for the urban/rural divide; and non-agricultural workers in Vietnam work longer hours than in Lao, accounting for differences between the two countries.
Figure 55. Labor Market Status

Source: STEP Household Survey 2011/12

Lao’s labor force participation rate is high, resulting from the small share of students or inactive non-students, such as housewives and seniors, as presented in Figure 55. Participation rates (in urban areas) are also much higher than in Vietnam; the share of inactive students and non-students in Lao is 16 percent for males and 14 percent for females, compared to Vietnam’s 26 percent and 33 percent, respectively. Furthermore, males’ labor force participation rate remains high throughout their working life (Figure 56), unlike females, whose rate begins to decline in their forties. This characteristic may be a partial reflection of the high share of males who are employed (many self-employed) in agriculture.

Figure 56. Labor Force Participation Rate

Source: STEP Household Survey 2011/12

3.2 Understanding the Demand for Skills: Employer Survey

To better understand the utilization of skills in Lao, firms were presented with a long list of potential obstacles to their success and growth and were asked to rank them in order of importance. Using comparable Enterprise Surveys from across the world, it is clear that employers in numerous settings face difficulty finding adequate workers to fill jobs because workers’ skills are often not aligned with employers’ needs (Figure 57). The survey asks employers to identify if an inadequately educated workforce is one of the following: an obstacle
at all, a minor obstacle, a moderate obstacle, a major obstacle, or a very severe obstacle. For example, neighboring Indonesia views skills as a problem, but only four percent view it as a major problem. By comparison, 18 percent of firms in Lao in 2012 view this as a “major” problem; the estimate is consistent with the 19 percent that was estimated in 2009, indicating that skill constraints still prevail in the country. Similar estimates are reported in Sri Lanka and Mongolia.

**Figure 57. Skills Constraints are A Major Constraint around the World**

![Bar chart showing skill constraints around the world](chart)

### 3.3 Skills Constraints and Shortages in Lao PDR

Skills inadequacy is a concern across firms in Lao, but the issue is most salient for larger firms. A large segment of firms in the sample surveyed are micro and small sized (58.5 percent); the rest of the firms are medium (33 percent) and large (8.5 percent) in size (the latter two are presented jointly as larger firms henceforth). As much of the economic literature shows, smaller firms are more likely than others to work informally and to offer less attractive wages and benefits (partly because their marginal productivity is typically low). Thus, given that larger firms pay better, they are more attractive employers and can afford to be more selective about their employees. In addition to offering higher wages, larger companies are likely to be more selective because they typically need more (quantity) workers who are specialized (quality) in particular areas of their business, which require training or the ability to receive training. Also, a selected set of larger firms (in mining and finance for instance) use complex technology, which likely requires specific skills and the ability to handle and adapt to new technology. About 24 percent of larger \(^{21}\) firms (20 workers or more) ranked the inadequacy of educated workers in the workforce as a major obstacle, indicating an under-supply of educated workers. The estimate is lower, at 12 percent, for smaller firms (Figure 58).

---

\(^{21}\) The standard definition is micro sized (1 to 4 workers), small (5 to 19 workers), medium (20 to 99) and large (100+). For most of this section the definition used is smaller (including micro and small) and larger (19 and above, or medium and large). Among “truly” large firms the estimate is more than 50 percent.
It is important to note that there is large heterogeneity in what firms mean by “lack of skills;” some refer to quantity and others to quality. Among those firms asking for better quality, the threshold of skills sophistication remains low. In some cases lack of skills simply means that employers cannot find workers (of any skill level), while in other cases it means they cannot find workers equipped to complete the tasks required (more on this point is described in the following section). The threshold of skills sophistication is still low in the country, as most firms are still very much engaged in labor intensive subsectors such as wood processing and garment manufacturing, and production of simple products that do not require highly skilled labor. Employers in the garment sector, for instance, typically expect skilled workers to be able to do basic “cutting, making, and trimming” rather than innovating in new production ideas or processes. A recent World Bank report (World Bank, 2012) reveals that these firms tend to import foreign production supervisors to undertake more complex tasks such as overseeing other workers and putting in place new production processes. The report states that the MoLSW estimates that as many as 100,000 foreign workers from Vietnam, Thailand, and China currently work in Laos in skilled professions.

3.3.1 Overview of Workers by Occupation

Despite economic growth in the last decade, firms continue to employ the majority of workers in low skilled occupations, though the proportion varies by industry. The firm (or establishment) survey confirms that despite continued grievances about worker skills, more than half of all workers are employed in low-skilled occupations such as elementary (27 percent) and craft/trade (23 percent); the rest work in more skilled occupations such as service personnel, technicians, and professionals (Figure 59). More specifically, the breakdown of workers in the distinct occupational categories varies widely among the two non-agricultural sectors. Nearly 80 percent of workers in manufacturing firms work in lower skilled occupations such as elementary, craft and trade, and plant operators. The technical, professional, and managerial occupational categories of workers in the manufacturing sector are small compared to the services sector. But even in the services sector, the skill requirements are medium (not high); this is evidenced by the fact that the largest share of workers in the sector are employed in semi-skilled occupations such as services, clerical, and technicians (Figure 60).
The demand for both skilled and unskilled workers has been on the rise in all economic sectors. Total employment in manufacturing and services expanded by 8.7 percent from 2011 to 2012, and is expected to grow faster, by 11.3 percent, between 2012 and 2013. In Figure 61, the red bar indicates the percentage increase from 2001 to 2012 and the blue bar indicates the expected percentage increase from 2012 to 2013. Estimates in the figure show that most growth has taken place in the craft and elementary occupations, and employers expect to hire a significant share of workers in those occupations between 2012 and 2013. Among more skilled occupations, employers show a strong interest in increasing their share of professionals and technicians; growth for these categories was around 7 percent, and is expected to be even higher between 2012 and 2013. Employers also report wanting to hire more managers, with an expected increase of around 12 percent in 2013. Aside from plant workers, employers expect to increase their workforce along all occupational categories, highlighting the importance of a well-diversified workforce.
3.3.2 Skills Constraints and Shortages

Employers expressed concern that the current workforce, including new entrants, has insufficient or inadequate skills. This is hardly surprising in light of employers’ limited input into the curricula and skills taught by higher education institutions (evidence of which is presented in Part II). Table 4 shows that over 60 percent of employers who tried to hire a new worker in the previous 12 months experienced some problems; this was the case irrespective of the occupational category. For instance, among the firms that tried to hire technicians (13.5 percent of all firms), 73 percent had difficulty doing so. Though only 18 percent of firms tried to hire someone for a professional category, about 64 percent of them also encountered a similar problem. These high estimates are a clear indication that employers are facing large voids in the skilled and semi-skilled pool. Even for unskilled categories of workers, such as for elementary occupations, a striking 70 percent of firms could not find workers to fill existing openings.

Table 4. Firms’ hiring experience in 2011-2012

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage of firms which tried to hire this type of workers</th>
<th>Percentage of firms which encountered some problems in hiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager</td>
<td>4.7%</td>
<td>61.4%</td>
</tr>
<tr>
<td>Professional</td>
<td>18.2%</td>
<td>64.3%</td>
</tr>
<tr>
<td>Technician</td>
<td>13.5%</td>
<td>73.0%</td>
</tr>
<tr>
<td>Clerical</td>
<td>9.7%</td>
<td>63.4%</td>
</tr>
<tr>
<td>Service</td>
<td>12.2%</td>
<td>69.4%</td>
</tr>
<tr>
<td>Sales</td>
<td>8.6%</td>
<td>68.1%</td>
</tr>
<tr>
<td>Craft &amp; trades</td>
<td>15.5%</td>
<td>88.4%</td>
</tr>
<tr>
<td>Plant &amp; machine</td>
<td>5.7%</td>
<td>79.3%</td>
</tr>
<tr>
<td>Elementary</td>
<td>28.0%</td>
<td>67.7%</td>
</tr>
</tbody>
</table>

Source: Lao Enterprise-STEP Survey, 2011-12

Continued growth, especially in the natural resources sector, has had some influence over where skilled workers seek employment. Increasing demand for workers in the natural resources sector means that many skilled workers move out of services and manufacturing and into mining and
hydro, exacerbating labor shortages in the non-resource sectors. As these economic sectors continue to grow, the competition for workers (in an already tight labor market) will continue to increase. The fact that the resource sector has not only a large absorptive capacity (at least in the near future) of skilled workers, but also ability to pay international wages, makes it difficult for other sectors to offer equally attractive posts.

The lack of skills and insufficient number of applicants are the biggest obstacles for hiring workers in the two non-agricultural sectors of the economy, especially manufacturing. Most unskilled workers are concentrated in the agricultural sector, either as subsistence farmers or on plantations. The MoLSW estimates that the agricultural sector in 2010 absorbed around 3.1 million people, while the non-agricultural sectors accounted for less than one third of that, at 666,400 (World Bank, 2012). As such, one of the top two reasons given for the limited pool of applicants is the fact that most eligible workers for elementary jobs are in rural areas, working in agriculture. These constraints are mostly felt by the manufacturing sector, where firms not only claim to find few applicants for all categories of workers (except sales), but also that applicants “lack the basic skills” required for the positions (Figure 62). This problem is most salient for technicians, professionals, managers and plant/machine operators, where over 80 percent of firms report lack of skills as a problem.

**Figure 62. Types of Problems Firms Encountered in Manufacturing**

![Figure 62. Types of Problems Firms Encountered in Manufacturing](image)

*Source: Lao Enterprise-STEP Survey, 2011-12*

The constraints for firms in the retail and services sector have more to do with mismatches about wage expectations than a lack of applicants. The problem in this sector is more about quality of skills than quantity of applicants, though quality is a problem in all sectors. About 24 percent of employers mentioned the lack of applicants and 52 percent reported finding limited skills as major constraints to hiring professionals; a bigger constraint is the fact that well over half of all firms had applicants turn down job offers because employers could not meet their wage expectations (Figure 63). About 50 percent of firms face this problem with technicians, and nearly 20 percent of firms also report that these workers dislike the working conditions they are offered, thus exacerbating the problem. The issue of mismatched wage expectations is also prevalent among service, craft/trade, and elementary workers. These three occupational categories appear difficult to fill due to skills and wage mismatches.
It is not entirely clear why wage mismatches are occurring in the non-agricultural sectors, but they are likely stemming from a combination of issues related to low quantity and low quality of supply. In the manufacturing sector there is a clear lack of people (quantity) willing to work for the wages offered, and this is particularly true for professionals. In services, on the other hand, there are people willing to work in the sector whose skills often do not meet the requirements (quality); hence they are not offered the wages they desire, resulting in a wage mismatch. In other words, either applicants do not have sufficient skills to merit the wages they desire, or the skill sets they possess are not aligned with market needs.

There are clear differences between recruitment and retention related constraints faced by small firms and large firms. For larger firms, the main constraint in hiring and retaining workers across all occupational categories is that workers and/or applicants lack the adequate skills to perform the jobs. About 80 percent of larger firms reported that workers in managerial and professional occupational categories lacked adequate skills, and the estimate is even higher for technicians and service personnel (Figure 64). For smaller firms, the estimates vary by occupational category. For instance, smaller firms report that the most salient reason for their inability to fill jobs in the professional category or retain professional workers is related to wage expectation mismatches, rather than lack of skills.

**Source:** Lao Enterprise-STEP Survey, 2011-12

---

**Figure 64. Types of Problems, by Firm Size**

*Source: Lao Enterprise-STEP Survey, 2011-12*
3.4 Skills Used by the Current Workforce

Highly skilled and skilled non-manual workers regularly use a wide range of skills, but the skill most commonly used at work for both groups is teamwork. Employers were asked to rank from among a group of seven core skills which ones are most often used by different categories of workers. These do not represent “desired” skills; only those which are regularly used by their current workers. As expected, distinct categories of workers use different skills more intensely. For instance, aside from teamwork, highly skilled workers such as managers, professionals, and technicians use numeracy and problem solving skills regularly; and the importance of numeracy skills gradually decreases from service workers to elementary workers (Figure 65). Skilled non-manual workers such as clerical and service workers use numeracy and presentational skills most often. But the salience of teamwork across all groups, including less skilled groups such as elementary workers, is worth noting, as it highlights its importance to employers.

![Figure 65. Types of Skills Frequently Used by Skilled Workers](image)

Less skilled groups are expected to have soft skills such as teamwork and problem solving. Problem solving skills are critical for semi-skilled manual workers, while teamwork is the most salient skill for elementary workers (Figure 66). Less skilled workers are not expected to read, write or speak a foreign language. In manufacturing, manual workers are expected to be able to work well in a team environment by contributing their efforts to the success of the team, and to follow instructions provided by their supervisors and team leaders. The main goal is to enable the production process to flow seamlessly, and this requires getting along with others and following instructions and guidelines.
Among the batch of technical skills, computer use at work is not too common, even for highly technical workers. Much like what was observed in the supply side section, workers in Lao seldom use computers at work, even among the professional and technical occupations (Figure 67). Among highly skilled workers, about 38 percent do not use computers to perform their jobs, and 11 percent use them only to perform very straightforward tasks. Only 14 percent use complex software programs and less than two percent use specialized software.

The estimates are much lower for lesser skilled categories of workers. As previously mentioned, it is unclear whether this is due to the fact that proficiency in computer skills is still not commonplace among Lao workers, or whether the production technologies and types of industries in Lao do not necessitate this skill. What is clear is that, going forward, computers will be even more central to occupations in growing economic sectors; proficiency in managing computers and complex software will be critical to the country’s sustained growth, and to workers’ competitiveness.
3.4.1 Types of Skills Demanded in the Job Market

The survey asks employers to rank the skills they wish their workers had in order to be more effective in their distinct occupational categories. The list includes eleven cognitive, technical, and non-cognitive skills, from which the top seven are shown in the figures that follow. The list of skills includes the following: 1) Literacy, 2) Numeracy, 3) Literacy in foreign language, 4) Job-specific technical, 5) Communication, 6) Leadership, 7) Team work, 8) Critical thinking, 9) Problem solving, 10) Autonomy, and 11) Time management.

Employers have a clear view of the skills they desire in distinct occupational categories to become more effective. Being able to read well is among the most desired skills for applicants to highly skilled occupations. For highly skilled occupations such as managers, professionals and technicians, employers expressed the desire to hire and retain workers with high levels of cognitive and job specific technical skills. They want these workers to be able to read complex texts and have job specific and industry specific technical skills as well as good command of numeracy skills. There is also a clear desire for workers to have high levels of soft skills such as problem solving, communication, and teamwork, but these are less critical.

Job specific technical skills are mostly expected from new entrants into skilled non-manual, and skilled manual jobs. For both of these occupational categories employers would like workers to know the industry details, operate machinery (in the case of manufacturing and resource industries), and engage with customers (in the case of services). For semi-skilled manual workers such as plant operators and trade workers, employers put job specific skills as number one on the list of desired skills. In Figure 68 the estimate far exceeds that of any other desired skill (surpasses 3). For skilled non-manual workers such as clerical staff and service workers, job specific technical skills are the most desired. Other desired skills are a combination of hard and soft skills including teamwork, literacy, and numeracy, and the ability to communicate effectively.

Figure 68. Top Skills Employers Expect New Skilled Workers to Have and Retain

(0: Not important – 5: Most important)

Highly Skilled

Skilled Non-Manual

In low-skilled occupations, the most desired skills include the ability to work independently and good communication; cognitive skills are not a top priority. For elementary workers, most of the skills desired fall in the non-cognitive or soft skills category (Figure 69). Working autonomously once given instructions is the most important trait that employers value, followed by the ability to communicate effectively and solve simple problems. Team work and time management are also high on the list. Among the hard skills desired are literacy and job specific technical skills. Overall, employers want to hire more well-rounded workers than those in their current pool.
Among the Big Five personality traits, conscientiousness and emotional stability are the two most desirable traits for all occupations. Conscientiousness, which means being organized and undertaking tasks in the most efficient manner so as to not waste time or resources, is the most important personality trait that employers look for in a worker (Figure 70). Their stated preference for this trait is consistent across all occupational categories, followed by emotional stability, or being in control of one’s emotions and actions. These traits are both associated with being a team player, easy to manage, and responsible.

Faced with the choice between technical skills, personal characteristics (such as age, appearance, gender), and non-cognitive skills, employers prefer job-related technical skills in the case of skilled and semi-skilled workers and non-cognitive skills for unskilled workers. Using a scale from 0 to 2, where 0 is not important, 1 is important and 2 is most important, employers were asked to prioritize between three sets of skills/traits: 1) having job specific technical skills; 2) having specific personal characteristics such as being young, having a certain appearance, and being from a particular ethnic group; or 3) having certain personality traits such as being a team player and openness, among others. Figure 71 shows that employer preferences are clearly biased toward technical skills, especially for highly skilled workers (with a score of 1.6). Having amenable personality traits also scores high, closer to being important. Non-cognitive skills are critical for unskilled workers because they often need to work well in groups and follow instructions. Personal characteristics such as appearance, gender, and age are less important.
across job categories; however, they are not completely irrelevant to many employers who still make partial decisions based on these characteristics.

**Figure 71. Importance of Group of Skills, by Occupation**

(0: Not important – 2: Most important)

![Image of Figure 71](image)

*Source: Lao Enterprise-STEP Survey, 2011-12*

### 3.4.2 Views from Employers on Skills Formation in Lao

Employers in Lao are not satisfied with the skills being produced by the higher and vocational education system in Lao. There are marked concerns across the board but more so with respect to practical skills. Over 35 percent of firms interviewed opine that the level of skills and the kinds of skills being imparted by educational institutions are inadequate. Perhaps the most important issue identified by employers across economic sectors is the lack of practical skills being taught by these institutions. In the case of the TVET system, employers in the manufacturing sector perceive that the practical skills and the level of skills taught are most inadequate. Employers in the manufacturing sector opine that graduates from universities and colleges are not well equipped across the board, and the inadequacy of the skills possessed by university graduates is starker than for TVET graduates. This may stem from the fact that university and college graduates still receive higher wages, despite their perceived lack of skills.

Service firms maintain that the skill sets imparted by the current higher education system (including TVET, universities and colleges) are outdated. During the consultations held for the preparation of this report, employers and TVET administrators mentioned that higher learning institutions in Laos were not well equipped—in terms of machinery, software, materials, and preparation of instructors—to train workers with adequate job specific technical skills. This qualitative finding is confirmed through the data; employers, especially in the services sector, find that graduates and workers as a whole are not trained in the technology and methods they use, and are not well versed with the latest materials and equipment/software (Figure 72). In the supply side section, this finding is evidenced by the fact that few people in the workforce use computers on a regular basis, for instance.
4. Assessing Mismatches
The analysis presented in this section identifies three types of mismatches; the first is whether people perceive their education level is appropriate for their job; the second is whether people perceive their skills, obtained in their educational training, are adequate for their job; and third is a comparison of employers’ revealed preferences (what employers actually employ) in hiring (in distinct occupational categories) with the current stock of workers.

The perceptions analysis uses data from a module in the STEP survey that asks respondents to assess the adequacy of their education and skills to perform their jobs. This analysis also identifies key factors contributing to perceived ‘mismatches’ in skills. The comparison exercise evaluates the educational attainment of individual workers, and compares it with data from the Enterprise and STEP employer survey. The insights obtained from this section could help contextualize some of the mismatches of skills and shortages of people/skills identified in previous sections.

4.1 Perceived Adequacy of Education
There are clear mismatches between educational attainment and tasks performed at work. Half of the workers with primary education level perceive that their educational level exceeds the requirements to perform their current jobs. The estimate is much higher (66 percent) for workers with secondary education levels, whereas only 29 percent of workers with vocational education levels feel overqualified. Among workers with university educational level, about half feel they are adequately educated and half feel they are overqualified. Interestingly, none feel under-qualified for their jobs (Figure 73).

---

22 Individuals considered are in the age range between 25 and 55 years old. They live in urban and rural areas with access to roads, and earn wages and salaries. No students are included in this analysis. From the demand side, data based on responses of employers in the employer part of the STEP survey on the educational attainment and cognitive skills are used. This includes information from the module that asks about: (i) a typical worker who represents each type of occupation in the enterprise, and (ii) the most recent person hired for each occupation.
When broken down by economic sector of work, it is clear that larger segments of workers in the manufacturing sector, compared to workers in the services sector, feel they are overqualified for their jobs (very few feel under-qualified). For instance, among workers with vocational education in the manufacturing sector, about 63 percent perceive they are overqualified for their jobs and only 37 percent feel their education is adequate for their jobs. This is high compared to the services sector where only 27 percent of workers with vocational education view their education as too high for their jobs (Figure 74). This finding is likely an indication that the manufacturing sector hires workers with education levels that may be too high for the type of tasks performed or that the education level of these workers is not an adequate indication of the skills these workers possess. Either way, such mismatch can have negative consequences because employers may not be providing workers with the opportunity to practice (and improve) their skills, thus people are likely to lose their skills over time.

Among highly skilled wage workers, with secondary and vocational education levels, the mismatch in terms of education levels is minimal and it is much more pronounced for university graduates who largely perceive themselves as being overqualified for their jobs. Among the most educated workers however, over half perceive that they are overqualified—in other words, they do not feel their job necessitates a university degree to be done well and could be performed by someone with less educational qualifications (Figure 75). This is an interesting yet puzzling
finding given that this set of workers includes managers, professionals and technicians, the most ‘challenging’ set of occupations. As expected, most workers with primary education level employed in highly skilled occupations feel they are under-qualified for their jobs.

**Figure 75. Self-Reported Appropriateness of Educational Qualifications, for Highly Skilled Occupations**

![Chart showing self-reported appropriateness of educational qualifications for highly skilled workers.](image)

When employers are asked about the educational qualifications they desire for their highly skilled workers, about 40 percent of them say their highly skilled workers should have university degrees. This is reflected in the labor market where 37 percent of current wage earners have university degrees. Interestingly, a non-negligible share of recent hires and typical workers in highly skilled jobs only have secondary or lower degrees (Figure 76), indicating that employers may be willing to forego educational qualifications for experience and skills (thus promoting from within or hiring workers with job-specific skills regardless of their education). Another explanation is that the pool of applicants is so limited that employers are forced to hire people with lower qualifications than desired.

However, if more workers are demanded for highly skilled wage jobs in the future, firms will face increased difficulty in hiring as the educational attainment of the self-employed in non-agricultural sectors clearly lags behind that of current wage workers. Figure 76 show that only 31 percent of self-employed workers in non-agriculture sectors have post-secondary degrees. As wage workers account for only 15 percent of the entire working population and the demand for skilled labor is expected to increase in coming years, the lower educational attainment of the self-employed is likely to be a severe constraint for growth in the future.
Significant differences between the supply and demand of skilled non-manual and skilled manual jobs were also identified. As shown in Figure 77, there is a large gap between the educational attainment of skilled manual workers (such as craft and plant workers) who are current wage-workers and that of workers who are demanded and recently hired by employers. It implies that there are a lot of skilled manual wage-workers in the market for whom it is difficult to find new jobs.

* Only non-agricultural workers between age 25 and 55 years are included.

4.2 Perceived Adequacy of Skills

One explanation of skills shortages and mismatches in Laos is that not enough people complete higher education levels and those that do complete secondary, vocational and university are not equipped with the right sets of skills. Data show that there are not enough people completing higher education levels in Laos, and as a result there are overall skills shortages (or not enough people with the education levels desired by employers). But it is more difficult to assess whether the quality of the skills imparted in the higher educational system are adequate. One way to ascertain this is through perceptions of adequacy of skills questions, as collected in the STEP
survey. Figure 78 shows that almost all non-agricultural wage workers with vocational and university levels of education, and a large share of workers with secondary level, perceive the skills they obtained in their formal education training are moderately or very useful to their jobs.

Figure 78. Perceived Usefulness of Skills Acquired Through the Formal Education System (Non-Agricultural Workers)

Among non-agricultural wage-workers who reported that their educational qualifications matched the requirements of their jobs, about 86 percent felt they had obtained very or moderately useful skills in the educational system. About 13 percent perceived that the skills they gained were not adequate for their jobs, thus they had the right educational level but not the right skills to perform. Among those who reported being under-qualified for their jobs, 83 percent viewed that the skills they obtained were moderately or very useful, despite having lower educational levels than required to perform well in their posts (Figure 79). On the positive side, one could argue that the skills these workers obtained in their educational training were sufficient to enable them to access jobs for which they did not have the adequate educational level. However, an alternative (and perhaps more likely) explanation is that shortages of workers with higher educational levels constrained employers to hiring workers with lower educational levels than desired.

Figure 79. Perceived Usefulness of Skills by Perceived Educational Fit in the Job

In the manufacturing sector, 39 percent of workers with the ‘right’ educational level (matched in terms of qualifications) felt the skills they acquired were somewhat or not useful at all. This estimate is high compared to the services sector where only seven percent of workers with the right educational levels felt the skills they acquired were not sufficient (Figure 80). Of those who
were under-qualified from an educational stance, 58 percent and 88 percent (in manufacturing and services, respectively), felt that they obtained useful skills in the formal education system that helped them do their jobs despite not having the appropriate education level.

**Figure 80. Perceived Usefulness of Skills by Perceived Educational Fit in the Job, by Sector**

There are certain skills employers require their workers to have in order to perform their jobs, especially in higher complexity occupations. Unfortunately, in many cases, these skills are not used even if they are available to employers, thus potentially contributing to loss of skills over time and/or workers feeling they are overqualified for their jobs. For instance, literacy is an important skill that most employers feel is necessary to perform any skilled task. The STEP employer survey asks firms to assess the amount of reading and writing that is required for each job; about 72 percent of employers think their highly skilled workers regularly read at work; however, 82 percent of highly skilled wage workers reported that the longest document they have read over the past 12 months at work was 10 pages or less, which hardly qualifies as reading regularly. This estimate indicates that even though most employers think they need their workers to be highly literate to perform, they seldom provide them the opportunity to hone their literacy skills. Only five percent are asked to read more than 25 pages at work during a 12-month period.

For skilled non-manual workers, such as administrative staff, the reading intensity expectation from employers is lower than what workers actually report doing. This sheds light on a perceived difference between what employers require and what workers actually do on the job for this category of workers. About 31 percent of people in this occupational category do none or very limited reading (Figure 81); the remaining 69 percent report doing some reading (two pages or more). About 52 percent of employers report that their typical non-manual worker is expected to read as part of his or her job, while the other half of employers do not require this skill. One interpretation of this difference is that nearly 20 percent of employers perceive this job category to be easier than it is in fact. If this interpretation is accurate, it could explain why wages offered by employers for this category of workers do not meet worker expectations.
For the two other less skilled categories of workers, the employers’ expectations with respect to reading are higher than what the workers actually do. Data show that only 16 percent of skilled manual workers read at work (two pages or more), whereas the estimate by employers is 21 percent. The same is true for elementary workers; employers think that six percent of their average workers in this category do read, but in reality only one percent of workers report doing so (two pages or more). This means that employers expect higher reading intensity at work of these workers, and workers are not carrying through either because they are unable to, because the job does not in fact require it, or because they do not have the opportunity to do so.

With respect to writing, much like with reading, there appears to be a mismatch between perceptions of what workers are supposed to do, against what they actually do. Half of all employers report requiring their highly skilled workers to write as part of their job, this estimate is much lower than what highly skilled workers report doing; about 80 percent of them report having to write regularly to perform their job, indicating that employers do not fully know what skills are used in highly skilled occupations. One explanation is that since only a small share of these workers, less than 30 percent, write intensely (six pages or more), it is only this group that employers have in mind when they report the amount or intensity of writing for a typical worker in that particular occupational category (Figure 82). In the case of skilled non-manual and skilled manual workers, there is more alignment between what employers report and what workers report. The more striking finding is not the mismatch in perceptions of how much the skill is needed, but the limited expectations by employers and also the limited utilization of writing skills on the job.

Source: Lao STEP Household Survey and Lao Enterprise-STEP Survey, 2011-12
With respect to numeracy skills, 74 percent of managers expect their skilled non-manual occupations to involve adding, subtracting, multiplying or dividing numbers, and indeed about 83 percent of workers in this occupational category are performing multiplication and division at work. In general, workers’ perceptions of numeracy skills utilization are somewhat higher than employers’ perceptions of numeracy skills needed on the job (Figure 83).

For numeracy, the biggest difference between perceived skills use and requirements is among the elementary category of workers. Less than 20 percent of all employers expect their elementary workers to do any math calculations, but 46 percent of workers report that they utilize some math at work. There is no clear explanation for the large difference; one potential reason is that employers have very low expectations of this group of workers and do not rely on them to perform this skill. On the other hand, elementary workers may possess some basic numeracy skills and use them whenever the opportunity arises. Another explanation is that employers and workers have a different definition for numeracy; workers may include any math skill used while at work, including counting garments or adding boxes when packaging, while employers may only include actually doing calculations when filling out forms or sending orders. Regardless of the definition, it appears that the need (requirement and use) for numeracy skills increases with occupational complexity.
Some mismatches between the perceived demand for and the actual supply of computer skills of highly skilled workers are observed. Data reveals that there are shortages of people with higher levels of programming skills in advanced functions in spreadsheets, CAD software, and statistical analysis. As shown in Figure 84, the share of current wage workers whose jobs involve complex or advanced levels of computer programming is quite limited, only five percent. Most highly skilled (managers, professionals and technicians) workers do not have complex/advanced computer skills and are not entrusted to undertake tasks that need these skills. Only about 12 percent of firms report that their highly skilled workers have good command of computer/software skills and as a result they can give their workers tasks that make use of those skills. With increased economic integration and competition from international markets the demand for more advanced capabilities of computers and programming skills is likely to continue to rise. Going forward, the education system, including TVET, should focus on strengthening computer/programming skills among all students to enable them to reduce skills shortages.

**Figure 84. Computer Skills of Current Workers, by Occupation**

Within a few years, demand for workers who speak foreign languages is likely to increase, and given current deficiencies in foreign language skills in Laos the risk for mismatches between the demand and supply will also continue to rise. This phenomenon is exacerbated by the proximity of 2015, the year when the ASEAN regional integration will formally come about. As presented in Figure 85, the quantity of wage-workers currently in the workforce who speak foreign languages (including English, Thai, French, Vietnamese and others) is lower than what employers need, mainly among highly skilled and skilled non-manual workers. Furthermore, all employers in foreign-owned firms report that their highly skilled workers’ jobs involve speaking a foreign language, and 74 percent of them report in the same way regarding skilled non-manual workers. Under the current market condition, employers have already faced difficulty in hiring skilled workers; the risk of mismatches will rise as the country continues strengthening its trade link with the rest of the region and world.
One question that merits investigation here is whether there are particular attributes that a worker has, or external characteristics, which make a person more likely to experience mismatches (in education and/or skills at work). The analysis shows that female workers, especially women in highly skilled occupations, are more likely than men to perceive their education and/or skills mismatched with their jobs. Age also matters, but only for skilled manual occupations, not highly skilled jobs. Relative to young workers (between 15 to 19 years of age), older workers are less likely to be mismatched to their jobs. Interestingly, among highly skilled workers, having a vocational level of education increases a person’s likelihood of having the right skills and their education being suitable for their job. Mismatches are more likely in Vientiane capital than anywhere else in Laos. Lastly, for skilled manual workers, being employed in the manufacturing sector increases the probability of mismatches.

5. Training by Employers

5.1 Training Provided by Employers

Company-provided training is one way to tackle skills deficiencies and overall mismatches in Laos. There is growing evidence that employer provided training directly affects firm performance. However, despite all the evidence in support of training, many companies are still reluctant to do it on their own. One of the reasons underlying their reluctance is employers’ uncertainty about the potential benefits of training, and whether these outweigh the opportunity costs associated with it, namely time spent away from the job in addition to the financial burden on the company.
Firm-level training for workers is not very prevalent, especially among small and medium enterprises (SMEs)—only about 35 percent of employers in Lao provide some training, and most of it is done in-house. Based on data collected through the World Bank's Establishment Survey in 2009 and through the Enterprise Survey in 2012, over 61 percent of large firms claimed to provide training for their employees—only 12 percent of SMEs did so in 2012. Over half of medium and large firms train their workers, and many combine in-house with external training (Figure 86). In the manufacturing sector, the garment industry is among the highest providers of employee training, especially for mid-level skilled staff, to manage industry-specific technology and to improve the quality of the products. The goal is to get workers’ skills, especially for new recruits, up to the basic level needed to perform their jobs. In the service sector, the tourism industry has been among the most proactive in training its workers. There are industry specific specialized training centers where existing and aspiring workers can obtain job-specific technical skills.

![Figure 86. Provision of Training](source: Lao Enterprise-STEP Survey, 2011-12)

Most in-house training is done on-the-job rather than by external or dedicated trainers. This type of training is largely used to remedy skill deficiencies, rather than improve on existing skills. The reasons for training workers run the gamut from basic—for instance, getting workers familiarized with equipment and methods of production/service, to sophisticated—wanting to improve the skill sets of workers to increase their ability to perform and thus positively affect productivity. In Lao, most employee training is of the basic variety—one example is remedial training done by peers or managers to help new recruits learn basic skills that are essential for performance (Figure 87). This type of training is most common in micro and small firms, where about 90 percent of training is for this purpose. In large firms, 11 percent of training is done by dedicated training professionals, with more sophisticated goals in mind relating to skills development and productivity.
The effect of employer-provided training in Lao appears to be neither positive nor negative. A simple estimate of the effect of training on labor productivity yields inconclusive results. In other words, there is no (statistical) difference in the change in labor productivity of firms that provided training compared to firms that provided no training. This result is discouraging, but hardly surprising, mainly because most training attempts to remedy substandard skills rather than up-skill workers that already have standard, or above standard, skill levels. The evidence from other country studies shows that remedying skills (cognitive or non-cognitive) later in life has some potentially positive impacts, but they are likely to be limited. Several studies (Cunha et al., 2006; and Heckhausen and Heckhausen, 2006) emphasize the importance of building non-cognitive skills in particular early in life, as they are more difficult to absorb later in life, lessening the returns on investments on ‘remedial’-type employee training. Going forward, it will be interesting to recreate this analysis when there are more firms engaging in skill upgrading to see whether the effect is measurable.

6. Labor Costs and Productivity

The labor productivity of the median manufacturing firm in Lao in 2009 was lower than that of other low- and middle-income countries in the region. Labor productivity is a measure of how efficiently a firm and the economy use inputs, such as labor and capital, to produce goods and services. An increase in productivity can mean that more goods and services have been produced with the same amount (or less) of capital and labor. As it relates to worker skills, increases in labor productivity reflect improvements in the workers’ abilities to do their jobs more efficiently. Unfortunately, firms in Lao are among the least productive compared to other low- and middle-income countries in Asia (Figure 88), and firm productivity did not improve between 2009 and 2012 despite Lao’s substantial economic growth during that period. The median labor productivity of Lao’s manufacturing firms in 2012 was about USD 1,800 (in 2009 US dollars), which only differed slightly from 2009. In general, labor productivity is higher in countries with higher per capita income, but labor productivity in Lao in 2009 and 2012 was far lower in proportion to its per capita income, which was about USD 5,300 in 2012. This can be partly explained by the lack of improvements in worker skills during this period of increasing wage costs.
Even after steep rises in labor costs between 2009 and 2012, they remain low compared to other countries. Labor costs went up from USD 670 to USD 1,100 (in 2009 US dollars) from 2009 to 2012. The rise in labor costs can be partly attributed to a 20 percent rise in the minimum wage in 2012 from 290,000 kip (prior to 2012) to 348,000 kip in 2012. Labor costs\textsuperscript{23} are positively correlated with per capita income, meaning that incomes rise when labor costs increase. This gives some indication that minimum wage increases may have had a positive impact on workers who remained employed (though more analysis on this is needed to determine its accuracy), but increasing costs without increases in workforce skills can hurt the economy in several ways. For instance, formal employers are more likely to let go of lower skilled workers when the costs of labor are too high to compensate for what workers are able to contribute (World Bank, 2013b). Lao firms are less likely to be competitive in international markets, and many firms may be pushed into informality in order to avoid payment of statutory minimum wages.

In fact, firms with higher shares of skilled workers have higher labor productivity within a given subsector and geographic location. Annex A.2.3 presents the results of regressions of labor productivity on firm characteristics using the sample of firms in the manufacturing sector in 2012.\textsuperscript{24} The share of skilled workers is defined as the ratio of the sum of non-production workers and skilled production workers to the number of unskilled workers. When subsectors and provinces are controlled (model (3) in Annex A.2.3), the coefficient of the share of skilled workers is significantly positive. Though the positive correlation does not necessarily imply causation, a higher fraction of skilled workers could lead to higher labor productivity, and vice versa, the results confirm that low labor costs in Lao are strongly associated with and dependent upon low labor productivity and poorly skilled workforce. This suggests that the provision of workers with higher skills is necessary for Lao firms to be competitive in international markets.

Although low labor costs can potentially allow underproductive firms to be competitive in international markets, they are not unambiguously good. Again, even though unit labor costs are

\textsuperscript{23} The measure of labor costs is the cost of wages, salaries, bonuses, other benefits, and social payments for workers at the firm, and this estimate is divided by the number of workers.

\textsuperscript{24} Value added per worker is directly applied as a dependent in the regressions, instead of the log of it, as labor productivity appears to be negative for 24 percent of the sample manufacturing firms in 2012.
low in Lao relative to comparable developing countries in Asia and elsewhere, increasing costs without increases in worker quality makes Lao’s firms less competitive. As discussed in Section 2 of Part I, differences in labor costs can reflect differences in worker education and skills. Low labor costs may reflect a poorly skilled workforce with low productivity, which means that firms can only remain competitive by paying low wages.

Figure 89. Labor Costs per Worker in Manufacturing

<table>
<thead>
<tr>
<th>Country</th>
<th>2009 USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lao PDR</td>
<td>665</td>
</tr>
<tr>
<td>Kyrgyz</td>
<td>728</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>1,074</td>
</tr>
<tr>
<td>Mongolia</td>
<td>1,054</td>
</tr>
<tr>
<td>Nepal</td>
<td>1,005</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,597</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1,726</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2,778</td>
</tr>
</tbody>
</table>

* Medium values are presented. Outliers are removed.

Source: World Bank, 2013b

7. Main Findings for Part I

Part I focuses mainly on the interconnections between the two markets presented in the Analytical Framework (see below), and salient issues in each side of the Framework. It assesses the level and quality of skills obtained through the Black Box of Skills Production, with special attention to the role of the educational experience (including on-the-job training); the composition and characteristics of Households and Private Individuals as they transition from skills absorbers to suppliers; and Skills Utilization from the point of view of labor market outcomes, and also from the point of view of the employers who demand said skills. The central question underlying the analysis is whether skills production (left-hand side of the Framework) is aligned with skills utilization and employer demand (right-hand side of the Framework).
Although more resources have been devoted to improving skills production in Lao, over one third of the working age population (skills suppliers in the labor market) has zero or minimal formal education and limited command of basic skills. There are also clear gendered and geographical dimensions to educational access, or lack thereof, as the lack of adequate education and skills is not only worse among rural inhabitants but also among women across the country. With their limited education and skills, these groups are most likely to remain in subsistence farming, or become self-employed in very low value-added activities, and highly unlikely to ever access wage employment.

Insufficient progress in getting more people to complete major milestones in the education cycle has implications on how effective the tertiary system can be in addressing skills demands. As previously mentioned, the two markets (for skills production and skills utilization) are heavily intertwined, thus requiring a closer link with one another to function effectively. The lack of significant progress in educational attainment is surprising given the Government’s strong emphasis in the last decade on improving access to education for all and its commitment to providing equitable access to secondary education.

Higher education levels not only endow workers with higher skills, but also with opportunities to access better jobs that provide higher returns on their investment. The analysis presented shows that returns to higher education are positive, and estimates range from three to four percent for each extra year of education. Interestingly, for women, the returns to each additional year could be as high as seven percent. More than half of all wage earners have completed vocational or university education, and workers with higher education are more likely to be in wage employment than self-employed. This indicates that higher education is very much sought after by employers and that people who invest in their education do so with the objective of working in wage employment. One bottleneck of the Skills Production process is that people with limited skills are unable to easily access wage employment, and no matter how much the tertiary education system improves, the pool of students from which it draws remains very limited.

Although the labor market rewards higher education, there is evidence that higher education does not necessarily translate into better skills, or skills that are aligned with labor market needs. The failures of the Education and Training Market are observable in terms of skills quality even at post-secondary levels. Even though a large share of university and vocational graduates works in higher value-added sub-sectors of the economy and in higher skill demanding occupations such as management, professionals and technicians, there is a non-negligible share of highly educated workers that works in less skill demanding occupations and low-value added sectors such as agriculture and sub-sectors in manufacturing. From an educational stance, these workers are likely overqualified for these jobs. The large variability in the quality of TVET education in particular signals to employers that there are no guarantees about the types and quality of skills of graduates because their education may or may not be up to the standards desired.

Although most people who completed primary education have basic literacy skills, they seldom use them. Their lack of practice may factor into their dire core literacy assessment results, compared to neighboring Yunnan Province, China and Vietnam. About 69 percent of people in Lao say they can read without difficulty. The estimate is higher in urban areas (84 percent) than in rural areas (61 percent). However, having these skills clearly does not guarantee their use, as less than 12 percent of males and nine percent of females in urban areas read more than five pages of text in one year. In other words, people know how to read and write but they rarely do so. About 60 percent of the population could not pass the section of the assessment that
tested their reading comprehension and ability to decipher text. In neighboring Vietnam and Yunnan (China), over 90 percent of people passed the same core literacy assessment, demonstrating a significant difference between skills in Lao and those of its immediate neighbors.

People with higher education levels performed better on the more complex section of the ETS assessment (core literacy), indicating that the formal education system delivers critical cognitive skills in a progressive manner. The ETS results show significant differences between the overall cognitive skills of people with no education and primary education, and those of vocational and university graduates. For instance, reading abilities increase progressively with education, and this is evident in the clear (positive) association between education level and the core literacy assessment results. This finding suggests that more exposure to the skill strengthens people’s ability to decipher text and develop reading comprehension.

On the other hand, results show that vocabulary skills are largely acquired in primary and lower secondary school, and even though they can improve with further education, the core set of vocabulary skills are acquired earlier rather than later. Results from the vocabulary section of the assessment show that most people with secondary education and higher levels passed the vocabulary assessment, whereas most of the failed scores were from among people with lower education levels, namely, incomplete primary school, no formal education, and complete primary education but lower than secondary. Results from the assessment indicate that the formative years (early childhood development, primary and lower secondary education) are when the vocabulary and basic reading skills are acquired.

A worrisome finding is that for all people, including those who have invested in higher education, there are limited opportunities to use and improve literacy skills at work. The labor market does not seem to adequately utilize workers’ literacy skills. Most people with higher levels of education and skills typically work in the public and services sectors in occupations such as managers, professionals, technicians, military officers, and clerical jobs. Others with high skills are absorbed by the manufacturing sector and the resource (non-agricultural) sectors, like mining and hydro. Unfortunately, a significant share of these workers is not required to use their literacy skills regularly in their jobs. In fact, data show that 20 percent of males and 30 percent of females with high education levels are seldom asked to read or write, thus limiting their ability to practice and strengthen their literacy skills. What is not clear is whether these jobs are misusing skills by allocating people to the wrong tasks, or whether most industries still have very basic literacy requirements (industry in Lao indeed appears more physical/manual in nature than intellectual). An alternative explanation is that employers do not trust their workers’ skills. Based on the demand side analysis, the latter explanation (employers not trusting the skills) seems to apply, but more analysis is required to obtain better insight.

With respect to autonomy or freedom to learn new things at work, well over half of men and women with higher education levels report having very low autonomy at work. It is clear that employers give little autonomy to their workers, including people with vocational and university education. This relates once again to the limited use of other skills and to the possibility that jobs simply do not require much thinking, and/or that employers do not trust their workers, even university graduates, to think on their own. While higher education levels are correlated with more use of technical equipment at work, workers with vocational education levels and below have limited exposure to computers at work. There is a clear wage premium for workers with computer skills, but it seems that employers only require (or trust) workers with university degrees to work with computers; hence, workers with computer skills (but lower education levels) are unable to exercise their ICT skills regularly. This situation likely
exacerbates the wage differences observed between university graduates in high skill occupations and others in the labor market.

Comparing skills in Lao with those of other countries helps to contextualize the problem of ‘low skills’, especially for a country entering the international economic arena and wanting to increase its international presence. Although a large number of people in Lao are able to read, the passing rate on the literacy assessment is significantly lower than for people in other comparable contexts. Lao also presents the lowest intensity of use of technical skills among the five countries compared, and the lowest computer usage at work. This is especially important in the services sector where ICT use is most prevalent and where a large segment of the educated population currently works.

The only personality trait that has a positive impact on wages is openness to new experiences, especially for women; among behavioral traits, grit emerges as an important trait that yields positive returns for men, and is most common among employed people (compared to unemployed). Openness to new experiences is often viewed as a necessary trait to have to accept change and promote innovation. Males employed in the services sector scored higher than males in other sectors on this trait, and much higher than women. Employers reward both males and females with this trait accordingly, but the impact is higher for women as it really pays off. Regarding grit, although women score higher on this trait than men, its effect on wages pays off for men but not for women (at least not enough to make it statistically significant).

There is clear evidence of an intergenerational transmission of education and skills in Lao, especially from mothers to daughters. As in other countries, Lao shows a clear intergenerational transmission of low educational attainment from parents to children and, as such, parental education has a strong influence on educational and skills attainments. For example, children with a parent who has no education or incomplete primary school are likely to end up with less than five years of education. As Lao continues to grow economically and focus its efforts on alleviating poverty, it will be important to specifically target children of less educated parents by providing them with a set of incentives (for instance, through social programs such as conditional cash transfers) that will allow them to continue their education beyond current levels. This will break the cycle of low education (and poverty) that would subsequently limit their opportunities in the labor market.

Larger firms face skill constraints in Lao and in almost every context around the world. In almost all neighboring countries where the World Bank has explored this issue, such as Indonesia, Vietnam, Thailand and Malaysia, employers find skills constraints an important issue. However, unlike in Lao, where 18 percent of firms view this as the top constraint, the issue of skills relative to other problems (for example, taxing and competition) is higher in other countries. In Lao, the issue is most salient in medium and large firms, where 24 percent see it as a very important constraint.

Employers interpret skill constraints differently. In some cases this means employers cannot find workers (of any skill level), while in others it means they cannot find workers equipped for the tasks required or workers who are willing to accept (lower) wages that are commensurate with their actual skills (rather than their education). Both skilled and unskilled workers are in great demand in all economic sectors, but the threshold of skills is still very low. Most firms are still engaged in labor intensive subsectors such as wood processing and garment making that do not require highly skilled labor. Their constraints pertain mostly to quantity of workers. The quantity problem is exacerbated by the continued growth in the natural resource sector, which attracts skilled and unskilled workers in large numbers, away from manufacturing. The quantity problem is also borne from the fact that these industries are unable
to attract workers away from the agriculture sector. The constraints faced by firms in the retail and services sector have more to do with mismatches between wage expectations and wages offered (rather than a lack of applicants). In other words, in services, the problem has more to do with the quality of skills available, and the fact that these skills are too low to merit the wages that applicants think they deserve. Wage expectation mismatches between employers and workers are most salient in the higher skill occupational categories.

The implication is that low quality skills are perpetuating low wages. In order to break this cycle, the system must: i) improve the quality of skills being taught so workers can justifiably expect better wages; ii) increase the opportunities (and incentives) for people to continue upgrading and updating their skills (by practicing them more often and acquiring new ones); and iii) provide a mechanism for employers to be able to have a say in what is taught in the formal education and training system.

Teamwork emerges as a critical skill for workers. Also, the personality traits that matter most across all occupations are conscientiousness and emotional stability. For higher skilled workers, having a good command of soft skills is secondary to having good cognitive and technical skills, even if they do not use them intensely. The importance of numeracy skills gradually decreases from service workers to elementary workers. But the salience of teamwork across all groups, including less skilled groups such as elementary workers, is worth noting. Given that many less skilled workers exit the education system early, it is important to focus on developing and honing these skills earlier rather than waiting to remedy them later on as adults.

As reported by workers, computer skills are not widely used at work, even for highly technical workers. More often than not workers in Lao do not use computers at work, even among the professional and technical categories of workers. Among highly skilled workers, over one-third do not use computers at work, and those that do use them only for basic tasks. A small share of workers uses complex and specialized software. The estimates are much lower for lesser skilled categories of workers. Because there are clear wage premiums for this skill, it is important that it be more widely and systematically taught, starting in primary school. The Government should consider putting in place an initiative (or joining forces with the private sector) that allows people to develop computer skills so that regardless of their education level, workers can be proficient in computers. This will be critical to the country’s sustained growth.

Despite the low levels of skills in Lao, labor costs have been rising over the last few years. These increased labor costs, without improved skills (and therefore productivity) to justify them, are likely straining the Lao economy. For instance, Lao firms are likely to be less competitive in international markets as they face higher costs, and within Lao, many firms are likely to enter the informal sector of the economy to avoid having to pay statutory minimum wages. Similar negative outcomes may filter down to lower skilled workers, who may lose their formal job status or be restricted to self-employment because their wages may be too high for their skill.

Some employers provide training to tackle skills deficiencies and mismatches, and to deal with increases in wage costs, but training mostly takes place in larger firms. Training is not commonplace among Lao’s firms—one-third of all firms (mostly larger ones) and many companies are still reluctant to provide in-house training or take-up existing training initiatives, largely because the benefits are unclear. Most companies that do invest in training do so in-house and on-the-job rather than through external or dedicated trainers. However, evidence shows that much of the training focuses on remedying skill deficiencies rather than improving or building on existing skills. In other words, employers are using their training budgets to remedy skills that workers should already have, rather than teaching them new skills.
Overall, the analysis in Part I shed light on mismatches in two dimensions: the quantity of people willing to work, and the quality of people available to work. For instance, the supply of workers available to work in the manufacturing sector is lower than what the sector can absorb. In other sectors, employers have problems getting workers of any skill level to apply for jobs. For the highly skilled category of workers, the mismatch in terms of educational attainment is minimal for university graduates, but larger for vocational graduates. Indeed, among recent hires in higher skill occupational categories, employers seem to have a revealed preference for university graduates and less so for vocational graduates. Employers perceive that university graduates are better trained than vocationally educated workers in the skills required to be efficient managers or professionals, especially as it relates to having higher literacy and technical skills (namely ICT and presentational skills). This is especially true for people trained in non-manual vocational degrees such as business administration, accounting, and management, which are also taught at the university level. For skilled non-manual workers such as administrative staff, employers have an expectation of skills that differs from the skills they actually need (and use) at work; for the most part, these workers use higher levels of skills than what employers perceive them to have, thus indicating that employers perceive certain job categories as less skilled than they actually are, and as a result, employers offer lower wages to certain categories of workers, discouraging applicants from taking the jobs.
PART II: UNDERSTANDING SKILLS FORMATION AND SKILLS OBTAINED IN THE FORMAL VOCATIONAL TRACK OF THE SYSTEM

1. Understanding Lao’s Post-Secondary Education System

Despite progress made in the last few years, Lao’s higher education and vocational education and training systems remain largely inefficient and unlikely to meet the country’s demand for skills without meaningful reform. Presently, the Government of Lao recognizes that only a small share of the population has skills and qualifications above the basic level, and more and more people are learning skills for which there is little demand. For instance, a Tracer study carried out in 2005 found that the country’s vocational system produced about 30,000 students less than what the labor markets’ requirements were, and while there was an oversupply of business and management-trained workers, there was a huge shortage of skilled labor for manual jobs and professions (MOES, 2006). At the same time, social pressures have resulted in increased demand for courses in business, computing, and language training; unfortunately, as MOES noted (2008), labor markets are not demanding such skills to the extent that the general public believes, deepening the skills mismatch.

Getting right the institutional arrangements in support of skills provision at both the public and private levels is a significant challenge. The performance of Lao’s vocational education system in terms of its institutional arrangements and sustainability, and also the employment outcomes of its graduates, has long been a concern. The supply-driven nature of the post-secondary education system, coupled with skills shortages and mismatches in the labor market as described in Part I of this report, indicates further need for reform. This is particularly important given the renewed focus on vocational education and training and the Government’s push (with significant donor assistance) to expand the sector and significantly increase the number of TVET institutes (as highlighted in the 7th NSEDP). The importance of vocational training in Lao is evidenced by the Government’s increased expenditure on vocational education in recent years, which far exceeds that of other forms of higher education (Figure 90).

Figure 90. Percentage of Government Budget Allocated to TVET and Higher Education

Source: Government of Lao, Ministry of Finance
To better understand the mismatch between demand and supply of skills, it is important to explore in detail the shortcomings of skills provision in higher education and their impact on labor outcomes. As Lao entered its second phase of educational reform, which was possible largely due to donor support, it was critical to understand the issues and constraints that remained salient in TVET and higher education (HE). Various donors had identified some of these issues through previous studies but an across-the-board institutional review of HE and TVET to assess the performance and responsiveness to labor market demands of these institutions was necessary. Apart from the institutional assessment, it was also important to understand how recent graduates had fared and are faring in the labor market.

As such, apart from the results derived using survey data, for this part of the report the team made use of an institutional assessment survey and traced a subset of graduates to accurately measure their outcomes. In addition to the STEP household and employer surveys, an evaluation of a sub-set of skills suppliers in the vocational education and technical (VET) and the higher education (HE) sectors and their graduates, was carried out to provide policymakers with the evidence necessary to guide a reform process. This section will identify common patterns and key institutional shortcomings and constraints within the HE sector, and assess the career potential, returns to education, and usefulness of completing vocational training in Lao. By describing the institutional arrangements currently in place in Lao’s higher education system, Part II aims to assess the current capacity of the country’s skills delivery and skills development institutions. This study aims to fill such gaps and to contribute to the analytical work guiding the second phase of the education reform agenda; recommendations for improving the delivery and increasing the quality and relevance of skills are provided in the final section.

After analyzing the institutional set up of higher education and TVET institutions in Lao, which can be seen as skill providers of the education and skills delivery system, the next section presents analysis that looks closely at the current situation of TVET graduates in the country as they transition from skills absorbers to skills suppliers.

2. Institutional Background and Assessment

In terms of affiliation, the bulk of the institutions surveyed fall under the direct or indirect responsibility of the Ministry of Education and Sports (MOES). Most, or 18 out of 29 institutions included in the survey are directly affiliated with the Ministry of Education (these include seven TVETs, six universities/faculties under the direct responsibility of MOES, and five Integrated Vocational Education and Training (IVET) under the Provincial Education Services of MOES), and six are private schools regulated by MOES. Two schools surveyed are TVETs affiliated with the Ministry of Labor and Social Welfare (MOLSW), and the remaining three institutions report to the Ministry of Agriculture and Forestry (MOAF). By technical vocational education and training (TVET) the analysis means all “vocational programs differ(ing) from academic ones in their curriculum and in their aim of generally preparing students for specific types of occupations and, in some cases, for direct entry into the labor market. VET takes a variety of forms in different countries but also within a country. Initial VET normally leads to a certificate at upper secondary level” (EC, 2009). TVET normally refers to training programs provided by formal institutions with the aim of providing students with skills relevant to employment in the formal sector. On the other hand, integrated vocational education and training (IVET), refers to “a unique approach to integrate formal and non-formal (short-term) vocational training for specific target groups. Such approach has been discussed in many countries (…) in order to enable access to vocational training also for target groups from the so-called informal sector and early school leavers.” (Planco Consulting, 2010, pg.8).

25 This reform has been possible with support from other donors such as ADB, The German Development Agency or GIZ, and the Japanese Development Agency JICA

26 By technical vocational education and training (TVET) the analysis means all “vocational programs differ(ing) from academic ones in their curriculum and in their aim of generally preparing students for specific types of occupations and, in some cases, for direct entry into the labor market. VET takes a variety of forms in different countries but also within a country. Initial VET normally leads to a certificate at upper secondary level” (EC, 2009). TVET normally refers to training programs provided by formal institutions with the aim of providing students with skills relevant to employment in the formal sector. On the other hand, integrated vocational education and training (IVET), refers to “a unique approach to integrate formal and non-formal (short-term) vocational training for specific target groups. Such approach has been discussed in many countries (…) in order to enable access to vocational training also for target groups from the so-called informal sector and early school leavers.” (Planco Consulting, 2010, pg.8).
teach different types of skills and programs, and can either be public and privately owned/operated. The number of institutions selected was based on the desire to cover 50 percent or more of the schools included in each category (for instance, half of TVETs under MOES, about half of IVETs under the Provincial Education Services of MOES, and half of TVETs under MOLSW). As shown in Table 5 below, this was achieved for all categories except private colleges where the pool is large and the budget only made it possible to interview approximately 10 percent of the schools. Furthermore, the sample made it possible to interview institutions accounting for over 25 percent of all post-secondary student population in the country.

Table 5: Summary of Institutions at the Post-Secondary Level & Sample Selection

<table>
<thead>
<tr>
<th>Category/Institution</th>
<th>Total # of Institutions</th>
<th># of Institutions in Sample</th>
<th>% Sample</th>
<th>% Enrollment at Sample Schools</th>
<th>Estimated Enrollment at Sample Schools</th>
<th>% Enrollment at Sample Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVET, MOE</td>
<td>14</td>
<td>7</td>
<td>50%</td>
<td>17,199</td>
<td>14,153</td>
<td>82%</td>
</tr>
<tr>
<td>IVET, PES (MOE)</td>
<td>8</td>
<td>4</td>
<td>45%</td>
<td>1,294</td>
<td>827</td>
<td>64%</td>
</tr>
<tr>
<td>TVET, MOLSW</td>
<td>4</td>
<td>2</td>
<td>50%</td>
<td>1,489</td>
<td>1,249</td>
<td>84%</td>
</tr>
<tr>
<td>TVET, MOAF</td>
<td>5</td>
<td>3</td>
<td>60%</td>
<td>488</td>
<td>331</td>
<td>68%</td>
</tr>
<tr>
<td>Public Universities, MOE</td>
<td>4</td>
<td>4*</td>
<td>100%</td>
<td>9,663</td>
<td>7,127</td>
<td>74%</td>
</tr>
<tr>
<td>Private Colleges/TVE Ts</td>
<td>Approx. 90**</td>
<td>6</td>
<td>7%</td>
<td>34,854</td>
<td>11,640</td>
<td>33%</td>
</tr>
<tr>
<td>Other***</td>
<td>40</td>
<td>0</td>
<td>0%</td>
<td>NA</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>Approx. 165</td>
<td>29</td>
<td>18%</td>
<td>Approx. 135,000</td>
<td>35,327</td>
<td>27%</td>
</tr>
</tbody>
</table>

* Due to the large size of the main national public university (the National University of Lao in Vientiane), we decided to focus our attention on only three of the largest faculties of this institution (the Faculty of Engineering, the Faculty of Economics, and the Faculty of Education) and to treat them as a single observation. As such, all the findings presented report and assume the number of universities at six instead of four (the three faculties mentioned and the three remaining public universities: Souphanouvong University, Champassack University, and Savannakhet University).

** UNESCO, 2012 and 7th National Socio Economic Development Plan

*** Other schools at the secondary and post-secondary vocational and higher education institutions not covered in this study include 10 training institutes of the Lao Youth Union, 5 training institutes of the Ministry of Culture and Information, 3 training institutes of each of the Ministry of Finance, the Ministry of Justice, and Lao Women’s Union, and 1 training instituted of the Bank of Lao. Finally, the Ministry of Health runs a Health Sciences University and 12 nursing schools.

In terms of institutional partnerships, the vast majority of schools interviewed have links with other local educational institutions, but a sizable number also partner with foreign schools. Only two schools out of 29 reported not having partnerships with local institutions, and 19 had partnerships with educational institutions abroad. Interestingly, 21 institutions had some relationships with local private firms, and 23 partnered with or were supported by non-governmental organizations (NGOs) or international bodies (for instance, ADB, GIZ, JICA, etc.). However, only four institutions had links to private firms abroad (among which are the Lao German Technical School and one of the National University of Lao or NUOL faculties).

2.1 Student Body, Program Offerings, and Teaching Materials

2.1.1 Students and Programs

The average size of the schools analyzed is about 1,600 students, with the median value almost half of that, reflecting the large variance in school sizes. The average total enrolment for the 29 schools analyzed is 1,644 students; however the median value is much smaller, at 845, reflecting large variance in size between a few institutions in the sample (mostly public universities) and many of the TVET or IVET colleges (although a few TVETs in the sample are very large). The range of the institutions’ sizes is from 65 students to over 8,000, for a total of over 45,000
students across the sample. Ten of the schools offer full time programs only, and the remaining 19 also have part-time students; the average school offering part-time courses has just over 40 percent of the student body enrolled as part-timers.

The share of women among total students is about one-third, although this ratio also shows a great deal of variation. While the average school interviewed has about 38 percent female students, the share of females is higher in universities and university departments or faculties (about 45 percent) and in private colleges (about 49 percent), but settles at about 25-30 percent in TVETs and IVETs. The subjects taught at each school, rather than the schools themselves, are important in determining the share of women enrolling in a given school because women typically go into a subset of careers (often less physical in nature) while men go into a distinct set of careers.

Twenty-two schools report offering up to bachelor programs, and the average school has about 1,300 students enrolled at the undergraduate level, a third of which were female (Table 6). Aside from the universities interviewed, four out of five IVETs, four out of six private colleges, eight out of nine TVETs, and one out of three public colleges interviewed offer programs up to the bachelor level. Once again, while the average school offering bachelor degrees has about 1,300 students at the undergraduate level, the variance is quite high: universities and distinct university departments/faculties have over 2,700 students enrolled at the undergraduate level, and IVETs have about 500 students. On the other hand, only five schools offer programs and courses at the Masters and PhD levels, with an average of 91 students enrolled; again, this number masks a lot of variance, with three university departments which account for 95 percent of the post-graduate student body in the sample. Finally, females make up about one-third of the average school’s undergraduate enrolment, with TVETs and IVETs comprising a lower share than universities.

### Table 6. Total Enrollment (Undergraduate & Above)

<table>
<thead>
<tr>
<th></th>
<th>Average (Median)</th>
<th>Schools Reporting More than 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total undergraduate enrolment</td>
<td>1,341 (930)</td>
<td>22</td>
</tr>
<tr>
<td>Total Undergraduate Enrolment - Women to Total Ratio</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Total Graduate institutional enrolment</td>
<td>91</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on World Bank Data

In terms of age and previous education, unsurprisingly, the bulk of the student body is between 19 and 24 years old and the vast majority has completed higher secondary school. About 55 percent of the student body is between the ages of 19 and 24, while about 30 percent is under 19, and the remaining 20 percent is over 24. When it comes to prior education, in the average institution, 87 percent of students have completed higher secondary schooling (with, expectedly, universities and faculties, and both public and private colleges having 95-97 percent of their student body with this level of prior education). About seven percent have completed only lower secondary, although the proportion is obviously much higher within IVETs, where the share of

---

27 It should be noted that TVET institutions will no longer accept students at the Bachelors level and all institutions offering Bachelors programs and above will fall under MOES’ Department of Higher Education.
students with only lower secondary education is about 30 percent on average and peaks at 60 percent in a few institutions. The remaining five percent have other education levels.

More than 60 percent of all programs offered are at the diploma and Bachelor (BA) level. One third of programs result in a certificate/diploma (Figure 91), while 31 percent are Bachelor level courses. Just over a fourth of programs result in a high diploma/certificate, while eight percent offer a low diploma/certificate, and a mere two percent result in a Master degree or above.

**Figure 91. Programs' Certification Level**

![Programs' Certification Level](image)

*Source: Authors’ calculations based on World Bank Data*

In 2011/12 the average program had about 65 students, of which about a third were women; the number seems to be on a declining trend. From the data collected from 22 schools, about 367 programs were offered in total, and the average program had 65 students enrolled. This represents an increase from the average 59 registered in 2010/11, but a significant decrease from the 83 students-per-program that was observed in 2009/10. The same year, the number of applicants per program settled at 79.

The most commonly offered programs were those related to agriculture, followed by electrical, hospitality, business administration and management, finance and accounting, and automotive. Focusing exclusively on the top 10 programs, over 14 percent of them were in agriculture, followed by just over 10 percent in the electrical sector. Programs related to hospitality and business administration accounted for about seven percent of the top 10 programs, while courses in finance and accounting, automotive repair, construction and engineering, languages, and electronics, each made up about five percent of the top 10 programs. Female students made up more than half the student body in hospitality, business administration, and finance and accounting programs—they had the lowest representation in electrical, electronic, and automotive repair programs (Table 7).

---

28 These findings are somewhat expected and are probably a result of the different nature of IVET institutions as opposed to TVETs, colleges and higher education institutions. IVETs, as described above, combine traits of both the formal and non-formal education system, are created especially to focus on targeted populations, and offer, among other things, short courses for the unemployed and early school leavers. It is therefore natural to find a higher proportion of students in these institutes with lower secondary education or even less. The only other two institutions that have a significant share of students with only lower secondary are two TVETs, which probably offer lower and middle level vocational courses at the lower and upper secondary level (that is, certificates).

29 Data based on 22 schools that provided data on enrolment.
Table 7. Top Ten Programs (by offering)  
Average Enrolment, Total Students, and Gender Breakdown

<table>
<thead>
<tr>
<th>Program Type (top ten programs)</th>
<th>% of programs</th>
<th>Average Enrolment per Program</th>
<th>Total Students Enrolled by Program</th>
<th>Share of Female Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agric., Agro-business, Husbandry &amp; Fishery</td>
<td>14.4</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Electrical</td>
<td>10.6</td>
<td>101</td>
<td>58</td>
<td>66</td>
</tr>
<tr>
<td>Hospitality</td>
<td>7.6</td>
<td>57</td>
<td>42</td>
<td>48</td>
</tr>
<tr>
<td>Business Administration and Management</td>
<td>7.1</td>
<td>169</td>
<td>107</td>
<td>123</td>
</tr>
<tr>
<td>Finance and Accounting</td>
<td>5.5</td>
<td>207</td>
<td>195</td>
<td>181</td>
</tr>
<tr>
<td>Automotive Repair, Maintenance &amp; Technology</td>
<td>5.5</td>
<td>57</td>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>Construction and Civil Engineering</td>
<td>4.6</td>
<td>73</td>
<td>31</td>
<td>33</td>
</tr>
<tr>
<td>Languages</td>
<td>4.4</td>
<td>128</td>
<td>241</td>
<td>209</td>
</tr>
<tr>
<td>Electronics</td>
<td>4.4</td>
<td>63</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Computer Science/Engineering, IT</td>
<td>3.8</td>
<td>116</td>
<td>76</td>
<td>122</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on World Bank Data

The three most widely offered programs, that is, agriculture, electrical, and hospitality, had relatively low average enrolment rates. Agricultural programs were small, at an average 26 students per program, but have maintained stable enrolment rates over time. Electrical programs, on the other hand, had substantially declined in average size (from 101 to 66) and in absolute number of students. Several other programs also faced declining enrolment rates, such as business administration and management (from 169 to 123), and finance and accounting (from 207 to 181 students per program). Courses in the hospitality industry, the construction and engineering sector, and in electronics had also decreased in size. A few other programs, on the other hand, seem to be on the rise, somewhat consistently with anecdotal evidence collected before the study; language programs increased dramatically (from 128 in 2009 to 209 in 2011), as well as (although to a much smaller degree) IT and computer sciences programs.

Interestingly, fluctuations over time in program enrolment rates did not reflect market demand for specific professions. GIZ has identified increasing labor market demand in five sectors: wood processing, construction, metal work, electrical installation, and automotive repair (Planco Consulting, 2010). However, the data showed that in some of these areas there were few students in absolute numbers, and the average size of the programs was small and/or declining (for instance in construction and automotive repair). Other programs, such as wood processing, were not even among the most frequently offered.

Tailoring, carpentry, agri-business, and construction programs featured prominently among programs of low interest to students. While the declining popularity of construction was evidenced in the enrolment data, agri-business remained among the top 10 programs offered. This suggests that some of these programs may have been set up years ago when there was high demand for them, but had not been subsequently dismantled despite their current scarce appeal among students (this explanation is also consistent with the finding that schools do not close programs even when they are unpopular, as shown in the next section). On the other hand, some of the increasingly popular programs (business administration, languages, finance and
accounting, tourism) were large in size and accounted for a large share of the students enrolled in the top 10 programs, although these areas are not necessarily considered to be Government priorities. The puzzling evidence was that electrical courses, which are classified as high-demand, declined in average size and in absolute number of students over time.

2.1.2 Student Admission and Enrolment Constraints

The most commonly used method for student admissions across the sample of institutions was the national examination channel. Figure 92 below presents the number of institutions that reported using a given selection method to admit students; 20 out of 29 institutions reported using the national examination to identify part of their student body, while 13 institutions admitted at least some students following direct Government assignment. Interestingly, none of the five IVET institutions in the sample resorted to the national examination to admit their students, but instead selected students on the basis of interviews, quotas and targeted populations. This probably reflects the fact that IVETs are set up to target special groups and provide courses and skills to disadvantaged groups, early school leavers, and so on. Finally, 10 institutions relied on the quota system to select pupils, and 11 institutions followed the nayobay system (that is, selected students among special target groups).

Figure 92. Selection of Students into Schools and Programs

<table>
<thead>
<tr>
<th>A. Number of Institutions Using a Given Selection Method</th>
<th>B. Average Percentage of Students Admitted Through Each Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>National examination</td>
<td>National examination</td>
</tr>
<tr>
<td>Interview for some programs</td>
<td>Interview for some programs</td>
</tr>
<tr>
<td>Quota system</td>
<td>Quota system</td>
</tr>
<tr>
<td>Special targeted populations ('nayobay')</td>
<td>Special targeted populations ('nayobay')</td>
</tr>
<tr>
<td>Direct government assignments</td>
<td>Direct government assignments</td>
</tr>
<tr>
<td>Student simply apply and we accept them</td>
<td>Student simply apply and we accept them</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations based on World Bank Data

The bulk of students across the board were selected through examinations. The average institution that used this method admitted more than 70 percent of its student body this way. In the nine schools that used interviews as an admission method, less than 50 percent of students were selected that way, and only a small portion (10 percent) were assigned by the Government to the 13 schools in which they had some jurisdiction over admissions. Five schools, three of which were private colleges, admitted most of their students (about 75 percent) based on applications.

Directors of institutions mentioned the lack of interest on behalf of the youth as the most important obstacle to expanding enrolment. As Figure 93 below shows, the “lack of interest
among youth” was mentioned 24 times (out of a total of about 60 answers and by all types of institutions) among the top three constraints, and 16 schools ranked this as the top constraint. The lack of jobs related to the students’ fields of training was also a major constraint, especially among TVETs and IVETs. The level of preparation of applicants was also a frequent problem among the schools that were interviewed. On a more positive note, respondents felt that the cost of attending their institutions was not a major obstacle for applicants. However, this evidence begs the question of whether the current system is responding to the needs of students and labor markets and, more importantly, whether HE and TVET institutions will be able to adapt to changing market conditions.

Figure 93. Existing Enrolment Constraints

(Number of Institutions Reporting a Constraint as Top or in the Top 3)

Source: Authors’ calculations based on World Bank Data

2.1.3 Program Creation and Teaching Materials

When it comes to program creation, most schools had some interaction, mostly informal, with employers before establishing new courses and programs; however, not a single school reported having ever closed down a program. As Figure 94 below shows, 24 schools out of 29 reported engaging in dialogue and interacting with firms and industry before setting new programs, and 16 schools had started new programs in the last three years. Thirteen schools said that their head Ministry told them which programs to open and, interestingly, only seven schools blamed financial constraints for not being able to start new courses. Most interestingly, no program had been closed in the last three years or, more generally, ever in the past; in fact, all 29 schools stated that programs are never shut down, even when there are no job prospects for graduates. Their rationale for this is not based on reputational issues, since none of them felt that program closures would reflect poorly on them. This is not an uncommon feature of education systems across the world, and points to a lack of incentives for efficiency, and also a lack of accountability, in the use of public resources. There is great potential for educational institutions to reallocate scarce resources to higher priority areas, but it will require system wide ability to adapt to demand side changes.
When asked how to improve the process of creating new programs, interviewees stressed the need for MOES to differentiate curricula based on geographic areas, specific economic needs, and regional needs. They also said the Government needs to encourage partnership with employers and other agencies to design programs that are more relevant to the needs of the economy. Curriculum development is somewhat disconnected from the needs of the students, the labor market, and receives little input from firms. Only one school reported using student inputs to develop its curricula, and only four schools relied on market surveys to design curricula, but only in some programs. Most schools do not use graduate surveys to inform the process of curricular development, and design curricula without considering the demands of students. However, nine institutions (of different types) reported relying on graduate surveys to develop at least some of their curricula. Only 11 schools seemed to ask for advice from employers to design parts of their curricula. Most curricula are therefore developed through some form of collaboration between individual institutions and the head Ministry, or by the institution alone, or by individual instructors. There was no significant difference between TVETs, IVETs, colleges, and public and private schools when it comes to curricular development.

There was even less input sought from students or employers in the design of teaching materials. Only three institutions developed part of their teaching materials with inputs from employers; this result explains why in Part I of the report employers complain about the lack of relevant skills among students and the inability to find prepared applicants and workers. Twenty-five institutions did not bear in mind students’ suggestions or market surveys in the design of their teaching materials. Only five institutions (mostly TVETs) carried out surveys among graduates to inform the development of teaching materials for some of their programs. Once again, in this respect, there is no difference between public or private institutions, or between IVETs and TVETs and colleges or universities. Finally, institutions quoted the lack of textbooks in Lao language as one of the major constraints to developing curricula and materials, as well as the lack of skills amongst instructors, lack of financial resources, and lack of standardizations at the national level. The disconnect between students, schools, firms, and ministries in the
development of teaching materials and curricula suggests once again that the skills taught in HE and vocational schools may not be aligned with the needs of the labor market (a finding that, once again, was also evidenced in Part I based on data collected on employers’ views).

When it comes to quality control mechanisms and advisory boards, there are few formal mechanisms to ensure that employers can provide feedback on the quality of teaching and institutional performance in general. Virtually no institution of higher learning relies on industry or firm advisors to help monitor the quality of the institution through the performance of its graduates in the workplace (Figure 95). Similarly, 24 institutions reported the absence of formal program advisory committees. Of greater concern was the finding that 17 out of 29 schools noted their parent Ministries did not monitor the performance or quality of their programs.

**Figure 95. Advisory Boards and Quality Control Mechanisms**

(Number of Institutions Answering)

![Advisory Boards and Quality Control Mechanisms](image)

*Source: Authors’ calculations based on World Bank Data*

Despite the fact that TVETs and IVETs are required to perform yearly self-assessments, almost half of the institutions in the sample do not resort to self-assessment or any other form of administrative review, including several public institutions (TVETs, IVETs and universities). However, on a more positive note, in about 20 schools, employers provide informal feedback on teaching quality and students for some or all programs offered. The lack of formal feedback mechanisms and self-assessments make it challenging for HE and vocational institutions to respond to changing labor market needs. A well-established feedback mechanism is necessary to assess schools’ performance and identify shortcomings and needs; the absence of feedback makes it more difficult to diagnose problems and take remedial action.

2.2 Internal Efficiency: Staff, Governance, Autonomy, and Services

2.2.1 Teaching Body

Two thirds of the instructors are men, and most female staff work in low-skilled jobs. The average and the median institution had about one third of full time female employees; institutions in the sample had on average 113 full time employees, including instructors, of which 37 were women. On the other hand, the median institution had 82 full time employees, 23 of which were female. A closer look at the gender breakdown of employees across different types of
occupations within schools revealed that women were more prevalent in low-skilled jobs. Out of 31 presidents/rectors in 29 schools (two institutions had two rectors each), only two were women (or about six percent). Similarly, the 29 schools interviewed had a total of 70 deputy presidents/rectors and only eight of those were women (about 10 percent). The ratio of women to total employees increased to almost 20 percent, however, at the level of department or program managers and coordinators only, settled at about 57 percent among administrative personnel, and reached 75 percent when restricting the analysis to janitorial staff.

The large majority of full-time employees were instructors. The average institution had 95 full-time instructors, and the median was 64. Once again, about a third of full time instructors on average were women. Fourteen interviewees reported that the average full time instructor in their institution had a Bachelors degree and above, and ten schools reported a high diploma as the average qualification.

**Figure 96. Enrolled Students per Teaching Staff**

(Part time and Full time Instructors)

The average institution in the sample had a higher student to instructor ratio than those observed across the region and other developing countries (Figure 96). The average student-instructor ratio across the 28 institutions for which data was available was 23 (although the median was considerably lower, at 13). This student-instructor ratio was broadly consistent with UNESCO’s data, according to which the average ratio across upper secondary institutions in Lao is about 21. However, Lao seems to perform worse than other countries in the East Asia and Pacific Region (EAP) or elsewhere in the developing world; the average student-instructor ratio among upper secondary institutions for EAP is about 15, and in Latin America about 14 (Figure 97).

Surprisingly, private schools are driving up the student to instructor ratio, while public schools are faring much better. It is important to note that the average student to instructor ratio hides a great deal of variance between institutions. While the average ratio settled at 23, the figure was in fact much lower among IVETs (seven) and public colleges (eight); it was very high in private ones (50). Finally, among universities and faculty there were about 18 students per teaching staff, and the same applied for TVETs (although within this last group the average dropped to 14 upon exclusion of one TVET with a ratio of 50).
2.2.2 Autonomy and Institutional Governance

Out of 29 institutions, 21 had boards of administrators/advisors, but only half of those comprised industry and firm representatives. All governance bodies included faculty and staff among their members, and two-thirds of them included Government officials. Only four schools allowed student representatives on the board of administrators or advisors. Among the 10 institutions that did not have employers on the administrative board, five had no link whatsoever between their boards and employers, and the remaining five schools consulted informally with employers.

The institutions’ governing boards had mostly consultative and strategic roles. In 17 institutions the boards had a purely consultative role and approved the strategic plan of the school; only in nine schools did the boards approve the budget, and in 10 schools, the boards had responsibilities when it came to hiring the president/rector of the institution (Figure 98).

The Government is heavily involved in the appointment of the members of the boards of administrators for most schools. Of the 21 schools with governance bodies, 16 institutions reported that the appointment of members fell directly under the Government’s purview. In five schools alone were members of the board of administrators appointed by faculty and staff, and only one school appointed its administrators through a competitive process (Figure 99).
The Government is also involved in the selection of presidents or heads of institutions, instructor appointments and dismissals, and salaries, leaving institutions with little room for maneuver. In 24 out of 29 institutions, the Government selected the rector/president, and in the remaining five schools the faculty and staff selected the head of institution after a competitive process. Public institutions had more flexibility when recruiting instructors, but less so in appointing them to particular posts. Nearly all institutions (27) reported complete freedom when it came to recruiting their instructors, and for the remaining two schools the recruitment was done directly by the head Ministry; however, only seven schools (of which six were private) were free to appoint them, and in 21 institutions the head Ministry appointed all or at least some instructors. Almost all schools recruited some of their instructors directly from a university or a teaching institute (such as the Vocational Education Development Center), and only one institution recruited its entire teaching staff from the private sector (Figure 100).

Public institutions have very little freedom to dismiss non-performing instructors and staff and, expectedly, to set their own salaries. Out of 29 institutions, 16 (all public including IVETs, TVETs, universities and colleges) had no freedom to dismiss instructors and staff, and another seven stated that although in theory they were able dismiss their staff, in practice it was very difficult to do so. Only five private institutions reported the ability to fire staff. Likewise, 22 schools had no freedom to set employees’ salaries, and only seven institutions (all the private ones and one university faculty) reported a significant degree of freedom in setting salaries (Figure 101 and Figure 102).
The limited freedom to appoint instructors, dismiss non-performing instructors and staff, and set salaries, could have negative repercussions on overall teaching and administrative performance. Inconsistency between good performance and salaries, and the absence of consequences for negative performance, lowers performance incentives among instructors and weakens their sense of accountability towards students and institutional administrations.

Figure 101. Ability to Dismiss Instructors and Staff

Figure 102. Freedom to Set Salaries

Note: Number inside the bar represents the number of institutions answering Yes or No

Source: Authors’ calculations based on World Bank Data

2.2.3 Student Services and Internships

Internship placement services seem to be widespread in the institutions interviewed, but trainings to prepare for job interviews and job placement services, are much less common. Of the 29 institutions interviewed, 27 had internship placement services available in all of their programs. Career counseling was also quite prevalent, with about 20 institutions offering such services for
all or some programs. However, when it came to employment or employability services, the picture was much less encouraging. Nineteen schools did not organize job fairs, and only six did so for all programs; only eight institutions offered interview training and CV preparation courses for all their students, and 14 schools did not arrange for job placement services or provide job search advice (Figure 103). On a positive note, the supply of language training was a common feature of the institutions interviewed, with 28 out of 29 respondents offering foreign language training for all interested students.

Figure 103. Student Services Available
(Number of Institutions Answering)

A more encouraging find is that nearly all students complete internships in local firms, but the benefits of these internships in terms of eventual employment are low. Among the 28 institutions that answered the questions on internships, the share of students that completed internships in local firms was almost 100 percent, and the average duration of internships was five weeks. However, virtually no student in the sample of institutions moved abroad to intern with a foreign firm. Eighteen interviewees mentioned that the internships are always related to the field of study of students, and eight institutions arranged internships relevant to their students most of the time. No institution reported sending their students to complete irrelevant internships. However, despite the fact that internships were very prevalent and aligned with the students’ fields of study, 22 schools believed that they lead to jobs only sometimes. Only six institutions reported that internships result in jobs most of the time, and one school mentioned that internships never lead to permanent employment.

2.3 Funding and Budgets
Institutional budgets, and Government contributions toward them, vary widely among the sample. The average yearly total budget for the schools interviewed was about USD 400,000 or Kip 3.2 billion, and the median was about USD 260,000 or Kip 2.1 billion. However, the differences in budgets among the institutions were large (just as the variance in terms of student size), ranging from the faculty of economics and the faculty of engineering of NUOL,

30 As of December 2012, USD 1 was equal to about Lao Kip 8,000. According to the World Bank’s World Development Indicators, the GDP per capita of the country in 2011 was USD 1,320.
Savannakhet University and a few other large TVETs displaying yearly budgets of Kip 7-9 billion (about USD 0.9-1.2 million), to a few small IVETs and TVETs reporting annual budgets of less than USD 50,000.

2.3.1 Public Funding

Public institutions receive the bulk of their funding from the Ministries with which they are affiliated, and the rest comes almost entirely from tuition and fees. The average institution (21 in total that provided data) reported collecting about USD 300,000 per year from the Government (with the median value being about USD 180,000), or about two thirds of its yearly budget. There was no significant difference in the amount of money collected from Ministries by universities or TVETs and IVETs. The average public school collected approximately Kip 1.4 billion (or about USD 175,000) through tuition and fees each year (however, once again, the median was much smaller at about USD 75,000), reflecting the fact that the large public universities and TVETs drive the averages upward. Only 11 public institutions reported raising some revenues through the sale of services and products, but the share of total budget collected through this channel was virtually zero. Finally, seven schools received assistance from foreign or private donors; for two of these institutions, foreign assistance accounted for about one-third of their total budgets, but for the other five institutions this source of funding was negligible.

Private schools with no Government funding (only five in the sample) are funded almost entirely by revenues from tuition fees (97 percent), and the remaining three percent is collected through the sale of products and services. Generally, direct Government support or tuition fees are the main sources of funding for HE and vocational institutions. The average school budget varies widely on a per student basis, but with no apparent correlation to the institution’s location, type, size, or courses taught. There is also no relationship between per capita budgets and other variables. As per Figure 104, the average school had a per-student budget of about Kip 2.8 million (or USD 350), with a median value of Kip 1.9 million (USD 235). Once again, the mean values hide a lot of variation, with some institutions managing with a budget per enrolled student of USD 50-100 per year, and other schools displaying budgets of well above USD 600 per pupil per year (and up to over USD 1,000).

**Figure 104. Total Annual Budget per Enrolled Student**

(Kips per Year—Full-Time and Part-Time Students)

Source: Authors’ calculations based on World Bank Data.
Per-student allocations from head Ministries also appeared to have no relationship to other variables such as courses taught, location, and so on. Head Ministries transferred approximately Kip 2.3 million (about USD 280) on average per student, with the median value being about Kip 1.2 million (roughly USD 150) per student. Once again, the per student allocation of funds varied widely across institutions, ranging from USD 50-100 per year to about USD 1,000. Budget allocations from the Government were therefore not linked to performance indicators, geographical preferences (that is, channeling higher budgets to more disadvantaged regions of the country), academic/career areas of interest, or other similar policy priorities.

This evidence raises questions about why similar public institutions receive significantly more than others; why is there so much variation, for instance, in the per-student Government allocation among IVETs which fall under the responsibility of the provincial education service? Similarly, why do some TVETs or universities receive per-student allocations that are much lower than others? On a more general note, why do public sector institutions show such a high variance in per-student allocations, and what policy priorities are funding decisions based on when they appear to be disconnected to other seemingly important variables?

Government allocations per student are low compared to tertiary sector contributions in other countries, but relatively high in the secondary sector. Lao PDR allocates more money than other countries in the region to secondary level education (Figure 105 and Figure 106); according to the data obtained, expenditure per pupil in the institutions in the sample is about 20-25 percent of GDP per capita per year, compared to 15-20 percent in Thailand, Hong Kong, Singapore, Malaysia, and less than 10 percent in Cambodia and Indonesia. On the other hand, compared to other countries in the region, Lao PDR spends less than most at the tertiary level.

![Figure 105. Public Expenditure per Pupil as % of GDP per Capita—Tertiary](image)

![Figure 106. Public Expenditure per Pupil as % of GDP per Capita—Secondary](image)

Source: UNESCO Institute for Statistics for all countries except Lao PDR. For Lao PDR, authors’ calculation based on World Bank data collected. Lao PDR’s Nominal GDP per capita in 2011 was USD 1,320

### 2.3.2 Tuition and Fees

Tuition revenues also vary widely, even among institutions of the same type (public universities, for example). Out of 26 schools for which data was available, the average tuition revenue per
student was about USD 120 per year, with a median value of about USD 65. Here the distribution appeared somewhat less dispersed in general, with 19 schools collecting somewhere between USD 35 and USD 150 per student per year. However, IVETs and TVETs collected less tuition revenue per student than average universities/faculties. Private colleges, on the other hand, expectedly collected more than the average value. The range of tuition revenue per student among public institutions varied between close to zero to USD 300, but the data does not shed light on why these variations occur and why some institutions charge considerably more than others.

Tuition variations are particularly puzzling since most public schools have little to no autonomy in setting them. Fifteen of the institutions interviewed reported no freedom to determine the level of fees for students, and eight had some degree of autonomy, as long as they maintained tuition and fees beneath a Government mandated ceiling. The remaining six institutions, all private, unsurprisingly reported complete freedom to set tuition fees.

Finally, and unsurprisingly, in terms of financial constraints, budget size was by far the most pressing issue among the institutions interviewed. All but three institutions in the sample ranked their limited budget as the top financial constraint they faced, and only one school did not mention the issue among the top three constraints faced. Almost 20 schools ranked the lack of access to income generating activities as one of the top financial obstacles, and 21 respondents lamented having limited access to financial contributions from partners. Interestingly, delays in the allocation of budgets were not perceived as a significant constraint.

2.4 Other Resource Constraints

2.4.1 Facilities Constraints

Most institutions lament the poor conditions of their physical facilities. Out of the 29 institutions interviewed, 18 assessed as ‘poor’ the condition of their facilities, while eight respondents ranked them merely adequate; only three institutions (two of which were private) assessed the physical condition of facilities as good.

The lack of classrooms and laboratories was the most widespread infrastructure or physical constraint. Ten institutions mentioned the lack of classroom space as their main constraint in terms of physical facilities, and six institutions suffered most from the lack of laboratories. However, it is almost exclusively the public institutions that lament the lack of classrooms and labs, with only two private institutions mentioning lack of classrooms as one of the top three constraints. Lack of equipment and tools for laboratories and workshops, as well as their poor quality, were also among the top constraints.

However, the utilization rate of space was not in line with the findings about physical space constraints. When asked to estimate the utilization rates over a 40-hour school week, the average across institutions came out in fact to be much lower than 100 percent, which is roughly what one would expect it to be if indeed an input was a main constraint. For instance, out of the 24 schools that reported using labs and workshops, the average and median utilization rates settle at about 50 percent, with only two schools reporting average utilization rates of 100 percent (despite the fact that almost 15 institutions ranked the lack of labs and workshops among the top three facilities constraints). Also, in terms of utilization rates of classrooms, out of the 28 schools that reported non-zero rates, the average and the median utilization rates were about 60 percent, with only seven schools reporting 100 percent utilization rates. Yet, 10 institutions mentioned the lack of classrooms as their main constraint, and 14 respondents assessed the issue as one of the top three
constraints faced. Only three of the institutions that ranked the lack of classrooms as their main constraint also reported 100 percent utilization rates.

Additionally, public institutions reported the lack of classrooms and labs as main constraints more often than private schools, but their utilization rates were pretty low (just over 50 percent on average); on the other hand, private schools did not mention these constraints very often but displayed very high utilization rates (four out of six private institutions reported in fact 100 percent classroom utilization rates). The reason for this inconsistency remains unclear but it is possible that respondents were more concerned about the state of their facilities as opposed to the sheer availability of them (that is, the issue may be the lack of ‘quality’ classrooms and labs, as opposed to mere lack of classrooms and labs).

2.4.2 Human Resources Constraints

When asked about human resources availability, the low availability of instructors was by far the main obstacle mentioned. Sixteen schools mentioned the lack of instructors as one of the top three issues faced by schools, followed by the lack of administrative staff. However, the quality of instructors and staff was also a frequent complaint among respondents.

This evidence is consistent with the data collected, which shows that quality is a major issue in the mind of respondents. As shown in Figure 107, almost 60 percent of schools mentioned that the lack of instructors with strong pedagogical skills and experience was a major constraint as far as the teaching body is concerned. A further third of schools considered this issue a moderate constraint. One private school alone said that poor pedagogical skills and experience among instructors were not a constraint at all. Furthermore, and consistent with the evidence previously mentioned, almost 80 percent of institutions reported the shortage of instructors in the country as a moderate to major constraint. Six out of 10 institutions also lamented the lack of instructors with industry specific skills and the conditions of employment offered to instructors, and considered such issues moderate or major ones.

Figure 107. Main Constraints with Respect to Instructors
3. TVET Graduate Assessment

The findings of the STEP and institutional surveys as previously described were examined using primary data collected for this study. Respondents were mostly TVET graduates, but also included university and college graduates. The following section summarizes the results of the Tracer data analysis, which focuses on labor market outcomes and sheds light on the school-to-work transition of the respondents. The analysis also highlights why graduates chose their fields of study, and examines student perceptions of the quality of skills and education they received while studying and whether the skills obtained are useful to their job.

Approximately 85 percent of all respondents to the Tracer survey attend public TVET institutes; the rest attend private colleges or public/private universities. The Tracer survey included 2,689 graduates (after removing the respondents that graduated from colleges or universities), two-thirds of whom had completed their TVET studies either in 2012 or in 2011; the majority (86 percent) graduated from public institutions. Over half (56 percent) of the interviewees were between 21 and 24 years old. In terms of gender breakdown, almost 1,500 respondents out of 2,800 were women, despite the fact that at the national level the number of men enrolled in TVETs is higher than that of women, as noted in the institutional assessment.

The sample of graduates was geographically spread, though 40 percent were from Vientiane. Nearly 1,150 out of the 2,700 graduates interviewed were from the capital, with Champasak accounting for another 420 respondents, and Luangprabang and Xieng Khuang for about 500 of the total number of those surveyed. On the other hand, about 2,260 interviewees were of Lao ethnicity, while graduates of Keumu and Hmong origin accounted for another five percent each.

3.1 Labor Market Outcomes and School-to-Work Transition of TVET Graduates

Almost two-thirds of the TVET graduates surveyed currently work, mostly in public administration. About 61 percent of respondents (or 1,631 of them) were employed at the time of the survey. About 32 percent that reported not working are undertaking further studies or training; they are either enrolled in school, completing Bachelors degrees, or pursuing high diplomas. Thus, only about seven percent of all respondents are currently unemployed, out of the labor force, or serving in the military.

Of these respondents, more than half (about 960 of them) work in public administration. About a fourth of all employed respondents work in the education sector, 15 percent are employed in the financial and banking sector, and another 10 percent are employed in the information and communication sector. Among those working in Government, about 40 percent report working in the ‘education’ sector (mostly as instructors). Another 13 percent of government workers are in ICT, and 11 percent work in the financial sector or banking. Excluding instructors, the majority of TVET graduates who report being employed work as clerks or technicians (Figure 108). Few of the graduates sampled hold unskilled positions. It is important to note that the sample is skewed towards the public sector and the teaching profession; thus respondents are not likely representativeness of the full population of recent graduates.

Older workers based in Vientiane report the highest salaries among respondents. Regression analysis shows that the monthly income of graduates who are working is higher among those holding managerial positions, those working in the capital, and those who are older. However, there are no significant differences between the salaries of men and women across provinces, between different sectors, fields of study, or degrees.
Interestingly, school-to-work transitions were smooth for all graduates currently employed. About 30 percent of graduates who work had secured a job before graduating, while 40 percent found employment one to three months after completing their studies. However, another 10 percent found jobs more than one year after graduation (Figure 109). Holding other factors constant, shorter job searches are correlated with being older, having graduated in more recent years, and living in the Vientiane area. There are low levels of churning in the labor market for those currently employed; the large majority of these respondents (about 1,400 out of the 1,631) are still in the first jobs they took after graduation.

Source: Authors’ calculations based on World Bank Data
The most common way for graduates to find their first jobs is through social networks. Of the roughly 2,250 graduates who answered the question of how they found their first job, almost 40 percent noted that friends, family, relatives, and instructors were instrumental to finding employment. A further 15 percent credited the career services of their educational institutions and another 15 percent got jobs after seeing advertisements in newspapers or the media. A similar share contacted employers directly and gained employment. Only five percent mentioned finding work as a result of training or apprenticeships, a result that contradicts the findings emerging from the institutional assessment survey, which showed that internships lead to employment quite frequently (at least according to the TVET school staff).

4. Choosing an Education Path and the Returns to It

About one-quarter of all graduates sampled received vouchers or scholarships to cover part of their education costs, and cited that receiving such assistance was the primary reason for their decision to attend the institutions they ultimately chose. One-fifth of students opted to enroll in a given institution primarily because of the practical nature of the skills taught. The quality of facilities, affordability and proximity to home were also an important factor in the decision-making process. Interestingly, even though the availability of scholarships appears to be the most often cited primary reason for going to a public institution, about two-third of graduates (from both private and public institutions) mentioned that their families primarily paid for their education, suggesting that the public scholarships and subsidies were not enough to cover all their costs. Only about 250 public school graduates reported scholarships and vouchers as their main source of funding, even though 650 mentioned financial support as the key reason behind their enrolment in public institutions.

Among those working, almost half studied business administration, accounting or economics, rendering them the most popular subjects. More than 700 respondents out of the 1,631 that are currently employed graduated in business administration, economics, accounting, or finance. And about 70 percent of them attended a public institution (Figure 110). The second most popular field of study is education, followed by engineering and technical subjects, and then law and legal services.

Figure 110. Field of Study of Currently Employed TVET Graduates

Source: Authors’ calculations based on World Bank Data
The most often cited reasons for studying business administration and related fields included “liking the field of study,” salary, and career expectations. Over 500 graduates in business administration listed one of those two reasons among the top three behind their decisions, followed (albeit with a much lower frequency) by the ease of entering such programs and family recommendations. Although many found employment in the financial services industry and businesses (30 percent), information and communication industry (12 percent), and food and tourism industry (10 percent), only nine percent of them worked as professionals (that is, not clerks or technicians), and one percent as managers.

The economic returns to a career in business administration and related subjects are similar to the returns in other fields of study, suggesting possible misconceptions about how the labor market rewards skills and fields of study. Regression analysis reveals that taking into account key factors such as age, gender, and education, there is no significant difference in average wages between those graduating in business administration and other fields. Similarly, those employed in the financial and banking sectors do not earn more than others; in fact, workers in the vehicle trade and repair sector obtain the highest monthly wages, while workers in industry and manufacturing, energy, mining, and tourism/food services, all earn comparable wages.

4.1 Usefulness of Skills Learned, Job Satisfaction, and Aspirations

About 80 percent of graduates currently working reported that their jobs are aligned with their educational backgrounds. Although this is a self-reported fact, the pattern was confirmed after comparing fields of study and sectors of current employment of the respondents.

However, about half of employed graduates mentioned not utilizing, or only partially utilizing, the knowledge and skills acquired through their education, while another 800 of the 1,631 working graduates said they used them to a large degree. This is consistent with the evidence presented in Part I on the limited amount of reading and writing being done by workers in Laos. The analysis shows that some factors are associated with using the skills learned through formal education; these include job and field of study alignment, age and year of graduation (suggesting that more experience and/or more responsibility are associated with greater use of skills), careers in specific subjects (such as science or mathematics), and working in specific sectors (for instance, tourism).

All of the above findings have repercussions on job satisfaction and self-esteem. The analysis uncovered certain factors that are associated with graduates reporting higher current job satisfaction and feeling more capable. Greater alignment between the field of study and subsequent job (on average for the sample and controlling for various other factors), and greater relevance (or usefulness) of skills learned, are associated with higher job satisfaction. Furthermore, the more relevant the person’s skills for the job, the more he/she feels capable at work.

In line with the evidence presented above, about 80 percent of employed graduates were satisfied or very satisfied with their current employment. One graduate in five felt indifferent, somewhat satisfied, or unsatisfied with his or her job, a finding that is aligned with the fact that about 20 percent of graduates reported working in fields that were not associated with their fields of study. On the other hand, only half of all employed graduates felt very capable or capable, which is a finding consistent with the fact that self-esteem seems to be associated with skills use at work (Figure 111 and Figure 112).
Graduates are seldom exposed to soft skills training in the curriculum, which likely contributes to the indifference, dissatisfaction, and feelings of incapability reported by workers in Laos. When asked which skills and attitudes are important for their jobs, soft skills (or non-cognitive skills) featured prominently in the list; willingness to learn, reliability, ability to work in teams, willingness to take new assignments and to coordinate, as well as the ability to communicate, problem solve, and make decisions, were all skills that graduates assessed as very important in their professional lives. Interestingly, graduates also believed they possess most such skills; for instance, only 100 respondents felt they lacked willingness to learn, the soft skill that was ranked as the most important among employed graduates, against 1,500 who reported having such a skill (that is, a ratio of about 1:15). Ratios of about 1:10 were observed for reliability, the ability to work in teams, problem solving, and decision-making. These self-reported assessments suggest that graduates are quite comfortable with their soft skills, contradicting the findings of the STEP household survey, which show that soft skills are generally lacking among Lao’s workforce.

Just as graduates may overstate their level of soft skills, they may also hold unrealistic expectations with respect to their career paths. Half of the employed graduates envisioned themselves in lower management positions in five years, another 35-40 percent believed that they would be middle-level managers, and a further 20 percent saw themselves in top/senior management positions. These expectations are somewhat inconsistent with the fact that in the sample of employed graduates, a negligible portion actually held managerial positions. The overwhelming majority of respondents (regardless of their graduating cohort), as previously mentioned, worked as clerks or technicians, and instructors.

4.2 Graduates’ View of the Education Received
Overall, and somewhat inconsistent with the previous findings, employed graduates find their most recent education useful. The majority, or 90 to 95 percent of employed graduates, assessed their studies as useful or very useful for finding new jobs, for improving their professional
development, for fulfilling their present professional tasks, and for the development of their skills and attitudes (Figure 113). This finding is somewhat at odds with the evidence presented earlier, according to which about half of employed graduates thought of themselves as not capable or only somewhat capable in their current jobs, and that half of employed graduates mentioned not using or only partially using the knowledge and skills acquired through their education. One possible way to reconcile the findings is that while students are happy with the education received and, as shown below, with the quality of instructors and the content of the courses, the labor markets are simply demanding different skills. Such skills are currently not being taught to many TVET graduates, causing them to feel incapable at work, or resulting in graduates finding jobs that do not require the skills they possess.

Furthermore, graduates assessed highly the provision of services and the education received, including the quality of instructors. Academic advice and mentoring were ranked very good or good by about 85 percent of respondents (more than 1,600 graduates); the theoretical content of the courses completed was assessed as very good or good by 81 percent of the respondents, while about two-thirds considered the practical contents very good or good. About 55 percent were appreciative of the career services received while in school (counseling and job preparation), and a further 67 percent thought the provision of internships very good or good. Finally, and most encouragingly, three out of four respondents judged the quality of instructors as very good or good.

![Figure 113. Usefulness of Most Recent Education](image)

Figure 113. Usefulness of Most Recent Education

- Very useful
- Useful
- Not too useful
- Not useful at all

Finally, when asked how to improve the institutions where they most recently studied, increasing the emphasis on practical skills and improving the quality of teaching and curricula, were the most often cited suggestions. Some results are puzzling. For instance, about 1000 respondents mentioned the need to have greater emphasis on practical skills. But many of those same respondents (about two-thirds) reported being satisfied with their TVET experience in part because of the focus on practical content. Improvement in the quality of teaching was an equally frequent suggestion for TVETs, despite the fact that many considered instructors’ quality good or very good. Interestingly, establishing better links with employers was not a main area of
improvement according to graduates, although the institutional assessment revealed that the coordination with industries was mostly informal and weak.

5. Main Findings for Part II

Part II of the study presented the data collected from two different surveys. The first survey focused on the institutional setting of post-secondary education institutions in Lao, and included 29 public and private institutions at the vocational and higher education level throughout the country. The second was a Tracer survey covering about 2,700 graduates (from the 2007-2012 period) of TVET institutions in Lao. The main findings from Part II are described below.

Overall, the HE and TVET/IVET systems somewhat lack flexibility and appear misaligned with market needs and Government priorities. The data collected shows that student enrolment is not aligned with market needs and Government of Laos priorities. While some areas (finance and accounting, business administration, and languages) display very large enrolment numbers (probably reflecting student demand), many (more technical and higher priority) programs such as automotive, electronics and construction are small in size and/or have declining enrolment rates. Some of the most frequently offered programs are small in size and cover topics and subjects “unpopular among students” (for instance, agri-business, agriculture, construction, and so on). At the same time, no single school has ever closed a single program even though there seems to be no reputational cost or any other administrative barrier to doing so. Schools report that the main constraints to expanding enrolment are lack of interest among youth, and lack of employment opportunities among graduates. Moreover, although all students complete internships in local firms, the benefits of these internships in terms of employment are reportedly quite low. All of the evidence points to a mismatch between what schools are currently offering and what labor markets and students need.

In terms of feedback mechanisms, self-assessments are not systematically used within schools despite the requirement to do so, and the same applies to administrative reviews. The majority of schools have no curricular advisory committees, and information on graduate placement, school-to-work transitions, and graduate salaries seems unavailable at the school level. This lack of reliance on feedback mechanisms reinforces the hypothesis that the system is currently detached from the demand-side of the skills and labor market, and is somewhat inflexible. Adapting to changes is in fact much harder if there is no systematic information on the system’s current performance and outcomes.

There seems to be limited and mostly informal interaction between institutions on one side, and employers and students on the other. Evidence shows in fact that while most schools interact with the industry and firms when establishing new courses and programs, much of this interaction is informal in nature. The development of curricula and teaching materials is mostly disconnected from students, labor markets, and employer inputs; student feedback is seldom used, and most schools do not rely on market surveys or graduate surveys to develop teaching materials. Firms have no formal mechanisms to provide schools with inputs on the subjects and programs taught, and on the quality of teaching. On the schools’ side, while internship-placing services are widespread, training for interviews and job placement are less commonplace. At the same time, institutions do not collect information on the external efficiency of graduates (placement rates, school-to-work transition, salaries, and so on), and therefore lack information on outcomes and performance. In other words, the system appears a little disconnected from labor markets, student needs, and industries to begin with, and this makes it even more difficult to adapt to changing demand.
The governance structures of the institutions tend to be fairly centralized and Government-heavy, and schools seem to have little autonomy. Although the majority of schools have boards of administrators, such boards tend to mostly have simple consultative roles; only half of the institutions include employers’ representatives on their boards, and just a few allow students on them. The Government is quite involved in selecting members of boards, rectors, and presidents, and also in the appointment of instructors. While public institutions have some freedom to recruit instructors, the appointing process of the teaching staff is done mostly by the Government. Finally, institutions appear to have little autonomy to dismiss non-performing staff and to set salaries. This limited administrative autonomy might have negative implications in terms of teaching and administrative performance.

The budgets available to institutions are limited and have little link to performance. The evidence collected shows that budget size is the most pressing financial resource constraint among institutions. At the same time, total budget size per enrolled student does vary a lot in our sample; among schools that receive Government-funding, the average public allocation per student also varies a lot and appears to have no systematic link with school performance (which is somewhat consistent with the lack of formal feedback mechanisms). However, IVET institutes seem to receive higher-than-average per capita funding from their head Ministries, while universities and university faculties receive less-than-average. Finally, per student government allocations seem somewhat low compared to other neighboring countries. From a financial autonomy perspective, our data also reveal that other than government funds and revenues collected through tuition fees, schools do not collect any other forms of revenue and that public schools have little autonomy to set tuition fees.

From a resource perspective, the quality of facilities and the pedagogical and industry-specific skills of instructors are an issue. The condition of the schools’ physical facilities is generally reported as poor and is considered a constraint; among physical facilities, the lack of laboratories and classrooms are the most important constraint. However, utilization rates for classrooms and labs, which tend to be low (especially among public schools that are the ones reporting the lack of availability of classrooms and labs as a constraint), suggest otherwise. This evidence suggests that perhaps the quality of facilities is indeed more of a constraint than the availability.

In terms of human resources, the low availability of instructors is the main obstacle for schools, but the availability of administrative staff is also a frequent complaint. Most importantly, the quality of instructors (particularly their pedagogical and industry-specific skills) is arguably the most important constraint for the institutions interviewed.

In terms of TVET graduates, despite the fact that the sample should not be considered representative of TVET graduates in the country, Tracer survey evidence reveals the following:

- About 60 percent of the TVET-graduates surveyed are currently employed. Most of them are employed by the public sector rather than the private sector.
- Many graduates studied business administration and related fields like banking/finance, and not technical fields.
- Of the roughly 1,000 graduates that reported not working (that is, the remaining 39 percent of the sample), the majority is undertaking further studies/training.
- Most people interviewed are either enrolled in or have graduated from public institutions. This finding raises a critical question: Is it cost effective to have so many TVET graduates go into the public sector and so many students study business administration, which are not vocational fields or jobs strictly speaking?
There seems to be no significant difference in salaries across sectors (at least among 2012 graduates). Our analysis shows that, in terms of salary levels, there is not much difference between the returns to having studied business administration, a popular subject, as opposed to a less popular subject such as science. Ignoring the possibility that these results might simply be due to a biased sample, it can be argued that there are three implications or explanations of such findings. First, students may be misperceiving the type of skills and subjects learnt that the market rewards. Second, students might simply not care that much about the salary but rather consider other factors (such as job status) more important. Third, given the little variation in the salaries across sectors, one could question whether or not labor markets are giving the right signals to graduates when it comes to the skills/trades that are in demand.

For most of the employed graduates, encouragingly, their current jobs are in line with their studies. For instance, employed graduates in business administration and related subjects appear to find employment in fields related to their studies, even though the level of occupation is at clerical/technical level for most of them. However, about half of employed graduates mention not using or only partly using the knowledge and skills acquired from their education institutions. These findings have repercussions on job satisfaction and on self-esteem, as a higher alignment between the field of study and one’s job, and greater relevance (or usefulness) of skills learned, seem to be associated with higher job satisfaction. In fact, only half of all employed graduates feel very capable or at least capable, which is a finding consistent with the fact that self-esteem seems to be associated with the skills used at work.

Employed graduates find their most recent education very useful or at least useful, and assess the provision of services and the education received quite highly, including the quality of instructors. Almost all employed graduates assess their studies as useful or very useful for finding jobs, professional development and fulfilling professional tasks. However, this evidence is in contrast with the fact that about half of all employed graduates think of themselves as not capable or only somewhat capable in their current jobs, and that half report not using or only partly using the knowledge and skills acquired. One explanation could be that while students are happy with the education received, as well as with the quality of instructors and the content of the courses, labor markets are demanding different skills—for instance, more job-specific skills, ICT and technical skills, and soft-skills among others. These skills are currently not being taught to many TVET graduates and this situation results in TVET students being somewhat unable to eventually do their jobs (thereby feeling incapable at work), or result in graduates finding jobs that do not require the skills they possess.

Graduates consider soft skills as important if not more important than other skills (such as technical, computer and English skills). This is an important finding that is confirmed also by employer surveys and suggests that TVET institutions need to start investing more and systematically in the development of these skills.
KEY RECOMMENDATIONS

The findings presented in Parts I and II point to the need for an integrated human development strategy to address skill deficiencies in the labor market, with special emphasis on producing the ‘right’ skills for Lao’s economy. An integrated strategy should comprise the entire education and training system, from early childhood to on-the-job training, with a clear set of goals and relational guidelines for all stakeholders involved. Results from the STEP Survey, especially with regard to employer needs and skill mismatches, could assist the Government in determining future goals and areas of focus; the Analytical Framework can be used as a reference for determining the relational aspects, that is, which actors should be involved at different points of the strategy. In the short term, the strategy should seek to improve the skills of the current workforce, and to prevent further mismatches, in terms of skills and educational attainment, from arising in the long term.

Based on the main findings of the study, below is a set of recommendations for the Government’s consideration, grouped under four priority areas. The matrix below summarizes the main issues and challenges faced by in the overall Skills Production System, and links these shortcomings to a particular intersection or quadrant of the Analytical Framework (see Figure 114). Based on each given challenge, the matrix defines a set of policy goals that policymakers may wish to pursue, a suggested toolkit to achieve said goals, and some international examples from which lessons learned could be further explored and adapted to the Lao context.

**Figure 114. Analytical Framework and Priority Areas**

*Source: Author’s Illustration*
### Summary of Findings, Recommendations, and Policy Tools

<table>
<thead>
<tr>
<th>Priority</th>
<th>Issue</th>
<th>Link to Framework</th>
<th>Policy Goal</th>
<th>Policy Tools</th>
<th>Example</th>
</tr>
</thead>
</table>
| **1**    | Quantity | Low flow of students progressing to higher education levels. High dropout rates among children (especially in rural areas) in primary school or between primary and secondary school | Failure in the 'Market for Education and Training'; too few skill users/absorbers entering the skills production 'black box' | Increase the flow of students that transition from the early stages of the education cycle to the secondary, post-secondary and higher education levels | • Conditional cash transfers  
• Health and nutrition-related incentive programs  
• Stipends for selected students  
• Increasing the supply of education services in rural areas | • Punjab Female School Stipend Program  
• Bolsa Familia Program in Brazil  
• Mexico’s Oportunidades /Progresa  
• Perú’s Juntos CCT Program |
| **2**    | Quality | Low cognitive skills among students due to low effectiveness of education | Failure in the 'Market for Education and Training'; low effectiveness of skills providers and low quality of inputs in the skills production 'black box' | Increase the level of cognitive skills among the population by improving the quality of the education system | • Give institutions more freedom (performance bonuses, ability to hire and set tuition fees), and a more flexible governance structure (for example, competitive recruitment of deans and administrators)  
• Performance-based allocation of budgets  
• Develop and uphold the Lao Qualifications Standards  
• Allow instructors to work part-time in firms  
• Devote more resources to instructors’ training  
• Increase the availability and upgrade the infrastructure of schools and the number of teachers and learning materials | • Governance reform in Korea, Thailand, and Malaysia in the mid-1990s, and Japan and Singapore in mid-2000s  
• Colombian Escuela Nueva |
| **3**    | Misalignment between skills taught in post-secondary programs and labor market needs | Lack of linkages between the Market for Education and Training and the Labor Market | Align and increase responsiveness of post-secondary system to labor markets’ and employers’ needs | • Involve employers in the development of curricula and teaching materials  
• Institutionalize tracer surveys  
• Institutionalize firms’ surveys to understand market needs  
• Set up a Labor Market Information System and/or labor market observatories and employment agencies to facilitate career choice and job searches  
• Activate the National Training Council and use it as intermediary between firms and the education system  
• Social marketing for programs and courses with high social returns  
• Expand student finance (loans and scholarships for targeted courses and institutions) | • China, Taiwan-China, Singapore, Japan  
• Chile’s Preferential School Subsidy  
• Colombia’s ICETEX  
• Australian Training Awards and WorldSkills Australia |
| **4**    | Lack of continuous training and skills upgrading among workers and within firms | Failure in the 'Labor Market'; few skills demanders | Promote investments and lifelong learning and skills | • Skills Development Funds for firms  
• Tax incentives for firms  
• Grants and scholarships for workers’ skills upgrading | • Malaysia Human Resources Development Fund and |
In line with the matrix above, an integrated strategy could be built around the following four priorities:

*Priority 1: Increase the flow of students transitioning from the early stages of the education cycle to the secondary, post-secondary and higher education levels. In order to do so, the Government could increase the incentives and opportunities for students (and future students) to get more education and better skills by establishing a targeting system and using instruments to entice students to remain in the education system.*

In order to decrease dropout rates and improve educational attainment (beyond primary level), the Government could consider putting in place a targeting mechanism that allows the educational and social systems to identify the most vulnerable or at risk students. For example, based on evidence from Part I, a clear link has been established between parental educational levels and those of their children—as such, students whose parents have low educational attainment are significantly more likely to drop out early in the educational cycle and not further their acquisition of education and skills. Based on this information, the Government could target these students to ensure that they receive special attention and incentives to stay in school.

One potential way to incentivize students to stay in school and prevent them from exiting the educational system too early is through conditional cash transfer (CCT) programs. Many countries use CCT programs and other similar incentive-oriented mechanisms to improve a broad set of outcomes (for example, nutrition and health) by conditioning transfer payments on school attendance and/or on continued investments in education. In Pakistan, for instance, the Punjab Female School Stipend Program provides girls with a CCT that is linked to school attendance. The program was set up in response to lower school participation of girls, which led to gender gaps in education. An evaluation of the program showed that enrolment of eligible girls in middle school increased by nearly nine percentage points, and positive results persisted for five years after the program ended (Alam, Baez and Del Carpio, 2011). The Bolsa Familia program in Brazil and Mexico’s Oportunidades/Progresa are two of the most well-known CCT programs around the world; the design and implementation of these programs have been well documented and could potentially be emulated in Lao PDR.

The Government of Lao could draw from such experiences and customize CCT programs to its needs by, for instance, providing larger transfers to the most vulnerable populations, such as girls in rural areas, to improve their educational outcomes. CCT programs and educational stipends can be used not only to increase primary education and the transition between primary and secondary education, but also to assist poor students in completing post-secondary studies. Stipends and quotas, which are already being used in some TVET programs, could explicitly target less advantaged students once a mechanism to identify them is put in place.

Finally, students in areas with limited access to secondary education (such as rural areas) are significantly more likely to exit the system after completing primary school; higher dropout rates,

---

31 Unless otherwise noted, the text that follows draws from World Bank, 2011, “Strengthening Skills and Employability in Peru.”
in turn, contribute to lower educational outcomes (and skills attainment) in rural and less well-off areas. Increasing the availability of schools (especially at the secondary level and in rural areas) would reduce the cost of attendance and decrease dropout rates between primary and secondary school. The Government of Lao PDR and the World Bank are currently designing an intervention along these lines.

**Priority 2: Increase the level of cognitive skills among the population by improving the quality of the education system.**

One way to improve educational quality, particularly at the post-secondary level, is to make the governance structures of post-secondary institutions more flexible and relevant. For example, institutions would benefit from the ability to directly appoint or elect their presidents and boards following a competitive process. Similarly, from an institutional standpoint, schools should be granted more freedom to set their teacher and staff salaries, and allowed to pay performance bonuses to their staff as per their criteria.

From a financial point of view, schools would benefit from greater financial autonomy, and the Government could go further by aligning funding more directly with school performance. Financial autonomy could also imply institutional freedom to set tuition fees; for example, schools could tailor fees in accordance with their cost structure, or even introduce higher fees for more affluent students to subsidize the less affluent ones. Moreover, institutions could be given incentives to diversify their sources of funding (for instance TVET and IVETs could sell goods and services produced by students to surrounding communities/firms, while universities could sell consultancy services to local firms and industries). Finally, the Government budget could be allocated to institutions more transparently and on the basis of objective criteria (for instance, funding per student should be formula-driven and based on observable characteristics such as graduation and placement rates, and using input and output indicators).

Several Asian countries began reform processes along these lines in the mid-1990s. In 1995, Korea was arguably the first Asian country to allow more autonomy to its private higher education institutions (previously under government control), followed a few years later by Thailand and Malaysia. Similarly, Japan and Singapore gradually extended autonomy to a share of their public universities in the mid-2000s (World Bank, 2012). In line with the trend in many other countries across the world, these reforms included granting institutions more freedom to hire and fire staff, set salaries, spend institutional money to achieve pre-established objectives, decide on student enrolment, and set academic content and structures.

Educational quality is very much a product of its human resources, that is, professors, administrators, and instructors; investing more heavily in these actors could improve institutions’ quality and ability to meet the requirements of a changing economy. For instance, industry-specific skills of instructors/faculty could be improved by allowing them to work part-time in industry or firms, or enabling them to complete short-term assignments in the private sector. Alternatively, institutions could try to attract more systematically skilled workers to teach at TVET/IVET centers. In the longer term, and on a general basis, there is a need for more (and better) teachers, giving preferential access to women, and for investing more in instructor training (especially in-house to develop the schools’ capacities) and pedagogical skills to improve teaching methods.

The Government may also consider the development and enforcement of the Lao Qualifications Standard (LQS) system, so as to improve the quality of higher education institutions uniformly across the country. This would benefit greatly from the development of a labor market
information system to keep all stakeholders informed, as well as guide the formation and reforms of the LQS. The Government should establish (or strengthen) the LQS system so that it follows international qualification standards that can be applied equally across the country, and specifically include modalities for widespread monitoring of implementation. Once in place, standards should be regularly updated in accordance with changing international guidelines, and also shifting domestic market needs.

One final recommendation for improving the quality of the education system in rural areas (which, due to lower access and availability, poor internal efficiency, equity and relevance, tends to produce students with lower levels of skills and displays higher dropout rates), is through increased ownership and coordination of reforms. One example of interest is Colombia’s *Escuela Nueva* (‘New School’) program\(^\text{32}\), which was born in the 1970s as a grassroots initiative, and later transformed into a national reform process (coordinated by the Ministry of Education) that lasted until the late 1980s. *Escuela Nueva* aimed to improve the quality of rural education by strengthening coordination between students, instructors, and communities.

One of the main components of *Escuela Nueva* was its focus on teacher training. All instructors underwent three one-week training sessions in their first year, learning to use teaching materials and student learning guides, and also how to set up and use school libraries. Instructors were asked to meet once a month within ‘micro-centers’ to share knowledge and ideas among peers, and also to interact with the community to receive feedback and discuss ongoing reforms. The initiative also put special emphasis on providing support for instructors by introducing pedagogical advisors, who were supported and trained directly by the Ministry of Education, and whose role was to advise rural instructors on the reform process and its implementation. Finally, the initiative attempted to strengthen the sense of ownership over the reform process among students and communities by giving them a more active role in school management. Schools were required to give voice to student governments and to involve students in many decisions affecting the overall school environment. The *Escuela Nueva* initiative has been evaluated on several occasions and has shown mostly positive results in areas like student tests scores (although with some variation across the country).

**Priority 3: As Lao’s economy moves forward, the higher education system will need to become better aligned with labor market needs. One way to achieve this is through closer interaction between the private sector and post-secondary institutions.**

The educational system should actively engage with employers (and vice versa) to render the system truly demand-driven. Employers should be core stakeholders, with roles and responsibilities, and their needs should be at the center of curricular reforms and skills formation, especially in TVET institutions. Employers have much to contribute, for instance in the design of programs and curricula, providing feedback to assess courses (particularly courses with low demand), assisting in making decisions about equipment purchases, developing internship programs, actively participating in the quality control process, and including industry representatives on the administrative boards of these institutions. In China and Taiwan-China, for instance, the authorities actively promote the excellence of universities and evaluate their faculty and students, among other things, on the strength of their links with industries. Small and medium enterprises in both countries collaborate intensively with public universities to foster product innovation. Similarly, in Japan and Singapore, the industry-university relationships are becoming stronger and stronger (World Bank, 2012).

Another option is for the Government to encourage partnerships between institutions and firms to design relevant programs, or facilitate private-public partnerships between large employers and schools. The National Training Council, which is established but not functional, would be the natural candidate for an ‘intermediary’ role. Furthermore, the use of Tracer studies to track graduates should be institutionalized, and the Tracer data should be fed into a consolidated educational database (for instance the Ministry of Education and Sports’ MIS) which would be widely accessible; this would allow policymakers to assess whether the skills bestowed on students are rewarded by the labor markets. Similarly, schools could institutionalize the use of firm surveys to assess current and future skills needs, and start systematically providing information to secondary and post-secondary school students (and parents) on employment outcomes and career choices. Social marketing to promote programs and courses with high social returns, steering students from high-demand (but lower return) areas such as business administration to ‘high-need’ areas, would be beneficial.

Monitoring and evaluation capacity, supported by better labor market information, is critical for effective and relevant skills development. Information needs to be generated through periodic labor market surveys, consultations, and tracking studies about skills demand and absorption, and the benefits of investment in worker skills. One useful policy initiative, which is currently under discussion, is to create a Labor Market Information System (LMIS) to effectively assess, estimate, and monitor demand for a wide range of skills, and to track the ease of job placement for different programs (this can be used as a proxy for the quality of skills-forming institutions). The LMIS can also provide information to workers, employers (on wages and supply of skills) and educational institutions. In parallel, labor market observatories and employment agencies could be created to facilitate career choice and job searches.

Finally, the report highlights as a main finding a significant misalignment between what students want to (or choose to) study and what the labor market needs. Nearly half of the TVET graduates interviewed studied in areas that do not yield high returns (business administration, accounting and economics). These subjects are more typically provided by universities at the Bachelors’ level, are not among the most critical ones for the country’s economy, and do not yield higher returns relative to other careers. To increase students’ incentives to attend particular institutions, or enroll in programs and courses that are more relevant to the current labor market, the Government could consider adapting programs such as Chile’s Preferential School Subsidy or Colombia’s ICETEX (Institute of Education Credit and Technical Study Abroad) to the Laotian context. These programs were designed to increase access for low-income and other targeted groups of students to higher and tertiary education institutions (domestic and, in the case of Colombia, internationally) by providing them with scholarships and cheap loans. In Lao, a similar approach could be adopted to promote not only school attendance in rural areas and among low-income students (thereby addressing priority one and two above), but also to promote enrollment in programs with heavy demand and short supply.

Lastly, social or other marketing techniques may help to improve the image and standing of the ‘classic’ TVET sector, which the evidence above would characterize as low. In this respect, the Australian experience might prove useful, whereby the Government of Australia has been sponsoring the annual Australian Training Awards, a ceremony in which the best young trainees from all over the country are brought together to compete for national-level recognition. To increase awareness about TVET and to attract students towards the sector, WorldSkills Australia organizes skills competitions throughout the country and in collaboration with firms, local authorities, and training centers. The competitions involve students, trainers, and employers, and reward excellence in applied skills in a range of sectors; winners of state and territory competitions advance to the national stage. The winners of the national competitions are
recognized in a public ceremony and later sent to represent their country at the World Skills General Assemblies in different countries across the world.

**Priority 4: Promote lifelong learning and skills upgrading by increasing the incentives and opportunities of workers to skill up, and employers to invest in the skills of their workers.**

Workers do not seize opportunities to be trained, and employers do not provide trainings, for a number of reasons. These generally have to do with financial shortcomings, physical limitations (distance and time constraints), lack of information on what training programs yield better returns, inadequacy of available training, and limited knowledge about the quality of training institutions. There are several ways in which the Government could help both employers and workers overcome these constraints.

Information is clearly one of the most salient constraints faced by both sides—by strengthening a LMIS or the LQS (or both), and by making standards mandatory for all institutions, the Government would address some information-related barriers (see priority 3), and could also monitor the quality of skills and education providers (see priorities 2 and 3).

To address financing related constraints, the Government could consider providing subsidies to workers and/or employers, along the lines of what the Philippines and Malaysia have instituted (World Bank, 2012). Training subsidies may provide incentives for employers to invest in training, but should target individuals and firms that would not otherwise do so and that could clearly benefit from it. Should the Government consider this course of action, it is generally best to finance subsidies through general revenues, rather than payroll taxes, to refrain from increasing labor costs (which may lead to subsequent decreases in labor demand) (World Bank, 2012). Funds could be derived from the social fund established for social development and poverty alleviation.

Alternatively, the Government could directly fund training programs for unskilled adults and self-employed (informal) workers with limited skills. For instance, training in life-skills, which are critical to Lao people transitioning from rural to urban labor markets, could be one option to consider creating and funding. Ideally, programs would provide basic life skills as well as job-specific skills so that people could transition from self-employment to wage employment and, in the case of internal migrants, help them adapt to urban conditions and be better equipped to find suitable work. Programs could either be outsourced to private sector providers who are paid upon successful outcomes, and/or they can be provided by selected secondary or vocational schools that would be similarly remunerated.

Policy reforms and improvements in the implementation of existing policies could also be considered as a way to make regulation more responsive to innovative public-private-partnerships that encourage pre-employment training, employer-sponsored-training, and on-the-job training. The Lao Skills Development Fund (LSDF) was established for this very purpose by collecting training levies from employers that they could then access for training; however, it has yet to become functional. Administering this type of fund is a complex task and takes time to do efficiently; therefore, much caution should be taken to ensure that if employers are obliged by law to contribute to the fund, they should see the benefit of their contribution immediately thereafter. The experiences of Malaysia and the Philippines could be useful to learn from—where their training funds are a good example of government, firm, and industry collaboration in training. The box below provides more detail on the Malaysian Skill Development Fund.
Box 3 Malaysia Human Resources Development Fund

Malaysia’s Human Resources Development Fund (HRDF) was established in 1992 under the Human Resources Development Act. Its overall objectives were to increase training initiatives for workers in the private sector and increase the supply of skilled workers in the country—thereby increasing productivity and building a culture of training among employers. HRDF is a pooled fund collected through a mandatory levy charged to firms and employers above a certain size and in selected sectors (mostly manufacturing and services). Registered and incorporated firms contribute to the fund by paying one percent of payroll costs, and may then apply for grants and financial assistance (up to the amount of the levies paid) to train and upgrade their workers’ skills. HRDF specifies reimbursement rates depending on the type of training and, generally, large firms are reimbursed at lower rates than smaller firms. In parallel to HRDF, a Skills Development Fund was also established to provide individuals with loans to complete training courses in accredited institutions.

During the early stages of HRDF implementation, only firms above 50 employees were covered, but by 1995 firms above 10 employees became eligible for HRDF grants. As of 2008, there were over 10,000 firms/employers registered with HRDF, and the fund’s revenues had increased from RM120 million in 2002 to over RM320 million in 2008. Similarly, disbursement of HRDF grants increased from RM160 million per year in 2002 to almost RM300 million in 2008, and the number of accredited training institutions almost doubled over the same period, from 420,000 in 2002 to almost 740,000 in 2008.

An evaluation of the HRDF initiative, carried out by Hong Tan, using firm level panel data found that HRDF led to an increase in enterprise training among all firms in the sample, with medium-sized ones benefitting most; at the same time, the increase in worker training resulted in productivity growth (particularly when the training was carried out on a continuous basis and done in parallel to investments in new technology). A further evaluation by Awang et al. (2010) found that training programs increased knowledge and skills and improved positive work behavior; however, the impact on employees’ work performance and cognitive skills was limited. Comparing evaluations of similar programs across the world, the impact of HRDF was much smaller among small firms, probably due to their limited budgets for training and limited knowledge about how to train workers. The sectors with the highest take-up rates of the scheme were professional services, scientific instruments, and machinery and ceramics, while food, beverages, textiles, woods and furniture displayed the lower take-up rates.

Despite uneven take-up across sectors and the relatively low compliance, Malaysia’s HRDF is generally considered successful, especially because of its transparency, its efficiency in reimbursing firms’ claims, and the ease with which firms can apply for funding and grants. In the recent past, the Government of Malaysia introduced an e-disbursement system (that allows training grants to be credited directly into the accounts of selected employers), an e-levy payment system (that allows firms and employers to pay HRDF levies online), and a public star rating system that allows firms and workers to rate training providers and programs based on their quality and delivery. The most interesting aspect of the HRDF experience for Lao may be the information provider role that the Malaysian Government took on, by pre-approving and accrediting training providers to reduce research costs for firms.

Finally, as SMEs in Lao tend to invest very little in training or upgrading their workers’ skills, special attention should be given to them. In Korea, for instance, where the Government has been running a levy-rebate scheme along the lines of the Malaysian HRDF since the mid-1990s, preferential treatment was granted to SMEs. Training rebate rates are higher for SMEs relative to large enterprises: large firms are reimbursed up to 100 percent of the training levies paid, whereas small and medium firms receive up to 270 percent of the levies paid. Another initiative is Korea’s SME Training Consortium, a Government supported initiative that aims to bring SMEs together and provide them with technical, financial, and administrative support to increase their training of workers. A Training Consortium is a geographically close group of 30 to 50 SMEs in similar industries which contribute to a common pool of resources and benefit from government support in determining training needs of each firm, selecting trainers, and organizing trainings for their employees. Since individual SMEs could not afford to hire training specialists, the Government seconded two training managers to each Consortium. The training managers assisted with the planning, forecasting, and managing of the day to day training activities of Consortium members.\textsuperscript{33}

\textit{Although this report merely touches upon issues related to early childhood development (and does not provide extensive evidence on the topic), the skills literature highlights the fundamental need to invest in early childhood education and development (ECD), and to focus resources on developing cognitive and non-cognitive skills that are more difficult to learn later in life.}

As shown in Part I, and confirmed by the existing literature on skills, some skills should be bestowed upon children from early childhood and are best taught in the early stages of the education cycle. Among cognitive skills, vocabulary skills are mostly acquired at early stages in life. Similarly, non-cognitive skills, such as openness to new ideas and experiences and teamwork, are traits acquired and developed from an early age. The available research and evidence shows unequivocally that a child’s brain and school readiness are influenced by his/her environment and upbringing; the role of early childhood development policies is therefore vital in ensuring that the workforce develops crucial skills, such as previously discussed. Building on the existing efforts in the ECD area and the collaboration between MOES and the World Bank, improving prenatal care and nutrition, as well as providing information for poor pregnant women to increase their chances of delivering healthy babies, will be instrumental in developing a more skilled workforce in the future.

In addition to ongoing initiatives by the Government, a few other options to consider include nutritional packages for children, establishing or scaling up CCT programs (one is currently being piloted with World Bank and WHO support), and policies that link families to health care facilities (such as the free mother and child health policy). The Government can also promote the formation of networks of caregivers in local communities that could be organized by the Lao Women’s Union, for instance, to create opportunities for children to interact with other children and for family members to stimulate early learning.

Several countries have successfully experimented and scaled up these types of policies. Brazil offers childcare, coupled with parent training in health and education, on weekends (to increase their participation). Mexico has set up a network of volunteers that impart parenting education classes in target communities. Vietnam has established a home-based program that provides

nutrition to children below three years of age, and stimulation to four and five-year old children. More examples can be found in World Bank (2012a).
LIST OF REFERENCES


ANNEX 1. DATA AND METHODOLOGY

Part I: The STEP Skills Measurement Instruments

The household and firm survey instruments measure skills with a multi-dimensional approach to gauge the levels of skill utilization and mismatch using comparisons of parallel measures relating to persons and jobs. The main feature of the surveys, supply side household survey and demand side firm level survey, is that they approach skills as a multi-dimensional concept that goes beyond level of educational attainment to capture human capital more comprehensively. Following the categories of the Dictionary of Occupational Titles in the United States, skills are classified into levels of complexity in dealing with data, people, and things, or cognitive, interpersonal, and manual skills and abilities. This concept of skills is applied both to workers and jobs (World Bank, 2013). The simultaneous measurement of skill stocks and job demands on both household and employer surveys gives some indication of the extent of mismatch between the skills workers possess and those demanded by employers.

STEP Household Survey

The goal of the household level survey is to measure human capital stocks, namely the skills supply, intensity of use, and level of the Lao working age population. The STEP household survey elicits a wide range of information on personal background, education, employment and compensation, household wealth, household size and composition, personality, and personal health. All adults, whether they work or not, are asked a similar set of questions to measure labor force potential, as well as skills used. The household-based survey collects background information on the household, as well as detailed information on a randomly-selected individual within the household (aged 15-64) regarding his/her skills acquisition history (including detailed information on field of study of all reported degrees and certificates, participation in apprenticeship, continuing education or training), educational attainment, work status and history, family background, and health (Sanchez Puerta et al, 2013).

STEP is an international effort so results from Lao are compared to the results from Bolivia, Sri Lanka, Vietnam, and China’s Yunnan province. The STEP household measurement survey was conducted in eight developing countries in the first batch (Bolivia, Colombia, Ghana, Laos, Sri Lanka, Vietnam, Ukraine, and China’s Yunnan province) to contextualize the results in the international setting. The survey instrument is harmonized across countries to make possible cross-country comparisons of human capital stocks, namely the skill supply. The results from five of the eight countries were ready in early 2013. In this report, the results from Lao are compared to the results from Bolivia, Sri Lanka, Vietnam, and China’s Yunnan province. Both Vietnam and Yunnan share geographical borders with Laos, and have similar socialist political systems.

In Lao PDR the national sample comprised about 2,800 households, of which about 40 percent were urban and 60 percent rural. Sample sizes and geographical coverage vary by country; in Lao, both urban and rural people were sampled. Despite differences in sample sizes and geographical focus (urban only in the case of Vietnam and Bolivia) between countries, all results

are standardized across countries for comparability. In Lao, one representative aged between 15 and 64 from each randomly selected household was also randomly selected for a detailed individual interview and literacy testing. The eight modules of the survey elicit detailed information on education, training, different types of skills (cognitive, non-cognitive, and technical), basic demographic and household information, and information on family background, employment, and wages.

Apart from the basic socio-demographic information, the household survey includes three unique modules to measure different types of skills. The focus of the survey is to measure three distinct types of skills identified in the literature to be critical to labor market outcomes. These are: cognitive, technical, and non-cognitive skills. The specific skills modules include: (a) assessment of reading literacy to assess level of competence to access, identify, integrate, interpret, and evaluate information; (b) battery of self-reported information on personality traits and behavior (for example, conscientiousness, extraversion, self-control, decision making, and aggressive behavior) as well as risk and time preferences; and (c) series of questions on task-specific skills that the respondent possesses or uses in his or her jobs (see Box 1 for details on the specific categories included). These Skills are defined as follows (extracted from Sanchez-Puerta et. al. 2013 as cited in the report for Sri Lanka by the World Bank, 2013):

- **Cognitive skills** are defined as the “ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought.” These skills are measured as self-reported numeracy, reading, and writing.
- **Technical skills** are defined as specialized skills that are relevant to perform the tasks involved in a specific job. These are the necessary conditions for increasing productivity and fostering economic growth. These include technology use, computer use, mechanical use, machinery use, English language, ability to work autonomously, and manual labor skills.
- **Non-cognitive skills** are defined as domains that are not directly associated with intelligence (cognition). They are also referred to as soft skills, personality traits, and behavioral or socio-emotional skills. The survey measures numerous dimensions of non-cognitive skills, for example, the Big Five personality traits—extraversion, conscientiousness, openness, emotional stability, and agreeableness—long-term perseverance, decision-making skills, and teamwork and presentation skills.

### Box A1. Contents of the Household STEP Survey

#### Household Level Information

(a) **Household Roster**

Names, age, gender, relationship to head for all household members.

Education status and self-reported literacy of all members aged six and over.

Marital and labor force status of all members aged 15 and over.

(b) **Dwelling Characteristic**

Dwelling construction materials, number of rooms, source of water and energy, toilets, tenure status.

Inventory of household consumer goods, appliances, and vehicles, number of books.

Ownership of bank accounts, receipt of social benefits.

#### Individual Respondent
(c) Education and Training

Level of formal education and whether academic or vocational.
Field of study for highest qualification (13-15 categories).
Reasons for dropping out (if applicable).
Apprenticeship (y/n) and trade.
Number of training courses, participation in literacy courses.
School class rank, parental encouragement.

(d) Health

Overall life satisfaction.
Height, weight, present or previous chronic health problems and severity.
Insurance coverage.

(e) Employment

Employment status, whether work on own account and casual work.
Reason not working, job search methods, reason not looking for work (if not working).
Reservation wage, occupations for which qualified (if not working).
Occupation, tenure, industry, hours worked, other occupations for which qualified.
Class of worker (wage/salary, daily or piecework, self-employed with (out) employees).
Wage, salary, or profits per time period, in-kind payments.
Employer (government, individual, domestic or foreign firm, NGO).
Establishment size, social benefits coverage.

(f) Job Skill Requirements

Inventory of reading tasks performed on job (or in general), length of longest document read.
Inventory of writing tasks performed on job (or in general), length of longest written document.
Inventory of math tasks performed on job (or in general).
Whether lack of reading and writing skills hindered employment, promotion, or pay raise.
Frequency of difficult problem solving on job.
Level of involvement with customers, clients, students, or public on job.
Make formal presentations as part of job.
Supervisory responsibilities, job autonomy, repetitiveness, continuous learning.
Level of physical job demands.
Inventory of technology use on job (including computer use and inventory of software use).
Computer use outside work and inventory of software use.
Whether lack of computer skills has hindered employment, promotion, or pay raise.
Usefulness of own studies at school for current job.
Level of education and related job experience required for job, length of job learning time.
Job search skills, whether employer required formal credentials or other proof of skills.

(g) Personality, Behavior and Preferences

Thirty-one personality items on the frequency of diagnostic behaviors (for example, extroversion).
Seven-item risk preference scale.

(h) Language and Family Background

Native language, other specific language proficiency.
Mother’s and father’s educational attainment.
Family size, composition, and socio-economic status when 12 years old, adverse family events.
Experience as child laborer, occupation.

(i) Reading Literacy Assessment

Core.
Reading Components.
Exercise booklets.
STEP Employer Survey and Enterprise Survey

On the employer side, the Lao team joined the Enterprise Survey and the STEP survey to create a multi-purpose instrument. The survey instrument measures the business climate and firm performance, and identifies skills requirements for employers currently and going forward. The Employer Survey comprised all modules of the World Bank’s Enterprise Survey and selected modules from the STEP employer survey. The main reason for joining the two surveys is that the Enterprise Survey was previously collected in Laos in 2007 and 2009, which allows for the analysis to not only look across economic sectors in 2012, but also across time. The STEP Employer Survey gathers information on hiring, compensation, termination and training practices, as well as enterprise productivity. The Survey includes questions to identify: (a) employers’ skills needs and utilization; (b) the types of skills that are considered of most value and the mechanisms by which they are acquired; and (c) the tools used to screen prospective job applicants. The survey uses the same skills concepts and definitions as those used in the household-based survey, a feature intentionally designed to facilitate analysis of skills gaps and mismatches.

The Enterprise-STEP survey looks at a representative sample of firms in the Lao private sector. The sample of the Lao PDR Enterprise Survey & STEP Survey 2012 was selected using stratified random sampling. Three levels of stratification were used: industry, establishment size, and province. The survey, which is answered by business owners and top managers, covers a broad range of business environment topics, such as access to finance, corruption, infrastructure, crime, competition, and performance measures. It also assesses the respondents’ opinions on their perceived constraints to firm growth and enhanced performance. Firms in Lao were stratified in three different ways—by industry, establishment size, and region—to ensure that the sample included establishments from different sectors, and was not concentrated within a specific region or firm size. Three criteria for sample selection were followed:

- Industry stratification included 23 manufacturing industries, two services industries, retail, and other services, in addition to the following sectors: mining and quarrying (group C); electricity, gas and water supply (group E); financial intermediation (group J); real estate (group K); and education (group M).
- Size stratification was defined in accordance with the standardized definition: small (five to 19 employees), medium (20 to 99 employees), and large (more than 99 employees). For stratification purposes, the number of employees was defined on the basis of reported permanent full-time workers, since seasonal/casual/part-time employment is not a common practice, except in construction and agriculture.
- Regional stratification was defined in six regions: Vientiane Capital, Champasack, Luang Prabang, Luang Namtha, Khammouane, and Savannakhet (Lao Implementation Note 2012).

A total of 379 firms were surveyed, and only one questionnaire was used for all sectors. The questionnaire had two versions—one for manufacturing and one for services firms—and was also split into two sections: one containing the standard Enterprise Survey questions, and the second containing the STEP skills, training, and education questions. Table has a breakdown of the

---

35 Which took place from May to October 2012
number of establishments surveyed by economic sector. In some cases, four groups of occupations are applied; these are: 1) Highly skilled: Managers, Professionals, and Technicians, 2) Skilled non-manual: Clerical, Service, and Sales workers, 3) Skilled manual: Crafts, and Plant and machine operators, and 4) Elementary occupations.

Table A.1.1. Enterprise-STEP Sample Breakdown

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th># of Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining &amp; Extractive industry</td>
<td>16</td>
</tr>
<tr>
<td>Financial</td>
<td>34</td>
</tr>
<tr>
<td>Real Estate</td>
<td>42</td>
</tr>
<tr>
<td>Education</td>
<td>50</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>91</td>
</tr>
<tr>
<td>Retail &amp; IT</td>
<td>68</td>
</tr>
<tr>
<td>Other services</td>
<td>78</td>
</tr>
</tbody>
</table>

Source: Author’s calculations

Institutional Survey of Technical and Vocational Education and Tracer of Graduates

Institutional Survey of Technical and Vocational Education (TVETs)

The sample analyzed in the institutional assessment survey includes 29 public and private institutions spread throughout the country. Of those, 17 institutions are TVET/IVETs offering certificates, diplomas, advanced diplomas and, in two cases, bachelor’s degrees; the remaining 12 are public or private universities and colleges offering associate/bachelor’s degrees and above. Of the 29 schools, 14 are in the Vientiane Province, four are in Savannakhet, three in Luangprabang, three in Champasak, and one school each in Oudomxai, Luangnamtha, Xayabouly, Xieng Khuang, and Xekong.

The sample includes higher education and vocational training institutions from various ministries, and some private institutions. The Ministry of Education and Sports (MOES) and, to an extent, the Ministry of Labor and Social Welfare (MOLSW) are in charge of a large number of vocational institutions. Other line ministries such as Agriculture and Forestry, Health, Industry and Commerce, and Energy and Mining are also involved in technical and vocational training, but to a much lesser degree than MOES. Also, training provided by those institutions is more specialized. Thus, the sample focuses mostly on public higher education institutions and technical vocational education and training (TVET) institutions, but also includes public integrated vocational education and training (IVET) institutions and, to a lesser extent, large private institutions involved in post-secondary education (vocational and non-vocational colleges).36 The World Bank team hired a local firm to conduct a tailor-made survey among a

36 By technical vocational education and training (TVET) the analysis means all “vocational programs differ(ing) from academic ones in their curriculum and in their aim of generally preparing students for specific types of occupations and, in some cases, for direct entry into the labor market. VET takes a variety of forms in different countries but also within a country. Initial VET normally leads to a certificate at upper secondary level” (EC, 2009). TVET normally refers to training programs provided by formal institutions with the aim of providing students with skills relevant to employment in the formal sector. On the other hand, by integrated vocational education and training (IVET), we refer to “a unique approach to integrate formal and non-formal (short-term) vocational training for specific target groups. Such approach has been discussed in many countries (…) in order to enable
total of 29 public and private institutions (17 TVET/IVETs offering certificates, diplomas, advanced diplomas and, in two cases, bachelor’s degrees, and 12 universities and colleges offering associate/bachelor’s degrees and above) spread throughout the country. Smaller (less formal) private institutions and vocational training centers, and those run by non-profit organizations, are not included in the sample. A breakdown of the types of institutions interviewed is shown in Table.

**Table A.1.2. Summary of Institutions in Lao and Sample Selection**

<table>
<thead>
<tr>
<th>Category/Institution</th>
<th>Total # of Institutions</th>
<th># of Institutions in Sample</th>
<th>% Sample</th>
<th>Total Enrollment</th>
<th>Estimated Enrollment at Sample Schools</th>
<th>% Enrollment at Sample Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVET, MOE</td>
<td>14</td>
<td>7</td>
<td>50%</td>
<td>17,199</td>
<td>14,153</td>
<td>82%</td>
</tr>
<tr>
<td>IVET, PES (MOE)</td>
<td>8</td>
<td>4</td>
<td>45%</td>
<td>1,294</td>
<td>827</td>
<td>64%</td>
</tr>
<tr>
<td>TVET, MOLSW</td>
<td>4</td>
<td>2</td>
<td>50%</td>
<td>1,489</td>
<td>1,249</td>
<td>84%</td>
</tr>
<tr>
<td>TVET, MoAF</td>
<td>5</td>
<td>3</td>
<td>60%</td>
<td>488</td>
<td>331</td>
<td>68%</td>
</tr>
<tr>
<td>Public Universities, MOE</td>
<td>4</td>
<td>4*</td>
<td>100%</td>
<td>9,663</td>
<td>7,127</td>
<td>74%</td>
</tr>
<tr>
<td>Private Colleges/TVETs</td>
<td>Approx. 90**</td>
<td>6</td>
<td>7%</td>
<td>34,854</td>
<td>11,640</td>
<td>33%</td>
</tr>
<tr>
<td>Other***</td>
<td>40</td>
<td>0</td>
<td>0%</td>
<td>NA</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>Approx. 165</td>
<td>29</td>
<td>18%</td>
<td>Approx. 135,000</td>
<td>35,327</td>
<td>27%</td>
</tr>
</tbody>
</table>

* Due to the large size of the main national public university (the National University of Lao in Vientiane), we decided to focus our attention on only three of the largest faculties of this institution (the Faculty of Engineering, the Faculty of Economics, and the Faculty of Education) and to treat them as a single observation. As such, all the findings presented report and assume the number of universities at six instead of four (the three faculties mentioned and the three remaining public universities: Souphanouvong University, Champasack University, and Savannakhet University).

** UNESCO, 2013 and 7th National Socio Economic Development Plan

*** Other schools at the secondary and post-secondary vocational and higher education institutions not covered in this study include 10 training institutes of the Lao Youth Union, 5 training institutes of the Ministry of Culture and Information, 3 training institutes of each the Ministry of Finance, the Ministry of Justice, and Lao Women’s Union, and 1 training instituted of the Bank of Lao. Finally, the Ministry of Health runs a Health Sciences University and 12 nursing schools.

The institutional assessment survey tool attempted to get a picture of the higher education and vocational training sector in Lao. The instruments focused on the policies and institutional arrangements that govern these institutions and the institutional capacity around skills development in the country. More specifically, it addressed the lack of economic relevance, lack of internal efficiency due to unclear governance structures, resource constrains and lack of autonomy, and financial constraints of these institutions.

The institutions included in the study were chosen according to size (the biggest schools in terms of enrolment size were all interviewed) and location. Sample selection kept in mind that schools have different ministerial affiliations, teach different types of skills and programs, and can either be public or privately owned. The number of institutions selected was based on the desire to cover 50 percent or more of the institutions included in each category. This was achieved for all categories, except private colleges where the pool is large (and very heterogeneous in size, coverage and focus) and budget limitations only allowed for coverage of approximately 10 percent of the schools. The survey sample also accounts for over 50 percent of all post-secondary students in the country. Where possible, the survey was administered to the director of the institutions visited, although administrative and financial staff in each training center provided much of the information sought.

access to vocational training also for target groups from the so-called informal sector and early school leavers.” (Planco Consulting, 2010, pg.8).
For each institution, data was collected on the curricula and programs offered, the focus on soft skills and other types of skills, the center’s teaching methods, the student body, and admission methods and criteria. The survey also focused on the financial and budgetary status of training centers, the adequacy of the facilities at their disposal, and the level of autonomy of each school (from the Government) in making staffing decisions, developing curricula, introducing courses and programs, and so on. Information was collected on the teaching and administrative bodies of each school, the main problems faced when hiring and retaining instructors, and the types of issues arising most frequently when making staffing decisions.

Whenever possible, data was collected on the number of graduates from each school and the main issues around placement of students in the labor market. The survey explored links between each school with employers and, more generally, the existing quality control mechanisms (if any) to ensure that the provision of training and skills is in line with market demands. It is important to note that the survey was not intended to assess the performance of an individual school or to rank institutions; rather, the objective was to identify common patterns and problems among schools using a standard set of indicators. Finally, in terms of external efficiency of Lao’s higher education system, the survey did not measure performance through the use of rate of return analysis. However, the data collected through the STEP and the tracer surveys does shed some light on the wage profiles of TVET and higher education graduates, their career trajectories, as well as the rates of return of different fields of study.

**Tracer Study of Graduates**

Data was collected from graduates from TVET and other institutions, but focused specifically on TVETs, to better understand how their graduates fare in the labor market. The data collected sheds light on employment status, income, career trajectories, skills gained through schooling, and aspirations of graduates. While the ideal way to conduct a tracer study is through the random selection of a sample of graduates from the entire population of TVET graduates in a given country, the unavailability of information on Lao TVET graduates made it impossible to survey a nationally representative sample. The decision to survey only TVET graduates was two-fold: first, to align efforts with the Government’s focus on TVET reform and technical skills delivery, and second, to avoid duplication of efforts with the Asian Development Bank’s (ADB) supported SHEP Project which had previously decided to run a tracer survey among Lao graduates. ADB and World Bank teams decided to split up the survey and focus on universities and TVETs, respectively.

The sample of interviewees for the Tracer was collected by adopting an ‘outreach and snowball’ method. This involved a three-step approach. The survey firm hired to collect the data on behalf of the World Bank was contracted to do the following:

- Carry out a comprehensive public outreach campaign (using local media such as TV, radio, and social networks), announcing ahead of time that survey teams would be collecting information from TVET graduates from the 2007-2012 period on specific dates and at given public spaces. Banners and leaflets with all the relevant information were also disseminated strategically in schools, bus stations, community centers, ministries, industries, public markets, sports fields, traffic lights, and along the roads. TVET alumni were invited to participate at these public meetings to share their ideas on how to improve the country’s education system by filling surveys. Attendance was made more attractive

---

37 The inspiration behind some of the questions included in our survey comes from work being carried out by World Bank staff in the Middle East and North Africa Region. See Annexes for a list of papers consulted.
by running raffles in which all survey respondents entered and had the chance to win prizes.

- Survey all willing TVET graduates, after a thorough screening process, and obtain from these respondents the names and contact details of fellow alumni or acquaintances that also graduated from the country’s TVET institutes.
- Follow up and survey on the phone the TVET graduates whose contact details were provided by other respondents.

The outreach plus snowball method resulted in a dataset of about 2,700 graduates from 2007-2011; however, this sample size is not representative of the population of TVET graduates in Lao. After a pilot in November 2012, the data was collected between November 2012 and January 2013, covered the Vientiane province and nine other provinces in the country, and each interview took approximately 45-50 minutes. While the sample size is large, the methods utilized to reach graduates probably compromised the representativeness of the group of interviewees; therefore, the generalizability of results should not be presumed. For one thing, graduates showing up to the public events are probably not representative of all Lao graduates; for instance, they might be more motivated or successful than average and therefore more inclined to attend the events. Moreover, respondents reached through the snowball method could easily be similar to the friends that referred them (that is, might have studied similar subjects, work in similar sectors, etc.). Thus, the sample might over-represent graduates with certain specific characteristics.

The imperfect sampling approach of graduates at public events had the upside of including some university graduates as well. Due to the fact that the public events were open to all, the sample ended up including some university graduates (that were discarded in the analysis) and TVET graduates from schools other than those included in the initial list of focus schools (that were included in the analysis). However, the data collected sheds light on TVET graduates’ activities post-graduation, and on the type of analysis that can be carried out in the future should Lao institutionalize the use of rigorous tracer surveys.
ANNEX 2. ANALYTICAL APPROACH

Description of the Supply Side Analysis

Data derived from the household modules are used to understand the current inventory of skills in the Lao workforce and measure the role of cognitive and non-cognitive skills in improving economic outcomes. The descriptive section relies heavily on simple statistical analysis: for example, mean estimates and cross tabulations of education levels and skill levels by key demographic characteristics (for example, gender, age group, geographic location). The analytical section uses more sophisticated statistical approaches to measure the effect of various types of skills on wages and other labor market outcomes. Cognitive and non-cognitive skills are formed over the life cycle and are expected to be greatly affected by educational investments and family and socio-cultural factors. The analysis in the report allows us to measure how education and other socio-demographic factors affect skills by using simple regression analysis. Definitions of cognitive and non-cognitive skills are included in Table A and Table A in the Annex.

Apart from the STEP survey, multiple datasets are used to ensure precision in the estimations presented. As mentioned, there are secondary data sets used in order to understand how education levels have evolved and to compare results with other comparable data sources. Apart from STEP, the analysis includes estimates from the recently collected Labor Force Survey (LFS) in 2010, and the Lao Economic Consumption Survey (LECS) collected in 2007/08. Each data set records hours worked and earnings from wages and salaries in different ways; thus, there are differences in the estimates reported by these three sources largely due to the manner in which similar questions were asked. To maximize the consistency between the estimates from the different datasets, hourly wages are computed as outlined in Table . There are also differences with respect to the sample size included in the regression analysis; sample sizes are small mainly because the estimations only include wage earners; business owners and those who work on farms, self-owned or owned by their families, are not included. The sample size, by data source, included is: LFS: 3,150; LECS: 1,525; and STEP: 566.

Table A.2.1. Definition of Hourly Wage Rates in Each Data Source

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>LECS IV (2007/08)</td>
<td>Income from wages and salaries \textit{in the last month} ÷ (Weekly hours worked × 4)</td>
</tr>
<tr>
<td>LFS (2010)</td>
<td>Income from wages and salaries \textit{in main work in the last month} ÷ (Weekly hours worked × 4)</td>
</tr>
<tr>
<td>STEP (2011/12)</td>
<td>Income from wages and salaries \textit{in main work in the last payment period} ÷ (Weekly hours worked × 1, 2, 4, or daily hours worked)</td>
</tr>
</tbody>
</table>

Source: Author’s Summary
Returns to Education Estimation

Human capital theory suggests that higher education leads to higher productivity and higher wages. The more time spent (or invested) in obtaining education, the more likely the person (or investor) is to make higher wages. The analytical approach used to measure the rates of return to schooling attainment follows the standard approach developed by Mincer (1974). More specifically, the approach used to estimate the rates of return to education evaluates the correlation between years of education and income earned through work. As in most studies, the human capital earnings function used is as follows (ordinary least squares method),

\[ \ln(\text{hourly wages}_i) = \beta_1 + \rho \text{Years}_i + \beta_2 \text{Exp}_i + \beta_3 \text{Exp}_i^2 + \beta_4' X_i + \epsilon_i, \]

where \( \text{Years} \) denotes years of schooling, \( \text{Exp} \) denotes years of work experience, and \( X \) represents other relevant factors assumed to affect earnings, including a province and a type of village in which a wage worker \( i \) resides. The estimated coefficient \( \rho \) shows the rate of return to an additional year of schooling. Male and female workers are differentiated either by introducing a dummy variable or by running the regression separately for each sex. To estimate the returns to each level of education, the following regression specification is estimated,

\[ \ln(\text{hourly wages}_i) = \beta_1 + \sum_j \rho_j S_{ji} + \beta_3 \text{Exp}_i + \beta_4 \text{Exp}_i^2 + \beta_5' X_i + \epsilon_i, \]

where \( S_{ji} \) is a dummy variable for a completion of \( j \)-th level of education that individual \( i \) has reached after the completion of primary education. \( \rho_j \) represents the rate of return to investment in \( j \)-th level of education. We classify the level of education into four groups: (i) no education or primary; (ii) secondary; (iii) vocational; and (iv) university or post-graduate education. Table displays numbers of observations used in the regressions by level of education. Only wage earners are considered in the regressions, and business owners and those who work on farms owned by themselves or their families are not included.

Table A.2.2. Sample Size for Analytical Estimations from Each Data Source

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Total</td>
<td>1051</td>
<td>474</td>
<td>2029</td>
</tr>
<tr>
<td>No education or primary</td>
<td>244</td>
<td>98</td>
<td>249</td>
</tr>
<tr>
<td>Lower or upper secondary</td>
<td>407</td>
<td>161</td>
<td>709</td>
</tr>
<tr>
<td>Vocational</td>
<td>239</td>
<td>143</td>
<td>495</td>
</tr>
<tr>
<td>University or above</td>
<td>161</td>
<td>72</td>
<td>576</td>
</tr>
</tbody>
</table>

Source: Author’s calculations
Table A.2.3: Cognitive Skills measured in STEP

<table>
<thead>
<tr>
<th>Type of cognitive skills</th>
<th>Range</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-reported cognitive skills</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>1-5</td>
<td>The length of the longest document that a respondent has read in the past 12 months</td>
</tr>
<tr>
<td>Writing</td>
<td>1-5</td>
<td>The length of the longest document that a respondent has written in the past 12 months</td>
</tr>
<tr>
<td>Numeracy</td>
<td>1-5</td>
<td>Variety of the numeracy skills a respondent possesses</td>
</tr>
<tr>
<td><strong>Literacy measured in the ETS assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Section A, Part 1</td>
<td>0-25</td>
</tr>
<tr>
<td>Reading</td>
<td>Section A, Part 2 &amp; 3</td>
<td>0-56</td>
</tr>
<tr>
<td>Core literacy</td>
<td>Section B</td>
<td>0-8</td>
</tr>
</tbody>
</table>

Table A.2.4: Non-Cognitive Skills measured in STEP

<table>
<thead>
<tr>
<th>Big Five</th>
<th>Number of questions in STEP</th>
<th>Range</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more extroversion</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more conscientious</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more open to new experience</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more emotionally stable</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more agreeable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other behavioral characteristics and preferences</th>
<th>Number of questions in STEP</th>
<th>Range</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit Scale</td>
<td>3</td>
<td>1-4</td>
<td>Higher is grittier</td>
</tr>
<tr>
<td>Hostile Bias</td>
<td>2</td>
<td>1-4</td>
<td>Higher is more hostile</td>
</tr>
<tr>
<td>Decision making</td>
<td>4</td>
<td>1-4</td>
<td>Higher is more thoughtful</td>
</tr>
<tr>
<td>Interpersonal skills at work*</td>
<td>2</td>
<td>0-1</td>
<td>Higher is possessing higher skills</td>
</tr>
<tr>
<td>Risk Aversion</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more risk loving</td>
</tr>
<tr>
<td>Discount Factor</td>
<td>3</td>
<td>1-4</td>
<td>Higher is more discounting future</td>
</tr>
</tbody>
</table>

*Measured only for workers

The approach used to estimate the rates of return to education evaluates the correlation between years of education and income earned through work. As in most studies, the human capital earnings function used is as follows (ordinary least squares method),
\[
\ln(\text{hourly wages}_i) = \beta_1 + \rho \text{Yearedu}_i + \beta_2 \text{Exp}_i + \beta_3 \text{Exp}_i^2 + \beta_4'X_i + \varepsilon_i,
\]

where \( \text{Yearedu} \) denotes years of schooling, \( \text{Exp} \) denotes years of work experience, and \( X \) represents other relevant factors assumed to affect earnings, including a province and a type of village in which a wage worker \( i \) resides. The estimated coefficient \( \rho \) shows the rate of return to an additional year of schooling. We differentiate male and female workers either by introducing a dummy variable or by running the regression separately for each sex.

To estimate the returns to each level of education, we can run the following regression,

\[
\ln(\text{hourly wages}_i) = \beta_1 + \sum_j \rho_j S_{j|i} + \beta_2 \text{Exp}_i + \beta_3 \text{Exp}_i^2 + \beta_4'X_i + \varepsilon_i,
\]

where \( S_j \) is a dummy variable for a completion of \( j \)-th level of education that individual \( i \) has reached after the completion of primary education. \( \rho_j \) represents the rate of return to investment in \( j \)-th level of education. We classify the level of education into four groups: (i) no education or primary, (ii) secondary, (iii) vocational, and (iv) university or post graduate education. Table 1(?) displays numbers of observations used in the regressions by level of education. Only wage earners are considered in the regressions, and business owners and those who work on farms owned by themselves or their families are not included.
### Informality Analysis

#### Informality

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Informality</th>
<th>0: w/o written contract OR 1: w/ written contract</th>
<th>w/o provinces</th>
<th>w/ provinces</th>
<th>w/ provinces, years of edu</th>
<th>w/ provinces, years of edu, interaction terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td>0.0105</td>
<td>0.00929</td>
<td>0.0117</td>
<td>0.0143</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0195)</td>
<td>(0.0156)</td>
<td>(0.0154)</td>
<td>(0.0153)</td>
</tr>
<tr>
<td>Age (base: 15-19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td></td>
<td></td>
<td>0.0791**</td>
<td>0.0292</td>
<td>0.0193</td>
<td>0.0187</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0317)</td>
<td>(0.0295)</td>
<td>(0.0296)</td>
<td>(0.0299)</td>
</tr>
<tr>
<td>25-29</td>
<td></td>
<td></td>
<td>0.113***</td>
<td>0.0559</td>
<td>0.0458</td>
<td>0.0461</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0386)</td>
<td>(0.0362)</td>
<td>(0.0364)</td>
<td>(0.0367)</td>
</tr>
<tr>
<td>30-44</td>
<td></td>
<td></td>
<td>0.0984***</td>
<td>0.0457</td>
<td>0.0368</td>
<td>0.0368</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0314)</td>
<td>(0.0312)</td>
<td>(0.0309)</td>
<td>(0.0309)</td>
</tr>
<tr>
<td>45-65</td>
<td></td>
<td></td>
<td>0.0952**</td>
<td>0.0767**</td>
<td>0.0729**</td>
<td>0.0720**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0373)</td>
<td>(0.0336)</td>
<td>(0.0329)</td>
<td>(0.0329)</td>
</tr>
<tr>
<td>Village (base: urban)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural w road</td>
<td></td>
<td></td>
<td>0.0923**</td>
<td>0.000918</td>
<td>0.00850</td>
<td>0.00967</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0430)</td>
<td>(0.0241)</td>
<td>(0.0241)</td>
<td>(0.0239)</td>
</tr>
<tr>
<td>Education (base: no educ or primary d/o)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td>0.0706*</td>
<td>0.0947**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0389)</td>
<td>(0.0444)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td>0.121***</td>
<td>0.148***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0394)</td>
<td>(0.0406)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td></td>
<td></td>
<td>0.235***</td>
<td>0.255***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0429)</td>
<td>(0.0394)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td></td>
<td></td>
<td>0.241***</td>
<td>0.286***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0433)</td>
<td>(0.0384)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0200***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.0166)***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.00215)</td>
</tr>
<tr>
<td>Sector (base: services)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
<td>0.0789*</td>
<td>0.112***</td>
<td>0.110***</td>
<td>-0.0635</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.0439)</td>
<td>(0.0366)</td>
<td>(0.0360)</td>
<td>(0.0777)</td>
</tr>
</tbody>
</table>
Manufacturing & -0.134*** & 0.0934*** & -0.0885*** & -0.182*** \\
& (0.0370) & (0.0283) & (0.0269) & (0.0610) \\

**Interaction (years edu x sector dummy)**

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>years edu x resources</td>
<td>0.0173**</td>
<td>(0.00739)</td>
</tr>
<tr>
<td>years edu x manuf</td>
<td>0.00952*</td>
<td>(0.00528)</td>
</tr>
</tbody>
</table>

**Province (base: Vientiane capital)**

<table>
<thead>
<tr>
<th>Province</th>
<th>NO</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.121**</td>
<td>-0.0455</td>
<td>-0.0701*</td>
<td>-0.0329</td>
</tr>
<tr>
<td></td>
<td>(0.0517)</td>
<td>(0.0540)</td>
<td>(0.0375)</td>
<td>(0.0423)</td>
</tr>
</tbody>
</table>

Observations: 3,880
R-squared: 0.065

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
## Labor Productivity Analysis

**Table A.2.5. Results for OLS Labor Productivity Regressions, Manufacturing in 2012**

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Value added per worker</th>
<th>Province (base: VTE capital)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Share of export in sales</td>
<td>-133.2</td>
<td>-60.31</td>
</tr>
<tr>
<td>Share of foreign ownership</td>
<td>-248.5</td>
<td>-472.0</td>
</tr>
<tr>
<td><strong>Share of skilled workers</strong></td>
<td>44,892</td>
<td>122,091</td>
</tr>
<tr>
<td>Share of female workers</td>
<td>34,830</td>
<td>72,863</td>
</tr>
<tr>
<td>ISO certified</td>
<td>-20,992</td>
<td>-52,640</td>
</tr>
</tbody>
</table>

**Subsector (base: food)**

| Textile, apparel | -401,455*** |  |  |
| Wood, paper | -155,218 |  |  |

**Notes:**
- ***,** **,** **,** indicate statistical significance at the 1%, 5%, and 10% levels, respectively.
- Standard errors are in parentheses.
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chemical, mineral, metal</td>
<td>-238,356*</td>
<td>(123,536)</td>
</tr>
<tr>
<td></td>
<td>Machinery, vehicles</td>
<td>-205,929</td>
<td>(132,980)</td>
</tr>
<tr>
<td>Firm age</td>
<td>1,558</td>
<td>-222.5</td>
<td>-4,871</td>
</tr>
<tr>
<td></td>
<td>(4,607)</td>
<td>(4,882)</td>
<td>(5,653)</td>
</tr>
<tr>
<td>Constant</td>
<td>-13,839</td>
<td>1,123</td>
<td>270,767*</td>
</tr>
<tr>
<td></td>
<td>(110,076)</td>
<td>(119,315)</td>
<td>(157,511)</td>
</tr>
<tr>
<td>Observations</td>
<td>77</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.008</td>
<td>0.051</td>
<td>0.176</td>
</tr>
</tbody>
</table>

Standard errors in parentheses. Outliers are removed.

*** p<0.01, ** p<0.05, * p<0.1
### ANNEX 3. LIST OF INSTITUTIONS INCLUDED IN THE INSTITUTIONAL ASSESSMENT

<table>
<thead>
<tr>
<th>Authority</th>
<th>Name of School</th>
<th>Location</th>
<th>Type/Subjects Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOES</td>
<td>Champasak Technical Vocational School</td>
<td>Champasak</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Vientiane Province Technical School</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Pakpasoak Technical College</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Polytechnic College</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Luangprabang Technical Vocational School</td>
<td>Luang Prabang</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Savannakhet Technical Vocational School</td>
<td>Savannakhet</td>
<td>TVET</td>
</tr>
<tr>
<td>MOES</td>
<td>Lao-German Technical School</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>PES</td>
<td>Xiangkhouang Integrated Vocational School</td>
<td>Xieng Khuan</td>
<td>IVET</td>
</tr>
<tr>
<td>PES</td>
<td>Xayabouly Integrated Vocational School</td>
<td>Xayabouli</td>
<td>IVET</td>
</tr>
<tr>
<td>PES</td>
<td>Luangnamtha Integrated Vocational School</td>
<td>Luangnamtha</td>
<td>IVET</td>
</tr>
<tr>
<td>PES</td>
<td>Xekong Integrated Vocational School</td>
<td>Xekong</td>
<td>IVET</td>
</tr>
<tr>
<td>MoLSW</td>
<td>Vocational Skills Development Center</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>MoLSW</td>
<td>Champasak Vocational Training Center</td>
<td>Champasak</td>
<td>TVET</td>
</tr>
<tr>
<td>MoLSW</td>
<td>Lao-Korean Vocational Training Center</td>
<td>Vientiane Capital</td>
<td>TVET</td>
</tr>
<tr>
<td>MoAF</td>
<td>Champasak Agriculture and Forestry College</td>
<td>Champasak</td>
<td>Agriculture, Livestock, Forestry</td>
</tr>
<tr>
<td>MoAF</td>
<td>Luang Prabang Agriculture and Forestry College</td>
<td>Luang Prabang</td>
<td>Agriculture, Livestock, Forestry</td>
</tr>
<tr>
<td>MoAF</td>
<td>Savannakhet Agriculture and Forestry College</td>
<td>Savannakhet</td>
<td>Agriculture, Livestock, Forestry</td>
</tr>
<tr>
<td>MOES</td>
<td>Champasak University</td>
<td>Champasak</td>
<td>University</td>
</tr>
<tr>
<td>MOES</td>
<td>Souphanouvong University</td>
<td>Luang Prabang</td>
<td>University</td>
</tr>
<tr>
<td>MOES</td>
<td>Savannakhet University</td>
<td>Savannakhet</td>
<td>University</td>
</tr>
<tr>
<td>MOES</td>
<td>NUOL</td>
<td>Vientiane Capital</td>
<td>Faculty of Engineering</td>
</tr>
<tr>
<td>MOES</td>
<td>NUOL</td>
<td>Vientiane Capital</td>
<td>Faculty of Commerce/Economics and Business Administration</td>
</tr>
<tr>
<td>MOES</td>
<td>NUOL</td>
<td>Vientiane Capital</td>
<td>Faculty of Education</td>
</tr>
<tr>
<td>Private</td>
<td>Xaisombath Technology College</td>
<td>Savannakhet</td>
<td>Business Mgmt., Electronics, Computer Science</td>
</tr>
<tr>
<td>Private</td>
<td>Comcenter</td>
<td>Vientiane Capital</td>
<td>Business Mgmt (Marketing), Business English, Business Law</td>
</tr>
<tr>
<td>Private</td>
<td>Lao-American College</td>
<td>Vientiane Capital</td>
<td>Business Mgmt, English</td>
</tr>
<tr>
<td>Private</td>
<td>Rattana Business Administration College</td>
<td>Vientiane Capital</td>
<td>Business Mgmt (Marketing), Business English</td>
</tr>
<tr>
<td>Private</td>
<td>Xaipattana Business College</td>
<td>Vientiane Capital</td>
<td>Business Mgmt, Accounting, Banking, English</td>
</tr>
<tr>
<td>Private</td>
<td>Lao-International College</td>
<td>Vientiane Capital</td>
<td>Hotel Mgmt, Tourism, Accounting, Bookkeeping, etc.</td>
</tr>
<tr>
<td>Q 1</td>
<td>Geographic area of service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 2</td>
<td>Institution establishment date: Date: Month: Year:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 3</td>
<td>Ministry Affiliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ministry Of Education &amp; Sport: 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ministry Of Labour &amp; Social Welfare: 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ministry Of Health: 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ministry of Agriculture and Forestry: 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others please specify: 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 4</td>
<td>Stated goals and objectives (Vision statement or institutional goals and objectives)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 5</td>
<td>Future plans (for e.g. to expand facilities, course offerings, new partnerships, etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 6</td>
<td>Distinguishing characteristics? (What is the school known for, or what makes it stand out from others.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q 7</td>
<td>Institutional partnerships - Does your institution partner with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>7.01</td>
<td>Local education institutions</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.02</td>
<td>Education institutions abroad</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.03</td>
<td>Local Private Firms</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.04</td>
<td>Private firms abroad</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.05</td>
<td>NGOs or other organizations</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7.06</td>
<td>Other</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Section 2 - Program Planning, Organization and Implementation

Q 8 How are individual programs established or terminated? (Kindly indicate the extent to which you agree with the following statements)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.01 The Ministry tells us which programs to open</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.02 We create new programs with dialogue and interaction with the private sector</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.03 In the past year we have created new programs</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.04 In the past three years we have created new programs</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.05 We don’t create new programs because it is not our role</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.06 We don’t create new programs because we don’t have the financial resources to do so</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.07 We don’t create new programs because we don’t have sufficient number of teachers</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.08 We end programs if there is no job market for graduates</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.09 In the past year we have ended programs</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.10 In the past three years we have ended programs</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>8.11 Ending a program reflects poorly on the school</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Q 8a Follow up - How are programs established or ended?

(Question not provided)

Q 9 Tell us about programs that are popular and unpopular with students

Q 10 How is teaching/instruction delivered?

<table>
<thead>
<tr>
<th>Instruction Method</th>
<th>In use</th>
<th>In use with some programs</th>
<th>In use with most or all programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.01 Classroom based instruction (usually as a part of the institutional program of instruction)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.02 Laboratory/shop based instruction (usually as a part of the institutional program of instruction)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.03 Internships in private sector (may also be known as on-the-job training)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.04 Short-term classes (usually for requesting firms or special training needs of students)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.05 School based production (for income generation or student work experience)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.06 Evening/Weekend courses (usually for employed workers in business and industry)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.07 Apprenticeships (formal, with training contract)... (usually an alternative to institutional training, but may include pre-apprenticeship training at the institution)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.08 Others (please list)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Q 11 How are students selected for each program? Ask if students are selected according to the different systems (yes or no) and ask respondents to estimate % of students admitted through each channel

<table>
<thead>
<tr>
<th>Q 11</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.01</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.02</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.03</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.04</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.05</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.06</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11.07</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Q 12 Institutional Changes in view of ASEAN Asian Economic Community 2015 Agreement (AEC 2015)

The AEC 2015 will establish ASEAN as a single market, making ASEAN more dynamic and competitive by accelerating regional integration in the priority sectors; facilitating movement of business persons, skilled labour and talents; and strengthening the institutional mechanisms of ASEAN. Essentially, the AEC Agreement will allow the free movement of good and skilled workers within all ASEAN Countries. As part of ASEAN, Lao PDR could then witness an increase in the inflow of skilled workers in the country.

Q 12a If YES, How is the institution preparing for ASEAN’s AEC 2015? (Please ask respondent to describe in more detail how the school is preparing for AEC 2015?)

Q 12b If NO, is there a plan to prepare for ASEAN AEC 2015? Can you describe it?

Q 12c As far as you know, has the Government introduced any policy changes that affect the [HIGHER EDUCATION/TVET] sector in view of ASEAN 2015 regional integration process?

Q 12d If YES, Please describe and share your opinions on the topic
<table>
<thead>
<tr>
<th>Name of Program</th>
<th>Entry requirement of program</th>
<th>Program Duration in Years</th>
<th>Program Duration in Months</th>
<th>Low Diploma</th>
<th>Diploma</th>
<th>BA</th>
<th>MA</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Check only one level - use additional line for each additional skill level.
### Section 3 - Internal Efficiency

#### Q 14
- **14.00 Total number of employees (including all full-time administrative and management personnel, teachers and non-teaching staff)**
- **14.01 President/Rector/Director**
- **14.02 Deputy Director/President/Principal**
- **14.03 Department/Program Mgrs/Coord.**
- **14.04 Other Administrative Personnel/Management/administrators in training**
- **14.05 Janitorial Staff (cleaning and maintenance)**

#### Q 15
**Average age of instructors/teachers please estimate**

#### Q 16
**Average age of administrators please estimate**

#### Q 17
**Information on instructors/teachers employed (for current year 2011/2012)**
- **7.01 Full-time**
- **7.02 Part-time**
- **7.03 Currently in training**
- **7.04 Contract teachers (i.e. not permanent employees of the school)**
- **7.05 Salaries and benefits**

#### Q 18
- **18.01 Total full-time institutional enrollment**
- **18.02 Total part-time institutional enrollment**
- **18.03 Current number residential students (i.e. students residing on campus)**
- **18.04 Capacity of dormitories**
- **18.05 Total undergraduate enrollment (Bachelor or lower)**
- **18.06 Total graduate enrollment (Masters and Ph.D.)**

#### Q 19
**Age level of students?**
- **19.01 Under 19 %**
- **19.02 Age range 19-24 %**
- **19.03 24+ %**

#### Q 20
**Prior education of most students?**
- **20.01 % of Trainees have completed lower secondary**
- **20.02 % of Trainees have completed higher secondary**
- **20.03 Other prior education**

#### Q 21
- **21.01 Does your institution have a board (e.g. board of administration, advisory board, committee)?**
  - **21.02 Yes**
  - **21.03 No**

#### Q 22
**Who are the members**
- **22.a1 Faculty and staff only**
- **22.a2 Student representatives**
- **22.a3 Government officials (outside of your institution)**
- **22.a4 Private sector representatives**

#### Q 23 (continued)
Please describe the roles and the activities of the board: composition of board, how often they meet, different roles of the administrators and industry links.
### Q 21b Who selects the members of the board

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment by the Government</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Elected by faculty and staff</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Appointed by the institution after competitive recruitment process</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

### Q 21c What authority does the board have

<table>
<thead>
<tr>
<th>Authority</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board has a consultative role</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Board approves the institution's strategic plan</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Board approves the institution's budget</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Board is responsible for recruitment of institution head</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

### Q 21d Linkages of the board with the private sector

<table>
<thead>
<tr>
<th>Linkage</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board includes private sector representatives</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Board consults informally the private sector</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Board has no links to the private sector</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

### Q 22 Who selects the President/Reector/Director (or the dean of the faculty in the case of a Faculty)

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment by the Government</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Internally elected by faculty and staff</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Appointed by the institution after competitive recruitment process</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

### Q 23 How do you recruit and appoint teachers?

<table>
<thead>
<tr>
<th>Option</th>
<th>All teachers</th>
<th>Some teachers</th>
<th>No teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment is done freely by institution</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Appointment is done freely by institution</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Recruitment is done by a Ministry</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Appointment is done by a Ministry</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Teachers are recruited directly from a Ministry or a teaching institute e.g. Vocational Education Development Centre</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Teachers are recruited from the private sector</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Number of teaching positions is determined by a Ministry</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

### Q 23a Use this space to provide further detail on the recruitment and appointment process:

### Q 23b Do you have an institutional human resource development plan?

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

### Q 23c Yes, please describe.

---

163
**Q 23d** What short-term in-service training has your staff participated in over the past academic year?

<table>
<thead>
<tr>
<th>Category of Staff</th>
<th>Main Provider: 1= In-House 2=MOE S/Gov 3=Private Firm 4= NGO</th>
<th>Average Length (days)</th>
<th>Main Provider</th>
<th>Average Length (days)</th>
<th>Main Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers/Administrators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q 24** Can you dismiss teachers and staff?

- 24.01 Institutions have no freedom to dismiss non-performing staff.
- 24.02 Institutions have the authority to dismiss non-performing staff, but it is very difficult in practice.
- 24.03 Institutions can dismiss non-performing staff.

**Q 25** Can you set the salaries of teachers and staff?

- 25.01 Institutions have no freedom to set salaries.
- 25.02 Institutions have some freedom to set salaries.
- 25.03 Institutions have a lot of freedom in setting salaries.

**Q 26** Constraints relating to administrator and instructor/teacher recruitment, retention and training

(All 2 indicate the extent to which you agree if the following issues are a constraint)

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Major Constraint</th>
<th>Moderate Constraint</th>
<th>Minor Constraint</th>
<th>No Constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortage of teachers in the country</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Lack of teachers’ commitment and discipline</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Lack of teachers with strong pedagogical skills and experience</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Lack of teachers with industry-specific experience (e.g., teachers in the faculty of engineering that have worked as engineers)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Difficulties in retaining teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Poor terms and conditions for teacher and administrator employment (i.e., for wages, shared housing, travel expenses, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Q 27** Development of curricula and teaching materials?

<table>
<thead>
<tr>
<th>All Curricula</th>
<th>Some of the Curricula</th>
<th>None of the Curricula</th>
<th>All Materials</th>
<th>Some Materials</th>
<th>None of the Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.01 Curricula and materials are developed and reviewed by the parent ministry or designated provider</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.02 Curricula and materials are developed by institution</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.03 Curricula and materials are jointly developed by both the parent ministry and designated provider</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.04 Curricula and materials are developed with input and advice of private sector employers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.05 Curricula and materials are developed by individuals, teachers or professors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.06 Curricula and materials are developed following market survey</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.07 Curricula and materials are developed in response to student applications</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.08 Curricula and materials are developed taking into account students’ input and suggestions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27.09 Developed curricula are developed following survey of graduates</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Use this space to provide additional detail on issues related to curricular and teaching materials development.

**Q 27a**

**Q 28** Library and book loans

- 28.01 There are one or more libraries at the institution
- 28.02 Students are allowed to take library books home

**Q 29** Program quality control mechanisms - Do you use any of the following groups, individuals, or tools to monitor the quality of your institution?

<table>
<thead>
<tr>
<th>Issue/Tool</th>
<th>Some programs</th>
<th>None of the programs</th>
<th>No program</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.01 Academic curriculum review committees (usually teachers and management)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.02 Employers provide informal feedback on the quality of curricular/curriculum</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.03 Parent advisory committees (usually the parent ministry)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.04 Program evaluation committees that includes employers</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.05 Self-assessment</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.06 Administrative review</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29.07 School (equally)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Q 30 Student services available - Does your institution provide the following services to its students?

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
<th>Some programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career counseling</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Test Preparation Search Services</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Internship planning services (for students for locating internships with employers during studies or after graduation)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Training for technical and non-technical positions in CNs</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Scholarships</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Life skills training (Budgeting, Finance, Health, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Academic counseling</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Free transportation facilities for TVET and above access to emergency medical services</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q 30 Student financial support available - Are any of the following support systems available to your students?

<table>
<thead>
<tr>
<th>Support System</th>
<th>Yes</th>
<th>No</th>
<th>Some programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stipends paid by institution or government</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Loans</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Scholarships</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Transportation support</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Others (specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 31 Information on Internships for Students

<table>
<thead>
<tr>
<th>Percentage of students completing an internship in a local firm</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Q 32 Facility availability and utilization - Does your institution have the following?

<table>
<thead>
<tr>
<th>Facility</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate number of classrooms</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Adequate number of desks for principal teacher</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Adequate number of shelves</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Adequate availability of tools and equipment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Adequate availability of instructional facilities (e.g., laboratories)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mechanics lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Water treatment lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Food storage/laboratory</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Computer lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Business services</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Computer lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Internet lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematics lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agriculture Application lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural machines lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Animal husbandry lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Textile sewing lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Welding/Hot metal lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Metalworking lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Utilization rate of labs and shops (record percentage of usage over a 40 hour week)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Q 33 Percentage / Average

<table>
<thead>
<tr>
<th>Production Agriculture lab</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile sewing lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Welding/Hot metal lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Metalworking lab</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Others (specify)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Q 34 General condition of physical facilities

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Q 35 Some programs

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>Some programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship placement services</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q 34 Percentage / Average

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Q 36 Some programs

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes</th>
<th>No</th>
<th>Some programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship placement services</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q 34 Percentage / Average

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
<th>Some of the time</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
### Q 35: Existing resource constraints (non-financial) - In terms of facilities, which are the three major constraints that your institution faces among the following?

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of classrooms</td>
<td>1</td>
</tr>
<tr>
<td>Lack of labs</td>
<td>2</td>
</tr>
<tr>
<td>Lack of toilets</td>
<td>3</td>
</tr>
<tr>
<td>Lack of professional staff services</td>
<td>4</td>
</tr>
<tr>
<td>Lack of medical support facility</td>
<td>5</td>
</tr>
<tr>
<td>Lack of counseling facility</td>
<td>6</td>
</tr>
<tr>
<td>Lack of sports facility</td>
<td>7</td>
</tr>
<tr>
<td>Lack of parking area</td>
<td>8</td>
</tr>
<tr>
<td>Lack of dormitory space</td>
<td>9</td>
</tr>
<tr>
<td>Lack of equipment or tools for labs and workshops</td>
<td>10</td>
</tr>
<tr>
<td>Poor equipment</td>
<td>11</td>
</tr>
<tr>
<td>Lack of classroom instructional materials</td>
<td>12</td>
</tr>
<tr>
<td>Lack of books</td>
<td>13</td>
</tr>
<tr>
<td>Lack of curricula</td>
<td>14</td>
</tr>
<tr>
<td>Lack of instruction media equipment</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
</tr>
</tbody>
</table>

**Example of facility constraints**

Please list three most critical constraints:

- [ ] Lack of classrooms
- [ ] Lack of labs
- [ ] Lack of toilets

### Q 36: Existing human resource constraints - In terms of human resources, which are the three major constraints that your institution faces among the following?

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of administrators</td>
<td>1</td>
</tr>
<tr>
<td>Lack of teachers</td>
<td>2</td>
</tr>
<tr>
<td>Lack of counselors</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

**Example of human resource constraints**

Please list three most critical constraints:

- [ ] Lack of administrators
- [ ] Lack of teachers
- [ ] Lack of counselors

### Q 37: Existing enrollment constraints - In terms of enrollment, which are the three major constraints that your institution faces among the following?

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of qualified applicants</td>
<td>1</td>
</tr>
<tr>
<td>No interest by youth</td>
<td>2</td>
</tr>
<tr>
<td>Costs are prohibitive</td>
<td>3</td>
</tr>
<tr>
<td>Poor quality of training</td>
<td>4</td>
</tr>
<tr>
<td>Lack of jobs related to training</td>
<td>5</td>
</tr>
<tr>
<td>School too isolated from market</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
</tbody>
</table>

**Example of enrollment constraints**

Please list three most critical constraints:

- [ ] Lack of qualified applicants
- [ ] No interest by youth
- [ ] Costs are prohibitive
### Q 38: Current annual institution budget

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Kip</th>
</tr>
</thead>
<tbody>
<tr>
<td>From your head ministry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From tuition and fees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From selling services and products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From external assistance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe sources:

### Q 39: Student fees and associated costs (Student's perspective)

<table>
<thead>
<tr>
<th>Item</th>
<th>Total</th>
<th>Kip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average cost tuition per year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cost for housing per year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cost for food per year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other costs - please list</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe "other costs":

### Q 41: Freedom to set tuition fees

- Yes
- No

### Q 42: Financial Constraints

- Slow allocation of budget
- Limited budget
- No access to school-generated income
- Limited access to contributions from alumni, government, industries, etc.
- Other (please specify)

Please list three most critical constraints:

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow allocation of budget</td>
<td>1</td>
</tr>
<tr>
<td>Limited budget</td>
<td>2</td>
</tr>
<tr>
<td>No access to school-generated income</td>
<td>3</td>
</tr>
<tr>
<td>Limited access to contributions from alumni, government, industries, etc.</td>
<td>4</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5</td>
</tr>
</tbody>
</table>

Additional Comments:
Section 5 - External Efficiency

Q 43 Institutional placement data available

- No
- Yes

If NO - Skip to Q 45

Q 44 Number of graduates employed by program and year (last three yrs, if possible)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4401</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4402</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4403</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4404</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Employed:

<table>
<thead>
<tr>
<th>Year</th>
<th>2010-2011</th>
<th>2009-2010</th>
<th>2008-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>44.01</td>
<td>44.02</td>
<td>44.03</td>
<td>44.04</td>
</tr>
<tr>
<td>44.05</td>
<td>44.06</td>
<td>44.07</td>
<td>44.08</td>
</tr>
<tr>
<td>44.09</td>
<td>44.10</td>
<td>44.11</td>
<td>44.12</td>
</tr>
<tr>
<td>44.13</td>
<td>44.14</td>
<td>44.15</td>
<td></td>
</tr>
</tbody>
</table>

Total:

Employed:

<table>
<thead>
<tr>
<th>Year</th>
<th>2010-2011</th>
<th>2009-2010</th>
<th>2008-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>44.01</td>
<td>44.02</td>
<td>44.03</td>
<td>44.04</td>
</tr>
<tr>
<td>44.05</td>
<td>44.06</td>
<td>44.07</td>
<td>44.08</td>
</tr>
<tr>
<td>44.09</td>
<td>44.10</td>
<td>44.11</td>
<td>44.12</td>
</tr>
<tr>
<td>44.13</td>
<td>44.14</td>
<td>44.15</td>
<td></td>
</tr>
</tbody>
</table>

Q 45 Based on studies or other information, what is the institution’s job placement rate overall and among your largest 3 programs/degrees? (In jobs for which students were trained - In percentage - Enter N/A if unknown)

<table>
<thead>
<tr>
<th>Year</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>44.01</td>
<td>44.02</td>
<td>44.03</td>
</tr>
<tr>
<td>2009-2010</td>
<td>44.04</td>
<td>44.05</td>
<td>44.06</td>
</tr>
<tr>
<td>2008-2009</td>
<td>44.07</td>
<td>44.08</td>
<td>44.09</td>
</tr>
</tbody>
</table>

Q 46 What do you think the average salary is among graduates of your largest 3 programs/degrees? (Monthly Salary - Enter N/A if unknown)

<table>
<thead>
<tr>
<th>Year</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>A. Program 1</td>
<td>B. Program 2</td>
<td>C. Program 3</td>
</tr>
<tr>
<td>2009-2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 47 How long do you think it takes on average for graduates of your 3 largest programs/degrees to find a job after graduation? (In Months - Enter N/A if unknown)

<table>
<thead>
<tr>
<th>Year</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>A. Program 1</td>
<td>B. Program 2</td>
<td>C. Program 3</td>
</tr>
<tr>
<td>2009-2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 48 Where are most graduates getting jobs? Speak to popular Sectors/Companies/Names/Location

<table>
<thead>
<tr>
<th>Year</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>A. Program 1</td>
<td>B. Program 2</td>
<td>C. Program 3</td>
</tr>
<tr>
<td>2009-2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q 49 Issues of placement and employment (Briefly describe key concerns regarding trainee/student employment following graduation)

<table>
<thead>
<tr>
<th>Year</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011</td>
<td>A. Program 1</td>
<td>B. Program 2</td>
<td>C. Program 3</td>
</tr>
<tr>
<td>2009-2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-2009</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU

For interview before end of interview

ask for list and contact details of all graduates from the last 5 years (2007-2011), ask for soft copy/epub file, ask to copy of hard copy. ALSO, please ask for copies of any reports/tracer studies on graduates.

THIS IS IMPORTANT
Annex 5. Tracer Study Methodology and Outreach Campaign

The Ministry of Education and Sport cooperated with World Bank Indochina Research LTD and The Vocational Training Institutions have organized The meeting of the Alumni.

2007-2011
Let's join the meeting of the Vocational Alumni!

List name of the Training Vocational Institutions

On this event, we can have the opportunity to win the prizes

On the date:
Location: At the Anouvong Park
Time: Start at 9:00pm - 20:30pm

On the topic: “Together to share ideas and solving for the future better”
1) Did you study the favorite subjects?
2) Is your CURRENT job in line with your most recent field of study?
3) How much of difficulty can you find a job?
4) How about your salary? Are you satisfied on this?

Implemented by: Indochina Research., Ltd
Let's join the meeting of the Vocational Alumni!

On this event, we can have the opportunity to win the prizes.

On the date:
Location: At the Anouvong Park
Time: Start at 15:00pm - 22:00pm

(Please let’s joint the meeting of the Vocational Alumni for the year academy of 2007-2011)

List name of the Training Vocational Institutions

Implemented by: Indochina Research.,Ltd
ANNEX 6. TRACER STUDY QUESTIONNAIRE

SECTION 1: GENERAL INFORMATION

In case we need to, are you willing to be contacted after the survey is completed?

☐ Yes =1
☐ No (Confidential) =2 >>>Skip to Q.4

What is your name and surname?

Name __________________________________________________________
Surname __________________________________________________________

What are your contact details?

Primary address (Village, District, Province)
_________________ , __________________ , _____________________
Primary telephone number __________________________________
Secondary telephone number (if any) __________________________________
District and province of origin __________________________________
Email address __________________________________

What is your gender?

☐ Male=1
☐ Female=2

What is your ethnicity? Enter code from list of ethnic groups

What is your age? _____
Education History: Enter the NUMERIC CODE for Field of Study and Year Completed for Each Certificate, Diploma and/or Degree Earned.

<table>
<thead>
<tr>
<th>Education level</th>
<th>NUMERIC CODE for Field of Study (Refer to table below)</th>
<th>Year completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High diploma 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High diploma 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor's degree 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor's degree 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master's degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other___________</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIELD OF STUDY**

<table>
<thead>
<tr>
<th>FIELD OF STUDY</th>
<th>NUMERIC CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (instructor training, education management, etc.)</td>
<td>1</td>
</tr>
<tr>
<td>Business administration, accountancy, finance, commerce, retail mgt,</td>
<td>2</td>
</tr>
<tr>
<td>economics, tourism, etc.</td>
<td></td>
</tr>
<tr>
<td>Public administration and planning</td>
<td>3</td>
</tr>
<tr>
<td>Law and legal services</td>
<td>4</td>
</tr>
<tr>
<td>Medical, health services, nursing etc.</td>
<td>5</td>
</tr>
<tr>
<td>Science, mathematics, computing, etc.</td>
<td>6</td>
</tr>
<tr>
<td>Technical and engineering, architecture, industry, crafts, carpentry,</td>
<td>7</td>
</tr>
<tr>
<td>construction, etc.</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Number</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Agriculture, livestock, forestry</td>
<td>8</td>
</tr>
<tr>
<td>Social and behavioral studies, media, culture, sport and leisure, etc.</td>
<td>9</td>
</tr>
<tr>
<td>Arts or humanities, languages, history, classics, theology etc.</td>
<td>10</td>
</tr>
<tr>
<td>Personal care services, home economics, food service, hairdressing, etc.</td>
<td>11</td>
</tr>
<tr>
<td>Other (Specify______________________________)</td>
<td>12</td>
</tr>
</tbody>
</table>
Work History: Enter the requested information about main jobs you have held (include your current job).

<table>
<thead>
<tr>
<th>No.</th>
<th>1-Type of Employer</th>
<th>2-Sector</th>
<th>3-Occupation</th>
<th>4-Start Date</th>
<th>5-End Date</th>
<th>6-Locatio n (Province, Country)</th>
<th>7-Job Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENTER NUMERIC CODE:</td>
<td>ENTER NUMERIC CODE:</td>
<td>ENTER NUMERIC CODE:</td>
<td>e.g. 2009</td>
<td>e.g. 2011 or Current</td>
<td>e.g. Vientiane, Lao PDR</td>
<td>Choose one:</td>
</tr>
<tr>
<td></td>
<td>1=Public administration (government)</td>
<td>1= Agriculture, forestry, fishing or livestock production</td>
<td>1= Manager</td>
<td>1= Full-time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2=Semi-private (government enterprise)</td>
<td>2= Industry and manufacturing</td>
<td>2= Professional (doctor, lawyer, engineer, instructor))</td>
<td>2= Part-time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3=Private company, (fully or partially) foreign owned</td>
<td>3= Energy</td>
<td>3= Technician (administrator, technical staff, IT/lab technician, medical assistant, manufacturing/construction foreman)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4=Private company, fully Lao owned</td>
<td>4= Water supply, waste water management</td>
<td>4= Clerical support worker (receptionist, secretary, teller, office clerk)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5=Private, my own business</td>
<td>5= Mining/quarrying</td>
<td>5= Service worker (beautician, cook, security, tour guide)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6=Private, family business (non-farming)</td>
<td>6= Vehicle trade/repair</td>
<td>6= Sales worker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7=Went back home (to work in farming paid or unpaid)</td>
<td>7= Construction</td>
<td>7= Skilled agricultural, forestry or fishery worker (includes farmers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8= Information, communication</td>
<td>8= Craft and related trade worker (construction, garment worker, handicrafts, electrician, furniture maker)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9=Tourism/food services</td>
<td>9= Plant and/or machine operator, assembler</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10=Financial sector/Banking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11= Education</td>
<td>12= Other (Specify_______)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>-----------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10= Basic or elementary occupation</td>
<td>includes laborer, cleaner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11= Other</td>
<td>Specify _________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>
SECTION 2: INFORMATION ABOUT THE INSTITUTION YOU MOST RECENTLY ATTENDED

From which educational institution did you most recently graduate?

☐ NUOL = 1
☐ SU = 2
☐ CU = 3
☐ Pakpasak Technical College = 4
☐ Vocational Skills Development Center = 5
☐ Polytechnic College = 6
☐ Lao-German Technical School = 7
☐ Lao-Korean Vocational Training Center = 8
☐ Luang Prabang Technical and Vocational College = 9
☐ Savannakhet Technical and Vocational College = 10
☐ Champasak Technical and Vocational College = 11
☐ Xiengkhouang Integrated Vocational School = 12
☐ Saravan Integrated Vocational School = 13
☐ Vientiane Pattana Asip (Vientiane Vocational Skills Development) = 14
☐ Xaysombath Technical College = 15
☐ Luang Prabang Agriculture and Forestry College = 16
☐ Champasack Agriculture and Forestry College = 17
☐ Other (Specify __________________________) = 18

What was the primary reason for choosing the educational institution you most recently attended? [One answer only]
I was assigned to this institution by the provincial authority = 1
Close to my home/workplace= 2
Got a voucher/scholarship = 3
Facilities = 4
Good reputation of the institution among employers = 5
Practice-orientated education = 6
It was the only institution that admitted me = 7
Affordability = 8
Other (Specify ____________________________) = 9

What were the primary reasons you selected the particular field you studied?
[Choose up to three.]
Easy to get into the program = 1
Expected career/salary is higher than other fields = 2
I did not pass the exam for my field of choice = 3
I was offered a scholarship in this field = 4
I was assigned a quota position = 5
The cost of studying in this field was low = 6
Family recommendation = 7
The field is popular = 8
Wanted to be in the same class with friends = 9
I like the field of study = 10
Other (Specify_________________________________________) = 11
What was your primary source of financing your above education? [One answer only]

☐ Scholarship under the quota system = 1
☐ Other scholarships/voucher program (full or partial assistance) = 2
☐ Family (parent's or other family member) money = 3
☐ Own money = 4
☐ Employer = 5
☐ Private Sponsor=6
☐ By working and studying at the same time = 7
☐ Other (Specify_________________________________________) = 8

Overall, rate the provisions and conditions you experienced in pursuing your most recent University/College/TVET education according to the following scale:

1=Very good 2=Good 3=Not very good 4=Not good at all 5=None/NA

Academic advice and mentoring.................................................................
Course content (theoretical)........................................................................
Course content (practical)...........................................................................
Course content (general: study skills, writing skills, critical thinking skills)........
Variety of courses offered...........................................................................
Opportunity to choose courses and areas of specialization...........................
Teaching quality.......................................................................................
SECTION 3: JOB SEARCH AND INFORMATION ABOUT FIRST JOB

When did you start looking for your FIRST job? [Refer to FIRST job listed in Work History Table, Question 8]

☐ Before Graduation = 1 >>> skip to Q.16
☐ After Graduation = 2 >>> skip to Q.16
☐ Did not look and apply for a job = 3

If you did not look for a job, what is the MAIN reason why? [One answer only]

☐ Continued with the job I had prior to entering the institution = 1
☐ Assisted with family business = 2 >>> Skip to Q.18
☐ Placed in government job = 3 >>> Skip to Q.18
☐ Family reasons (e.g. sickness in family or self) = 4 >>> Skip to Q.24
☐ Personal choice (e.g. take a break, marriage, pregnancy) = 5 >>> Skip to Q.24
☐ Continued with higher education = 6 >>> Skip to Q.24
☐ Other (Specify_________________________________________) = 7 >>> Skip to Q.24

How did you get your FIRST job? [Mark all that apply]

☐ Employment agency = 1
☐ Career/student affairs office (in the educational institution) = 2
☐ Social network (friends/relative/instructor/other) = 3
☐ Newspapers/TV/internet = 4
☐ Employer contacted you = 5
☐ Contacted employer directly = 6
☐ Started own business = 7
☐ Job obtained after training/apprenticeship with employer = 8
☐ Other (Specify _______________________________) = 9

How long did it take you to find your FIRST job?
☐ Secured a job before graduation=1
☐ Secured a job 1-3 months after graduation=2
☐ Secured a job 4-6 months after graduation=3
☐ Secured a job 6-9 months after graduation=4
☐ Secured a job 10-12 months after graduation=5
☐ Secured a job more than a year after graduation=6
☐ Did not get a job=7 >>> Skip to Q. 24

What was your monthly level of compensation (e.g. wage, salary) in your FIRST job?
[If you have held only ONE job, indicate your CURRENT salary level]

Monthly Amount in Kip ________________________________

Did you receive social security benefits (e.g. private pension) in your FIRST job?
☐ Yes = 1
Did you receive other benefits (e.g. health insurance, stipends, housing or transport allowance) in your FIRST job?

☐ Yes = 1
☐ No = 2

What was the size of the firm/agency (number of workers) of your FIRST job?

☐ Small (1-20 workers) = 1
☐ Medium (21-100 workers) = 2
☐ Large (>100 workers) = 3

SECTION 4: CURRENT EMPLOYMENT SITUATION

Are you still employed in your FIRST job?

☐ Yes = 1 >>>Skip to Q.32
☐ No = 2

If you are not employed in your FIRST job, what is the PRIMARY reason [One answer only]:

☐ You were laid off = 1
☐ Your employer closed the business = 2
☐ Your own business failed = 3
☐ You quit because you disliked the employment = 4
☐ You quit to move to a better job/better paying job = 5
☐ You quit to start your own business = 6
☐ You decided to stop working = 7
☐ Your contract ended = 8
☐ Family, health or personal reasons = 9
☐ You moved localities = 10
☐ You quit to continue your education = 11
☐ Other (Specify ________________________________) = 12

How would you characterize your current employment situation?
☐ Employed = 1
☐ Without employment but seeking employment = 2>>>Skip to Q.29
☐ Without employment but not seeking employment = 3>>>Skip to Q.39
☐ Undertaking professional training or more education = 4>>>Skip to Q.39
☐ Military service or related = 5>>>Skip to Q.39
☐ Other (Specify ________________________________) = 6

What is your current level of compensation (e.g. monthly wage, salary)? (Refer to job indicated as CURRENT in Q8 “Work History”)

Monthly Amount in Kip ____________________________

Do you receive social security benefits (e.g. private pension) in your CURRENT job?
☐ Yes = 1
☐ No = 2

Do you receive other benefits (e.g. health insurance, stipends, housing or transport allowance) in your CURRENT job?
Yes = 1
No = 2

What was the size of the firm/agency (number of workers) of your CURRENT job?
☐ Small (1-20 workers) = 1
☐ Medium (21-100 workers) = 2
☐ Large (>100 workers) = 3

If you are unemployed, for how long have you been looking for a job?

Length of time (months) ____

If you are unemployed, what methods for searching for a job are you using? [Choose up to 3]
☐ Employment agency = 1
☐ My educational institution’s career/student affairs office = 2
☐ Social network (friends/relative/instructor/other) = 3
☐ Newspapers/TV/internet = 4
☐ Employer contacting you = 5
☐ Contacting employers directly = 6
☐ Starting my own business = 7
☐ Entering training/apprenticeship/internship with prospective employer = 8
☐ Other (Specify ________________________) = 9

If you were not able to get a job, what were the main reasons? [Choose up to 3]
☐ There are no jobs in my field of study = 1
☐ I am lacking skills (e.g. language, IT, communication) that are in demand = 2
☐ Reputation of the institution = 3
☐ My expected wage does not match jobs available = 4
☐ My expected working conditions do not match jobs available = 5
☐ Not enough information available to get a job = 6
☐ I am unable to move localities (migrate to other areas) = 7
☐ Employers did not like my personality = 8
☐ I am not actively looking = 9
☐ Other (Specify _______________________) = 10

[IF YOU STILL DO NOT HAVE A JOB SKIP TO >>Q.39]

SECTION 5: JOB AND EDUCATION/SKILLS MATCH

Is your CURRENT job in line with your most recent field of study?
☐ Yes = 1
☐ No = 2

How satisfied are you with your CURRENT job?
☐ Very satisfied =1
☐ Satisfied =2
☐ Indifferent =3
☐ Somewhat satisfied =4
☐ Not satisfied =5
To what extent are the knowledge and skills provided by the education institution used in your CURRENT job?

☐ Very much = 1
☐ Partly = 2
☐ Not at all = 3

What kind of training do you need for your CURRENT job? [Choose all that apply]

☐ No training =1
☐ Advice, help from experienced colleagues =2
☐ Advice, help from superiors =3
☐ Participation in a training program provided by your firm = 4
☐ Participation in a training program provided by someone other than your firm = 5
☐ Other (Specify_____________________________) = 6

If you received training by your employer for your CURRENT job, how long was the training? [several courses, please add the times together]

Length of time ______ (months)

How capable do you feel in your CURRENT job?

☐ Very capable =1
☐ Capable =2
☐ Somewhat capable =3
☐ Not capable =4
What skills and attitudes are most important for you to succeed in your CURRENT job?

<table>
<thead>
<tr>
<th>Job-Related Skills and Attitudes</th>
<th>Rate Importance (Circle One)</th>
<th>Do you have this Skill/Attitude?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1= very important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2= important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3= somewhat important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4= not important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5= not relevant/applicable</td>
<td></td>
</tr>
<tr>
<td>Technical skills (sector-specific)</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>English (or other foreign language) skills</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>People Management skills (leadership/supervision)</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to solve problems</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to make decisions</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to express yourself and communicate with others</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to work in teams</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to coordinate with others</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to work under pressure</td>
<td>1</td>
<td>Yes  No</td>
</tr>
<tr>
<td>Ability to think of new ideas or new ways of doing things</td>
<td>1</td>
<td>Yes  No</td>
</tr>
</tbody>
</table>
SECTION 6: ASPIRATIONS and ADVICE TO EDUCATIONAL INSTITUTION MOST RECENTLY ATTENDED

Professionally, where do you envision yourself in three to five years? [One answer only]

☐ Top/senior management (board of directors, general manager, etc.) = 1
☐ Mid-level management and leadership (head of department, local manager, etc.) = 2
☐ Lower management (Foreman, group leader, etc.) = 3
☐ No management tasks at all = 4
☐ Owning my own company in a similar economic area to current job= 5
☐ Owning my own company in a different economic area (non-farming) from current job = 6
☐ Exiting the labor market altogether = 7
☐ Going back to farming / to my home town = 8
☐ No change = 9

Where is your desired location of work?

☐ Your current location/province =1
☐ Another province =2
☐ Another country (in Southeast Asia) =3
Another country (outside of Southeast Asia) =4

Rate the usefulness of your most recent University/College/TVET education:

1=Very useful  2=Useful  3=Not too Useful  4=Not useful at all

For finding a good job .................................................................☐

For fulfilling your present professional tasks...........................................☐

For your future professional development/career............................................☐

For the development of your skills and attitudes.............................................☐

From your employment or search of employment experience, what would you like your most recent University/College/TVET institution to improve in the future? [Mark all that apply]

Nothing, the training provided was fine.........................................................☐

To improve the quality of the curriculum..........................................................☐

To improve the quality of the teaching .................................................................☐

To develop theoretical knowledge............................................................................☐

To emphasize on practical skills and develop practical activities...............................☐

To establish better links with the private sector and employers.................................☐

To establish a career services office...........................................................................☐

To strengthen language skills taught and/or required..................................................☐

To provide better opportunities to study abroad.......................................................☐

To improve management and administration.............................................................☐

Other (Specify__________________________).................................................. ☐
Do you have advice for the faculty or the management of the institution you most recently attended?

_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________

THANK YOU VERY MUCH FOR YOUR TIME AND PARTICIPATION