ECONOMIC ANALYSIS

A. Economic Justification

1. **Economy-level benefits of secondary education.** Extensive research points to the importance of, and large returns from, investment in education. At the country or economy level, schooling significantly promotes growth and development.¹ Education’s role is particularly vital in developing economies where it expands the supply of skilled workers to allow the economy and its industries to modernize and climb the technological ladder, attract foreign investment, increase productivity and trade competitiveness, and better respond to new opportunities created by shifting markets. Education also promotes inclusive growth. Secondary education appears to play a particularly critical role in rapidly developing economies, as borne out by estimates of returns to schooling on an individual level (para. 3).

2. The Government of the Lao People’s Democratic Republic (Lao PDR) places a high priority on education as the basis for sustained economic growth and poverty reduction and central to the goal of graduating from least-developed country status by 2020. The secondary education subsector (SES) will make an increasingly vital contribution to inclusive growth as the Lao PDR transforms.² At the same time, the Lao PDR’s reforms of lower secondary education (LSE) and upper secondary education (USE) curricula—directly supported by the Secondary Education Sector Development Program—explicitly target enhanced relevance to the labor market, expected to further strengthen the contribution of the SES to growth.³ Finally, as the Lao PDR progresses toward universal primary education, the SES will play an increasingly key role in promoting the inclusiveness of growth, including minimizing gaps between urban and rural areas. Investments in expanding access to quality secondary education have an important redistributive effect, helping ensure that less-developed areas (and poorer population groups) can participate in, and benefit from, rapid national economic growth.

3. **Individual-level returns to secondary education.** Beyond benefits to the economy, education and human capital accumulation are critical in determining the workforce outcomes of individuals. In particular, a large number of economic development studies demonstrate significant wage returns to education, with most finding that one additional year of schooling raises an individual’s earnings by around 10%.⁴ The returns to primary and secondary schooling are particularly high in less-developed countries, and secondary education appears particularly important in rapidly growing economies including those in Asia.⁵ Many studies have found that girls’ completion of secondary education has a particularly large impact on wages as well as broader workforce outcomes such as participation in the formal labor market and nonagriculture sectors.⁶ While data for estimating returns is limited in the Lao PDR, existing and forthcoming analysis using the Lao PDR Expenditure and Consumption Survey data suggests that the

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² Asian Development Bank. 2010. *Country Assistance Program Evaluation: Lao People’s Democratic Republic.* Manila. These include transformations (i) from a planned to a market economy; (ii) from a subsistence economy to a commercially oriented and regionally integrated economy; and (iii) from an agrarian to a more urbanized society.


returns to secondary education are at least 6% and appear considerably higher for ethnic group youth and among entrepreneurs; there is also some evidence that these returns are rising as the economy modernizes.\(^7\) Taken alongside extensive findings from other developing countries, such findings suggest that completion of a quality secondary education is critical to the ability of individuals to access higher-paying modern sector employment and other economic opportunities (as well as post-secondary education and training).

4. **Broader socioeconomic returns.** In developing countries in particular, education also conveys broader socioeconomic benefits. Studies (footnote 6) indicate that secondary education has particularly large, long-term, and even cross-generational benefits for girls, i.e., education empowers girls and women, raises age at marriage and lowers fertility, promotes household saving behaviors, and increases investments in human capital of the next generation, thus helping to break longer-term poverty traps. Similarly, in the Lao PDR and other developing countries, secondary education conveys especially large socioeconomic benefits to the poor, ethnic groups, and other disadvantaged groups by allowing them to fully participate in society and the economy. Finally, whereas higher levels of education principally convey private returns to the individual, secondary (and primary) education has strong social benefits, with positive externalities and spillover effects providing a strong justification for government investment.

B. **Cost-Effectiveness Analysis**

5. The program’s design is both cost-effective and enhances equity. Directly aligned with core government priorities under the Education Sector Development Framework, complementary policy program and investment project interventions aim to systematically and comprehensively address key SES challenges. Building directly on prior Asian Development Bank support through the Basic Education Sector Development Program,\(^8\) this approach is likely to be far more effective and sustainable than narrow project interventions. In particular, the design addresses diverse and complex constraints on accessing good quality secondary education. Key supply-side constraints include weak school network coverage of remote areas, capacity and human resource gaps in the education sector, and inadequate financial resources, all of which depress both quality as well as physical access. Similarly, program and project interventions combine to address an array of demand-side constraints, including (i) financial and opportunity costs, through policy and project support for LSE and USE stipend programs; (ii) weak academic preparation (especially for non-Lao-speaking ethnic groups from more remote and poor areas), through targeted remedial support; (iii) low parental valuation on education and/or cultural norms that pose barriers remedial education and poor areas); and (iv) physical disabilities, by ensuring that all project-supported civil works provide access for disabled children.

6. **Geographic targeting.** The program is principally national or nationwide in scope, directly supporting the rollout by the Ministry of Education (MOE) of new SES curricula, and providing a critical mass of support for other critical reforms. At the same time, selected interventions under the project (particularly access-related investments under output 1) are geographically targeted to 30 districts that are classified by the government as both “poorest” and “educationally disadvantaged,” where these investments can leverage the largest impact on


\(^8\) ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Grant to the Lao People’s Democratic Republic for the Basic Education Sector Development Program.* Manila.
education objectives. While precise district net or gross enrolment rates are not available in the Lao PDR, Table 1 shows grade-specific SES enrolments in the last year available (school year SY2009/10, prior to the addition of grade 12) for three types of areas: (i) the Lao PDR as a whole, (ii) 48 districts classified as poorest, and (iii) a further subset of 30 districts that are also classified as educationally disadvantaged. The data point to the influence of socioeconomic factors. In particular, compared to nationwide figures, the drop-off in total enrolments of girls and boys after grade 6 is much more dramatic among the 48 poorest districts, and still more marked among the 30 districts targeted under output 1 of the program’s project. Table 1 also reflects the fact that gender gaps (among both students and teachers) are largest in these 30 districts. Finally, the small average size of SES schools in these districts (which in part reflects large numbers of incomplete schools) also has implications for both quality and efficiency.

Table 1: Secondary Enrolment, Teachers, and Mean School Enrolment, SY2009/10

<table>
<thead>
<tr>
<th>Area</th>
<th>LSE Enrolments</th>
<th>USE Enrolments</th>
<th>SES Teachers</th>
<th>SES Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade 6</td>
<td>Grade 7</td>
<td>Grade 8</td>
<td>Grade 9</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>105,769</td>
<td>88,220</td>
<td>75,221</td>
<td>66,179</td>
</tr>
<tr>
<td>48 poorest districts</td>
<td>26,698</td>
<td>20,435</td>
<td>15,816</td>
<td>13,087</td>
</tr>
<tr>
<td>30 target districts</td>
<td>11,957</td>
<td>9,101</td>
<td>6,890</td>
<td>5,698</td>
</tr>
</tbody>
</table>

LSE = lower secondary education; SES = secondary education subsector; USE = upper secondary education
Source: Tabulated from Education Management Information System (EMIS) 2009/10 data.

7. Table 1 suggests that dropout is most problematic in these 30 districts, and hence their strategic importance for program support. The lack of multiyear district data (further complicated by the recent restructuring of LSE and USE) precludes precise calculation of transition rates across grades and dropout. However, rough estimates can be generated using Education Management Information System (EMIS) data for SY2009/10. Figure 1 shows approximated profiles depicting the shares of primary school graduates who enter LSE (grade 6) and transition to successive grades of LSE and USE, with comparisons across the same three types of areas.

Figure 1: Approximated Grade Transition Profiles for Primary Graduates, SY2009/10

EMIS includes district data for total enrolments by grade. Calculations noted herein involve simplifying assumptions in adjusting for factors such as population growth and repetition, and are considered approximate.
8. The data suggest that around 87% of recent Lao PDR primary graduates have continued into LSE (grade 6), while the figure drops to roughly 80% in the 48 poorest districts and 75% in the 30 target districts. This confirms that constraints on access are particularly acute in the target districts, especially considering that a much smaller share of children in these areas will have graduated from primary school. The continued downward profiles suggest that dropout takes a particularly high toll in the 30 target districts, with only 40% of primary school graduates reaching the final year of LSE (grade 9) (compared with 60% nationwide) and only 25% entering USE (grade 10) (48% nationwide).\(^\text{10}\) It is also estimated that less than 50% of children who enter LSE in the 30 districts will complete grade 9, implying a very high level of wastage in education investments by the government and households.\(^\text{11}\) This suggests a strong justification for investments to improve access and quality in these districts. At the same time, program targeting of these 30 districts—a subset of the MOE-prioritized 56 educationally disadvantaged districts—complements efforts to expand primary education access in the 56 educationally disadvantaged districts under the newly approved Catalytic Fund Education for All Fast-Track Initiative Program, supported by the World Bank, the Australian Agency for International Development, and the World Food Programme. In addition to coordination in areas such as district capacity building, the program will help ensure that the SES in these 30 districts is ready to absorb an expected jump in numbers of primary graduates.

9. **Other design aspects.** As with the program’s support for nationwide school network mapping, LSE school and USE classroom construction in the 30 districts will prioritize underserved catchment areas with large populations. This maximizes impacts on equity, total enrolment, and school viability by ensuring that new classrooms address unmet demand from large nearby populations of primary and LSE graduates. Where appropriate, new USE classroom blocks will expand current LSE schools into complete secondary schools, enhancing access, efficiency, and sustainability, with additional advantages in attracting and supporting better qualified teachers.\(^\text{12}\) Other design features that are cost-effective and/or have prospects to enhance the efficiency of the SES include the trialing of low-cost, community-supported dormitories bundled with complementary interventions including stipends, access grants, and remedial support.\(^\text{13}\) These packaged interventions will collectively address distance, transport costs, weak academic preparedness, and other barriers to access, thus promoting increased demand for schooling more effectively than any singular intervention. Finally, careful monitoring and evaluation (including a particularly rigorous impact evaluation\(^\text{14}\) of the LSE stipend program) will promote effective implementation mid-project, and more important potential replication and scale-up of successful interventions post-project, based on evidence of efficacy.

C. **Beneficiary Analysis**

10. At the system level, the program will provide subsectorwide support for the SES through reforms supported by the program loan and nationwide project investments in in-service and

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\(^{10}\) Gender gaps are also most marked in these districts: only 30% of grade 5 females reached grade 9 in these 30 districts, some 26 percentage points below districts not classified as either poorest or educationally disadvantaged.

\(^{11}\) There is considerable evidence from developing countries that failure to complete a given level of education negates much of the value of that schooling.

\(^{12}\) The approach will not involve closure of incomplete SES schools but rather aims to expand currently incomplete schools, particularly in areas determined by school network mapping to yield large gains in SES access.

\(^{13}\) Provision of sex-segregated dormitories, stipends, access grants, and other interventions will include clear guidelines and targets to ensure they prioritize girls and ethnic group children, and will be carefully monitored.

\(^{14}\) It is foreseen that the impact evaluation will involve a difference-in-difference strategy, which will track and compare education outcomes (e.g., progression through and completion of LSE) for a single age cohort of children that is eligible for the stipend against prior and later cohorts who are not eligible for selection.
preservice teacher training\textsuperscript{15} and provision of improved LSE and USE textbooks, contributing to improved education quality for many cohorts of children to come. While the longer-term total benefits of reforms and improved curriculum and materials are difficult to quantify, they are clearly substantial. The discussion in paras. 11-13 focuses on immediate-term beneficiaries of the project (starting from national and nationwide initiatives), and is likely to considerably underestimate the eventual and indirect benefits of the program.

11. \textbf{Education managers, teachers, and other educators.} Multistage multimodal capacity building programs under the project will directly support more than 1,000 subsector managers at national, provincial, and district levels during the project. Programs to improve school management and instructional leadership within schools will directly benefit virtually all (approximately 1,200) secondary school principals and 1,200 senior female teachers. Virtually all (approximately 22,000) SES teachers nationwide will benefit from new textbooks, teacher guides, and participation in at least one round of formal in-service teacher training, to be conducted year-by-year prior to introduction of the new grades 8–12 curriculum along with peer training.\textsuperscript{16} More than 900 staff of teacher training institutions (TTIs) and 370 secondary pedagogical advisors will benefit from participation in training-of-trainers in annual cycles of the in-service teacher training courses, while provision of equipment and materials (including new textbooks and teacher guides) to TTIs nationwide, ensuring that prospective graduates are better prepared to deliver the new LSE and USE curricula.

12. \textbf{Students nationwide.} More than 500,000 secondary students\textsuperscript{17} will directly benefit from program support during the project’s duration, including from access to improved textbooks, more relevant curriculum, and increased teacher adoption of student-centered learning. The program will provide LSE textbooks on a 1:1 book–pupil ratio (helping the MOE reach a key Education Sector Development Framework target), covering a projected 96,000 grade 8 students in SY2012/13, followed by grade 9 students in SY2013/14.\textsuperscript{18} At the USE level, the project will develop new textbooks (and teacher guides) and will directly fund distribution of one textbook per four children. Books will be retained by schools to benefit subsequent cohorts of children, and reform support for increased recurrent budget allocations and block grants will support textbook replacement in the longer term.

13. \textbf{Beneficiaries in the 30 target districts.} Output 1 interventions will improve LSE completion rates for girls, ethnic groups, and poor students in disadvantaged communities. At least 1,740 LSE students will benefit from stipends for 4 years and 1,200 USE students for 3 years (through completion), reducing cost burdens on their families. At least 2,400 LSE and 750 USE students (mostly from poor and ethnic group families, and prioritizing girls) will benefit from dormitory accommodation during the project. During and following the project, much larger numbers of children will directly benefit from new classrooms and dormitories, stipends, and initiatives catalyzed by access grant support and more active pupil-parent associations, in addition to new textbooks and curriculum and better-trained teachers.

\textsuperscript{15}To ensure the benefits of curriculum reform are achieved and enjoyed by all, the program will invest heavily in strengthening the capacity of current teachers and ensuring better-trained graduates from TTIs enter teaching, especially in remote and poor areas.

\textsuperscript{16}Each round will cover five teachers from each school who teach that grade, followed by their provision of in-school peer training on the new curriculum and textbooks, cascading benefits to all teachers teaching at that grade level.

\textsuperscript{17}For SY2009/10, the EMIS reports that there are 433,427 SES students in grades 6–11. Grade 12 was added in SY2010/11 and improved access, retention, and grade progression (as well as increasing primary completion rates) are expected to result in substantial increases in total SES enrolments.

\textsuperscript{18}The program will support increased enrolments in the near term (e.g., through limited additional classroom capacity) and longer term, including by systemic support to improve appointment of qualified and trained teachers, the communication strategy, and stipends and other demand-side initiatives targeting girls and ethnic children.