

**PROJECT PERFORMANCE AUDIT REPORT**

**ON THE**

**TECHNICAL EDUCATION AND VOCATIONAL  
TRAINING DEVELOPMENT PROJECT  
(Loan 974-NEP[SF])**

**IN**

**NEPAL**

**July 2002**

## CURRENCY EQUIVALENTS

Currency Unit – Nepalese rupee/s (NRe/s)

	<b>At Appraisal</b> (May 1988)	<b>At Project Completion</b> (November 1998)	<b>At Operations Evaluation</b> (December 2001)
NRe1.00 =	\$0.044	\$0.016	\$0.013
\$1.00 =	NRs22.50	NRs61.05	NRs76.10

## ABBREVIATIONS

AD	–	Accreditation Division
ADB	–	Asian Development Bank
CTEVT	–	Council for Technical Education and Vocational Training
EA	–	Executing Agency
EIRR	–	economic internal rate of return
FNCCI	–	Federation of Nepalese Chambers of Commerce and Industry
IRR	–	internal rate of return
LMIC	–	labor market information center
MOH	–	Ministry of Health
MOICS	–	Ministry of Industry, Commerce and Supplies
NRM	–	Nepal Resident Mission
OEM	–	Operations Evaluation Mission
OPEC	–	Organization of Petroleum Exporting Countries
PBME	–	project benefit monitoring and evaluation
PCR	–	project completion report
PIU	–	project implementation unit
PPAR	–	project performance audit report
PPTA	–	project preparatory technical assistance
RID	–	Research and Information Division
SCH	–	skills-certificate holder
SDC	–	Swiss Development Cooperation
TEVT	–	technical education and vocational training
TITI	–	Technical Instructor Training Institute
TNA	–	training-needs assessment
TSP	–	technical school plan

## NOTES

- (i) The fiscal year (FY) of the Government ends on 15 July.
- (ii) In this report, "\$" refers to US dollars.

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## BASIC DATA

### Technical Education and Vocational Training Development Project (Loan 974-NEP[SF])

#### Project Preparation

TA No.	TA Name	Type	Person-Months	Amount <sup>1</sup> (\$)	Approval Date
536	Technical Schools	PPTA	20	150,000	23 Aug 1983

#### Key Project Data (\$ million)

	As per ADB Loan Documents	Actual
Total Project Cost	21.60	19.32
Foreign Exchange Cost	9.70	10.43
Local Currency Cost	11.90	8.89
ADB Loan Amount/Utilization <sup>2</sup>	11.80	12.58
ADB Loan Amount/Cancelation		0.80

#### Key Dates

	Expected	Actual
Fact-Finding	IV Jan–II Feb 1988	24 Jan–16 Feb 1988
Appraisal	II Apr–II May 1988	24 Apr–19 May 1988
Loan Negotiations	16–18 Aug 1989	24–28 Aug 1989
Board Approval	IV Sep 1989	28 Sep 1989
Loan Agreement	II Nov 1989	15 Nov 1989
Loan Effectiveness	1 Jan 1990	26 Feb 1990
First Disbursement		16 Oct 1990
Project Completion	31 Dec 1995	30 Sep 1997
Loan Closing	31 Dec 1996	23 Mar 1998
Months (effectiveness to completion)	72	91

#### Internal Rate of Return

Economic Internal Rate of Return (%)	4.6
Weighted Average Internal Rate of Return (%)	18.0

#### Borrower

Kingdom of Nepal

#### Executing Agency

Council for Technical Education and Vocational Training

#### Mission Data

Type of Mission	No. of Missions	No. of Person-Days
Fact-Finding <sup>3</sup>	3	174
Appraisal <sup>4</sup>	2	130
Project Administration		
Review	14	197
Project Completion	1	16
Operations Evaluation <sup>5</sup>	1	20

ADB = Asian Development Bank, PPTA = project preparatory technical assistance, TA = technical assistance.

<sup>1</sup> Approved amount.

<sup>2</sup> Due to the appreciation of the special drawing rights against the US dollar, the dollar equivalent of the original loan amount increased to \$13.38 million, of which \$12.58 million was disbursed.

<sup>3</sup> After the PPTA completion in August 1984, the Government requested deferment of the Project. The Project was revived in May 1987, and a preliminary fact-finding mission was sent during 2–8 September 1987 to review priorities and past outstanding issues. Another fact-finding mission was fielded during 8–21 December 1987, and a follow-up fact-finding mission during 24 January–16 February 1988.

<sup>4</sup> A reappraisal mission was fielded during 22 November–5 December 1988 to review cofinancing possibilities for the proposed Project.

<sup>5</sup> Comprising S. Hutaserani (Mission Leader and Senior Evaluation Specialist) and R. Bista (Staff Consultant and Education Evaluation and Institutional Development Specialist), who visited Nepal during 10–19 December 2001.

## EXECUTIVE SUMMARY

In response to the scarcity of skilled workers in Nepal, the Project was designed to strengthen the country's technical education and vocational training (TEVT) system in line with the technical school plan (TSP) introduced by the Government in 1981. The TSP aimed to (i) establish a manageable number of accessible technical schools, (ii) develop skills standards and testing for certification, and (iii) train dropouts from primary and secondary schools in local marketable skills. At project formulation, TEVT was a national priority set out in the Seventh Five-Year Plan (1985–1990). To help implement the TSP, the Government requested the Asian Development Bank (ADB) to finance the Project. A project preparatory technical assistance, approved by ADB in August 1983, helped design the Project. At the Government's request, further processing was deferred for several years. It was resumed in 1987 and the Project was approved in September 1989.

The objectives of the Project were to (i) strengthen the institutional capacity of the Executing Agency, the Council for Technical Education and Vocational Training (CTEVT), to manage its TEVT programs and coordinate TEVT programs provided by other government agencies and the private sector; (ii) expand the supply of skilled workers mainly in the agriculture, construction, and health sectors; and (iii) improve the quality and relevance of CTEVT's programs. The Project comprised (i) development of institutional capacity of CTEVT; (ii) establishment of four technical schools in Seti, Bheri, Rapti, and Dhawalagiri; (iii) upgrading of Lahan Technical School; (iv) development of skills standards and testing for certification; and (v) provision of consulting services for project implementation. In view of the growing needs of tourism and business during project implementation, in June 1994 ADB approved the Government's request to expand the project scope and use loan savings to establish another technical school in Pokhara as a branch of that in Dhawalagiri.

The project cost was estimated at \$21.6 million at appraisal, to be financed by an ADB loan of \$11.8 million from its Special Funds resources. The Swiss Development Cooperation was to cofinance \$5.6 million in a grant, and the Organization of Petroleum Exporting Countries, \$2.5 million as a loan. The remaining \$1.7 million was to be provided by the Government. The actual project cost of \$19.3 million was 10.6% below the appraisal estimate. The cost underrun stemmed from savings on consulting services and civil works.

The Project was envisaged at appraisal to be implemented over 6 years. Actual implementation took 7 years and 7 months. First, about 1 year was taken by the new Government to review all projects in the pipeline. The balance of 7 months was due to some delays in the establishment of the project implementation unit (PIU), start and progress of civil works, and procurement of equipment. The delays were mainly caused by frequent changes in CTEVT leadership due to seven changes in government, remoteness of some project sites, and unfamiliarity of PIU staff with the technical requirements of the training equipment.

The Project was relevant to the Government's and ADB's education strategies at appraisal, which focused on TEVT and higher education. Since the early 1990s, ADB's priorities have shifted to basic education due to its larger poverty reduction impact. The Government also shifted its priorities in the Eighth Plan (1992-1997) to focus on basic education. Although the Project may appear to be only partly relevant today, it has fulfilled or exceeded its objectives, including (i) strengthening CTEVT's institutional capacity (by improving staff capacity through international training of 43 staff from CTEVT's headquarters and 27 staff from CTEVT's project schools, institutionalizing training-needs assessment and tracer studies, developing a quality control system to accredit 142 private TEVT schools, introducing 15 new courses and curricula

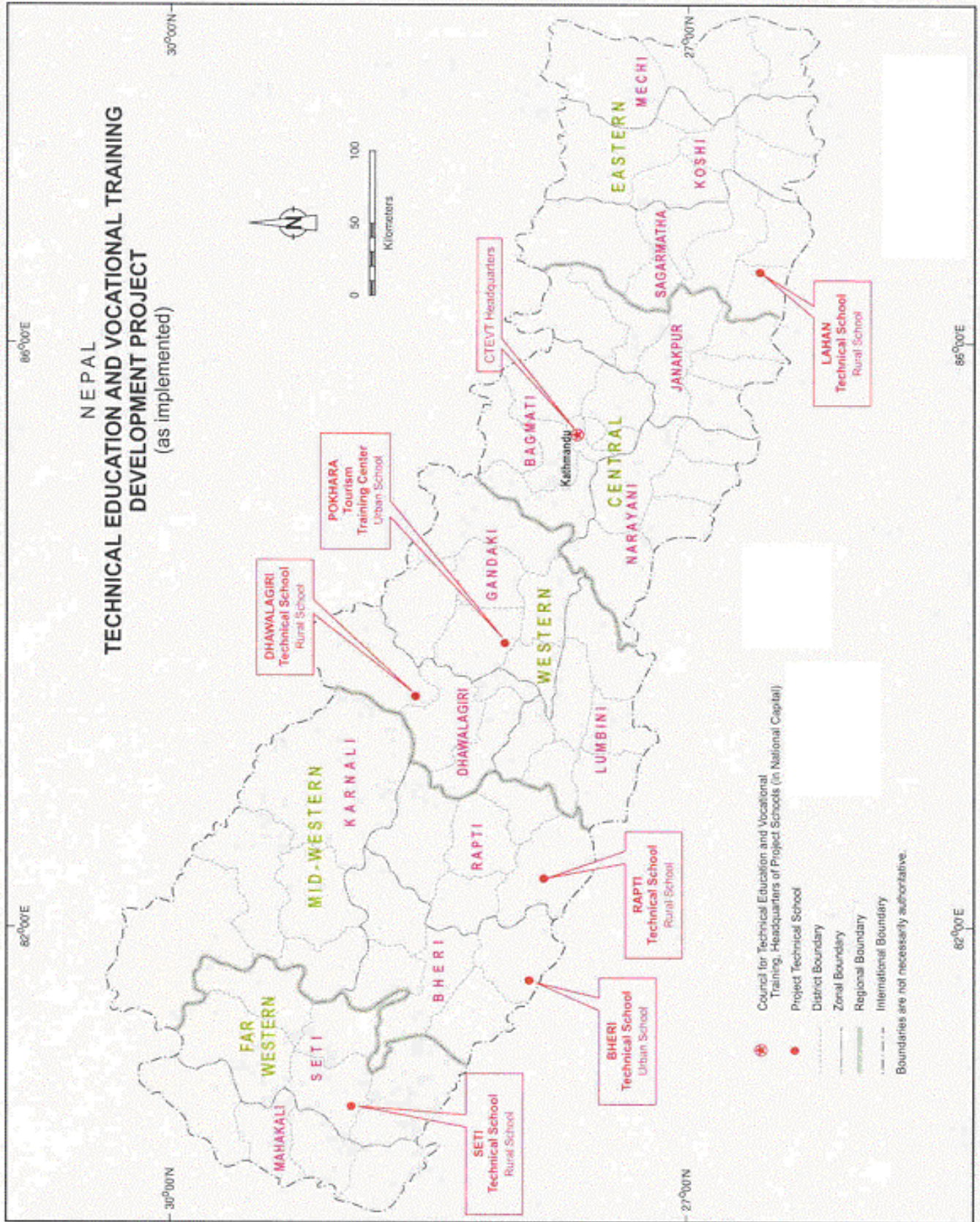
for the project schools, and developing skills standards and testing for certification in 107 skill areas); (ii) expanding the supply of skilled workers (by supplying 8,327 graduates from regular and short-term courses to the market over the past 6 years, enrolling the current 1,402 students in regular courses, and supplying 4,062 skills-certificate holders [mostly poor school dropouts] to the market over the past 7 years); and (iii) improving the quality and relevance of TEVT programs (by achieving high external efficiency as indicated by the stable demand for enrollment in the project schools, and sufficient quality and relevance of the project schools' curricula to market needs as perceived by graduates and their employers).

Achieving these objectives has helped the Project meet its long-term goal to strengthen the country's TEVT system. For example, more than 70% of project school graduates are employed, and the private (individual) internal rates of return of project school graduates are high (18%), implying excess demand for semiskilled and skilled workers as generally expected in a developing country undergoing structural change. The eventual project effects are beneficiaries' overall improved socioeconomic status, and increased productivity. The Project has also achieved long-run sustainability as indicated by the ability of the project schools to increase cost recovery to 26% after project completion despite the stable flow of Government's recurrent budget allocated to them. The Project is thus rated as successful.

Two key issues emerge from the evaluation. First, as TEVT is a career preparation program, TEVT curricula must be geared to produce graduates with adequate skills and knowledge required by the market. Adequate linkages with private enterprises are thus important to the success of TEVT. Although such linkages had been created at the CTEVT's assembly and council levels during the Project, not much interaction took place until recently, when CTEVT established a working-group coordination committee in 2001 to link up with TEVT stakeholders. Following the Operations Evaluation Mission's suggestion, the committee conducted a participatory workshop in February 2002 to develop a labor market information center (LMIC) and entrepreneurship skills, with more than half of the participants from private enterprises. The LMIC will provide an information-sharing mechanism to help TEVT stakeholders overcome the skills mismatch and make TEVT marketable. It is important that CTEVT pursue this idea to maintain the commitment of private enterprises.

Second, given the shift in the Government's and ADB's education strategies and the efficiency of private providers (in terms of lower unit capital and recurrent costs), CTEVT should phase itself out of certain sectors such as health, where the private sector can do well. CTEVT should also increasingly coordinate and control the quality of TEVT provided by the private sector and other government agencies.

The successful implementation and operation of the Project provide some valuable lessons that will help further enhance the poverty reduction impact, cost-effectiveness, and sustainability of similar operations in the future.



## I. BACKGROUND

### A. Rationale

1. As the scarcity of skilled workers impedes Nepal's economic development, the Government has implemented a variety of programs to institutionalize technical education and vocational training (TEVT). These programs began with the national education system plan in 1971 to introduce vocational training into general education, with mixed results. The Government then introduced the technical school plan (TSP) in 1981 to restructure the TEVT system by establishing a manageable number of accessible technical schools, developing skills standards and testing for certification, and training school dropouts in local marketable skills. At appraisal, TEVT was a national priority set out in the Seventh Five-Year Plan (1985–1990). To help implement the TSP, the Government requested the Asian Development Bank (ADB) to finance the Technical Education and Vocational Training Development Project,<sup>1</sup> which followed the Vocational Education Project<sup>2</sup> and was consistent with ADB's education strategy then to focus on TEVT and higher education. A diagram showing the TEVT system as part of Nepal's educational system is in Appendix 1.

### B. Formulation

2. Project preparatory technical assistance (PPTA)<sup>3</sup> helped design the Project based on the TSP. At the request of the Government, further processing was deferred for several years. After the Government renewed its request in May 1987, ADB fielded a preliminary fact-finding mission in September 1987, a fact-finding mission in December 1987, and a follow-up fact-finding mission in January–February 1988. An appraisal mission was fielded in April–May 1988 to confirm the viability of the Project and its suitability for ADB financing.

### C. Purpose and Outputs

3. The objectives of the Project were to (i) strengthen the institutional capacity of the Council for Technical Education and Vocational Training (CTEVT) to manage its TEVT programs and coordinate TEVT programs provided by other government agencies and the private sector; (ii) expand the supply of skilled workers mainly in the agriculture, construction, and health sectors; and (iii) improve the quality and relevance of CTEVT's programs. The Project comprised (see Map) (i) development of institutional capacity of CTEVT; (ii) establishment of four technical schools in Seti, Bheri, Rapti, and Dhawalagiri; (iii) upgrading of Lahan Technical School;<sup>4</sup> (iv) development of skills standards and testing for certification; and (v) provision of consulting services for project implementation. In view of the growing needs of tourism and business during project implementation, in June 1994 ADB approved the Government's request to expand the project scope and use loan savings to establish another technical school in Pokhara as a branch of that in Dhawalagiri.

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<sup>1</sup> Loan 974-NEP(SF): *Technical Education and Vocational Training Development Project*, for \$11.8 million, approved on 28 September 1989.

<sup>2</sup> Loan 315-NEP(SF): *Vocational Education Project*, for \$4.2 million, approved on 8 November 1977.

<sup>3</sup> TA 536-NEP: *Technical Schools*, for \$150,000, approved on 23 August 1983, and completed in August 1984.

<sup>4</sup> Established under Loan 387-NEP(SF): *Integrated Rural Development Project*, for \$14 million, approved on 20 December 1978.

#### **D. Cost, Financing, and Executing Arrangements**

4. The project cost was estimated at \$21.6 million at appraisal, comprising \$9.7 million in foreign exchange and \$11.9 million equivalent in local currency (Appendix 2). An ADB loan of \$11.8 million from Special Funds resources was approved to finance 54.6% of the total cost, including \$2.3 million of foreign exchange cost and \$9.5 million equivalent of local currency cost. The Swiss Development Cooperation (SDC) was to cofinance the Project with a \$5.6 million grant, and the Organization of Petroleum Exporting Countries (OPEC), with a \$2.5 million loan. The remaining \$1.7 million was to be provided by the Government. The CTEVT under the Ministry of Education and Sports was the Executing Agency (EA).

#### **E. Completion and Self-Evaluation**

5. The Project was completed in September 1997, and a project completion report (PCR) prepared by ADB's Agriculture and Social Sectors Department (West) was circulated to the Board in June 1999. The PCR rated the Project as successful mainly because it had achieved most of its physical targets envisaged at appraisal despite political instability. These included institutionalization of training-needs assessment (TNA), accreditation of 120 private TEVT schools, development of 13 courses and curricula (in addition to 5 existing ones) for the project schools, development of skills standards and testing for certification in 92 areas, enrollment of about 1,022 students in 1997, and graduation of about 600 students per year from regular (long-term) courses. Although the PCR did not clearly indicate whether the Project would be sustainable, sustainability was implicitly assumed since CTEVT regularly received financial support from the Government's recurrent budget, and the project schools were able to recover cost equivalent to about 12% of their total recurrent budget, mostly by providing fee-earning short-term courses. However, the PCR focused heavily on the achievement of the Project's physical targets, without sufficient discussion of the project design (e.g., quality and relevance of the TEVT programs provided by the project schools). The PCR did not assess the efficiency of investments in the Project, although it mentioned that the unit capital cost per student was lower than that estimated at appraisal due to increased enrollment. The PCR did not discuss whether the Project remained relevant at completion.

#### **F. Operations Evaluation**

6. This project performance audit report (PPAR) evaluates the design, implementation, outputs, and impacts of the Project. It focuses on the component outputs' contribution to achieving each objective and on the Project's long-term goal, efficiency, and prospects for long-term sustainability. Key issues are identified and follow-up actions recommended. Project lessons are also identified for future operations. The PPAR is based mainly on the findings of the three comprehensive field surveys conducted by the Operations Evaluation Mission (OEM): (i) a beneficiary survey of 273 students (174 from the six project schools and 99 from six sample private TEVT schools in the same provinces), and 62 parents (41 from the project schools and 21 from the private schools); (ii) a tracer survey of 388 graduates (297 from the project schools and 91 from the private schools), 96 employers of graduates (42 from the public sector and 54 from the private sector), and 30 skills-certificate holders (SCHs) (8 employed in the public sector, 18 in the private sector, and 4 self-employed); and (iii) a school survey of 51 teachers and administrators (34 from the project schools and 17 from the private schools).<sup>5</sup> The PPAR also used the findings from the following sources: (i) focus group discussions with CTEVT staff

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<sup>5</sup> The sample size of each category does not have a round number because many intended respondents were not able to respond.

at the headquarters and at project schools, government agencies concerned, some beneficiaries, some private schools, and some private enterprises; (ii) desk review of project and related documents, including CTEVT's reports on project benefit monitoring and evaluation (PBME); and (iii) consultations with ADB divisions concerned, including the Nepal Resident Mission (NRM). Copies of the draft PPAR were submitted for review to CTEVT and to the ADB divisions concerned. Comments received were considered in finalizing the PPAR.

## **II. PLANNING AND IMPLEMENTATION PERFORMANCE**

### **A. Formulation and Design**

7. The Project was designed in accordance with the Government's objective to strengthen the country's TEVT system. The Project was consistent with ADB's operational strategy in the education sector at appraisal. The project design focused not only on hardware but also on software. One of the five project components was to strengthen the institutional capacity of the newly established CTEVT to enable it to serve as the apex organization responsible for TVET management, planning, and coordination. Two divisions were established in CTEVT: the Research and Information Division (RID), mainly to institutionalize TNA; and the Accreditation Division (AD), to accredit private TEVT schools. TNA was conducted at the start of the Project to develop many new courses and training modules to meet market demand. Based on the TNA results, which found growing demand for tourism and business courses, a project component was expanded to establish a technical school in Pokhara to run these courses. The inclusion of PBME in another project component was also useful in monitoring project progress and in forming the basis to institutionalize such activities after project completion.

### **B. Achievement of Outputs**

8. Appendix 3 summarizes the Project's outputs versus appraisal targets. The Project has achieved or exceeded its targets, including institutionalization of TNA, accreditation of private TEVT schools, and development and revisions of curricula. At the OEM stage, the six project schools enrolled a total of 1,402 students (compared to about 1,022 students at the PCR stage and 725 students at appraisal) and graduated an average of 606 students per year from the regular courses (compared to about 600 at the PCR stage and 220 at appraisal). In 1996–2001, the Project graduated 8,327 students (3,638 from the regular courses and 4,689 from the short-term courses). It also certified 4,062 SCHs in 1995–2001 (compared to about 700 SCHs in 1995–1997). Employers found the quality of the graduates to be sufficient as confirmed by their sufficiently high average employment rate of over 70%.

### **C. Cost and Scheduling**

9. The actual project cost of \$19.3 million was 10.6% below the appraisal estimate of \$21.6 million (Appendix 2). The cost underrun stemmed from savings on consulting services that allowed \$1.2 million of the SDC grant to be cancelled, and savings on civil works that allowed \$1.0 million of the OPEC loan to be cancelled. There was a cost overrun of 82% on equipment due to higher specifications required by some courses. Due to the appreciation of the special drawing rights, the ADB loan in dollar terms increased from \$11.8 million to \$13.4 million, of which \$12.6 million was disbursed. The Government's share decreased by 46% to about \$0.9 million equivalent due to the depreciation of the local currency, and some cost savings. The Project was envisaged at appraisal to be implemented over 6 years. Actual implementation took 7 years and 7 months. First, about 1 year was taken by the new Government to review all projects in the pipeline. The balance of 7 months was due to some

delays in the establishment of the project implementation unit (PIU), start and progress of civil works, and procurement of equipment. These delays were caused by frequent changes in the CTEVT leadership due to seven changes in government, remoteness of some project sites, and unfamiliarity of PIU staff with the technical requirements of the training equipment.

#### **D. Procurement and Construction**

10. Office and training equipment was to be procured by international competitive bidding. However, the schools' small procurement packages made procurement by international shopping more suitable, and 19 international shopping contracts were awarded. Furniture was procured locally in accordance with government procedures acceptable to ADB. Suppliers' performance was satisfactory, albeit with some delays. Civil works contracts were awarded based on local competitive bidding among prequalified contractors. Inadequate civil works supervision by domestic consultants resulted in poor roof insulation and leakage in some schools. CTEVT, in consultation with ADB, had to renovate some completed civil works. The poor civil works performance also resulted from the bid prices, which were so low that satisfactory service could not be expected.

#### **E. Organization and Management**

11. The Government demonstrated commitment to the Project even before implementation by providing CTEVT with the political and legal frameworks, including the TEVT Council Act (2045) that would make it an autonomous coordinating body. The Government has continued to provide CTEVT with annual flow of recurrent budget after project completion. CTEVT was credited with conducting TNA at the start of the Project, leading to the introduction of demand-driven courses. However, the CTEVT leadership changed often, and PIU staff were deployed for activities outside the project scope. Accounting, auditing, and financial reporting arrangements met ADB's requirements, albeit with some delays. Although most loan covenants were complied with on time, a few conditions were fulfilled only after long delay, including the preparation of plans for fellowship development for international training, private sector linkages coordination, PBME, and staff recruitment and retention. The performance of international consultants was satisfactory, particularly of those who designed the institutional development plan and who served as coprincipals of the project schools. The coprincipals were highly appreciated for motivating school principals and staff to adapt the school curricula to local market needs, and for initiating strong partnerships with the community.

12. ADB provided close supervision and guidance, including various kinds of training to relevant PIU staff (e.g., on project implementation and administration, disbursement, procurement, the use of consulting services, and PBME). ADB fielded 14 review missions totaling 197 person-days, plus the PCR Mission. However, some project sites were so remote that only two missions visited them. ADB also coordinated closely with SDC. NRM provided support and close coordination with other external funding agencies involved in TEVT.

### **III. ACHIEVEMENT OF PROJECT PURPOSE**

#### **A. Operational Performance**

##### **1. Component I: Development of CTEVT's Institutional Capacity**

13. The outputs of this component include (i) full functioning of CTEVT and utilization of its staff; (ii) institutionalization of TNA by RID and accreditation of private TEVT schools by AD;

(iii) establishment of a working-group coordination committee to link up with private enterprises and other government agencies providing TEVT; and (iv) institutionalization of TEVT curriculum development and revisions. These outputs substantially helped achieve one of the three project objectives: strengthening institutional capacity of CTEVT to manage its programs and coordinate other TEVT programs.

#### **a. Full Functioning of CTEVT and Utilization of Its Staff**

14. The Government established CTEVT in 1988 as a chartered autonomous body to manage its own TEVT programs and coordinate various TEVT programs provided by other government agencies and the private sector. CTEVT became fully functioning with project help, primarily in staffing, international staff training, and establishment of RID and AD (Table A4.1). Given the numerous functions of CTEVT (policymaking, developing and revising TEVT curricula, running its own TEVT programs, and coordinating and exercising quality control over other TEVT programs), the number of CTEVT's headquarters staff increased from 81 at the beginning of the Project to 177 at the PCR stage and 202 at the OEM stage. About 43 CTEVT's headquarters staff received a total of 251 person-months of international training under the Project in accounting, development of skills standards and testing, TEVT management and planning, TEVT monitoring and evaluation, and training operations. About 27 staff at the project schools also received a total of 187 person-months of international training in school administration. Most of the staff trained have continued to work at the project schools and utilize the training knowledge to help strengthen CTEVT's institutional capacity. Based on the OEM's interview with some of these staff, 36% utilized the knowledge gained to a high degree, while 45% utilized it moderately (Table A4.2). Most of the local training for CTEVT's headquarters and school staff, including teachers, was provided by the Technical Instructor Training Institute (TITI) concurrently established by SDC.

15. The PCR raised a concern over CTEVT's difficulty in retaining capable teachers in remote areas. The OEM found that CTEVT recently designed a new rotation plan that requires new staff to work in rural areas for 4 years before transferring to semi-urban areas for another 4 years and then to urban areas. CTEVT also requires urban-posted staff who are ready for promotion to move to semi-urban or rural areas for the promotion to become effective. The Project provided staff housing in the project schools as an incentive to retain teachers in rural areas. CTEVT should encourage its rural schools to provide more fee-earning short-term courses relevant to local demand and to allow teachers to earn extra income as an incentive to stay.

#### **b. Institutionalization of Training-Needs Assessment and Accreditation of Private Technical Schools**

16. RID conducted TNA before designing courses and curricula for the project schools to reflect local needs. After project completion, RID institutionalized TNA for the project schools by integrating it into TNA for CTEVT's 16 public schools (4–5 schools per year). AD institutionalized the accreditation of private TEVT schools for quality control.<sup>6</sup> The accredited private schools are required to register under CTEVT and to use the same curricula and entrance and graduation exams as CTEVT's public schools. To control the quality of these

<sup>6</sup> Private technical or vocational schools are either registered with CTEVT (142 private schools) or with the Ministry of Industry, Commerce and Supplies (MOICS) (more than 1,000 private schools). Most of the private schools under MOICS operate purely for profit, without any quality control measures. Since these schools are not under the purview of CTEVT, it is not in a position to control their quality. However, CTEVT and MOICS should closely coordinate for quality control.

private schools, CTEVT coordinates closely with them and closed down 35 in 2001 mainly due to students' low passing rates and unmet curriculum standards. There are 142 private schools currently under CTEVT's accreditation. However, CTEVT still needs to improve the quality of these schools, for example, by allowing their recently established federation to be represented in the new coordination committee of CTEVT so that it can communicate with them more effectively.

### **c. Establishment of a Working-Group Coordination Committee**

17. CTEVT has also tried to increase coordination with private enterprises and other government agencies providing TEVT (e.g., Ministry of Agriculture; Ministry of Health [MOH]; Ministry of Industry, Commerce and Supplies; Ministry of Labor; and Ministry of Tourism). Although two coordination committees exist (one at the assembly level and the other at the council level), both are represented by high-ranking officials and tend to focus on policy rather than implementation. RID, therefore, created a working-group coordination committee in mid-2001—the Executive Committee for Macro Forum of Coordination—with six workshops planned for 2002. The Federation of Nepalese Chambers of Commerce and Industry (FNCCI), which represents private enterprises, suggested that CTEVT conduct industrial-needs assessment, focusing on fee-earning short-term courses with high market demand in consultation with FNCCI. The latter would then persuade its 50 commodity organization members to send some employees to attend these courses to generate more income for CTEVT's schools. The OEM suggested that the working-group committee conduct a workshop to coordinate with private enterprises. The committee subsequently conducted a participatory workshop in February 2002 on developing a labor market information center (LMIC) and entrepreneurship skills. More than half the participants were from private enterprises.

### **d. Institutionalization of TEVT Curriculum Development and Revisions**

18. CTEVT has fulfilled its mandate to develop and revise the TEVT curricula to keep pace with changing market needs. At appraisal, the Project envisaged adding three new courses (with modularized multimedia training packages) to the five existing ones (Table A4.3). With regular TNA, more courses were added and curricula developed, resulting in 13 new courses (totaling 18) at the PCR stage and 15 new courses (totaling 20) at the OEM stage. CTEVT's Curriculum Development Division routinely revises and updates the curricula. To control course quality, all new or revised curricula are subject to review and approval by the Curriculum Development Board, consisting of CTEVT experts, curriculum experts, planners, and representatives from relevant ministries and the private sector.

## **2. Components II–III: Establishment of Five Technical Schools and Upgrading of Lahan Technical School**

19. These schools produced sufficiently skilled workers for agriculture, construction, health, mechanical work, secretarial work, and tourism. Their output has significantly helped achieve two of the three project objectives: increase the supply and quality of skilled workers.

### a. Increased Supply of Skilled Workers

20. The OEM's school survey data<sup>7</sup> from the six project schools (Table A5.1) show that they enrolled a stock of 1,402 students in regular courses (normally 1–2 years) in 2001 compared to about 1,022 students at the PCR stage (1997)<sup>8</sup> and 725 at appraisal. During 1996–2001, the project schools enrolled 6,914 students. The 20 courses offered are grouped under six major subject areas. Most students concentrate on construction (31%) and agriculture (24%), followed by health (12%),<sup>9</sup> mechanical course (12%), tourism (11%), and the secretarial course (10%) (Table A5.2). The project schools fully utilize their physical enrollment capacity (average of 102%) (Table A5.3). In 2001, they accounted for 53% of total enrollment in CTEVT's 16 public schools (1,402 out of 2,650 students).

21. Table A5.4 shows the “flow” figures of enrollment, which refer to “new” enrollment added each year. No corresponding figures were provided by the PCR or at appraisal. New enrollment at the project schools almost doubled during the past 6 years, from 493 to 833 students, with an average annual number of 759 students and annual growth rate of 11%. During the past 6 years, total new enrollment was 4,556 students (without double-counting the students who enrolled more than one year), and 3,638 skilled workers graduated (Table A5.5). The average graduation rate was thus 80%, and the average number of skilled workers graduated was 606 per year (compared to 600 reported by the PCR and 220 estimated at appraisal). Of the 9.5 million employed workers all over the country, 76% are in agriculture, 14% in services, and 10% in industry. Of the total number of skilled workers produced by the project schools, 21% are in agriculture; 42% in services (including health, secretarial work, and tourism); and 37% in industry (including construction and mechanical work) (Table A5.6).

22. In 1996–2001, the project schools' fee-earning short-term courses (a few weeks to a few months) had 4,880 students and 4,689 graduates, or an average of 813 students and 782 graduates per year (Tables A5.7–A5.8). Most of the students had been employed (and many sponsored by their employers to upgrade their skills). Most (54%) short-term students were in business-related areas such as tourism (54%) (Table A5.9).

23. For comparison, the OEM's school survey also collected data from six CTEVT-accredited private schools in the same provinces as the six public project schools. Since private TEVT schools in Nepal are a recent phenomenon, they normally have smaller investments, fewer facilities and, hence, smaller enrollment capacity than the public schools. Given their much lower overhead investments compared to those of the public schools, private schools have been growing much faster than public schools. The 142 CTEVT-accredited private schools had 7,344 students (about 52 per school) in 2001. By contrast, CTEVT's 16 public schools had 2,650 students (about 166 per school).

24. Enrollment in regular courses in the six sample private schools is about half that of the six project schools, with 575 students in 2001 and 3,073 in 1996–2001 (Table A5.1). The sample private schools offer only two subject areas, with 98% of students enrolled in health and 2% in construction, and enrollment slightly below capacity, averaging 90% (Tables A5.2–A5.3). New enrollment increased from 240 to 405 students in 1996–2001, with an average annual 378 students and the same average annual growth rate as that of the project schools (11%)

<sup>7</sup> See para. 6 for details of the OEM surveys. Since not all the respondents could give answers (e.g., on income), the numbers of the respondents shown in some appendix tables are less than the actual sample sizes.

<sup>8</sup> Although the PCR was conducted in November 1998, it used figures from academic year 1997 (February–November).

<sup>9</sup> Including auxiliary and community health, and nursing.

(Table A5.4). Total new enrollment and total graduates of the sample private schools are about half those of the project schools (2,265 students and 1,621 graduates), with a slightly lower average graduation rate of 72% (Table A5.5).<sup>10</sup> These private schools do not offer short-term courses.

### **b. Improved Quality and Relevance of TEVT**

25. The output of components II–III helped improve the quality (including internal efficiency) and relevance (external efficiency) of TEVT, as reflected in (i) sufficient internal efficiency of the project schools, (ii) increased enrollment demand in the project schools, (iii) sufficient quality and relevance of the project schools' curricula as perceived by the graduates, (iv) sufficient relevance of the curricula to the market needs as perceived by employers, and (v) sufficiently high employment rate of the graduates. The project schools have achieved sufficient internal efficiency as reflected in the low and declining student dropout rate of 2% (averaging 5% in 1996–2001) as well as the continued high attendance rate of 90%. However, given the existing low student-teacher ratio of 8:1, the teachers have not been utilized efficiently (Table A6.1).<sup>11</sup> Although the sample private schools also have a similarly low student-teacher ratio (9:1), their teachers have been utilized more efficiently as many of them are hired part-time. The private schools' average annual recurrent expenditure per student (\$191 equivalent) is about half that of the project schools (\$369 equivalent). Private school dropout and attendance rates are almost the same as those of the project schools. As for the utilization of project facilities, project schools fully utilize most of the facilities, except for one cooking laboratory at the school in Pokhara whose underutilization does not reflect inefficiency but poor civil works design.

26. The yearly number of applicants for the six project schools increased from 988 to 1,421 in 1996–2001, with an average annual growth rate of 7.5% (Table A6.2). The number of applicants for the project schools has exceeded that of new students enrolled each year as indicated by the demand index (applicants divided by new enrollment), ranging from 1.7 to 2.0, compared to the lower range for the six sample private schools of 1.2–1.5. The lower demand for the private schools reflects greater competition among the increasing number of private schools, including those affiliated with CTEVT and with other agencies. The lower demand also reflects public opinion in Nepal that the quality of private TEVT schools is lower than that of their public counterparts due to lower overhead investments.

27. As for the quality and relevance of TEVT curricula as perceived by employed graduates from the project schools, the OEM's tracer survey data indicate that 73% of the sample considered the curricula as highly relevant to their job needs (Table A6.3). The corresponding percentage of the sample private school graduates is not much different (78%). The sample project school graduates, especially those working in the private sector, suggested that the curricula emphasize computer training, English, accounting, and management.

28. Nearly half the sample employers found the project school curricula to be highly relevant, while the other half found it to be moderately relevant (Table A6.4). All the public sector employers found the curricula to be either highly or moderately relevant, while some private sector employers (4%) found it to be partly relevant. The employers suggested four major areas for curriculum improvement and emphasis: (i) positive work ethics (discipline, honesty, integrity, punctuality, and teamwork); (ii) general life skills (communications, creative

<sup>10</sup> However, the national average graduation rate of private schools is much lower (about 30–40%).

<sup>11</sup> The generally expected student-teacher ratio for TEVT is at least 15:1. The ratio is also low in Malaysia (9:1) and Papua New Guinea (6:1), but high in Pakistan (19:1) and Sri Lanka (22:1).

thinking, diagnostic and planning skills, and interpersonal and problem solving skills); (iii) industry-specific knowledge and multiple technical skills (information technology and entrepreneurial skills) to cope with changing market demand; and (iv) linkages with private enterprises. The suggestions of employers and graduates should be taken into account when revising the TEVT curricula.

29. Another indicator of improved quality and relevance of TEVT is high employment rates of graduates from the project schools and CTEVT's public schools. In 2001, the employment rates of the former were 61–80%, averaging 74% compared to 73% in 1998, higher than those of the sample private schools (59% in 2001 and 72% in 1998) (Table A6.5). The average national employment rates of CTEVT's public schools were 75% in 2001 and 65% in 1998,<sup>12</sup> higher than those of CTEVT-accredited private schools (65% in 2001 and 60% in 1998). Public TEVT schools have a better reputation than private schools (para. 26), and project school graduates got jobs in a shorter time than their private counterparts (55% compared to 42%, less than 6 months; 10% compared to 20%, more than 1 year) (Table A6.6). However, the quality of private schools is improving, and the proportion of sample employers who prefer private school graduates (25%) is almost the same as those who prefer public school graduates (26%) (Table A6.7).

30. Most of the sample graduates from the project and private schools are employed in the private sector (45% and 51%, respectively) (Table A6.8). CTEVT's follow-up surveys in 1997 and 2001 show that more public school graduates are being employed in the private sector (8% in 1997 compared to 18% in 2001) and fewer are joining the government sector. This gradual shift is a result of private sector expansion as the economy developed. More project school graduates (70%) work in the formal sector (establishments with more than 10 workers) than private school graduates (63%), and thus have greater job security.

### **3. Component IV: Development of Skills Testing for Certification**

31. This component provided skills certification based on the system of skills standards and testing developed by CTEVT. Its output reflects the achievement of one project objective: strengthening the institutional capacity of CTEVT, which developed 107 areas of skills standards and testing for certification compared to 92 areas at the PCR stage and only 7 envisaged at appraisal (Table A7.1). Another project objective has thus been achieved: increasing the number of certified semiskilled workers. The certificates enable the disadvantaged (mostly dropouts from primary and secondary schools) to get jobs and enhance their career paths. The skills developed range from those useful for self-employment in cottage industries to those required in modern capital-intensive industries. In 1995–2001, the Project certified 4,062 people as SCHs (about 700 SCHs were certified according to the PCR in 1995–1997) (Table A7.2). The OEM's tracer survey also collected data from some SCHs, 60% of whom are employed in the private sector, 27% in the public sector, and 13% self-employed (Table A7.3). About 73% of SCH employers reported being highly satisfied with SCHs' performance (Table A7.4). SCHs earn an average of \$52 equivalent monthly, while project school graduates earn \$82 equivalent, indicating that SCHs have lower skills.

<sup>12</sup> Employment rates do not differ much across subject areas. Many self-employed agriculture graduates often said that they were unemployed when they were asked about their employment status.

#### **4. Component V: Project Implementation**

32. This component helped establish the PIU to implement the Project and to conduct PBME activities and institutionalize them after project completion. However, since the project schools are under CTEVT, PBME has been replaced by RID annual tracer studies of a few schools per year after project completion. The institutionalization of the tracer studies strengthens CTEVT's institutional capacity.

##### **B. Performance of the Operating Entity**

33. CTEVT continues to receive regular funds from the Government even after project completion. The allocation of the Government's overall recurrent budget<sup>13</sup> to the education sector and the allocation of total recurrent education budget across the education subsectors are in Table A8.1. As the Government's Eighth Plan (1992–1997) focused on the social sector and poverty reduction, the share of the total recurrent education budget in the Government's overall recurrent budget increased from 5% in FY1991 to 22% in FY1998, and stabilized at about 18% in FY2002. As the Government's education priority has shifted to basic education since the Eighth Plan, primary education now has the highest priority (around 50% throughout the period), followed by secondary (28%), tertiary (12%), and nonformal (7%) education. TEVT is the lowest priority, with a share of around 2%. Almost all of the Government's recurrent education budget allocated to TEVT has been absorbed by CTEVT which, in turn, has been allocating about 23–34% of its budget to the project schools since project completion.

##### **C. Sustainability**

34. The PCR did not analyze the Project's long-term financial sustainability, but calculated cost recovery of course fees levied by the project schools to be only 12% of their total recurrent budget. The OEM found that the project schools subsequently offered more short-term courses relevant to market needs and rented out some facilities to the community to generate more income. This resulted in the cost recovery of fees and incomes from other sources of 26% of the schools' total recurrent budget, while the remaining 74% came from CTEVT (Table A8.2). The significant increase in cost recovery reflects the capacity of the project schools to generate their own income. They should continue to do so to rely less on CTEVT. All the project schools have allocated a budget item for operation and maintenance of school facilities, although this item accounted for only about 2% of recurrent expenditure. Since the sample private schools do not receive any subsidy, their cost recovery of fees and incomes from other sources was 100% (Table A8.3).

35. Constituting 38% of CTEVT's 16 public schools, the 6 project schools had a 36% share of CTEVT's recurrent budget at project completion (Table A8.1). In line with CTEVT's encouragement of the project schools to enhance their cost recovery capacity, and with their ability to do so over the years, the share of CTEVT's contributions to the project schools has declined to 23% in FY2002 and is expected to decline further to 15% in FY2005 (although in absolute terms, such contributions are still increasing). These indicators suggest that the project schools have good potential to become increasingly self-reliant and gradually financially sustainable. The Project has also achieved institutional sustainability in terms of staff retention under the new rotation plan to encourage more people to work in rural areas (para. 15), and

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<sup>13</sup> In this case, "budget" and "expenditure" are used interchangeably because budget allocated from one source to a recipient will finally become its expenditure.

adaptability to new demand given CTEVT's institutionalization of curriculum development and updating (para. 18).

#### **D. Economic Reevaluation**

36. No economic analysis was conducted at appraisal or in the PCR. To assess the efficiency of investments in the Project, the OEM's survey data were used to estimate the economic internal rate of return (EIRR) and the private (individual) internal rates of return (IRRs) (Appendix 9). IRRs of graduates from the project schools are high in all six subject areas (Table A9.1): agriculture (24%), construction (20%), health (17%), mechanical course (15%), secretarial course (28%), and tourism (27%), with a weighted average of 18%. The high individual IRRs imply excess demand for semiskilled and skilled workers, which is not uncommon in a developing country undergoing structural change. Individual IRRs were also estimated for graduates from the sample private schools. The IRRs of private school graduates (15% for construction and 11% for health, averaging 12%) are lower than those of their public counterparts and reflect lower earnings because (i) the private sector offers lower salaries than the public sector, and employs more graduates from private schools (51%) than from public schools (45%) (para. 30); and (ii) the general public in Nepal believes that public TEVT schools are better than private schools (para. 29).

37. The estimated low EIRR of the Project of 4.6% (Table A9.2) does not take into account some educational benefits that are intangible, and should therefore be interpreted with caution.<sup>14</sup> The economic cost includes the project cost, which is divided into traded and nontraded components. The project capital cost was incurred during 8 years of project implementation, while recurrent cost is assumed to continue after project completion. The expected economic benefits include productivity increases and cost of foreign labor saved. The former is the product of the output of graduates from the regular and short-term courses of the project schools, and their corresponding weighted average incremental wage rates. The latter is the amount of money saved from not having to pay a large number of foreign workers (mostly from India) the minimum wage rate for skilled workers by replacing them with the expected graduates from the project schools. Many Indian electricians working in Nepal have recently been replaced by graduates of CTEVT's public schools. Sensitivity analysis shows that if the number of graduates doubles, the EIRR will increase to 12%. However, although the project schools should try to expand enrollment capacity to utilize teachers more efficiently, doubling enrollment is not recommended since the trade-off would be lower program quality. Project schools should focus on expanding enrollment of fee-earning, demand-driven short-term courses to generate more income and increase utilization of teachers.

38. The PCR estimated the capital cost (amortized over an estimated lifetime of 20 years for project facilities) per student to decline from \$1,216 equivalent at appraisal to \$720 equivalent at the PCR stage due to the increase in enrollment from 725 to 1,022 students. With 1,402 students at the OEM stage, the per unit amortized capital cost further decreased to \$534 equivalent. At \$161 equivalent, the sample private schools are found to be even more cost-effective since most of them tend to provide only a few courses (e.g., health and construction), which do not require large overhead investments.

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<sup>14</sup> Low EIRRs are commonly found in TEVT projects in other countries (e.g., Singapore [7.2%] and Thailand [7.2%]).

#### IV. ACHIEVEMENT OF OTHER DEVELOPMENT IMPACTS

##### A. Socioeconomic Impact

39. The Project has helped improve the beneficiaries' socioeconomic status. Of the sample graduates from the project schools, 94% perceive that their socioeconomic status (income and social status) has significantly improved, while 89% of private school graduates thought so (Table A10.1). The sample graduates from the project schools generally earn more than those from private schools (Tables A10.2–A10.3): \$90 equivalent average per month compared to \$88 equivalent in construction, and \$81 compared to \$74 equivalent in health; and the weighted average of monthly earnings for all areas combined is \$82 equivalent compared to \$76 equivalent. The Project did not aim to reduce poverty. If the National Planning Commission poverty line of NRs6,100 per head per year were applied to the sample students enrolled in regular courses at the project schools, only about 9% would be classified as poor.<sup>15</sup> Slightly fewer private school students (7%) were found to be poor. However, the Project has mainly benefited rural people as 60% of the sample students from the 6 project schools are from rural areas compared to 48% of those from private schools. The Project has also benefited a large disadvantaged group of primary and secondary school dropouts, who have no access to formal training, through the skills testing and certification program.

40. Although the Project did not intend to address gender issues, it gave females greater access to project schools. Females who passed the written entrance exams were implicitly considered as having passed the interview, and made up about 24% of the students. One graduate of the project school in Pokhara became the country's first woman trekking guide. About 13% of the staff at CTEVT's headquarters and public schools are female.

##### B. Environmental Impact

41. The Project had no adverse environmental impact. It helped raise environmental awareness by including environmental education in some regular courses of the project schools. The construction of some project schools (e.g., at Pokhara) also benefited the community by bringing in basic infrastructure as well as community services such as good farming practices, primary health care, safe water, and sanitation in rural areas.

##### C. Impact on Institutions and Policy

42. Since institutional development of CTEVT was one of the project components, the institutional and policy impacts generated by the Project have been substantial (paras. 13–18). After its completion, many staff of CTEVT's headquarters and the project schools, especially teachers, have undergone periodic training at TITI, to upgrade their knowledge and skills to keep pace with changing local needs.

#### V. OVERALL ASSESSMENT

##### A. Relevance

43. The Project was relevant to the Government's strategy during appraisal and consistent with ADB's education strategy when it focused on TEVT and higher education. However, since

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<sup>15</sup> The low proportion partly reflects the fact that the survey teams were not able to collect data from students living in very remote areas due to difficulty of accessing them.

the early 1990s, ADB's priority has shifted to basic education due to its larger poverty reduction impact. The Government also shifted the focus of its education strategy during the Eighth Plan (1992–1997) to basic education. Although the Government is still an important provider of TEVT (with 16 public schools and current enrollment of 2,650 students), the private sector's role has been increasing. CTEVT-accredited private schools account for three fourths of overall TEVT enrollment (7,344 out of 9,994 students) and 90% of TEVT schools under the purview of CTEVT (142 out of 158 schools). Lower per unit recurrent and capital costs than those of public schools make private schools more efficient in providing TVET, although of a somewhat lower quality. The latter should be monitored closely by CTEVT. Based on these considerations, the Project is rated as partly relevant.

## **B. Efficacy**

44. The Project has achieved or exceeded most of its physical targets, including (i) improving staff capacity through international training of 43 staff from CTEVT's headquarters and 27 staff from the project schools; (ii) increasing the number of private schools accredited by CTEVT to 142; (iii) increasing the number of new courses developed for the project schools to 15; (iv) increasing the number of skilled workers to 8,327 over the past 6 years (3,638 graduates from regular courses and 4,689 graduates from short-term courses); (v) enrolling the current 1,402 students in regular courses; (vi) developing skills standards and testing for certification in 107 skill areas; and (vii) increasing the number of SCHs to 4,062 over the past 7 years. Consequently, the Project is rated as highly efficacious.

## **C. Efficiency**

45. Although the Project has low economic efficiency as indicated by the low EIRR and lower cost-effectiveness compared to that of the private schools, the Project has achieved high external efficiency (relevance to market demand). This is indicated by the stable demand for enrollment in the project schools, sufficient quality and relevance of the project schools' curricula as perceived by their graduates, sufficient relevance of the curricula to market needs as perceived by employers, sufficiently high employment rates of graduates, and high individual IRRs of graduates. Internal efficiency is partly high (e.g., high utilization of project facilities, high attendance rate, and low dropout rate); and partly low (e.g., low utilization of teachers). On balance, the Project is rated as efficient.

## **D. Sustainability**

46. The Project is considered to be institutionally and financially sustainable given (i) the increased cost recovery of school fees and incomes from other sources by the project schools to 26%, and (ii) the regular provision for annual recurrent budget to the project schools by CTEVT. Since the project schools still rely heavily on financial support from CTEVT each year, although in a declining proportion, the Project is considered as achieving gradual self-reliance and sustainability. Sustainability is thus rated as likely.

## **E. Institutional Development and Other Impacts**

47. The Project has had substantial positive institutional development impact, including (i) full functioning of CTEVT and utilization of its staff; (ii) institutionalization of TNA, tracer studies, and accreditation of 142 private TEVT schools; (iii) establishment of a working-group coordination committee to increase coordination with private enterprises and other government

agencies providing TEVT; and (iv) institutionalization of TEVT curriculum development and revisions.

48. Almost all sample graduates from the project schools thought the Project had helped improve their socioeconomic status. The Project increased females' access to TEVT. The Project included raising environmental awareness in some courses offered by the project schools, and brought basic infrastructure to neighborhoods by building schools. The Project's institutional development and other impacts are rated as substantial.

#### **F. Overall Project Rating**

49. The outputs of the Project helped achieve all its objectives as planned, including strengthening the institutional capacity of CTEVT to manage its TEVT programs and coordinate TEVT programs provided by others, increasing the number of skilled workers, and improving the quality and relevance of CTEVT programs. The Project's long-term goal to strengthen the country's TEVT system was achieved without any major shortfall in spite of the political instability during implementation. For example, over 70% of project school graduates are employed, which has improved the beneficiaries' socioeconomic status and increased productivity. The overall project rating is successful.

#### **G. Assessment of ADB and Borrower Performance**

50. The Borrower largely fulfilled its functions despite the unstable political situation, remote project sites, and underdeveloped domestic consulting industry. The Borrower has also shown strong commitment to sustain the Project by regularly allocating sufficient funds to the project schools even after their completion, and encouraging them to generate more income from fee-earning short-term courses. ADB provided sufficient project implementation training to PIU staff and fielded many supervisory missions to monitor the Project. Although some project schools were visited by only two missions because of their remoteness, ADB's monitoring and supervision of project activities are deemed adequate. Overall, the performance of the Government and ADB is rated as satisfactory.

### **VI. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS**

#### **A. Key Issues for the Future**

51. Although the Project had a substantial institutional development impact, the coordination role of CTEVT needs to be further strengthened to keep pace with the changing market, particularly in relation to private enterprises (potential employers) and private schools (TEVT providers). Strengthening coordination with these TEVT stakeholders is crucial for long-term sustainability of the project benefits.

##### **1. Strengthening Coordination with Private Enterprises**

52. The TEVT curricula must be geared to produce graduates with adequate skills and knowledge for self-employment and wage employment. Sufficient linkages between CTEVT and private enterprises will thus be important in determining the success of TEVT as private enterprises know what skills they need and what types of business will survive. Although such linkages had been established at the CTEVT's assembly and council levels during the Project, not much interaction took place until recently when CTEVT established a working-group coordination committee in 2001 to link up with TEVT stakeholders. Following the OEM's

suggestion, the committee conducted a participatory workshop in February 2002 to develop an LMIC and entrepreneurship skills, with more than half the participants coming from private enterprises. FNCCI has committed to play an active role in the establishment of the LMIC.

53. The computerized LMIC will help TEVT stakeholders overcome the skills mismatch and make TEVT more marketable by sharing such information as TEVT demand and supply, skills in demand, and job and apprentice opportunities. The LMIC will store and utilize existing CTEVT data from various surveys. CTEVT should, therefore, pursue the establishment of the LMIC and keep the momentum of the private enterprises' commitment by holding another workshop soon after CTEVT decides how to involve FNCCI in the actual establishment of the LMIC.

## **2. Strengthening Coordination with Private TEVT Schools**

54. Given the shift in the Government's and ADB's education strategies, the private sector's high potential as the major TEVT provider, and the high efficiency of private providers, the question is whether CTEVT should continue to provide TEVT. In view of Nepal's present state of development, the private sector may not yet be able to entirely replace CTEVT without loss of quality. CTEVT still needs to retain its provider role, while gradually phasing itself out of the sectors where private providers can do well (e.g., the health sector). For example, 80% of private schools already teach health courses as they require low investments, market demand for them is high in rural and urban areas (particularly in private hospitals), and instructors are easily available. Annual growth in health course enrollment in private schools (17.5%) is much higher than that of CTEVT's public schools (2.4%), which shows that students' parents are willing to pay private school fees and that demand for private school graduates in the health sector is growing. Expansion of private sector provision has helped promote competition and, hence, reduced costs. The average annual enrollment fee in private school health courses was \$720 equivalent in 2001 compared to \$788 equivalent in 1996.

55. Concerns exist that if the private sector becomes the major provider of TEVT, its quality and access by the poor might suffer. Although private TEVT schools are still perceived to be of lower quality than public schools, employers are generally equally satisfied with the performance of public and private school graduates. Private schools thus have good potential to improve their quality, which should be monitored closely by CTEVT. Private schools are distributed across the country's five development regions, indicating that the schools also serve rural students, although not in mountainous and remote areas.

56. With its mandate as policymaker, coordinator, quality controller, and provider of TEVT, CTEVT has been focusing on its provider role. To use its human and financial resources more productively, CTEVT should focus more on policymaking, coordination, and quality control, and less on providing TEVT in sectors where private providers can do the job well. CTEVT has thus recently developed a partnership with a nongovernment organization to encourage it to provide a diploma nursing program with a minimum annual support of about \$33,000 equivalent. CTEVT has also recently accredited a diploma nursing program provided by MOH. Now that it has enhanced its coordinating and quality controlling role in the health sector, CTEVT should gradually reduce its role as a provider in this sector and explore additional sectors where it should encourage private provision.

## **B. Lessons Identified**

57. The Project provides the following lessons:

- (i) Although its education priorities have shifted to basic education, ADB need not stop supporting vocational education and training, but should strengthen previous interventions (which were successful), especially in capacity building for self-sufficiency. Such support should also aim to reduce poverty and be cost-effective based on the felt needs of each developing member country by, for example, (a) focusing on subsectors with good employment (including self-employment) potential for the poor; (b) focusing on subsectors such as nonformal and continuing education (and, hence, basic education) that can improve the skills of some poor groups, such as dropouts of primary and secondary schools; and (c) exploring cost-effective possibilities such as supporting prospective private providers.<sup>16</sup>
- (ii) For similar projects that need to coordinate with other agencies, the EA should form a coordination committee at an early stage of implementation. The members of the committee should come from the working group under the supervision of senior officers of each member agency to ensure effective coordination, not just policy discussions.
- (iii) For similar projects that involve many stakeholders, at least one participatory workshop with stakeholders should be held during the PPTA stage or early stage of project processing to ensure their continued support and involvement during implementation and operation.
- (iv) For similar projects that are employment oriented, the demand for semiskilled and skilled labor should be estimated for various subject areas during the PPTA, and broken down into formal and informal sector requirements to ensure long-term utilization of workers.
- (v) For similar projects that involve school establishment, the design should maximize the investment potential and the utilization of major facilities.
- (vi) For similar projects that involve more than one agency having similar functions, the administrative structure of the EA and related agencies should be studied during the PPTA to avoid duplication and ensure effective coordination.
- (vii) To avoid implementation delays, changes in EA leadership and deployment of PIU staff for activities outside the project scope should be minimized. ADB should monitor PIU staff activities by coordinating closely with the EA.

### **C. Follow-Up Actions**

58. Based on the issues discussed in section VI. A, several follow-up actions are recommended:

- (i) By September 2002, CTEVT should prepare an indicative action plan to establish the LMIC. The plan should be specific about the role and responsibilities of each TEVT stakeholder; the amounts of human and financial resources needed for each activity and timeframe; the sources of initial and subsequent financial

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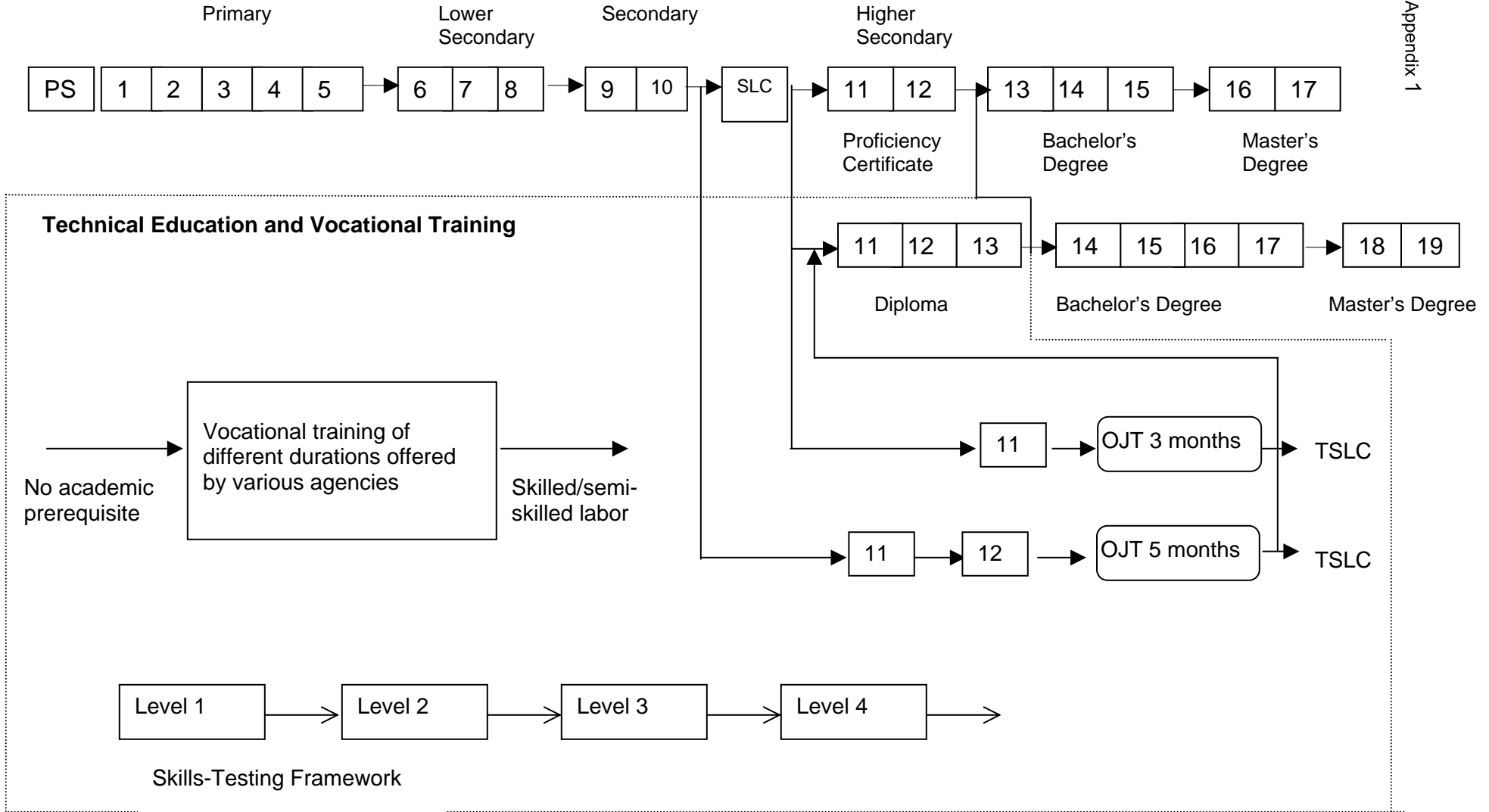
<sup>16</sup> FNCCI is initiating a project (with its own financial contribution as seed money) to establish some trade schools in rural areas, and is also looking for donors.

support; the strategy to make it become financially self-sufficient; the types of data to be collected; the approach to data collection, updating, and dissemination; and the types of labor market research needed.

- (ii) By October 2002, CTEVT should hold a participatory workshop to keep up the momentum of private enterprises' commitment to establishing the LMIC, and to agree on how to involve them in the actual establishment.
- (iii) By October 2002, following FNCCI's earlier suggestion, CTEVT should prepare a summary study on industrial-needs assessment (using CTEVT's existing 10 reports on key industrial areas and TNA results) to identify key areas with high market demand in consultation with FNCCI.
- (iv) By December 2002, based on the results of the summary study above, CTEVT should prepare additional fee-earning short-term courses to be offered by its schools (especially the project schools) as well as skills-testing certification for these courses.
- (v) By December 2002, CTEVT should coordinate more closely with private TEVT schools by holding a participatory workshop with them to explore possibilities of increasing their role in providing TEVT in the sectors where they can do well, and to consider phasing itself out of such sectors in the long run.
- (vi) By December 2002, CTEVT should coordinate more closely with other government agencies providing vocational education and training by holding a consultative workshop with them, particularly at the policy-making level, to explore possibilities of avoiding duplication and improving the quality of the programs provided by them as well as by private providers under their purview.

59. NRM has agreed to monitor the implementation of these actions.

# EDUCATIONAL SYSTEM IN NEPAL



OJT = on-the-job training, PS = primary school, SLC = school leaving certificate, TSLC = technical school leaving certificate.

**ESTIMATED AND ACTUAL PROJECT COST**  
(\$ million)

Category	Appraisal Estimates			Actual (at PCR)			% Overrun/ (Underrun)		
	Foreign	Local	Total	Foreign	Local	Total	Foreign	Local	Total
Civil Works									
Land Acquisition	0	0.22	0.22	0	0.08	0.08			
Site Development	0	0.97	0.97	0	1.12	1.12			
Construction	3.13	4.32	7.46	3.75	3.18	6.93			
<b>Subtotal</b>	<b>3.13</b>	<b>5.51</b>	<b>8.64</b>	<b>3.75</b>	<b>4.38</b>	<b>8.13</b>	<b>19.8</b>	<b>(20.5)</b>	<b>(5.9)</b>
Furniture and Equipment	1.13	1.03	2.16	2.50	1.43	3.93	121.6	38.8	82.0
Staff Development	0.97	0.05	1.01	1.00	0.04	1.04	3.6	(8.7)	3.1
Consulting Services									
Architects/Engineers	0	0.64	0.64	0	0.25	0.25			
Academic Consultants	3.95	0.29	4.25	2.88	0.22	3.10			
<b>Subtotal</b>	<b>3.95</b>	<b>0.93</b>	<b>4.89</b>	<b>2.88</b>	<b>0.47</b>	<b>3.35</b>	<b>(27.2)</b>	<b>(49.6)</b>	<b>(31.5)</b>
Recurrent Cost Funding	0	3.46	3.46	0	2.46	2.46	0	(29.0)	(29.0)
Taxes and Duties	0	0.92	0.92	0	0.11	0.11	0	(88.3)	(88.3)
Service Charge	0.52	0	0.52	0.31	0	0.31	(41.3)	0	(41.3)
<b>Total</b>	<b>9.70</b>	<b>11.90</b>	<b>21.60</b>	<b>10.43</b>	<b>8.89</b>	<b>19.32</b>	<b>7.6</b>	<b>(25.3)</b>	<b>(10.6)</b>

PCR = project completion report.

Source: ADB. 1999. *Project Completion Report on the Technical Education and Vocational Training Development Project in Nepal*. Manila.

### ACHIEVEMENT OF PROJECT TARGETS

Project Component	Appraisal Target (as per RRP and Appraisal Report)	Actual Achievement (as per PCR and OEM inspection)
A. Development of Institutional Capacity of the Council for Technical Education and Vocational Training (CTEVT)	<ul style="list-style-type: none"> <li>- Full functioning of CTEVT as an autonomous body to manage its own technical education and vocational training (TEVT) programs and coordinate TEVT programs provided by other government agencies and the private sector, with two new divisions: the Research and Information Division (RID) and Accreditation Division (AD)</li> <li>- Staff development through international training of 53 staff from CTEVT (228 person-months) and 19 staff from the project schools (120 person-months)</li> <li>- Conduct of training-needs assessment (TNA) by RID to develop TEVT courses and curricula for the project schools responsive to market needs</li> <li>- Accreditation of some private TEVT schools by AD to increase competition and quality</li> <li>- Development of linkages with private enterprises through the establishment of two coordination committees at the assembly and council levels</li> </ul>	<ul style="list-style-type: none"> <li>- Full functioning of CTEVT as an autonomous body to manage its own TEVT programs and coordinate TEVT programs provided by other government agencies and the private sector, with two new divisions: RID and AD</li> <li>- Staff development through international training of 43 staff from CTEVT (251 person-months) and 27 staff from the project schools (187 person-months)</li> <li>- Institutionalization of TNA by RID to develop TEVT courses and curricula for the project schools responsive to market needs</li> <li>- Accreditation of many more private TEVT schools by AD to increase competition and quality (120 schools at the time of the PCR, 142 schools at the time of the OEM)</li> <li>- Development of linkages with private enterprises through the recent establishment (at the time of the OEM) of a working-level coordination committee, with one participatory workshop on establishing a labor market information center and five other workshops planned for 2002</li> </ul>

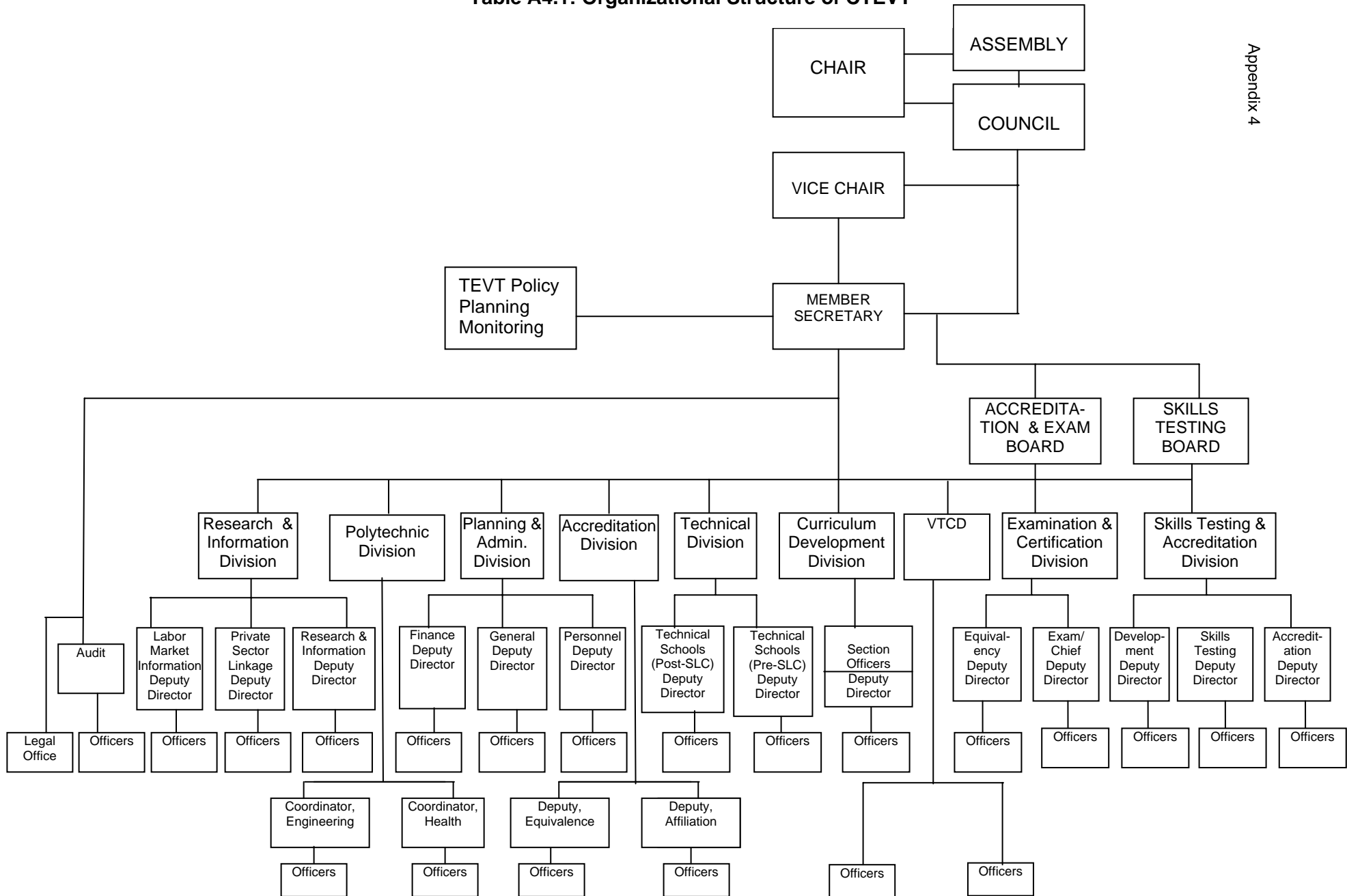
OEM = operations evaluation mission, PCR = project completion report, RRP = report and recommendation of the President.

(continued)

Project Component	Appraisal Target (as per RRP and Appraisal Report)	Actual Achievement (as per PCR and OEM inspection)
	<ul style="list-style-type: none"> <li>- Introduction of three new courses and curricula for the project schools (in addition to five existing courses)</li> </ul>	<ul style="list-style-type: none"> <li>- Introduction of many more new courses and curricula for the project schools (13 new courses at PCR; 15 new courses at OEM, totaling 20 courses grouped under six subject areas)</li> </ul>
B. Establishment of Five New Technical Schools  C. Upgrading of Lahan Technical School	<ul style="list-style-type: none"> <li>- Graduation of an average of 220 sufficiently skilled workers per year from regular (long-term) courses</li> <li>- Enrollment of 725 students in regular courses</li> </ul>	<ul style="list-style-type: none"> <li>- Graduation of sufficiently skilled workers, averaging many more per year from regular courses (600 graduates per year at PCR [1997] and 606 graduates per year at OEM [2001])</li> <li>- Enrollment of many more students in regular courses (1,022 students at PCR, and 1,402 students at OEM)</li> </ul>
D. Development of Skills Standards and Testing for Certification	<ul style="list-style-type: none"> <li>- Development of skills standards and testing for certification in seven skill areas</li> <li>- Certification of skills certificate holders (SCHs) from the skills standards and testing program</li> </ul>	<ul style="list-style-type: none"> <li>- Development of skills standards and testing for certification in many more skill areas (92 at PCR, 107 at OEM)</li> <li>- Certification of many more SCHs from the skills standards and testing program (about 700 SCHs over 3 years [1995–1997] at PCR, and 4,062 SCHs over 7 years [1995–2001] at OEM)</li> </ul>
E. Project Implementation	<ul style="list-style-type: none"> <li>- Establishment of a project implementation unit within CTEVT to implement the Project and to conduct project benefit monitoring and evaluation (PBME)</li> </ul>	<ul style="list-style-type: none"> <li>- Institutionalization of the tracer studies by RID to replace PBME after project completion</li> </ul>

# INSTITUTIONAL CAPACITY STRENGTHENING OF CTEVT

**Table A4.1: Organizational Structure of CTEVT**



Admin. = administration, CTEVT = Council for Technical Education and Vocational Training, SLC = school leaving certificate, TEVT = technical education and vocational training, VTCD = vocational training for community development.

**Table A4.2: CTEVT Staff's Perceptions of the Extent of Utilization of International Training**

Extent of Utilization	Staff Trained Overseas	
	No.	%
Highly Utilized	4	36.4
Moderately Utilized	5	45.4
Partly Utilized	1	9.1
Poorly Utilized	1	9.1
<b>Total</b>	<b>11</b>	<b>100</b>

CTEVT = Council for Technical Education and Vocational Training.  
Source: CTEVT Staff Interview in January 2002.

**Table A4.3: Regular (Long-Term) Courses Offered at Project Schools**

<b>Location of Project Schools</b>	<b>At Appraisal<sup>a</sup></b>	<b>At Project Completion<sup>a</sup></b>	<b>At Operations Evaluation<sup>a</sup></b>
Seti	Agriculture, construction, health	Agriculture, construction, health	Agriculture, construction, health, diploma in civil engineering
Bheri	Automotive course, electrical course, plumbing and welding	Air conditioning and refrigeration, automotive course, electrical course, electronics, general mechanics, plumbing and welding, secretarial course	Air conditioning and refrigeration, automotive course, electrical course, electronics, general mechanics, plumbing and welding, secretarial course
Rapti	Agriculture, construction, general mechanics	Agriculture, construction, health, rural mechanics	Agriculture, construction, health, rural mechanics
Dhawalagiri	Lodge management	Cooking and baking, housekeeping and bar waiter, lodge and hotel management	Agriculture, cooking and baking, housekeeping and bar waiter, lodge and hotel management
Pokhara		Cooking and baking, food and beverage services, front office operation, secretarial course, tour guide, travel agency operation	Cooking and baking, food and beverage services, food preparation and control, front office operation, secretarial course, tour guide, travel agency operation
Lahan	Agriculture, construction, general mechanics	Agriculture, construction, general mechanics	Agriculture, construction, general mechanics, diploma in civil engineering

<sup>a</sup> At appraisal, 3 new courses were envisaged (automotive course, general mechanics, and lodge management) in addition to 5 existing technical education and vocational training courses (agriculture, construction, electrical course, health, and plumbing and welding). At project completion, the number of new courses developed increased to 13 (air conditioning and refrigeration, automotive course, cooking and baking, electronics, food and beverage services, front office operation, general mechanics, housekeeping and bar waiter, lodge and hotel management, rural mechanics, secretarial course, tour guide, and travel agency operation) in addition to the 5 existing courses. At operations evaluation, the number of new courses developed increased to 15, with 2 additional courses in the diploma in civil engineering, and food preparation and control. The 20 courses (15 new plus 5 existing) can be grouped into 6 major subject areas (agriculture, construction, health, mechanical course, secretarial course, and tourism).

Source: School survey in January 2002.

## INCREASED SUPPLY OF SKILLED WORKERS

Table A5.1: Stock of Enrollment in Regular (Long-Term) Courses

Location of Technical Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	107	258	190	168	185	207	1,115
Bheri	132	182	235	262	291	294	1,396
Rapti	228	269	260	272	238	214	1,481
Dhawalagiri	51	54	42	46	50	47	290
Pokhara	0	0	91	233	164	118	606
Lahan	122	259	333	400	390	522	2,026
<b>Public Total</b>	<b>640</b>	<b>1,022</b>	<b>1,151</b>	<b>1,381</b>	<b>1,318</b>	<b>1,402</b>	<b>6,914</b>
<b>Annual Average</b>							<b>1,152</b>
<b>Sample Private Schools</b>							
Seti	70	137	137	132	127	118	721
Bheri	0	110	217	218	224	226	995
Rapti	0	0	64	93	80	44	281
Dhawalagiri	0	0	0	0	17	37	54
Pokhara	70	41	60	58	63	70	362
Lahan	100	140	80	140	120	80	660
<b>Private Total</b>	<b>240</b>	<b>428</b>	<b>558</b>	<b>641</b>	<b>631</b>	<b>575</b>	<b>3,073</b>
<b>Annual Average</b>							<b>512</b>

Source: School survey in January 2002.

Table A5.2: Stock of Enrollment in Regular Courses by Subject Area

Subject Area	Year						Total	
	1996	1997	1998	1999	2000	2001	No.	%
<b>Public Project Schools</b>								
Agriculture	240	270	245	298	271	361	1,685	24
Construction	144	362	386	417	340	455	2,104	31
Health	130	186	119	131	138	146	850	12
Mechanical Course	33	95	173	154	192	167	814	12
Secretarial Course	42	55	95	201	199	120	712	10
Tourism	51	54	133	180	178	153	749	11
<b>Public Total</b>	<b>640</b>	<b>1,022</b>	<b>1,151</b>	<b>1,381</b>	<b>1,318</b>	<b>1,402</b>	<b>6,914</b>	<b>100</b>
<b>Sample Private Schools</b>								
Construction	0	0	0	0	17	37	54	2
Health	240	428	558	641	614	538	3,019	98
<b>Private Total</b>	<b>240</b>	<b>428</b>	<b>558</b>	<b>641</b>	<b>631</b>	<b>575</b>	<b>3,073</b>	<b>100</b>

Source: School survey in January 2002.

Table A5.3: Enrollment Capacity in Regular Courses

Location of Technical Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	90	90	90	90	90	90	540
Bheri	180	207	250	310	280	292	1,519
Rapti	300	300	300	300	300	300	1,800
Dhawalagiri	72	72	72	72	72	72	432
Pokhara	0	0	298	298	298	298	1,192
Lahan	125	135	160	240	320	320	1,300
<b>Public Total</b>	<b>767</b>	<b>804</b>	<b>1,170</b>	<b>1,310</b>	<b>1,360</b>	<b>1,372</b>	<b>6,783</b>
<b>Annual Average</b>							<b>1,131</b>
<b>Capacity Utilization<sup>a</sup> (%)</b>	<b>83</b>	<b>127</b>	<b>98</b>	<b>105</b>	<b>97</b>	<b>102</b>	<b>102</b>
<b>Sample Private Schools</b>							
Seti	80	80	80	80	80	80	480
Bheri	0	120	240	240	240	240	1,080
Rapti	0	0	80	80	80	80	320
Dhawalagiri	0	0	0	0	48	96	144
Pokhara	80	80	80	80	80	80	480
Lahan	150	150	150	150	150	150	900
<b>Private Total</b>	<b>310</b>	<b>430</b>	<b>630</b>	<b>630</b>	<b>678</b>	<b>726</b>	<b>3,404</b>
<b>Annual Average</b>							<b>567</b>
<b>Capacity Utilization (%)</b>	<b>77</b>	<b>100</b>	<b>89</b>	<b>102</b>	<b>93</b>	<b>79</b>	<b>90</b>

<sup>a</sup> Capacity utilization is calculated as the percentage of enrollment over the enrollment capacity each year.

Source: School survey in January 2002.

Table A5.4: Flow of New Enrollment in Regular Courses

Location of Technical Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	82	214	144	101	111	100	752
Bheri	100	107	147	170	175	162	861
Rapti	138	140	145	145	108	112	788
Dhawalagiri	51	54	42	46	50	47	290
Pokhara	0	0	91	233	164	118	606
Lahan	122	157	190	258	238	294	1,259
<b>Public Total</b>	<b>493</b>	<b>672</b>	<b>759</b>	<b>953</b>	<b>846</b>	<b>833</b>	<b>4,556</b>
<b>Annual Average</b>							<b>759</b>
<b>Annual Growth Rate (%)</b>		<b>36.3</b>	<b>12.9</b>	<b>25.6</b>	<b>(11.2)</b>	<b>(1.5)</b>	<b>11.1</b>
<b>Sample Private Schools</b>							
Seti	70	74	66	74	65	80	429
Bheri	0	110	113	118	119	110	570
Rapti	0	0	64	36	62	44	206
Dhawalagiri	0	0	0	0	17	21	38
Pokhara	70	41	60	58	63	70	362
Lahan	100	140	80	140	120	80	660
<b>Private Total</b>	<b>240</b>	<b>365</b>	<b>383</b>	<b>426</b>	<b>446</b>	<b>405</b>	<b>2,265</b>
<b>Annual Average</b>							<b>378</b>
<b>Annual Growth Rate (%)</b>		<b>52.1</b>	<b>4.9</b>	<b>11.2</b>	<b>4.7</b>	<b>(9.2)</b>	<b>11.0</b>

Source: School survey in January 2002.

Table A5.5: Number of Graduates from Regular Courses

Location of Technical Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	0	77	206	135	96	103	617
Bheri	31	93	123	140	175	133	695
Rapti	0	119	125	130	129	93	596
Dhawalagiri	51	52	41	44	47	34	269
Pokhara	0	0	84	215	157	111	567
Lahan	0	112	143	175	236	228	894
<b>Public Total</b>	<b>82</b>	<b>453</b>	<b>722</b>	<b>839</b>	<b>840</b>	<b>702</b>	<b>3,638</b>
<b>Annual Average</b>							<b>606</b>
<b>Average Graduation Rate<sup>a</sup></b>							<b>79.9</b>
<b>Sample Private Schools</b>							
Seti	0	60	68	57	64	57	306
Bheri	0	0	90	100	102	106	398
Rapti	0	0	0	52	30	53	135
Dhawalagiri <sup>b</sup>	0	0	0	0	0	0	0
Pokhara	0	61	36	53	52	58	260
Lahan	0	90	127	72	128	105	522
<b>Private Total</b>	<b>0</b>	<b>211</b>	<b>321</b>	<b>334</b>	<b>376</b>	<b>379</b>	<b>1,621</b>
<b>Annual Average</b>							<b>270</b>
<b>Average Graduation Rate<sup>a</sup></b>							<b>71.6</b>

<sup>a</sup> Average graduation rate is an indicative figure. It is calculated as the percentage of total graduates in the past 6 years over the total number of new students during the same period. Graduation rate for each year (which should be the percentage of graduates in that particular year over the number of new students 2 years ago) is not calculated due to the following reasons: (i) some regular courses (secretarial and tourism courses) take only 1 year or less, so students who have passed the exams will become graduates in the same year of enrollment; and (ii) some students who failed in the exams in the past year will retake the exams in the following 1–2 years. These students are no longer counted in the enrollment record, but counted as graduates in the year that they have passed the exams.

<sup>b</sup> Graduates not produced yet.

Source: School survey in January 2002.

Table A5.6: Number of Graduates from Regular Courses by Subject Area

Subject Area	Year						Total	
	1996	1997	1998	1999	2000	2001	No.	%
<b>Public Project Schools</b>								
Agriculture	0	154	152	132	167	150	755	21
Construction	0	119	216	230	229	188	982	27
Health	0	74	123	66	66	58	387	11
Mechanical Course	0	24	51	92	89	98	354	10
Secretarial Course	31	30	55	154	121	63	454	12
Tourism	51	52	125	165	168	145	706	19
<b>Public Total</b>	<b>82</b>	<b>453</b>	<b>722</b>	<b>839</b>	<b>840</b>	<b>702</b>	<b>3,638</b>	<b>100</b>
<b>Sample Private Schools</b>								
Health	0	211	321	334	376	379	1,621	100
<b>Private Total</b>	<b>0</b>	<b>211</b>	<b>321</b>	<b>334</b>	<b>376</b>	<b>379</b>	<b>1,621</b>	<b>100</b>

Source: School survey in January 2002.

Table A5.7: Enrollment in Fee-Earning Short-Term Courses

Location of Public Project Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
Seti	110	92	137	103	105	105	652
Bheri	36	36	36	36	36	36	216
Rapti	0	0	0	42	27	102	171
Dhawalagiri	165	177	339	273	288	251	1,493
Pokhara	145	601	388	327	314	126	1,901
Lahan	45	51	42	56	124	129	447
<b>Total</b>	<b>501</b>	<b>957</b>	<b>942</b>	<b>837</b>	<b>894</b>	<b>749</b>	<b>4,880</b>
<b>Annual Average</b>							<b>813</b>
<b>Annual Growth Rate (%)</b>		<b>91.0</b>	<b>(1.6)</b>	<b>(11.1)</b>	<b>6.8</b>	<b>(16.2)</b>	<b>8.4</b>

Source: School survey in January 2002.

Table A5.8: Number of Graduates from Fee-Earning Short-Term Courses

Location of Public Project Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
Seti	110	92	137	103	105	105	652
Bheri	36	36	36	36	36	36	216
Rapti	0	0	0	42	27	24	93
Dhawalagiri	165	177	339	273	288	251	1,493
Pokhara	145	579	338	316	295	126	1,799
Lahan	45	51	42	45	124	129	436
<b>Total</b>	<b>501</b>	<b>935</b>	<b>892</b>	<b>815</b>	<b>875</b>	<b>671</b>	<b>4,689</b>
<b>Annual Average</b>							<b>782</b>

Source: School survey in January 2002.

Table A5.9: Enrollment in Fee-Earning Short-Term Courses by Subject Area

Subject Area of Public Project Schools	Year						Total	
	1996	1997	1998	1999	2000	2001	No.	%
Agriculture	105	119	123	92	140	207	786	16
Construction	85	81	52	48	80	80	426	9
Health	30	15	45	40	57	38	225	5
Mechanical Course	16	16	48	72	75	80	307	6
Secretarial Course	19	152	157	93	54	40	515	10
Tourism	246	574	517	492	488	304	2,621	54
<b>Total</b>	<b>501</b>	<b>957</b>	<b>942</b>	<b>837</b>	<b>894</b>	<b>749</b>	<b>4,880</b>	<b>100</b>

Source: School survey in January 2002.

**IMPROVED QUALITY AND RELEVANCE OF TECHNICAL EDUCATION  
AND VOCATIONAL TRAINING**

**Table A6.1: Number of Teachers and Student-Teacher Ratio**

Location of Technical Schools	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	23	26	26	29	29	26	159
Bheri	35	35	35	46	50	53	254
Rapti	17	27	32	34	30	28	168
Dhawalagiri	21	27	30	26	29	24	157
Pokhara	0	0	18	17	17	14	66
Lahan	21	29	29	28	26	28	161
<b>Public Total</b>	<b>117</b>	<b>144</b>	<b>170</b>	<b>180</b>	<b>181</b>	<b>173</b>	<b>965</b>
<b>Student-Teacher Ratio<sup>a</sup></b>	<b>5</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>8</b>	<b>7</b>
<b>Sample Private Schools</b>							
Seti	7	8	8	8	9	9	49
Bheri	0	11	12	11	13	13	60
Rapti	0	6	8	8	9	9	40
Dhawalagiri	0	0	0	15	16	17	48
Pokhara	7	8	7	9	9	10	50
Lahan	6	7	6	6	7	7	39
<b>Private Total</b>	<b>20</b>	<b>40</b>	<b>41</b>	<b>57</b>	<b>63</b>	<b>65</b>	<b>286</b>
<b>Student-Teacher Ratio<sup>a</sup></b>	<b>12</b>	<b>11</b>	<b>14</b>	<b>11</b>	<b>10</b>	<b>9</b>	<b>11</b>

<sup>a</sup> Student-teacher ratio is calculated as the ratio of the number of students enrolled to the number of teachers each year.

Source: School survey in January 2002.

**Table A6.2: Number of Applicants and Demand in Regular Courses**

Location of Technical School	Year						Total
	1996	1997	1998	1999	2000	2001	
<b>Public Project Schools</b>							
Seti	165	378	260	195	269	250	1,517
Bheri	103	115	166	270	214	260	1,128
Rapti	160	166	170	183	165	175	1,019
Dhawalagiri	60	67	55	50	61	55	348
Pokhara	0	0	96	298	209	145	748
Lahan	500	520	537	796	800	536	3,689
<b>Public Total</b>	<b>988</b>	<b>1,246</b>	<b>1,284</b>	<b>1,792</b>	<b>1,718</b>	<b>1,421</b>	<b>8,449</b>
<b>Annual Average</b>							<b>1,408</b>
<b>Annual Growth Rate (%)</b>		<b>26</b>	<b>3</b>	<b>40</b>	<b>(4)</b>	<b>(17)</b>	<b>7.5</b>
<b>Demand Index<sup>a</sup></b>	<b>2.0</b>	<b>1.9</b>	<b>1.7</b>	<b>1.9</b>	<b>2.0</b>	<b>1.7</b>	<b>1.9</b>
<b>Sample Private Schools</b>							
Seti	70	74	66	74	65	80	429
Bheri	0	120	120	132	134	125	631
Rapti	0	0	106	47	69	62	284
Dhawalagiri	0	0	0	0	32	29	61
Pokhara	200	150	200	250	102	103	1,005
Lahan	100	140	80	140	120	80	660
<b>Private Total</b>	<b>370</b>	<b>484</b>	<b>572</b>	<b>643</b>	<b>522</b>	<b>479</b>	<b>3,070</b>
<b>Annual Average</b>							<b>512</b>
<b>Annual Growth Rate (%)</b>		<b>31</b>	<b>18</b>	<b>12</b>	<b>(19)</b>	<b>(8)</b>	<b>5.3</b>
<b>Demand Index<sup>a</sup></b>	<b>1.5</b>	<b>1.3</b>	<b>1.5</b>	<b>1.5</b>	<b>1.2</b>	<b>1.2</b>	<b>1.4</b>

<sup>a</sup> Demand index is calculated as the proportion of the number of applicants to the number of new students each year.

Source: School survey in January 2002.

**Table A6.3: Graduates' Perceptions about the Relevance of Curriculum to Job Requirements**

Extent of Relevance	Graduates from Public Project Schools		Graduates from Sample Private Schools		Total Graduates	
	No.	%	No.	%	No.	%
Highly Relevant	216	72.7	71	78.0	287	74.0
Moderately Relevant	63	21.2	12	13.2	75	19.3
Partly Relevant	18	6.1	8	8.8	26	6.7
Not Relevant	0	0	0	0	0	0
<b>Total</b>	<b>297</b>	<b>100.0</b>	<b>91</b>	<b>100.0</b>	<b>388</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

**Table A6.4: Employers' Perceptions about the Relevance of Project Schools' Curriculum to Job Requirements**

Extent of Relevance	Public Sector Employers		Private Sector Employers		Total Employers	
	No.	%	No.	%	No.	%
Highly Relevant	22	52.4	23	42.6	45	46.9
Moderately Relevant	20	47.6	29	53.7	49	51.0
Partly Relevant	0	0	2	3.7	2	2.1
Not Relevant	0	0	0	0	0	0
<b>Total</b>	<b>42</b>	<b>100.0</b>	<b>54</b>	<b>100.0</b>	<b>96</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

**Table A6.5: Employment Rates of Graduates (%)**

Location of Technical Schools	Public Project Schools <sup>b</sup>		Sample Private Schools <sup>b</sup>	
	1998	2001	1998	2001
Seti	65	61	70	56
Bheri	80	80	65	53
Rapti	60	71	70	57
Dhawalagiri <sup>a</sup>	80	80		
Pokhara	85	80	65	60
Lahan	70	70	90	70
<b>Average of 6 Schools</b>	<b>73</b>	<b>74</b>	<b>72</b>	<b>59</b>
<b>Average of all CTEVT's Public Schools<sup>c</sup></b>	<b>65</b>	<b>75</b>		
<b>Average of all Private Schools Accredited by CTEVT<sup>c</sup></b>			<b>60</b>	<b>65</b>

CTEVT = Council for Technical Education and Vocational Training.

<sup>a</sup> Graduates not yet produced by the sample private schools.

<sup>b</sup> Estimated by school administration.

<sup>c</sup> Estimated by CTEVT.

Source: Tracer survey in January 2002.

**Table A6.6: Job Search Period of Employed Graduates**

Period	Graduates from Project Schools		Graduates from Sample Private Schools		Total Graduates	
	No.	%	No.	%	No.	%
< 6 Months	164	55.2	38	41.8	202	52.1
6 Months–1 Year	104	35.0	35	38.5	139	35.8
> 1 Year	29	9.8	18	19.8	47	12.1
<b>Total</b>	<b>297</b>	<b>100.0</b>	<b>91</b>	<b>100.0</b>	<b>388</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

**Table A6.7: Comparison of Employers' Satisfaction with the Performance of Graduates from Project Schools and Private Schools**

Comparison of Satisfaction	Employers	
	No.	%
Satisfied More with Project School Graduates	22	25.9
Satisfied More with Private School Graduates	21	24.7
No Preference/Not Applicable	42	49.4
<b>Total</b>	<b>85</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

Table A6.8: Sector and Size of Establishments where Graduates Work

Sector	CTEVT		2002 OEM Tracer Survey																
	Follow-Up Surveys		Project School Graduates						Sample Private School Graduates						Total Graduates				
	1997	2001	<=10 Workers <sup>a</sup>		>10 Workers		Total		<=10 Workers		>10 Workers		Total		<=10 Workers		>10 Workers		No.
	(%)	(%)	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Government	63.0	42.0	15	17.9	61	31.8	76	27.5	11	35.5	19	35.8	30	35.7	26	22.6	80	32.7	106
Semigovernment	4.0	20.0	6	7.1	16	8.3	22	8.0	1	3.2	3	5.7	4	4.8	7	6.1	19	7.8	26
NGO	25.0	20.0	19	22.6	36	18.8	55	19.9	1	3.2	6	11.3	7	8.3	20	17.4	42	17.1	62
Private	8.0	18.0	44	52.4	79	41.1	123	44.6	18	58.1	25	47.2	43	51.2	62	53.9	104	42.4	166
<b>Total by Sector</b>	<b>100.0</b>	<b>100.0</b>	<b>84</b>	<b>100.0</b>	<b>192</b>	<b>100.0</b>	<b>276</b>	<b>100.0</b>	<b>31</b>	<b>100.0</b>	<b>53</b>	<b>100.0</b>	<b>84</b>	<b>100.0</b>	<b>115</b>	<b>100.0</b>	<b>245</b>	<b>100.0</b>	<b>360</b>
<b>Total by Size</b>			<b>84</b>	<b>30.4</b>	<b>192</b>	<b>69.6</b>	<b>276</b>	<b>100.0</b>	<b>31</b>	<b>36.9</b>	<b>53</b>	<b>63.1</b>	<b>84</b>	<b>100.0</b>	<b>115</b>	<b>31.9</b>	<b>245</b>	<b>68.1</b>	<b>360</b>

CTEVT = Council for Technical Education and Vocational Training, NGO = nongovernment organization, OEM = Operations Evaluation Mission.

<sup>a</sup> Establishments with 10 or less workers are generally classified under the informal sector, and those with more than 10 under the formal sector.

Source: CTEVT's follow-up studies; OEM's tracer survey in January 2002.

## INCREASED SUPPLY OF SKILLS-CERTIFICATE HOLDERS

**Table A7.1: List of Skill Areas under CTEVT's Certification**

At Appraisal	At PCR	At OEM
1	Mechanical Filter L-2	Light Vehicle Service Mechanic L-1
2	Lathe Setter Operator L-2	Light Vehicle Engine Mechanic L-2
3	Structural Fabricator L-2	Light Vehicle Machine L-3
4	Brick Layer/Mason L-2	Light Vehicle Electrical Mechanic L-2
5	Const. Carpenter L-2	Middle & Heavy Vehicle Service Megabuck L-1
6	Household Plumber L-2	Heavy Vehicle Mechanic L-2
7	Building Electrician L-2	Heavy Vehicle Mechanic L-3
8		Heavy Vehicle Electrical Mechanic, L-2
9		Mechanical Fitter, L-1
10		Mechanical Fitter, L-2
11		Maintenance Fitter, L-3
12		Arc Welder (IG and IF), L-1
13		Structural Fabricator, L-2
14		Structural Fabricator, L-3
15		Lathe Setter Operator, L-1
16		Lathe Setter Operator, L-2
17		Lathe Setter Operator, L-3
18		Milling Machine Setter Operator, L-2
19		Milling Machine Setter Operator, L-3
20		Refrigeration & Air Conditioning Mechanic, L-1
21		Refrigeration & Air Conditioning Mechanic, L-2
22		Refrigeration & Air Conditioning Technician, L-3
23		Motorcycle Service Mechanic, L-1
24		Motorcycle Service Mechanic, L-2
25		Boiler Operator (Attendance), L-1
26		Pump Set Operator, L-2
27		Tractor Mechanic, L-2
28		Production Foreman, Cement Plant, L-3
29		Sheet Metal Worker, L-2

Table A7.1 (continued)

At Appraisal	At PCR	At OEM
30	Binding Technician, L-3	Binding Technician, L-3
31	Printing Technician, L-3	Printing Technician, L-3
32	Brick Layer/Mason, L-1	Brick Layer/Mason, L-1
33	Brick Layer/Mason, L-2	Brick Layer/Mason, L-2
34	Stone Layer/Mason, L-1	Stone Layer/Mason, L-1
35	Stone Layer/Mason, L-2	Stone Layer/Mason, L-2
36	Plasterer, L-1	Plasterer, L-1
37	Plasterer, L-2	Plasterer, L-2
38	Construction Carpenter, L-2	Construction Carpenter, L-2
39	Construction Carpenter, L-2	Construction Carpenter, L-2
40	Concrete Layer L-1	Concrete Layer L-1
41	Plumber, L-1	Plumber, L-1
42	Household Plumber, L-3	Household Plumber, L-3
43	Household Plumber, L-3	Household Plumber, L-3
44	Bar Bender, L-1	Bar Bender, L-1
45	Scaffolder, L-1	Scaffolder, L-1
46	Scaffolder, L-2	Scaffolder, L-2
47	Drafting Technician, L-2	Drafting Technician, L-2
48	Furniture Maker, L-1	Furniture Maker, L-1
49	Furniture Maker, L-2	Furniture Maker, L-2
50	Furniture Maker, L-3	Furniture Maker, L-3
51	Building Painter, L-1	Building Painter, L-1
52	Building Electrician, L-1	Building Electrician, L-1
53	Building Electrician, L-2	Building Electrician, L-2
54	Building Electrician, L-3	Building Electrician, L-3
55	Industrial Electrician, L-1	Industrial Electrician, L-1
56	Industrial Electrician, L-2	Industrial Electrician, L-2
57	Industrial Electrician, L-3	Industrial Electrician, L-3
58	Lineman, L-1	Lineman, L-1
59	Lineman, L-2	Lineman, L-2
60	Electric Machine Winder, L-1	Electric Machine Winder, L-1
61	Electric Machine Repairer, L-2	Electric Machine Repairer, L-2
62	Cable Jointer, L-1	Cable Jointer, L-1

Table A7.1 (continued)

At Appraisal	At PCR	At OEM
63	Switchboard Operator, L-1	Switchboard Operator, L-1
64	Electrical Appliance Repair, L-2	Electrical Appliance Repair, L-2
65	Armature Rewinder, L-2	Armature Rewinder, L-2
66	Solar Electric Technician, L-1	Solar Electric Technician, L-1
67	Solar Electric Technician, L-2	Solar Electric Technician, L-2
68	Transformer Repair Technician, L-2	Transformer Repair Technician, L-2
69	Small Hydro Operator, L-1	Small Hydro Operator, L-1
70	Radio Technician (Broadcasting), L-2	Radio Technician (Broadcasting), L-2
71	Radio Repair Technician, L-2	Radio Repair Technician, L-2
72	Color TV Receiver Technician, L-2	Color TV Receiver Technician, L-2
73	Black & White TV Receiver Technician, L-2	Black & White TV Receiver Technician, L-2
74	Tape Recorder Repair Technician, L-3	Tape Recorder Repair Technician, L-3
75	Computer Operator, L-2	Computer Operator, L-2
76	Computer Hardware Technician, L-3	Computer Hardware Technician, L-3
77	Computer Network Technician, L-3	Computer Network Technician, L-3
78	Tailor, L-1	Tailor, L-1
79	Tailor, L-2	Tailor, L-2
80	Tailor, L-3	Tailor, L-3
81	Assistant Leather Good Technician, L-2	Assistant Leather Good Technician, L-2
82	Ophthalmic Assistant, L-3	Ophthalmic Assistant, L-3
83	Eye Health Worker, L-2	Eye Health Worker, L-2
84	Ophthalmic Helper (OPD), L-1	Ophthalmic Helper (OPD), L-1
85	Community Health Worker, L-1	Community Health Worker, L-1
86	Physiotherapy, L-1	Physiotherapy, L-1
87	Physiotherapy, L-2	Physiotherapy, L-2
88	Physiotherapy, L-3	Physiotherapy, L-3
89	Lab Technician, L-2	Lab Technician, L-2
90	Hair Cutting & Beautician Apprentice, L-2	Hair Cutting & Beautician Apprentice, L-2
91	Kitchen Helper, L-1	Kitchen Helper, L-1
92	Front Office reception, L-1	Front Office reception, L-1
93		Bell Boy, L-1
94		Cook, L-1
95		Cook, L-2

Table A7.1 (continued)

At Appraisal	At PCR	At OEM
96		House Keeping Cleaner, L-1
97		Assistant Waiter, L-1
98		Senior Library Information Document Assistant, L-3
99		Senior Library Assistant, L-4
100		Agriculture JTA (Agronomy), L-2
101		Village Animal Health Worker (VAHW), L-1
102		Livestock JTA, L-2
103		Veterinary JTA, L-2
104		JTA (Vegetable Production), L-2
105		JTA (Dairy Technician), L-2
106		Music and Dance, L-2
107		Library, L-2

CTEVT = Council for Technical Education and Vocational Training, JTA = junior technical assistant, L = level, OEM = operations evaluation mission, OPD = outpatient department, PCR = project completion report.

Note: There are generally three levels of skills certified by CTEVT (L-1, L-2, and L-3). However, L-4 has only been recently developed for Library Science.

Source: Skills Testing and Accreditation Division, CTEVT.

**Table A7.2: Supply of CTEVT's Skills-Certificate Holders**

Number	Year							Total
	1995	1996	1997	1998	1999	2000	2001	
Applicants	479	505	514	1,750	1,246	1,809	2,019	8,322
Those Taking the Tests	411	405	440	1,604	1,072	1,663	1,789	7,384
Those Passing the Tests (Skills Certificate Holders)	228	214	180	867	569	948	1,056	4,062
Pass Rate (%)	55.5	52.8	40.9	54.1	53.1	57.0	59.0	55.0

CTEVT = Council for Technical Education and Vocational Training.

Source: Skills Testing and Accreditation Division, CTEVT.

**Table A7.3: Sectors of Employment of Sample Skills-Certificate Holders**

Sector	Skills Certificate Holders	
	No.	%
Public	8	26.7
Private	18	60.0
Self-Employed	4	13.3
<b>Total</b>	<b>30</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

**Table A7.4: Employers' Satisfaction with the Performance of Skills-Certificate Holders**

Extent of Satisfaction	Public Sector		Private Sector		Total	
	Employers		Employers		Employers	
	No.	%	No.	%	No.	%
Highly Satisfied	6	75.0	16	72.7	22	73.3
Moderately Satisfied	2	25.0	5	22.7	7	23.3
Partly Satisfied	0	0.00	1	4.5	1	3.3
Not Satisfied	0	0.00	0	0.00	0	0.00
<b>Total</b>	<b>8</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

## SUSTAINABILITY ANALYSIS

**Table A8.1: Long-Term Financial Sustainability of the Project**

Item	Project Implementation Period (1990–1998)								Postproject Period								
	FY1991	FY1992	FY1993	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005		
GDP (at current price, NRs billion) <sup>a</sup>	120.4	149.5	171.5	199.3	219.2	248.9	280.5	300.8	342.0	379.7	409.3	452.1	499.4	551.6	609.3		
Overall Recurrent Exp. (NRs billion) <sup>b</sup>	7.6	9.9	11.5	12.4	19.3	21.6	24.2	27.2	31.0	34.5	43.5	49.3	56.6	65.5	75.6		
Overall Recurrent Exp./GDP (%)	6.3	6.6	6.7	6.2	8.8	8.7	8.6	9.0	9.1	9.1	10.6	10.9	11.3	11.9	12.4		
Overall Recurrent Exp. (NRs million)	7,574.1	9,905.4	11,484.1	12,409.2	19,265.1	21,561.9	24,181.1	27,174.4	31,047.7	34,523.3	43,460.9	49,321.9	56,800.0	65,500.0	75,800.0		
Total Recurrent Education Exp. (NRs million) <sup>c</sup>	373.5	479.8	694.8	751.5	3,674.7	4,426.6	4,919.2	5,850.5	6,141.8	6,843.8	7,720.3	8,712.2	9,806.5	11,056.5	12,487.7		
Primary	197.8	265.1	358.4	416.1	1,950.0	2,445.5	2,536.4	2,975.2	3,184.0	3,496.7	4,001.2	4,415.2	4,872.1	5,376.3	5,932.6		
Secondary	78.6	113.8	182.4	178.7	774.8	1,049.5	1,360.9	1,613.8	1,732.8	1,968.7	2,109.8	2,426.0	2,789.6	3,207.7	3,688.5		
TEVT	7.3	7.3	9.7	9.7	62.9	67.7	72.6	84.1	101.9	89.4	118.5	181.8	246.4	318.2	412.6		
to CTEVT									44.6	80.4	92.7	89.0	117.7	191.0	245.6	317.4	411.8
from CTEVT to 6 Project Schools									9.9	28.6	30.2	28.0	39.8	42.9	48.2	54.2	60.9
Other CTEVT Exp.									34.7	51.8	62.5	61.0	77.9	148.1	197.4	263.2	350.9
Non-CTEVT									28.0	3.7	9.2	0.4	0.8	0.8	0.8	0.8	0.8
Tertiary	65.3	73.6	105.8	115.5	643.9	678.6	748.4	23.7	893.1	939.6	986.5	1,063.1	1,145.7	1,234.8	1,330.7		
Nonformal	24.6	20.1	28.6	31.6	243.2	185.3	201.0	1,153.8	230.1	349.5	504.3	616.1	752.7	919.5	1,123.3		
Total Recurrent Education Exp./Overall Recurrent Exp. (%)	4.9	4.8	6.1	6.1	19.1	20.5	20.3	21.5	19.8	19.8	17.8	17.7	17.3	16.9	16.5		
Primary Recurrent Exp./Total Recurrent Education Exp. (%)	53.0	55.3	51.6	55.4	53.1	55.2	51.6	50.9	51.8	51.1	51.8	50.7	49.7	48.6	47.5		
Secondary Recurrent Exp./Total Recurrent Education Exp. (%)	21.0	23.7	27.7	23.8	21.1	23.7	27.7	27.6	28.2	28.8	27.3	27.8	28.4	29.0	29.5		
TEVT Recurrent Exp./Total Recurrent Education Exp. (%)	1.9	1.5	1.4	1.3	1.7	1.5	1.5	1.4	1.7	1.3	1.5	2.2	2.5	2.9	3.3		
Tertiary Recurrent Exp./Total Recurrent Education Exp. (%)	17.5	15.3	15.2	15.4	17.5	15.3	15.2	0.4	14.5	13.7	12.8	12.2	11.7	11.2	10.7		
Nonformal Recurrent Exp./Total Recurrent Education Exp. (%)	6.6	4.2	4.1	4.2	6.6	4.2	4.1	19.7	3.7	5.1	6.5	7.1	7.7	8.3	9.0		
Project Schools' Recurrent Exp. (NRs million)	1.4	7.3	10.5	14.4	18.2	19.2	25.1	28.6	30.2	28.0	39.8	42.9	48.2	54.2	60.9		
CTEVT Recurrent Exp./TEVT Recurrent Exp. (%)									61.4	95.6	91.0	99.6	99.3	99.6	99.7	99.8	
Project Schools' Recurrent Exp./CTEVT Recurrent Exp. (%)									56.3	35.6	32.6	31.5	33.8	22.5	19.6	14.8	

CTEVT = Council for Technical Education and Vocational Training, Exp. = expenditure, FY = fiscal year, GDP = gross domestic product, MOES = Ministry of Education and Sports, MOF = Ministry of Finance, TEVT = technical education and vocational training.

<sup>a</sup> The data on GDP for FY2003 onward were estimated based on their average annual growth rate of the past 5 years.

<sup>b</sup> The data on overall recurrent expenditure for FY2003 onward were estimated based on their average annual growth rate of the past 3 years.

<sup>c</sup> The data on total recurrent education expenditure broken down into different subsectors were obtained from MOES. However, MOES data do not include all kinds of recurrent budget and expenditure (but only regular budget and expenditure). Thus, they do not include the data on recurrent TEVT budget allocated to CTEVT. CTEVT's budget and expenditure data were thus obtained from CTEVT itself. As such, the values of total recurrent education expenditure in this table are slightly higher than those obtained from MOES.

Source: CTEVT; MOES; MOF, *Economic Survey*, 2000–2001; staff estimates.

Table A8.2: Cost Recovery of School Fees by Project Schools<sup>a</sup>

Location of Public Project Schools	Annual Recurrent Budgets and Expenditures (NRs '000)				Surplus	Cost Recovery of Fees & Incomes from Other Sources (%)	Contribution from CTEVT (%)
	Received from CTEVT	Received from Students as Fees & from Other Sources	Total Recurrent Budget	Total Recurrent Expenditure			
Seti	6,500.0	1,557.1	8,057.1	5,823.1	2,234.0	19.3	80.7
Bheri	9,400.0	5,530.0	14,930.0	9,330.0	5,600.0	37.0	63.0
Rapti	7,800.0	2,256.4	10,056.4	7,285.0	2,771.4	22.4	77.6
Dhawalagiri	5,280.0	667.3	5,947.3	5,515.0	432.3	11.2	88.8
Pokhara	3,475.0	1,867.8	5,342.8	4,008.2	1,334.6	35.0	65.0
Lahan	7,390.0	2,164.5	9,554.5	7,425.6	2,128.9	22.7	77.3
<b>Total</b>	<b>39,845.0</b>	<b>14,043.1</b>	<b>53,888.1</b>	<b>39,386.9</b>	<b>14,501.2</b>	<b>26.1</b>	<b>73.9</b>

CTEVT = Council for Technical Education and Vocational Training.

<sup>a</sup> Fiscal year 2001.

Source: School survey in January 2002.

Table A8.3: Cost Recovery of School Fees by Sample Private Schools<sup>a</sup>

Location of Sample Private Schools	Annual Recurrent Budgets and Expenditures (NRs '000)				Surplus	Cost Recovery of Fees & Incomes from Other Sources (%)
	Received from Students as Fees & from Other Sources	Total Recurrent Budget	Total Recurrent Expenditure			
Seti	1,583.7	1,583.7	1,383.0	200.7	100.0	
Bheri	3,058.0	3,058.0	2,722.2	335.8	100.0	
Rapti	1,536.0	1,536.0	828.0	708.0	100.0	
Dhawalagiri	1,520.0	1,520.0	774.3	745.7	100.0	
Pokhara	1,335.1	1,335.1	1,335.1	0.0	100.0	
Lahan	1,328.0	1,328.0	1,328.0	0.0	100.0	
<b>Total</b>	<b>10,360.8</b>	<b>10,360.8</b>	<b>8,370.6</b>	<b>1,990.2</b>	<b>100.0</b>	

<sup>a</sup> Fiscal year 2001.

Source: School survey in January 2002.

## ECONOMIC ANALYSIS

### A. Estimates of Private Internal Rates of Return

1. The data from the tracer survey conducted by the Operations Evaluation Mission (OEM) are used to estimate a private (individual) internal rate of return (IRR) for each of the six subject areas offered by the project schools (agriculture, construction, health, mechanical course, secretarial course, and tourism) as well as for each of the two subject areas offered by the sample private schools (construction and health). The same data are also used to estimate IRRs based on the weighted average costs and benefits of the six subject areas offered by the project schools as well as on the weighted average costs and benefits of the two subject areas offered by the sample private schools. The secretarial and tourism courses take about 1 year to complete, while the other four subject areas take about 2 years (as shown by the negative values representing the costs incurred to each individual in Table A9.1). An individual's earning lifetime is assumed to be 31 years after graduation from the secretarial and tourism courses, and 30 years for the other four subject areas. The cut-off age is thus the same for everybody, as shown by the positive values representing the lifetime benefits accrued to each individual until year 32 (Table A9.1).

2. Individual costs and benefits are calculated annually. Private costs incurred to an individual include direct cost (books, transportation, uniforms, tuition, and other fees) and indirect or opportunity cost (prevailing wage rate for those who have completed secondary education). Private benefits accrued to each individual in each of the six subject areas are measured in terms of incremental wage rate, which is the difference between the average wage rate earned by graduates in that particular subject area and the wage rate that they would have earned had they not taken up the technical education and vocational training (TEVT) programs. Such private benefits are adjusted, in the first year of entry into the labor market, using the prevailing employment rate for the corresponding subject area. Weighted average costs and benefits are also calculated for the six subject areas offered by the project schools combined (and for the two subject areas offered by the sample private schools combined) using the proportions of graduates in these subject areas as the weights.

### B. Estimates of Economic Internal Rate of Return

3. An economic internal rate of return (EIRR) is also estimated as a rough indicator for efficiency of investments in the Project (Table A9.2). The calculations of the economic costs and benefits of the Project are based on the world price numeraire, using a standard conversion factor of 0.9 to adjust the nontraded component of the economic cost and benefits to the border price level. The economic cost includes the Project's cost, which is divided into traded and nontraded components. Both components are expressed in constant 2001 prices by using a dollar deflator (manufacturing unit value index) applied to the traded component, and a domestic deflator (gross domestic product deflator) to the nontraded component, and converted to domestic currency by using the 2001 exchange rate. The Project's capital cost was incurred during 8 years of project implementation. To be consistent with the individual IRRs' estimates in Table A9.1 (in which the cut-off year is 32), the cut-off year in the EIRR's estimates is 34 (32 years plus 2 years at the beginning, when the Project had just started; individual enrollment started only in year 3, so benefits start in year 4). The residual value of the Project's capital cost during the cut-off year is added as part of the net economic benefits during the same year. The Project's recurrent cost is assumed to continue after the project period.

4. The economic benefits include expected productivity increases and expected cost of foreign labor saved. Expected productivity increases are the product of the output of graduates from the regular and short-term courses of the project schools and their corresponding weighted average incremental wage rates. Future productivity increases after the cut-off year are discounted and added as a residual value to the productivity increases that year. The cost of foreign labor saved is the amount of money saved from not having to pay a large number of foreign workers the minimum wage rate for skilled workers by replacing them with the expected number of graduates from the project schools. Since employers normally provide foreign workers with minimum accommodation, they remit an assumed 90% of their earnings (so 90% of their earnings will be replaced). Nepal has about 1.5 million foreign workers, mostly from India, many of whom were reported to have been replaced by graduates from the country's public TEVT schools.

**Table A9.1: Private (Individual) Internal Rates of Return for Graduates from Project Schools and Sample Private Schools (NRs)**

Year	Streams of Net Incremental Benefits of Individual Graduates									
	Public Project Schools						Sample Private Schools			
	Agriculture	Construction	Health	Mechanical Course	Secretarial Course	Tourism	Public Schools Weighted Average	Construction	Health	Private Schools Weighted Average
1	(61,861)	(69,724)	(68,413)	(58,691)	(63,750)	(61,533)	(64,697)	(90,300)	(96,348)	(95,959)
2	(36,086)	(69,724)	(57,011)	(58,691)	16,200	13,843	(64,697)	(90,300)	(48,174)	(47,980)
3	22,733	26,170	21,924	16,234	18,000	17,304	21,053	24,691	16,308	15,152
4	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
5	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
6	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
7	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
8	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
9	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
10	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
11	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
12	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
13	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
14	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
15	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
16	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
17	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
18	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
19	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
20	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
21	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
22	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
23	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
24	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
25	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
26	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
27	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
28	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
29	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
30	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
31	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
32	28,416	32,712	24,360	20,292	18,000	17,304	26,316	30,864	18,120	18,940
<b>IRRs</b>	<b>24%</b>	<b>20%</b>	<b>17%</b>	<b>15%</b>	<b>28%</b>	<b>27%</b>	<b>18%</b>	<b>15%</b>	<b>11%</b>	<b>12%</b>

IRR = internal rate of return, OEM = Operations Evaluation Mission.

Source: Staff estimates based on OEM's tracer study conducted in January 2002.

Table A9.2: Economic Internal Rate of Return on Investments in Project Schools

(NRs'000)

Year	Economic Benefits				Project Cost			Net Economic Benefits	
	Productivity Increases		Cost of	Total	Capital Cost		Recurrent		Total
	Regular	Short-term	Foreign	Economic	Traded	Nontraded	Nontraded		Project Cost
	Courses	Courses	Labor Saved	Benefits					
1	0	0	0	0	7,225	9,265	18,035	34,525	(34,525)
2	0	0	0	0	27,630	30,997	15,086	73,713	(73,713)
3	0	0	0	0	34,537	35,067	27,306	96,910	(96,910)
4	4,211	12,900	3,387	18,448	66,692	65,372	30,542	162,606	(144,158)
5	19,079	18,060	9,420	41,903	123,856	122,951	35,902	282,709	(240,806)
6	20,790	25,800	10,690	51,552	162,760	142,865	33,374	338,999	(287,448)
7	22,369	30,960	11,642	58,474	136,560	106,500	37,318	280,377	(221,903)
8	24,211	38,700	12,066	67,479	105,992	76,628	39,779	222,399	(154,920)
9	26,842	38,700	13,124	70,800			30,000	30,000	40,800
10	28,158	38,700	13,653	72,460			30,000	30,000	42,460
11	30,790	38,700	14,712	75,781			30,000	30,000	45,781
12	33,290	38,700	16,299	79,460			30,000	30,000	49,460
13	35,132	38,700	17,569	82,261			30,000	30,000	52,261
14	37,237	38,700	19,157	85,585			20,000	20,000	65,585
15	53,948	38,700	27,518	108,150			20,000	20,000	88,150
16	53,948	38,700	27,518	108,150			20,000	20,000	88,150
17	53,948	38,700	27,518	108,150			20,000	20,000	88,150
18	53,948	38,700	27,518	108,150			20,000	20,000	88,150
19	53,948	38,700	27,518	108,150			10,000	10,000	98,150
20	53,948	38,700	27,518	108,150			10,000	10,000	98,150
21	53,948	38,700	27,518	108,150			10,000	10,000	98,150
22	53,948	38,700	27,518	108,150			10,000	10,000	98,150
23	53,948	38,700	27,518	108,150			10,000	10,000	98,150
24	53,948	38,700	27,518	108,150			10,000	10,000	98,150
25	53,948	38,700	27,518	108,150			10,000	10,000	98,150
26	53,948	38,700	27,518	108,150			10,000	10,000	98,150
27	53,948	38,700	27,518	108,150			10,000	10,000	98,150
28	53,948	38,700	27,518	108,150			10,000	10,000	98,150
29	53,948	38,700	27,518	108,150			10,000	10,000	98,150
30	53,948	38,700	27,518	108,150			10,000	10,000	98,150
31	53,948	38,700	27,518	108,150			10,000	10,000	98,150
32	53,948	38,700	27,518	108,150			10,000	10,000	98,150
33	53,948	38,700	27,518	108,150			10,000	10,000	98,150
34	490,117	351,589	27,518	782,302			10,000	10,000	820,567

EIRR = economic internal rate of return, OEM = Operations Evaluation Mission.

**EIRR = 4.6%**

Source: Staff estimates based on OEM's tracer survey conducted in January 2002.

## SOCIOECONOMIC IMPACT

**Table A10.1: Graduates' Perceptions of Improvement in Socioeconomic Status**

Extent of Improvement	Graduates from Public Project Schools		Graduates from Sample Private Schools		Total	
	No.	%	No.	%	No.	%
Significantly Improved	278	93.9	82	89.1	360	92.8
Moderately Improved	13	4.4	6	6.5	19	4.9
No Improvement	5	1.7	4	4.3	9	2.3
<b>Total</b>	<b>296</b>	<b>100.0</b>	<b>92</b>	<b>100.0</b>	<b>388</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

**Table A10.2: Monthly Salary Range of Graduates**  
(\$)

Salary Range	Graduates from Public Project Schools		Graduates from Sample Private Schools		Total	
	No.	%	No.	%	No.	%
>100	47	16.3	8	9.0	55	14.6
76-100	85	29.5	26	29.2	111	29.4
51-75	133	46.2	47	52.8	180	47.7
<=50	23	8.0	8	9.0	31	8.2
<b>Total</b>	<b>288</b>	<b>100.0</b>	<b>89</b>	<b>100.0</b>	<b>377</b>	<b>100.0</b>

Source: Tracer survey in January 2002.

Table A10.3: Average Monthly Salary of Graduates by Subject Area

Subject Area	Public Project Schools		Sample Private Schools	
	Average Monthly Salary (\$)	Respondents (no.)	Average Monthly Salary (\$)	Respondents (no.)
Agriculture	85.0	71		
Construction	89.7	88	87.7	11
Health	80.6	31	73.7	74
Mechanical Course	76.1	39		
Secretarial Course	73.6	16		
Tourism	72.8	43		
<b>Total</b>		<b>288</b>		<b>85</b>
<b>Weighted Average for Construction and Health</b>	<b>87.3</b>		<b>75.5</b>	
<b>Weighted Average for Six Areas</b>	<b>82.3</b>			

Source: Tracer survey in January 2002.