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NEPAL

Education and Human Resources Sector Assessment

May 1988

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Improving the Efficiency of Educational Systems

Coordinated for His Majesty's Government of Nepal by the Ministry of Education and Culture with the United States Agency for International Development

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Agency for International Development
Bureau for Science and Technology
Office of Education
Contract No. DPE-5823-C-00-4013-00
Project No. 936-5823

NEPAL

Education and Human Resources Sector Assessment

May 1988

Coordinated for His Majesty's Government of Nepal by the Ministry of Education and Culture with the United States Agency for International Development

PN-ABD-820
26415
1825

ACKNOWLEDGEMENTS

The Improving the Efficiency of Educational Systems (IEES) project gratefully acknowledges the contributions of the many individuals who willingly gave their time and assistance to support the preparation of this Education and Human Resources Sector Assessment for Nepal.

This extensive work would not have been possible without the generous assistance and endorsement of Dr. Narsing N. Singh, Secretary of the Ministry of Education and Culture (MOEC). The Secretary, his Steering Committee for this assessment, many officials of the MOEC, and representatives from other ministries met with team members on numerous occasions to help them in many ways. Mr. Uttam Amatya served in a highly effective liaison role between the IEES team and the MOEC, and Dr. Jean Meadowcroft provided excellent assistance on behalf of the United States Agency for International Development Mission to Nepal. IEES would additionally like to thank Ms. "Mike" Malone and Mrs. Damaris Zehner for their extraordinary efforts in producing the draft and this final document over the past several months.

The chapters were written by the individuals cited below, with final editing the responsibility of the Team Leader.

Chapter 1. Executive Summary (Victor J. Cieutat and Mary Joy Pigozzi)
Chapter 2. Economic and Financial Analysis (Walter W. McMahon, Jay S. Salkin, and Tirtha Bahadur Manandhar)
Chapter 3. Education System Management (Victor J. Cieutat and Om Prakash Gupta)
Chapter 4. Primary Education (Barbara Butterworth and Chuda Nath Aryal)
Chapter 5. Secondary Education (George H. Axinn and Chuda Nath Aryal)
Chapter 6. Teacher Education (Gajendra Man Shrestha)
Chapter 7. Vocational and Technical Training (Suresh Raj Sharma)
Chapter 8. Nonformal Education (Mary Joy Pigozzi)
Chapter 9. External Assistance (Mary Joy Pigozzi)

May 23, 1988

Currency Equivalents
(as of July 1987)

Rs 1.00 = US $0.0465
US $1.00 = Rs 21.50

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ACRONYM LIST

ADA	Average Daily Attendance
ADB	Asian Development Bank
AEI	Assistant Education Inspector
AES	Adult Education Section
AGP	Age Group Population
APEID	Asian Programme of Educational Innovation for Development
AR	Activity Ratio
ARNCE	All-Round National Committee on Education
ARPC	Administrative Reforms Planning Commission
BRIDGES	Basic Research and Implementation in Developing Education Systems
BSLD	Basic Services for Local Development
CBS	Central Bureau of Statistics
CEDA	Centre for Economic Development and Administration
CERID	Research Centre for Educational Innovation and Development
CRED	Central Regional Education Directorate
CTSDC	Curriculum, Textbook and Supervision Development Centre
DCVI	Department of Cottage and Village Industries
DEC	District Education Committee
DEI	District Education Inspector
DEO	District Education Office/Officer
DTVE	Directorate of Technical and Vocational Education
EGWN	Equality for Girls and Women in Nepal Project
EHRD	Education and Human Resources Development
ERD	Education for Rural Development (SETI Project)
FOE	Faculty of Education
FRG	Federal Republic of Germany
GDI	Gross Domestic Investment
GDP	Gross Domestic Product
GNI	Gross National Investment
GNP	Gross National Product
GTZ	Technical Assistance Agency of the Federal Republic of Germany
HMG	His Majesty's Government
IAAS	Institute of Agriculture and Animal Science
IDA	International Development Agency (World Bank)
IDRC	International Development Research Centre

IDS	Integrated Development System
IEES	Improving the Efficiency of Educational Systems Project
IHDP	Integrated Hill Development Project
IIP	Instructional Improvement in Primary Schools Project
IIR	Institute for International Research, Inc.
ILO	International Labour Organization
IMF	International Monetary Fund
IOE	Institute of Education
IOF	Institute of Forestry
JEMC	Janak Educational Material Centre
JICA	Japanese International Cooperation Agency
JTA	Junior Technical Assistant
MOE	Ministry of Education
MOEC	Ministry of Education and Culture
MOF	Ministry of Finance
MOGA	Ministry of General Administration
MOLJ	Ministry of Law and Justice
MPLD	Ministry of Panchayat and Local Development
MTC	Mechanical Training Centre
NASC	Nepal Administrative Staff College
ND	No Date
NEC	National Education Committee
NEPC	National Education Planning Commission
NESP	National Education System Plan
New ERA	New Educational Reform Associates
NFE	Nonformal Education
NGO	Non-Governmental Organization
NNEPC	Nepal National Educational Planning Commission
NORAD	Norwegian Agency for Development
NPC	National Planning Commission
NPCS	National Planning Commission Secretariat
NRB	Nepal Rastra Bank
NSTA	National Skill Testing Authority
OCE	Office of the Controller of Examinations
PACT	Private Agencies Collaborating Together
PDLT	Panchayat Development and Land Taxes
PEP	Primary Education Project

PMU	Primary Materials Unit
PROAP	Principal Regional Office for Asia and the Pacific
PSTU	Primary Supervision Training Unit
RC	Resource Center
RDO	Regional Directorate of Education
RED	Radio Education Division
REO	Regional Education Office
RETT	Radio Education Teacher Training Project
RP	Resource Person
SATA	Swiss Agency for Technical Assistance
SEDU	Science Education Development Unit
SEP	Science Education Project
SERD	Seti Education for Rural Development
SETI	Education for Rural Development in Seti Zone
SIR	Student Involvement Ratio
SIU	Southern Illinois University
SLC	School Leaving Certificate
SMC	School Management Committee
SMT	Science Master Teacher
T.U.	Tribhuvan University
TA/DA	Travel Allowance/Daily Allowance
TQR	Teacher Question Ratio
TRUGA	Training for Rural Gainful Activitues
TVEC	Technical and Vocational Education Committee
TVED	Technical and Vocational Education Directorate
UCEP	Underprivileged Children's Education Programs
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFPA	United Nations Family Planning Association
UNICEF	United Nations International Children's Education Fund
UMN	United Mission to Nepal
UPE	Universal Primary Education
USAID	United States Agency for International Development
USC	Unitarian Service Committee
WEI	World Education, Inc.
WRED	Western Regional Education Directorate

1. EXECUTIVE SUMMARY

This is the executive summary of the Nepal Education and Human Resources Sector Assessment. The initial draft of this assessment was completed in August of 1987 with subsector chapters on economic and financial analysis, education system management, primary education, secondary education, teacher education, technical and vocational training, nonformal education, and external assistance. The initial draft was revised and edited in the U.S., and then reviewed, revised, and approved in Nepal during February 1988. This is the final version.

This work was performed with the guidance of a Steering Committee selected by the Ministry of Education and Culture (MOEC). It was jointly sponsored by His Majesty's Government (HMG) and the United States Agency for International Development (USAID) Contract No. DPE-5823-C-00-4013-00. The USAID contract provides funds for the Improving the Efficiency of Educational Systems (IEES) Project, a ten-year effort to enhance local capabilities for the more efficient use of educational resources in several developing countries.

The Steering Committee members are listed in Annex 1.1. The eleven members of the joint Nepalese-U.S. team that prepared the draft report at Kathmandu, between June 10 and August 14, 1987, are cited in Annex 1.2. Each chapter was reviewed by professional educators assigned by the MOEC. The individuals who performed this task are listed in Annex 1.3. The information for this document is based on interviews in Nepal with numerous knowledgeable and experienced Nepali educators, a review of over 230 relevant documents and reports, and the guidance of the members of the Steering Committee. The relevant interviewees and bibliographies are cited in annexes to the individual chapters.

The long-term objective of this sector assessment is to assist HMG with the more efficient allocation of government and external assistance agency resources throughout the education sector, and to identify ways to develop local capacities to continue this improved approach to the allocation of resources. To achieve this long-term objective the assessment identifies needs, strengths, and constraints within each subsector, and makes data-based recommendations for the more efficient use of resources to achieve HMG's goals.

The general context for the education sector is set forth in Section 1.1, and a number of policy concerns are identified in Section 1.2. In Section 1.3 there is a synthesis of the recommendations of the subsectors, and Section 1.4 presents the subsector recommendations from each chapter.

A preliminary synthesis of the subsector recommendations and a draft report of all chapters were reviewed by the Steering Committee and the team members during the week of August 7-14, 1987. Based on the review, an expanded and more detailed revised report was prepared, reviewed in Kathmandu, and then presented to the Steering Committee on February 5, 1988. It was approved at this time.

Several general comments are in order as part of this introduction. The educational system has efficiencies as well as inefficiencies. For example, the Adult Education Section of the MOEC employs a very efficient method for using its limited resources to provide literacy training to adults. The number of years of formal schooling it takes to produce a single primary school graduate, however, is high as a result of repetition and dropout rates.

There is a great deal of educational innovation and it is encouraged at every level. For example, the Primary Education Project has had success with clustering schools around a resource school. A variety of inservice teacher training programs is in operation. Some have been developed by externally funded projects and others by the MOEC. All include innovations adapted to the Nepalese context. The results of the sector assessment indicate a need for quality improvement throughout the system, and for incorporation of successful innovations.

The MOEC's decision to focus on primary education is appropriate. There are plans to provide universal primary education by the year 2000 A.D. The current strategy under consideration to meet this goal is very expensive and may need revision.

The focus on primary education should not exclude consideration of related needs for secondary education. The implementation of an expanded primary system will place heavy demands on the secondary system within a few years. These should be anticipated and planned for.

Two areas in need of further study impressed the sector assessment team. The first relates to the costs and financing of higher education. Although an examination of this subsector was not within the scope of work for this assessment, the sector-wide data collected and the political events at the University during the summer of 1987 indicate a need for both further study of the unit and cycle costs of higher education and possible additional sources of finance.

The second area for which the team noted a need for further study is with regard to the costs and likely outcomes of the selected approach to technical and vocational education. There is no question of the need for a larger and better-trained workforce. There is some concern, however, that the costs of the selected approach may not have been fully examined.

1.1 CONTEXT

Formal education is the responsibility of the MOEC. The system, which is decentralized into the 75 distr'cts, is coordinated and managed from the MOEC's offices at Kathmandu. Although considerable progress has been made in the last 25 years, management of the MOEC could still be improved.

In May of 1987 HMG made a commitment to a basic needs approach to development. This includes a decision to meet Asian standards for basic education throughout Nepal by the year 2000 A.D. This means that there should be universal access to primary education in a little over a decade. The MOEC currently reports a gross enrollment ratio of only 77 percent for primary students.

The serious economic situation facing the country means there may not be sufficient funds to meet the goals set forth by HMG. This is further complicated by a government decision to encourage the education sector to secure its own financing, from sources other than government, for its programs.

1.2 POLICY CONCERNS

A major goal of the IEES project is to help nations reformulate policies to improve the efficiency of their education systems. While the following chapters in this document address each subsector, this executive summary synthesizes results across all subsectors. This particular section briefly summarizes seven areas of policy concern identified by this sector assessment.

1. **Planning and Management Capacity.** Strengthening of planning and management capacity is needed throughout the sector to enable individuals to develop appropriate and realistic strategies to meet sector goals. This would also help the MOEC to better utilize internal resources and external assistance in support of educational activities.

2. **Instruction.** Significant resources are already being devoted to improving educational processes. There are serious concerns, however, about the amount of learning actually occurring. There is a need for more attention to the instructional process to improve its quality and efficiency. The data from this assessment suggest that a multi-faceted approach to improved instruction would be most effective.

3. **Data Collection and Analysis.** The availability of more reliable and current data, and the increased capacity to perform timely analyses, would improve databased planning and decision-making throughout the sector. The basic procedures for collecting and analyzing data already exist and could be improved easily. Both short-term and long-term training in data analysis could be considered.

4. **Decentralization.** Much of the formal education system is decentralized, but there is a pressing need to clarify roles and procedures surrounding decentralization. Unlike many countries that are just beginning to consider decentralization, Nepal has a history which provides good data for policy analysis and policy reformulation in this area, and an excellent foundation upon which to build.

5. **Quality Control of Educational Activities at All Levels.** There is a limited communications infrastructure, a lack of clarity regarding where responsibilities lie, a supervisory structure that is undergoing significant change, and variability in student attendance and teacher qualifications. This means that there are few mechanisms to control the quality of education at all levels. This is especially so in the primary and secondary schools. Instituting procedures to identify obstacles to quality could provide valuable information to guide future investments in support of improved learning.

6. **Educational Financing.** Educational activities are financed from a wide range of sources, many of which appear to have been underestimated in the past. A better understanding of the sources and magnitude of available resources for each level in the formal system (primary, secondary, higher, and technical and vocational education) would support the development of more feasible plans.

7. **More Effective External Assistance Agency Support.** The MOEC is fortunate to have a number of external assistance agencies which support some of its activities. There needs to be a better balance between the short-term needs of external assistance agencies and the long-term goals of HMG and the MOEC.

1.3 SYNTHESIS OF RECOMMENDATIONS

A pictorial overview of the synthesis is shown in Figure 1.1 on the following page. This figure shows the relationships among the following components of the synthesis: the *overall goal* of HMG to meet the basic needs in education by the year 2000 A.D., five *sub-goals* in support of this long term goal, and eighteen *action recommendations* derived from this assessment to support sub-goals in the short-term and the overall goal in the long-term. This is a synthesis of the team's findings and major suggestions for selected actions that will have the highest payoff in the education sector. It is not, however, meant to be an implementation plan for all activities in education.

The overall goal of HMG for education is to meet the basic needs of the people of Nepal by the year 2000 A.D. The program to attain this goal is set forth in the Seventh Plan and the Basic Needs document. The most challenging aspect of the basic needs plan, for the education sector, is to achieve universal primary education. This synthesis emphasizes achievement of sub-goals in support of this major goal, and specific action recommendations to support each of the five sub-goals.

The five sub-goals identified that would most efficiently and effectively support the overall goal in Figure 1.1 are the following:

1. Better Administration and Management
2. Expanded Access to Primary Education
3. Improved Primary School Instructional Quality
4. Broadened Funding Base
5. Enhanced Post-Primary and Employment Opportunities

Each of the eighteen action recommendations supports one of the five sub-goals shown in Figure 1.1. All of these actions recommendations are based on data presented in the subsector chapters. These sub-goals and their associated action recommendations are discussed below.

SUB-GOAL 1: BETTER ADMINISTRATION AND MANAGEMENT

The limited resources in the education sector, even assuming increased support from HMG, peoples' participation, and external assistance agencies, will still require better administration and management to ensure efficient allocation for their maximum utilization and effectiveness (Sub-Goal 1).

Figure 1.1

Overview of Synthesis

GOAL	SUB-GOALS	ACTION RECOMMENDATIONS
Basic Needs by the Year 2000 A.D.	1. Better Administration and Management	1.1 Develop Overall Basic Plan 1.2 Expand and Improve Data Bases 1.3 Assess Current Staff Capabilities 1.4 Provide Training
	2. Expanded Access to Primary Education	2.1 Expand Access for Underserved Groups, Especially Girls 2.2 Improve Teacher Allocation 2.3 Continue Plans to Establish New Schools
	3. Improved Primary School Instructional Quality	3.1 Elaborate Present Curriculum 3.2 Improve Instructional Materials 3.3 Coordinate Teacher Education with Curriculum
	4. Broadened Funding Base	4.1 Reallocate HMG Resources More Efficiently 4.2 Expand Peoples' Participation 4.3 Identify Appropriate External Assistance
	5. Enhanced Post-Primary and Employment Opportunities	5.1 Improve and Expand Skills Training 5.2 Expand Adult Education 5.3 Enhance Quality of Secondary Education 5.4 Facilitate Private Secondary School Expansion 5.5 Maintain Standards for Public and Private Secondary Education

Action Recommendation 1.1: Develop Overall Basic Plan

For education sector activities to be managed efficiently, the first step should be the preparation of a detailed implementation plan which includes all actions required for attaining HMG's objectives in the sector. This plan should specify all activities to be implemented, and the financial and human resources needed to support them. The plan then can guide the allocation of all resources to make the best use of all funds in the sector. This synthesis contains suggestions for some components of such a plan, but it should be understood that it is not suggested as HMG's overall planning document. The kind of plan referred to as needed in this recommendation is a fully operationalized plan based on current HMG education sector goals.

Action Recommendation 1.2: Expand and Improve Data Bases

Planning in every subsector is hampered by a lack of timely, relevant, and accurate information. Quality information on status and resources, as well as feedback for monitoring and evaluation of projects and activities, is needed throughout the sector.

Action Recommendation 1.3: Assess Current Staff Capabilities

Although most of the staff in the sector are well qualified, there may be some specific training needs in the central staff and some serious needs at the school, Headmaster, District Education Officer, and inspectorate levels. These needs, with an emphasis on skills and knowledge required, rather than on formal qualifications, should be addressed as soon as possible.

Action Recommendation 1.4: Provide Training

Needs identified in management and administration should be promptly addressed with in-country training using existing programs and institutions wherever possible. This reduces costs and strengthens the training capacity of national institutions.

SUB-GOAL 2: EXPANDED ACCESS TO PRIMARY EDUCATION

Expanded access requires much more than the construction of additional school buildings. It also requires strategies for using these buildings in a systematic and efficient way, as one of many components of the education system. For example, this might emphasize more participation by girls and other under-served groups, and the better use of teachers (Sub-Goal 2).

Action Recommendation 2.1: Expand Access for Under-Served Groups, Especially Girls

The planned expansion of access should be phased, to the greatest extent possible, so that the needs of presently under-served groups are met first. Existing imbalances in access for girls and for other under-served groups should be reduced as early as possible.

Action Recommendation 2.2: Improve Teacher Allocation

As explained in detail within the primary education chapter, more effective access could be achieved by the improved allocation of currently available teachers. Allocating newly trained teachers on this same basis would also produce additional savings in teachers' salaries as well as increases in access.

Action Recommendation 2.3: Continue Plans to Establish New Schools

The issue of allocation and location of new schools is not addressed directly in the assessment, as HMG already has plans for this activity. It is cited as an important step, however, to emphasize the critical role of school location planning for efficient control of expanded access and for reducing access imbalances.

SUB-GOAL 3: IMPROVED PRIMARY SCHOOL INSTRUCTIONAL QUALITY

It is important that an urgent program to expand access not cause a reduction of educational quality. Expanded access should be accompanied by strong efforts to maintain instructional quality (Sub-Goal 3).

Action Recommendation 3.1: Elaborate Present Curriculum

The present curriculum could better influence the preparation of instructional materials, and the conduct of classroom activities, if certain aspects of it were more refined. The existing teaching objectives could be improved by greater specificity of the behavioral outcomes expected, the amount of curricular content allocated to each grade level, the scope and sequence of the material to be taught, and similar characteristics.

Action Recommendation 3.2: Improve Instructional Materials

Investments in textbooks have been identified in many developing countries as the single most cost-effective investment at the primary school level. Re-design of some of the current textbooks, based on the elaborated curriculum suggested above, could improve achievement without any significant increase in the cost of producing and delivering textbooks. (Any development costs would be incurred on a one-time basis.) Improved textbooks could be accompanied by revised teachers' guides to make the textbooks even more useful to those teachers with limited training and classroom experience.

Action Recommendation 3.3: Coordinate Teacher Education with Curriculum

Some teacher education is reported to be overly academic and not related to the realities of classrooms, especially to those in poor and/or remote areas. It would be very effective if preservice and inservice teacher education were more closely coordinated with revised textbooks, and especially with revised teachers' guides. Teacher education could thus focus more closely on the exact knowledge and skills needed for effective classroom performance.

SUB-GOAL 4: BROADENED FUNDING BASE

A universal primary education program requires large increases in funds, and for this the current funding base is not sufficient. A broadened funding base, involving increased participation of local communities to an even greater extent than at present, is required over the next decades (Sub-Goal 4).

Action Recommendation 4.1: Reallocate HMG Resources More Efficiently

A recurrent theme throughout this assessment is the importance of the more efficient use of existing resources. In order to attain universal primary education, of course, there will have to be considerably more financial and human resources allocated to the education sector. Equally important, however, is the need to use both current and additional resources in the most efficient ways possible. The overall development plan referred to in Action Recommendation 1.1, for example, would enable planners and policy-makers to have an overview of all needs. With this overview, they would be able to reallocate available resources from less important areas to those that are more important. External assistance agency funds, for example, could be shifted from less cost-effective uses to more highly cost-effective applications.

Action Recommendation 4.2: Expand Peoples' Participation

The continued and expanded support of local communities for financing education will be required to achieve universal primary education. This participatory mechanism is already in place in Nepal, because local communities for a long time have been contributing to education by providing school buildings, part of teachers' salaries, textbooks, uniforms, and other related items. The level of this participation will have to be expanded, however, for universal primary education to be achieved.

Action Recommendation 4.3: Identify Appropriate External Assistance

External assistance has long been a major component of the support for education, and its continuation will be important. A strengthening of the relationship between external assistance applications and education sector needs can make even more efficient use of these important funds.

SUB-GOAL 5: ENHANCED POST-PRIMARY AND EMPLOYMENT OPPORTUNITIES

Universal primary education will make available a large number of primary school leavers ready to contribute to national social and economic growth. To anticipate this readiness for gainful employment, and for the consequent pressure on secondary schools and other post-primary training and employment possibilities, early attention of HMG should be directed to enhanced post-primary and related employment opportunities (Sub-Goal 5).

Action Recommendation 5.1: Improve and Expand Skills Training

The development of the modern sector, as well as the agricultural sector, requires a sufficient supply of manpower with appropriate skills. Training for skill areas tied closely to projected manpower demands will require careful planning because of the relatively high costs of technical and vocational training. It is important to have some such training opportunities available to primary school leavers.

Action Recommendation 5.2: Expand Adult Education

The Adult Education Section of the MOEC has developed a very effective set of literacy materials. Adult education is a highly leveraged program because these materials are widely used by many government and non-governmental agencies. Expansion of this program would contribute to sub-goal five, since literate adults are more likely to be employed.

Action Recommendation 5.3: Enhance Quality of Secondary Education

The quality of secondary education can be improved by several measures described in the secondary education chapter. A secondary education system that helps prepare students for the workforce would be more attractive to primary school leavers, and also would contribute to national social and economic growth. Measures to improve the examinations system could include steps such as separating the School Leaving Certificate examination from its present dual purpose of a certification examination for secondary schools and an entrance examination for higher education. Other action recommendations in the secondary education chapter relate to improving instructional quality and decentralizing financing.

Action Recommendation 5.4: Facilitate Private Secondary School Expansion

Universal primary education will place considerable pressure on the limited secondary education facilities. HMG plans for the private sector to meet this increase in demand. One way to do this would be to encourage this expansion by developing guidelines for establishing new private schools, thus facilitating this private sector growth.

Action Recommendation 5.5: Maintain Standards for Public and Private Secondary Education

In order to maintain quality control of the expanding secondary school system, which is certain to grow following universal primary education, steps will have to be taken to monitor the instructional processes as well as the outputs of these schools. Accreditation based on standardized teacher skills, facilities, instructional materials, and student achievement would be one way to maintain standards.

1.4 SUMMARY OF SUBSECTOR RECOMMENDATIONS

This section presents all of the recommendations from each subsector chapter. Data to support these recommendations are given within the individual chapters.

ECONOMIC AND FINANCIAL RECOMMENDATIONS

These recommendations are based on the evidence and conclusions in Chapter 2 and are consistent with the recommendations made by the National Education Committee (1983) study, *The Effects of New Trends in Educational Financing on the Plan Objectives, Equity, Quality, and Efficiency.* Chapter 2 recommendations are

new and more specific with respect to the financing of primary education, and regarding budgeting priorities. In general, both studies are consistent with respect to their overall recommendations.

Budgeting to Improve Allocative Efficiency

The economic and financial analysis has focused on ways to increase the contribution of education to raising per capita income. Based on education's contribution to economic growth and industrialization worldwide, and on the best estimates that can be made in Nepal (Section 2.8.4), it is concluded (Section 2.8.1) that there can be high payoffs by increasing the investment in primary and lower secondary education. This offers guidance in that new budget increments do not have to be made on an ad hoc or external assistance agency interest basis, but should be made where the returns are greatest in relation to the costs. Depending upon the validity of the assumptions, the rates of return to investment in primary education in Nepal, which include the contribution it makes to agricultural output, may well be over 100 percent, returns to lower secondary 29.1 percent, to secondary 7.5 percent, and returns to different university programs vary between 8 and 21 percent. Even if the assumptions for these rates of return are not totally valid, there probably still is a sound economic justification for supporting the rapid achievement of universal primary education as part of a balanced domestic investment strategy and as already set out in objectives of the Basic Needs Strategy, and for seeking to attract external assistance agency interest to help with this aspect of the strategy.

Recommendation 1. Since the evidence shows that the highest growth payoff is to primary and lower secondary education, the goals of faster per capita economic growth as well as more equitable distribution through greater equality of educational opportunity can both be served simultaneously by relatively more rapid increases in investment here.

Such a policy does not cause a conflict between efficiency and equity, but instead serves them both. Primary and lower secondary education also is highly correlated with the amount of learning through experience on-the-job by craftsman and in industry, and is a key part of a balanced investment strategy that best develops the kinds of human resource base most needed for industrialization.

Improving Educational Financing

Recommendation 2. To reduce the inefficiency associated with high drop-out rates at primary and lower secondary, the current grants-in-aid system that reimburses teachers' salaries directly should be replaced by a school aid formula more clearly based on the average daily attendance (ADA) of children in the school. This school aid formula furthermore needs to have two additional features:

1. A provision that matches all funds per child in ADA that are raised locally by the school tax on property (or some other non-regressive tax handle) so that the local panchayats have an incentive to support the schools.

2. A provision that provides a floor level of expenditure per child in ADA, since some districts have little or no local property.

This recommendation has implications for encouraging local initiative in education with a degree of involvement of local bodies in educational planning, monitoring, and financing. The next step would be to undertake more detailed study of this proposal, for example, of the method of verifying ADA in the schools for some unannounced sample period during the end of the term and the method for determination of the floor-level of expenditure per child in ADA to be guaranteed by the Central Government.

Recommendation 3. The Ministry of Education and Culture, in cooperation with the Ministry of Finance, should form a joint committee or task force to recommend specific workable ways to give local primary and lower secondary schools an independent and non-regressive revenue base that encourages higher retention rates and higher quality in the local public schools.

To finance the universal primary education under the Basic Needs Strategy, and to encourage local initiative, an independent and stable source of revenue for the local schools needs to be designated in addition to what the Central Government will contribute. The designated source needs to be realistic and equitable, and therefore should not permit the taxing of only the poorest persons in each village. Education is an investment in the economic growth of the nation, and not a consumption benefit to the parents. The parents do not benefit from the education but instead reduce their consumption by forgoing the production of their children in farming and work at home while they are in primary and lower secondary schools. This is a large burden on the parents in subsistence agriculture, and a major cause

of the high drop-out rate. What specifically can be done needs to be worked out by such a joint committee, of course, but if the experience in other countries is any guide, this is a matter in which the MOEC needs to take the initiative.

One possibility would be to designate and expand the scope of the urban property tax based on the value of urban and rural real estate including all larger buildings. The local panchayats could be encouraged to vote a separate "millage rate" (i.e., an extra percentage added to a tax already being levied) that is designated for the exclusive use of education. These funds could then be turned over to the local primary and lower secondary School Management Committee. These funds would need to be provided only on the condition that they be used to replace any primary or lower secondary fees still charged locally and which encourage drop-outs. They could also be used to cover building costs, the 25 percent of lower secondary salaries that must be covered at the local level, and to improve quality. This would give the local panchayats some initiative, and an interest and a capacity to help improve the efficiency and quality of the local schools.

Authority to do this already exists under the Decentralization Act of 1982. No local panchayats have used this option, however, in part because the value of urban and rural structures (for example) has not been clearly designated as the "tax handle." The scope of such a real estate tax would need to be expanded to be sure that it included the value of all new urban and rural structures not now on the tax rolls.

Improving Allocative Efficiency

The most important and basic requirement for efficiency in human resource development for industrialization as a whole has been addressed by Recommendation 1 above. The most basic requirement is to have a broader base of literate, trainable labor available to agriculture, small business, and industry. There also is a need for advanced technical manpower in areas where Nepal has a longer run strategic advantage, such as hydroelectric power, irrigation, and tourism, and a strategic need for efficient managers in the public and private sectors.

Beyond this there must be developed intermediate skills of all types. Many of the costs of doing this are developed in the section on costs (2.6) above. Good current data exist on the returns to the major levels and types of education and in the different types of employment (industry, civil service, agriculture, etc.). When the 1986-1987 Household Budget Survey data are available they will provide further information on the return to investments in education at all levels.

The MOEC is faced with competing demands from many different subsectors of education. Most programs usually want more resources, and it is very difficult to manage these competing demands and to make decisions on the basis of what is best for economic growth and widescale employment as called for by the Seventh Five Year Plan. For an objective source of facts relevant to budget decisions, an independent, comprehensive data source and a stronger analytical capability is needed in the MOEC.

Recommendation 4. The MOEC should develop access to independent sources of data such as the 1986-1987 National Household Budget Survey, tracer studies, and national manpower surveys, and further develop its capacity to analyze these sources for help in decision-making based on the returns to education, thereby helping the education sector investments relate more closely to the needs of the economy. Such data would permit refinements to current estimates of social rates of return for the different levels and types of education. This also would provide independent evidence about returns in relation to costs, where the shortages are most acute, and hence where the relative increments are most needed for the use of scarce resources among competing programs.

Recommendation 5. With respect to over expansion of separately tracked secondary schools offering training in narrowly defined specific skill areas, caution should be used.

Recommendation 6. Continuing emphasis should be given to providing special incentives and facilities for encouraging women's increased participation in education. Women are an underutilized resource in the nation. Their potential contributions to industrialization, business skills, teaching, and the professions are being underutilized. The education of women through the lower secondary level also can make significant contributions to reduced population growth.

In conclusion, the above six recommendations show that the economic evidence on the relative contributions of different levels and types of education to per capita economic growth can offer a great deal of insight and guidance to efficient and equitable resource allocation in developing the nation's large human resource base. However, there are also insights into the future about long run strategies related to comparative economic advantages such as in hydroelectric power, irrigation, and tourism, that need to be taken into account in developing the highly skilled manpower needed to support these areas.

EDUCATION SYSTEM MANAGEMENT RECOMMENDATIONS

The following recommendations, which are listed in priority order, focus on the major concerns related to management of the education system. They are derived from the analysis of needs, constraints, and conclusions set forth in Chapter 3.

Recommendation 1. Improve coordination between existing data collection and analysis activities. A major result of this improvement will be enhanced support for more informed policy development by the MOEC, and for better work by the Planning Division. The consolidation and sharing of current data collection and analysis will make more efficient use of staff and personnel now working independently on these activities. More fully coordinated collection of data will also enable the MOEC to function more effectively with any agency concerned with manpower planning.

This coordination should include authority for data collection, so that District Education Offices will be compelled to submit their data forms on time. Coordination should include data sharing and cooperation with regard to data collection. This way, schools' evaluation and routine statistical data could be used by either unit. Also, the present duplication of data collection will disappear and cost savings will be realized.

Implied in this recommendation is an analysis of staff skills, and the providing of any necessary training. Based on informal discussions, training in data analysis and reporting is likely to comprise an area of need. Also, additional hardware and software may be needed.

Recommendation 2. Decentralize more administrative tasks and responsibilities. More delegation of responsibility is necessary for the improved management that will be required for current tasks of the MOEC as well as for the management of the complex goal of attaining universal primary education by the year 2000 A.D. Staff at the middle and lower levels must have clearly defined areas of responsibility, within which they feel free and responsible to make decisions. This will require endorsement and implementation from the highest levels in the MOEC if it is to be successful, and it also implies the surrender of some influence at the higher levels in the organization.

At the level of the District Education Offices, and the schools within their jurisdictions, there should be less dependence upon higher administrative levels for decision-making within certain well defined bounds. The type of change that would

improve classroom management, for example, would be to allow headmasters to dismiss temporary or permanent teachers not fulfilling their teaching obligations.

As part of the process to encourage more local participation in this decentralization, the MOEC could monitor the amounts contributed by the local communities. The levels of local contributions could be used to guide the payment of central contributions, with more funds going to those communities that give more local support. Also, this information could be used to give public recognition to communities that support their schools most generously.

Recommendation 3. Strengthen the Programme and Evaluation Section of the Planning Division. The Programme and Evaluation section should maintain close contact with all external assistance agencies operating in Nepal, and keep these agencies informed of HMG's priorities in the education sector. When presented with data-based identification of needs in the education sector, most external assistance agencies will be willing to modify their own priorities to best meet the development needs of Nepal. Such coordination also will avoid duplication of activities among these agencies, thus making more effective use of this major source of funds in the education sector.

Because of the need to meet the universal primary education target, the MOEC should make additional personnel commitments to the section responsible for this task. Achievement of this task will also be assisted by the improved data that will be available from the implementation of Recommendation 1, and will be helped by the better planning that these data will allow.

Recommendation 4. Improve staff incentives by relating rewards to effective performance. The performance evaluation system must reward effective performance of individuals if the education management system is to function effectively as a whole. "Effective performance" has to be clearly defined to include individual behavior that enhances system efficiency. An extreme example is the problem with teacher absenteeism, which is reported to occur at alarmingly high rates in some schools. If teachers were not paid when they did not report to school and remain through the day, absenteeism would decrease. This might not ensure effective teaching, but it would be a step in the right direction.

In addition to financial awards, public recognition of outstanding performance can be a strong motivator for effective performance if everyone understands the basis for making the awards. Such awards made on the basis of personal

friendships, for example, are relatively meaningless when compared to those made on the basis of outstanding contributions to education.

Recommendation 5. Reduce staff turnover. Policy changes can be made that will reduce staff turnover, and will result in more effective performance. One example of such a policy change would be to shift some of the key positions in the MOEC from the administrative cadre to the technical cadre. The District Education Officers would be a good example of the type of position that could be shifted. Other policy changes could focus on improving the incentive system, as cited in Recommendation 4, so that remaining in the MOEC becomes a more attractive career for the individuals who might otherwise seek better opportunities outside the Ministry.

Recommendation 6. Conduct a training needs analysis. A training needs analysis should be conducted to identify any lack of knowledge and skills among the central staff of the MOEC, the District Education Officers, the inspectors, the headmasters, and the teachers. As stated in this chapter, qualifications are less a problem than lack of incentives for the central staff. Nevertheless, there may be some sections with personnel who require training in specific areas. With respect to the District Education Officers, inspectors, and headmasters, however, there seems to be general agreement that many of them lack the skills and knowledge required for the effective performance of their duties. (The needs for teacher training are covered in Chapter 6.)

This training needs analysis should not be based on a survey of formal qualifications, but instead should be based on an assessment of actual knowledge and skills possessed by the individuals. For positions where there are large numbers of incumbents, such as District Education Officers, inspectors, and headmasters, a sampling of the total pool would be sufficient to identify generic training needs, thus reducing the costs and time needed for such an analysis. One outcome of this analysis might be a transfer of staff within the MOEC so that knowledge and skills are more closely related to job requirements. Another possible policy option that might result from implementation of this recommendation could be the establishment or adaptation of a training institution for MOEC administrators, depending on the training needs identified (see following recommendation).

Recommendation 7. Train staff with on-site programs, using existing institutions, in specific areas identified by the training needs analysis. In order for the training to be cost-effective, it should all be done in Nepal. In addition to savings in travel and related costs, on-site training is less attractive to individuals who want to attend training programs for non-professional reasons.

Whenever possible, existing programs should be used as the first choice. There are a variety of programs cited in this chapter that might be considered at the MOEC itself, the Ministry of General Administration, the Nepal Administrative Staff College, and the Faculty of Education at Tribhuvan University. If existing training programs are not available to meet the identified needs, then the second choice should be the modification of existing programs. The third choice should be the setting up of new programs to suit these needs, but this should be done within existing in-country institutions and using available local instructors whenever possible. This not only is a three-step approach which minimizes training costs, but it also builds in-country training capabilities. Out-of-country training should be used only when none of the above three types of training are available. Out-of-country training is very expensive. Even if the funds for such training are loaned on a concessionary basis by external assistance agencies, it involves training which is often not suited to the local setting with respect to content and cultural sensitivities, and it does not contribute to the strengthening of local training institutions.

Finally, the training programs should use competency-based evaluations for course completion. Certification should be based on the demonstrated acquisition of skills and knowledge and not on class attendance. This implies a specific development of a curriculum in terms of objective behavioral outcomes related to job performance, and less emphasis on theory and overly academic instructional content. The objective of each program should be to improve job performance of course completers, based on the skills and knowledge identified by the training needs analysis advocated by Recommendation 6.

PRIMARY EDUCATION RECOMMENDATIONS

To achieve universal primary education by the year 2000 A.D., the government has decided to: (1) assure universal access to schools for all children; (2) promote universal enrollment of all children; (3) promote universal retention of all children through Grade 5; and (4) improve the quality of primary education. This demands

careful planning and efficient use of resources if these objectives are to be achieved. The following recommendations are not exhaustive; they do not address every area of need in primary education. Rather, they recognize that resource constraints will not allow the government to act simultaneously in all areas of need, but instead that the government must emphasize those areas where the investment of limited resources is likely to have the greatest impact. The recommendations assume that improving the quality of instruction is key to meeting many of these objectives, to encouraging out-of-school children to enroll in school, and to reducing drop-out and repetition rates. When children and parents believe that children are becoming proficient in reading, writing, and arithmetic through high quality instruction, then children will be motivated to come to school and stay through the primary cycle.

As mentioned earlier in this chapter, improving the quality of instruction will require multiple interventions. These include the improvement of instructional materials, the training of teachers, the development of a professional support network for teachers and other teacher incentives, and enhanced financial and educational community support for schools. Such multiple interventions present the government with an overwhelming task. Therefore, these recommendations identify strategies that are believed to be the first and most critical step to improving the quality of education. They identify the improvement of instructional materials as the most crucial need of primary education and recommend that resources first be allocated to meeting this need. Teacher training and support become effective when teachers have quality materials with which to work. The recommendations then identify ways to improve the administrative support system and to encourage local initiative in seeking ways to expand primary school enrollments. There is also a suggestion for ways to reallocate resources to finance the earlier recommendations and a final recommendation for more extensive use of data analysis and policy studies to support the planning and policy making process.

These recommendations identify priority areas for government action. This does not mean that other areas such as teacher training (also addressed in Chapter 6), the improvement of physical facilities, or the provision of incentive systems to out-of-school children, are unimportant but rather that they can be more effectively accomplished once these priority recommendations have been implemented.

Improved Educational Materials

Recommendation 1: Develop the specific skills, attitudes, and knowledge to be learned by primary school children, based on the general objectives of the primary curriculum. The primary curriculum presents broad outlines of what is to be covered in Grades 1-5. Specific steps in the form of detailed, sequential objectives related to skills, knowledge, and attitudes now need to be developed to support the curriculum. The specific objectives should bridge the gap between the general objectives and the textbook material and activities. These specific objectives, in fact, are needed to make the textbooks or other instructional materials more effective for helping children develop basic literacy and attain the other objectives of the curriculum. The language arts and mathematics curricula require special attention since they form the core of the literacy skills. The task is complex because it involves the application of theories of learning, cognitive development, and curriculum development to the achievement of these objectives. Once these objectives are specified, they can serve as the basis for the preparation and revision of instructional materials which will expand students' opportunities to learn.

Recommendation 2: Develop instructional materials that are self-directing for teachers and/or students. This should be undertaken upon completion of Recommendation 1. The implementation approach should be incremental. In the first step, more directions could be added to the existing textbooks either as footnotes for teachers or by identifying learning objectives in the body of the textbook and in the introduction to the student exercises. Grammar and skill instruction in language arts could even replace some of the student exercise material. Future steps could involve development of alternative formats that would provide more self-directing materials. These might include the following: instructional guides for teachers, self-instructional workbooks for students, or various combinations of these for use with the existing textbooks. Attention should be given to designing materials that will facilitate instruction and learning in Grade 1, particularly the learning of sounds, letters, simple words, and numbers. Such materials would increase the efficiency of instruction in Grade 1 and thereby reduce the time needed to cover the curriculum and the tendency of many students to spend two years in Grade 1. Quality Grade 1 instructional materials are essential for reducing the high repetition rates at this grade. Materials development should also recognize that many schools have multi-grade classrooms and that within all classrooms students demonstrate a wide range of abilities. At present, it is felt that materials are designed for the average student.

Experience in other developing countries has shown that incorporating a few basic principles of instruction in learning materials produces significant gains in achievement. These kinds of instructions include: requiring active student participation, giving immediate feedback to students on the correctness of responses, dividing learning tasks into meaningful units, providing appropriate examples, and allowing opportunities for practice. Incorporating these principles into the development of well-designed instructional materials can help make teachers more effective. Such materials are especially needed when teachers are untrained and undertrained.

Recommendation 3: The cost of printing and distributing revised and/or additional instructional materials should not exceed the amount currently spent for providing free textbooks. This means that less expensive ways need to be found to produce more materials. There are a number of ways to do this. The following suggestion can serve as an example for further discussion.

The MOEC is planning to renew efforts to recycle textbooks, thus eliminating the cost of their yearly replacement. To effectively recycle books, however, students should not be allowed to take them home but only to use them at school. Parents and students, however, expect children to receive books and it is important to provide opportunities for learning and practice at home. Workbooks which students are given each year could be developed to complement and enhance the material in the textbooks. In addition, workbooks would provide students with paper and opportunities for writing. Since students are often not able to provide their own copy books, workbooks would provide at least a partial solution to this problem. If new textbooks are provided only every three years, for example, the funds saved could be used to publish and distribute the workbooks. The cost of these should be considerably below the cost of textbooks since less expensive paper could be used. The books in the adult literacy series, *Naya Goreto*, are published for a cost of about Rs 6 for nearly a hundred pages of text and illustrations. A hundred pages could provide students with extensive opportunities for reading, writing, and arithmetic practice.

The lack of storage facilities at schools is often a major obstacle to recycling textbooks. If schools are allowed to sell the workbooks for a small fee (e.g., Rs 1), these funds could be used for building storage facilities. Of course, workbooks should be given free to students who cannot afford to buy them, but recovering even part of their cost should make students value the books more and provide the schools with funds for needed storage and other materials.

The Administrative System

Recommendation 4: Implement the school inspectorate system as planned but assure that Assistant Education Inspectors visit schools on at least a bi-monthly basis. In effect, this represents a recentralization of authority in order to increase the accountability of schools and teachers. The implementation of other recommendations will depend on regular contact between schools and Assistant Education Inspectors (AEIs). Since assistant inspectors will have more of a policing role than currently played by supervisors, the standards for holding schools accountable need to be clearly specified in terms that can be objectively measured. For example, objective judgments about teaching quality may be more difficult to make than assessments of teacher attendance or student achievement. In addition, AEIs must have sufficient authority to make decisions consistent with their responsibilities.

The inspectorate system assumes that teachers and headmasters know what to do but, given the absence of accountability and incentives, they are not performing adequately. While this assumption may be partially correct, it seems likely that teachers and headmasters also need opportunities to learn how to do a better job and need access to resources to support their efforts. The next recommendation addresses these needs.

Recommendation 5: Develop policy guidelines and incentives for schools to form their own clusters of Resource Schools and Satellite Schools based on a review of the PEP and SETI Projects. This recommendation will decentralize selected aspects of school administration to balance the trend to centralization, develop cost effective ways to improve access to primary education, and improve the quality of instruction.

The PEP and SETI projects both have developed viable clustering models which provide a mechanism for channeling resources to schools and for giving professional support to teachers. They are, however, implemented from the top down, i.e. from the central and district level. As a result, implementation costs may be prohibitively high when nationwide implementation is considered, and the demand for trained manpower may exceed the capacity of the system. This recommendation proposes that local schools be encouraged to form their own clusters within guidelines provided by the MOEC. Initiative would come from the schools and only those schools wishing to participate would do so.

These clusters would be responsible for: improving the quality of their educational program; and identifying and implementing ways to expand primary school access to under-served populations, particularly girls. Through a system of support, schools can be encouraged to improve, experiment, and solve their own problems.

Obviously, there must be significant incentives for schools to participate. Incentives that would be available only to schools in a cluster could include the following: (1) access to training programs which lead to recognition as a trained teacher; (2) access to supplementary materials such as those developed by SETI, PEP, and IIP; (3) construction funds; (4) funds for existing or additional personnel to implement the cluster program; (5) reassignment of personnel decisions to individual schools (headmasters or SMCs) given proven performance; and (6) permission to levy an education tax through the District Panchayat.

Decentralizing efforts for improving the quality and accessibility of education should be less costly and more efficient than centralized implementation efforts. There are several reasons for this. Local resources are more likely to be utilized when there is local initiative and the utilization of these resources will more likely be efficient. Given the magnitude of the task of providing universal primary education, the MOEC needs to decentralize certain aspects of authority and responsibility to accomplish its goals.

Recommendation 6: Establish resources for program implementation within each District Education Inspectorate. This will enable the DEIs to provide information and training to local leaders and educators for establishing a cluster system and for channeling resources to these schools once the clusters are established. These resources would need to be coordinated with the inspection process but in such a way that efforts to improve it do not conflict with inspection responsibilities. The resources needed for program implementation in the District Education Inspectorate would parallel the growth of the number of schools in the cluster systems.

Recommendation 7: Adhere to the policy that only those students six years of age and above be allowed to enroll in Grade 1. Older students are more mature than under-age children and therefore are more likely to be successful in school. This policy will reduce Grade 1 class sizes and should also reduce the number of students repeating that grade.

Recommendation 8: Expect all districts, according to policy, to administer and be responsible for grading the Grade 5 examination. By controlling the Grade 5 examination, districts can set standards for primary schools both in terms of the literacy skills and the knowledge that students are expected to achieve by the end of primary school. A district level examination can be an incentive for primary schools to increase the time that teachers spend in the classroom and the quality of their instruction. Care needs to be taken, though, that such an examination encourages learning and understanding and not merely the rote memorization of material in the textbooks.

District Education Officers will probably need guidance in how to develop effective tests. A pool of sample questions could be developed to serve as models for district personnel developing the test. Test construction is a skill that should be incorporated in training programs offered to DEI personnel.

Recommendation 9: Create a significant role for headmasters by giving them clearly separate authority from the School Management Committees, by requiring training for their positions, and by increasing their allowances. Headmasters are an important link in the chain of communication and authority which extends from the MOEC to the teachers. Because headmasters are at the school level, they are in the best position to promote instructional quality and expanded access. They cannot do this without appropriate authority, training, and incentives.

Recommendation 10: Train DEO (DEI) staff, particularly District Education Officers (Inspectors), supervisors (Assistant Education Inspectors), accountants, and those responsible for program implementation. These personnel need to be thoroughly familiar with their role responsibilities and the extent of and limitations to their authority. District level staff presently receive no training. This reduces their ability to fulfill their functions, particularly for the planning and budgeting required by the MOEC and for improving the effectiveness of primary schools. As roles are redefined with the introduction of the inspectorate system, training becomes even more essential. If teachers are to be encouraged to teach more effectively, they need to be supported by staff who are competent in their respective areas.

Resources Allocation

Recommendation 11: Reassign teachers within and across districts to adhere to the student/teacher ratios specified in the Basic Needs Document and to expand access in areas without schools. Abolish positions that exceed present needs. The reduction of teacher numbers exceeding the present ratios would provide significant savings to HMG. Reallocating existing teachers to new areas identified in the school mapping study would reduce the cost of hiring new teachers required to implement universal primary education.

Planning and Policy

Recommendation 12: Support the planning and policy making process with analyses of existing data and with policy studies when existing data sources are not sufficient. The objective of universalizing primary education is clear. The most effective means of achieving this objective, however, have not yet been identified in detail. Costs of alternative policies, and their relative benefits, have to be estimated for policy selection to be made. A careful analysis of existing data and policy research studies to address policy issues facing the government would enhance the effectiveness of the planning process.

SECONDARY EDUCATION RECOMMENDATIONS

Development comes through change, which normally requires modification of existing patterns of human behavior in order to evolve new patterns. Such change has a better chance of being accepted and persisting over time if each step is carefully fitted into existing situations, introduced incrementally, and implemented slowly and gradually. The recommendations below, based on the preceding analysis of the subsector, are offered to support this type of development.

Reform Examinations (Recommendations 1-5)

Recommendation 1. Separate the School Leaving Examination from the university entrance examination. The present SLC Examination serves the purpose of testing and certifying students for entry into higher education more than the purpose of testing and certifying students for having completed the secondary level of education. A single mechanism cannot serve both of these purposes effectively. Hence, a new mechanism to carry out the latter purpose (testing and certifying for completion of secondary level education) should be instituted. With due

standardization this would make the SLC an entrance examination for higher education, in which case the name would need to be changed. An alternative would be to institute a university-based entrance examination for higher education, leaving the SLC Examination to perform its current functions. In the absence of either of these two recommended mechanisms, the education system of the country assumes the characteristics of a "straight highway system."

Recommendation 2. Decentralize the administration of the SLC Examination to the regional level. A system in which each development region manages its own examining and certifying procedures would reduce much of the present burden on the Office of the Controller of Examinations (OCE). This would facilitate the introduction of curricula best suited to the needs of the regions. The central standardization of the curriculum and the uniform treatment of schools, while viable for certain matters such as promotion of national interests and culture, is not viable in view of the increasing numbers of students from various strata of life and in view of increasing differentiation of the economic needs of the regions. With regionalization, the present OCE could act as the coordinator of the examinations systems and carry out several improvement measures including the research which now is absent.

Recommendation 3. Continue present efforts to revise and improve the SLC examination. Improvements in question papers, field administration, invigilation, marking of papers, and processing of results should be supported. Recommendations recently made by the Cambridge Syndicate to the Office of the Controller of Examinations should be implemented. These recommendations include improvements such as the following: installation of computer hardware and software; establishment of in-house facilities for small scale confidential and large scale non-confidential document reproduction; redesign of current documentation to allow for an increase in micro-electronic applications for storage, retrieval, and analysis of data; and decentralization of some of the functions of the office to the districts.

Recommendation 4. Validate examinations. Systematic research should be conducted on the validity and reliability of the examination process as a measure of achievement of secondary education, as a predictor of success in higher education, and as a preparation for various employment opportunities.

Recommendation 5. Develop prototype examinations. Prototypes of testing and evaluation materials should be developed on the contents of SLC syllabi, so that teachers as well as students may get instant feedback through their administration to students. Examination graders could also be trained to score the copies of these prototypes.

Decentralize Finance and Administration (Recommendations 6-9)

Recommendation 6. Expand cost-sharing with local communities. Further decentralization of financial support is recommended in order to cope with increasing numbers of secondary school students. If the government continues its grants-in-aid to secondary schools at the present levels, parents and communities should pay an increasing proportion of the total costs. This calls for increased flexibility by government in encouraging individual schools to be accountable to parents for the quality of education. It also calls for academic quality controls on a national level (as through continued supply of ever better textbooks and instructional manuals), and financial incentives to local schools for increased access to secondary education by disadvantaged groups, as well as for expansion of buildings and facilities.

Recommendation 7. Decentralize district level administration. Central government support to district level administration and supervision should also be decentralized. Increased accountability at district levels would be encouraged by decentralization of financial management. Decisions regarding the numbers of supervisors or inspectors, and the amounts of funds for travel to visit schools, could be made within the district. The district, in turn, should be held accountable for verification that government grants to individual schools are utilized for their intended purposes.

Recommendation 8. Fund disadvantaged children. A system of scholarships for disadvantaged children should be created in order to promote equity for members of this group.

Recommendation 9. Change grants-in-aid base. The formula for grants-in-aid to individual schools might be shifted to a multiple-criteria base. Criteria such as the numbers of students, schools' performance on national examinations, proportion of girls enrolled, extent of coverage of remote areas, local investment in science laboratories, and similar indices could be used to determine the size of the grants-in-aid.

Improve Instructional Quality (Recommendations 10-14)

Recommendation 10. Increase practical applications. Continue the gradual modification of textbooks to include more application of principles to practical problem solving. This could include applied areas such as accounting, teaching, tourism, transportation, forestry, manufacturing, and agriculture. The present form of vocational education in the general secondary schools, with objectives of increasing students' appreciation of the dignity of work, does not seem to be achieving its objectives. Alternative approaches should be implemented. These could include options such as arranged work assignments for students during vacation periods; non-curricular tours of industrial, commercial, agricultural, and other workplaces; special programs at school assemblies featuring talks by successful former students who are now succeeding in various jobs; and others. Any further "vocational" classes in the secondary schools should be limited to those vocations which are typically practiced in the locality.

Recommendation 11. Improve and localize teacher training. Short and intensive inservice teacher training programs for those teachers who have university degrees, but no background in pedagogy, should be offered as near to school locations as feasible. Such training programs should get due recognition. High priority should initially be given to training the headmasters, who then could train their teachers while on-the-job.

Recommendation 12. Reward master teachers. Expand the system of national and community rewards for master teachers. These might be based on criteria such as: (1) quality of instruction, (2) creative use of teaching aids, (3) innovative development of instructional materials, (4) high achievement of former students, and (5) unusual length of service. Other incentives and types of recognition should also be developed.

Recommendation 13. Establish school evaluations. The MOEC should establish a school evaluation program conducted by a team of professional experts. These evaluations might even be considered as part of the base for awarding grants-in-aid to individual schools.

Recommendation 14. Establish a materials production unit. A materials production unit should be established to prepare low-cost instructional materials for secondary school use. The Janak Education Material Centre could be expanded to produce more than merely textbooks. Perhaps the CTSDC's materials production unit could be mobilized.

TEACHER EDUCATION RECOMMENDATIONS

The following fourteen recommendations for teacher education are given in priority order. They are based on the analysis presented in Chapter 6.

Recommendation 1. Clarify the status and role of teacher education in the total educational context in order to have it maintain a clear and consistent direction. Considering the crucial role of teacher education in raising the efficiency and effectiveness of the education system, it is important to consider the teacher education program as a national priority. It is also necessary that the minimum essential training be made mandatory for entering and obtaining tenure in teaching. This can be done on a phased basis.

Recommendation 2. Specify the minimum essential levels of skill and knowledge required for primary and secondary school teachers. A standard curriculum should be developed with a required core component for all training programs and an optional component which may vary with the needs of teachers or with the philosophies of different training organizations.

Recommendation 3. Consider all teacher education as a professional program with due consideration given to preparing faculty members, developing training materials, and maintaining a balance between theoretical and practical content. In order to design and implement practical and relevant teacher training programs, it is necessary that the education campuses be converted into unitary campuses and that adequate financial and material resources be made available for practical activities at the campuses and for a school-based practicum. Opportunities should be provided for teacher educators to upgrade their knowledge and skills, and to prepare training materials.

Recommendation 4. Develop a multi-media package for inservice teachers, including the use of radio and self-instructional modules involving face-to-face contact with experienced teacher trainers, so that they can fulfill minimum training requirements. Such a package would ensure active participation by inservice teachers and promote the introduction of new technology into teacher education. The training needs of teachers from difficult geographic contexts should also be addressed by the multi-media training package.

Recommendation 5. Establish a coordinating mechanism to integrate all teacher education programs. A Teacher Training Coordination Board should be established at the national level to consider plans and policies for the consolidation of the teacher education programs.

Recommendation 6. Establish a teacher education accreditation board to maintain minimum standards and a unified direction for teacher education. A Teacher Education Accreditation Board can be constituted at the national level to examine contents and modalities of different teacher training programs. On the basis of periodic observation and study, the Board could accredit different programs and make suggestions for their improvement.

Recommendation 7. Include plans for training of inservice teachers and preparation of preservice teachers in a comprehensive plan for teacher education. The planning of inservice and preservice teacher training should be done separately with a clear assignment of responsibilities to different training agencies.

Recommendation 8. Organize inservice training programs as close to schools as possible and promote the use of Resource Centres for the recurrent training of the inservice teachers. This will help to make training programs practical and relevant to the local situation, and will have the most immediate impact on classroom instruction.

Recommendation 9. Provide the minimum essential inservice training to as many teachers as possible and the longer-duration degree-oriented training to the selected ones who have demonstrated excellent professional performance. In order to raise the quality and the effectiveness of school programs, it is important to give basic minimum training to all untrained teachers now in primary and secondary schools.

Recommendation 10. Develop a cadre of primary teacher educators to facilitate the training of primary school teachers as visualized in the programs to fulfill basic needs in education. The preparation of teacher trainers is a prerequisite for making training programs effective.

Recommendation 11. Develop standard materials for inservice and preservice primary teacher training. This should include a teacher's guide, reference materials for teachers, and samples of teaching aids.

Recommendation 12. Synchronize the strengthening of existing institutions (education campuses) and the creation of new structures (regional training centres and mobile teams) to match the training capacity with teacher requirements. In order to ensure an adequate supply of trained teachers for the expanding education system, the intake capacity and programs of the education campuses can be improved. The establishment of the regional training centers should be synchronized with the long-term plans for training inservice (including refresher courses) and preservice teachers. These regional training centers, through satellite centers as necessary, should organize programs to meet the training needs of teachers of all 14 zones of the country.

Recommendation 13. Clarify the role of T.U. in the preparation of teachers by a reorganization of the Faculty of Education. The T.U. Faculty of Education should consult with the MOEC in conducting different teacher education programs at its campuses so that its production is consistent with teacher requirements in different districts.

Recommendation 14. Entrust the T.U. Faculty of Education, in addition to regular preservice programs, with the design and implementation of appropriate teacher educator programs, and have them undertake research and prototype projects to enhance the efficiency and effectiveness of teacher education. For the long-term improvement of the teacher education program, the preparation of the cadres of primary teacher educators and other specialists (such as science and mathematics educators) is a prerequisite. Similarly, a strong research base is required for identifying effective training materials and modalities.

TECHNICAL AND VOCATIONAL TRAINING RECOMMENDATIONS

In this section ten major recommendation are presented concerning policy, programming, and implementation aspects of technical and vocational education. These recommendations are based on the above analysis of the status and projected needs.

Recommendation 1. Create an Integrated Skill Development System. This body should be assigned the following responsibilities:

1. Make more realistic manpower estimates for public and private sector needs.

2. Coordinate the training provided by the various agencies with regard to curricular content and the equivalence of their various programs.

3. Develop more effective and less expensive training modules suitable for rural development and employment generation.

4. Evolve a career development system for technical manpower at different levels.

5. Propose a manpower production system based on projections of manpower supply and demand.

6. Update and modernize the existing training programs.

7. Update and strengthen the data collection and processing system. This would help avoid duplication, strengthen planning, and help develop a suitable career development system for the technical cadre.

Recommendation 2. Strengthen the National Skill Testing Authority by providing adequate technical, administrative, and financial support. This would facilitate recognition of skills which have not been developed through the formal system, and also would help standardize the programs conducted by different agencies.

Recommendation 3. Conduct a detailed survey of the vocational training needs of the rural areas, of the urban and semi-urban areas, and also of women, to promote employability. This will help identify useful vocations for future training. With improvements in the road network, modernization of agriculture, development of hydroelectric plants, expansion of housing activities, execution of integrated development programs, etc., a number of new employment opportunities are emerging. The extent of these new skill requirements should be estimated more precisely so that skill development programs of the right types can be developed.

Recommendation 4. Give more attention to the instructor training needs. The smooth supply of qualified and experienced instructors is necessary to ensure training quality. Experience has shown that one of the main reasons for the failure of a number of vocational training activities was the lack of suitable instructors.

There is no organized instructor trainer center in the country to produce and upgrade instructors for technical education and vocational training programs.

Recommendation 5. Since the cost of skill training is always high, government should commit the necessary funds and also explore alternative and less expensive training models. An apprenticeship training program, for example, can be a more cost-effective model. Some measures can be tried for decreasing the unit cost of training. Increasing the enrollment capacity of centers, decreasing the duration of training programs, operating the centers on a shift basis, etc., for instance, could help reduce the unit cost. While doing this, however, the quality of the training should be maintained.

Recommendation 6. Take steps to give more dignity to basic- and middle-level skills. The skill proficiency and the dignity given to the skill should not be compared with the length of education in other areas. The skills imparted by lower level training have so far been used by the private sector. The public sector does not have attractive offers for skilled craftsmen, nor have they seriously thought about giving good status to such skills. The private sector, although it offers employment opportunities to persons with basic- and middle-level skills, is not organized well enough to offer career development opportunities to these workers.

Recommendation 7: Increase the proportion of the government budget allocated for technical education and vocational training to at least 5 percent to expand training opportunities. Currently, only about 1.5 percent of the education budget is allocated for this purpose, and this amount is insufficient to expand activities in this area. The bulk of the education budget supports general education. Technical and vocational education has so far received only a small share of the total. Industries and other development activities have not provided funds for manpower development.

Recommendation 8. Help industries and the private sector develop technical education and vocational training systems by providing them with the technical expertise to do this. This can add leverage to the use of government funds for training in the technical and vocational subsector.

Recommendation 9. Continue and increase the allocation of external assistance to the development of technical education. The development of infrastructures for technical training with government resources alone would be very difficult. Development of physical infrastructure, procurement of equipment, training of instructors, etc., are capital-intensive aspects. Without an adequate provision of these components, effective skill training cannot be achieved. In the initial years of developing such skill training centers, external assistance would greatly be needed.

Recommendation 10. Formulate more specific government policies for skilled manpower development. In the absence of such policies the qualitative and quantitative growth in the technical and vocation area will not be possible. Several agencies are presently engaged in skill training activities. The university, the labor department, the cottage and industry department, the Ministry of Panchayat and Local Development, and the Ministry of Education and Culture are the major agencies. But which of the agencies are supposed to do what type of training is not yet clear. Keeping current records of the needs, and identifying the agencies to help meet the needs, would also greatly help with the accreditation aspects of this issue.

NONFORMAL EDUCATION RECOMMENDATIONS

The MOEC has a mandate regarding literacy targets in relation to the Basic Needs Strategy and it has delegated responsibility for these activities to its Adult Education Section (AES). Policy has been clearly stated. A strategy for its implementation has been selected and is in the process of being carried out. Eight recommendations are given below for improving implementation of the existing policy. These are provided in priority order.

Each recommendation is accompanied by a rationale. This is followed by a set of specific actions. It is assumed that the recommended actions, if adopted, would be carried out by the AES. In cases where the AES might wish to employ consultants for the activity it is assumed that AES staff would also be closely involved in the process. In some cases the AES might wish to consider requesting external assistance agency funds to finance suggested actions, especially when they entail "one time only" costs.

Recommendation 1: Improve basic information on literacy activities.

Rationale. Good implementation is dependent on good planning and good data are essential for good planning. There currently is very little accurate information to support policy development, planning, or decision-making. Development of a simple, easy to use and manage database on literacy activities in the nation is essential for improved implementation and for setting and reaching appropriate literacy targets.

Specific Actions. Basic information is needed on which organizations are engaged in literacy training and the extent of their activities. It is important to know the location of the program, its content and nature, what materials are used, whether the program is combined with other development-related activities, the number and characteristics of participants, the number and characteristics of facilitators, the number and characteristics of supervisors, the structure of the administrative and management system, costs and financing, the nature of evaluation within the program, drop-out rates, levels of achievement, what facilities and equipment are required, whether the program produces its own materials, the extent of community participation, and the nature of post-literacy activities.

The easiest way to do this would be to build the database gradually with the AES by asking cooperating agencies to complete a simple form along the lines of the one that was used to collect data for Chapter 8 of this sector assessment. Each year this form could be updated and, as new agencies begin to use the MOEC'S Nonformal Education for Rural Development program, information on their activities could be added to the database.

To get a better understanding of activities in the subsector immediately, a simplified survey could be conducted. The scope of the survey would clearly depend on available resources but again it could be based on a very basic questionnaire. If finances permitted it would be ideal to visit sites of those activities that keep their data in the field and do not forward it to Kathmandu.

The data could be tabulated manually, if necessary. Ideally, the AES would have a small computer in which it could keep its data and from which it could provide summaries for its own planning and for that of the Ministry.

Setting up the database, conducting the initial survey, and providing a computer, printer, monitor, software, and basic supplies is an example of what could appropriately be requested from an external assistance agency. On-the-job training and database upkeep would be the responsibility of the Section. This is consistent with how it has used external funds in the past and this activity would not require large financial inputs.

Recommendation 2: Develop and implement a specific strategy for increasing the number of government agencies (including schools) and NGOs cooperating with the AES.

Rationale. Literacy can contribute positively to the nation's development and to achieving targets of the Basic Needs Strategy, but to make an impact a significant number of adults must be reached. To ensure that literacy opportunities are available to a large number of people it will be necessary to have a detailed plan of action for encouraging additional government agencies and NGOs to participate in the literacy program. The continued use of NGOs is especially important as HMG considers moving to a massive scale because there is a concern that increased dependence on the formal school structure might "formalize" the NFE program more than is desirable.

Specific Actions. An important first step would be to develop a mechanism for identifying additional government agencies and NGOs who might be contacted regarding their interest in cooperating with the AES by providing literacy activities. A short presentation could be developed and made to any interested agencies.

A basic survey of government agencies and NGOs engaged in development projects could be conducted. This could easily be carried out by the AES staff or by individuals selected by them.

Examples of how literacy activities might be expanded include having development projects, such as dam construction, provide literacy classes at no cost for their workers and asking literacy facilitators to teach morning as well as evening classes to reach out-of-school youth. Should the National Development Service be reinstituted it might be worth exploring its potential as a literacy corps.

Recommendation 3: Strengthen the AES.

Rationale. The AES has excellent materials but it needs sufficient staff to develop and support an entire package. This package should include improved capacity in planning, organizing, communications, technical expertise, training, and implementation.

Specific Actions. What is being discussed for the AES is very ambitious and it needs to develop a systematic approach to meet its goals. A first step is to develop a comprehensive plan. The section needs to be strengthened to carry out this crucial step.

Recommendation 4: Reconsider budget allocations to the AES.

Rationale. The AES needs additional resources to meet its goals. The present allocation of less than 1 percent of the education budget is not sufficient.

Specific Actions. Provide the AES with a budget that is more realistically tied to the program. It should be based on a realistic and detailed plan submitted by the AES (see Recommendation 3). At this time it might be appropriate to consider creating an Adult Education Division.

Recommendation 5: Develop and implement a post-literacy program.

Rationale. Gains in literacy are lost unless there are materials and activities available for new literates to practice their skills and put them to use. Because there are so few written materials available in the villages at present, investments in literacy will be wasted unless something is done to make such materials available.

Specific Actions. A post-literacy program is needed that makes the most efficient use of available resources. A strategy similar to the one for literacy activities might be the most appropriate. It could begin with a determination of what post-literacy materials and activities are currently being implemented in the nation and by which agencies.. Then those agencies not engaging in post-literacy activities might be encouraged to add such activities to their programs based on experiences with existing materials and activities. It would also be important to determine which agencies plan to develop materials and in what topical areas.

With this information available it would be easier to coordinate existing activities and develop an effective plan for materials development and expansion of post-literacy activities. For example, an expansion activity might include working with the Ministry of Information and determining its interest in developing a simply written and easy-to-read newspaper for new-literates in the villages.

Again, a simplified survey might be the best way to start. This could be the responsibility of the AES which would use consultants if it wished. Implementation of the long-term strategy would require staff and other resources from the AES and this would need to be addressed by the MOEC.

Recommendation 6: Develop a simple and appropriate literacy test.

Rationale. There is a need to measure achievement gains to learn whether participants have attained literacy and to determine how well new-literates are retaining their skills.

Specific Actions. Develop, field test, and revise a very simple literacy test. This test could be based on the work already pioneered by CERID and other organizations engaged in similar work. The test needs to be based on an agreed-upon basic definition. It might be linked to primary school criteria. Once the test is ready, make it freely available to all government agencies and NGOs engaged in literacy and post-literacy activities. This activity should be conducted under the aegis of the AES.

Recommendation 7: Gain a better understanding of the role of facilitators and improve their support.

Rationale. Facilitators play a critical role in literacy activities yet they are often inadequately prepared for their work. Better facilitator preparation should result in improved outcomes from investments in literacy.

Specific Actions. Identify what it is that makes a successful facilitator and what aspects of these characteristics can be developed within a training program. Determine from the facilitators where they are having the greatest difficulties and what kinds of assistance or training are the most helpful, and then reorient literacy activities accordingly.

Implementation of this recommendation would require a small, field-based research study that could be conducted by the AES or individuals selected by the Section. If any recommendations requiring permanent changes in the activities of the Section were adopted the Section would have to be able to assume any additional financial responsibility.

Recommendation 8: Gain a better understanding of the role of supervisors and improve their support.

Rationale. Supervisors are the link between the planning and support agencies and the field level activities. Improved linkages between these levels can encourage feedback mechanisms and efficiencies.

Specific Actions. Conduct a field-based study to determine what makes a good supervisor and how better supervision can be implemented, then reorient the literacy activities in this area on the basis of the findings. This should be the responsibility of the AES.

EXTERNAL ASSISTANCE RECOMMENDATIONS

Four recommendations are made related to external assistance. These recommendations suggest a major alteration and improvement in the relationships between the MOEC and the external assistance agencies. If accepted and implemented they will require substantial changes in the behavior of all involved and an acceptance of greater accountability. Thus, these few recommendations constitute a serious challenge to all participants engaged in external assistance.

Recommendation 1. Adopt a more aggressive position with regard to external assistance in the sector and initiate this by developing a detailed and comprehensive plan for using external funds.

This will involve setting realistic and scheduled priorities for the sector. Specific annual targets consistent with the priorities will have to be identified. Next, the kinds and amounts of different resources that will be required will have to be identified. An assessment of existing and anticipated government resources should be made and compared with the assessment of total resource requirements. Existing external assistance activities should then be examined to see which of those needs they are meeting. The remaining needs should be considered carefully and put in priority order for funding consideration by current and potential external assistance agencies.

This priority listing should be a major guide for decisions regarding assistance to the sector. That is, project selection (whether for grants or loans) should be based on these MOEC-defined needs. In some cases it might be necessary to ask external assistance agencies to redirect current projects, but this should not be done if the agency does not wish to alter an existing agreement with HMG.

It must be recognized that there will be some costs attached to this approach if it is selected. For example, it may be necessary to ask some external assistance agencies to delay or redirect project design activities. It may also be necessary to indicate to an agency that their proposed contributions are not necessary because they do not fit government priorities--it is difficult to refuse funding but it may be a necessary step.

Developing such a plan should have high priority. Without it, it will be difficult to continue to seek additional external assistance in a rational manner. Sufficient staff must be delegated to the task for it to be done properly.

Recommendation 2. External assistance agencies should be more sensitive to their role as contributors to a sector that is the responsibility of individuals representing HMG.

The issue of a perceived vacuum resulting from a slow decision-making process has already been discussed in this chapter. Representatives of the MOEC often find themselves in the uncomfortable position of trying to address high pressure for action from external assistance agency representatives before decisions have passed to them through appropriate channels in the Ministry.

The MOEC staff recognize that funding agencies often have good ideas and well conceived proposals. They also believe, however, that external assistance agencies are too inflexible, that they are not sufficiently willing to adapt their proposals to existing conditions or rational goals nor do they appreciate the difficulties faced by the MOEC staff. The MOEC is also concerned that new project proposals often reflect primarily the goals and directions of the external assistance agencies and that these have usually been determined outside of Nepal. Once a project is in operation, the MOEC staff is concerned that inflexibility means that ultimately the project suffers.

Recommendation 3. Recognize the value of continual coordination of external assistance at the MOEC level and strengthen coordination activities.

This will be most effective if there is a detailed and comprehensive plan which can provide guidelines for all involved in the sector. Coordination of activities might be most fruitful if they begin with a focus on sharing technical and professional information and insights on specific topics such as effective supplementary primary education instructional materials, calculating unit and cycle costs of training activities, or methods of monitoring supervisory activities. These meetings could be an expansion of the current effort of various project boards. In addition to providing all concerned with useful information, such meetings would provide MOEC personnel with opportunities to become better acquainted with the different aspects of the variety of project activities. In these sessions it would be easy to correct any misunderstandings and come to agreement on simple matters such as policies regarding vehicle use.

These meetings would serve as a useful foundation for occasional meetings where the MOEC and external assistance agencies could review overall progress in the sector, discuss needs in the light of priorities, and provide each other with professional advice. This would be particularly useful if assistance from another

external assistance agency were about to be sought. For example, those currently implementing projects might assist the MOEC with evaluation of certain design aspects of proposed projects.

Commitment to coordination may require assigning additional MOEC staff to work in the area of external assistance. These staff must be able to work effectively with the range of involved units in the MOEC and with current and potential external assistance agencies. The responsible unit in the MOEC should also have the authority to work closely with the MOF and other governmental agencies such as the NPC on an informal basis.

Recommendation 4. Participate more actively with external assistance agencies in professional activities.

Both the MOEC and project staff represent some of the most creative educators who are accustomed to working under difficult conditions. They have much to offer one another professionally and should take advantage of the opportunities that collegial work provides.

The MOEC staff should take a more active role in new project design so that these projects are consistent with MOEC priorities and to ensure that the staff are fully informed about the goals and objectives of new projects before they begin. Involvement in activities such as evaluation would give MOEC staff experience with the various projects and would make the MOEC more knowledgeable about the strengths of the different projects in the sector.

Annex 1.1

Steering Committee Members

Narsing N. Singh, Secretary of Education, Ministry of Education and Culture (MOEC): Committee Chairman

Chhabi Lal Gajorel, Member cum Secretary, National Education Committee

Ramesh J.Thapa, Additional Secretary of Education, MOEC

Suresh Raj Sharma, Professor of Chemistry, Tribhuvan University

Gopi Nath Sharma, Joint Secretary, Educational Administration Division, MOEC

Keshab P. Nepal, Joint Secretary, Planning Division, MOEC

Kedar Nath Shrestha, Chief, Centre for Curriculum, Textbook and Supervision Development (CTSDC), MOEC

Jnan Kaji Shakya, Under Secretary, National Planning Commission

Babu Ram Shrestha, Under Secretary, Ministry of Finance

Prayag Man Shrestha, Under Secretary, MOEC

Uttam Amatya, Assistant Secretary, Programme and Evaluation Section, MOEC

Annex 1.2

Team Members

Victor J. Cicutat, Senior Vice President, Institute for International Research (IIR): Team Leader (Executive Summary; Education System Management)

Suresh Raj Sharma, Professor of Chemistry, Tribhuvan University: Team Leader, Nepalese Experts (Vocational and Technical Education)

Mary Joy Pigozzi, Principal Research Scientist, IIR: Deputy Team Leader (Executive Summary; Nonformal Education; External Assistance)

Chuda Nath Aryal, Professor, Curriculum and Evaluation, and Chairman, Department of Education Foundations, Faculty of Education, Tribhuvan University: (Primary Education; Secondary Education)

George H. Axinn, Professor, Department of Resource Development, College of Agriculture and Natural Resources, Michigan State University: (Secondary Education; Teacher Education)

Barbara Butterworth, Resident Technical Advisor, Improving the Efficiency of Educational Systems (IEES) Project: (Primary Education; Teacher Education)

Om Prakash Gupta, Professor of Educational Administration, Department of Educational Planning and Management, Tribhuvan University: (Education System Management)

Tirtha Bahadur Manandhar, Joint Director of Studies, Nepal Administrative Staff College: (Economic and Financial Analysis)

Walter W. McMahon, Professor of Economics, University of Illinois at Urbana - Champaign: (Economic and Financial Analysis)

Jay S. Salkin, Research Associate, State University of New York at Albany: (Economic and Financial Analysis)

Gajendra Man Shrestha, Dean, Faculty of Education, Tribhuvan University, Kirtipur: (Teacher Education)

Support Staff

Dibya Man Karmacharya (Nonformal Education)

Bhola Ram Shrestha, Executive Assistant

Purushottam Manandhar, Word Processor

Rajeswor Pradhan, Word Processor

Kiran Ratna Shakya, Word Processor

Annex 1.3

Reviewers

Uttam Amatya	(Chapter 9)
Keshab P. Nepal	(Chapter 3)
J.R. Pant	(Chapter 9)
Ratna Man Pradhan	(Chapter 2)
Achut Man Rajbhandary	(Chapter 2)
Jnan Kaji Shakya	(Chapter 3)
Gopi Nath Sharma	(Chapter 6)
Dil Bahadhur Shrestha	(Chapter 8)
Kedar Nath Shrestha	(Chapter 4)
Kharga Man Shrestha	(Chapter 7)
Madan Man Shrestha	(Chapter 7)
Prayag Man Shrestha	(Chapter 4)
Puspa Bahadhur Shrestha	(Chapter 5)
Shankar Lal Singh	(Chapter 6)
Ishwar Upadhaya	(Chapter 5)

2. ECONOMIC AND FINANCIAL ANALYSIS

Improving the efficiency and the financing of education at all levels, and most especially at basic education, is vital for development. It is widely accepted that education can make a critically important contribution to economic growth, including key contributions to per capita growth in agriculture. It is also well established that the distribution of education is important for reducing poverty.

Nepal's largest potential resource is its large underdeveloped human resource base. This is a major constraint to development in Nepal. Given the limited financial resources available, as well as the scope and strategic importance of this problem, it is especially important that solutions to it be identified that are both practical and cost effective. This chapter emphasizes the economically efficient development of Nepal's large human resource base to promote faster per capita economic growth, improve living standards, and reduce poverty.

2.1 INTRODUCTION

This chapter begins with the rationale for an economic analysis of human resource development and its relevance to educational policy. This is followed by a brief overview of the chapter.

2.1.1 Rationale

This chapter identifies ways to improve the current internal and external efficiency of the educational system to increase Nepal's rate of growth of real output per capita. For education, this goal is consistent with reducing poverty by attaining a more equitable distribution of the benefits of that growth.

This chapter is consistent with the basic goals of the Seventh Plan (1985-1990). It also is consistent with objectives recently stated by Prime Minister Marich Man Singh for improving the living standards of the people including those under the poverty line (*The Rising Nepal*, July 23, 1987, p. 1). Elaborated more fully in the Seventh Plan (pp. 81-86), this central goal of economic development involves the following components:

- "increasing production (real output) at a higher rate,
- increasing opportunities for productive employment, and
- fulfilling the minimum basic needs of the people, . . .
  (including the needs) for primary and skill based education."

A wide range of recent research demonstrates clearly that education makes a significant contribution to these economic growth objectives. The equality of educational opportunity also influences the distribution of income among families in the next generation. This chapter briefly summarizes what is currently known about the contribution of education to both of these effects. It also describes economic criteria that may be applied to educational investment decisions to help achieve these kinds of results.

Investment in human capital formation through education is especially relevant to the first two basic objectives of the Seventh Plan set out above, the efficiency objective of increasing output and the equity objective of expanding employment opportunities. The chapter develops the basic economic criteria relating the benefits of education to the costs. These criteria may be used by decision-makers, even when precise measurement is not possible for returns, effectiveness, and costs, to help education make a larger contribution to faster growth.

Faster per capita economic growth, which can be achieved by increases in production and by slower population growth, is an important need in Nepal. Given the current slow economic growth rate, and the high population growth rate, per capita income growth is negligible, and a very large portion of the population are living in severe conditions of poverty. With human resource development so vitally important, not only for agriculture and for the beginnings of industrialization, but also for achieving greater competitiveness with India, it is important that this potential be efficiently utilized.

2.1.2 Economic Analysis and Decision-Making

The basic assumption underlying this approach is that reasoned analyses provide information that can support improved decision-making and contribute to more desirable educational outcomes. There are, of course, goals for education other than those stated above. These include objectives such as military potential, national unity, religious considerations, and the like that influence decisions. Some of these are consistent with and can be achieved with economic development goals. Others can be attained only at the cost of reduced efficiency and slower growth, inflation, or more limited educational opportunities.

This chapter does not address the above kinds of goals, in the belief that policy-makers need a basic economic analysis of what is conducive to faster per capita real growth and development. The necessary compromises can then be made, when addressing other goals, with greater awareness of their costs. In cases where these conflicts are particularly evident, the economic analysis presents alternative means of achieving the desired goals.

2.1.3 Approach

This chapter first outlines briefly the major economic issues in the nation to which more efficient investments in human resources development can make a contribution, and how it affects the fiscal capacity of the economy to finance investment in education. It then surveys briefly the research on the contribution of education to per capita economic growth and to industrialization. Following this it reviews the current state of Nepal's economy, problems relating to the financing of education, and the fiscal capacity based on these factors and on enrollment projections. The sections that follow develop the major economic criteria available, and apply these to data for the nation. The objective is to derive conclusions and recommendations about investment and financing efficiencies that will enhance educational effectiveness.

For an educational system truly to be efficient in achieving faster per capita growth, it must relate to the needs of the economy (i.e., be externally efficient). The maximum contribution to industrialization and growth requires relating the costs to the returns to education in Nepal, such as revealed by data on the earnings and employability of persons with education at all different levels and of different types. Following this benefit cost analysis, the conclusions are presented in Section 2.8. The conclusions are used to derive the recommendations in Section 2.9.

2.2 THE ECONOMY

This section covers major issues in the education sector, measures of economic performance, current national budget receipts, national development plans and education expenditures, and the contribution of education to economic growth.

2.2.1 Major Issues Related to Education

The issues here concern the low growth of real per capita income, under-investments in human and physical capital, the shorter run economic outlook, and the longer run economic prospects as they are affected by an under-developed human and natural resource base.

2.2.1.1 Low Per Capita Income Growth. Real Gross Domestic Product per capita has grown at a rate of only 0.1 percent from 1965 to 1985. The result is continued poverty, with a per capita income of only $160 per year. Nepal is now in its Seventh Plan (1985-1990), following six prior plans seeking to raise per capita growth. Foundations for growth have been prepared, and there are some promising signs. The failure of the per capita growth rate to be higher on a sustained basis,

however, suggests that some new strategies may be needed. A promising possibility is discussed below in Section 2.2.1.2.

One major obstacle to improving per capita growth has been a 2.66 percent rate of population increase from 1971 through 1985, with an even higher current 2.7 percent rate since 1985. It reflects primarily a high fertility rate of 6.3, typical of countries where the majority of rural females receive little primary education and even less lower secondary education. An important economic reason for this is the cost to parents, mostly forgone production, while children are in school instead of helping with farming or with child care. Other economic reasons for children not attending school, and for the high drop-out rate, include the perceived low quality of education and the fees charged, such as registration fees, admission fees, building fees, sports fees, examination fees, textbook fees, copybooks and pencil costs, and uniform costs (see Sections 2.6.2.2 and 2.6.3.2). Illiterate and semi-literate females have limited access to employment except for farming. They do not have incentives to use contraceptives, and have few alternatives other than to marry early and have children. This would change if they had access to labor in the market economy.

Investment in education to raise economic growth, decrease fertility rates, and hence to increase per capita growth is discussed in more detail later in the chapter. But for now, the low per capita economic growth problem is truly the dominant economic issue. Living standards that fell 0.1 percent annually from 1965 through 1980 are the result of a 2.3 percent economic growth rate less the 2.4 percent population growth rate for that period. From 1980 through 1985 the record improved with 3.4 percent aggregate economic growth less 2.7 percent population growth leaving a positive per capita annual growth rate of .7 percent (World Bank, 1987, pp. 204 and 254). Much of the apparent recent gains may be merely a result of the cyclical recovery from the recent worldwide recession.

Poverty in the rural areas is worse than the above data suggest. The agricultural Gross Domestic Product grew at only 1.5 percent from 1971 through 1981, for example, which with high rural fertility rates in the Hills, and high fertility and population growth rates in the Tarai, suggests declining per capita rural incomes (see NPC, 1987; and NPCS, 1987).

2.2.1.2 Human and Physical Capital Underinvestment. Efficient investment both in human and physical capital is necessary for faster per capita growth. One way to estimate whether rates of investment are relatively too high or low is to examine what was done in other countries just before their periods of rapid growth. Taiwan, Hong Kong, Singapore, and Japan, the fastest growing countries in Asia

since 1965, by that time had 100 percent of their age groups enrolled in primary schools through Grade 6, and over 35 percent enrolled in secondary schools. At that time Nepal had 20 percent enrolled in primary and 5 percent in secondary, which represents underinvestment in relative terms (see Section 2.2.5.4). There has been considerable improvement in access in Nepal at the primary level since that time (see World Bank, 1987, pp. 262-3), but there is survey evidence that these enrollment figures overstate the percentage of children ages 6-10 actually remaining in school as the school year progresses.

For the 1986-1987 fiscal year, the education sector accounted for 11.93 percent of the development budget in Nepal, and had a share well under that in the regular budget, following a 6.5 percent cutback below 1985-1986 education totals (USAID, 1987, pp. 14d, 14e, and 14f). In comparison, investment in education has stayed at a higher 18 to 22 percent of the government budgets in all of the fastest growing countries mentioned except for Japan. Investment in physical capital formation in Nepal also has been relatively low. Gross Domestic Investment was only 10 percent of GDP in 1984, as compared with over 20 percent in all of the nine fastest growing countries of the world except Lesotho. Real Gross Domestic Investment grew at only 4 percent annually in Nepal from 1974-1975 through 1979-1980 (calculated from Ministry of Finance, 1987, p. 3). In the most recent five years, Real Gross Domestic Investment in Nepal has grown annually at 7 percent, somewhat above the earlier 4 percent rate. The low rates of investment in both human and physical capital formation are a major source of slow per capita economic growth.

2.2.1.3 Short Run Outlook. The short run economic outlook includes a current reduction in the rate of growth of real GDP per capita to -.12 percent for 1987, presumably only temporarily below the low 0.1 percent longer term rate. The longer run growth must be distinguished from the short term economic impacts on the Nepalese economy. These shorter term factors are much discussed, but are mentioned here to keep the rest of the discussion in proper perspective. The short term outlook reflects the following four factors:

1. A decline of 7.8 percent in agricultural production during the 1986-1987 fiscal year and a -2.1 percent decline in the production of maize (Ministry of Finance, *Economic Survey*, 1987, p. 6).

2. An overpriced Nepalese currency that limits agricultural exports (including rice exports to India), encourages imports, and has contributed to the continuing large trade deficit.

3. Overall unemployment is low, with substantial underemployment, especially in agriculture.

4. Inflation, which was a serious problem with the 15.4 percent rate registered in 1985-1986, has slowed to a 9.28 percent rate in 1986-1987.

2.2.1.4 Long Run Outlook. A significant strategic advantage for the nation is the continuing development of irrigation capacity to reduce the dependence of agricultural output on the timing of the monsoon. There also is very considerable potential for hydroelectric power to increase domestic productivity that is based on more energy-intensive domestic activities. HMG is making major efforts to stress repair and maintenance of existing irrigation facilities, support for privately operated irrigation plants, and investment in the extension of irrigation facilities, as well as related rural development projects both to capitalize on this growth potential and to reduce rural and urban unemployment. Feasibility studies are underway, supported by West Germany and the U.S., to increase the current 152 megawatt hydroelectric capacity of the Karnali River Project (to 3,600 megawatts) and of the Arun Project on the Koshi River (400 megawatts). This would amount to a 26-fold increase in capacity when implemented which, if costs per kilowatt hour are kept low, could virtually revolutionize Nepal's economy.

These natural and other agricultural resource enhancements require specific accompanying development of the nation's educational system. This will require highly skilled hydroelectric engineers, construction workers, electrical engineers, trained managers, agricultural scientists, and intermediate skills to support the associated infrastructure.

2.2.2 Performance Measures

These four economic issues all have major relevance for education. It therefore is appropriate to examine their foundations in the nation's economy before assessing their implications for educational planning and for fiscal capacity.

2.2.2.1 Economic Growth and GDP. Nepal's average annual growth rate of real GDP has been 2.3, similar to that of the other 35 lowest income countries in the world. As shown in Table 2.1 below, Nepal's 1965-1980 growth rate of 2.3 percent was below the 3.2 percent for the other 35 low income economies. In 1980-1985 this was reversed and Nepal's growth rate rose to 3.4 percent, then exceeding the 2.8 percent of these other countries. During 1986-1987 it has been 2.3 percent, equal to the long term 1965-80 average of 2.3 percent, largely due to the effect of the late monsoon.

Table 2.1

Comparative Real GDP Growth Rates

Years	1965-80	1980-85	1986-87
Nepal	2.3%	3.4%	2.3%
The 35 Other Lowest Income Countries	3.2%	2.8%	N.A.

Source: World Bank (1987), *World Development Report*, p. 204.

The Gross Domestic Product for agricultural and non-agricultural sectors is shown in Table 2.2. Annual growth rates from 1964-1965 through 1986-1987 in constant 1984-1985 prices are shown in Table 2.3. These tables reveal that agriculture currently accounts for 60 percent of GDP at current prices, and 62 percent in constant prices. Nepal is a subsistence agriculture economy with 91.15 percent of the economically active population engaged in agriculture according to the 1981 census data.

Land available for cultivation is highly limited. Irrigation currently reaches only 15 percent of cultivable land, and thus agricultural production is largely a function of weather conditions. Living by subsistence agriculture is harsh, and families at the margin of subsistence are constantly at the mercy of the vagaries of the weather.

Such families often are not able to pay supplemental school fees, or for copy books, uniforms, and other materials at the primary level or for tuition fees in addition to this at the lower secondary level. These fees are a high percentage of the 860-1300 rupee per capita income in the Hill and Mountain areas, and are in addition to the high forgone earnings costs already being borne by the parents when the children are not available to help at home or in the fields.

Table 2.2

GDP by Industrial Origin: 1974-1986

(millions of current price rupees)

Industry	Year					
	1974	1975	1976	1977	1978	1979
Agriculture, Fisheries & Forestry	11,435	11,495	10,389	11,616	13,365	13,520
Mining and Quarrying	22	23	26	25	34	42
Manufacturing	664	690	736	794	848	936
-- Modern	440	459	499	531	559	618
-- Cottage	224	231	237	263	289	318
Electricity, Gas and Water	34	38	39	42	48	60
Construction	583	718	1,020	1,338	1,559	1,570
Trade, Restaurants and Hotels	540	603	636	707	724	889
-- Trade						786
-- Restaurants and Hotels						103
Transport, Communications & Storage	690	805	852	1,093	1,248	1,541
Financial and Real Estate	1,095	1,171	1,412	1,534	1,613	1,833
Community and Social Services	873	1,046	1,145	1,277	1,340	1,495
-- Public	648	811	884	989	1,090	1,211
-- Extra-Territorial						25
-- Private Services	255	235	261	299	250	259
GDP at Factor Cost	15,936	16,589	16,255	18,426	20,779	21,886
Indirect Taxes less Subsidies	635	805	1,025	1,306	1,436	1,465
Agriculture	115	116	136	136	157	163
Non-Agriculture	520	689	889	1,170	1,279	1,302
GDP at Current Market Price	16,571	17,394	17,280	19,732	22,215	23,351
Agriculture	11,550	11,611	10,506	11,752	13,522	13,683
Non-Agriculture	5,021	5,783	6,774	7,980	8,693	9,668
GDP at 1974/75 Market Price	16,571	17,300	17,822	18,607	19,048	18,606
Agriculture	11,550	11,615	11,141	11,141	11,480	10,933
Non-Agriculture	5,021	5,685	6,681	7,466	7,568	7,673
GDP Deflator	100.00	100.54	96.96	106.05	116.63	125.50
Agriculture	100.00	99.97	94.30	105.48	117.79	125.15
Non-Agriculture	100.00	101.72	101.39	106.88	114.87	126.00

(table continued)

Table 2.2 (continued)

Industry	Year						
	1980	1981	1982	1983	1984	1985	1986
Agriculture, Fisheries & Forestry	15,510	17,715	19,082	22,087	23,988	N.A.	N.A.
Mining and Quarrying	58	66	85	96	104		
Manufacturing	1,049	1,243	1,460	1,650	1,792		
-- Modern	712	851	1,021	1,154	1,253		
-- Cottage	337	392	439	496	539		
Electricity, Gas & Water	67	82	127	140	152		
Construction	1,974	2,342	2,377	2,502	2,717		
Trade, Restaurantsand Hotels	953	1,068	1,199	1,355	1,472		
-- Trade	832	950	1,069	1,208	1,312		
-- Restaurants and Hotels	121	118	130	147	160		
Transport, Communications and Storage	1,889	1,992	2,129	2,306	2,505		
Financial andReal Estate	2,077	2,366	2,594	2,832	3,076		
Community andSocial Services	1,889	2,167	2,591	2,801	3,042		
-- Public	1,574	1,747	2,116	2,287	2,484		
-- Extra-Territorial	31	35	39	42	46		
-- Private Services	384	381	436	472	512		
GDP at Factor Cost	25,466	29,041	31,644	35,769	38,848		
Indirect Taxes less Subsidies	1,841	1,951	2,117	2,715	2,890		
Agriculture	169	188	200	230	275		
Non-Agriculture	1,672	1,763	1,917	2,185	2,615		
GDP at Current Market Price	27,307	30,992	33,761	38,484	41,738	50,124	56,013
Agriculture	15,679	17,903	19,282	22,317	24,641	29,895	33,210
Non-Agriculture	11,628	13,085	14,479	15,867	17,097	20,229	22,803
GDP at 1974/75 Market Price	20,158	20,920	20,297	21,873	22,520	23,432	23,962
Agriculture	12,066	12,616	12,478	13,668	13,990	14,608	14,752
Non-Agriculture	8,092	8,304	7,819	8,205	8,530	8,824	9,210
GDP Deflator	135.46	148.15	166.33	175.94	185.34	213.91	33.76
Agriculture	129.94	141.91	154.53	163.28	176.13	204.65	225.12
Non-Agriculture	143.70	157.57	185.18	193.38	200.43	229.25	247.59

Source: Ministry of Finance (1987, pp. 1-2 of tables)

Table 2.3

GDP 1964-1965 through 1986-1987: Rupees in '000

(constant 1984-1985 prices)

Year	Agric.	Percent Rate of Growth	Non-Agric.	Percent Rate of Growth	GDP Total	Percent Rate of Growth
1964/65	16,409		8,051		24,460	
1965/66	18,331	11.71%	7,902	-1.85%	26,234	7.25%
1966/67	17,577	-4.12%	8,233	4.18%	25,810	-1.62%
1967/68	17,671	0.54%	8,299	0.80%	25,970	0.62%
1968/69	18,201	3.00%	8,907	7.32%	27,108	4.38%
1969/70	18,830	3.45%	9,064	1.76%	27,894	2.90%
1970/71	18,947	0.62%	8,940	-1.37%	27,886	-0.03%
1971/72	19,086	0.73%	9,345	4.53%	28,431	1.95%
1972/73	19,284	1.04%	9,700	3.80%	28,984	1.95%
1973/74	20,622	6.94%	10,221	5.37%	30,843	6.41%
1974/75	20,343	-1.35%	10,064	-1.54%	30,407	-1.41%
New Series						
1974/75	20,343		10,064		30,407	
1975/76	20,458	0.56%	11,395	13.22%	31,853	4.75%
1976/77	19,623	-4.08%	13,391	17.52%	33,014	3.65%
1977/78	19,623	0.00%	14,964	11.75%	34,587	4.77%
1978/79	20,220	3.04%	15,169	1.37%	35,389	2.32%
1979/80	19,257	-4.76%	15,379	1.39%	34,636	-2.13%
1980/81	21,252	10.36%	16,219	5.46%	37,471	8.19%
1981/82	22,221	4.56%	16,644	2.62%	38,865	3.72%
1982/83	21,978	-1.09%	15,672	-5.84%	37,650	-3.13%
1983/84	24,074	9.54%	16,446	4.94%	40,519	7.62%
1984/85	24,641	2.36%	17,097	3.96%	41,738	3.01%
1985/86	25,730	4.42%	17,686	3.45%	43,416	4.02%
1986/87	25,983	0.99%	18,460	4.37%	44,443	2.37%

Constant price GDP percent annual rate of growth for various sub-periods

Year	Agric.	Non-Agric.	GDP Total
1964-71	2.18%	2.15%	2.17%
1964-74	2.17%	2.26%	2.20%
1971-81	1.53%	5.94%	3.18%
1971-85	2.16%	4.66%	3.07%
1974-81	1.27%	7.45%	3.57%
1974-84	1.94%	5.44%	3.22%
1974-85	2.16%	5.26%	3.29%
1976-86	2.85%	3.26%	3.02%
Economically Active Population Annual Percent Rate of Growth			
1971-81	3.10%	8.30%	3.50%
Implied Employment Elasticity			
1971-81	2.023	1.397	1.102

Source: Ministry of Finance (1987) plus computations based on that data made by the IEES team.

The fluctuations in agricultural output from year to year revealed in Column 2 of Table 2.3 (Percent Rate of Growth) show growth rates ranging from +11.71 percent in 1965-1966 to -4.76 percent in 1979-1980, and current growth of agricultural GDP of .99 percent. These fluctuations of real income in rural areas, with so many families at the subsistence level, help to explain the high drop-out rates, especially in the bad crop years. These drop-out rates (currently 22 percent right after Grade 1) and repetition rates (39 percent for Grade 1) are extremely high at this level compared with developing country standards, and these rates are much higher than this for girls. Some of the internal inefficiency in the primary schools due to high drop-out and repetition rates may be explained by low and unstable agricultural output, since families near subsistence are unable to pay the financial costs and absorb the forgone earnings costs as well.

Programs that stabilize and raise agricultural productivity (e.g. irrigation) and/or lower fees could reasonably be expected to lower drop-out and repetition rates. At the same time, improvements in drop-out rates, repetition rates, and in the school levels attained in the education of future farmers is shown by research to raise the productivity of farmers. Among other things, it increases their capacity to adapt, to use technologies such as fertilizer and hybrids more appropriately, and to market their output more profitably. Growth of productivity in agriculture is the single most important source of potential growth in real GDP.

2.2.2.2 Industrial Output and Employment. The breakdown of non-agricultural Gross Domestic Product by major industry that is shown in Table 2.2 is reflected in the distribution of the economically active population among industries shown in Table 2.4. Only 8.8 percent of the population is employed outside of agriculture. The largest non-agricultural employment is in community service industries (4.58 percent) and in commerce and transport (1.59 percent).

Table 2.3 also reveals somewhat higher and somewhat less volatile rates of growth in the non-agricultural sector than in agriculture (see percent rates of growth in columns 2 and 4). The combined result of 2.37 percent real growth for the most recent 1986-1987 fiscal year, for example, is composed of 4.37 percent growth in non-agricultural output, and only 0.99 percent growth in agricultural output.

The individual industry in which employment grew most rapidly between census years, as shown in Table 2.4, was financial and business services at 12.79 percent. Employment was growing in the non-agricultural sectors at an annual rate of 8.26 percent.

2.2.2.3 Labor Absorption Rates. The labor absorption rates are relatively encouraging for Nepal. They measure the percent increase in employment that occurs for every 1 percent increase in real GDP. The respective labor absorption rates (or "implied employment elasticities") shown at the bottom of Table 2.3 above indicate that for every 1 percent increase in real GDP in the sector concerned there is a 2.02 percent increase for employment in agriculture and a 1.40 percent increase for employment in non-agricultural industries. This is a positive indication. These rates compare very favorably with the much lower labor absorption rates in the .5 - .35 range that are a serious problem in some other developing countries. Low labor absorption rates are due to the choice of production techniques that use too much physical capital and too little labor. This can arise when capital goods are imported from industrial countries that use technology that is too capital intensive and inappropriate where labor is cheaper. This is not a major problem in Nepal as shown by the labor absorption rates.

Manufacturing accounted for 12 percent of non-agricultural GDP, the modern segment for 8.4 percent, and cottage industries 3.6 percent. This cottage industry is growing rapidly. There were only 70 firms in this category in 1974-1975, which had grown to 1,112 firms by 1984-1985, reflecting a 38-fold increase for investments in this sector. Basic literacy, numeracy, and the elements of accounting, managerial innovation, and financial management are key contributions made by both primary and secondary education that are important to the initiation, survival, and growth of these cottage industry firms. In the 1981-1982 census of manufacturing, there were 4,903 establishments in the country of which only seven firms employed more than one thousand people and 301 firms more than 50 people. The breakdown of employment among occupations is given by census data as shown in the bottom half of Table 2.4. Outside of agriculture, very few are in professional and technical occupations, in administrative, clerical, sales, and services. Laborers in production and construction jobs comprise 3.12 percent.

2.2.2.4 Real Income and Growth. With the relatively low growth rates of real GDP discussed above, and the relatively high 2.7 percent current annual population growth rate, the major economic issue facing the country is the very low .1 percent per capita real income growth rate from 1965 through 1985 shown in the last row of Table 2.5.

Table 2.4

Industrial and Occupational Distribution of the Economically Active Population Aged 10 and Above: 1971, 1981, and Projection to 2000 A.D.

Industry	1971 Persons Engaged ('000)	Percent of Total Engaged	1981 Persons Engaged ('000)	Percent of Total Engaged	Annual Rate of Growth 1971-81	Basic Needs Forecast 2000 ('000)
Agriculture, Forestry and Fishing	4,579	94.35%	6,244	91.15%	3.15%	12,004
Manufacturing	52	1.07%	34	0.50%	-4.16%	157
Electricity, Gas & Water	2	0.04%	3	0.04%	4.14%	14
Construction	5	0.10%	2	0.03%	-8.76%	9
Commerce	64	1.32%	109	1.59%	5.47%	505
Transport & Communication	10	0.21%	7	0.10%	-3.50%	32
Financial & Business Services	3	0.06%	10	0.15%	12.79%	46
Personal & Community Service	138	2.84%	314	4.58%	8.57%	1,454
Industries N.E.I.			27	1.85%		588
Total	4,853	100.00%	6,850	100.00%	3.51%	14,810
Non-agriculture	274	5.64%	606	8.85%	8.26%	2,806
Projected Total Employment Growth 1981-2000						7,960
Projected Employment Growth in Agriculture 1981-2000						5,760

Occupation

Professional & Technical	25	0.52%	64	0.93%	9.86%
Administrative	1	0.02%	6	0.09%	19.62%
Clerical	47	0.97%	49	0.72%	0.42%
Sales	60	1.24%	85	1.24%	3.54%
Services	34	0.70%	16	0.23%	-7.26%
Farming & Fishing	4,579	94.37%	6,260	91.39%	3.18%
Production & Labor Workers	106	2.18%	214	3.12%	7.28%
Occupations N.E.I.			156	2.28%	
Total	4,852	100.00%	6,850	100.00%	3.51%

Source: Central Bureau of Statistics: Population Census--1971; Population Census--1981; Vol. I, Part VII, p. 1.

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Table 2.5
Per Capita Real Income and Output Growth: 1964-1987

Year	Population ('000)	Real per Capita GDP	Percent Rate of Growth
1964/65	10,010	2,444	
1965/66	10,218	2,567	5.07%
1966/67	10,430	2,475	-3.61%
1967/68	10,646	2,440	-1.42%
1968/69	10,866	2,495	2.26%
1969/70	11,092	2,515	0.81%
1970/71	11,321	2,463	-2.06%
1971/72	11,556	2,460	-0.12%
1972/73	11,861	2,444	-0.68%
1973/74	12,177	2,533	3.66%
1974/75	12,501	2,432	-3.97%
New Series			
1974/75	12,501	2,432	
1975/76	12,833	2,482	2.04%
1976/77	13,175	2,506	0.96%
1977/78	13,525	2,557	2.05%
1978/79	13,885	2,549	-0.33%
1979/80	14,254	2,430	-4.66%
1980/81	14,634	2,561	5.38%
1981/82	15,023	2,587	1.03%
1982/83	15,397	2,445	-5.48%
1983/84	15,779	2,568	5.01%
1984/85	16,172	2,581	0.51%
1985/86	16,574	2,619	1.50%
1986/87	16,986	2,616	-0.12%

Constant Price per Capita GDP
Rates of Growth for Selected Periods

Period	Percent Annual Rate of Growth
1964-71	0.10%
1964-74	-0.05%
1971-81	0.50%
1971-85	0.45%
1974-81	0.88%
1974-84	0.59%
1974-85	0.68%
1976-86	0.43%
1964-86	0.31%
1982-86	1.70%
1965-85	0.10%

Source: NPC, Economic Survey 1986-1987. Real GDP from Table 2.3 divided by population from Ministry of Finance (1987). Growth rates for sub-periods are compound rates calculated by the IEES economists.

This has temporarily turned negative for 1986-1987 for reasons explained earlier and is shown there to become a -0.12 percent per capita growth rate. The negative -5.48 percent rate of growth of real per capita income in the 1982-1983 bad crop year is almost canceled out by the 5.01 percent rate in the following year. Except for self-cancelling deviations like this, the dramatic fact is that per capita income has not risen appreciably over the past 10-20 years.

Education and these low per capita growth rates are interdependent in several ways that are developed below in Section 2.2.5. Primary and lower secondary education are known to contribute significantly to the productivity of farmers, for example. The education of women, in particular, both raises the effectiveness of their economic contribution and lowers their fertility rates. Low per capita income in rural areas limits the funds available for education but, as growth begins and income rises, this may increase the funds for education and educational expansion itself may thus accelerate.

2.2.2.5 Capital Formation. Gross National Investment in physical capital as defined by the national income and product accounts is shown in Table 2.6, and the saving that makes it possible for investment to occur without inflation is shown in Table 2.7. Investment has grown as a percent of GDP from 14.5 percent in 1974, which was low by international standards, to 20.7 percent of GDP currently (World Bank, 1987, p. 210 and Table 2.6). This 20.7 percent of GDP invested in physical capital in Nepal is high, however, in relation to the 15 percent average in the 29 other lowest income countries in the world.

It is investment, rather than saving, that contributes to productivity growth by providing more physical capital, tools, equipment, and human capital skills for each worker. But a flow of saving, which involves refraining from consumption, is what permits investment to grow without generating excess total demand and hence inflation. Real Public Investment grew from 1974 through 1986, using the GDP deflator shown in Table 2.8, by 13.3 percent per annum. Private investment grew by 3.8 percent annually during the same period. This gives an overall growth rate of 6.6 percent. In the more recent 1983-1986 period real investment in physical capital has grown at about the same rate (7 percent), composed of a lower growth rate for public investment (2.2 percent) and a higher growth rate for private investment (11.9 percent).

Table 2.6

Investment in Physical Capital: 1979-1986

(millions of 1984-1985 rupees)

	1979	1980	1981	1982	1983	1984	1985	1986
GDP at Market Price	23,351	27,307	30,988	33,761	38,148	41,738	50,124	56,013
Less Exports of Goods and Non-factor Services	695	3,523	3,592	3,455	4,196	5,372	6,488	
Plus Imports of Goods and Non-factor Services	4,375	5,357	5,823	7,196	7,661	9,317	11,221	
Total Available Resources	17,311	25,031	29,141	33,224	37,502	41,649	45,408	
Investment	2,402	4,270	4,808	5,098	6,799	7,402	8,636	10,372
Gross Fixed Capital Formation	2,223	3,681	4,299	5,249	6,747	6,958	8,148	9,814
-- Public	505	1,466	1,823	2,487	3,306	3,340	3,543	4,267
-- Private	1,718	2,215	2,476	2,672	3,441	3,618	4,605	5,547
Change in Stocks	179	589	509	-151	52	444	488	558
Investment as a Percent of GDP	14.5%	18.3%	17.6%	16.5%	20.1%	19.4%	20.7%	20.7%

Source: Based on CBS and NRB Data; Ministry of Finance (1986 and 1987, p. 3 of Tables)

The low rate of domestic saving shown in Table 2.7 is supplemented by an amount equal to about 30 percent of this domestic saving that is transferred from abroad. The desire to maintain investment and the momentum for growth, faced with insufficient domestic savings and other resources, has contributed to the 14.3 percent inflation rate in 1985-1986 and the 9.28 percent inflation rate in 1987.

Table 2.7

Domestic Saving plus Net Transfer from Abroad

(millions of 1984-1985 rupees)

	1974	1979	1980	1981	1982	1983	1984	1985
Gross National Savings								
Gross Domestic Product		16,571	23,351	27,307	30,988	33,761	38,184	41,738
At Market Price Less Private and Govt. Consumption Expenditure		14,909	20,761	24,333	28,126	30,703	34,247	36,772
Gross Domestic Savings		1,662	2,590	2,974	2,862	3,058	3,937	4,966
Plus Net Transfers from Abroad		354	844	951	1,228	1,373	1,703	1,512
Plus Net Factor Income from Abroad		267	494	587	615	697	625	651
Gross National Savings	2,283	3,928	4,512	4,705	5,128	6,265	6,854	7,157
Gross National Savings as a Percent of GDP	13.8%	16.8%	16.5%	15.2%	15.2%	16.4%	16.4%	14.3%

Source: Based on CBS and NRB Data; Ministry of Finance (1986 and 1987, p. 3 of Tables)

Table 2.8

1964-1965 to 1986-1987 Inflation Rates

as Measured by the GDP Deflator (1984-1985 = 100)

Year	Agric.	Rate of Growth	Non-Agric.	Rate of Growth	GDP Total	Rate of Growth
1964/65	0.2585		0.2503		0.2539	
1965/66	0.3036	1.174	0.2769	1.106	0.2926	1.153
1966/67	0.2835	0.934	0.2663	0.962	0.2756	0.942
1967/68	0.3208	1.132	0.2855	1.072	0.3064	1.112
1968/69	0.3417	1.065	0.3053	1.069	0.3266	1.066
1969/70	0.3651	1.069	0.3249	1.064	0.3486	1.067
1970/71	0.3697	1.013	0.3361	1.035	0.3556	1.020
1971/72	0.4322	1.169	0.3613	1.075	0.4043	1.137
1972/73	0.3960	0.916	0.3617	1.001	0.3811	0.943
1973/74	0.4983	1.258	0.4006	1.107	0.4603	1.208
1974/75	0.5678	1.139	0.4989	1.246	0.5396	1.172
New Series						
1974/75	0.5678		0.4989		0.5396	
1978/79	0.6687	1.042	0.5731	1.035	0.6293	1.039
1979/80	0.7106	1.063	0.6286	1.097	0.6772	1.076
1980/81	0.7378	1.038	0.7169	1.140	0.7309	1.079
1981/82	0.8057	1.092	0.7862	1.097	0.7992	1.093
1982/83	0.8773	1.089	0.9239	1.175	0.8975	1.123
1983/84	0.9270	1.057	0.9648	1.044	0.9419	1.050
1984/85	1.0000	1.079	1.0000	1.036	1.0000	1.062
1985/86	1.1619	1.162	1.1165	1.116	1.1430	1.143

Source: Ministry of Finance (1987)

Another important part of total investment is the investment in human capital formation that also contributes to growth. Focusing on education, Table 2.9 shows the government investment in education through both the regular and development budgets increasing from 9.39 percent of GDP in 1980-1981 to 11.1 percent in 1985-1986. To this must be added the private investment made by families in the form of forgone earnings (i.e., forgone production) shown further down in Table 2.9.

Table 2.9

Public and Private Investment in Education: 1980-1981 through 1987-1988[5]

(millions of current price rupees)

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88[4]
Public Investment in Education[1]								
Education Expenditures (Regular Budget)	98.6	106.8	129.4	137.2	161.4	207.6	209	211
Education Expenditures (Development Budget)	285.6	412.3	604.6	678.6	644.2	879.4	1,021	1,328
Total Public Investment in Education	384.2	519.1	734.0	815.8	305.5	1,087	1,126	1,539
As a % of Total Govt. Expenditure	9.39%	9.68%	10.52%	10.97%	9.60%	11.10%	-	-
Household Investment in Education								
Fees, Uniforms, Materials[2]	113	105	145	163	199	227	(257)	(292)
Forgone Earnings[3]	1,534	1,432	1,860	2,120	2,446	2,905	(3,198)	(3,503)
Total Investment in Education	2,031	2,056	2,739	3,098	3,450	4,219	(4,581)	(5,334)
Public plus H.H. Investment as a % of GDP	7.0%	6.4%	7.6%	7.7%	7.5%	7.9%	(7.7%)	(8.0%)

Sources: [1]Ministry of Finance (1987, pp. 54, 54, and p. 1 of the Tables).

[2]Estimate based on Fees and Uniform Costs in Section 2.6.3.1 of this sector assessment multiplied by 1/4 primary enrollment plus total secondary plus total higher education enrollments from Section 2.6.1.2.

[3]This is based on per capita income (GDP) in constant 1984-85 prices, from Table 2.5, Section 2.2.2.4, times the GDP deflator shown in Section 2.2.2.4. This average per capita income is used as an estimate of what school-age children could earn or produce in real terms in agriculture, or in urban employment, if not in school. The result is multiplied by enrollment (1/4 primary plus total secondary plus higher education enrollments). This assumes zero forgone earnings for primary children in Grades 1-4, even though strictly speaking the production is not zero, but is small. In Grades 5 and above, forgone earnings (or forgone production) costs borne by the family are substantial. This assumes that children are as productive as adults, and a change in this assumption would produce different results.

[4]Estimates for 1986-87 are based on the amounts budgeted reduced by 23 percent. Actual expenditures shown in the rest of the table have been about 87 percent of the amount budgeted in most recent years.

[5]Items in parentheses are estimates based on extrapolations of enrollment growth.

This investment in human capital also must be financed with saving. The government portion of the saving occurs as taxes are collected, inducing reduced consumption. The saving by the family occurs as parents forgo the production the child could contribute through work in agriculture or at home.

Table 2.9 shows that the household's investment in primary and secondary education, even if fees were negligible, is many times larger than the investment by government. This is because one child's pro-rata share of the costs of education paid by government is considerably less than the real value of what the child could produce helping at home or in the fields. This is important because the high costs of basic primary and lower secondary education to the family are one factor explaining why rural children are withdrawn from school at an early age. Another reason why parents sometimes withdraw children from school is because the perceived value of additional education is below the costs. Thus, raising the quality of education can increase the amounts parents are willing to spend (or forgo) for education.

Forgone earnings costs are the major and (for non-land owners) almost the only form of saving done by families in subsistence agriculture. As government invests more in education (e.g., by reducing supplementary primary charges and secondary school fees), this encourages parents to send their children to school.

The 11 percent that education receives as a share of the current government budget (Table 2.9) is low in relation to the fastest growing countries in the world, but is about the same as the 11.5 percent share of education in the public budgets of the 56 middle income economies worldwide (World Bank, 1987, p. 246). The large percentage increases in the 1986-1987 budget (e.g., the 35 percent increase for primary education) needs to be interpreted with care because actual expenditures from the development budget tend to be considerably below those budgeted: about 30 percent of the development budget has not usually been spent in recent years. Total investment in human capital formation via education, shown at the bottom of Table 2.9, has risen from 7.0 percent of GDP in 1980-1981 to approximately 8.0 percent of GDP in 1987-1988.

2.2.2.6 Trade Flows and Foreign Exchange Rates. An effective way to achieve faster economic growth, that also reduces the unequal distribution of real income, has involved investment in physical and human capital that raises productivity, and that simultaneously improves the competitiveness of exports (McMahon, 1987). These investment policies need to be supported by other policies, such as avoiding overvaluation of the Nepalese rupee, that also promote exports and foster export-driven growth.

The currency in Nepal often becomes over-priced. This tends to benefit urban dwellers, who import consumption goods from abroad and enjoy inexpensive agricultural products at the expense of farmers who cannot export because their crops are not competitive in world markets. It also harms agriculturally-based industries, such as leather goods, whose exports declined further in 1986-1987 (Ministry of Finance, 1987, p. 8). An over-priced currency slows the development of agriculture and tends to create large trade deficits, both of which are problems in Nepal (see Table 2.10, line 1, and the slow growth of agriculture in Table 2.3 above). An over-priced currency also benefits industries that import their raw materials and which may have more political influence. It is also disadvantageous to those industries that develop domestic sources for their raw materials with a larger value added. The parents' capacity to save (forgo earnings) and invest in education in the rural areas is thereby adversely affected, as those farms suffer that have a marketable surplus.

In January 1986 the Nepalese currency was devalued by 14.7 percent, and a series of regulations was imposed on domestic credit used by lower priority public and private sectors for imports. This does not yet appear to have reduced the trade deficit, since in the first nine months of 1986-1987 it was 5,202.1 million rupees, whereas in the first nine months of 1985-1986 it was a somewhat smaller 4,523.9 million rupees. Imports are up, encouraged by an overvalued rupee that lowers their effective price to importers, and partially due to increases in the price of oil. Exports so far have failed to recover, partly because markets once lost take a long time to regain.

The inflation rate has slowed, with the national urban price index increasing 2.6 percent during the first nine months of 1986-1987, compared to 14.8 percent during the same period in the previous year, as reported by the Ministry of Finance (1987, p. 61 of Statistical Appendix). But the 11.5 percent increase in the Consumer Price Index during 1986 has not been accompanied by a commensurate devaluation. Hard currencies are being bought on the black market (a free market) at a non-official rate at about 14 percent above the official rate, and the trade deficit remains large. Both indicate that the Nepalese currency is still somewhat over-priced in spite of the new market basket of currencies approach.

Despite the continuing deficits in the balance of trade, and the continuing current account deficits shown in Table 2.10, Nepal has received a counterbalancing flow of capital movements due largely to development grants and loans from active external assistance agency countries and multilateral agencies. These resulted in a temporary net balance of payments surplus in 1985-1986 which has turned negative more recently with the net loss of reserves during the first nine months of 1986-1987.

Table 2.10

Government Expenditure and Sources of Finance:

1980-1981 through 1985-1986

(millions of rupees)

Head	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
Expenditure	4,092.3	5,361.3	6,979.2	7,437.3	8,395.0	9,797.1
Regular	1,361.2	1,634.4	1,997.1	2,273.5	2,906.2	3,584.0
Development	2,731.1	3,726.9	4,982.1	5,163.8	5,488.8	6,213. 1
Receipts	3,288.1	3,672.8	3,931.7	4,285.9	4,840.1	5,817.4
Revenue	2,419.2	2,679.5	2,841.6	3,409.3	3,916.6	4,644.5
Foreign Grants	868.9	993.3	1,090.1	676.6	923.5	1,172.9
Overall Surplus (+) or Deficit (-)	-804.2	-1,688.5	-3,047.5	-3,151.4	-3,554.9	-3,979.7
Source of Financing						
Deficit						
Foreign Loan	693.3	729.9	985.8	1,670.9	1,752.9	2,501.1
Internal Loan	250.0	500.0	1,000.0	1,576.8	1,802.0	1,403.4
Bonds and Bills etc.	-	-	-	1,076.8	1,302.0	903.4
Bonds (For Non-Banking Sector only)	-	-	-	500.0	500.0	500.0
Cash Balance						
Surplus(+) or Deficit(-)	-139.1	458.6	1,061.7	-96.3	-	75.2

Source: Ministry of Finance (1987)

Foreign debt, incurred almost entirely on concessionary terms and mostly from IDA and ADB loans, has increased dramatically. Debt service now requires about 10 percent of the total (regular plus development) budget, an amount that will increase if U.S. and other interest rates increase. Preliminary indications are that borrowing during 1986-1987 will be significantly higher.

Under the IMF-sponsored economic reform program, the government has committed itself to (1) periodic review of the need for further devaluation and continued expansion of the flexible exchange rate management policy, (2) continued restraint on public deficit expenditure, including increased public revenue generation through improved tax administration, (3) reduction of administered prices, (4) a limit on external commercial borrowing, and (5) reduction of the regulations on trade, such as import and export licenses and customs, and further identification and encouragement to exports to strengthen the trade regime.

2.2.3 National Budget

This section covers the national budget revenue and expenditures, as well as some aspects of the most current budget (1987-1988) available at the time this report was prepared.

2.2.3.1 Revenue. Total internal revenue of the government has been increasing steadily. Total revenue increased from Rs 2,419.5 million in 1980-1981 to Rs 4,644.5 million in 1985-1986 implying an average increase of 13.9 percent per year (Table 2.11). The revenue generated in 1985-1986 constituted 9.3 percent of GDP for that year. The internal mobilization of revenues as a proportion of GDP is low compared to the experience of several other developing countries. The rate of increase of internal revenue is also low in relation to the annual rate of increase of total government expenditure, which during 1980-1981--1985-1986 was an average of 28 percent per year (Table 2.10).

The total revenue of the government is comprised of tax revenue and non-tax sources as shown in Table 2.11. In 1985-1986, *tax* revenue amounting to Rs 3,755 million constituted 81 percent of the total revenue worth Rs 4,644.6 million. The major proportion of tax revenue is accounted for by customs, and excise and sales taxes, followed by the taxes on property, profit, and income. Land revenue and registration, which in the past was a major source of revenue, contributed 5.3 percent of total revenue in 1985-1986. Indirect taxes thus are the predominant sources of revenue (Table 2.11).

Table 2.11

Tax and Non-Tax Revenue: 1980-1981 through 1985-1986
(millions of rupees)

Revenue Source	1980/81	1981/82	1982/83	1983/84	1984/85	1985/1986	1985/86
Tax Revenue:							
Customs	815.8	825.1	760.9	825.9	1,064.5	1,231.0	26.5%
Tax on Consumption & Production of Goods & Services	866.7	1,006.3	1,213.6	1,365.2	1,523.4	1,757.4	37.8%
Land Revenue & Registration	178.5	170.0	171.5	212.2	218.6	244.3	5.3%
Tax on Property, Profit & Income	174.7	209.9	275.1	333.7	344.7	426.7	9.2%
Tax Total	2,035.7	2,211.3	2,421.1	2,737.0	3,151.2	3,659.4	78.7%
Non-Tax Revenue:							
Charges, Fees, Fines & Forfeiture	48.7	56.9	71.5	170.4	283.2	201.9	4.3%
Receipts from Sales of Commodities & Services	172.0	189.4	162.9	225.7	253.1	305.6	6.6%
Dividend	87.3	106.5	119.1	109.0	86.2	110.1	3.4%
Royalty & Sale of Fixed Assets	8.0	16.8	9.2	40.4	30.7	32.6	0.7%
Mint	21.3	5.3	6.9	3.7	0.9	--	---
Principle and Interest Payment	30.1	29.1	47.6	117.4	101.6	324.5	7.0%
Miscellaneous	16.1	64.2	3.3	5.7	9.9	10.5	0.2%
Non-Tax Total	383.5	468.2	420.5	672.3	765.6	985.2	101.0%
Total Revenue	2,419.2	2,679.5	2,841.6	3,409.3	3,916.8	4,644.6	

Source: Ministry of Finance, Economic Survey, 1986/87

The *non-tax* sources of revenue consist of receipts from sales of commodities and services, repayment of principal, interest, dividends, fines and charges, fees, minting profits, etc. In 1985-1986, the sale of commodities and services raised Rs 305.6 million (6.6 percent of total revenue) (Table 2.11). These items include drinking water charges, irrigation charges, electricity rates, postal services, and income from agricultural, educational, forestry, and transportation sectors. In recent years, the government has raised the charges for utility services, partly to meet their rising costs of expansion and maintenance.

2.2.3.2 Government Expenditures. The composition of government expenditures, by regular and development kinds, is given in Table 2.12 for 1985-1986. The actual expenditures by category, from 1980-81 through 1985-1986, are given in Table 2.13. The public expenditures of the government have increased sharply in recent years to finance administrative and investment activities. Government expenditures are divided into "Regular" and "Development" categories, the regular being largely recurrent expenditures of the administrative system, and the development being expenditures on new program activities. Annual development expenditures, in effect, constitute yearly plan outlays. The regular expenditures increased from Rs 1,354.3 million in 1980-1981 to Rs 3,583.9 million in 1985-1986, being an average increase of 21.5 percent per year as shown in Table 2.13. Similarly, the development expenditures increased from Rs 2,731.1 million in 1980-1981 to 6,213.1 million in 1985-1986, comprising an average increase of 17.9 percent per year. In 1980-1981, the development expenditures constituted 66.8 percent of total government expenditures. In 1985-1986, development expenditures constituted a somewhat smaller 63.4 percent of the total government expenditure (see Table 2.13).

With respect to the Regular Expenditure in 1985-1986 (Rs 2,584 million), 14.4 percent was for general administration, 16.9 percent for defense, 6.5 percent for economic service, 13.8 percent for social services, and 28.4 percent for loan and interest payments. The higher proportion of the regular expenditure for loan and interest payments is especially notable. It indicates a mounting burden of internal and external debt on the economy. Only 6 percent of the regular expenditures were for education (included among the social services in Table 2.12).

With respect to actual expenditures from the Development Budget in 1985-1986, of the total development expenditures amounting to Rs 6,213.3 million, 27.4 percent was for social services, 71.1 percent for economic activities, and the rest for other activities. The education sector received 14.1 percent of the development

expenditures in that year. The education sector expenditure has grown from Rs 285.6 million in 1980-1981 to Rs 879.4 million in 1985-1986. Development expenditures for economic services have increased from Rs 2,101 million in 1980-1981 to Rs 4,414.6 million in 1985-1986 (Table 2.13).

Table 2.12

Composition of Government Expenditures: 1985-1986

(millions of rupees)

Actual Expenditure	Amount	Percent
1. **Regular**		
a. Constitutional Organs	113.0	3.2
b. General Administration	516.1	14.4
c. Revenue Administration	75.4	2.1
d. Economic Administration and Planning	31.5	0.9
e. Judicial Administration	51.6	1.4
f. Foreign Service	71.6	2.0
g. Defense	606.2	16.9
h. Social Services	493.1	13.8
i. Economic Services	232.3	6.5
j. Loans and Investment	9.0	0.3
k. Loan and Interest Payment	1,019.3	28.4
l. Miscellaneous	364.8	10.2
Sub-Total	3,583.9	100.1
2. **Development**		
a. General Administration	10.3	0.2
b. Economic Administration and Planning	4.0	0.1
c. Social Services	1,699.9	27.4
d. Economic Services	4,414.6	71.1
e. Miscellaneous	84.5	1.4
Sub-Total	6,213.3	100.2
Total (Lines 1 + 2)	9,797.2	

Source: Ministry of Finance (1987)

Table 2.13

Actual Expenditures by Category: 1980-1981 through 1985-1986

(millions of rupees)

Regular Budget	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
Constitutional Organs	61.9	60.3	54.5	57.9	60.9	113.0
General Administration	218.8	253.2	323.6	351.1	411.3	516.1
Revenue Administration	35.8	43.9	54.7	58.7	63.0	75.[illegible]
Economic Administration and Planning	6.7	12.0	24.2	25.0	28.0	31.5
Judicial Administration	18.5	25.8	38.6	39.9	43.9	51.6
Foreign Services	38.8	50.1	52.5	54.8	62.3	71.6
Defence	258.9	282.8	392.4	453.6	507.9	606.2
Social Services	210.2	249.6	320.4	360.5	410.6	493.1
Economic Services	110.1	130.6	165.7	174.6	199.4	232.3
Loans and Investment	11.3	7.9	3.3	-	11.1	9.0
Loan Repayment and Interest	216.3	256.7	307.0	497.6	678.2	1,019.3
Miscellaneous	167.0	254.2	252.4	199.8	429.6	364.8
Sub-total	1,354.3	1,627.1	1,989.3	2,273.5	2,906.2	3,583.9

(table continued)

Table 2.13 (continued)

Development Budget	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
General Administration	0.7	2.9	7.9	13.0	11.9	10.3
Economic Administration and Planning	30.0	14.4	20.2	15.4	5.2	4.0
Social Services	572.5	1,059.6	1,540.3	1,493.5	1,501.2	1,699.9
a. Education	285.6	412.6	604.6	678.6	644.2	879.4
b. Health	97.7	152.8	216.3	199.8	254.8	255.9
c. Drinking Water	73.2	107.5	241.9	220.9	201.6	228.3
d. Panchayat and Local Development	90.0	270.3	335.2	334.5	339.3	280.8
e. Other Social Services	26.0	116.7	142.3	59.7	61.3	55.5
Economic Services	2,101.0	2,556.1	3,287.0	3,582.5	3,617.0	4,414.6
a. Agriculture	257.0	468.0	668.6	547.1	703.6	856.2
b. Irrigation	288.2	359.6	487.4	545.3	652.2	846.7
c. Land Reform	12.2	16.3	20.6	21.4	17.9	18.9
d. Survey	30.2	37.7	45.6	45.9	40.7	46.7
e. Forest	89.3	185.4	228.1	234.5	290.4	365.0
f. Industry and Mining	123.2	266.5	373.0	651.3	347.0	397.5
g. Communication	30.8	49.2	74.3	97.2	90.4	89.5
h. Transportation	601.3	744.0	802.2	746.8	923.0	717.1
i. Electricity	653.2	382.2	443.3	653.0	504.9	1,035.4
j. Other Economic	16.6	47.2	143.9	40.0	49.9	41.6
Miscellaneous	26.9	93.9	126.7	59.4	353.3	84.5
Sub-total	2,731.1	3,726.9	4,982.1	5,163.8	5,488.6	6,213.3
Total Regular and Development Budget	4,085.4	5,354.0	6,971.4	7,437.3	8,394.8	9,797.2

Source: Ministry of Finance (1987)

Note: Figures have been rounded

With respect to the financing of expenditures, the government budgets have relied heavily on foreign grants and loans over the past several years. In 1985-1986, 12 percent of the total expenditures of Rs 9,797.1 million was met by foreign grants, 25.5 percent by foreign loans, and 14 percent by internal loans. Internal resources (government revenues) met only 47.4 percent of the expenditures. A large portion of the internal loans were mobilized from the banking sector, leading to increases in the money supply.

External and internal loan financing has been used to fill the large gap between receipts (revenue and foreign grants together) and expenditures. The absolute amount of the deficit (the gap between receipts and expenditures) has grown during the past several years, and is a major source of inflationary pressure. If the deficit could be reduced, then the interest rates would not have to be so high. This would stimulate private investment, lower the price of the rupee, and hence stimulate exports. However, the volume of foreign loans has been increasing significantly (Table 2.10).

2.2.3.3 The 1987-1988 Budget. The budget for 1987-1988 was presented July 9, 1987. The revised estimate for 1986-1987 shows that Rs 1,187.2 million were spent, 63.6 percent of it for development expenditure. Internal revenues have covered 49 percent of the total expenditure. Foreign grants and loans together accounted for 36.5 percent of total expenditure. Internal loans were used for meeting 14.5 percent of expenditure.

The budget estimate for 1987-1988 put expected expenditures at Rs 15,188 million, 63.3 percent being devoted to development expenditures. Internal revenue and foreign assistance (grants and loans together) are expected to meet 48.4 percent and 43.4 percent of the proposed expenditures, respectively. The balance is to be covered by internal loans.

Fiscal policies in recent years have emphasized the following six measures for greater mobilization of resources: (1) increasing income elasticity in tax revenue; (2) improving revenue administration; (3) streamlining public enterprises; (4) raising taxation rates on luxury items (imports); (5) broadening of the tax base on urban houses and all land; and (6) raising rates on public utility services, such as water and electricity.

2.2.4 Development Plans and Education Expenditures

The two sections immediately below cover the first six plans with a brief overview for each of them, followed by a more detailed presentation of educational aspects of The Seventh Plan.

2.2.4.1 The First Six Plans. The following paragraphs present brief summaries of education expenditures under the first six development plans.

The First Plan (1956-1961): Nepal's first development plan was designed to raise living standards and to promote employment. The Report of the Nepal National Education Planning Commission (1956) guided most of the activities in the education sector during the period. Rs 210 million was spent implementing the plan. Substantial progress was attained in the establishment of schools, partly due to the great enthusiasm for education shown by people. The shortage of trained manpower was keenly felt during the plan period. The establishment of Tribhuvan University in 1959 was a significant landmark of this period. Also, normal schools were established throughout the country for training primary school teachers. A College of Education was also established in Kathmandu.

The Second Plan (1962-1965): This plan aimed at creating an economic infrastructure for development. Rs 596 million was spent implementing the plan. The growth in the number of schools and enrollments continued. It is estimated that by 1965 about 27 percent of the primary school age children were in the five-grade primary schools. By 1964, there were 220 high schools and 30 colleges.

The Third Plan (1965-1970): The Third Plan aimed at further developing the infrastructure, increasing agricultural production, and diversifying trade. Rs 1,780 million was spent on public sector programs. It is estimated that the number of primary schools increased to 7,000, and the percentage of primary school age children in schools rose to 32 percent by 1969-1970.

One important development was that free and compulsory primary education was introduced within two districts, and in over 100 village panchayats in the remaining districts, financed mainly by local taxation. In the late 1960s, 29 multi-purpose schools were established, offering a range of vocational subjects.

The main developments in education during 1960-1970 included rapid growth of school enrollments, due mainly to strong social demand; extensive participation of local communities in establishing schools; establishment of primary teacher training facilities; setting up of multi-purpose schools; and initiation of free and compulsory primary education. Compulsory education did not mean, however, that primary education became universal. The multi-purpose secondary schools and compulsory education were terminated with the implementation of the NESP in 1971.

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The Fourth Plan (1970-1975): The Fourth Plan aimed at increasing agricultural and industrial production, development of the infrastructure, maximum use of the labor force, control of population growth, and establishment of the pre-conditions for a society without exploitation. Rs 2,040 million was spent in the public sector in the first four years of the plan.

The National Education System Plan (1971-1976) was introduced in the second year of the Fourth Plan period, and took precedence over the education sector component of the Fourth Plan. The NESP objectives guided the activities in education during this and the subsequent Fifth Plan period.

The NESP initiated a number of important changes in the educational system. Some of these are that it:

- Introduced a short cycle primary education (Grades 1-3) in place of the former Grades 1-5, thus causing a sudden steep rise in the reported enrollment ratio
- Introduced vocational education in all secondary schools
- Provided special facilities for remote areas
- Stressed technical education at the higher education level
- Led to the overhauling of the curriculum at both primary and secondary schools and higher education levels

By 1974-1975, 0.458 million students were enrolled in the primary grades (1-3). The primary enrollment ratio target for 1976 was 64 percent, which was not reached. This target was then fixed for the subsequent plan period. During 1971-1972 to 1975-1976, a total of Rs 708 million was budgeted for the education sector in annual budgets, compared to the NESP (1971-1976) budgeted expenditure of Rs 590 million. This formed 9 percent of the total government budget for the five year period.

The Fifth Plan (1975-1980): This plan aimed at increasing production to meet the essential needs of the people, maximizing the use of the labor force, and attaining balanced regional development. Rs 8,860 million was spent in the public sector (at current prices) compared to the planned outlay of Rs 6,170 million at 1974-1975 prices.

The declaration of free primary education and the provision of free primary textbooks for Grades 1-3 caused sharp increases in primary enrollments during this period; the primary enrollment ratio (students in Grades 1-3 relative to the age 6-8

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year old population) reached 87.9 percent by the end of the plan period. During the plan period, primary enrollments increased by 127.5 percent as shown in Table 2.14, lower secondary enrollments by 134.4 percent, and secondary enrollments by 79.8 percent. Similarly, as shown in Table 2.15, the total higher education enrollment increased by 83.2 percent during the Period.

Several programs of the NESP, that were being executed consistently but that had several difficulties relating to implementation, were critically assessed during the final years of the plan. "A Full Term Evaluation" of the NESP was undertaken by the National Education Committee in 1979. Further, the Research Centre for Educational Innovation and Development (CERID) undertook a critical analysis of the vocational education program in 1978.

The Full Term Evaluation made wide ranging recommendations regarding all aspects of school and higher education. Among the major recommendations made were the restructuring of the secondary curriculum, remodelling of the supervision system, changing the university institute structure, and implementing a system of financing to be based more on local resources.

The Sixth Plan (1980-1985): This plan had three objectives: increasing production at a rapid rate, increasing opportunities for productive employment, and fulfilling the minimum basic needs of the people. During the plan period, Rs 22,000 million was spent in the public sector. Development expenditures in the education sector amounted to Rs 2,703 million during the period.

The beginning of the plan coincided with important changes in the educational system. The primary cycle of Grades 1-5 was reinstated, and the lower secondary cycle was reduced to Grades 6 and 7. Vocational education content in secondary schools was reduced drastically. The secondary school curriculum was thoroughly revised.

The government adopted the system of lump sum grants to schools, in line with the policy of gradually reducing the dependence on government financing mentioned in the education policy in the plan.

A separate stream of vocational education (the trade schools). coinciding with the same grades as secondary general education, was developed to provide vocational education to youths. Enrollment ratio targets were specified for the primary, the lower secondary, and the secondary levels. As may be calculated from Table 2.16, from 1979-1980 to 1984-1985 primary enrollment increased by 43 percent, lower secondary enrollment by 87 percent, and secondary enrollment by 89 percent.

Table 2.14

Education Progress during the Fifth Plan (1975-1980)

Education Level	1974-75	1979-80
1. Primary (Grades 1-3)		
Schools	8,314	10,136
Enrollment	458,516	1,043,332
Teachers	18,874	27,384
2. Lower Secondary (Grades 4-7)		
Schools	1,893	3,261
Enrollment	174,143	408,907
Teachers	6,496	11,294
3. Secondary (Grades 8-10)		
Schools	479	704
Enrollment	67,214	120,838
Teachers	3,451	4,610
4. Total (Lines 1 + 2 + 3)		
Schools	10,686	14,101
Enrollment	699,873	1,573,077
Teachers	28,821	43,288

Source: National Planning Commission, The Sixth Plan (1980-1985) in Nepali, p. 80

Table 2.15

Higher Education Enrollments during the Fifth Plan (1975-1980)

Institutes		
1. Technical	5,207	8,181
a. Medicine	1,120	1,753
b. Forestry	190	283
c. Agriculture and Animal Science	378	1,094
d. Engineering	759	1,584
e. Science and Technology	2,760	3,467
2. Professional	7,891	16,030
a. Education	4,014	6,178
b. Management	3589	7,374
c. Law	288	2,478
3. General	8,662	15,652
a. Humanities and Social Science	8,387	15,186
b. Sanskrit	275	466
Total (Lines 1 + 2 + 3)	21,760	39,863

Source: National Planning Commission, The Sixth Plan (1980-1985) in Nepali, p. 81

Table 2.16

Education Progress during the Sixth Plan (1980-1985)

Education Level	1979-80	1984-85
1. Primary		
a. Schools	10,404	11,704
b. Enrollment	1,317,068	1,833,655
c. Teacher	28,353	49,305
2. Lower Secondary		
a. Schools	2,223	3,502
b. Enrollment	142,271	266,639
c. Teachers	11,145	11,037
3. Secondary		
a. Schools	785	1,280
b. Enrollment	121,007	228,502
c. Teachers	4,683	7,882

Source: National Planning Commission, The Seventh Plan (1985-1990) in English, p. 743

Note: Primary and Lower Secondary data in this table vary from data in Table 2.14 due to adjustments to take care of structural changes in levels (e.g., primary 1-5 grades are lower secondary 6-7 grades from 1980 onward).

By 1984-1985, the enrollment ratios at primary, lower secondary, and secondary levels had reached 78 percent, 34.5 percent, and 24 percent, respectively. At the primary level, this measure of enrollment exceeded the target slightly, but evidence suggests that actual attendance later in the year is significantly below this enrollment figure due to high drop outs.

A number of education projects were initiated during the plan period. These were the Education for Rural Development (Seti Zone) Project, the Primary Education Project, the Science Education Project, the Functional Adult Education Project, and the Population Education Project.

Tribhuvan University trained 14,677 persons at various levels in several technical areas through its technical institutes during the plan period as shown in Table 2.17. The total number of students admitted during the period was 34,315.

Table 2.17

Higher Education Progress (Technical Institutes)

during The Sixth Plan (1980-1985)

Institute		Total Admission	Total Production
1. Medicine			
a.	Certificate	1,500	785
b.	Graduate	300	150
c.	Post Graduate	30	20
d.	Low Level	1,625	1,100
	Subtotal a + b + c + d	3,455	2,055
2. Forestry			
a.	Certificate	990	700
b.	Graduate	200	175
c.	Training	100	80
	Subtotal a + b + c	1,290	955
3. Agriculture and Animal Science			
a.	I.Sc. Agri. Science	610	530
b.	B.Sc. Agri. and Vet.	650	400
c.	J.T.A.	2,040	1,800
d.	Agri. Training	450	450
e.	In-Service Training	120	120
	Subtotal a + b + c + d + e	3,870	3,300
4. Engineering			
a.	Certificate	3,282	1,463
b.	Graduate	288	131
c.	Low Level (Trade Training)	1,480	903
	Subtotal a + b + c	5,050	2,497
5. Science and Technology			
a.	Certificate	15,100	3,020
b.	Graduate	4,000	1,600
c.	Post Graduate	1,500	1,200
d.	Ph.D.	30	50
	Subtotal a + b + c + d	20,650	5,870
6. Total (Lines 1 + 2 + 3 + 4 + 5)		34,315	14,677

Source: National Planning Commission, the Seventh Plan (in English) p. 769-771

2.2.4.2 The Seventh Plan (1985-1990). This plan set the same three objectives as the Sixth Plan, namely: to attain a high growth rate in production, to increase productive employment opportunities, and to fulfill the minimum needs of the people which, among others, includes primary and skill based education. The plan called for total expenditures of Rs 50,410 million (at 1984-1985 prices) of which Rs 29,000 million was to be accounted for by the public sector. Of the public sector outlay, a sum of Rs 3,010.2 million (approximately 10 percent of the total public sector outlay) has been allocated for education.

The planned allocations for different subsectors and programs within the total allocation for education are shown in Table 2.18.

Table 2.18

Education Budget under the Seventh Plan (1985-1990)

Area	(Rs in Million)	Percent
Primary and Adult Education	302.4	10.0
Other Educational Programs	526.0	17.5
Art and Culture	17.0	0.6
Higher Education	750.0	24.9
District Level Projects	1,341.6	44.6
Science and Technology	73.2	2.4
Total	3,010.2	100.0

Source: National Planning Commission, The Seventh Plan, pp. 126 and 771

The major programs and targets of the Education Sector Plan within each sub-sector are as follows:

Primary Education

Provision will be made for enrolling 87 percent of the 6-10-year-old population. For this purpose, 1,000 new primary schools will be established and an additional 12,838 teachers will be recruited.

Some town Panchayats will introduce compulsory primary education on their own initiative. Some primary schools will be set up with the mobilization of educated youths. Pre-primary education will be encouraged.

The Primary Education Project will be implemented in six districts. This project intends to improve the quality of teaching in primary schools through teacher training at the Resource Center level, improve supervision, improve provision of better reading materials, and develop physical facilities.

Another project, the Education for Rural Development (Seti Zone) Project, that has been in operation since 1980, will be continued in an expanded form. This project uses the Resource Center approach as the main mechanism for training and other activities.

Secondary Education

The policy will be to gradually integrate lower secondary and secondary grades, and have a system of secondary education comprising Grades 6-10. However, the plan has specified gross enrollment ratio targets for the lower secondary and secondary levels separately; which are 45 percent for lower secondary, and 36 percent for secondary.

The plan also mentions that an additional 450 lower secondary and 900 secondary schools will be granted approval. Moreover, the plan calls for the establishment of model schools at the regional level. Such schools will provide teacher training services for the improvement of quality in neighboring schools.

Technical Education

Six new trade schools, including the Women's Technical School at Sanothimi, Bhaktapur, will be established. The Directorate of Technical and Vocational Education of the MOEC will also be strengthened.

Girls' and Women's Education

The plan mentions that special arrangements will be made for the promotion of female education. For this purpose, a number of activities will be carried out. These included the implementation of the Access of Girls and Women to Education Project, which has since been cancelled. Construction of a central hostel and feeder hostels for girls being trained to become primary teachers will be completed. The primary teacher training for girls will also be continued under this project.

Science Education

This project, designed to improve science and mathematics teaching at the secondary level, will be implemented in 25 districts. The components include teacher training, production and distribution of science education materials, construction of science laboratories, and other activities.

Teacher Training

The MOEC will make arrangements for providing inservice training to 2,895 primary teachers, 1,035 lower secondary teachers, and 825 secondary teachers. Special training programs will be started for training teachers of 18 remote districts. Radio Education Teacher Training will provide training for 6,000 teachers.

Higher Education

The focus of the program will be on quality improvement of higher education by strengthening the existing campuses. Emphasis will also be placed on increasing the outputs of middle and higher level manpower in technical areas.

Steps are to be taken to improve the teaching process in order to complete courses in the standard time. Capacity and range of subject offerings of the technical institutes will be increased. With regard to the technical institutes, the targets shown in Table 2.19 for enrollment and output have been set.

Table 2.19

Higher Education Targets under the Seventh Plan

Field	Admission Target	Output Target
Medicine	3,455	2,055
Forestry	1,290	955
Agriculture and Animal Science	3,870	3,300
Engineering	5,050	2,497
Science & Technology	20,650	5,870

Source: National Planning Commission, The Seventh Plan (1985-1990) in English, p. 762

2.2.5 Education and Economic Growth

This section gives a brief overview of the contributions of education to per capita economic growth. It covers the measures of the overall contributions of education to industrialization and growth, some illustrations of successful investments in eduction, and estimates of rates of return to investments in education.

2.2.5.1 Introduction. "Rising living standards," which is a clear goal expressed in many official pronouncements by the government, requires that there be economic growth in per capita terms. Per capita growth requires that adults now underemployed be drawn into the labor force, the productive skills of the entire population be utilized more effectively, and the accelerating rate of population growth be reduced. Education plays a vital role in each of these matters.

2.2.5.2 Overview. A brief overview of evidence for the effects of education on development is given here. The high payoff for investment in primary education is common sense and the evidence for this is widely known and accepted by educators worldwide. The evidence for the effects of all levels of education on earnings is based on microeconomic data estimating the contribution to earnings made by primary education, lower secondary education, upper secondary education, and higher education.

The evidence measures the relative contribution to growth of different levels of education, and of different types of education at each level. This evidence demonstrates that the largest contribution to per capita growth is made by investment in primary education. When too much is spent on the higher education of too many persons, leaving the mass of the labor force semi-literate without even lower secondary education, those in specific skill areas and with advanced education remain unemployed or emigrate, and per capita growth rates remain low.

2.2.5.3 Contributions of Education. As summarized in Table 2.20, education alone has been found to explain directly 25-33 percent of the differences in per capita income. This does not include its indirect contributions to per capita income through its effect on lowering fertility rates (Schultz, 1974, pp. 3-22), through its positive effects on longevity and hence lifetime productivity, or through it's effects on assimilating a larger fraction of the female population into the market economy. Indirect effects are found by Krueger (1968) to explain about another 25 percent as shown in the first column of Table 2.20. This adds up to the 50-58 percent of the growth in per capita income shown in Table 2.20 explained by these direct plus indirect contributions of education.

Table 2.20

Effects of Education on Industrialization

Effects of Education	Per Capita Income Growth[1]	Growth of Output per Worker in Agriculture[2] & [3]		Return per year per "Dollar" Invested[4]
Direct Effects of Basic Education	25-33%	7-15%	17-41%	21.2%
Indirect Effects Via:				
Better Health and Increased Age				
Reduced Population Growth Rates	25%			
Absorption of a Larger Percent Into Industry				
Advanced Technical Education that Embodies New Technology		15-25%		25.6%
Direct Plus Indirect Effects				
Total Percent of Per Capita Income Differences Explained by Education	50-58%	30-32%		
Total Return Per Year Per Unit Invested				46.8%

Sources: [1] Krueger (1968)

[2] Yamada and Ruttan (1980, p. 560), accounting for differences between the U.S., Argentina, India, Denmark, and Turkey (Column 2).

[3] Jamison and Lau (1982, pp. 10-11). Assumes an average educational attainment of farmers in Korea, Malaysia, and Thailand, the countries studies, of 8 years (Column 3).

[4] McMahon (1987, Table 5)

Other evidence cited in Table 2.20 suggests direct and indirect independent returns of 21.2 percent to basic education and 25.6 percent to higher education, the latter with a 10- to 15-year delay. The latter included investment in higher education abroad, the effects of which take time but also facilitate technology transfer.

2.2.5.4 Illustrations of What Works. It is interesting to consider examples of these different investment strategies to try to see whether either investment in physical capital in isolation, or investment in education in isolation, can lead to growth, or whether it would appear that the two kinds of investment are complementary. The rate of return evidence is also relevant to the issue of investment strategies addressed here. It would be expected to reveal the highest social rate of return to that factor in relatively shortest supply in Nepal (e.g., rates of return to primary or lower secondary education, for example, vs. rates of return to physical capital investment), with diminishing returns affecting the returns to whatever level or type of education or other input that is not the growth bottleneck at the time.

The four groups of countries (I-IV) in Table 2.21 are selected from the 128 countries in the 1986 *World Development Report Annex of Statistical Indicators* (pp. 180-241) for which data are available. Group I, the lowest income economies, has the lowest real per capita growth rates of any group from 1965 to 1985. Group II has stressed education. It consists of the three countries that are the only ones with over 25 percent of their government budgets currently spent for education and, as would be expected, they also have quite high enrollment rates in primary education going back to 1965. Group III consists of those 10 countries (four are in Group IV) that have increased physical capital investment most rapidly since 1965. This often has been with far less attention to investment in human capital. Group IV (which also contains four countries from Group III) are the nine countries with the fastest real per capita growth in the world since 1965.

The pattern that emerges is that investment in human capital and in physical capital appears to make a complementary contribution to per capita growth and to the beginnings of industrialization. The poorest countries with an overwhelmingly illiterate labor force (60 percent or so without primary education and over 80-84 percent without secondary education), and relatively low rates of increase in investment in physical capital, all have very low rates of per capita growth averaging only 0.9 percent per year since 1965.

2.2.5.5 Rates of Return. The foregoing discussion suggests that the contribution to growth will be the largest when scarce resources are invested in a balanced way, emphasizing investment where the rates of return are the highest in order to retain this balance. Rates of return are not perfect, but they are the best single measure available of the contribution of any given investment to growth, including investment in education.

Table 2.21

What Works and What Doesn't: Illustrations

	Indices of Education Investment				Gross Domestic Investment[2]		Per Capita Growth
	Percent Illit-erate 1985	Percent[1] Not Enrolled in Primary 1965	Percent[1] Not Enrolled in Secondary 1983	Education Exp. as a % of Total Govt. Budget 1983	Growth of GDI (%) 1965-1973	GDI as a % of GDP, 1984	Average Annual Growth Rate of GNP per Capita 1965-1984[3]
I. Slow Growth: Basic Education Not Stressed (at Least Prior to 1983), Plus Slow Growth of Physical Capital Investment:							
Pakistan	74%	60%	84%	3.1%	.4%	17%	2.5%
Nepal[5]	85%	80%	78%	7.2%	n.a.	10%	.2%
Ethiopia	94%[5]	89%	87%	14.4%	1.5%	11%	.4%
34 Lowest Income Economies[4]		56%	80%	9.9%	3.2%	16%	.9%
II. Limited Success: The 3 Countries Most Stressing Education (over 25% of Govt. Exp.) but with Relatively Slow Growth of Physical Capital Investment:							
Bolivia		27%	65%	26.9%	6.9%	18%	.2%
Ecuador		9%	47%	26.0%	6.0%	10%	3.8%
Philippines	5%	0%	37%	25.6%	4.4%	18%	2.6%
III. Mixed Success: The 10 Countries that Increased Physical Capital Investment Fastest Since 1965 (i.e., > 14.4%; Four are in Group IV):							
Panama		0%	41%	11.0%	15.4%	18%	2.6%
Dominican Republic		13%	55%	11.7%	19.2%	21%	3.2%
Kenya		46%	82%	20.6%	15.9%	15.9%	2.1%
Malawi		56%	95%	13.4%	16.0%	16%	1.7%
Haiti		50%	87%	n.a.	14.4%	16%	1.0%
Nigeria		68%	80%[5]	4.5%	15.2%	12%	2.8%
IV. Success Stories: The 9 Countries with the Highest Sustained Per Capita Growth in the World, 1965-1985 (Growth of 4.7% or Faster, Excluding Arab Oil Exporters):							
Korea, Rep. of		0%	11%	20.5%	19.7%	29%	6.6%
Hong Kong		0%	32%	n.a.	3.7%	24%	6.2%
Singapore		0%	31%	21.6%	22.7%	47%	7.8%
Japan		0%	6%	12.0%[7]	14.1%	28%	4.7%
Taiwan[6]		1%	25%	18.0%	14.1%	28%	4.7%
Botswana		35%	79%	19.4%	48.1%	21%	8.4%
Indonesia		28%	63%	9.4%	17.5%	21%	4.9%
Lesotho		6%	81%	17.4%	11.0%	14%	5.9%
Jordan		5%	22%	11.5%	n.a.	32%	4.8%

[1]Source: World Bank, *World Development Report*, 1986, pp. 222, 236.
[2]Source: World Bank, *World Development Report*, 1986, pp. 186, 188.
[3]Source: World Bank, *World Development Report*, 1986, p. 180.
[4]Not including China and India.
[5]Estimate based on data for earlier years.
[6]Source: S. Kuo, G. Ranis, and J. Fei, *The Taiwan Success Story*, Westview Press, Boulder, CO, 1981, p. 40. The percentage in Secondary Schools is an extrapolation based on data for 1978, and Gov't. Exp. on Education is for 1971.
[7]For 1965. 1983 n.a.

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There is now extensive evidence on rates of return to investment in education for a very wide range of developed and industrialized countries developed by Psacharopoulos (1973, 1981, 1984, 1985) and others so that patterns are readily apparent. This evidence is widely known and accepted. The results for the social rates of return for 100-125 studies that cover most of the developing countries are summarized by Psacharopoulos (1985, Appendix Table). These social rates of return are the ones most relevant to development strategies since they show where the relative growth payoffs are largest. Standard social rates of return reflect, in addition to the private costs to families that are included in the private rates of return, the costs to external assistance agencies and tax costs to the public. The social rate of return thus includes the total resource costs to the society.

The rate of return evidence based on 100-125 studies is summarized in Table 2.22. It shows that the rates of return to investment in primary education are more than twice as high as the rates of return to investment in physical capital in the developing countries. Annual growth payoffs of 28 percent on investment in primary education in 26 developing countries, well above the 13 percent rate of return to investment in physical capital in Table 2.22, indicate that the investment pays for itself in earnings and hence in national income per person employed within four years of the time the student enters the labor force.

Rates of return to investment in secondary education of 17 percent can also be seen in Table 2.22 to be higher than the 13 percent rate of return to investment in physical capital. Rates of return to secondary general education are higher (16-19 percent), on the average, than rates of return to secondary vocational education (12 percent) in developing countries.

The annual rates of return for higher education always tend to be somewhat lower than those for primary and secondary, again mostly because each year of higher education costs more. There is also widespread evidence, observable in Table 2.22, that the rates of return to all capital, both human and physical, are somewhat lower in the more advanced countries where all capital is relatively more plentiful.

Primary education is a particularly advantageous investment, therefore, with a high growth payoff. It does not use very much of scarce foreign exchange, apart from occasional foreign support for some teacher training, and it is relatively labor intensive and low cost per child.

Table 2.22

Social Rates of Return to Investment in Education and in Physical Capital

Country Group	Social Rates of Return by Level of Education[1]			Rates of Return to Physical Capital[4]
	Primary	Secondary	Higher	
Industrial Market Economies (10 Countries)	15%[2]	11%	11%	11%
Developing Countries (4 exporters of manufactures)[3]	15%	13%	9%	n.a.
Developing Countries (26 countries)	28%	17%	14%	13%
All Developing Countries Studies[1] (30 countries)				
Secondary level school only	16%	16%		13%
Secondary Vocational+ Technical Schools	12%	12%		13%

Sources:

[1] Arithmetic mean of studies reported in Psacharopoulos (1985) using latest year observations for each country where primary, secondary, and higher social rates of return are available (secondary and higher in the case of advanced countries). Most, but not all, of the approximately 125 studies on which these averages are based refere to the 1970s and early 1980s.

[2] Estimate based on the return in the intermediate countries. The lack of a control group of illiterates in the industrialized countries prevents a direct computation there.

[3] India, Israel, Singapore, and Yugoslavia.

[4] Psacharopoulos (1985, p. 591).

2.3 FISCAL CAPACITY ANALYSIS

This section covers national development goals for education. It includes projections of population and school-age cohorts, economic growth, Basic Needs Strategy requirements, enrollments, education expenditure, and fiscal capacity and educational expenditure.

2.3.1 National Development Goals

This discussion of national development plans covers constitutional provisions, development plans, and national goals for educational development.

2.3.1.1 Constitutional Provisions. The goals for national development have been identified by the constitution. The Directive Principles of the Constitution of 1962 specify the following goals (in paraphrased translation from Nepali):

1. Promote the general welfare of the people by establishing a democratic, just, and dynamic society without exploitation
2. Enhance the participation of the common people in the establishment of a society, as conceived above
3. Establish harmony among interests of different groups
4. Promote national integration by fostering mutual good will among the people and by fostering Nepalese culture and values
5. Help people of different regions attain comparable standards of living by promoting balanced regional development
6. Encourage private and cooperative initiative and entrepreneurship in economic activities
7. Promote economic development by giving priority to the fulfillment of the basic needs of the rural people

Education can contribute significantly to the attainment of these goals. Support for primary education and literacy is important for enabling people to play their role as citizens who are conscious of their rights and duties. Curricula taught in schools and colleges can foster attitudes of tolerance and good will among different groups in the country. Provision of educational opportunities in different parts of the country is an essential component of balanced, regional development.

2.3.1.2 National Goals. Education contributes significantly to national development. It is a major instrument for bringing about change and modernization, and for providing trained workers for different production activities. Clarity of the national objectives for education is needed to guide the education system so that the goals of the society are met.

The National Education System Plan (1971-1976) explicitly stated the national goals of education for the first time. Briefly, the NESP set the national goals as (1) producing citizens loyal to the nation, crown, and national sovereignty; (2) promoting the learning of science technology and skills needed for the development of the country and producing a cadre of workers needed for development; (3) instilling in the students the qualities of moral integrity, habits of work, self-reliance, creativity, a scientific approach, appreciation skills, aesthetic awareness, and cosmopolitanism; and (4) the development of the national language, literature, culture, and arts.

In accordance with the above goals, the NESP emphasized technical and vocational education, improvement of the quality of education, expansion of education opportunities, improvement of the curriculum and instructional materials, and the upgrading of the teaching profession. The most recent Seventh Plan (1985-1990) has adopted national goals similar to those set forth in the NESP, with only a light change in wording. The Seventh Plan elaborates various working policies to meet its priorities. These are given below for several topics.

Primary Level

- The objective of primary education will be to make students literate and develop in them habits of being healthy.
- Free primary education and free textbooks (up to Grade 3) will be provided.
- Pre-primary education will be developed with People's Participation.
- Some Town Panchayats will initiate compulsory primary education.

Secondary Level

- The objective of lower secondary education will be to build character, and develop dignity of labor and habits of working; and that of secondary level will be to prepare citizens capable of contributing to national development, and to prepare a base for higher education.
- Government will provide grants to secondary schools that are established with People's Participation, only after successful operation for a specified period.

Vocational Education

- Trade schools will be expanded in various zones.

Adult Education

- Functional adult education, with an aim to provide skills to adults in addition to providing literacy, will be given priority.
- Adult Literacy Centers will be run by the local panchayats.

Girls' Education

- Scholarships and hostel accommodations will be arranged for the development of female education.

Curriculum and Materials

- Population and environmental education will be integrated with formal and non-formal education.
- Writers of good textbooks will be rewarded.
- Good question papers will be developed and a question bank will be established.
- Extracurricular activities will be systematized.
- Essential facilities (laboratories, equipment, etc.) will be provided for the improvement of science and technical education.

Schooling Facilities

- In granting permission for the establishment of schools, a needs criteria will be followed, giving priority to areas without schools at a particular level.
- Educational facilities will be expanded for people in rural areas, and for those places which are educationally less developed.
- People's Participation will be mobilized for providing physical facilities in schools.

Quality of Education

- Attempts will made for reducing educational wastage. Pre-primary education and girls education will be emphasized for this purpose.
- Educational standards of schools will be evaluated, and worthy schools will be rewarded.
- Additional equipment and suitable training will be arranged for improving the teaching of science, English, and mathematics.
- Regional model schools will be established.

Higher Education

- Campus autonomy and self reliance will be emphasized for decentralization of university administration.
- Measures will be taken for providing higher education through open media like radio and correspondence.

School Management

- School Management Committees will be activated to run schools according to the expectations of the people.

The above working policies recognize the need for expanding primary education, functional adult education, and technical and vocational education. The policies stress raising the quality of education through provision of physical facilities and teaching materials, and through creation of a climate of competition among schools. The role of the private sector is stressed for providing secondary and higher education. The need to reform the examination system (paper setting and scoring) has also been mentioned. This is important since the examination system might be partly responsible for the high failure rates at the school and higher education levels. The need to improve special education facilities for remote regions has been recognized. Regarding girls' education, some facilities have been mentioned. A broader public participation in the running and financing of the schools has been stressed. Management aspects have received attention. However, some aspects (e.g., teacher training) are missing.

2.3.2 Population and Cohort Projections

This section reviews the past and projected population growth and considers the implications of alternative population growth rates on the school-age cohorts. As shown in Table 2.23, the population of Nepal was relatively stable prior to 1952. Since the early 1950's, the population has followed a path typical of many countries. Although the earlier censuses may contain substantial errors, the available data suggest that the population growth rate has increased substantially over the years, reflecting substantial declines in mortality rates, continued high rates of fertility, and some migration.

Table 2.23

Population Size and Growth:

Census Years 1911-1981

Year	Population	Growth Rate
1911	5,638,749	
1920	5,573,788	- 0.13
1930	5,532,574	- 0.07
1941	6,283,649	+ 1.16
1952/1954	8,256,625	+ 2.30
1961	9,412,996	+ 1.65
1971	11,555,983	+ 2.07
'981	15,022,839	+ 2.66

Source: *Population Monograph of Nepal* (1987), National Planning Commission Secretariat

Like many developing countries, Nepal is in the early stages of demographic transition where declines in fertility are not yet manifest. The recent Demographic Sample Survey 1986-1987 (p. 57) reports increases in the age-specific fertility rate for females 15-19, and virtually no change in the total fertility rate, of approximately 6.3 live births per female, over the 1976-1986 period. The rise in the age 15-19 fertility rate may be due to improvement in maternal health care. The failure of the fertility rate to decline is significantly affected by the fact that very few females complete lower secondary education.

The Central Bureau of Statistics has projected the population to the year 2000 A.D. using several sets of assumptions. The official population projection, the Medium Variant case, assumes the Total Fertility Rate of 6.3 in 1981 will decline as follows: 6.00 (1986), 5.44 (1991), 4.64 (1996), and 3.84 (2001).

An alternative projection, the High Variant case, assumes the current fertility rate will continue to the year 2001. The 1986 Demographic Sample Survey does not report any change in the fertility rate. It thus seems reasonable to consider both scenarios in projecting the school-age cohorts.

As shown in Table 2.24, the total population of 15.0 million in 1981 is projected to grow to 23.6 million in 2001 according to the Medium Variant case, and to 26.2 million according to the High Variant case. The 11 percent difference in the 2001 total population according to the two projections does not reflect the even more significant differences projected for the school-age cohorts, especially the primary school-age cohort of age 6-10. According to the Medium Variant case, there would be 2.93 million children aged 6-10 in 2001, while for the High Variant case the corresponding projected age cohort is 3.57 million. This is over 21.8 percent higher for the High Variant case.

Table 2.24

Medium and High Variant

Population Projections (millions)

	Medium		High	
Year	Total	Age 6-10	Total	Age 6-10
1981	15.0	1.97	15.0	1.97
1986	17.1	2.25	17.2	2.25
1991	19.4	2.69	19.8	2.73
1996	21.5	2.91	22.7	3.15
2001	23.6	2.93	26.2	3.57

Source: *Population Projections of Nepal*

By the year 2001, according to the declining fertility and mortality rates of the Medium Variant case, the demographic parameters would reach levels that would lead to a stable population of about 30 million by the year 2030. That is reflected in the primary school-age cohorts of virtually the same size in 1996 and 2001 as shown for the Medium Variant case in Table 2.25.

The High Variant case projections assume a constant annual population growth rate of 2.81 percent over the period to 2001. Projected past the year 2001 at those rates, the population would be approximately 58.5 million in the year 2030, almost twice that of the Medium Variant case and almost four times the 1981 population.

The implications of such rapid population growth projections, based on either the Medium or the High Variant case, cannot be over emphasized. Over the period to 2001, such growth places added burdens on the population's ability to sustain itself, let alone increase its efforts to raise the standard of living. The greater the rate of population increase the greater will be the burden of caring for young children, feeding them, educating them, and providing them with health care and other basic needs.

Table 2.25 presents the projections for the primary, lower secondary, and secondary school cohorts, aged 6-10, 11-12, and 13-15, respectively, for both the Medium and High Variant population growth assumptions. There are only minor differences in the two projections until after 1991. The most striking differences between the two projections occurs for children aged 6-10 in the year 2001. The High Variant population projection yields over 12 percent more than the Medium Variant projection for the lower secondary cohort in 2001, and 5.2 percent more than the secondary cohort in 2001.

These differences correspond to the differences in the fertility rate assumptions between the two cases that take six years to be reflected in the primary school-age cohort, 11 years for lower secondary cohort, and 13 years for the secondary school cohort.

Also presented in Table 2.25 are the annual percentage growth rates over the 1981 to 2001 period for the various school-age cohorts under the two alternative projections. The High Variant population projection, of course, gives rise to higher growth rates for all cohorts. But, the most striking difference is for the growth rates of the primary school-age cohorts. In the Medium Variant population projection, that cohort would grow an average of 2.01 percent per annum; for the High Variant case, the rate would be 3.03 (over 50 percent higher).

Table 2.25

Medium and High Variant School-Age Cohort Projections

(millions)

	Medium Variant			High Variant		
	Age			Age		
Year	6-10	11-12	13-15	6-10	11-12	13-15
1981	1.97	.69	.96	1.97	.69	.96
1986	2.25	.82	1.12	2.25	.82	1.12
1991	2.69	.93	1.29	2.73	.93	1.28
1996	2.91	1.12	1.54	3.15	1.15	1.56
2001	2.93	1.16	1.72	3.57	1.30	1.82
Annual Percent Rate of Growth 1981-2001						
Age	6-10	11-12	13-15	6-10	11-12	13-15
Percent	2.01	2.64	2.95	3.03	3.19	3.27

Source: *Population Projections of Nepal*

These data also illustrate that the lower secondary and secondary school-age cohorts are projected to grow relatively more rapidly than the primary school-age cohort for both scenarios. This reflects the high and rising fertility rates, and declines in infant and child mortality rates, that have been achieved in recent years. There is a fairly substantial amount of built-in population growth momentum within the demographic structure and patterns.

The Medium Variant case projects the total secondary level school-age cohort (aged 11-15) to grow from 1.65 million in 1981 to 2.88 million in 2001. According to this projection the total secondary level school-age cohort will be virtually the same size as the primary school-age cohort in 2001. By comparison, the High Variant case projects the total secondary cohort will grow to 3.12 million by 2001, but would still be 0.45 million less than the primary school-age cohort.

The total school-age population (aged 6-15) is projected to increase from 3.62 million in 1981 to 5.81 million in 2001 according to the Medium Variant case, and to 6.69 million according to the High Variant case. The High Variant case projects 0.88 million (15 percent) more school-age persons than the Medium Variant case. In either case, there will be substantial increases in the school-age population by 2001.

2.3.3 Economic Growth Projections

Predicting economic growth is complex and involves many variables and factors that are extremely difficult to forecast. External factors, acts of God or nature or other men, and the economics of nearby countries and/or trading partners, can affect the level of economic activity. There is thus a high degree of uncertainty for economic predictions; these uncertainties become greater the further into the future that predictions are made. Thus, cautious judgement should be applied to the results and analyses of economic growth projections.

The uncertainties of longer run economic forecasts do not reduce the need for, and the importance of, such efforts. Estimates of future levels of economic activity, and of resources required and available, are crucial to support rational and effective planning, programming, budgeting, and implementation of development efforts.

There are two basic forecasts of macroeconomic activity considered in this section. The first involves projections of GDP for the agriculture and non-agriculture sectors of the economy, and the second concerns projections of employment and manpower requirements derived from the projected levels of economic activity.

The economy of Nepal has not grown very rapidly, in real terms, over the period from 1964 to 1986. As shown above in Table 2.3, real GDP measured in 1984-1985 prices has grown at an average annual growth rate of 2.75 percent, with agriculture GDP growing only at a rate of 2.11 percent, and non-agriculture GDP at 3.84 percent. Over that entire period, the rate of growth of real GDP barely exceeded the rate of growth of population. The result is that the standard of living, measured by per capita GDP, was virtually unchanged (see Table 2.5 above).

Compared to economic growth, employment growth has been more favorable. According to the 1971 and 1981 population censuses, the economically active population had work opportunities expand at an annual average rate of 3.51 percent over the decade, with the annual growth of agriculture employment averaging 3.1 percent and that of non-agriculture employment 8.26 percent as shown in Table 2.5 above.

The increase in employment reflected in the census data does not indicate the adequacy of the employment opportunities being created, either in terms of earnings by workers or in terms of utilization of labor. In fact, the decline in manufacturing, construction, and transport employment probably reflects the 1981 worldwide recession following the second oil price shocks in January 1979. The relatively higher rate of growth of employment compared to GDP growth implies that labor productivity per worker has declined over the period. This suggests that population growth is exceeding human and physical capital formation so that not much total capital deepening per worker is occurring, and that many of the jobs being created are marginal.

The nation has ambitious development plans that call for rapid economic growth to achieve objectives of the Basic Needs Strategy by the year 2000 A.D. In support of those targets, the development plans contain a variety of projects and programs to promote agricultural development and industrial growth (especially in the cottage industries), as well as employment creation. There are special projects for small farmer development, production credits for rural females, and intensive banking for employment creation. There also are other projects in education, training, health, transportation, and other areas, to promote rapid economic growth and the expansion of income producing opportunities.

On the basis of these development projects and programs, the economy is forecast to grow at an average annual rate of 5.7 percent between 1985 and 2000. The agriculture sector is expected to have an annual growth rate of 3.5 percent over the period, and the non-agriculture sector is expected to grow at 8.4 percent.

As presented in Table 2.26, real GDP in 1984 1985 prices is projected to grow from Rs 43.4 billion in 1985 to RS 99.2 billion in 2000, an increase of over 129 percent. The relatively higher projected growth rate for the non-agriculture sector means that it would be larger than the agriculture sector by the mid-1990s, and the country would have undergone one of the major structural transformations involved in national economic development.

Table 2.26

Basic Needs Projections: GDP in Constant 1984-1985 Prices

Year	Agric. ('000)	Percent Rate of Growth	Non-Agric. ('000)	Percent Rate of Growth	GDP Total ('000)	Percent Rate of Growth
1984	24,641	2.36%	17,097	3.96%	41,738	3.01%
1985	25,730	4.42%	17,686	3.45%	43,416	4.02%
1986	25,983	0.99%	18,460	4.37%	44,443	2.37%
1987	26,893	3.50%	20,011	8.40%	46,903	5.54%
1988	27,834	3.50%	21,691	8.40%	49,525	5.59%
1989	28,808	3.50%	23,514	8.40%	52,322	5.65%
1990	29,816	3.50%	25,489	8.40%	55,305	5.70%
1991	30,860	3.50%	27,630	8.40%	58,490	5.76%
1992	31,940	3.50%	29,951	8.40%	61,891	5.81%
1993	33,058	3.50%	32,467	8.40%	65,524	5.87%
1994	34,215	3.50%	35,194	8.40%	69,409	5.93%
1995	35,412	3.50%	38,150	8.40%	73,562	5.98%
1996	36,652	3.50%	41,355	8.40%	78,006	6.04%
1997	37,935	3.50%	44,828	8.40%	82,763	6.10%
1998	39,262	3.50%	48,594	8.40%	87,856	6.15%
1999	40,636	3.50%	52,676	8.40%	93,312	6.21%
2000	42,059	3.50%	57,101	8.40%	99,159	6.27%
2001	43,531	3.50%	61,897	8.40%	105,428	6.32%

Source: NPC, Economic Survey 1986-1987

The projected growth rate for the economy would exceed the growth rate for the population, and lead to substantial increases in per capita income. Table 2.27 shows the Medium Variant population projections and the real per capita GDP levels to the year 2000 A.D. Both the more rapid growth in GDP and the slowdown in the growth rate of population would complement each other and result in increasingly rapid growth in per capita income levels. From 1986 to 2000, per capita GDP in constant 1984-1985 prices is forecast to grow from Rs 2616 to Rs 4,280, an annual increase of 3.4 percent.

The economic growth projections presented here are very optimistic for a nation whose development history has yet to demonstrate any comparable performance and where human capital investment (especially in the education of women which reduces fertility rates as well) and physical capital investment remains no higher than for average-growth middle income countries. Underlying these macroeconomic projections are more detailed sectoral analyses that are based on specific development plans and programs. The growth rates projected for the agriculture and non-agriculture sectors are plausible in the sense that similar growth rates have been achieved by other countries in Asia, but such growth has always been accompanied by much higher rates of human and physical capital investment than historically has been the case for Nepal.

Table 2.27

Basic Needs Projections: Real per Capita GDP in Constant 1984-1985 Prices

Year	Population ('000)	Real per Capita GDP	Percent Rate of Growth
1986	16,986	2,616	
1987	17,438	2,690	2.80%
1988	17,903	2,766	2.85%
1989	18,379	2,847	2.91%
1990	18,868	2,931	2.96%
1991	19,370	3,020	3.02%
1992	19,786	3,128	3.59%
1993	20,210	3,242	3.65%
1994	20,644	3,362	3.70%
1995	21,087	3,489	3.76%
1996	21,539	3,622	3.81%
1997	21,935	3,773	4.18%
1998	22,338	3,933	4.24%
1999	22,749	4,102	4.29%
2000	23,167	4,280	4.35%

Source: NPC, *Population Projections of Nepal*

Achieving these economic targets will be difficult. It will require the effective implementation of a major supporting group of development projects, the development of more highly skilled and motivated human resources, and the forgoing of current consumption by those at higher income levels so there can be sufficient resources to invest in the physical and human capital needed for economic growth.

The employment projections that accompany the Basic Needs economic forecasts assume that the need for manpower grows in proportion with the output of the sectors of the economy. The record of the past employment growth suggests that employment could grow even more rapidly than output, albeit with decreases in labor productivity. Most other developing countries have typically experienced employment growth that is relatively lower than output growth.

Many factors influence the relationship between employment growth and GDP growth. Rates of technological progress, relative prices of labor and other inputs, tax and other incentives, improvements in labor quality, and other factors can all influence how rapidly employment opportunities expand.

The relatively low cost of labor in Nepal may keep the employment elasticity near to unity. This would mean that for every one percent increase in sectoral GDP, employment opportunities would also expand by one percent. As with most employment projections, too much confidence should not be placed in either of these growth or employment projections. Most likely, such projections can serve as goals for policy makers.

Table 2.4 above presented the basic employment data by sector from the 1971 and 1981 censuses, along with the Basic Needs forecast of employment for the year 2000 A.D. Assuming that employment opportunities in agriculture will grow 3.51 percent annually to the year 2000 A.D., approximately 5.76 million additional jobs will be available in the agriculture sector, compared to the 1981 level. Employment growth in the non-agriculture sector would provide an additional 2.8 million jobs over the 1981 level, if the 8.26 percent annual rate of growth is achieved. The percent allocation of employment among industries implied by the Basic Needs projection shows the percent in agriculture decreasing from 91.15 percent to 81 percent, but the percent in manufacturing remaining fairly constant.

There were 10.532 million persons aged 10 and over in 1981, of whom 6.85 million were economically active. The Medium Variant population projection estimates imply that the population aged 10 and over will be approximately 17.4 million by the year 2000 A.D. The Basic Needs employment projections of 14.8 million jobs available in the year 2000 A.D. imply that labor force participation rates will rise from about 65 percent in 1981 to 85 percent in 2000 A.D.; or that utilization of the labor force, if the same participation rates prevail, will need to rise by over 30 percent. In either event, the Basic Needs employment projections involve substantial improvements in the opportunities for labor by the year 2000 A.D.

2.3.4 Basic Needs Strategy Projections

This section gives an introduction to the Basic Needs Strategy projections, followed by a discussion of the nation's current situation with respect to the fulfillment of basic needs. Programs needed to fulfill the Basic Needs by the year 2000 A.D. are then presented.

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2.3.4.1 Introduction. The emphasis on fulfillment of basic needs appeared in the literature on development planning in the mid-1970's. Development planners became aware that the aggregate growth of national income in developing countries was not solving the problems of mass poverty. Concern regarding the fulfillment of Basic Needs in Nepal can be traced to 1975. The Fifth Plan (1975-1980) mentioned that one of its goals was to raise production so that the essential needs of the people would be met. Further, the 1976 NPC study *Employment, Income Distribution and Consumption Patterns* revealed that 40 percent of the people were below the poverty level and not able to meet their minimum subsistence needs.

The Sixth Plan (1980-1985) laid down fulfillment of the basic minimum needs as one of its objectives. The basic services identified were food, clothing, fuelwood, drinking water, primary education, skill-based education, primary health care, sanitation, and minimum rural transport facilities.

The Seventh Plan mentioned the following steps to meet the Basic Needs for the plan period 1985-1990.

1. Raising food production at an average annual rate of 4.1 percent
2. Developing the textile industry in the country
3. Launching a massive reforestation program to plant trees on 1,750,000 hectares
4. Increasing the proportion of the population with access to clean drinking water facilities to 69 percent of the population (67 percent in rural areas, and 94 percent in urban areas)
5. Providing more extensive health services in rural areas by setting up an additional 1,400 health sub-centers
6. Improving the quality of health services in rural areas
7. Expanding primary education to raise the gross primary enrollment ratio to 87 percent, and making provision for the required additional schools and teachers for attaining this target
8. Expanding skill-based education by increasing basic level vocational training facilities
9. Increasing employment in agriculture and non-agriculture sectors
10. Expanding adult literacy programs, and raising the literacy rate to 38.9 percent

2.3.4.2 Fulfillment of Basic Needs. The following sections briefly summarize Nepal's current basic needs status with respect to per capita income, food supplies, clothing, housing, health conditions, education, and drinking water.

Per capita income: In 1984-1985, the per capita income (at current prices) was estimated at Rs 2,540. Because there is considerable disparity in the income distribution, this figure does not accurately represent the poor economic conditions of the vast majority of the population. An estimate for 1987 prepared by the National Planning Commission indicated that about 42.5 percent of the population is at the poverty level (National Planning Commission, *Program for the fulfillment of basic needs, 1985-2000*; figures quoted in other sub-sections are from this document.)

Food supplies: The volume of food produced in 1984-1985 was estimated at 3,073 thousand metric tons. Of this, 2,843 thousand metric tons were available for domestic consumption after taking care of exports and animal feed. The requirement for 1984-1985 (on the basis of need of 1964 calories per person per day) was estimated to be 3,716 thousand metric tons. Thus, the availability of food was well below the needs of the people. An estimated 170.37 kg of food was available per person in that year, which is 24 percent below the estimated requirement of 223 kg.

Clothing: The textile industry is comprised of cottage industries and a few modern mills. It is estimated that 46.2 percent of cotton cloth needs are fulfilled by internal production. The fulfillment of clothing needs depends very much on purchasing capacity. Persons in very poor economic status do not have adequate clothing.

Housing: It is estimated that 93.6 percent of the people live in their own houses, and the rest live in houses of close relatives. Even though a large majority of people have their own houses, the quality of housing is very poor. In rural areas, most houses are of a rough and temporary nature, without essential facilities like toilets and drinking water. The houses are crowded, and several family members share rooms.

Health conditions: There are only 89 hospitals and 814 health posts in the country, the latter mainly in rural areas. The population served by each hospital and health post is very large. Communicable diseases are widespread, but there are signs of improvement in life expectancy and infant mortality rates. Life expectancy was 51 years in 1984-1985, and infant mortality was 111.5 per 1,000 live births.

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Education: There has been significant progress in education during past three decades. Primary enrollment has expanded dramatically, and the gross primary enrollment ratio reached 82.8 percent in 1985. However, this over estimates actual attendance, and participation of girls and socio-economically disadvantaged groups is still quite low. The literacy rate is about 30 percent and is increasing rather slowly.

Drinking water: Many health problems are related to impure water and lack of sanitation. Piped drinking water facilities are available for only about one quarter of the population. Many people, mostly women, spend considerable time fetching water. Drinking water scarcities are noted in urban as well as rural areas.

2.3.4.3 Basic Needs Projections. The overwhelming current concern of planners and the government is to design and implement programs for fulfillment of the basic needs by the year 2000 A.D. A program was developed by the National Planning Commission in April 1987, and presented in a document for meeting basic needs (1985-2000). The main projections given in the document are briefly presented here.

Population projections: The population projected for the year 2000 A.D. is 23,167,076. The target annual rate of population growth by the turn of the century is 1.9 percent as shown in Table 2.28. All calculations of requirements for goods and services over the period of 15 years are based on these projections.

Table 2.28
Population Projections: 1980 - 2000

Year	Total Population	Annual growth rate (%)
1980	14,633,607	2.66
1985	16,687,124	2.52
1990	18,900,289	2.21
2000	23,167,076	1.90

Source: National Planning Commission, (1987), *Program for Meeting Basic Needs 1985-2000*, (in Nepali), Kathmandu, p. 17

Food requirements: In order to fulfill a minimum requirement of 2,250 calories per person per day for the projected population in the year 2000 A.D., the country would need an annual growth rate of 4.6 percent for food production over the 15 year period. The gross volume of food production would have to more than double

over this period. This would require increasing the investment in irrigation to extend the area under irrigation by over eight fold, expanding the use of improved seeds by over 8.60 percent, raising the use of fertilizers by 15.3 percent, and increasing agricultural loans by 12.2 percent over the levels in 1984-1985. Further, the achievement of the target will require the assistance of significant numbers of additional trained agricultural workers.

Education: The target for the year 2000 A.D. is universal primary education for children in the 6-10 year age group, and this means 2,928,984 children will need primary education facilities by that year. This will require the number of schools to increase to 17,713, and the number of teachers to 88,566 by that year.

The three five-year targets are as follows:

Plan	Enrollment	Enrollment Ratio	Schools	Teachers
Seventh Plan 1985-1990	2,257,151	87%	13,931	69,505
Eighth Plan 1990-1995	2,720,941	95%	16,413	82,065
Ninth Plan 1995-2000	2,928,984	100%	17,713	88,565

Further, in order to rapidly increase the literacy rate, and to enhance adults' participation in development, adult education programs will be conducted effectively.

Health: The population growth rate will be reduced to 1.9 percent per year, infant mortality to 45 per 1,000, and life expectancy will be raised to 65 years. There will be a trained physician for every 3,000 persons, a trained nurse for every 600, and a voluntary health worker for every 500. Primary health care will be provided by integrating various services at the health post levels.

Shelter: It is estimated that 1,320 thousand new houses will be needed by the year 2000 A.D. A floor space of 30 square meters per family has been taken as a base. Measures to be taken are provision of loans, development of housing technology, improvement of housing in rural areas, and production of housing materials.

Income generation and employment: Disparities in income distribution will be reduced. In 1985-1986, people below the poverty level only received 12.6 percent of nominal income. By 2000 A.D., it is planned that their proportional share of national

income will be raised to 23 percent. The NPC program does not give estimates for the decline in the proportion of people below the poverty line. The labor force above 10 years of age was estimated to be 7.95 million in 1985, of which about 5 percent were unemployed, and about 40 percent were underemployed.

The macroeconomic annual growth rate planned for the agriculture sector throughout the 1985-2000 period is 3.1 percent, and for the non-agriculture sector is 8.3 percent. If these rates are attained, it is estimated that five million new full-time jobs will be created. A wide range of employment creation measures are mentioned in the NPC document.

Per capita income: The per capita income will be raised to Rs 4,219 by the year 2000 A.D. at 1984-1985 prices. Disposable per capita income will be Rs 4,093 by the target year, and for those below the poverty line this amount will be Rs 2,212. Thus by 2000 A.D., despite these ambitious goals, considerable income disparities will remain.

2.3.5 Enrollment Projections

Four scenarios of primary and secondary level enrollments were prepared to examine some effects that population growth, Basic Needs targets, and the existing structure of the school system will have on the education sector over the next 15 years.

The projection used for school enrollments needed to achieve Basic Needs targets is the official forecast of the government. This requires having total enrollment in Grades 1-5 in the year 2000 A.D. equal to the projected size of the 6-10 age cohort for that date (2.93 million). Achieving primary enrollment in this way does not imply that all children of primary school age will be in school. Rather, the enrollment of some under-age and over-age children will offset those school-age children who will not have entered, or who may drop out of, the system. Compared to the primary enrollment of 1.81 million in 1985, the Basic Needs enrollment target of universal primary education implies an annual growth rate of 3.26 percent.

The basic education system enrollment projection model begins with an initial group of students in Grades 1 to 10, introduces a group of new entrants at Grade 1, and traces them through the system as they repeat or drop out from a certain grade or progress to the next grade. To use such a model to forecast enrollments, it is necessary to have estimates of (1) new entrants to Grade 1, (2) repetition rates by grade, (3) drop-out rates by grade, and (4) progression rates from primary to lower secondary, and from lower secondary to secondary.

Data on examination pass rates at various levels, student/teacher ratios, and unit costs can be entered into the model to project internal efficiency measures, teacher requirements, and education budgets. These additional aspects of education projections are reported in other sections of this chapter.

Estimates of the various education system parameters, such as new entry rates, repetition rates, drop-out rates, continuation rates, and examination pass rates, were derived from official sources whenever possible. In a few cases, small sample survey results were used to obtain estimates of some parameters. Where possible, these estimates were cross-checked against related data and discussed with MOEC officials to ascertain their suitability.

Repetition rates are very high for all grades, and exceptionally high in the primary grades. For Grade 1, the repetition rate has been estimated to be 39 percent. This amounts almost literally to having a grade that takes two years to complete.

The drop-out rates were also found to be quite high in Grade 1; about 22 percent of all Grade 1 students drop out. Based on the MOEC statistics for progression rates, and a 1972-1973 study, drop-out rates for Grades 6-9 were estimated to be 10-12 percent. These, too, are fairly high; but they may be highly influenced by school fees. The MOEC education statistics for 1981-1985 also were used to estimate the continuation rates from Grade 5 to 6, and from Grade 7 to 8. For the Basic Needs enrollment projections, it was assumed that these parameters would remain unchanged to the year 2000 A.D.

For the Basic Needs enrollment scenario, it was assumed that the annual primary enrollment growth would be 3.26 percent from 1985 to 2000 A.D. Given the initial students in the primary system, and the assumed rates of repetition, drop-out, and progression, the number of new entrants required to achieve the enrollment target year by year was estimated. Tables 2.29 to 2.34 present the summary of the Basic Needs enrollment projection model for selected years. Table 2.29 gives the Medium Variant population projections disaggregated to the various school age cohorts, as well as the population aged less than 15.

The primary school cohort (age 6-10) as a proportion of the total population is forecast to rise through 1991, after which the declines in fertility will lead this cohort to become a smaller and smaller percent of the total population. With a lag, similar demographic patterns are projected for the lower secondary and secondary school-age cohorts, respectively.

Table 2.29

Medium Variant Disaggregated Population Projection

Age	1981	1986	1991	1996	2000	2001
0	524,675	648,381	604,008	612,512	586,740	584,281
1	506,866	609,926	611,563	607,024	586,506	583,326
2	489,340	576,175	613,328	602,695	586,819	583,093
3	472,145	546,692	609,959	599,200	587,500	583,404
4	455,328	521,039	602,110	596,214	598.379	584,081
5	438,937	498,778	590,436	593,411	593,018	584,945
6	423,022	479.474	575,592	590,466	588,789	585,818
7	407,628	462,687	558,231	587,055	585,374	586,521
8	392,806	447,982	539,009	582,851	582,457	586,876
9	378,602	434,921	518,581	577,531	588,341	586,704
10	364,971	423,670	496,630	571,842	585,421	585,763
11	351,869	414,396	472,841	566,534	582,039	583,810
12	339,808	403,643	452,721	555,912	577,872	580,989
13	329,023	389,767	438,866	537,504	572,597	577,253
14	319,282	374,140	429,020	514,206	566,547	572,228
15	310,062	359,758	418,513	491,098	561,287	566,353

School Age Cohorts

Age	1981	1986	1991	1996	2000	2001
6-10	1,967,029	2,248,735	2,688,044	2,909,746	2,930,383	2,931,681
11-12	691,677	818,040	925,562	1,122,445	1,159,911	1,164,799
13-15	958,367	1,123,665	1,286,399	1,542,807	1,700,431	1,715,833

Total Population

1981	1986	1991	1996	2000	2001
15,022,839	17,131,277	19,370,405	21,539,081	23,167,081	23,592,956

Share of Population

0-14	0.4123	0.4257	0.4188	0.4098	0.3842	0.3765
6-10	0.1309	0.1324	0.1388	0.1371	0.1284	0.1261
11-12	0.0460	0.0482	0.0478	0.0529	0.0508	0.0501
13-15	0.0638	0.0662	0.0664	0.0727	0.0745	0.0738

Source: IEES Economists' Calculations

Table 2.30 presents the basic education system model parameters used to forecast enrollments in Grades 1 through 10. These are assumed to remain constant throughout the period in this scenario, although they will be varied in two scenarios presented later. As noted earlier, and shown more fully in Section 2.6 dealing with unit and cycle costs, the current estimates of these education system parameters imply that the school system is very inefficient.

Table 2.30

Basic Needs Projections: Education System Parameters

(Repetition Rate)

Grade	1981	1986	1991	1996	2000	2001
1	0.390	0.390	0.390	0.390	0.390	0.390
2	0.230	0.230	0.230	0.230	0.230	0.230
3	0.180	0.180	0.180	0.180	0.180	0.180
4	0.190	0.190	0.190	0.190	0.190	0.190
5	0.170	0.170	0.170	0.170	0.170	0.170
6	0.100	0.100	0.100	0.100	0.100	0.100
7	0.150	0.150	0.150	0.150	0.150	0.150
8	0.100	0.100	0.100	0.100	0.100	0.100
9	0.100	0.100	0.100	0.100	0.100	0.100
10	0.200	0.200	0.200	0.200	0.200	0.200
Drop-out Rate						
Grade						
1	0.220	0.220	0.220	0.220	0.220	0.220
2	0.050	0.050	0.050	0.050	0.050	0.050
3	0.020	0.020	0.020	0.020	0.020	0.020
4	0.080	0.080	0.080	0.080	0.080	0.080
5	0.070	0.070	0.070	0.070	0.070	0.070
6	0.120	0.120	0.120	0.120	0.120	0.120
7	0.110	0.110	0.110	0.110	0.110	0.110
8	0.100	0.100	0.100	0.100	0.100	0.100
9	0.100	0.100	0.100	0.100	0.100	0.100
10	0.530	0.530	0.530	0.530	0.530	0.530
Continuation Rate						
Grade						
5 to 6	0.830	0.830	0.830	0.830	0.830	0.830
7 To 8	0.900	0.900	0.900	0.900	0.900	0.900
SLC Graduation Rate						
	0.370	0.370	0.370	0.370	0.370	0.370

Source: MOEC Report on Drop-out and Repeaters, 1986

Table 2.31 shows the estimated gross enrollment ratios for primary, lower secondary, and secondary schools. The gross enrollment ratio measures the ratio of all students enrolled at a given level of the education system to the corresponding school-age cohort. By the year 2000 A.D., the target enrollment ratio of 100 percent is achieved, while the ratios for lower secondary and secondary schools, given constant continuation rates to those levels, are projected to reach 44.3 percent and 31.3 percent, respectively.

Table 2.31

Basic Needs Projections: Enrollment Model

	1981	1986	1991	1996	2000	2001
Primary Enrollment Target	1,871,104	2,196,235	2,577,862	2,930,383	2,931,681	
New Entrants to Grade 1 Required	391,380	431,492	528,739	613,488	696,756	625,218
Grade	Actual			Projected		
1	599,610	717,908	847,268	984,626	1,120,182	1,062,0892
2	277,596	366,036	408,394	77,587	544,818	562,179
3	232,695	300,184	340,370	403,891	460,157	475,097
4	153,873	273,090	322,551	385,099	436,403	451,042
5	124,228	213,885	277,652	326,659	368,823	381,274
6	94,892	153,279	210,028	240,518	272,477	281,330
7	74,672	123,840	185,697	210,819	241,391	248,741
8	61,028	99,930	146,896	172,178	198,552	204,519
9	46,452	83,097	119,779	48,747	170,299	175,872
10	36,851	77,708	107,883	145,458	162,759	168,791
Graduates	13,635	28,752	39,917	53,819	60,221	62,453
Enrollment Sub-totals						
Grades						
1-5	1,388,002	1,871,104	2,196,235	2,577,862	2,930,383	2,931,681
6-7	169,564	277,119	395,725	451,337	513,868	530,070
8-10	144,331	260,735	374,558	466,382	531,611	549,182
Total	1,701,897	2,408,958	2,966,517	3,495,581	3,975,861	4,010,934
Gross Enrollment Ratios						
Grades						
1-5	0.706	0.832	0.817	0.886	1.000	1.000
6-7	0.245	0.339	0.428	0.402	0.443	0.455
8-10	0.151	0.232	0.291	0.302	0.313	0.320

Source: IEES Economists' Projections

The implications of the Basic Needs projection, for the required number of new entrants to Grade 1, is quite striking in the context of the assumed constant repetition rates, drop-out rates, and continuation rates. To achieve the enrollment target of 2.93 million by the year 2000 A.D., 0.696 million new entrants for Grade 1 will be required. At that date, the number of children aged 6 will be 0.597 million. The education system will need to induct 16.6 percent more children into primary school than will be available. Similar results also occur for the immediately preceding years, which points to a contradiction in the Basic Needs projection.

In the context of the current education system parameters, the Basic Needs targets will require year after year finding more children to enter Grade 1 than will be available which, of course, is not possible. If the targets are to be achieved, there must be some changes in the system parameters. Basically, this implies that the high drop-out rates must be reduced.

Table 2.32 shows the expected levels of repeaters from 1981 to 2001. As expected, with the underlying system parameters constant, the numbers of repeaters will rise dramatically as total enrollment expands to achieve the Basic Needs target. From 1986 to 2000 A.D., as total primary enrollment is forecast to increase 56.6 percent from 1.87 million to 2.93 million, the number of repeaters in primary schools is projected to rise 60.8 from 0.574 million to 0.924 million. Because repetition is a major element of wastage, this implies that the internal efficiency within the primary system will remain low unless some improvements in drop-out and repetition rates are effected.

Table 2.32

Basic Needs Projections: Repeaters

Grade	1981	1986	1991	1996	2000	2001
1	233,848	279,984	330,435	384,004	436,871	414,215
2	63,847	84,188	93,931	109,845	125,308	129,301
3	41,885	54,033	61,267	72,700	82,828	85,517
4	29,236	51,887	61,285	73,169	82,917	85,698
5	21,119	36,360	47,201	55,532	62,700	64,817
6	9,489	15,328	21,003	24,052	27,248	28,133
7	11,201	18,576	27,855	31,623	36,209	37,311
8	6,103	9,993	14,690	17,218	19,855	20,452
9	4,645	8,310	11,978	14,875	17,030	17,587
10	7,370	15,542	21,577	29,092	32,552	33,758
Total	428,743	574,201	691,219	812,109	923,517	916,789
Total 1-5	389,935	506,453	594,117	695,250	790,624	779,548
Total 6-7	20,690	33,904	48,857	55,675	63,456	65,444
Total 8-10	18,118	33,844	48,244	61,184	69,437	71,797

Source: IEES Economists' Projections

Table 2.33 presents the estimates of the number of drop-outs from the system through the 1981-2001 period. The growth in the number of drop-outs closely follows the growth in enrollments. Drop-outs from the primary system, if no improvement is made in the rate, would increase 56.9 percent from 219,064 to 343,614.

Using student/teacher ratios of 33:1, 23:1, and 33:1 for the primary, lower secondary, and secondary levels, respectively, teacher requirements projections are derived for the Basic Needs case and are presented in Table 2.34. Over 22,000 additional primary school teachers will be required to achieve the Basic Needs enrollment target; and over 10,000 additional lower secondary and 8,000 additional secondary teachers will be needed if the current progression and continuation rates are not improved. The 23:1 ratio used for lower secondary may possibly be too low and seems out of line with the primary and secondary ratios. Because lower secondary schools often are not separate, but are extensions of existing primary schools, they often use some of the same teachers for primary and for lower secondary grades. This may cause some difficulties and errors in calculating full-time equivalents of lower secondary teachers. If these figures are not correct, the projections based on them will not be accurate.

One alternative scenario to the Basic Needs projections would involve assuming that the current system will continue to absorb and process students through the various grades and levels just as it is doing now. Such a scenario would amount to a Base Case, and would serve as a useful point of reference to compare with the optimistic Basic Needs projections (which nevertheless assume no improvement in internal efficiency) and other more optimistic simulations of the education system's development.

Table 2.35 presents the assumptions that underlie a Base Case model. The parameters for repetition rates, drop-out rates, and continuation rates are the same as those used in the Basic Needs projections. The new entry rates, which measure the proportion of children of each age who enter Grade 1, were estimated on the basis of a MOEC survey which yielded data on the age distribution of Grade 1 students, including repeaters and those who dropped out. The data on non-repeaters in Grade 1 were used to derive the estimated new entry rates. The new entry rates were truncated at age 10, and those under age 5 were combined with the age 5 group.

Table 2.33

Basic Needs Projections: Drop-Outs

Grade	1981	1986	1991	1996	2000	2001
1	131,914	157,940	186,399	216,618	246,440	233,660
2	13,880	18,302	20,420	23,879	27,241	28,109
3	4,654	6,004	6,807	8,078	9,203	9,502
4	1,231	21,847	25,804	30,808	34,912	36,083
5	8,696	14,972	19,436	22,866	25,818	26,689
6	11,387	18,394	25,203	28,862	32,697	33,760
7	8,214	13,622	20,427	23,190	26,553	27,361
8	6,103	9,993	14,690	17,218	19,855	20,452
9	4,645	8,310	11,978	14,875	17,030	17,587
10	19,531	41,185	57,178	77,093	86,262	89,459
Total	221,334	310,568	388,341	463,486	526,012	522,662
Total 1-5	171,454	219,064	258,866	302,249	343,614	334,043
Total 6-7	19,601	32,016	45,630	52,052	59,250	61,121
Total 8-10	30,279	59,488	83,845	109,185	123,148	127,498

Source: IEES Economists' Projections

Table 2.34

Basic Needs Projections: Teacher Requirements

	1981	1986	1991	1996	2000	2001
Primary	42,061	56,700	66,553	78,117	88,799	88,839
Lower Secondary	7,372	12,049	17,205	19,623	22,342	23,047
Secondary	4,374	7,901	11,350	14,133	16,109	16,642
Total	53,807	76,650	95,108	111,873	127,251	128,527

Source: IEES Economists' Projections

Table 2.35

Base Case Enrollment Projections: System Parameters

New Entry Rate:	Year					
Age	1981	1986	1991	1996	2000	2001
<5	0.170	0.170	0.170	0.170	0.170	0.170
6	0.330	0.330	0.330	0.330	0.330	0.330
7	0.330	0.330	0.330	0.330	0.330	0.330
8	0.080	0.080	0.080	0.080	0.080	0.080
9	0.020	0.020	0.020	0.020	0.020	0.020
10+	0.010	0.010	0.010	0.010	0.010	0.010
Sum	0.940	0.940	0.940	0.940	0.940	0.940
Repetition Rate:						
Grade	1981	1986	1991	1996	2000	2001
1	0.390	0.390	0.390	0.390	0.390	0.390
2	0.230	0.230	0.230	0.230	0.230	0.230
3	0.180	0.180	0.180	0.180	0.180	0.180
4	0.190	0.190	0.190	0.190	0.190	0.190
5	0.170	0.170	0.170	0.170	0.170	0.170
6	0.100	0.100	0.100	0.100	0.100	0.100
7	0.150	0.150	0.150	0.150	0.150	0.150
8	0.100	0.100	0.100	0.100	0.100	0.100
9	0.100	0.100	0.100	0.100	0.100	0.100
10	0.200	0.200	0.200	0.200	0.200	0.200
Drop-out Rate:						
Grade	1981	1986	1991	1996	2000	2001
1	0.220	0.220	0.220	0.220	0.220	0.220
2	0.050	0.050	0.050	0.050	0.050	0.050
3	0.020	0.020	0.020	0.020	0.020	
4	0.080	0.080	0.080	0.080	0.080	0.080
5	0.070	0.070	0.070	0.070	0.070	0.070
6	0.120	0.120	0.120	0.120	0.120	0.120
7	0.110	0.110	0.110	0.110	0.110	0.110
8	0.100	0.100	0.100	0.100	0.100	0.100
9	0.100	0.100	0.100	0.100	0.100	0.100
10	0.530	0.530	0.530	0.530	0.530	0.530
Continuation Rate:						
Grade						
5 to 6	0.830	0.830	0.830	0.830	0.830	0.830
7 to 8	0.900	0.900	0.900	0.900	0.900	0.900
SLC Graduation Rate:						
	0.424	0.431	0.370	0.370	0.370	0.370

Source: IEES Economists' Projections

The overall level of new entry rates was adjusted slightly so that the total enrollment in 1985, less estimated repeaters, would correspond to the new entrants that would be forecast using those new entry rates and the projected populations at those various ages. Over a period of several years, the sum of these estimated new entry rates would imply that 94 percent of each age cohort would enter primary school.

Table 2.36 presents the Base Case enrollment projections from 1986 to 2001. According to that projection, primary enrollments would only grow to 2.52 million in the year 2000 A.D., yielding a gross enrollment ratio of 86 percent, only slightly higher than estimated for 1986. New entrants to Grade 1 level off in the mid-1990's, and with that also the total enrollment in the primary system.

Enrollments in lower secondary and secondary schools would continue to rise throughout the period, although at slower and slower rates. Compared to the Basic Needs projections for the year 2000 A.D., the Base Case forecasts of primary enrollments would only be 86 percent as large. Likewise, the estimated teacher requirements of 76,374 in 2000 A.D., as shown in Table 2.37, would only be 86 percent of the Basic Needs requirements.

A third education system scenario was prepared using decidedly more optimistic assumptions regarding improvements in new entry, repetition, drop-out, and continuation rates. It is not very likely that these assumptions will be met. This Optimistic Case has new entry rates that concentrate new entry on children aged 6 and 7, and by the year 2000 A.D. increase sufficiently so that all children will be entering Grade 1 by the time they reach age 8.

With regard to the repetition and drop-out rates, the Optimistic Case assumes dramatic reductions across all grades especially after Grade 1, as shown in Table 2.38. This would markedly improve the internal efficiency of the education system at all levels. Continuation rates from primary to lower secondary, and from lower secondary to secondary, are assumed to increase to a very optimistic 96 percent and 94 percent, respectively, by the year 2000 A.D. It is also assumed that the pass rate for the SLC examination rises dramatically to 75 percent by the year 2000 A.D. This does not have any effect on enrollments in the education system, but it certainly would have a very positive psychological effect on those who would have completed high school successfully, even though most of them do not plan to continue to college.

Table 2.36

Base Case Enrollment Projections: Enrollment Model

	1981	1986	1991	1996	2000	2001
New Entrants to Grade 1	391,380	444,479	532,994	553,359	552,505	550,854
Grade	Actual	Projected (including repeaters)				
1	599,610	730,895	854,855	908,575	906,494	904,387
2	277,596	366,036	413,460	460,444	459,908	459,312
3	232,695	300,184	347,374	400,384	404,335	403,914
4	153,873	273,090	330,848	387,169	399,167	399,309
5	124,228	213,885	283,013	329,899	350,440	350,967
6	94,892	153,279	211,495	243,544	266,781	268,096
7	74,672	123,840	185,697	214,548	241,014	244,241
8	61,028	99,930	146,896	176,018	200,039	204,380
9	46,452	83,097	119,779	151,921	172,216	177,253
10	36,851	77,708	107,883	147,232	165,230	170,819
Graduates	15,608	33,454	39,917	54,476	61,135	63,203
Sub-Totals						
Grades						
1-5	1,388,002	1,884,091	2,229,550	2,486,471	2,520,344	2,517,888
6-7	169,564	277,119	397,192	458,092	507,795	512,338
8-10	144,331	260,735	374,558	475,171	537,485	552,451
Total	1,701,897	2,421,945	3,001,300	3,419,734	3,565,624	3,582,677
Gross Enrollment Ratios						
Grades	1981	1986	1991	1996	2000	2001
1-5	0.706	0.838	0.829	0.855	0.860	0.859
6-7	0.245	0.339	0.429	0.408	0.438	0.440
8-10	0.151	0.232	0.291	0.308	0.316	0.322

Source: IEES Economists' Projections

Table 2.37

Base Case Enrollment Projections: Teacher Requirements

Level	1981	1986	1991	1996	2000	2001
Primary	42,061	57,094	67,562	75,348	76,374	76,300
Lower Secondary	7,372	12,049	17,269	19,917	22,078	22,276
Secondary	4,374	7901	11,350	14,399	16,287	16,741
Total	53,807	77,043	96,182	109,664	114,740	115,316

Source: IEES Economists' Projections

Table 2.38

Optimistic Case Enrollment Projections: System Parameters

New Entry Rate:	Year					
Age	1981	1986	1991	1996	2000	2001
<5	0.170	0.170	0.120	0.098	0.080	0.080
6	0.330	0.330	0.400	0.444	0.480	0.480
7	0.330	0.330	0.360	0.371	0.380	0.380
8	0.080	0.080	0.080	0.069	0.060	0.060
9	0.020	0.020	0.010	0.004	0.000	0.000
10+	0.010	0.010	0.000	0.000	0.000	0.000
Sum	0.940	0.940	0.970	0.987	1.000	1.000
Repetition Rate:						
Grade	1981	1986	1991	1996	2000	2001
1	0.390	0.390	0.300	0.244	0.200	0.200
2	0.230	0.230	0.160	0.116	0.080	0.080
3	0.180	0.180	0.160	0.116	0.080	0.080
4	0.190	0.190	0.160	0.116	0.080	0.080
5	0.170	0.170	0.160	0.116	0.080	0.080
6	0.100	0.100	0.070	0.053	0.040	0.040
7	0.150	0.150	0.120	0.087	0.060	0.060
8	0.100	0.100	0.070	0.053	0.040	0.040
9	0.100	0.100	0.070	0.053	0.040	0.040
10	0.200	0.200	0.150	0.122	0.100	0.100
Drop-out Rate:						
Grade	1981	1986	1991	1996	2000	2001
1	0.220	0.220	0.160	0.104	0.060	0.060
2	0.050	0.050	0.030	0.024	0.020	0.020
3	0.020	0.020	0.020	0.020	0.020	0.020
4	0.080	0.080	0.030	0.024	0.020	0.020
5	0.070	0.070	0.030	0.024	0.020	0.020
6	0.120	0.120	0.080	0.058	0.040	0.040
7	0.110	0.110	0.080	0.058	0.040	0.040
8	0.100	0.100	0.080	0.058	0.040	0.040
9	0.100	0.100	0.080	0.058	0.040	0.040
10	0.530	0.530	0.350	0.239	0.150	0.150
Continuation Rate:						
Grade						
5 to 6	0.830	0.830	0.900	0.933	0.960	0.960
7 to 8	0.900	0.900	0.920	0.931	0.940	0.940
SLC Graduation Rate:						
	0.424	0.431	0.500	0.639	0.750	0.750

Source: IEES Economists' Projections

The Optimistic Case projections are presented in Table 2.39 below. Primary enrollment would grow at an annual rate of 3.4 percent from 1.88 million in 1986 to 3.01 million in the year 2000 A.D. Even more striking enrollment growth would occur at the secondary levels with lower secondary growing at a 9 percent annual rate from 0.277 million to 0.924 million over the same period. Enrollment in Grades 8-10 would increase at a 10.5 percent annual rate from 0.261 million to 1.051 million.

Table 2.39

Optimistic Case Enrollment Projections: Enrollment Model

	1981	1986	1991	1996	2000	2001
New Entrants to Grade 1	391,380	444,479	550,359	581,033	587,450	586,078
Grade	Actual			Projected		
1	599,610	730,895	800,969	785,064	747,174	735,513
2	277,596	366,036	480,283	572,049	595,583	600,555
3	232,695	300,184	420,010	543,591	576,479	582,143
4	153,873	273,090	372,026	513,643	555,995	563,311
5	124,228	213,885	319,957	475,912	534,651	543,168
6	94,892	153,279	235,593	385,800	476,983	491,283
7	74,672	123,840	206,796	340,032	447,029	465,646
8	61,028	99,930	160,140	272,041	387,995	410,515
9	46,452	83,097	128,224	225,680	344,701	370,743
10	36,851	77,708	111,962	198,933	318,672	348,992
Graduates	15,608	33,454	55,981	127,096	239,004	261,744
Sub-Totals Grades						
1-5	1,388,002	1,884,091	2,393,245	2,890,259	3,009,881	3,024,689
6-7	169,564	277,119	442,389	725,831	924,012	956,929
8-11	144,331	260,735	400,326	696,654	1,051,367	1,130,250
Total	1,701,897	2,421,945	3,235,960	4,312,743	4,985,261	5,111,868
Gross Enrollment Ratios Grades						
1-5	0.706	0.838	0.890	0.993	1.027	1.032
6-7	0.245	0.339	0.478	0.647	0.797	0.822
8-10	0.151	0.232	0.311	0.452	0.618	0.659

Source: IEES Economists' Projections

The gross enrollment ratio of the primary system would exceed 100 percent by the year 2000 A.D., while those of lower secondary and secondary would reach 80 percent and 62 percent, respectively. These results under the Optimistic Case would require substantial improvement in the internal efficiency of the school systems. Compared to the Basic Needs projections, greater total enrollments would be achieved, all children would have participated in the educational system, and more of them would have progressed through all levels in less time.

Table 2.40 presents the teacher requirements derived from the enrollment projections of the Optimistic Case. By the year 2000 A.D., teacher requirements for all levels would exceed 163,000; 91,200 for primary, 40,200 for lower secondary, and 31,900 for secondary. This would compare with the total teachers required of 127,300 in the year 2000 A.D. for the Basic Needs projections, and 114,700 teachers required in the Base Case projections.

Table 2.40
Optimistic Case Enrollment Projections:
Teacher Requirements

Level	1981	1986	1991	1996	2000	2001
Primary	42,061	57,094	72,523	87,584	91,209	91,657
Lower Secondary	7,372	12,049	19,234	31,558	40,174	41,606
Secondary	4,374	7,901	12,131	21,111	31,860	34,250
Total	53,807	77,043	103,888	140,252	163,243	167,513

Source: IEES Economists' Projections

The fourth scenario presented utilizes the High Variant population projections shown in Table 2.41. Much like the Optimistic Case above, this fourth scenario assumes substantial improvements in the education system. As the data in Table 2.41 show, the High Variant population projects very high rates of growth of the various school age cohorts that all exceed the annual population growth rate of 2.84 percent.

Table 2.41

High Variant Population Projections: Disaggregated

Age	1981	1986	1991	1996	2000	2001
0	524,675	675,167	698,981	817,651	910,741	943,328
1	506,866	629,482	688,434	784,400	875,732	905,442
2	489,340	589,805	674,496	754,792	843,584	870,636
3	472,145	555,581	657,656	728,396	814,059	838,675
4	455,328	526,253	638,401	704,781	798,785	809,322
5	438,937	501,267	617,220	683,517	766,302	782,340
6	423,022	480,066	594,601	664,173	737,377	757,493
7	407,628	462,095	571,032	646,318	711,590	734,544
8	392,806	446,797	547,002	629,522	688,519	713,257
9	378,602	433,617	522,999	613,354	677,677	693,394
10	364,971	422,722	498,594	598,410	658,498	674,632
11	351,869	414,278	473,356	585,286	640,796	656,645
12	339,808	404,118	452,364	568,419	624,143	639,638
13	329,023	390,241	437,941	545,323	608,113	623,552
14	319,282	374,259	427,823	518,649	592,868	607,885
15	310,062	359,758	417,604	493,130	579,866	592,806
School Age Cohorts						
6-10	1,967,029	2,245,298	2,734,228	3,151,775	3,473,661	3,573,320
11-12	691,677	818,395	925,720	1,153,705	1,264,939	1,296,283
13-15	958,367	1,124,258	1,283,368	1,557,103	1,780,847	1,824,243
Total Population	15,022,83	17,252,037	19,758,408	22,787,264	25,541,381	26,280,427
Share of Population						
0-14	0.4123	0.4235	0.4302	0.4320	0.4287	0.4281
6-10	0.1309	0.1301	0.1384	0.1383	0.1360	0.1360
11-12	0.0460	0.0474	0.0469	0.0506	0.0495	0.0493
13-15	0.0638	0.0652	0.0650	0.0683	0.0697	0.0694

Source: IEES Economists' Projections

The primary school age cohort is projected to grow at an annual rate of 3.03 percent from 1.967 million in 1981 to 3.573 million in 2001. The lower secondary school age cohort would increase at an annual rate of 3.19 percent from 0.692 million in 1981 to 1.296 million in 2001. And the secondary school age cohort of persons aged 13-15 is forecast to grow at an annual rate of 3.27 percent from 0.958 million in 1981 to 1.824 million in 2001.

The assumptions underlying this projection are shown in Table 2.42. New entry rates are assumed to concentrate around the age 6 and age 7 cohorts, and over the population aged 5 to 8 sum to unity by the year 2000 A.D.

Table 2.42

High Variant Population Projections:

System Parameters

New Entry Rate	Year					
Age	1981	1986	1991	1996	2000	2001
<5	0.140	0.120	0.100	0.072	0.050	0.050
6	0.300	0.285	0.270	0.270	0.270	0.270
7	0.300	0.380	0.460	0.554	0.630	0.630
8	0.100	0.090	0.080	0.063	0.050	0.050
9	0.050	0.040	0.030	0.013	0.000	0.000
10+	0.020	0.020	0.020	0.009	0.000	0.000
Total	0.910	0.935	0.960	0.982	1.000	1.000
Repetition Rate						
Grade	1981	1986	1991	1996	2000	2001
1	0.390	0.340	0.290	0.240	0.200	0.200
2	0.230	0.215	0.200	0.144	0.100	0.100
3	0.180	0.150	0.120	0.087	0.060	0.060
4	0.190	0.155	0.120	0.087	0.060	0.060
5	0.170	0.145	0.120	0.087	0.060	0.060
6	0.100	0.090	0.080	0.069	0.060	0.060
7	0.150	0.135	0.120	0.098	0.080	0.080
8	0.100	0.090	0.080	0.069	0.060	0.060
9	0.100	0.090	0.080	0.069	0.060	0.060
10	0.200	0.180	0.160	0.138	0.120	0.120
Drop-out Rate						
Grade	1981	1986	1991	1996	2000	2001
1	0.220	0.180	0.140	0.090	0.050	0.050
2	0.050	0.040	0.030	0.024	0.020	0.020
3	0.020	0.020	0.020	0.020	0.020	0.020
4	0.080	0.060	0.040	0.029	0.020	0.020
5	0.070	0.055	0.040	0.029	0.020	0.020
6	0.120	0.110	0.100	0.089	0.080	0.080
7	0.110	0.095	0.080	0.069	0.060	0.060
8	0.100	0.090	0.080	0.069	0.060	0.060
9	0.030	0.030	0.030	0.030	0.030	0.030
10	0.000	0.000	0.000	0.000	0.000	0.000
Continuation Rate						
Grade						
5 to 6	0.830	0.850	0.870	0.887	0.900	0.900
7 to 8	0.900	0.900	0.900	0.900	0.900	0.900

Source: IEES Economists' Projections

Repetition rates and drop-out rates are assumed to steadily decline for all grades over the period, while the continuation rate from primary to lower secondary is assumed to rise to 90 percent.

Table 2.43 presents the enrollment projections for the High Variant population case. Total enrollment is projected to grow to 3.48 million at the primary level, 0.929 million at the lower secondary level, and 0.956 million at the secondary level by the year 2000 A.D. The gross enrollment ratio at the primary level would exceed 100 percent by the year 2000 A.D., while those ratios for lower secondary and secondary would be 73.4 percent and 53.7 percent respectively.

Table 2.43

High Variant Population Projections:

Enrollment Model

	1981	1986	1991	1996	2000	2001
New Entrants to Grade 1	376,156	438,578	554,361	640,406	720,134	742,066
Grade	Actual			Projected		
1	599,610	695,618	779,927	851,959	907,202	923,506
2	277,596	414,759	512,819	647,633	728,890	753,291
3	232,695	300,316	418,429	564,059	655,953	680,780
4	153,873	273,000	385,545	524,039	615,437	640,403
5	124,228	220,644	348,118	474,824	576,898	600,816
6	94,892	158,315	272,876	379,810	493,890	517,689
7	74,672	124,595	228,442	323,887	434,954	459,542
8	61,028	100,457	167,920	260,945	357,494	381,591
9	46,452	83,960	137,279	224,513	308,050	333,078
10	36,851	82,849	126,663	217,819	290,073	315,134
Sub-Totals Grades						
1-5	1,388,002	1,904,337	2,444,838	3,062,514	3,484,380	3,598,795
6-7	169,564	282,910	501,317	703,697	928,844	977,231
8-10	144,331	267,265	431,862	703,278	955,617	1,029,803
Total	1,701,897	2,454,512	3,378,017	4,469,489	5,368,840	5,605,830
Gross Enrollment Ratios Grades						
1-5	0.706	0.848	0.894	0.972	1.003	1.007
6-7	0.245	0.346	0.542	0.610	0.734	0.754
8-10	0.151	0.238	0.337	0.452	0.537	0.565

Source: IEES Economists' Projections

Table 2.44 gives the teacher requirements associated with this High Variant population projection. This scenario not only yields the highest forecast of total teacher requirements, a total of 174,930 teachers required, but also has those requirements still growing quite rapidly at the turn of the century, at an annual growth rate of approximately 4.5 percent.

Table 2.44

High Variant Population Projections: Teacher Requirements

Level	1981	1986	1991	1996	2000	2001
Primary	42,061	57,707	74,086	92,803	105,587	109,054
Lower Secondary	7,372	12,300	21,796	30,596	40,385	42,488
Secondary	4,374	8,099	13,087	21,311	28,958	31,206
Total	53,807	78,107	108,969	144,710	174,930	182,749

Source: IEES Economists' Projections

2.3.6 Education Expenditure Projections

The growth of education expenditures will depend primarily on the growth of enrollments at the various levels of the education system, and on the unit costs of education at each level. In Section 2.3.5, several alternative enrollment projections were developed. In this present section, estimates of unit costs for the different subsectors are given. These two sets of data are brought together in this section to derive projections of education budgets.

Budget projections in this section are based upon several simplifying assumptions. Unit costs per student at the primary, secondary, higher, and technical/vocational levels are assumed to remain constant in real terms over the projection period. For primary and secondary, the 1985-1986 estimated unit costs are used (expressed in 1984-1985 prices). For higher education and technical/vocational education, the 1984-1985 unit costs are used.

The per student administrative and overhead costs of the MOEC, to support the primary and secondary systems, are also assumed to be constant in real terms. These costs include the following budget categories (1) Curriculum, Textbook & Educational Materials, (2) Miscellaneous Education Projects, (3) Education Administration, (4) Education Research & Statistics, (5) Scholarship and Student Welfare, and (6) Supervision, Training and Publicity. The distribution of these

overhead costs across all MOEC budget items is assumed to remain as it was in 1985-1986; that is, all of the overhead budget items related to primary and secondary education are assumed to change in the same proportion over the projection period.

For want of better information, various budget items are assumed to remain constant in real terms in 1984-1985 prices. These budget items include (1) Adult Education, (2) Physical Education & Sports, (3) Archeology, (4) Special Education, (5) Tribhuvan University, (6) Science and Technology, (7) Integrated Rural Development, (8) Cultural Corporation, (9) Vocational Education, and (10) Others.

Table 2.45 below presents the budget forecast that corresponds to the Basic Needs enrollment projections. The funds to support the projected expansion of the primary system, with constant unit costs, would rise from Rs 387 million in 1985-1986 to Rs 626 million in the year 2000 A.D. in 1984-1985 prices. This would amount to a 61.7 percent real increase in resources spent for primary education.

Table 2.45

Regular and Development Projected Budget Expenditure in Education: Basic Needs Case (Constant 1984-1985 Prices -- '000)

Year	Primary	Lower Second. and Second.	Tribhuvan Univ.	Tech. and Vocat.	Adminis-Tration	Other	Total
1985	387,024	165,239	362,663	13,568	40,462	116,518	1,085,474
1986	399,626	171,773	308,276	13,568	42,215	117,622	1,053,081
1987	412,639	183,895	308,276	13,568	43,948	118,714	1,081,040
1988	426,075	198,652	308,276	13,568	45,860	119,919	1,112,351
1989	439,949	214,622	308,276	13,568	47,875	121,188	1,145,478
1990	454,275	231,441	308,276	13,568	49,973	122,510	1,180,043
1991	469,067	246,003	308,276	13,568	51,986	123,778	1,212,678
1992	484,341	257,919	308,276	13,568	53,893	124,980	1,242,977
1993	500,112	267,634	308,276	13,568	55,720	126,131	1,271,440
1994	516,397	276,161	308,276	13,568	57,524	127,267	1,299,194
1995	533,212	284,384	308,276	13,568	59,355	128,421	1,327,215
1996	550,574	293,089	308,276	13,568	61,257	129,619	1,356,384
1997	568,502	302,605	308,276	13,568	63,250	130,875	1,387,076
1998	587,014	312,765	308,276	13,568	65,326	132,183	1,419,133
1999	606,128	323,258	308,276	13,568	67,471	133,534	1,452,235
2000	625,865	333,891	308,276	13,568	69,673	134,922	1,486,196
2001	626,143	344,678	308,276	13,568	70,288	135,309	1,498,261

Source: Ministry of Finance, projection by the IEES economists

Note: Cost per student used in projection: primary Rs 213.58; total secondary Rs 332.59; total school level Rs 239.19; including overhead Rs 267.75; average overhead per student Rs 28.56; higher education Rs 5,571.39; technical/vocational Rs 18,598.34

The secondary system's expansion is greater percentage-wise, based on assumed constant continuation rates from primary to lower secondary, and from lower secondary to secondary. This greater percentage increase occurs because the initial base is smaller for the secondary cycle. The budget for lower secondary and secondary is projected to rise from Rs 165 million in 1985-1986 to Rs 334 million in the year 2000 A.D., or a 102 percent increment (compared to the 61.7 percent increase for primary expenditures).

The budget for educational administration is projected to increase 72 percent in real terms between 1985-1986 and 2000-2001. Overall, for the Basic Needs scenario, the primary and secondary education budget would increase 73 percent, and the total education budget including higher education is projected to rise 36 percent from Rs 1,085 million in 1985-1986 to Rs 1,486 million by the year 2000 A.D.

Table 2.46 shows budgetary estimates for the Base Case enrollment projections. The Base Case enrollment projections are more conservative and assume a continuation of the current patterns for entry of children into primary school, and their repetition, drop-out, and continuation. The budgetary estimates for the Base Case forecast are, therefore, lower than those of the Basic Needs projection.

For the Base Case, the primary budget in constant 1984-1985 prices would only increase to Rs 538.3 million by the year 2000 A.D., compared to the Basic Needs projected primary budget of Rs 625.8 million. The total education budget, for the Base Case forecast, would be 6.7 percent lower than that of the Basic Needs projection for the year 2000 A.D.

A third enrollment projection, based upon the Medium Variant Population Projection, assumes substantial improvements in entry of the age 6-10 cohort into primary school, reductions in repetition and drop-out rates, and increases in continuation rates from primary to lower secondary and from lower secondary to upper secondary. The budgetary forecasts in Table 2.47 are based on these assumptions.

This more optimistic scenario produces larger total enrollments at both the primary and secondary levels, with relatively larger increases at the secondary level. Total budgetary implications for this scenario would exceed those of the Basic Needs case by over 23 percent by the year 2000 A.D., being Rs 1,829 million compared to Rs 1,486 million for the Basic Needs case.

Table 2.46

Regular and Development Projected Budget Expenditure in Education:

Base Case

(Constant 1984-1985 Prices -- '000)

Year	Primary	Lower Second. and Second.	Tribhuvan Univ.	Tech. and Vocat.	Adminis-Tration	Other	Total
1985	387,024	165,239	362,663	13,568	40,462	116,518	1,085,474
1986	402,400	171,773	308,276	13,568	42,442	117,766	1,056,225
1987	418,567	183,895	308,276	13,568	44,434	119,020	1,087,761
1988	433,306	198,652	308,276	13,568	46,453	120,293	1,120,549
1989	447,274	214,622	308,276	13,568	48,476	121,567	1,153,782
1990	461,496	231,441	308,276	13,568	50,565	122,883	1,188,229
1991	476,183	246,471	308,276	13,568	52,595	124,162	1,221,256
1992	490,879	259,511	308,276	13,568	54,517	125,373	1,252,124
1993	504,628	270,580	308,276	13,568	56,252	126,466	1,279,770
1994	516,298	280,209	308,276	13,568	57,738	127,402	1,303,491
1995	525,306	289,107	308,276	13,568	58,965	128,175	1,323,398
1996	531,055	298,053	308,276	13,568	59,928	128,782	1,339,663
1997	535,148	307,387	308,276	13,568	60,776	129,316	1,354,471
1998	537,478	316,874	308,276	13,568	61,488	129,764	1,367,448
1999	538,260	325,911	308,276	13,568	62,048	130,117	1,378,180
2000	538,290	333,828	308,276	13,568	62,484	130,392	1,386,839
2001	537,765	340,058	308,276	13,568	62,783	130,581	1,393,032

Source: Ministry of Finance, and IEES economists' projections

Note: Cost per student used in projection: primary Rs 213.58; total secondary Rs 332.59; total school level Rs 239.19; including overhead Rs 267.75; average overhead per student Rs 28.56; higher education Rs 5,571.39; technical/vocational Rs 18,598.34

Table 2.47

Regular and Development Projected Budget Expenditure in Education: Optimistic Case (Constant 1984-1985 Prices -- '000)

Year	Primary	Lower Second. and Second.	Tribhuvan Univ.	Tech. and Vocat.	Adminis-tration	Other	Total
1985	387,024	165,239	362,663	13,568	40,462	116,518	1,085,474
1986	402,400	171,773	308,276	13,568	42,442	117,766	1,056,225
1987	419,184	183,895	308,276	13,568	44,485	119,052	1,088,460
1988	437,808	200,179	308,276	13,568	46,906	120,578	1,127,316
1989	458,740	220,267	308,276	13,568	49,726	122,355	1,172,933
1990	483,174	243,961	308,276	13,568	53,031	124,437	1,226,447
1991	511,144	269,136	308,276	13,568	56,707	126,753	1,285,584
1992	539,980	297,957	308,276	13,568	60,655	129,240	1,349,676
1993	565,932	331,239	308,276	13,568	64,610	131,732	1,415,358
1994	588,004	368,187	308,276	13,568	68,449	134,150	1,480,633
1995	605,228	409,366	308,276	13,568	72,122	136,464	1,545,024
1996	617,296	454,295	308,276	13,568	75,577	138,641	1,607,653
1997	626,777	500,857	308,276	13,568	78,910	140,741	1,669,130
1998	633,821	546,787	308,276	13,568	82,008	142,693	1,727,153
1999	638,840	590,619	308,276	13,568	84,825	144,467	1,780,597
2000	642,844	630,871	308,276	13,568	87,362	146,066	1,828,988
2001	646,007	666,576	308,276	13,568	89,581	147,464	1,871,472

Source: Ministry of Finance, plus IEES economists' projections

Note: Cost per student used in projection: primary Rs 213.58; total secondary Rs 332.59; total school level Rs 239.19; including overhead Rs 267.75; average overhead per student Rs 28.56; higher education Rs 5,571.39; technical/vocational Rs 18,598.34

The fourth budgetary estimate (Table 2.48) is based on a more rapidly growing population as assumed in the High Variant Population Projection. It does not assume the decline in fertility rates used by the Optimistic Case budget projection. For this scenario the primary school-age cohort would continue to grow rapidly, and assumed improvements in entry into, and progression through, the primary system would lead to substantial budgetary increases.

Table 2.48

Regular and Development Projected Budget Expenditure in Education: High Variant Case

(Constant 1984-1985 Prices -- '000)

Year	Primary	Lower Second. and Second.	Tribhuvan Univ.	Tech. and Vocat.	Adminis-Tration	Other	Total
1985	387,024	165,239	362,663	13,568	40,462	116,518	1,085,474
1986	406,724	175,708	308,276	13,568	43,013	118,125	1,065,415
1987	429,044	192,527	308,276	13,568	45,767	119,860	1,109,043
1988	451,982	213,089	308,276	13,568	48,778	121,757	1,157,450
1989	476,055	235,844	308,276	13,568	52,002	123,788	1,209,533
1990	498,228	266,485	308,276	13,568	55,502	125,993	1,268,053
1991	522,164	298,027	308,276	13,568	59,197	128,321	1,329,552
1992	548,404	328,424	308,276	13,568	63,018	130,728	1,392,418
1993	576,057	358,047	308,276	13,568	66,912	133,182	1,456,043
1994	603,568	388,083	308,276	13,568	70,818	135,642	1,519,955
1995	630,216	417,762	308,276	13,568	74,633	138,046	1,582,501
1996	654,086	449,341	308,276	13,568	78,324	140,372	1,643,967
1997	677,002	484,159	308,276	13,568	82,115	142,760	1,707,880
1998	699,297	521,984	308,276	13,568	86,019	145,220	1,774,364
1999	721,196	561,614	308,276	13,568	89,991	147,722	1,842,367
2000	744,187	601,835	308,276	13,568	94,084	150,301	1,912,251
2001	768,623	640,981	308,276	13,568	98,237	152,917	1,982,603

Source: Ministry of Finance, plus IEES economists' projections

Note: Cost per student used in projection: primary Rs 213.58; total secondary Rs 332.59; total school level Rs 239.19; including overhead Rs 267.75; average overhead per student Rs 28.56; higher education Rs 5,571.39; technical/vocational Rs 18,598.34

In this High Variant scenario, the primary system budget, in real terms, would increase from Rs 387 million in 1985 to Rs 744 million in the year 2000 A.D., mainly because of the greater number of children. With assumed improvements in continuation rates from primary through the secondary system, the budget for lower secondary and secondary schools would need to rise from Rs 165 million in 1985 to Rs 602 million in the year 2000 A.D., an annual increase of 9 percent. The total budgetary implications of the High Variant projection would exceed those of the Basic Needs case by 28.7 percent by the year 2000 A.D.

2.3.7 Fiscal Capacity and Educational Expenditures Projections

The expansion and improvement of the educational services required by the Basic Needs goals discussed above ultimately depends on the capacity of the government to mobilize resources, not only nationally but also at the local level. Any community support based on local taxes to pay for some costs of schools would require that the tax system be effectively and fairly administered and that there be an equitable "tax handle" (i.e. the object to be taxed).

2.3.7.1 Central Government Resources. Several sources of finance available to the central government are discussed below. These sources are domestic tax and non-tax revenues, income of public enterprises, and public borrowing.

Domestic Tax and Non-Tax Revenues

The tax revenue was Rs 3,659.4 million in 1985-1986. Tax revenue comprised 79 percent of government revenues. This suggests that there is little opportunity for increasing government expenditures for schools as long as tax revenues are not raised.

Indirect taxes dominate the tax revenue collections, as was shown above in Table 2.11. Custom duties and sales tax are the major sources of revenues. Income and urban property taxes are a small proportion of the total, and have increased only slowly. Urban property tax revenue has not increased in amounts commensurate with the large scale urban housing construction by private households, and income tax collections on interest, rent, and profits from medium and higher income individuals and firms appear to be considerably below their potential. Land tax revenue now (1985-1986) accounts for only 1.5 percent of total revenue and has declined over the past few years. House and land registration has grown, but only to 4 percent of the total. A registration tax on houses is extremely regressive (i.e. it mainly taxes the poor) unless there is an adequate system to appraise the value of the urban houses and express the taxes as a percent of that value.

For every year from 1980-1981 to 1985-1986 the actual revenue realized was 20 to 40 percent lower than the budgeted revenue. Similarly, the actual foreign aid grants have been lower than the budgeted amounts.

Income of Public Enterprises

There are 53 public enterprises, covering commercial, industrial, service oriented, and infrastructure oriented activities. The contribution of the public enterprises to the total national product is about 2.1 percent at present. The government has invested large amounts in these enterprises. The equity investment of the government in all of these enterprises was Rs 2.2 billion in 1983-1984. Besides, every year the government has to provide in annual budgets more than Rs one billion as equity, loans, and subsidies to the enterprises (The Seventh Plan, p. 242).

The enterprises contribute to the government revenue through indirect tax, income tax, dividends, interest, and principal repayment. These payments have every year been lower than the annual cash flow (in equity, subsidy, and loans) from the government to the enterprises. This is partly due to the weak financial status of the enterprises and partly to management difficulties; it is also due to the inability of the enterprises to set prices commensurate with their rising production costs.

Public Borrowing

As indicated previously, the Central Government has used internal loans to meet budget deficits. During the 1979-1980 to 1984-1985 periods (the Sixth Plan), the government borrowed Rs 5.839 billion. This is higher than the revenue savings of Rs 4.865 billion utilized for financing the plan. A major portion of the internal loans has been financed with money created by the banking sector. This has led to large increases in the money supply with consequent upward pressure on prices, especially in 1985-1986 when the inflation rate was 14.8 percent (Ministry of Finance 1987, p. 61). Since July 1986 the expansion of the money supply has slowed and the inflation rate has dropped to 2.6 percent.

2.3.7.2 Local Resources. The local bodies, the village and town panchayats and the District Panchayats, have been given the authority to impose several local taxes such as a tax on professions, on commodities brought in for sale, on vehicles, on houses, etc. The town panchayats could introduce an education tax using one or another of these tax handles to finance compulsory primary education in its area. None of the 33 town panchayats has so far taken any initiative in this direction, possibly because each one is reluctant to be the first to do so and is waiting for a lead from the Ministry of Finance and the MOEC with respect to how the local schools can best be more adequately financed.

The Decentralization Act of 1982 emphasizes mobilization of resources at the local level, and government leaders continue to emphasize this. Besides the regular local taxes, the local bodies have also been empowered to mobilize resources from the beneficiaries of the local projects such as drinking water improvement, irrigation, etc. The Act also allows the village and town panchayats to impose Panchayat Development and Land Taxes (PDLT), with permission from Government and after submission of a detailed program of the work to be accomplished and the financing procedure.

The PDLT was implemented in a few districts in late 1960s and mid 1970s. Although still on the statute books, the tax is unused since its suspension in 1979-1980. This tax has now been reemphasized, beginning with its mention in the Decetralization Act of 1982. The tax is primarily based on land, and will replace the present Land Tax wherever it is implemented. The Act provides that 85 percent of the proceeds of the tax will remain with the local panchayat, 10 percent will be shared with the District Panchayat, and 5 percent will be set aside for the Central Government. The concerned village or town panchayat imposing the tax is required to use the proceeds to finance projects of priority importance for the local people. The Act also lists priorities to be adopted in local level plans. Among the specified priorities are projects that will directly benefit common people and meet minimum needs; will raise agricultural production, productivity, and employment; will ensure the natural environment; and projects that are listed as "Priority Projects" at the national level. It is noteworthy that primary education is one of the nationally designated "Priority Projects."

The PDLT, if imposed by the local panchayats, could lead to greater mobilization of resources at the local levels. However, there are several difficulties with its implementation such as lack of current land records, lack of systems for valuation or assessment, and lack of adequate administration for collection of the tax, including lack of proper accounting and control systems. All these have led to misuse and wastage of the proceeds of those taxes that were imposed earlier during the mid 1960s to mid 1970s.

Under the new Decentralization Act no village or town panchayat yet has come forward with proposals for re-imposition of the tax. It seems that the essential conditions for collection and utilization of the tax are still lacking in the local panchayats. However, the Budget of 1987-1988 has again referred to the option available to the local panchayats for raising resources by developing assessment procedures that place a value on local real estate and imposing a tax on this property.

2.3.7.3 Resource Mobilization and Financing Plans. The patterns for financing development plans indicate that the country is becoming increasingly more dependent on external resources for financing development programs. The problem of inadequate domestic resource mobilization is due to several factors such as the following:

- A low per capita economic growth rate of about 0.1 percent per year during 1970-1980 and one which currently is negative
- A more sharply declining per capita growth rate in agriculture
- A low rate of industrialization
- Poor performance of public enterprises
- Existence of a large non-monetized sector
- Inefficient tax administration
- Inadequate utilization of natural resources (water resources mainly), and excessive use of forest resources
- Lack of effective adequate returns to investment in the public sector

The country has had shortages of resources for financing development beginning with the first five-year plan (1956-1961). Domestic tax resources have met the following proportion of total expenditures in different plans, and the remainder has been met by external assistance agency loans and grants:

Second Plan (1962-1965)	- 23 percent
Third Plan (1965-1970)	- 47 percent
Fourth Plan (1970-1975)	- 47 percent
Fifth Plan (1975-1980)	- 33 percent
Sixth Plan (1980-1985)	- 49 percent

The Seventh Plan proposes to spend Rs 29,000 million in public sector development programs. Of this amount Rs 20,480 million (70.6 percent) is to be met with foreign assistance (grants and loans together). Internal resources will be used for meeting the balance of Rs 8,520 million. The pattern of internal financing is projected to be as follows:

Revenue savings	Rs 3,090 million
Additional tax mobilization	Rs 1,930 million
Internal loans	Rs 3,500 million

2.3.7.4 Tax Reforms. The tax policy statement in the Seventh Plan makes the following recommendations with regard to various tax reforms:

Income Tax: Facilities and exemptions to individuals should be reduced; the high tax exemption for individual income is causing too much revenue loss. Capital gains should be treated as income and be duly taxed. Income from agriculture should also be included as income tax, and should be taxed at the same rate as other income.

Urban House and Land Tax: Exemption limits on hotels and industrial properties should be removed; the property should be revalued, and all exemptions reduced.

Land Tax: The rate of the land tax should be raised, as the present rates were set about two decades ago. The land tax should be converted into a property tax that reflects the value of the property more accurately.

Sales Tax: Sales taxes should not be used to protect industries. Essential goods should be exempted on grounds of equity. Sales taxes should be imposed on services as well as telephones, telecommunications, non-life insurance, and tourist package services.

Excise Duties: The policy of allowing exemptions from excise duties on the basis of utilization of production capacity should be reviewed, with a view to making profitable industries contribute to revenues.

Custom Duties: At present the custom duties serve many purposes such as raising revenue, protecting domestic industries, and raising prices of those imported goods consumed by the rich. The plan suggests that the custom duties need to be reviewed to make them serve primarily the objective of protecting indigenous industries from competition of foreign industries.

In addition to providing indicative directions regarding tax reform, the Seventh Plan also stresses the need for strengthening tax administration by having programs such as training of tax administrators, improving the organization of tax administration, preventing leakages in taxation, and preventing misutilization of the tax incentives provided by the Industrial Enterprises Act of 1981.

The government thus proposes changes in tax rates, exemption limits, and deductions to derive a greater volume of revenue. Professionalization of tax administration has also been stressed. The government has also emphasized the need for streamlining the public enterprises to make them function efficiently and develop self-reliance. The government also expects more revenue from them.

2.3.7.5 Fiscal Capacity and Education Expenditures. During the past year the government has devoted about 10 percent of its budget (regular and development together) to the education sector. The capacity of the government to allocate additional resources to education will obviously depend on its revenue. The revenues have been increasing slowly due to the constraints mentioned earlier. The principle problems are a slow increase in production and inadequate tax administration. Higher productivity and employment levels would raise the taxable capacity of the people and better enforcement would encourage voluntary tax compliance, which is now lacking. By contributing to raising national production, the education sector can thereby help enhance future national revenues, on which it then can depend for financing further expansion of educational opportunities.

Meanwhile, given the insufficient finances in the public sector, the government has been stressing private sector participation in education. Privatization is strongly endorsed for establishing and operating schools and colleges and for providing training facilities on-the-job. An equitable local tax source, such as a tax based on the value of urban and rural real estate, could help provide financial resources for schools to meet the goals of the Basic Needs Strategy by the year 2000 A.D.

At present the resource recovery from higher education is very low. Greater mobilization of resources for higher education is needed. One way to do this is by rationalization of fees so that those easily able to pay are required to do so, and those from poor families continue to benefit from low tuition and other current subsidies. Implementation of cost sharing measures in higher education would not only provide more resources for all education, including the expansion of higher education, but also would increase the internal efficiency and equity of the higher education system. At the present, however, it is clear that no cost recovery at the higher education level is feasible for the immediate future. The most likely course of action is that there will be no increases in public support for higher education. No new publically supported campuses will be established, for example, except possibly for technical education and training.

Local sources for financing education have historically been of great importance in Nepal. The school system has mobilized local resources for providing physical facilities and furniture to the schools to a considerable extent, and senior education officials express great confidence that local support will be forthcoming to assist with meeting objectives of the Basic Needs Strategy.

Local resources could also be used to replace lower secondary school fees, such as textbook fees, registration fees, admission fees, examination fees, sports fees, and building fees, all of which cause the children from poor families to drop out. There are clear limits to local level financing, however, because the local areas themselves have only limited resources, especially financial, and other local programs besides education have claims on these resources. A policy of grants from the central government that would provide for a floor level of education (and other services) for each child in the poorest districts would be helpful, since the central government can use sales and income tax sources that are not feasible for the communities.

2.4 MANPOWER SUPPLY AND DEMAND

2.4.1 The Manpower Situation

This section presents briefly some outstanding features of the manpower situation in Nepal. The areas covered include the labor force participation rate, structure of employment, manpower stock, supply-demand imbalance, and manpower availability for the private sector.

The census of 1981 has reported labor force participation rates that include the population 10 years of age and over, since many people in the age group 10-14 and over 60 years are engaged in paid work. The labor force participation rate in 1981 was 65 percent for the population 10 years and over; the size of the labor force was 6.85 million. About 200 thousand people are currently added to the labor force each year, mainly due to the high rate of population growth (over 2.6 percent annually) since as early as 1971. This addition to the labor force has significant implications for the creation of employment opportunities.

The labor force is overwhelmingly dependent on agriculture. Diversification of occupations is very limited. In 1981, the labor force engaged in agriculture, fisheries, and forestry was 91.39 percent; the manufacturing industry provided jobs for 3.12 percent; and service activities employed 3.8 percent. The service sector is growing at a faster pace than the manufacturing sector.

The continued high dependance on agriculture for employment is partly due to the slow expansion of non-agriculture sector activities. Further, Nepalese manpower have not been able to take full advantage of the new jobs created by development activities because they have not had sufficient opportunities to learn the requisite skills.

The manpower stock, which here refers to more highly skilled labor, is comprised of (1) employment of educated persons in the civil service, public enterprises, and educational institutions, and (2) technical manpower as estimated by the National Planning Commission.

The Civil Service employed 84,484 persons in 1984-1985, including 21,428 in peon status (i.e., unskilled and casual labor). Over 33,000 of the total Civil Service staff belonged to the Technical Service, which includes agriculture, medicine, engineering, forestry, education, mining, etc. Educational institutions (schools and colleges together) provided employment to 80,000 persons in 1984-1985. And the 53 public enterprises provided jobs for 40,000 persons in the same year. The public sector, comprising the Civil Service, public enterprises, and publicly supported educational institutions, accounted for nearly 200,000 workers. The public sector is thus the largest employer of educated manpower.

The National Planning Commission has presented the stock of technical manpower in the country for 1984-1985 (Table 2.11 above). The high, middle, and basic levels of technical manpower totaled 30,674 persons, as shown in Table 2.49, most of whom are believed to be employed in the public sector. The Seventh Plan document stated that there was a shortage of 8,788 persons when compared with the estimated requirements for the Sixth Plan (1980-1985). It was observed that the gap between the estimated requirements and actual supply was widening.

An important feature of the country's manpower situation is the uneven distribution of educated manpower. Most trained persons are in urban areas. The rural areas have manpower shortages at all three levels, especially the middle and high levels. This makes implementation of several development programs difficult, especially those that focus on rural development.

Table 2.49

Manpower Stock 1984-1985

Levels	Engineering (a)	Medicine (b)	Agriculture (c)	Forestry (d)	Science & Technology (e)	Total
High	2,155	965	1,537	204	465	5,326
Middle	4,577	1,996	2,353	442	655	10,023
Basic	5,935	2,627	3,461	1,726	1,576	15,325
Total	12,667	5,588	7,351	2,372	2,696	30,674

Source: National Planning Commission, The Seventh Plan (1985-90) Kathmandu, 1985, p. 140-145

Notes:

a. Engineering manpower includes Civil, Electrical, Mechanical and other Engineering

b. Medical manpower includes Doctors, Nursing, Pharmacy, Medical Technology, Ayurved

c. Agricultural manpower includes Agricultural Science, and Animal Science, and Extension

d. Forestry manpower includes Forestry, Water and Soil Conservation and Wildlife

e. Science and Technology manpower includes General Science and Technologies

The manpower situation in the private sector has not yet been systematically assessed. Private sector activities include a wide range of occupations such as farming, trading, service work, transportation, manufacturing, construction, food processing, garment making, handicrafts, tourist activities, inn and hotel catering, and many others. These varied activities are served by people with various levels of skills. It seems that the manpower stock available for the private sector is deficient in quality and quantity. The conditions of employment in the private sector are generally not as attractive as in the public sector. In recent years, educated persons have been compelled to seek private sector employment in larger numbers because of the difficulties getting civil service or public enterprise jobs.

The manpower available for the panchayat sector (local government institutions) has also been deficient. To address the general scarcity of trained persons in rural areas, the government has adopted the policy of establishing educational and training institutions in the more rural locations. Training activities for preparing basic level manpower at local levels are being conducted under the various Integrated Rural Development Projects.

2.4.2 Determinants of Demand

The target economic growth rate is the main factor determining manpower demand. The scale of production activities in agriculture, industry, transportation, and other sectors is determined by the target economic growth rate. Sectoral growth rates are adopted in preparing development programs in different sectors. The Seventh Plan (1985-1990) aims at an annual growth rate of 4.5 percent in national income. The agriculture sector annual growth rate target has been set at 3.5 percent for the plan period, and the non-agriculture sector rate at 5.7 percent. Industrial production will grow at an annual rate of 12.7 percent. The sectoral growth rates help determine the scale of the various programs, which then become the basis for the manpower estimates.

Another determinant of manpower requirements is the nature of development activities. To meet basic needs by the year 2000 A.D., programs of sectoral ministries need to be oriented towards the fulfillment of these needs. A greater emphasis is called for on agricultural extension, primary education, primary health care, skill training, and rural development. To help implement these programs, basic- and middle-level manpower extension workers, health workers, primary teachers, skill instructors, and overseers have to be trained in larger numbers, and they should be provided with sufficient incentives for them to work in rural areas.

Another determinant of the requirement for new manpower is the need for replacements. The manpower stock is gradually depleted by attrition for various reasons. The replacement need in the past has been disregarded in manpower plans. There is also a need to plan for the replacement of the many foreign workers in Nepal. This can be done by training the domestic labor force in the appropriate skills.

Manpower needs of the private sector must also be taken into account in planning the total manpower needs of the country. The Seventh Plan has envisaged that about 42 percent of the proposed investments will be made by the private sector. Accordingly, various industries to be established by the private sector have been mentioned specifically. Manpower is obviously needed for all of these activities, as well as for the existing establishments.

Rural development activities are being implemented in all the districts to increase agricultural production, raise employment, and promote a favorable environment. These activities have created a demand for manpower of different categories and levels in the rural areas.

2.4.3 Determinants of Supply

Manpower supply is determined basically by the range of the education and training programs, the size of enrollment, the quality of the education and training, and the efficiency of the education and training system. The manpower supply in Nepal is determined by (1) informal training activities in family situations, (2) formal training and instruction, (3) nonformal training activities, and (4) higher education and training in foreign countries.

Informal training activities are found primarily in the areas of agriculture, cottage crafts, masonry, carpentry, and several other areas of self-employment. The formal education and training system is the main producer of manpower, and secondary education is of vital importance in this respect. Though a very high proportion of SLC (School Leaving Certificate) completing students proceed to higher education, many of them seek employment instead. The provision of facilities for study in the morning and the evening, and for private examinations, has facilitated concurrent pursuit of higher education and employment.

Tribhuvan University is the main producer of middle and higher level manpower. During 1975-1981 the University produced a total of 4,602 persons with Certificate level education in the fields of Engineering, Agriculture, Medicine, and Forestry, and 404 persons with Bachelor level education in Agriculture (Table 2.50). Manpower of various other disciplines has also been produced in considerable numbers.

Manpower production by Tribhuvan University is constrained by several factors. The enrollment levels of the technical institutes have remained more or less static during 1981-1984, for example, except for the Institute of Engineering. The manpower policy mentioned in the Seventh Plan calls for increasing the enrollment capacity of the technical institutes.

Table 2.50

Manpower Production from Tribhuvan University Technical Institutes: 1975-1981

	Institute	Total Output
1.	Engineering Certificate	2,340
2.	Medicine Certificate	1,096
3.	Agriculture/Animal Science	
	Certificate	799
	Diploma (Bachelor)	404
4.	Forestry Certificate	367
5.	Science	
	Certificate	3,326
	Diploma (Bachelor)	1,105
	Degree (Masters)	477

Source: Centre for Economic Development and Administration "Development of Human Resources," CEDA, Tribhuvan University, 1984

Another crucial factor is the low internal efficiency of the University institutes. It takes students an average of four years of study to complete most two-year programs, a pattern encouraged by the high subsidy received by the students. This inefficiency is also reflected in the high failure rates in the University examinations within all of the institutes except the Institute of Medicine.

The trade (technical) schools are important for preparing basic level manpower to support rural and urban development activities. The Mechanical Training Centre (MTC), under the trade schools scheme, produces basic level manpower in the mechanical trades. Some other trade schools also prepare new manpower. The graduates of trade schools have faced difficulties finding jobs in the initial stages after completing training. It would be helpful if contacts would be developed with prospective public and private sector employers during training. It is also important that these trade schools be required to survey job openings and relate their programs to actual job market needs. Further, the student/teacher ratios in all trade schools are quite low, which greatly increases the unit costs of such programs. The completion times necessary to estimate cycle costs could not be obtained, but if experience elsewhere is any guide this is a potential additional source of internal inefficiency. Student intake could be increased to attain a more economical student/teacher ratio.

The nonformal training system covers the following:

1. Training provided to literate adults for a period of 3 to 12 months by the Department of Cottage and Village industries, in areas such as textiles, weaving, ceramics, electricity, mechanics, and carpentry.

2. Training provided for adults at five locations by the Labour Supply Centres under the Department of Labour, in elementary skills such as press compositing, road works, house wiring, and brick making.

3. Training for periods of one to six months provided to women by the Women's Training Centre at Kathmandu, and three regional centres, in various household skills and income generating skills.

4. Training provided at field levels by seven of the Integrated Rural Development Projects, for preparing rural people for local development activities.

5. Functional adult education of the MOEC, which provides orientation for various functional areas, primarily in agriculture.

The nonformal training activities need more skilled instructors, many of the trainees lack essential literacy skills, and there are shortages of finance and equipment. A basic problem for all types of nonformal training is the difficulty of absorption in the labor market soon after the completion of training.

2.4.4 Manpower Imbalances

There are three types of imbalances relating to manpower demand and supply. The first is the imbalance between outputs of the education system and the types of persons needed by the economy. The education system before 1971 was criticized for failing to provide the types of knowledge and skills needed for development. The NESP (1971-1976) tried to remedy this situation by introducing vocational education into secondary schools and by establishing technical institutes within Tribhuvan University. Vocational education in secondary school, as a way to prepare manpower, was abandoned in 1981 after a decade of trial. At that time an extensive curricular change was introduced. The technical institutes have now been expanded and provided with extensive financial and technical support. They have begun to train graduates who can be directly employed in relevant areas. There is still an imbalance in the total university system, as higher education mainly emphasizes non-technical areas, and the enrollment capacity for technical education is limited.

The second imbalance is between the estimated manpower needs and the expected supply, as identified by the National Planning Commission. Table 2.51 presents the manpower demand and supply estimates for technical manpower during the Seventh Plan period, 1985-1990. These estimates show substantial shortages in high, middle, and basic level manpower in several different areas. Shortages of high level engineers, agricultural specialists, forest specialists, middle level overseers, middle level and basic level agriculture manpower (junior technicians and junior technical assistants), and basic engineering workers (sub overseers) are particularly noted. It is noteworthy that the technical institutes of Tribhuvan University could adopt measures for relieving the shortages of middle and basic level manpower. Shortages in many high level manpower areas now have to be met by sending qualified people abroad for training.

The third kind of imbalance is the lack of jobs for trained persons, especially in urban areas. For instance, many positions in primary and secondary school teaching are unfilled while qualified graduates for such jobs are unemployed. Even engineers have complained about long job searches and waiting periods. Part of the reason for the growing unemployment among educated persons is the inadequate base of primary and secondary school graduates necessary to provide the appropriate infrastructure to support their employment. Another reason is the reluctance of many educated persons to move to the rural areas where some of these jobs are located because they are not attractive places to live and do not provide opportunities for further personal development.

2.4.5 Manpower Development Planning

Manpower estimates have been incorporated in development plans since the Fifth Plan (1975-1980). Even before then the NESP document included a manpower planning model, apparently as the basis for its rationale to develop basic and middle level manpower through the education system. Manpower planning is now a regular part of development planning. The National Planning Commission (NPC) is responsible for estimating manpower needs for development programs in the periodic plans. The NPC assesses manpower needs by conducting studies and surveys, and by soliciting manpower information from the ministries, departments, and public enterprises. The estimates in development plans are mainly for manpower needs for development programs, as submitted by the concerned ministries.

Table 2.51

Public Sector Demand and Supply of Technical Manpower under the Seventh Plan (2042-2047)

Manpower Category	Total Demand during the Plan	Total Supply during the Plan	Surplus (+) Deficit (-)
High Level	3,881	2,655	- 1,226
1. Science and Technology	283	235	- 48
2. Engineering	1,291	710	- 581
3. Medicine	550	386	- 164
4. Agriculture	1,498	1,093	- 405
5. Forestry	259	231	- 28
Middle Level	7,867	5,085	- 2,782
1. Science and Technology	399	362	- 37
2. Engineering	3,232	2,229	- 1,003
3. Medicine	1,497	959	- 538
4. Agriculture	2,347	900	- 1,447
5. Forestry	392	635	+ 243
Basic Level	9,110	5,732	- 3,278
1. Science and Technology	963	670	- 293
2. Engineering	3,357	1,862	- 1,495
3. Medicine	1,473	1,105	- 368
4. Agriculture	3,295	2,015	- 1,280
5. Forestry	22	80	+ 58
	20,858	13,472	- 7,286

Source: National Planning Commission, The Seventh Plan (p. 137)

Note: Total demand includes shortfall during Sixth Plan

Manpower planning objectives are to: (1) utilize available manpower to the maximum; (2) maximize productivity and employment prospects of technical manpower; and (3) remove imbalances between demand and supply of manpower.

To meet these objectives, the NPC will adopt the following policies:

1. Determine student enrollment in technical institutes in accordance with projected manpower demand

2. Expand capacities of technical institutes and, if necessary, establish new institutes

3. Obtain more scholarships from abroad to increase the supply of high level technicians

4. Conduct formal and nonformal training to remedy the shortage of basic and middle level manpower

5. Help mobilize and utilize technical manpower by improving career development prospects, benefits, facilities, and recruitment procedures

6. Ensure the employment of technicians in related fields

7. Secure the services of foreign advisers only in areas where Nepalese technicians are not available

The above policies stress the correspondence between enrollment in technical institutes and manpower needs, extension of the capacity of technical institutes, expansion of basic and middle level manpower training, and proper utilization of manpower.

There are six major limitations to the manpower projections included in development plans. First, they do not consider the costs. Simple adherence to manpower goals without regard to the costs can waste resources and reduce the rate of growth. Second, they disregard manpower needs for administration management, teaching, and other non-technical areas. Third, they do not necessarily reflect the financial abilities of ministries and departments to hire new personnel. Fourth, they only focus on public sector needs. Fifth, they do not imply the immediate creation of posts in civil service or public enterprises. And sixth, as the latter points imply, such "goals" are often only "wish lists" that can lead to serious mismatches with the actual realized needs of the economy as bottlenecks emerge, and are reflected in the demands for more graduates and higher earnings.

Despite these limitations, the projections can provide broad guidelines for long run planning for the expansion of technical education. These projections also stress the importance of proper manpower assessments within individual sectors by concerned ministries, and the importance of continuing annual monitoring and adjustments in response to new job market information and the results of tracer studies.

2.4.6 Employment and Manpower Development Policies

The employment situation shown by the 1981 census has the following striking features:

1. The labor force has grown at a higher rate than the population during the 1971-1981 period.

2. The labor force participation rate of children 10 to 14 years of age has increased from 50 percent in 1971 to 57 percent in 1981.

3. A very large proportion of the labor force is engaged in agricultural work. Despite a slight decline in the proportion engaged in agriculture over the 1971-1981 period, the absolute number of agricultural laborers has increased from 4.2 million in 1971 to 5.9 million in 1981.

4. There was a slight increase in the proportion of people engaged in Personal and Community Services which include administration, health, education, and welfare services.

5. Over 85 percent of the labor force are self-employed.

6. One fifth of the labor force has no schooling, as shown in Table 2.52, and more than half have educational levels below the SLC. The labor force therefore has a higher education level than the population as a whole.

7. The overall unemployment rate is 1.6 percent; 2.8 percent in urban areas and 1.5 percent in rural areas.

The unemployment rate shown by an NPC survey (*A Survey of Employment, Income Distribution, and Consumption Pattern, 1977*) is much higher (5.6 percent) than the rate shown by the 1981 Census. The NPC Survey also showed that 63 percent of labor days in rural areas and 44 percent of labor days in urban areas are underutilized.

There is a general consensus that unemployment and underemployment have increased in recent years, despite the creation of many jobs by the various development activities. The lack of skills in the work force has hampered the ability of Nepali laborers to fully utilize the new work opportunities. In addition, educated persons also have difficulties finding jobs. This is partly due to their insistence on working in particular locations (e.g., urban areas) and in the public sector.

Growth of employment opportunities has been a major objective of development plans. However, employment planning has been fragmentary. The Seventh Plan has stressed promotion of self-employment, cottage industries, use of labor intensive production techniques, expansion of vocational and apprenticeship training, and greater involvement of women in development projects.

Table 2.52

Major Education Groups by Educational Attainment

Occupation	No School	Below SLC	SLC and Equiv.	I.A. and Equiv.	Grad. and Equiv.	Post Grad. & Equiv.	Total
Prof/Tech.	0.106	0.301	0.226	0.162	0.147	0.058	1.000
Admin.	0.061	0.126	0.082	0.121	0.376	0.235	1.000
Clerical	0.202	0.473	0.167	0.098	0.055	0.006	1.000
Sales	0.292	0.526	0.083	0.049	0.042	0.007	1.000
Service	0.347	0.552	0.055	0.026	0.016	0.003	1.000
Farmers	0.359	0.598	0.022	0.011	0.007	0.002	1.000
Production	0.361	0.578	0.034	0.016	0.009	0.002	1.000
Not Stated	0.214	0.477	0.132	0.083	0.072	0.021	1.000
Total	0.214	0.574	0.041	0.024	0.019	0.006	1.000

Source: Population Census - 1981, Vol. I, Part vi, p.1

Note: Occupation/educational distribution (proportion of each occupation with stated educational level)

The educational policy of the government stresses promotion of technical education, as well as the orientation of higher education to producing manpower for development. The labor policy of the government emphasizes raising skills and productivity of labor, and the greater use of surplus labor for development. The manpower development policy of the government is set forth in various policy statements. A section on "Technical Manpower Development" in the Seventh Plan states that appropriate types of formal and nonformal training programs will be expanded to remove the shortages of middle and basic level manpower and that necessary arrangements will be made to upgrade and mobilize basic level local skills.

In the education sector, the strengthening of science and mathematics education at the secondary level has been emphasized. Trade schools are to be further developed. Higher education in technical areas is to be expanded. In the nonformal education sector, the training programs of several agencies are to be expanded. Better coordination is to be established among skill training programs of different agencies.

Manpower development is as much concerned with the quality of the labor force as with its size. Quality of manpower essentially refers to the level of skills, motivation to use these skills proficiently, and positive attitudes towards work. There are a number of short-term training programs regularly conducted by ministries, departments, and specialized training agencies aiming at providing refresher, as well as intensive, short-term training in various areas.

The manpower situation is characterized by a surplus of unskilled labor on the one hand and, on the other hand, a shortage of people with lower secondary education and enough technical skills to make them trainable on the job. There has been some outmigration of high level manpower to foreign countries. There has also been some flow of basic and middle level technicians to middle eastern countries. But, in general, the outmigration of trained manpower has been much lower from Nepal than from some South Asian countries. The government is adopting a policy of creating a favorable working environment for high level manpower to encourage them to work in Nepal.

There is an extensive shortage of middle level manpower in agriculture, industry, medical services, and construction. The reasons for this shortage are: (1) inadequate output from the technical training institutions, and (2) the tendency of middle level manpower to move to other careers because there are very limited prospects of career upgrading at this level. Career development issues have often been raised within the administration, but effective solutions have not been established. Upgrading to public employment officer level status is contingent on having a Bachelor-level degree in a related area. It is not easy for middle level technicians to enter Bachelor-level courses unless places and scholarships are allotted specifically for them in the technical institutes of the University.

The problem of an increasing number of educated persons who are unemployed is an important issue for manpower planners. The problem is partly due to an underexpansion at lower secondary levels, and partly to a mismatch between the type of educational output and the needs of the labor market. The educational systems have continued to be heavily academic. Also, there is a need to establish more technical training centers throughout the country so that local people can be trained.

The inadequate provision of science and mathematics education at the secondary level has prevented many students from pursuing science and technical courses in higher education. Many students have thus been compelled to pursue liberal arts courses in higher education. An upgrading of science/mathematics

education at the secondary school level is necessary. The MOEC has a program for such upgrading. Meanwhile, increasing the enrollment capacity and internal efficiency of the technical institutes of Tribhuvan University has become urgent.

Another aspect of manpower development policy is the assessment and fulfillment of manpower needs in rural areas. Presently, the integrated rural development projects, the cottage industry training programs, and the trade schools are contributing to these needs, but not enough is being done. Nonformal training activities need to be expanded for helping farmers and practitioners of other trades to raise their productivity and for helping villages to better organize their local efforts.

2.4.7 Teacher Demand and Supply

This section covers the estimated demand and supply of teachers over the Seventh Plan period and through to the year 2000 A.D. Following these projections, there is a discussion of the imbalance between qualified and unqualified teachers.

2.4.7.1 Demand for Teachers. Projected demand for new teachers depends on (1) the projected number of students, (2) the average number of students taught by each teacher, and (3) the number of persons expected to leave teaching.

The Seventh Plan estimated teacher requirements for the 1985-1990 plan period by considering the target primary school enrollment (2,332,108) corresponding to the gross enrollment ratio of 87 percent by 1990 (Table 2.53). The additional number of primary school teachers required was estimated at 10,877.

With regard to lower secondary and secondary, the additional schools at each level (450 for lower secondary and 900 for secondary) has been mentioned as the maximum the government might approve. The target enrollment ratios are 43 percent for lower secondary and 36 percent for secondary (Table 2.53). To attain the target enrollments mentioned in the plan, an addition of 5,120 lower secondary teachers, and 4,601 secondary teachers would be needed if present student/teacher ratios are used as shown in Table 2.53. If the target enrollments at both levels are combined and the current student/teacher ratio at secondary level is used (35:1), the need of 3,477 additional teachers in the 1985-1990 period is derived (Table 2.53).

The MOEC has recently published the Education Sector Program for Meeting Basic Needs by the Year 2000 A.D. It contains projections for employment, teachers at the primary level, and adult education. The projected 6-10 year population by the year 2000 A.D. (2056-2057 B.S.) is 2,928,984. The objective is to enroll all of

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these in primary schools. For teaching these students, the MOEC estimates that 88,565 teachers will be needed by the year 2000 A.D. (Table 2.54). The teachers needed, starting from 1985, would be (88,565 - 51,266 =) 37,299. The total primary teachers that have to be trained by the year 2000 A.D. is estimated by the MOEC at 63,766, including the present untrained teachers.

Table 2.53
Teacher Requirements for
Seventh Plan Enrollment Targets

	1985	1990 (Targets)	Additional (1985-90)
Primary			
Schools	11,869	12,869	1,000
Enrollment	1,812,098	2,332,108	520,010
Enrollment Ratio (%)	77.1	87	
Teachers	51,266	62,143	10,877
Student/Teacher Ratio	35:1	38:1	
Lower Secondary			
Schools	3,578	4,028	450
Enrollment	254,354	373,535	119,181
Enrollment Ratio (%)	33.4	43	
Teachers	11,120	16,240	5,120
Student/Teacher Ratio	23:1	23:1	
Secondary			
Schools	1,321	2,221	900
Enrollment	242,467	390,830	148,363
Enrollment Ratio (%)	25.4	36	
Teachers	7,242	11,843	4,601
Student/Teacher Ratio	33:1	33:1	
Combined Secondary Lower Secondary and Secondary			
Enrollment	496,821	764,365	267,544
Teachers	18,362	21,839	3,477
Student/Teacher Ratio	27:1	35:1	

The IEES team has prepared population estimates using medium projections of the Central Bureau of Statistics (*Population Projection for Nepal--1981-2001 A.D.*), which are very nearly the same as those used by the NPC for programming basic needs (*Program for Meeting Basic Needs by the Year 2000 A.D.*). The IEES

optimistic scenario estimates use the following population school age projection data for the year 2000 A.D.: 6-10 years' population (2,930,383); 11-12 years' population (1,159,911); and 13-15 years' population (1,700,431).

Table 2.54

Number of Primary Level Students, Teachers, and Schools

Fiscal Year (B.S.)	Number of Children Age 6-10	Target of Student Enrollment	%	Number of Teachers	Number of Schools
2044/45	2,424,113	2,079,134	85.8	58,977	12,820
2045/46	2,507,813	2,168,146	86.5	64,241	13,370
2046/47	2,594,434	2,257,158	87.5	69,505	13,921
2047/48	2,646,062	2,349,918	88.8	72,017	14,419
2048/49	2,998,823	2,442,677	90.5	74,529	14,918
2049/50	2,752,743	2,535,437	92.1	77,041	15,416
2050/51	2,807,848	2,628,196	93.6	79,553	15,915
2051/52	2,864,164	2,720,956	95.0	82,065	16,413
2052/53	2,878,664	2,762,562	96.0	83,365	16,563
2053/54	2,889,396	2,804,167	97.1	84,665	16,713
2054/55	2,902,360	2,845,773	98.1	85,965	16,863
2055/56	2,915,555	2,887,378	99.0	87,265	17,013
2056/57	2,928,984	2,928,984	100.0	88,565	17,163

Source: MOEC, "Program for Fulfillment of Basic Needs in the Education Sector," 1987

The IEES optimistic scenario projections, using various assumptions for entry, continuation, repetition, and drop-out rates, produce the enrollments in Table 2.55. The IEES optimistic scenario (one of three scenarios, in addition to the Basic Needs scenario) assumes dramatic reductions in drop-out and repetition rates for all grades, leading to improved internal efficiency of the education system.

Teacher requirements for the primary enrollment in the IEES projection is higher by 2,452 than the number in the MOEC enrollment target using a student/teacher ratio of 33:1. With regard to secondary, the requirement depends on the assumed student/teacher ratio for the two levels. If a ratio of 35:1 is used the total secondary (lower secondary plus secondary) teacher requirement by the year 2000 A.D. would be 56,439, which is three times higher than the 1985 teaching force at these two levels. The IEES projection uses separate student/teacher ratios for the two levels, 23:1 for lower secondary and 33:1 for secondary. These ratios imply a need for 40,174 teachers for lower secondary, and 31,860 for secondary.

Table 2.55
IEES Estimates for the Year 2000 A.D.
(Optimistic Scenario)

Level	Projected Enrollment	Projected Gross Enrollment Ratio
Primary (Grades 1-5)	3,009,881	102.7
Lower Secondary (Grades 6-7)	924,012	79.7
Secondary (Grades 8-10)	1,051,367	61.8
Total	4,985,261	

The demand for teachers should also be analyzed by subject and by more specific needs. There is currently a shortage of teachers in English, mathematics, science, vocational subjects, and new optional subjects, such as population education. To derive teacher needs by subject area, it would be necessary to also project the number of schools. At the secondary level, if a school:student ratio of 1:200 is used, the required number of lower secondary and secondary schools for the 6-10 grade student body of 1.9 million would be 9,500. For each of these, there ought to be a corresponding number of science/mathematics, vocational, and English teachers, as well as teachers in other subjects.

A summary of teacher needs by primary and secondary levels for the year 2000 A.D. is given below in Table 2.56.

2.4.7.2 Supply of Teachers. The sources of teachers are secondary schools, higher education institutions, teacher training colleges, and special programs for teacher training. Primary school teachers are supplied by secondary schools. There is a need to provide teacher training to the SLC passers to enable them to teach proficiently.

Table 2.56

Teacher Needs by 2000 A.D.

Levels	Enrollment by 2000	Student/ Teacher Ratio	Projected Total Number of Teachers Required
Primary Levels			
MOEC Projection	2,928,984	33:1	88,757
IEES Projection	3,009,881	33:1	91,209
Secondary Levels			
IEES Projection			
Lower Secondary	924,012	23:1	40,174
Secondary	1,051,367	33:1	31,860

Higher education institutions supply teachers for secondary schools. Total higher education enrollment in Tribhuvan University campuses has fluctuated over the past few years. It reached 60,296 in 1984, then steadily decreased. It later increased again, reaching 55,332 in 1985. Several thousand additional students are enrolled in private colleges, and a large number of persons take University examinations as private candidates. Some graduates of higher education become teachers, and more would do so if the conditions of service for teachers were improved.

Teacher training institutions are the sources of trained teachers. During the past few years the output of Certificate and Bachelors training colleges under the Institute of Education (now the Faculty of Education) has been as follows: 214 in 1979, 943 in 1980, and 127 in 1981 (*Report of Royal Commission on Higher Education*, 1983). One striking feature of the output trend from the IOE is the high failure rate in examinations. The Royal Commission Report noted that in 1981 only 10 percent of the students passed the certificate examination in education (teacher training). An increased supply of trained teachers would require an increased enrollment in training campuses as well as a substantial improvement in the efficiency of the campuses.

The Radio Education Teacher Training Project, in operation since 1978, is an important program for untrained teachers in primary schools. It helps improve their knowledge and skills in subject areas such as Nepali language, social studies, mathematics, science, and rural development. Presently, the focus of the training is on the four areas of Nepali, English, mathematics, and science. The MOEC program for Basic Needs set a target of training 8,437 teachers for this project.

The MOEC program for Basic Needs has the following plans for training 63,766 untrained teachers on a phased basis:[1]

1. Developing and operating a primary teacher training system in the Far-Western Region, which will provide five months of in-service training to the untrained teachers of the nine districts.

2. Making arrangements for the more efficient operation of I.Ed. and B.Ed. preservice training at the teacher training campuses of Tribhuvan University.

3. Establishing training units in the five Regional Education Directorates for vacation time training programs, enabling the participants (untrained teachers) to complete the required five months training over a period of two years.

4. Operating morning and evening training services at the district level, through the District Level Supervisors. The training will meet requirements for the five months' training program.

5. Expanding the Radio Education Teacher Training Project.

The supply of secondary level teachers is largely determined by the number of graduates from the higher education institutions and teacher training campuses. Programs are required for training subject teachers in areas with shortages. In this connection, the Science Eduction Project, being implemented since 1983, has an important role.

There is a campus for training vocational teachers under the Faculty of Education. This campus (Sanothimi Campus) now has low enrollments, partly due to a decline in demand for vocational teachers following the 1980 change in government policy relating to vocational education. The trade schools, on the other hand, need trained instructors. The facilities at the Sanothimi Campus are considered inadequate for training trade school teachers. The technical institutes of Tribhuvan University might train such teachers through special programs. Some of the graduates from the technical institutes may be interested in teaching in the trade schools.

[1]Since the preparation of the draft of this report in August of 1987, the MOEC has adopted a 150-hour training package requirement for all untrained primary school teachers.

The need to prepare women teachers, especially for teaching at the primary level, is important for increasing the enrollment and retention of girls. The Equal Access of Women to Education Program, with components such as hostel construction, teacher training, scholarships, and upgrading of secondary education for girls, has been an important step toward increasing the number of trained women primary school teachers. Participation of educated women in other teacher training programs also needs to be increased.

2.4.7.3 Qualifications of Teachers. The total number of teachers at primary, lower secondary, and secondary levels in 1985 was 51,266, 11,120 and 7,242, respectively. The percentages of qualified teachers at different levels of education is as follows (Table 2.57).

Table 2.57

Percentages of Qualified Teachers at Different Levels

Levels	Under SLC	SLC	I.A.	B.A. and Above	Total
Primary	27.2	62.7	9.7	0.4	100.0
Lower Secondary	1.5	14.8	72.4	11.3	100.0
Secondary	0.1	0.2	3.9	95.8	100.0

Source: MOEC, *Report on Educational Statistics of Nepal*, 1986

The above information shows that more than one fourth of the primary teachers do not have the required SLC qualification. At the lower secondary level, over 16 percent of teachers do not have at least the required intermediate level qualifications. The qualifications of secondary teachers are impressive with over 95 percent having at least the required Bachelor degree. The problem of less qualified teachers is more pronounced at the primary and lower secondary levels. Underqualified teachers are generally located in remote areas, where there are few secondary school completers for these teaching jobs.

Another aspect of the profile of the teachers presented above relates to the training they have received. In 1985 the proportion of trained teachers at primary, lower secondary, and secondary levels was 31.9 percent, 41.9 percent, and 53.0 percent, respectively. From the standpoint of training, the problem is more serious at the primary than at the lower secondary and secondary levels.

The consistent numbers of unqualified and untrained teachers at the primary and upper levels can be explained by several factors; (1) qualified and trained primary teachers gradually are promoted up the career ladder to become lower secondary and secondary teachers; (2) the requirement for having training in order to have permanent status was eliminated in 1980, which has discouraged enrollment in teacher training; and (3) the IOE has been facing problems in expanding its program, because of the lack of adequate funds and supporting facilities.

The MOEC's Program for Fulfillment of Basic Needs in the Education Sector (1987) states that persons without the SLC will no longer be appointed as primary teachers. In addition, training in teaching methods could eventually be made compulsory for every teacher, at least for new entrants. Programs need to be implemented to train the large number of untrained teachers both in content and in teaching methods. Resource Center training could be used for recurrent training of teachers. The mechanisms outlined by the government for expanding primary teacher training in the Program for Basic Needs, such as Regional Directorate level training units, and training by supervisors at the district levels, should be implemented with adequate facilities and materials.

2.5 EDUCATION FINANCING

This section covers the sources of the financing of education as related to the Central Government, the local government, and participation by communities and non-government organizations (NGOs). The final section below (2.5.4) discusses the economic and financial costs of education that are borne by parents and students.

2.5.1 Central Government

With the implementation of the NESP in 1971 the Central Government assumed substantial responsibilities for financing all levels of education. Financing was based on meeting 100 percent of salaries for primary school teachers, 75 percent of salaries for lower secondary teachers, and 50 percent of salaries for secondary teachers. This commitment was fulfilled by the Government until 1981, when the percentage formula was replaced by what was called the Block Grants method.

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Under this method the government would continue to pay 100 percent of primary teachers salaries, but for lower secondary and secondary teachers grants-in-aid would be based on a definite staffing pattern in the schools. This practice was expected to discourage indiscriminate hiring of teachers by the schools, and also to encourage more contributions to costs of education by the schools and local communities.

With respect to higher education, the government provides an annual grant-in-aid, which covers 100 percent of university salaries, as well as a major portion of program expenses. There was a brief attempt in the mid-1970's to collect financial resources for higher education through an Education Donation, but this was abandoned.

The Central Government financing of education has been increasing since the implementation of the NESP, which emphasized expenditure on education as an investment in human resources, and which also initiated wide ranging innovations in education.

The total budgeted expenditure for the education sector in 1986-1987 was Rs 1,286 million, as shown in Table 2.58. This is 54 percent higher than the amount budgeted in 1982-1983.

Table 2.58

Budgeted and Actual Central Government Expenditure for Education (thousands of rupees)

Year	Budgeted	Actual
1982/83	836,902	734,000
1983/84	891,052	815,800
1984/85	910,722	805,600
1985/86	1,247,170	1,087,000
1986/87	1,286,385	

Source: Ministry of Finance: Economic Survey, 1986-1987; and MOEC: *Educational Statistics of Nepal at a Glance (1981-85)*

Total expenditures have consistently increased by varying rates from 1982-1983 to 1986-1987, as shown in Table 2.58. There was a slowdown in 1984-1985. Actual expenditures have consistently been slightly lower than the budgeted expenditures.

Education expenditure as a proportion of total government expenditure was 9.6 percent in 1984-1985. In the same year, education expenditure as a proportion of GNP was 1.7 percent, as can be seen at the bottom of Table 2.59. For the past several years, education's share of government's expenditure has been in the range of 9.6 to 11 percent. Similarly, the education expenditure as a proportion of GNP has barely exceeded 2 percent in the recent past (Table 2.59). These figures do not reflect forgone earnings that are also a part of society's investment in education.

The functional distribution of total budgeted education expenditure is given in Table 2.60. It shows that the allocation for primary education has steadily risen, reaching a level of 36.32 percent of the total education budget in 1986-1987. The allocation for lower secondary and secondary has been in the range of about 13 to 16 percent of the total education budget during the past five years. Adult education has received less than 1 percent of the education budget for the past several years. Tribhuvan University has received as much as 44.3 percent of the education budget in 1982-1983. Since then, it has declined steadily, reaching 28.4 percent in 1986-1987. In 1986-1987, formal school education and higher education accounted for 80 percent of the education budget. The remainder was for other activities, such as educational administration, culture, science and technology, and curriculum and materials development.

The per capita allocation at the different levels of education in 1985-1986 is as follows: Rs 244 at the primary level, Rs 380 at the secondary level, and Rs 7,821 at the higher education level. At the school level (primary, lower secondary, and secondary) there is an additional indirect expenditure per capita of about Rs 45, comprising items such as educational administration, curriculum development, physical education, and supervision.

External assistance in the forms of grants and loans has been used to support educational projects at the school and higher education levels. The annual external assistance components have been included in the government's annual education budgets. In 1985-1986, it was proposed that about 5 percent of the education budget expenditures would be met by external assistance. Realized foreign assistance as a proportion of actual education expenditure was 22.9 percent in 1982-1983; it declined to 12.2 percent in 1984-1985 (Table 2.61).

Table 2.59

GNP and Total Government Education Expenditure

	1980/81	1981/82	1982/83	1983/84	1984/85
GNP					
(Rs in millions)	27,307	30,265	33,621	38,184	48,138
Rate of Change (%)		10.8	11.0	13.6	28.0
Total Government Expenditure					
(Rs in millions)	4,055	5,319	6,951	7,421	8,394
Rate of Change (%)		31.2	30.7	6.8	13.1
Total Education Expenditure					
(Rs in millions)	384	519	734	815	805
Rate of Change (%)		35.1	41.4	11.0	-1.2
Total Education Expenditure					
As % of GNP	1.4	1.7	2.2	2.1	1.7
As % of Total Government Expenditure	9.5	9.7	10.5	11.0	9.6

Sources: National Planning Commission, the Seventh Plan.
Ministry of Finance, Economic Survey, 1985-86.

Note: Monetary value at current prices

The major portion of proposed as well as realized external assistance has been devoted to higher education. In 1984-1985, 79.6 percent of the realized total foreign assistance of Rs 98 million went to Tribhuvan University.

Major school level education projects receiving foreign assistance over the past five years are the Primary Education Project, Technical (Trade) Schools, the Equal Access of Women to Education Project, the Radio Education Teacher Training Project, the Science Education Project, the Education for Rural Development Project (Seti Zone), and the Population Education Project.

Table 2.60

Total Budget Expenditure (Regular and Development): Percent Distribution

Heads	1982/83	1983/84	1984/85	1985/86	1986/87
Primary Education	26.76	34.46	35.26	35.65	36.32
Lower Secondary and Secondary Education	13.52	12.60	15.93	15.22	15.30
Adult Education	0.97	0.83	0.29	0.34	0.25
Curriculum Textbook & Educational Materials	2.33	2.13	1.95	1.39	1.49
Physical Education & Sports	0.71	0.90	1.04	0.88	0.89
Misc. Education Projects	0.97	0.35	0.34	0.26	4.30
Education Administration	3.92	4.20	3.87	3.73	2.86
Education Research & Statistics	0.01	0.02	0.01	0.01	0.01
Scholarship and Student Welfare	0.39	0.41	0.35	0.44	0.41
Supervision, Training and Publicity	0.80	0.04	0.30	0.24	0.51
Archeology	1.02	1.23	0.67	0.47	0.60
Tribhuvan University	44.31	35.25	33.74	33.41	28.42
Science and Technology	--	0.40	0.92	2.29	5.94
Integrated Rural Development	1.44	1.20	0.87	1.13	0.26
Cultural Corporation	0.14	0.34	9.03	0.07	--
Technical & Vocational Education	0.04	3.30	1.47	1.25	--
Others	2.97	2.30	2.80	3.22	2.44
Total	100.0	100.0	100.0	100.0	100.0

Source: Education Statistics of Nepal at Glance, 1985

Note: Rs in thousands

2.5.2 Local Government

The local government financing for education covers expenditures by the village, the district, and town panchayats. Each local government institution has some responsibility for education in its area. The Village Panchayat Act of 1961 mentions that a village panchayat will establish and manage at least one primary school in its area. The Town Panchayat Act of 1962 requires the town panchayats to establish and supervise schools according to the regulations prescribed by the MOEC.

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Table 2.61

Realized Foreign Assistance for Education

(Rs in Millions)

	1982/83	1983/84	1984/85
Education Expenditure	734.0	815.8	805.6
Realized Foreign Assistance	167.8	147.9	98.0
Proportion of Foreign Assistance	22.9	18.1	12.2

Source: Ministry of Finance, Economic Survey 1985-1986

The village panchayats have contributed significantly to education development in the local areas, mainly at the primary level, by mobilizing local resources to construct school buildings and by providing essential furnishings. The village panchayats annually submit their lists of proposed activities and expenditures to the district panchayat for approval and financial assistance. Education components are generally included in such proposals.

The thirty-three town panchayats, where about 9 percent of the total population reside, have taken the initiative in getting schools and colleges established in their areas. The financial involvement of the town panchayats in educational activities varies. Most town panchayats have been primarily engaged in activities for improvements in areas such as sanitation, drinking water, town development, and parking facilities. Education is a low priority area for most of them, partly because governmental and non-governmental agencies are providing the educational services in the urban areas, and the town panchayats have been provided no clear incentives to become involved.

The District Panchayats have been given wide powers and responsibilities for planning and implementing local development projects. One of the five planning committees under the District Panchayat Secretariat is the Education Planning Committee. This committee assesses education needs in the district, and formulates plans which, along with other sectoral plans at the district levels, are submitted to the NPC for approval and financing.

2.5.3 Communities and Non-Governmental Organizations

Community participation in financing education has taken various forms, such as (1) the contribution of materials and labor for construction of school buildings, (2) the donation of land and funds for schools by individuals, enterprises, and organizations, (3) the payment of local taxes, proceeds of which are partly spent on education, (4) the provision of housing facilities for teachers in remote areas, (5) the payment of fees to schools by parents, and (6) the provision of community facilities for instructional purposes.

Community resources contributed substantially to development of education in the pre-NESP years (i.e., before 1971). There was a sharp decline in public participation in financing in the years following implementation of the NESP, because the government began assuming overall responsibility for financing schools. In order to encourage generation of more resources at the local level, and also to oversee management of the schools, the government in 1981 amended the Education Code of 1971, reinstating School Management Committees. These committees were expected to be more active than the School Cooperation Committees established under the NESP.

The lower secondary and secondary schools now have to identify local resources to pay the costs for buildings, materials, and for the portion of teacher salaries not covered by government grants. Considerable leeway has been granted to schools for renting classroom space and for charging fees. The fees create a serious problem because they encourage a high drop-out rate, which is especially high at the primary and lower secondary level by developing country standards. Unless they are changed they will seriously deter attainment of the Basic Needs goals for basic education by 2000 A.D.

In the 18 remote districts, the government continues to bear the full (100 percent) costs of teachers at all levels of school education, as provided for by the NESP, but not the other costs. These districts are quite poor and, thus, a greater measure of government support for them is justified on the grounds of equity.

The participation of non-governmental organizations (NGOs) in education has increased since the government in 1981 adopted the policy of permitting the establishment of private schools. Private schools usually flourish in situations where the financing of the public system is inadequate. People with financial means prefer sending their children to these schools, despite their high fees, which then results in a tendency for these wealthier persons to withdraw their financial and political support from the public schools. The private schools thus further increase

the inequalities in the social system. Despite these problems the government now encourages privitization of the school system as a means of increasing total system capacity and helping to meet the target of universal primary education by the year 2000 A.D.

Private campuses have begun to appear in different parts of the country at the higher education level. Some local resources have been mobilized to establish these campuses. Almost all private campuses are presently being conducted in secondary school buildings, as the local resources are not adequate for providing these campuses with their own premises and sufficient facilities.

2.5.4 Economic and Financial Costs to Parents and Students

Household expenditures for education exceed the per capita government expenditures. Expenses are sizeable for the purchase of books, uniforms, and stationary, and the payment of fees and transportation. Public schooling costs much less than private schooling. Private schools charge Rs 125 to Rs 150 for monthly tuition. Public schools (lower secondary and secondary) charge monthly fees in the range of Rs 15 to Rs 30, depending on the grade. Private schools charge several other fees and raise funds through additional measures, such as donations and school building construction assessments. Private schooling is 8 to 10 times more expensive than public schooling when transportation and other charges are also considered.

Higher education is very inexpensive for the students. It is heavily subsidized by the government. The need to increase the fees in higher education institutions was mentioned by the Full Term Evaluation of NESP in 1979. Higher education is presently available to students at a lesser direct financial cost than secondary school education.

Students themselves incur costs when attending educational institutions, but these are more in the nature of opportunity costs. They have to be away from family economic activities or other income earning work that otherwise may have been available. Part-time schooling and alternate timing of classes have been suggested to allow needy students to work without missing schooling. At the higher education level, there are facilities in most towns for evening and morning study in liberal arts and commerce. More part time work for all students (10-15 hours per week maximum) also helps to build work habits and encourages the learning of work-related skills.

2.6 UNIT COSTS, CYCLE COSTS, AND INTERNAL EFFICIENCY

This section presents estimates of the unit costs, cycle costs, and the internal efficiency of the educational system. Section 2.7 below covers the benefits and the external efficiency of each subsector within the education system. The focus of the cost analysis in this section is on the direct, institutional, financial costs of the education system per student and per cycle. For each subsection the available recent data on institutional costs and the level of student enrollment is used to estimate unit costs. Information on student flows is then used to estimate the instructional years required for each student to complete each education cycle, and the cycle costs required to produce one graduate (completer). Finally, the internal efficiency of the education cycle is assessed.

2.6.1 Education Costs and Internal Efficiency

Education requires sacrifices of various kinds by students, their families, and society. The range of sacrifices, including direct financial payments, forgone income-producing opportunities, and sometimes other non-monetary socio-cultural inconveniences incurred, represents the total of all costs of education to the students, their families, and society.

Expressing these aggregate sacrifices in terms of the cost for a student finishing a given year in the educational system, or the cost of completing a given cycle (e.g., primary, lower secondary, or secondary), contributes to the assessment of the internal efficiency of the sector. Comparing these costs to the post-educational earnings and non-monetary benefits derived from the education contributes to the evaluation of the external efficiency of the education sector. A comparison of education costs and benefits is also one way to assess the relative contribution of investments in each level or cycle of education to the growth of income.

2.6.1.1 Conceptual Issues. Assessing internal efficiency involves four basic steps: (1) measuring the costs of education, (2) estimating the costs per student per year (unit costs), (3) calculating the costs per student who completes a cycle (cycle costs), and (4) comparing cycle costs to what could be attained if the system had no wastage or loss. For each of these steps, there are conceptual and methodological issues to be addressed in order that any results and conclusions will be understood.

It is difficult to obtain reasonably accurate measures of education costs. The direct financial costs borne by students, their families, government authorities, and NGOs can be classified into several categories. These include school fees, books, other materials, food, board, extra-curricular charges, salaries and allowances, facilities, utilities, and other items. The direct financial costs can also be disaggregated into recurrent operating expenses and amortized capital costs, the latter being either the depreciation or the rental value of the facilities and equipment. The calculations in this section assume that all capital costs are reflected in the Table 2.62 figures (below).

In addition to the direct costs of eduction, the value of the students' time given up to attend school is another kind of cost to students and their families. These costs generally increase with the level of education of the students. However, they are often difficult to measure. This is especially the case with the value of home production given up to attend school, such as caring for siblings, preparing food for other household members, or helping with the care of cattle or with agricultural work.

For many educational systems, especially in areas of agricultural subsistence economies, the value of time forgone while attending school is the major component of educational costs borne by students and their families. Consideration of this component of education costs is left to the next section where it is integrated with the benefits of education to assess external efficiency.

This section concentrates on the institutional unit costs to government, the school, and the student. It avoids double counting the various cost categories that may overlap the different institutional agents. For example, teacher salaries and the student fees that finance them should not be counted twice in the cost of education.

2.6.1.2 Basic Elements of Education Costs. At each level of the education system, financial support for education may come from government, the students and their families, local communities, and external assistance agencies. The data on the government's costs of education (in both current price and 1984-1985 constant price rupees) are summarized in the Tables 2.62 and 2.63. The use of 1984-1985 constant price rupees is a standard national accounting practice used to adjust the data for inflation so that financial amounts are comparable in "real" terms. The figures include the major external assistance agency support to the education sector that is channeled through the MOEC.

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Table 2.62

Total Education Expenditure (Regular and Development):

1977-1978 through 1986-1987

(current prices -- '000)

Type of Education	1977/78	1978/79	1979/80	1980/81	1981/82
Primary Education	73,000	88,400	98,624	114,247	164,779
Lower Secondary and Secondary Education	60,540	67,765	73,967	79,526	86,776
Adult Education	2,979	1,762	2,408	3,064	4,348
Curriculum, Textbook, & Educational Materials	13,433	7,530	14,604	18,252	27,812
Physical Education & Sports	3,657	3,251	2,816	3,462	4,146
Misc. Education Projects	3,291	6,087	4,308	11,759	4,712
Education Administration	20,094	20,837	21,921	24,287	28,059
Education Research & Stats.	650	1,551	1,523	100	541
Scholarship and Student Welfare	2,166	2,428	3,693	2,526	3,134
Supervision, Training, and Publicity	605	1,071	1,609	1,848	2,042
Archeology	1,052	1,117	1,105	6,721	
Special Education	882	1,132	1,800	3,485	3,078
Tribhuvan University	93,947	117,464	118,453	150,279	202,327
Science and Technology	415	650	795		
Integrated Rural Devt.	500	2,458	11,160		
Cultural Corporation					
Technical and Vocational Education					
Others	960	1,160	1,133	14,388	19,261
Total	277,671	322,705	348,759	429,681	568,896
Percent Rate of Growth		16.22%	8.07%	23.20%	32.40%
School Level Administrative Overhead* Sub-total	41,121	40,636	49,458	62,257	69,378
School Level Grand Total	174,661	196,801	222,049	256,030	320,933

*Overhead includes budget expenditures for curriculum, textbook, and educational materials; miscellaneous education projects; education administration; education research and statistics; and supervision, training, and publicity.

(table continued)

Table 2.62 - (Continued)

Type of Education	1982/83	1983/84	1984/85	1985/86	1986/87
Primary Education	224,000	307,099	321,922	442,369	467,300
Lower Secondary and Secondary Education	113,144	112,168	145,055	188,868	196,798
Adult Education	8,123	7,402	2,600	4,224	3,162
Curriculum, Textbook, & Educational Materials	19,462	19,015	17,724	17,230	19,119
Physical Education & Sports	5,951	8,002	9,457	10,905	11,405
Misc. Education Projects	5,572	3,202	3,077	3,255	55,276
Education Administration	32,818	37,146	35,239	46,248	36,830
Education Research & Stats.	110	135	115	115	115
Scholarship and Student Welfare	3,286	3,720	3,220	5,526	5,233
Supervision, Training, and Publicity	6,688	373	3,256	3,011	6,611
Archeology	8,511	10,984	6,057	5,834	7,739
Special Education					
Tribhuvan University	370,850	314,099	308,276	414,524	365,618
Science and Technology		3,651	8,407	28,352	76,433
Integrated Rural Development	12,021	11,401	7,894	13,977	3,340
Cultural Corporation	1,200	3,050	310	817	
Technical and Vocational Education	349	29,431	13,428	15,508	
Others	24,187	20,179	25,515	39,934	31,413
Total	836,272	891,057	911,552	1,240,697	1,286,392
Percent Rate of Growth		6.55%	2.30%	36.11%	3.68%
School Level Administrative Overhead* Sub-total		63,591	62,631	75,385	123,184
School Level Grand Total		482,858	529,608	706,622	787,282

Source: Planning Division, MOEC; reported in World Bank Mimeo, ND (Table 13)

* Overhead includes budget expenditures for curriculum, textbook, and educational materials; miscellaneous education projects; education administration; education research and statistics; and supervision, training, and publicity.

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Table 2.63

Total Education Expenditure (Regular and Development):

1977-1978 through 1985-1986

(constant 1984-1985 prices -- '000)**

Type of Education	1977/78	1978/79	1979/80	1980/81	1981/82
Primary Education	124,824	140,474	145,635	156,310	206,180
Lower Secondary and Secondary Education	103,519	107,683	109,225	108,806	108,579
Adult Education	5,094	2,800	3,556	4,192	5,440
Curriculum, Textbook, & Educational Materials	22,969	11,966	21,565	24,972	34,800
Physical Education & Sports	6,253	5,166	4,158	4,737	5,188
Misc. Education Projects	5,627	9,673	6,361	16,088	5,896
Education Administration	34,359	33,111	32,370	33,229	35,109
Education Research & Stats.	1,111	2,465	2,249	137	677
Scholarship and Student Welfare	3,704	3,858	5,453	3,456	3,921
Supervision, Training, and Publicity	1,035	1,702	2,376	2,528	2,555
Archeology	1,799	1,775	1,632	0	8,410
Special Education	1,508	1,799	2,658	4,768	3,851
Tribhuvan University	160,642	186,658	174,916	205,608	253,162
Science and Technology	710	1,033	1,174	0	0
Integrated Rural Devt.	0	795	0	3,363	13,964
Cultural Corporation	0	0	0	0	0
Technical and Vocational Education	0	0	0	0	0
Others	1,642	1,843	1,673	19,685	24,100
Total	474,795	512,800	515,001	587,879	711,832
Percent Rate of Growth		8.00%	0.43%	14.15%	21.08%
School Level Administrative Overhead* Sub-total	70,314	64,573	73,033	85,179	86,809
School Level Grand Total	298,656	312,730	327,892	350,294	401,567

* Overhead includes budget expenditures for curriculum, textbook, and educational materials; miscellaneous education projects; education administration; education research and statistics; and supervision, training, and publicity.

** The deflator for gross domestic product is used to derive the 1984-1985 constant price series.

(table continued)

Table 2.63 (Continued)

Type of Education	1982/83	1983/84	1984/85	1985/86
Primary Education	249,582	326,042	321,922	387,024
Lower Secondary and Secondary Education	126,066	119,087	145,055	165,239
Adult Education	9,051	7,859	2,600	3,696
Curriculum, Textbook, & Educational Materials	21,685	20,188	17,724	15,074
Physical Education & Sports	6,631	8,496	9,457	9,541
Misc. Education Projects	6,208	3,400	3,077	2,848
Education Administration	36,566	39,437	35,239	40,462
Education Research & Stats.	123	143	115	101
Scholarship and Student Welfare	3,661	3,949	3,220	4,835
Supervision, Training, and Publicity	7,452	396	3,256	2,634
Archeology	9,483	11,662	6,057	5,104
Special Education	0	0	0	0
Tribhuvan University	413,203	333,474	308,276	362,663
Science and Technology	0	3,876	8,407	24,805
Integrated Rural Devt.	13,394	12,104	7,894	12,228
Cultural Corporation	1,337	3,238	310	715
Technical and Vocational Education	389	31,246	13,428	13,568
Others	26,949	21,424	25,515	34,938
Total	931,779	946,021	911,552	1,085,474
Percent Rate of Growth	30.90%	1.53%	-3.64%	19.08%
School Level Administrative Overhead* Sub-total	75,695	67,514	62,631	65,954
School Level Grand Total	41,342	512,642	529,608	618,216

Source: Planning Division, MOEC; reported in World Bank Mimeo, ND (Table 13)

* Overhead includes budget expenditures for curriculum, textbook, and educational materials; miscellaneous education projects; education administration; education research and statistics; and supervision, training, and publicity.

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Government's budgeted expenditures for the primary, general secondary, adult education, higher education (post-secondary), and technical and vocational education subsectors are specifically identified in the tables. In addition, several of the other budgetary head items can reasonably be attributed to the primary and secondary subsectors. These include items such as curriculum, textbook, and educational materials; miscellaneous education projects; and pro-rata portions of education administration; education research and statistics; and supervision, training, and publicity. This allows a reasonable allocation of those costs to the various subsectors.

The total budget expenditure in current prices increased from Rs 277.7 million in 1977-1978 to Rs 1,286.4 million in 1986-1987, an annual increase of 21.1 percent. Referring to Table 2.63, the total budget in constant 1984-1985 prices increased from Rs 474.8 million in 1977-1978 to Rs 1,085.5 million in 1985-1986, an annual increase of 10.9 percent. The rate of growth for real total budget expenditures in recent years has been much lower, however. In constant price terms, total budget expenditure increased from Rs 931.8 million in 1982-1983 to Rs 1,085.5 in 1985-1986, an annual increase of only 5.2 percent.

Table 2.64 presents the unit cost data based upon the total government budget expenditure. The data are discussed in detail in Sections 2.6.2 through 2.6.7 below. Government costs per student are estimated using enrollment data for the different levels of education for academic years 1977-1978 through 1985-1986. Unit costs are calculated by aggregating the budget categories that support primary and secondary education on a per student basis. In addition, unit costs in 1984-1985 prices are calculated in a similar manner using constant prices.

Compared to government budget data, the data on educational costs to students, their families, and communities are anecdotal and less complete. These data, discussed in the following paragraphs, suggest that the unit costs presented are probably underestimates. Some individual school budget data give some indications of the sources and magnitudes of revenues and expenditures for a small, non-random sample of primary and secondary schools. In general, a conservative approach was used to derive lower "floor" estimates of institutional unit and cycle costs.

Table 2.64

Enrollment and Expenditure Unit Costs
(current and constant 1984-85 prices per student) *

Levels	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
Enrollments:									
--Primary	769,049	875,494	1,012,530	1,067,912	1,388,002	1,474,698	1,626,437	1,747,857	1,812,098
--Lower Secondary	226,639	276,580	342,929	391,427	169,564	198,723	219,639	238,928	254,364
--Upper Secondary	82,178	93,651	106,109	121,007	144,331	170,404	198,449	216,473	242,467
--Total Secondary	308,817	370,231	449,038	512,434	313,895	369,127	418,088	455,401	496,831
Total Primary & Secondary									
--School Level	1,077,866	1,245,725	1,461,568	1,580,346	1,701,897	1,843,825	2,044,525	2,203,258	2,308,929
--Higher	21,990	25,402	31,942	39,863	38,450	52,070	48,229	55,332	54,355
--Vocational/Technical								722	
Cost per Student:									
(Current Prices)									
--Primary	94.92	100.97	97.40	106.98	118.72	151.90	188.82	184.18	244.12
--Total Secondary	196.04	183.03	164.72	155.19	276.45	306.52	268.29	318.52	380.15
--Total School Level	123.89	125.36	118.09	122.61	147.81	182.85	205.07	211.95	273.39
--Including Overhead**	162.04	157.98	151.93	162.01	188.57	219.70	236.17	240.37	306.04
--Higher	4,272	4,624	3,708	3,770	5,262	7,122	6,503	5,571	7,626
--Vocational/Technical								18,598	
Cost per Student:									
(Constant Prices)									
--Primary	162.31	160.45	143.83	146.37	148.54	169.24	200.46	184.18	213.58
--Total Secondary	335.21	290.85	243.24	212.33	345.91	341.52	284.84	318.52	332.59
--Total School Level	211.85	199.21	174.37	167.76	184.95	203.73	217.72	211.95	239.19
--Including Overhead**	277.08	251.04	224.34	221.66	235.95	244.79	250.74	240.37	267.75
--Higher	7,305	7,348	5,476	5,158	6,584	6,853	6,914	5,571	6,672
--Vocational/Technical							18,598		

Source: Planning Division, MOEC; reported in World Bank Mimeo, ND (Table 13). Data on higher education enrollments for 1983-1984 and 1985-1986 corrected with data provided by the university, since the 1985-1986 data in the source listed showing 20,802 (instead of 54,355) were obviously in error.

* The deflator for gross domestic product is used to derive the 1984-1985 constant price series.

** Overhead includes budget expenditures for curriculum, textbook, and educational materials; miscellaneous education projects; education administration; education research and statistics; and supervision, training, and publicity.

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In addition, discussions with MOEC officials, both in Kathmandu and several outlying districts, yielded some corroborative rough estimates of various fees, costs, and other charges paid by students and their families both in private and public schools. Moreover, complementary cost data were obtained through teacher and staff salary schedules which provide a basis to estimate this major component of school expenses. Further, data were obtained from several evaluation studies and from a private school fee schedule which permitted a comparison of public and private school costs to students. Given the incompleteness of the data, the estimates derived should be viewed as indicative costs only, and not necessarily representative of the cost structure of education in Nepal.

2.6.2 Primary Education Costs

The primary school cycle covers Grades 1 through 5 with students supposedly entering at age 6. While the age 6-10 population cohort is the primary school age population, there are substantial numbers of students in primary school who are over-age (16.7 percent in 1984) and under-age (2.5 percent in 1984).

2.6.2.1 Unit Costs. As shown in Table 2.64, unit costs in terms of the government budget for primary education in current prices have risen from Rs 94.92 in 1977-1978 to Rs 184.18 in 1984-1985. In 1985-1986 the primary education budget increased by 37.4 percent which resulted in an increase of costs per student in primary education from Rs 184.18 to Rs 244.12 (32.5 percent). In constant price 1984-1985 terms, the costs per student for primary education increased from Rs 162.31 in 1977-1978 to Rs 213.58 in 1985-1986, an annual increase that averaged about 3.5 percent.

In addition, the data in Table 2.64 on unit costs in current prices for the total school level population, including overhead, indicate that overhead costs per student to the MOEC are approximately (306.04 - 273.39 =) Rs 32.65 in 1985-1986. Thus, including the various overhead items of the MOEC budget, the unit costs of primary education to the government are estimated to be (244.12 + 32.65 =) Rs 276.77 in 1985-1986.

Another way to estimate unit costs of primary education incorporates school and student expenditures. This includes costs that may be borne by non-governmental bodies. The approach involves constructing education budgets of students and schools and dividing those by the number of students in schools.

Table 2.65 summarizes the various costs per student per year for many of the items that comprise school and student expenditures. The teacher costs per primary education student of Rs 263.6 were estimated using a 33:1 student/teacher ratio and using the 1985-1986 salary scales for unqualified teachers with three years' experience (Rs 7,345 per annum) and qualified teachers with ten years' experience (Rs 10,075 per annum), assuming half of the teachers were qualified.

The school book costs by grade were provided by the MOEC. The materials costs were estimated on the basis of the Rs 300 per teacher, and a 33:1 student/teacher ratio provided by the MOEC. The costs per student for equipment and furniture were derived from the "Micro-School Level Information" study commissioned by the World Bank.

Table 2.65
Estimated Costs per Student
(Rupees)

Grade	1	2	3	4	5	Avg
Teacher Costs	263.6	263.6	263.6	263.6	263.6	263.6
Book Costs	14.8	16.3	17.1	45.1	51.4	28.9
Materials	9.1	9.1	9.1	9.1	9.1	9.1
Equipment	4.0	4.0	4.0	4.0	4.0	4.0
Furniture	6.9	6.9	6.9	6.9	6.9	6.9
Facilities	7.4	7.4	7.4	7.4	7.4	7.4
Others	20.7	20.7	20.7	20.7	20.7	20.7
Copy Books	9.0	9.0	9.0	9.0	9.0	9.0
Pencils	2.5	2.5	2.5	2.5	2.5	2.5
Uniforms	80.0	80.0	80.0	80.0	80.0	80.0
Total	418.0	419.5	420.3	448.3	454.6	432.1

Source: MOEC

The costs per student for facilities were derived from the SETI project school construction estimates assuming a 5-day school week for 150 students with a 20-year facilities life. Estimates for annual costs per student for school copy books and pencils were provided by officials from the MOEC. According to District Education Officers and MOEC officials, estimates of costs of school uniforms range from Rs 80 to Rs 250, with the lower figure being selected.

Cost estimates for school shoes, boots, and other such items were not included. Also excluded were estimates of fees for items such as registration (Rs 75), admission (Rs 75), games and sports (Rs 50 per annum), first aid (Rs 50 per annum), and entertainment (Rs 50 per annum) which had been provided from a private school fee schedule. For public primary education schools, such fees are supposedly not charged.

Because of the variations in the school book costs per grade, the units costs vary from Grade 1 to Grade 5, averaging Rs 432. The 1985-1986 Rs 276.77 government budget cost per primary education student, including overhead, derived from Table 2.64, represents over 64 percent of the unit cost of primary education estimated this way.

2.6.2.2 Cycle Costs. Cycle costs are estimated by tracing student flow through the system, taking into account repetition and drop-outs and calculating the cost of producing a completer (graduate) from each cycle of the system. The common measures used in estimating cycle costs are average instructional years required for a student to complete each cycle, and the unit cost for each instructional year of that cycle.

Estimating cycle costs in this standard manner, in terms of costs per completer, attributes to the completers the instructional costs of all students who repeat years and/or drop out before completing the cycle. This method also disregards any of the benefits received by persons who drop out before completing the cycle. Nevertheless, it is the standard method used, and produces cycle costs that can be compared with similar studies in Nepal and elsewhere.

Table 2.66 presents an example of the standard education cycle model, using the 1985-1986 repetition and drop-out rates recently estimated by the MOEC. At the top of the table are listed the repetition and drop-out rates by grade along with the completion (graduation) rate for Grade 5 students, and the continuation rate of Grade 5 completers into Grade 6.

The repetition and drop-out rates are highest in Grade 1. The repetition rates, while declining substantially after Grade 1, remain quite high throughout the primary cycle. The drop-out rates decline dramatically after Grade 1, and for Grades 2-5 are fairly low by developing country standards.

The model takes a hypothetical cohort of 1,000 students who enter Grade 1 and follows them through their primary education cycle. Of the 1,000 students who enter Grade 1 in year 1, only 390 continue on to Grade 2 in year 2. Of the original students, 390 repeat Grade 1 in year 2, and (1,000 entrants - 390 repeaters - 390 completers who progress to Grade 2 =) 220 of the original students drop out from the system.

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After five years of the primary cycle, only 125 of the original 1,000 students have completed primary education. Over the next eight years another (481 - 125 =) 356 of the original students complete the primary cycle. Thus, of the 1,000 original entrants, only 481 students would complete the primary cycle, and this would take place over a period of approximately fifteen years.

Table 2.66
Internal Efficiency Model: Primary Education

Parameters (Rates)	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Repetition	0.39	0.23	0.18	0.19	0.17
Drop-outs	0.22	0.05	0.02	0.08	0.07
Graduates					0.76
Continuers to Grade 6					0.84

School Flow Model

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Graduates
1	1,000					
2	390	390	0	0	0	0
3	152	242	281	0	0	0
4	59	115	225	225	0	0
5	23	50	123	222	164	125
6	9	20	58	141	190	145
7	4	8	25	73	135	103
8	1	3	10	34	76	58
9	1	1	4	15	38	29
10	0	1	2	6	17	13
11	0	0	1	3	7	6
12	0	0	0	1	3	2
13	0	0	0	0	1	1
14	0	0	0	0	1	0
15	0	0	0	0	0	0
Sum	1,639	830	729	720	633	481

Total
Pupil years = 4,552
per graduate = 9.46

Average study years
per entrant = 4.55

Ideal student years for
number ofgraduates = 2,406
Efficiency = 0.5286
5 Times grades/total pupil years

Pupil years wasted

repeaters	drop-outs	total
1,206	939	2,145

Source: IEES Sector Assessment Internal Efficiency Model

Note: Totals may not add due to rounding.

The total instructional years spent in educating that original cohort in the primary education system would be 4,552. Ideally, if 481 graduates were to be obtained through a five-year primary cycle, only (481 x 5 =) 2,405 years of instruction would be needed. (The 2,406 in the table is due to rounding.) Compared to the ideal number of instructional years for 481 graduates, the actual number of years taken indicates that the primary education system has an internal efficiency of (2,406/4,552 =) .5286; that is, it is only 53 percent efficient compared to what it would be with no drop-outs or repeaters.

Dividing the total instructional years by the total number of graduates yields the total instructional years per graduate of (4,552/481 =) 9.46. Compared to the five years it could have ideally taken to produce a graduate, the 9.46 instructional years per graduate also indicates that the primary education system's internal efficiency is 53 percent.

Of the 4,552 total instructional years, 2,145 are wasted in terms of repetition and drop-outs. A total of 1,206 instructional years are spent on repeaters, and 939 are spent on students who do not complete the primary cycle.

Multiplying the costs per student times the instructional years per graduate provides the estimated cycle cost of the primary system. In terms of the government budget expenditure on primary education, including overhead, the cycle cost would be (Rs 276.77 x 9.46 =) Rs 2,618 per graduate. In terms of the total school and student expenditure of Rs 432 per student, the cycle cost would be (Rs 432 x 9.46 =) Rs 4,087 per graduate. If the internal efficiency were ideal, the cycle cost to the government would be (Rs 276.77 x 5 =) Rs 1,384, and the cycle cost in terms of school and student expenditures would be (Rs 432 x 5 =) Rs 2,160.

The inefficiency of the current primary education system, measured in 1985-1986 prices, costs the government (Rs 2,618 - Rs 1,384 =) Rs 1,234 per graduate, and costs the schools and the students of the primary education system (Rs 4,087 - Rs 2,160 =) Rs 1,927 per graduate.

2.6.3 Secondary Education Costs

The secondary school system is comprised of two levels; lower secondary with Grades 6-7, and (upper) secondary with Grades 8-10. At the end of Grade 10 there is a national examination which provides those who pass a School Leaving Certificate (SLC). Students who pass the SLC examination are very likely to be admitted to higher education. The SLC pass is considered the measure of satisfactory completion of the secondary school cycle in this analysis. Other measures of completion could be used for alternate analyses, and they would yield different estimates of these costs.

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2.6.3.1 Unit Costs. Tables 2.62 and 2.63 (above) present the data on the total budget expenditures for the combined lower secondary and secondary school systems. Total regular and development budget expenditures for the combined secondary education system increased from Rs 60.5 million in 1977-1978 to Rs 188.9 million in 1985-1986.

Over the same period, in which lower secondary education was compressed from Grades 4-7 into Grades 6 and 7, the combined secondary education enrollment increased from 308,000 to 497,000. As shown in Table 2.64 the total budget expenditures per student increased from Rs 196.04 per annum in 1977-1978 to Rs 380.15 in 1985-1986 in current prices. In constant 1984-1985 prices, unit costs of combined secondary education remained relatively unchanged from Rs 335.21 in 1977-1978 (Rs 400.44 including overhead) to Rs 332.59 in 1985-1986 (Rs 361.15 including overhead). In short, the real direct budgetary cost to the government for secondary education per student remained virtually unchanged over the period from 1977-1978 to 1985-1986.

As discussed in Section 2.5, government supports only a portion of the costs for secondary education. Based on standard staffing ratios for the type of school and number of students, government pays 75 percent of the teacher costs of lower secondary education, and 50 percent of the teacher costs of secondary.

Assuming that teachers at both levels are on average qualified and have 10 years of experience, it is possible to estimate the unit teacher costs using current student/teacher ratios. The annual salary cost in 1985-1986 for a lower secondary teacher with 10 years of experience was (Rs 930 x 13 =) Rs 12,090, while for a secondary teacher it was (Rs 1,565 x 13 =) Rs 20,345. For lower secondary education, with a student/teacher ratio of 23:1, the unit teacher costs are estimated to be (Rs 12,090/23 =) Rs 525.65; for secondary education, the unit teacher costs with a student/teacher ratio of 33:1 would be (Rs 20,345/33 =) Rs 616.52.

In the World Bank "Micro-School Level Information" study, salaries and allowances accounted for 82 percent of school expenditures in 1985-1986. While that study related to schools that contained primary education sections, discussions with MOEC officials suggest that comparable proportions may also apply at the combined secondary education level. Thus, rough approximations of school expenditures per student would be (Rs 525.65/.82 =) Rs 641 and (Rs 616.52/.82 =) Rs 752 at the lower secondary and secondary levels, respectively.

At the lower and secondary levels, students pay a variety of fees, such as registration, admission, building, games and sports, and examinations to cover school expenses not paid by government. In addition, students also incur costs for items such as textbooks, copy books, pencils and materials, and uniforms.

Very limited data were available on the magnitude of these costs for secondary students; but it is reasonable to assume they were at least as great as those estimated for Grade 5 students in Table 2.65, or approximately Rs 142.9 per annum. Thus, the financial unit costs to schools and students of lower secondary and secondary education would be about (Rs 641 + Rs 143 =) Rs 784 and (Rs 752 + Rs 143 =) Rs 895 per year, respectively.

2.6.3.2 **Cycle Costs.** The data on student enrollment in the combined secondary education system allow estimation of crude progression rates. The data on secondary education enrollments by grade and the crude progression rates are summarized for years 1975-1976 through 1985-1986 in Table 2.67. Also presented in Table 2.67 are data relating to the SLC pass rates, which turn out to be the critical factor in the method used in this chapter for assessing the internal efficiency of the secondary education system.

The crude progression rates, which measure the enrollment in a certain grade in a certain year relative to the enrollment in the next lower grade in the previous year, suggest that throughout the secondary education system about 90 percent of the students progress from one grade to the next each year. The crude progression rates do not take into account the repetition within the system, and thus make it difficult to estimate cycle costs precisely.

Data from 1972-1973 reported in Chapter 5 on the grade level examinations indicated that 10-12 percent of secondary education students failed such examinations in Grades 6-9 each year. Data from the SLC results indicated that on average, over the period from 1981-1982 to 1984-1985, the ratio of SLC passes to Grade 10 enrollment was 37 percent, considering that many students taking the SLC were doing so for the second or third time. (See Chapter 5 for further discussion of the SLC examination and the categories of candidates who take it.)

Given the absence of direct estimates of repetition and drop-out rates for the combined secondary education system, the above information was used to develop indirect estimates of the assumptions that are consistent with the crude progression rates and that are used in the education flow model.

Table 2.67

Enrollments, Progression Rates, and SLC Pass Rates

Grade	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
6	36,140	37,787	44,419	53,615	68,422	80,017
7	31,820	32,273	35,691	42,897	51,352	62,254
8	11,262	31,369	32,951	36,443	42,046	50,070
9	8,545	23,305	26,380	29,662	33,619	38,455
10	9,248	19,386	22,847	27,546	30,444	32,482
SLC sat	27,729	32,720	35,189	41,008	48,443	63,989
SLC pass	11,250	7,208	10,939	13,961	13,551	18,789
Sub-Totals						
Lower Secondary Grades 4-7	174,143	188,688	226,639	276,580	342,929	391,427
Secondary Grades 8-10	29,055	74,060	82,178	93,651	106,109	121,007
Total	661,714	906,583	1,077,866	1,245,725	1,461,568	1,580,346

Crude progression rate (enrollment in year t+1 for Grade i+1 divided by enrollment in year t for Grade i)

Grade	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
6	0.8930	0.9445	0.9657	0.9578	0.9099	0.9332
7	0.9858	1.0210	1.0211	0.9802	0.9750	0.9803
8	2.0693	0.8410	0.9002	0.9225	0.9146	0.9277
9	2.2687	0.9803	1.0442	1.0264	0.9662	0.9583
SLC pass as proportion of Grade 10 enrollment	1.2165	0.3718	0.4788	0.5068	0.4451	0.5784
SLC pass as proportion of sitters	0.4057	0.2203	0.3109	0.3404	0.2797	0.2936
SLC pass as proportion of Grade 6 enrollment 5 years earlier					0.3750	0.4972
Grade 8 enrollment as a proportion of Grade 6 enrollment 2 years earlier			0.9118	0.9644	0.9466	0.9339
Grade 10 enrollment as a proportion of Grade 8 enrollment 2 years earlier			2.0287	0.8781	0.9239	0.8913
SLC pass as a proportion of Grade 8 enrollment 2 years earlier			1.1829	0.7202	0.5931	0.6821

(table continued)

Table 2.67 - (Continued)

Grade	1981/82	1982/83	1983/84	1984/85	1985/86
6	94,892	109,364	121,811	131,053	136,008
7	74,672	89,359	97,828	107,875	118,356
8	61,028	69,510	79,745	87,889	93,874
9	46,452	55,636	63,415	73,973	79,982
10	36,851	45,258	55,289	54,611	68,611
SLC sat	72,819	79,969	80,886	100,001	95,923
SLC pass	15,608	13,337	16,434	23,824	29,538
Sub-totals					
Lower Secondary					
Grades 4-7					
Grades 6-7	169,564	198,723	219,639	238,928	254,364
Secondary					
Grades 8-10	144,331	170,404	198,449	216,473	242,467
Total	1,701,897	1,843,825	2,044,525	2,203,258	2,308,929

Crude progression divided by enrollment in year t for Grade i
divided by enrollment in year t for Grade i

Grade	1981/82	1982/83	1983/84	1984/85	1985/86	Average 81/2-84/5
6	0.9417	0.8945	0.8856	0.9031		0.9062
7	0.9309	0.8924	0.8984	0.8702		0.8980
8	0.9116	0.9123	0.9276	0.9100		0.9154
9	0.9743	0.9938	0.8612	0.9275		0.9392
SLC pass as proportion of Grade 10 enrollment						
	0.4235	0.2947	0.2972	0.4362	0.4305	0.3764
SLC pass as proportion of sitters						
	0.2143	0.1668	0.2032	0.2382	0.3079	0.2261
SLC pass as proportion of Grade 6 five years earlier						
	0.3514	0.2488	0.2402	0.2977	0.3113	0.2899
Grade 8 enrollment as a proportion of Grade 6 enrollment two years earlier						
	0.8919	0.8687	0.8404	0.8036	0.7707	0.8351
Grade 10 enrollment as a proportion of Grade 8 enrollment two years earlier						
	0.8764	0.9039	0.9060	0.7857	0.8604	0.8665
SLC pass as a proportion of Grade 8 enrollment two years earlier						
	0.5127	0.4106	0.4460	0.5264	0.5342	0.4860

Source: MOEC, Education Statistics, several sources

Table 2.68 presents the results of that model for an initial cohort of 1,000 students entering Grade 6 in year 1. Of special note in the model are the assumptions that the Grade 10 graduation rate is 37 percent, based on SLC passes, and that the repetition rate in Grade 10 is 20 percent. Discussions with MOEC officials suggest that these assumptions may overestimate the efficiency of the secondary education system. That is, while the ratio of SLC passes to Grade 10 enrollment may be 37 percent, of a typical Grade 10 class, only 50 percent may pass the send up examination and be allowed to take the SLC; and of those, only 30-35 percent may actually pass the examination the first time they take it.

Thus, the actual graduation rate for Grade 10 students may be under 20 percent in the year the candidates are Grade 10 students. The assumed graduation rate of 37 percent reduces the time it takes students on average to pass the SLC, although it should not affect the number of years they spend in school preparing to pass the SLC unless they are continually repeating Grade 10.

The results in Table 2.68 indicate that 276 of the initial cohort of 1,000 are expected to graduate from the secondary education system. The total instructional years required to produce those graduates is 4,459. To produce 276 graduates through a five-year secondary education system, it ideally should take only (276 x 5 =) 1,380 instructional years. (The 1,379 reported in the table is due to rounding). Compared to the ideal, the secondary education system model as presented is only (1,379/4,459 =) 30.9 percent efficient. The instructional years per graduate are (4,459/276 =) 16.17 years, when ideally this should be 5.

Of the total instructional years expended, (4,459 - 1,380 =) 3,081 represent wastage; 571 instructional years are expended upon repeaters, and 2,509 are expended upon students who never graduate. A total of 404 students drop out before reaching Grade 10. Of the 596 students who reach Grade 10, only (276/596 =) 46 percent eventually graduate.

Multiplying the instructional years per graduate (16.17) times the government unit costs of Rs 380.15 (Rs 412.8 including overhead) yields an estimated cycle cost per graduate to the government budget of Rs 6,147 (Rs 6,675). With regard to the full financial unit costs to schools and students per annum of Rs 784 for lower secondary education and Rs 895 for secondary education, the cycle costs are estimated to be (([784 x (1,111 +1,020)] + [895 x (838 + 745 + 745)])/276 =) Rs 13,602. Compared to the ideal costs of producing graduates of ([784 x 2] + [895 x 3] =) Rs 4,253, the cycle costs to schools and students are (13,602 - 4,253 =) Rs 9,349 higher.

Table 2.68

Internal Efficiency Model: Secondary Education

Parameters (rates)

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Repetition	0.10	0.15	0.1	0.1	0.20
Drop-outs	0.12	0.11	0.1	0.1	0.43
Graduates					0.37

School flow model

Year	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Graduates
1	1,000					
2	100	780	0	0	0	0
3	10	195	577	0	0	0
4	1	37	202	462	0	0
5	0	6	48	208	369	137
6	0	1	9	59	240	89
7	0	0	2	13	95	35
8	0	0	0	3	30	11
9	0	0	0	1	8	3
10	0	0	0	0	2	1
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
Sum	1,111	1,020	838	745	745	276

Total = 4,459

Per graduate = 16.1

Average study years per entrant = 4.46

Ideal student years for number of graduates = 1,379

Efficiency = 0.3091
5 Times grades/total pupil years

Pupil years wasted

Repeaters	Drop-outs	Total
571	2,509	3,081

Source: IEES sector assessment internal efficiency model

2.6.4 Costs of Technical/Vocational Education

The system of technical/vocational education and training covers a broad range of activities, both formal and nonformal. These activities are operated under the auspices of several different Ministries and Departments, and many different agencies. The MOEC is responsible for the coordination of technical and vocational education.

The range of technical and vocational education includes programs operated by the Institute of Engineering, the Technical Schools, the Department of Cottage and Village Industries, the Department of Labor, the Ministry of Panchayat and Local Development, and others. Only limited data were available on the costs and enrollment at the Technical Schools managed by the Directorate of Technical and Vocational Education. Neither the cycle costs nor the unit costs of the many other programs could be analyzed.

2.6.4.1 Unit Costs. Tables 2.69 and 2.70 present some of the data relating to prior expenditure on Technical Schools by the MOEC. For 1987-1988, the proposed budget and unit costs for the various schools are also shown in Table 2.70. As proposed, the unit costs of technical education for the five schools for 1987-1988 would average Rs 24,150 for the anticipated enrollment of 684 students. The unit costs would range from a low of Rs 11,915 per student at the Lahan Technical School to a high of Rs 32,000 at the Dhankuta Technical School.

Table 2.69

Unit Cost of Technical and Vocational Training Centers: 1984-1985

Center	Total Enrollment	Total Expenditure	Unit Cost (in Rs)
Sanothimi Technical School	172	2,739,491	15,927
Mechanical Training Centre, Balaju	129	1,251,165	9,699
Six Labor Supply Centers	972	7,114,481	7,319
Vocational Training Centre (Hair Dressing)	40	177,388	4,435
Department of Cottage and Village Industries, Kathmandu	674	141,275	2,096

Source: Concerned Centers

Data were not available to assess the length of time it takes the average student to complete the program. Hence, the cycle costs and internal efficiency of these schools could not be determined. Discussions with MOEC officials and colleagues indicate the measures of internal efficiency may be low due to the need to provide accommodation for trainees from remote areas, poor quality of student intake, difficulty in retaining staff, and cultural aversion to technical education.

Table 2.70

Costs of Technical Schools: 1981-1982 through 1985-1986

(thousands of rupees)

	Costs ('000)					(Proposed)		
School	1981/82	1982/83	1983/84	1984/85	1985/86	1987/88 Budget ('000)	Enroll-ment	Unit Cost
Jiri Technical School	543	2,031	3,529	2,482	3,588	3,602	132	27,287
Karnali Technical School	1,929	2,558	4,620	2,388	2,698	4,280	145	29,517
Lahan Technical School	100	1,263	5,601	1,865	4,202	1,549	130	11,915
Mechanical Training Centre	3,081	5,822	5,019	1,451	1,237	4,531	197	23,000
Dhankuta Technical School	5,999	6,333	10,385	3,982	3,735	2,560	80	32,000
Total	11,652	18,007	29,154	12,168	15,460	16,522	684	24,150[1]
Percent change		54.54	61.90	-58.26	27.05			
4 Year annual rate of growth					7.33			

Source: Directorate of Technical and Vocational Education

[1]Average cost.

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2.6.5 Teacher Education Costs

There are a variety of programs to prepare teachers for primary and secondary schools. Some of these are more formal than others, giving certificates and degrees for their successful completion. Through the University system, the Faculty of Education conducts programs for a Certificate of Proficiency, a Bachelor of Education, and a Master of Education, as well as a shorter five-month teacher training "package" course at Sanothimi. Other teacher training for primary teachers includes the Equality for Girls and Women in Nepal Project (EGWN), the Seti Education for Rural Development Project (ERD), the Primary Education Project (PEP), and the Radio Education Teacher Training Project (RETT).

2.6.5.1 Unit Costs. Assessing the costs of alternative teacher training projects is made difficult by the paucity of the data, complications in allocating project and program costs to specific training activities, and non-comparability across programs with respect to the duration and the outcome of the training.

2.6.5.2 Cycle Costs. In order to estimate the costs per trainee, and the costs for obtaining a successful completer, it is necessary to have annual data on (1) training program expenditures, (2) student enrollment, and (3) student flow through the program from entry to completion or drop-out, including repetition. Only partial data were available on the costs and student flow data for various teacher education programs. In some cases, there were inconsistent enrollment data reported for the teacher training programs. Table 2.71 presents data on enrollment and output for the various teacher education programs conducted at the University from 1977 to 1986. These data are used to estimate crude completion rates for the programs.

The data in Table 2.71 are incomplete, but can be used to roughly estimate the outflow from any given level of inflow. The various teacher education programs are intended to be of two year's duration each, except for the Bachelors Program where there is both a one-year program and a two-year program. As such, the outflow in any given year could be compared to one-half of the enrollment two years earlier to get a rough approximation of the completion rate in the Proficiency Certificate and Master's programs. For the Bachelor's program it is estimated by persons close to the program that for every 100 students, about 40 are in the one-year program and about 60 are in the two-year program. To estimate the completion rate, based on this assumption, the enrollment in the one-year program can be multiplied by

two to estimate the total Bachelors' equivalent enrollment. That is, (.40+.40+.60 =) 1.4 times the Bachelors of Education enrollment in Table 2.71 estimates the Bachelors equivalent enrollment required for computation of the completion rate.

This will tend to yield over-estimates of the completion rates as some two-year students may drop out after their first year. However, that bias may be offset by having relatively large numbers of students enrolled for three or more years, and also by the pattern of decreasing enrollments over the period for the Proficiency Certificate and Bachelor's Programs.

From 1979 to 1984, 2,629 students completed the Proficiency Certificate program. Compared to one-half of the 6,112 enrollments over the period two years earlier, i.e., from 1977 to 1982, the crude completion rate is estimated to be 43 percent. For the Bachelor's program, 2,235 students completed from 1979-1984, compared to the Bachelors' equivalent enrollment of 6,436 over the period 1977-1982. One half of this Bachelor's equivalent enrollment would be 3,218, indicating an estimated annual completion rate of (2,235/3,218 =) 69.5 percent.

Table 2.71

Teacher Education Programs: Enrollment and Outflow (1977-1986)

	Proficiency Certificate		Bachelor's of Education		Master's of Education	
Year	Enrollment	Outflow	Enrollment	Outflow	Enrollment	Outflow
1977	2,309	856	637	622	19	24
1978	2,239	766	981	857	13	4
1979	3,019	1,041	1,313	719	60	17
1980	2,482	390	1,115	733	103	49
1981	1,390	423	NA	716	NA	11
1982	665	42	551	67	91	3
1983	1,375	702	859	NA	118	7
1984	622	13	843	NA	NA	NA
1985	817	NA	120	NA	171	NA
1986	1,060	NA	788	NA	117	NA
Total 1977 -1982 only		4,220*		3,714		108

Source: A Survey of Teacher Education in Nepal

* Includes 1983 certificate receipts

For the Master's program, for which there are some gaps in the data, the outflow of 87 graduates from 1979-1983 compared to the enrollments of 286 from 1977 to 1982 suggests an estimated crude completion rate of (87/143 =) 60.8 percent.

Table 2.72 presents another set of data on the enrollments in teacher education programs by year of study, covering 1977-1986 for the Proficiency Certificate and 1975-1985 for the Master of Education. These data, while not identical to those in Table 2.71, do permit the estimation of crude progression rates from year one to year two. The crude progression rate is estimated by dividing the enrollment in year two of each program by the enrollment in year one.

It is less meaningful to compute a crude progression rate for the Bachelor's program since about 40 of every 100 enrollees have had more prior training, and therefore are in the separate one-year program. Enrollments in the second year include new admissions to the one-year program. Separate data on the one-year and two-year program enrollments were not available at the time of this writing, so no progression rate for the two-year Bachelor program could be completed.

As shown in Table 2.72, the crude progression rates vary substantially over the period from 1976 to 1985 in all of the programs. The instances of crude progression rates in excess of unity must be due to repetition, and highlight one of the weaknesses of using crude progression rates to assess student flow patterns and internal efficiency.

With regard to the Proficiency Certificate program, the data in Table 2.72 indicate that of the (15,998 - 1,060 =) 14,938 students who had been in year one of the program from 1977 to 1986, 8,300 progressed to year two during the period from 1977 to 1986. For that period, the average progression rate was 55.5 percent. For the Masters of Education program, the comparable progression rate from year one to year two was 88.2 percent.

In Table 2.73, the data from Table 2.71 on total enrollment and outflow of the teacher education programs are combined with data on public expenditures of the Faculty of Education to estimate cost per student and per graduate. The cost per graduate, estimated here by dividing annual expenditures by the annual number of graduates, is a crude measure. This is because the aggregate expenditure data in any year is associated with trainees who may graduate in some subsequent year. Nonetheless, over a long enough period, the cost per graduate estimated this way will closely approximate the more formal estimates of cycle costs that rely on estimating instructional years per graduate.

Table 2.72

Teacher Education Programs: Enrollments (1977-1986)

Proficiency Certificate

Year	1st year (Primary Level)	2nd year (Lower Secondary Level)	Total	Progression Rate
1977	2,309	451	2,760	0.144
1978	2,239	333	2,572	0.244
1979	3,019	547	3,566	0.265
1980	2,482	800	3,282	0.204
1981	1,390	507	1,897	1.400
1922	665	1,863	2,528	1.457
1983	1,375	969	2,344	0.660
1984	622	907	1,529	1.542
1985	817	959	1,776	1.180
1986	1,060	964	2,024	
Total	15,998	8,300	24,278	

Master of Education

Year	1st Year (Teacher Education Level)	2nd Year (Teacher Education Level)	Total	Progression Rate
1975	30	11	41	
1976	5	25	30	0.833
1977	19	25	44	5.000
1978	13	3	16	0.158
1979	60	17	77	1.308
1980	103	43	146	0.717
1981		83	83	0.806
1982	91	50	141	
1983	118	66	184	0.725
1984		75	75	0.636
1985	171	62	233	
Total	610	460	1,070	

Source: A Survey of Teacher Education in Nepal; with first year data as corrected by Gajendra M. Shrestha

Table 2.73

Teacher Education Programs: Costs per Student and per Graduate (Rupees)

Year		Total Enroll-ment	Total Out-flow	Public Expend-itures ('000)	Cost per Student	Cost per Graduate
1977		4,570	1,502	11,969	2,619	7,969
1978		884	1,627	13,744	2,814	8,447
1979		6,198	1,777	13,889	2,241	7,816
1980		6,178	1,172	12,266	1,985	10,466
1981		2,826	1,150	14,359	5,081	12,486
1982		3,870	112	14,592	3,771	NA
1983		4,019	NA	15,574	3,875	NA
1984		3,535	NA	18,745	5,302	NA
1985		3,407	NA	18,790	5,515	NA
1986		3,630	NA	NA	NA	NA
Total:	1977-85	39,487	NA	133,928	--	--
Total:	1977-80	21,830	6,078	51,868	3,856	7,867
Average:	1977-80	--	--	--	2,376	8,534

Source: Enrollment data provided by Gajendra M. Shrestha

Over the period from 1977 to 1980, the last year for which the number of graduates in the Proficiency Certificate and the Bachelor's programs were available on a reliable basis, the data suggest that the average cost per graduate of the IOE was Rs 8,534.

In order to estimate what it ideally would have cost to produce a graduate, it is necessary to recognize that about 40 percent of the students and presumably the graduates of the Bachelor's program are in the one-year program. According to Table 2.73, there were 2,931 graduates from the Bachelor's program from 1977 to 1980; 40 percent of which would be 1,172 graduates from the one-year program.

Since there were 6,078 graduates from the FOE over that period, (6,078-1,172 =) 4,906 would have been graduates of the two-year Proficiency Certificate, Bachelor's, and Master's programs. If all graduates had been successful in the least possible time from when they entered their respective programs, the average cost of a graduate ideally should have been ([2,376 (1,172/6,078)] + 2 (4,906/6,078)] =) Rs 4,294. Compared to the estimated average cost per graduate of Rs 8,534, the ideal cost per graduate of Rs 4,294 indicates the teacher education programs are only 50.3 percent internally efficient.

A measure of the internal efficiency since 1982 is not possible because no data on the outflow of graduates in the Certificate, Bachelors, or Masters programs were available at the time this report was prepared.

Tables 2.74 and 2.75 present preservice and inservice student flow data that can also be used to assess the efficiency of the teacher education programs. Although the data are for about 1977-1979, they are the most recent data available that show examination pass rates by student cohorts in teacher education. In Table 2.74, three cohorts of students entering the preservice teacher training program are traced through four semesters of their education. While the semester structure of teacher education no longer prevails at the University, these student flow data are the best available that indicate the losses and wastages within these levels of teacher education.

The student flow data show that many students, approximately 90 or so percent, progressed from one level to the next each semester, even though fairly low percentages (approximately 22-38 percent) passed each of the first three semester's examinations. An average of 75 percent of the fourth semester students passed their final examinations but, as a percent of the initial cohorts, graduates only represented 54.5 percent.

The total number of graduates from among the 303 students who initially entered the program was 165. There were 1,026 total instructional semesters provided to the three cohorts of trainees. An average of 6.22 semesters (or 3.11 instructional years) per graduate were provided. Compared to the ideal of four semesters per graduate, the data indicate that the teacher education program was only 64 percent efficient.

The data for the teacher inservice program in Table 2.75 can be similarly analyzed to provide estimates of the internal efficiency of that program. Of the two cohorts that entered the inservice program, only 24.5 percent graduated. In order to obtain the 27 graduates from the initial cohorts that totaled 110 students, 211 instructional semesters of education were provided. This amounted to 7.81 instructional semesters (3.9 years) per graduate. Compared to the ideal two instructional semesters per graduate, the inservice teacher education was only 25.5 percent efficient.

Table 2.74

Preservice Teacher Education Student Flow

Semester	Summer 2032	Winter 2032	Summer 2033	Winter 2033	Summer 2034	Winter 2034	Total
First							
Enrolled	83	116	104				303
Appeared in exam	66	148	66				280
% appeared	79.5	127.6	63.5				92.4
Passed all	26	37	19				82
% enrolled Passed	31.3	31.9	18.3				27.1
Second							
Enrolled		61	136	64			261
Progression rate		73.5	117.2	61.5			86.1
Appeared in exam		60	132	57			249
% appeared		98.4	97.1	89.1			95.4
Passed all		17	17	25			59
% enrolled Passed		27.9	12.5	39.1			22.6
Third							
Enrolled			55	130	54		239
Progression rate			90.2	95.6	84.4		91.6
Appeared in exam			53	129	47		229
% appeared			96.4	99.2	87.0		95
Passed all			18	37	36		91
% enrolled Passed			32.7	28.5	66.7		38.1
Fourth							
Enrolled				53	123	47	223
Progression rate				96.4	94.6	87.0	93.3
Appeared in exam				50	122	47	219
% appeared				94.3	99.2	100.0	98.2
Graduated				31	98	36	165
% graduated of appeared				62.0	80.3	76.6	75.3
% graduated of initial cohort				37.3	84.5	34.6	54.5

Source: A Survey of the Instructional Resources of Mahendra Ratna Campus, Institute of Education, 2035

Table 2.75

Inservice Teacher Education Student Flow

Semester	Summer 2032	Winter 2032	Summer 2033	Total
First				
Enrolled	62	48		110
Appeared in exam	58	43		101
% appeared	93.5	89.6		91.8
Passed all	22	8		
% enrolled passed	35.5	16.7		
Second				
Enrolled		58	43	101
Progression rate				
Appeared in exam		57	42	99
% appeared		98.3	97.7	98.0
Graduated		10	17	27
% graduated of appeared		17.5	40.5	27.3
% Graduated of initial cohort		16.1	35.4	24.5

Source: A Survey of the Instructional Resources of Mahendra Ratna Campus, Institute of Education, 2035

Table 2.76 presents a detailed breakdown of the SETI Project training program costs for eighteen different types of training, such as activities for teacher training, refresher courses, health training, instructor training, supervisors training, and advanced teacher training. These training activities cover a wide range of types, levels, and durations of training. The major items that comprise the total and average costs are food, materials, porterage, trainers, and miscellaneous. Unit costs per participant per training activity range from Rs 146 to Rs 2,099. On a per participant per day basis, the range of training costs is Rs 41 to Rs 218.

For the eighteen different kinds of activities listed, there were 191 training sessions, involving 2,002 days of training, covering a total of 3,007 trainees, and providing 39,146 participant days of training for a total cost of Rs 2,175,461. The unit cost per participant per day for each of the 18 programs is shown in Column 7. It is not very meaningful to average the participation or unit costs across these 18 different kinds of activities, because each activity is unique. The effectiveness of

each of the programs should be considered separately, however, and measured wherever possible. Then their cost effectiveness can be considered as these unit costs are considered in relation to the benefits. Viewing these short-term training costs on an annual basis, and assuming 260 potential training days per year, yields an annualized cost of (260 x Rs 55.6 =) Rs 14,456 per participant. For comparison with a five-month training program, the costs per participant would be (14,456 x 5/12 =) Rs 6,023.

Table 2.76

SETI Project Training Program Costs

S. No.	No. of Days	No. of Times	Avg. Partici-pants	Parti-cipant Days	Unit Cost	Unit Cost /Day	Total Cost
1	21	38	19	15,162	980	47	707,560
2	7	27	15	2,835	501	72	202,905
3	12	11	11	1,452	2,099	175	253,979
4	18	1	13	234	1,029	57	13,377
5	10	2	12	240	684	68	16,416
6	2	2	9	36	259	130	4,662
7	3	27	23	1,863	198	66	122,958
8	3	27	8	648	428	143	92,448
9	5	4	19	380	320	64	24,320
10	7	4	20	560	419	60	33,520
11	1	8	5	40	218	218	8,720
12	35	11	28	10,780	1,446	41	445,368
13	7	9	12	756	501	72	54,108
14	2	6	11	132	167	84	11,022
15	35	4	27	3,780	1,467	42	158,436
16	7	2	11	154	619	88	13,618
17	2	5	7	70	244	122	8,540
18	1	3	8	24	146	146	3,504
Weighted Average					723.46	55.6	
Total		191		39,146			2,175,461
Annualized Cost (260 days)				14,456			
Five-Month Basis				6,023			

Source: Education for Rural Development in Seti Zone; Cost of Project Activities and Main Achievements.

Table 2.77 below summarizes the unit costs of the various primary teacher training programs. The programs vary in duration, size, approach, and content, as well as in unit costs per enrollee and per participant per day. The Equality for Girls and Women in Nepal (EGWN) Project had unit costs per enrollee per day that varied from a low of Rs 20.58 at Surkhet to a high of Rs 77.08 at Jumla. The high unit costs at Jumla seemed clearly related to the low enrollment.

The estimated cost per enrollee per day was Rs 24.06, Rs 46.65, and Rs 36.33 at the "Package" program at Sanothimi, the SETI Project, and the Primary Education Project, respectively. For the Radio Education Teacher Training Project, the cost per enrollee per day was Rs 8.31, while the cost per passing trainee per day of the course was Rs 28.63.

Table 2.77

Unit Costs of Primary Teacher Training

Program	Duration (days)	Budget Expend-itures (Rs)	Number Enrolled	Unit Cost per Enrollee (Rs)	Unit Cost (Rs per Enrollee per Day)
EGWN Project	300	2,029,400	211	9,618	32.06
Pokhara	300	632,600	79	8,008	26.69
Dhankuta	300	485,100	42	11,550	38.50
Surkhet	300	426,100	69	6,175	20.58
Jumla	300	485,600	21	23,124	77.08
Sanothimi Package	150	415,018	115	3,609	24.06
SETI Project	21	18,615	19	980	46.65
Primary Education Project	12	10,900	25	436	36.33
RETT Project					
Per Enrollee	300	3,135,000	1,257	2,494	8.31
Exam candidate	300	3,135,000	1,121	2,797	9.32
Passing trainee	300	3,135,000	365	8,589	28.63

Source: Models of Primary Teacher Training: A Status Assessment, Chuda Nath Aryal

The comparison of the cost per passing trainee to the cost per enrollee is a measure of training program efficiency. For the RETT Project, the efficiency is (8.31/28.63 =) 29 percent of what it potentially could be. Without data on comparable successful completers for the other primary teacher training programs, it is not possible to assess their efficiency.

Table 2.78 presents the cost elements used to estimate the unit costs for the EGWN (data in 000's), the Sanothimi "Package" program, the SETI Project, and the PEP. Stipends, TA/DA (travel allowance/daily allowance), and food account for the greater portion of the costs for all the programs.

Table 2.78

Costs of Primary Teacher Training
('000 Rupees)

Budget Heads	Programs							
	EGWN Project							
	Total Project	Pokhara	Dhankuta	Surkhet	Jumla	Sanothimi Package	SETI Project	Primary Educ. Project
Stipends	1,332.0	420.0	315.00	273.00	324.0	404,670	6,390	7,830
TA/DA	150.0	50.0	37.50	32.50	30.0			308,160
Medication	30.0	10.0	7.50	6.50	6.0			
Tutorial	45.0	15.0	11.25	9.75	9.0			
Education Tour	150.0	40.0	40.0	40.00	30.0			
Campus Uniform	90.0	30.0	22.50	19.50	18.0			
Rural Devt.	15.0	5.0	3.75	3.25	3.0			
Educ. Materials	120.0	40.0	30.0	26.00	24.0	7,175	1,600	150
Extra-curricular	30.0	10.0	7.50	6.50	6.0			
Miscellaneous	30.0	10.0	7.50	6.50	6.0	3,173	650	120
Coordinators' Allowance	10.4	2.6	2.60	2.60	2.6			
Prizes	27.0	0.0	0.00	0.00	27.0			
Food	0.0	0.0	0.00	0.00	0.00		9,975	51,000
TOTAL	2,029.4	632.6	485.10	426.10	485.6	415,018	18,615	367,260

Source: Model of Primary Training: A Status Assessment, Chuda Nath Aaryal

2.6.6 Higher Education Costs

Higher education is provided by Tribhuvan University through 69 public and 49 private campuses, and through the Sanskrit University. The structure of the University has been altered in recent years to replace several of the Institutes with Faculties, including Education, Management, Law, and Humanities. The section on

teacher education considered the unit and cycle costs of the Faculty of Education. This section briefly covers the cost analysis of the broader university system, although the higher education sub-sector is not a major topic of this sector assessment.

2.6.6.1 Unit Costs. Tables 2.62, 2.63, and 2.64 (above) present the total budget expenditure for Tribhuvan University from 1977-1978 to 1986-1987 in both current and 1984-1985 constant prices, along with the estimated unit costs per student. Since higher education is almost totally subsidized by the government, there is very little cost recovery at that level. Those unit costs figures can thus be regarded as providing reasonable estimates of the total annual institutional costs per student.

In current prices, the total budget for Tribhuvan University increased from Rs 93.9 million in 1977-1978 to Rs 414.5 million in 1985-1986, an annual increase of 20.4 percent. In constant price terms, the budget expenditure for the University increased from Rs 160.6 million in 1977-1978 to Rs 362.7 million in 1985-1986, an annual increase of 10.7 percent in real terms.

Costs per student at the University increased in current prices from Rs 4,272 in 1977-1978 to Rs 7,626 in 1985-1986 (Table 2.64). In constant 1984-1985 prices, expenditures per student have remained relatively stable, fluctuating from a high of Rs 7,348 in 1978-1979 to a low of Rs 5,158 in 1980-1981 as economies of scale were realized with larger enrollments, especially in Engineering, Medicine, Science and Technology, and Agriculture, and as inflation eroded the University's fiscal base. Since 1985-1986, expenditures per student in real terms have returned to Rs 6,672 per year, close to their 1981-1982 to 1983-1984 average.

2.6.6.2 Cycle Costs. Data on university enrollment and outflow by faculty, program, and year are used to estimate the crude completion rates for portions of the 1977-1981 period for which data were available. The data suggest that overall crude completion rates were as high as 84.6 percent in 1977 and declined to 22.7 percent in 1981. The average crude completion rate over the period is estimated to be 57.9 percent, although the trend was clearly downward.

Discussions with University officials indicate that repetition is a serious problem. Average years-to-graduate for students is roughly estimated to be four years, twice the standard length of each program. Without more detailed data on student flow, including repetition and drop-out rates, only crude estimates of the cycle costs can be made.

One such crude estimate is provided by the ratio of University budget expenditures to number of graduates. If the University population were stable, this would closely approximate the cycle cost model estimates, as were developed for primary and secondary education. Table 2.79 presents data from 1977-1978 to 1981-1982 for the costs per student and the combined costs per graduate of the IA, BA, and MA programs. While costs per student increased from Rs 4,598 to Rs 5,262 over the period, because of the dramatic decline in the crude completion rate, the cost per graduate increased from Rs 10,348 to Rs 55,814.

Table 2.79

University Costs Per Student and Per Graduate

Year	Cost per IA, BA, MA Student	Cost per IA, BA, MA Graduate
1977	4,598	10,348
1978	5,032	12,406
1979	3,953	27,199
1980	4,004	19,841
1981	5,423	55,814

Source: Planning Division, MOEC

2.6.7 Adult Education Costs

Chapter 8 examines the Nonformal Education for Rural Development Program, a literacy drive coordinated by the Adult Education Section of the MOEC. There is a wide range of adult education programs in operation, with different cost structures and different durations. For the Nonformal Education for Rural Development programs, in general, costs per participant range from Rs 200 to Rs 360, and course length is one year or less. Some administrative and supervisory expenses are not included in these estimates, but available data suggest that such omitted expenses are unlikely to add more than 15-25 percent to the unit costs.

Discussions with officials of the MOEC's literacy programs suggest that completion rates range from 40 percent to 100 percent, although the measure of a successful completer is not well-defined. Since the program cycle does not exceed one year, dividing the unit costs by the completion rate yields an estimate of the cycle costs of literacy programs. For the range of unit costs and completion rates mentioned above, the range of cycle costs per literacy program completer would be Rs 200 to Rs 900. With another 15 to 25 percent being added for managerial and administrative expenses, the range of those cycle costs would be Rs 230 to Rs 1,130.

2.7 RETURNS TO EDUCATION

Evidence on the contribution of education to economic growth is summarized above in Section 2.2.5. This present section is based on the foundation summarized in Section 2.2.5, here only adding evidence specific to Nepal.

2.7.1 Agriculture

The returns to education in the rural areas discussed in this section reflect the effects of the current education provided. Further investment that improves its quality could increase the current returns-per-farmer reported here. Recent reports have documented the problem of primary and secondary education in the rural areas, including Chapters 3 and 4 of this assessment. Manandhar (1986, pp. 6-7) has graphically described the high drop-out rates, high non-attendance rates, the very limited participation by girls and economically disadvantaged groups, and the use of schools that are often mud-built structures with leaky roofs, no drinking water, no toilets, no blackboards, and no vermin-proof storage facilities for textbooks. Teaching is generally a second job for many of the teachers.

The recent report on technical and vocational education *(Strategies for National Manpower Development in Nepal*, ILO, 1986, p. 1) presents as its first finding the "high rate of underemployment in the agricultural sector". Directly relevant to this underemployment, its second finding is that "there remain serious problems of illiteracy, and approximately one third of the primary school age group drop out before reaching secondary school." Other research, referred to above in Section 2.2.5.3, develops the importance of prior schooling to the amounts of on-the-job learning that occurs, as well as the point that illiterates are too costly for firms to employ and train.

In a study of the physical productivity of individual farmers in the Tarai region and in the Hill region in Nepal, Pudasaini (1982, p. 21) found, after controlling for the number of hectares cultivated, the economic circumstances of the parents, the education of the parents, and other factors, that farmers with more education are employing technologically more progressive inputs (e.g., hybrid seed, fertilizer, pesticides, animal genetics) and also have more contact with extension services than do illiterate farmers. This enhancement of innovative ability, and interaction with extension and other agencies, led to a 10.7 percent increase in output contributed by the completion of one additional year of primary education in the Tarai region and a 10.5 percent increase for each additional year of primary education in the Hill region as shown in Table 2.80.

Although the percent increase in output is similar in the Tarai and Hills, the absolute increase in the bushels of rice produced in the Tarai is larger than the increment to the bushels of corn produced in the Hills largely because the average output of all farms in the Tarai is larger. Each year of lower secondary education adds a smaller 5.2 and 6.6 percent increase to output in each district, respectively. One year of additional education at each level beyond lower secondary continues to contribute percentage increments to agricultural output comparable to those in the lower secondary years. But education at these more advanced levels may contribute even more to small enterprise and urban industrial employment, increasing industrial and office employment for underemployed rural dwellers. Each additional year of education on the average for all levels increases output by 5.2 percent in the Tarai and 5.9 percent in the Hill region.

Table 2.80

Contribution of Education to Agricultural Output

	Tarai		Hill	
Education Level	Percent	Increase in Output (Bushels of Rice)	Percent	Increase in Output (Bushels of Corn)
Primary	10.7	2,270	10.5	1,037
Lower Secondary	5.2	1,103	6.6	652
High School	3.7	785	5.8	573
College	6.5	1,379	6.8	671
Average	5.2	1,103	5.9	583

Source: Pudasaini (1982, p. 35) based on interviews with 205 randomly selected farmers in the Bara district and 149 in the Gorkha district of Nepal in 1979-1980.

These results are 70 percent larger than the main conclusion in the well known book by Jamison and Lau (1982), *Farmer Education and Farm Efficiency*. Drawn from the results of a number of independent studies in Thailand, Korea, and Malaysia, as well as their own research, they conclude that each additional year of elementary and secondary education raises the physical output in agriculture in South East Asia by 3.05 percent, or by an average of 24 percent for those who have completed the lower secondary level as compared to those with no schooling. These results in turn are not inconsistent with those obtained by Yamada and Ruttan (1980, p. 560), who controlled for farm size and other inputs such as fertilizer used and amounts of machinery or animal power. They found that the net

contribution of education was about 30 percent of the net increase to agricultural output.

There are significant implications of these results for Nepal. The combined effect of high drop-out rates and high repetition rates in Nepal is shown by the net enrollment ratios in Table 2.81 below. These rates are extremely high by developing country standards, especially at the first grade level where they are 22 percent and 39 percent, respectively. Reducing Pudasaini's estimates by 70 percent, on the grounds that Bara is one of the most prosperous districts, and Gorkha also is unusual in that it is a Hill district that has an access road and has received special attention in other ways, a crude estimate can be made of the effect on agricultural output of increased investment in primary education in Nepal. If these drop-out rates were reduced by making an additional investment that improves the quality and reduces the private costs of primary education, just one additional year in primary school could raise agricultural output by 99,600 metric tons, or 2.6 percent, as can be seen in the last column of Table 2.81. Achieving universal primary education, using Pudasaini's estimates of the effect reduced conservatively to Jamison and Lau's level, would raise agricultural output by 222,000 metric tons or 5.8 percent. Universal primary and universal lower secondary education would raise annual output by 254 metric tons, or 6.6 percent. Although late monsoons would of course depress output, this effect of education could approximately be expected to operate in the dry years as well, raising output over what it otherwise would have been without the education.

The cost of one additional year of primary education to the government for all children aged 6-10 not now completing primary school at Rs 280.74 per student in 1987-1988 (estimate based on 1985-1986 unit costs from Table 2.71 raised by 15 percent to allow for inflation) would be Rs 613 million. The value added by this one additional year of primary education to agricultural output in 1987 and in each year thereafter would have been Rs 863 million. (This is based on actual agricultural GDP of Rs 33,210 million in 1986 from Section 2.2.2.1 from the *Economic Survey*, times the 2.6 percent increment that this primary education for new entrants to the labor force would have contributed as shown in line 1 of Table 2.81). Such an investment therefore would pay for itself within the first year after these students entered the labor force, if these assumptions are valid. Since this increment would repeat itself in following years, this is somewhat over a 100 percent rate of return and a very good investment.

Table 2.81
Potential Agricultural Output Effects of Additional Investment in Basic Education

If All Rural Children Complete:	Population[1] (Age 6-10, 11-12,13-15 in Thous.)	Net Enrollment Ratio[2] 1984	Enrollment After Investment in Quantity	New School Leavers as % of All Farmers[4]	% Increment per School Leavers[3] (58.6% of[6])	1986/87 Output Metric Tons (in Thousands)[3]	Increment to Output (in Thousands)	% Increase in Output (After 2-3 Years)
Primary: One addtl. yr.	2,290	55.9%	75.9%	42.0%	6.2%	3,826	99.6	2.6%
Primary Level: Grades 1-5	2,290	55.9%	100.0%	93.8%	6.2%	3,826	222	5.8%
L. Secondary: One addtl. yr.[5]	742	14.4%	64.0%	13.7%	3.5%	3,826	18	.4%
L. Sec. Level: Grades 6-7	742	14.4%	100.0%	23.7%	3.5%	3,826	32	.8%
U. Secondary: One addtl. yr.[5]	927	13.9%	47.0%	17.3%	3.9%	3,826	26	.7%
TOTAL INCREMENT TO OUTPUT								
All Children Ages 6-15 Retained One addtl. yr.	3,959			73.2%		3,826	114	3.7%
Universal Primary and Universal Lower Secondary	3,959			100.0%		3,826	254	6.6%

[1] Source: Moec (1986), A Brief Overview of Nepal's Education Statistics, p. 7.

[2] Source: Ibid (p. 8). This shows students enrolled who are of the correct age (e.g., ages 6-10 in Grades 1-5), thereby correcting for the overstatement that occurs due to higher repetition rates (39% in primary).

[3] Source: Ministry of Finance (1987), Economic Survey, p. 4 of Tables.

[4] This assumes that 91.15% of the economically active population, or 5,378,542 workers, are in agriculture. Source: National Planning Commission (1987), Population Monograph of Nepal, Table 9.2, p. 204.

[5] These lines assume a one-year increment for all children in the relevant age bracket, a somewhat unrealistic assumption unless universal education at the primary level (and in the case of upper secondary, also at the lower secondary level) has previously been achieved.

[6] Pudasaini (1982, p. 35).

The move to universal primary education would cost the government approximately Rs 280.74 per child times the 5.049 million additional child years of education that would be received by those now repeating grades and those dropping out, or Rs 1,417 million. This is a gigantic sum, equal to 3.6 times the current primary education budget, or 3.9 times the current higher education budget. However, the increase in agricultural output alone of such a move to universal primary education could be estimated on the same basis as above to contribute an addition of approximately Rs 1,926 million per year to the value of agricultural output. The value of one year's increment to output alone would cover the investment costs of educating this one group of school children before they enter the labor force.

The individual future farmers who receive the benefit of the additional education before they leave the schools can be expected to produce at this higher rate not just for one year but throughout their working lives. A primary school leaver of age 12 at the end of lower secondary school (or at the end of Grade 5 if he or she has had to repeat some grades) can expect to live 47 additional years, or to age 59. This is a life expectancy that holds at that age for both males and females separately, based on separate expectation of life tables for males and for females in the NPC's *Population Monograph of Nepal* (1987, pp. 354-5). This approximately 30 percent increment of a primary school graduate over an illiterate with no education therefore can be expected to persist not just for one year, but for the remaining 40 or so years of the individual's working life.

The costs to the government for educating this group of individuals is a one time cost, however. There are forgone earnings costs to the parents as the child remains in school, that are both discussed and estimated in Section 2.2.2.5 above. But for the purposes here, if it is assumed that the forgone production as children age 10 or younger are in school rather than working at home is negligible, or are offset by the child care services that the school provides, then the costs to the government for the primary schools are approximately equal to the total social costs of the investment. On this basis, the social rate of return, or the stream of benefits in the form of higher agricultural production discounted back to its present value and related to the costs, is very high and in fact over 100 percent. This estimate would need to be reduced to the extent that the effect of the education in agriculture cannot be double when there is more than one person that receives the education in each family. However, this may be offset as lower secondary education of more females delays marriage and lowers fertility rates, thereby raising per capita living standards.

2.7.2 Industrialization

The preceding discussion has disregarded the fact that the main source of the labor force for small and medium enterprises and for most industry is the output of the primary and lower secondary school systems, 91 percent of which is in the rural areas. This would decrease the increment to agricultural output. But industry simply cannot operate with an illiterate labor force, such as the 67 percent illiteracy rate among males and 90 percent illiteracy rate among females age 10 years and over found in rural Nepal where 91 percent of the population lives (1987, *Population Monograph of Nepal*, p. 129).

These rural males and females age 13-15 and slightly older comprise the main pool of labor for industrialization. But this labor without primary education and at least lower secondary education, although available at extremely low wages, is too costly for industries to train. There are almost no jobs in small firms that can be performed without basic literacy, numeracy, habits of dependability, and trainability, all of which are too costly for an individual firm to provide. These costs must be borne by the parents and those in the broader community with the ability to pay. The noticeable result is that many basic construction workers and some clerical workers are imported from India, and native Nepalese do not receive the benefit of training on the job or of "learning by doing." Work habits are learned primarily on the job, not in school. But firms cannot afford to train persons in basic generalizable skills since they cannot recover these costs as the workers leave for other higher paying jobs (see Becker, 1983, Ch. 2). This lack of a trainable labor force with basic literacy, numeracy, and related skills is a major constraint to economic growth and to industrialization in Nepal.

Earnings data comprise the best measure of the relative needs in the economy for employees with different levels of education, and with different types of education at each level. Earnings in the private sector suggest where the relative growth bottlenecks lie, and suggest as well what the education system should respond to. Salaries in the government sector usually crudely reflect the salaries paid for comparable skills in the private sector, although they are usually somewhat below the free market for comparable skills (Psacharopoulos, 1983).

Earnings data exist in Nepal for individuals at each education level, from no education to primary, lower secondary, and higher levels. These data cover the private industrial and small enterprise sector, and are in the nationwide stratified random sample of 6,000 households of the 1986-87 *Household Budget Survey*

conducted by the Nepal Rastra Bank to estimate weights in the Consumer Price Index. The data permit separate treatment of the returns to education within industry from those in the government sector, which then can be related to the costs of each type of education given in Section 2.6 above. The returns to education for industrialization (which is likely to be more and more of a private sector expansion as development occurs) therefore can be seen largely independent of the returns to education within the civil service. The analyses in this chapter can be refined when these data become available.

2.7.3 Returns Relative to Public Employment Costs

It is possible to estimate the age-earnings profiles of civil servants by using civil service pay scales for 1984-1985 for Non-Gazetted and Gazetted administrators. This is done in Tables 2.82, 2.83, and 2.84 below. The number of years in service is shown in the first column (which is related to age), the monthly earnings of an employee at the next lower level of education in Column 2, the monthly earnings upon completion of the requisite level of education in Columns 4 and 6, and the net earnings differential for each year converted to an annual basis in Columns 5 and 7. The cycle cost for the level of education required plus the forgone earnings cost of each level of education is shown at the bottom of each table, where they are added to complete the total investment costs. Then, assuming a 40-year working life for the average government employee, the rate of return is found that will discount the stream of net earnings differentials over the working life back to their present value and set them equal to the total investment costs of the education required for each civil service position.

The social rates of return for each level of education for those entering the civil service are summarized in Table 2.85. The social rate of return for those completing lower secondary education and entering the civil service is 29.1 percent, a very good rate of return assuming that the salary scales reflect approximately what is paid for comparable levels of skills in the private sector and reflect at least in an approximate way the individuals' productivity. Rates of return of 15 percent to completers of lower secondary education (without an SLC pass) also are quite respectable, and comparable to the 13-17 percent social rates of return that are the average found in 30 developing countries.

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Table 2.82

Age-Earnings Profiles for 3rd and 4th Class Non-Gazetted Administrators Based on 1984/1985 Salary Scales (Rupees)

Education Level/Year	Peon under Grade 8	Add'l Post	Non-Gazetted 4th Class Grade 8	Non-Gazetted 4th Class Annual Earnings Differential	Non-Gazetted 3rd Class Under SLC	Non-Gazetted 3rd Class Annual Earnings Differential
Initial Cost				-2,816		-4,794
1	410	490	475	689	545	559
2	416	498	484	728	556	585
3	422	506	493	767	567	611
4	428	514	502	806	578	637
5	434	522	511	845	589	663
6	440	530	520	884	600	689
7	446	538	529	923	611	689
8	452	546	538	962	622	689
9	458	554	547	1,001	633	689
10	464	562	558	1,053	645	702
11	470	570	569	1,105	657	715
12	477	570	580	1,157	669	728
13	484	570	591	1,209	681	741
14	491	570	602	1,261	693	897
15	498	570	613	1,313	705	1,053
16	505	570	624	1,365	717	1,209
17	512	570	624	1,274	717	1,209
18	519	570	624	1,183	717	1,209
19	526	570	624	1,092	717	1,209
20	534	570	624	1,092	717	1,209
21	540	570	624	1,092	717	1,209
22	540	570	624	1,092	717	1,209
23	540	570	624	1,092	717	1,209
24	540	570	624	1,092	717	1,209
25	540	570	624	1,092	717	1,209
26	540	570	624	1,092	717	1,209
27	540	570	624	1,092	717	1,209
28	540	570	624	1,092	717	1,209
29	540	570	624	1,092	717	1,209
30	540	570	624	1,092	717	1,209
31	540	570	624	1,092	717	1,209
32	540	570	624	1,092	717	1,209
33	540	570	624	1,092	717	1,209
34	540	570	624	1,092	717	1,209
35	540	570	624	1,092	717	1,209
36	540	570	624	1,092	717	1,209
37	540	570	624	1,092	717	1,209
38	540	570	624	1,092	717	1,209
39	540	570	624	1,092	717	1,209
40	540	570	624	1,092	717	1,209
41	540	570	624	1,092	717	1,209
42	540	570	624	1,092	717	1,209
43	540	570	624	1,092	717	1,209
44	540	570	624	1,092	717	1,209
45	540	570	624	1,092	717	1,209
46	540	570	624	1,092	717	1,209
47	540	570	624	1,092	717	1,209
48	540	570	624	1,092	717	1,209
49	540	570	624	1,092	717	1,209
50	540	570	624	1,092	717	1,209
51	540	570	624	1,092	717	1,209
52	540	570	624	1,092	717	1,209
53	540	570	624	1,092	717	1,209
54	540	570	624	1,092	717	1,209
55	540	570	624	1,092	717	1,209
56	540	570	624	1,092	717	1,209
57	540	570	624	1,092	717	1,209
58	540	570	624	1,092	717	1,209
59	540	570	624	1,092	717	1,209
60	540	570	624	1,092	717	1,209
61	540	570	624	1,092	717	1,209
62	540	570	624	1,092	717	1,209
63	540	570	624	1,092	717	1,209
Present Value at 10%	60,075	69,908	71,039	9,577	81,792	7,964
40-Year Worklife	58,697	5,266	69,447	9,369	79,962	7,737
Instructional Years per Cycle			2.35		3.47	
Forgone Earnings			974		1,688	
Total Costs			2,816		4,794	
Estimated NPV at 10% 40-Year Worklife				6,552		2,943
Estimated Internal Rate of Return 40-Year Worklife			Lowest Secondary	0.29154	Secondary Yrs 8-9	0.15022

Table 2.83

Age-Earnings Profiles for 1st and 2nd Class Non-Gazetted Administrators Based on 1984/1985 Salary Scales (Rupees)

Year	Non-Gazetted 2nd Class SLC	Non-Gazetted 2nd Class Annual Earnings Differential	Non-Gazetted 1st Class Certificate	Non-Gazetted 1st Class Annual Earnings Differential	Add'l Post	Standard Earnings Profile
Initial Cost		-12,485		-24,962		
1	650	364	815	1,368	1,015	475
2	663	390	831	1,677	1,035	484
3	676	403	847	1,716	1,055	493
4	689	416	863	1,755	1,075	502
5	702	429	879	1,794	1,095	511
6	715	442	895	1,833	1,115	545
7	728	455	911	1,846	1,135	556
8	741	468	927	1,859	1,155	567
9	754	481	943	1,872	1,175	578
10	769	676	961	1,911	1,195	589
11	784	871	979	1,950	1,215	650
12	799	1,066	997	1,989	1,215	663
13	814	1,261	1,015	2,028	1,215	676
14	829	1,456	1,033	2,262	1,215	689
15	844	1,651	1,051	2,496	1,215	702
16	859	1,846	1,069	2,730	1,215	815
17	859	1,846	1,069	2,730	1,215	831
18	859	1,846	1,069	2,730	1,215	847
19	859	1,846	1,069	2,730	1,215	863
20	859	1,846	1,069	2,730	1,215	879
21	859	1,846	1,069	2,730	1,215	895
22	859	1,846	1,069	2,730	1,215	911
23	859	1,846	1,069	2,730	1,215	927
24	859	1,846	1,069	2,730	1,215	943
25	859	1,846	1,069	2,730	1,215	961
26	859	1,846	1,069	2,730	1,215	979
27	859	1,846	1,069	2,730	1,215	997
28	859	1,846	1,069	2,730	1,215	1,015
29	859	1,846	1,069	2,730	1,215	1,033
30	859	1,846	1,069	2,730	1,215	1,051
31	859	1,846	1,069	2,730	1,215	1,069
32	859	1,846	1,069	2,730	1,215	1,069
33	859	1,846	1,069	2,730	1,215	1,069
34	859	1,846	1,069	2,730	1,215	1,069
35	859	1,846	1,069	2,730	1,215	1,069
36	859	1,846	1,069	2,730	1,215	1,069
37	859	1,846	1,069	2,730	1,215	1,069
38	859	1,846	1,069	2,730	1,215	1,069
39	859	1,846	1,069	2,730	1,215	1,069
40	859	1,846	1,069	2,730	1,215	1,069
41	859	1,846	1,069	2,730	1,215	1,069
42	859	1,846	1,069	2,730	1,215	1,069
43	859	1,846	1,069	2,730	1,215	1,069
44	859	1,846	1,069	2,730	1,215	1,069
45	859	1,846	1,069	2,730	1,215	1,069
46	859	1,846	1,069	2,730	1,215	1,069
47	859	1,846	1,069	2,730	1,215	1,069
48	859	1,846	1,069	2,730	1,215	1,069
49	859	1,846	1,069	2,730	1,215	1,069
50	859	1,846	1,069	2,730	1,215	1,069
51	859	1,846	1,069	2,730	1,215	1,069
52	859	1,846	1,069	2,730	1,215	1,069
53	859	1,846	1,069	2,730	1,215	1,069
54	859	1,846	1,069	2,730	1,215	1,069
55	859	1,846	1,069	2,730	1,215	1,069
56	859	1,846	1,069	2,730	1,215	1,069
57	859		1,069	2,730	1,215	1,069
58	859		1,069	2,730	1,215	1,069
59	859		1,069	2,730	1,215	1,069
60	859		1,069	2,730	1,215	1,069
61	859		1,069		1,215	1,069
62	859		1,069		1,215	1,069
63	859		1,069		1,215	1,069
Present Value at 10%	97,669	8,792	122,018	20,400	147,536	83,243
40-Year Worklife	95,477	8,473	119,291	19,887	144,436	80,515
Education Cycle Cost	7,545		22,284			
Instructional Years Per Cycle	8.43		4.00			
Forgone Earnings	4,940		2,678			
Total Costs	12,485		24,962			
Estimated NPV at 10% 40-Year Worklife		-4,012		-5,075		
Estimated Internal Rate of Return 40-Year Worklife		SLC 0.07452		Certificate–1st 2 yrs University 0.0812		

Table 2.84

Age-Earnings Profiles for Gazetted Administrators

Based on 1984/1985 Salary Scales (Rupees)

Education Level/Year	Section Officer Graduate	Asst Secy Graduate	Under Secy Graduate	Joint Secy Graduate	Add'l Secy Graduate	Special Class	Standard Earnings Profile Graduate	Annual Earnings Differential
								-33,464
1	1,300	1,500	1,740	2,320	2,675	3,075	1,300	5,681
2	1,340	1,545	1,790	2,390	2,755	3,175	1,340	5,993
3	1,380	1,590	1,840	2,460	2,835	3,275	1,380	6,305
4	1,420	1,635	1,890	2,530	2,915	3,375	1,420	6,617
5	1,460	1,680	1,940	2,600	2,995	3,475	1,460	6,929
6	1,500	1,725	1,990	2,670	3,075	3,474	1,500	7,241
7	1,540	1,770	2,040	2,740	3,075	3,475	1,540	7,527
8	1,580	1,815	2,090	2,810	3,075	3,475	1,580	7,813
9	1,620	1,860	2,145	2,880	3,075	3,474	1,620	8,099
10	1,665	1,910	2,200	2,950	3,075	3,475	1,665	8,450
11	1,710	2,010	2,255	3,020	3,075	3,475	1,725	8,996
12	1,755	2,060	2,310	3,020	3,075	3,475	1,770	9,347
13	1,800	2,110	2,365	3,020	3,075	3,475	1,815	9,698
14	1,845	2,110	2,420	3,020	3,075	3,475	1,860	10,283
15	1,890	2,110	2,420	3,020	3,075	3,475	1,910	10,933
16	1,935	2,110	2,420	3,020	3,075	3,475	1,960	11,583
17	1,935	2,110	2,420	3,020	3,075	3,475	2,010	12,233
18	1,935	2,110	2,420	3,020	3,075	3,475	2,060	12,883
19	1,935	2,110	2,420	3,020	3,075	3,475	2,110	13,533
20	1,935	2,110	2,420	3,020	3,075	3,475	2,110	13,533
21	1,935	2,110	2,420	3,020	3,075	3,475	2,200	14,703
22	1,935	2,110	2,420	3,020	3,075	3,475	2,255	15,418
23	1,935	2,110	2,420	3,020	3,075	3,475	2,310	16,133
24	1,935	2,110	2,420	3,020	3,075	3,475	2,365	16,848
25	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
26	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
27	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
28	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
29	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
30	1,935	2,110	2,420	3,020	3,075	3,475	2,420	17,563
31	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
32	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
33	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
34	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
35	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
36	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
37	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
38	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
39	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
40	1,935	2,110	2,420	3,020	3,075	3,475	3,020	25,363
41	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
42	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
43	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
44	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
45	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
46	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
47	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
48	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
49	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
50	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
51	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
52	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
53	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
54	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
55	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
56	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
57	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
58	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
59	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
60	1,935	2,110	2,420	3,020	3,075	3,475	3,075	26,078
61	1,935	2,110	2,420	3,020	3,075	3,475	3,075	
62	1,935	2,110	2,420	3,020	3,075	3,475	3,075	
63	1,935	2,110	2,420	3,020	3,075	3,475	3,075	
Present Value at 10%	209,407	237,027	273,048	356,547	386,188	439,844	223,726	96,707
40-Year Worklife	204,470	231,643	266,873	348,841	378,342	430,977	215,880	91,802
Education Cycle Cost	22,284	22,284	22,284	22,284	22,284	22,284	22,284	
Instructional Years Per Cycle	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
Forgone Earnings	0	10	5,440	6,270	7,260	9,700	11,180	
Total Costs	22,284	22,294	27,724	28,554	29,544	31,984	33,464	
Estimated NPV at 10% 40-Year Worklife								58,338
Estimated Internal Rate of Return 40-Year Worklife								BA ROR 0.21723

Table 2.85
Social Rates of Return to Investment in Education in Civil Service Employment

Education Level	Instructional Yrs/Cycle	Rate of Return
Primary Grades (1-5)		(a)
Lower Secondary (6-7), Non-Gazetted 4th Class	2.35	29.1%
Secondary (8-9) only, Non-Gazetted 3rd Class	3.47	15.0%
Secondary (10, SLC) Non-Gazetted 2nd Class	8.43	7.5%
Certificate (11-12), Non-Gazetted 1st Class	4.00	8.0%
Bachelor (13-14), Assist. Under, and Joint Secretary (b)	4.00	21.7%

(a) Not available due to lack of a salary scale for those with no primary education.

(b) Based on average salaries for persons with the same number of years in service at these grades.

Rates of return to upper secondary were on the low side, not due to low salary scales but instead due to the high cycle costs. An average of 8.43 years to complete a school leaving certificate reflects very low internal efficiency at that level.

The 21.7 percent social rate of return to a Bachelor's degree is high by international standards. Since higher education is nearly free and so heavily subsidized in Nepal, the private rate of return to the individual student is still higher than this. As with all free or nearly free goods, a large pent-up demand and queuing for admission to higher education is to be expected. But this remarkably high rate of return to a Bachelors degree assumes that all those with a Bachelors reach the ranks of section officer, assistant secretary, under secretary, joint secretary, or secretary. Not all will do this but, on the other hand, the formal salary scale does not include income from second jobs or other sources. It therefore is hard to say whether the 21.7 percent understates or overstates the returns to a Bachelors degree in the civil service.

2.7.4 Education and Population Growth

One of the most important relatively recent discoveries, especially for countries such as Nepal where high population growth rates are a serious problem, is that the education of women lowers fertility rates. The relation to the education of the husband is much weaker, and not as consistent (e.g., Rodriguez and Cleland, 1980). The positive effect of the education of women on per capita growth rates is therefore a double effect. It not only facilitates more women entering the labor force of the market economy, thereby contributing to GDP (assuming that there is underemployment and/or lower productivity in agriculture), but it also lowers population growth rates thereby contributing to raising per capita standards of living.

The reason that women's education lowers fertility rates is developed in Schultz (1974) *Economics of the Family*, other Journal of Political Economy articles since that time, and, for Nepal, in Y.B. Karki (1982) *Fertility and the Value of Children: A Study of Rural and Urban Populations in Nepal.* The reason is primarily that the increase in the value of the woman's time causes her to shift away from the more time-intensive activities, such as rearing more children, toward those activities where her education can be used to better advantage, including entering the labor force of the market economy. This same pattern is noticed in the effects of education on the allocation of women's time even within the home, away from more children and toward a greater investment of time in the health and education of fewer children. In Nepal, a woman with lower secondary education has some alternative options, such as primary school teaching or small enterprise cottage industry jobs. The woman who remains illiterate or has only primary education in Nepal is known to marry two years earlier than one with lower secondary education (see National Planning Commission, 1987, p. 117). The girl without lower secondary education has few attractive alternative options other than rearing children.

This strong effect normally occurs in many other countries in Asia and the Pacific as well as between those women who have achieved at least a lower secondary education beyond the primary level, as one would expect from theory (United Nations, 1980, pp. 162-5). However, as may be seen for Nepal in Table 2.86 below, just the literacy of the wife as provided by basic education has a low but significant negative effective on fertility, after controlling for other influences, of -.08 on the number of living children that the family actually has. It also has a low though highly significant negative effect of -.10 on the desired family size. These wives are more likely to be aware of the existing technology of

contraceptives, enabling them to plan the sizes of their families. But more important, from the point of view of the economic behavior, the alternative options that then become available to them give them an incentive to use birth control technology.

Tuladhar (1982) finds little connection in Nepal between the education of the husband and the number of children born in the family and in fact a slightly positive effect of the education of males in the Tarai counterbalancing a slightly negative effect on the number of children in the Hill region. But this relatively negligible effect of the husband's education is consistent with what has been found in studies in other countries.

Table 2.86

Net Correlation of Education with Fertility:

Gorkha District, 1979

Wife	Living Children	Desired Family Size (a)
Literacy	-.08*	-.10**
Education Level	-.04	-.04

Source: Karki (1982, Table 12.6).
* Significant at .05 level
** Significant at .01 level

(a) Desired family size is the number of living children plus the current pregnancy, if any, plus the number of additional children wanted.

In Table 2.86, line 2, the number of years of education of the wife, which would include the very large population of first grade female drop-outs in Nepal, is less significant as would be expected from the theory. Nevertheless, the number of years of education of the wife measured in this way is still seen to have a consistently negative relation to the number of children the family has (even though their health may be better and the earlier death rate may have been lower), as well as to the desired family size.

2.7.5 Higher Education Cost/Benefit Analysis

Higher education has a longer run strategic role in economic development. Most studies find positive effects on the earnings of graduates, but are unable to find significant effects on per capita growth, except after about a 10-12 year delay (see McMahon, 1987). There is a negative effect on growth if the students emigrate. Higher education first needs to meet the needs for technically competent civil servants, university faculty, and physicians, but the effects on a nation's output as the students of returning faculty in turn enter the labor force are long delayed. Higher education also needs to provide advanced training in skills necessary to development in areas where a nation has a natural comparative advantage, as in hydroelectric power, irrigation, oil exploration, and tourism, for example, in the case of Nepal. This helps to place the necessary technology transfer and adaptation in the hands of Nepalese. These are strategic "thrusts" designed to get something going where there is clear long term basic potential and they will not always necessarily be the most cost effective in the short run when the benefits are measured only in terms of the salaries that the civil servants, university faculty, or the scientists earn.

As development proceeds, higher education is increasingly called upon to provide the technical education and skills needed by the private sector: the engineers, agricultural and agri-business specialists, accountants, and production and financial managers. The U.S. Land-Grant University system offers one successful example, which has also been applied quite successfully in India. It expands the responsibilities of universities to also train people in the more applied fields of engineering, business, and agriculture for the private sector. As this occurs, rate of return analysis of higher education becomes increasingly relevant because the earnings and employability of graduates indicate where the growth bottlenecks are.

For Nepal, there has been one early and good cost benefit analysis of higher education conducted (Pandey, 1976). He drew a stratified random sample of 291 educated employed persons in Kathmandu in 1974-1975, from which the social and private rates of return shown in Table 2.87 below were calculated. These were the first known rates of return ever calculated for Nepal.

The results shown in Table 2.87 below indicate that the social and private rates of return are very high. The social rate of return to the General Undergraduate (two-year) Certificate for example is 18.2 percent, and the private rate of return to the student is a still larger 22.4 percent. This two-year degree therefore would appear to be a good investment, in spite of the costs, both for the

student and for society. This is in spite of the fact that all the rates of return shown are exactly one half of those reported by Pandey because as the result of interviews at the university conducted in connection with the estimation of the unit costs of higher education (see Section 2.6.6. above), it was discovered that it takes on the average four years to complete each program, twice the standard length of the program that was used for the computation by Pandey. The years to complete each program are shown in Table 2.87.

The fact that the private rate of return is above the social rate, not only at this level but at all levels shown in Table 2.87, reflects the fact that higher education is highly subsidized in Nepal, especially the two- and four-year programs for professional students. Cost recovery, which is not practical at the present time, would reduce the internal inefficiency that exists as a result of students taking too long to complete each of these programs.

Table 2.87

Social and Private Rates of Return to Higher Education: 1974-1975

Type of Program	Program Length	Years to Complete	Rates of Return Social	Rates of Return Private
General Undergraduate Certificate	2 years	4	18.2%	22.4%
General Bachelors	4 years	8	11.5%	14.6%
"Professional" Undergraduate Certificate	2 years	4	9.6%	12.8%
Professional Bachelors	4 years	8	6.4%	7.6%
Post-Graduate Degrees	2 years	3	5.7%	6.5%

Source: Pandey (1976)

The social rates of return to professional education, both at the undergraduate and at the graduate level, are a lower 9.6 percent and 6.4 percent, largely because the costs are higher and the salaries received by graduates are not commensurately higher. The private rates of return to professional Bachelors degrees are not as far above the social rates of return as they are in other curricula because many of these professional Bachelors degrees were obtained in India, and the private families as a result bore a much larger share of the costs.

Post graduate degrees yield a smaller approximately 6.79 percent social rate of return. But this is typical of the pattern worldwide, and the justification for investing at this level must be more in terms of the longer run strategic need to train university faculty, and persons in hydroelectrics, and other strategic engineering, agriculture, and business fields as indicated above.

2.8 CONCLUSIONS

The economic and financial analysis within this chapter has focussed primarily on how the contribution of education to raising per capita living standards can be increased. It has also suggested ways to provide a more decentralized basis for financing education. The 12 conclusions of the analysis are presented below, based on the evidence set forth above.

2.8.1 Education and Economic Growth Conclusions

Conclusion 1. Contribution to growth. There is a wide range of evidence worldwide, consistent with evidence found in Nepal, that education makes a very significant contribution to economic growth. In some cases this can be a larger contribution than investment in physical capital.

Both types of investment are necessary, in education and in physical capital. A balanced strategy that lets the relative rates of return influence the rate of increase for each type of investment appears to work the best. This same pattern of quite high returns to investment in education appears in all the available evidence on the returns to education in Nepal.

Conclusion 2. Underdeveloped human resources. The rates of saving and investment in human resource development as well as in physical capital have been relatively low in Nepal (Section 2.2.1.2).

The result is a large and relatively underdeveloped human resource base which is a major constraint to per capita growth and industrialization.

Conclusion 3. Female education benefits. There is also evidence in Nepal, consistent with studies worldwide, that when women are retained in school through the lower secondary level the potential for slowing the population growth rate is considerable.

The evidence suggests that this could increase the age at marriage in Nepal by two years, and also lower fertility rates (Section 2.7.4). This could influence an increase in per capita growth and per capita living standards. Other economic effects to be expected from the education of women are the positive effects this has on the health of husbands and children. Also, there is a more efficient utilization of this under-utilized resource as women enter the market economy. When these effects of population growth and labor force entry are added to the direct effects on productivity, the best evidence that exists suggests that education contributes from 33 to 58 percent of the explanation for increases in per capita living standards.

Conclusion 4. Industrialization. Because learning on the job is highly correlated with amount of prior schooling, and because costs of separate vocational education schools are very high, causing the rates of return to be relatively lower, the contribution of basic education and secondary general education to the growth and industrialization process is larger.

Although some expansion of skill-based training is strategically essential (e.g., training the trainers), a nationwide system of separate vocational schools teaching narrowly defined skills would not likely be cost effective.

This is not to say that terminal courses in applied skills are not needed. Subjects such as vocational agriculture, practical nursing, computer programming, bookkeeping, electrical, and craft skills help the students terminating at that level to relate to their first job. A cadre with specific skills must be trained, which is a strategic justification for a few special technical schools designed to develop persons who can train others.

2.8.2. Fiscal Capacity Conclusions

Conclusion 5. Limited resources. Very low per capita economic growth averaging only 0.1 percent per year severely limits both public and private resources available to investment in education (Section 2.2.2.1 and Section 2.3.7).

Conclusion 6. Efficiency and equity. Improvements in the efficiency and equity of education financing could greatly increase the fiscal capacity of the central and local government to finance the needed improvements in primary and lower secondary education. Some aspects related to this are the following:

a. Local schools need a stable revenue base to cover the building costs, textbook and other fees charged, and the 25 percent of the teachers' salaries at the lower secondary level and 50 percent of the teachers' salaries at the upper secondary level now covered locally.

b. The property tax on urban real estate and major village structures has been growing as a possible source of revenue (Section 2.2.3.1). This is the revenue source usually regarded as the most workable tax handle available to localities.

c. Nepal's drop-out rate during and after Grade 1 is extremely high by developing country standards (Section 2.6.2.2).

d. The present grants-in-aid system encourages inefficiency. School aid elsewhere is often based on average daily attendance of pupils throughout the year, which would give headmasters, teachers, and School Management Committees very strong incentives to reduce drop-outs.

e. The current school financing formula that reimburses on the basis of teachers salaries rather than average daily attendance, and the lack of a local supplemental school tax rate on the value of structures, are two key aspects of school financing that contribute to internal inefficiency and to underutilized fiscal capacity for the local schools.

2.8.3 Manpower Conclusions

Conclusion 7. Insufficient supply. The total manpower available has been insufficient for supporting development programs.

Conclusion 8. Low unemployment. Unemployment in recent years has generally been low. There are short-run cyclical factors that create some temporary unemployment. But this is related to fluctuations in demands and not relevant to the education system which is concerned with much longer run investments in human resource development.

Conclusion 9. Manpower imbalance. Over expansion of specific skill training at advanced levels can create manpower imbalances. The remedy is to avoid over expansion, to use tracer studies and manpower data to constantly monitor the system, and to "top off" the needs in specific skill areas with general education graduates who are trainable by existing cadres already on the job. The manpower situation is characterized by a surplus of unskilled laborers and illiterates on the

one hand, and a shortage of lower- and middle-level technical and management skills, and persons who are trainable on the job, on the other.

Conclusion 10. Job-search vs. unemployment. All secondary school graduates normally require some job-search time. This is frequently confused with unemployment of secondary school graduates. Tracer studies, that often find the secondary school leaver employed nine months later, reveal this pattern.

2.8.4 Costs and Rates of Return Conclusions

Conclusion 11. Rates. Social rates of return to the different levels of education in Nepal are estimated to be as follows:

Primary Education	over 100%	Section 2.7.1
Lower Secondary	29.1%	Section 2.7.3
Upper Secondary (SLC)	7.5%	Section 2.7.3
College (Certificate) (1-12)	8.0%	Section 2.7.3
Bachelors	21.7%	Section 2.7.3

Conclusion 12. Higher education. Within higher education, the evidence suggests that the rates of return to the general undergraduate certificate and Bachelors (11.5 to 18.2 percent) are highest. Professional undergraduate certificates and Bachelors returns are lower because the costs are higher (Section 2.7.5). Cycle costs in most curricula are increased by the average of four years taken to complete two-year programs. There are strategic reasons for certain kinds of investment in higher education, related to the human resource requirements for the nation's longer run comparative advantage, and the need to continue to develop skillful civil servants.

2.9 RECOMMENDATIONS

These recommendations are based on the evidence and conclusions in this chapter and are consistent with the recommendations made by the National Education Committee (1983) study, *The Effects of New Trends in Educational Financing on the Plan Objectives, Equity, Quality, and Efficiency.* Chapter 2 recommendations are new and more specific with respect to the financing of primary education, and regarding budgeting priorities. In general, both studies are consistent with respect to their overall recommendations.

2.9.1 Budgeting to Improve Allocative Efficiency

The economic and financial analysis has focused on ways to increase the contribution of education to raising per capita income. Based on education's contribution to economic growth and industrialization worldwide, and on the best estimates that can be made in Nepal (Section 2.8.4), it is concluded (Section 2.8.1) that there can be high payoffs by increasing the investment in primary and lower secondary education. This offers guidance in that new budget increments do not have to be made on an ad hoc or external assistance agency interest basis, but should be made where the returns are greatest in relation to the costs. Depending upon the validity of the assumptions, the rates of return to investment in primary education in Nepal, which include the contribution it makes to agricultural output, may well be over 100 percent, returns to lower secondary 29.1 percent, to secondary 7.5 percent, and returns to different university programs vary between 8 and 21 percent. Even if the assumptions for these rates of return are not totally valid, there probably still is a sound economic justification for supporting the rapid achievement of universal primary education as part of a balanced domestic investment strategy and as already set out in objectives of the Basic Needs Strategy, and for seeking to attract external assistance agency interest to help with this aspect of the strategy.

Recommendation 1. Since the evidence shows that the highest growth payoff is to primary and lower secondary education, the goals of faster per capita economic growth as well as more equitable distribution through greater equality of educational opportunity can both be served simultaneously by relatively more rapid increases in investment here.

Such a policy does not cause a conflict between efficiency and equity, but instead serves them both. Primary and lower secondary education also is highly correlated with the amount of learning through experience on-the-job by craftsman and in industry, and is a key part of a balanced investment strategy that best develops the kinds of human resource base most needed for industrialization.

2.9.2 Improving Educational Financing

Recommendation 2. To reduce the inefficiency associated with high drop-out rates at primary and lower secondary, the current grants-in-aid system that reimburses teachers' salaries directly should be replaced by a school aid formula

more clearly based on the average daily attendance (ADA) of children in the school. This school aid formula furthermore needs to have two additional features:

1. A provision that matches all funds per child in ADA that are raised locally by the school tax on property (or some other non-regressive tax handle) so that the local panchayats have an incentive to support the schools.

2. A provision that provides a floor level of expenditure per child in ADA, since some districts have little or no local property.

This recommendation has implications for encouraging local initiative in education with a degree of involvement of local bodies in educational planning, monitoring, and financing. The next step would be to undertake more detailed study of this proposal, for example, of the method of verifying ADA in the schools for some unannounced sample period during the end of the term and the method for determination of the floor-level of expenditure per child in ADA to be guaranteed by the Central Government.

Recommendation 3. The Ministry of Education and Culture, in cooperation with the Ministry of Finance, should form a joint committee or task force to recommend specific workable ways to give local primary and lower secondary schools an independent and non-regressive revenue base that encourages higher retention rates and higher quality in the local public schools.

To finance the universal primary education under the Basic Needs Strategy, and to encourage local initiative, an independent and stable source of revenue for the local schools needs to be designated in addition to what the Central Government will contribute. The designated source needs to be realistic and equitable, and therefore should not permit the taxing of only the poorest persons in each village. Education is an investment in the economic growth of the nation, and not a consumption benefit to the parents. The parents do not benefit from the education but instead reduce their consumption by forgoing the production of their children in farming and work at home while they are in primary and lower secondary schools. This is a large burden on the parents in subsistence agriculture, and a major cause of the high drop-out rate. What specifically can be done needs to be worked out by such a joint committee, of course, but if the experience in other countries is any guide, this is a matter in which the MOEC needs to take the initiative.

One possibility would be to designate and expand the scope of the urban property tax based on the value of urban and rural real estate including all larger buildings. The local panchayats could be encouraged to vote a separate "millage

rate" (i.e., an extra percentage added to a tax already being levied) that is designated for the exclusive use of education. These funds could then be turned over to the local primary and lower secondary School Management Committee. These funds would need to be provided only on the condition that they be used to replace any primary or lower secondary fees still charged locally and which encourage drop-outs. They could also be used to cover building costs, the 25 percent of lower secondary salaries that must be covered at the local level, and to improve quality. This would give the local panchayats some initiative, and an interest and a capacity to help improve the efficiency and quality of the local schools.

Authority to do this already exists under the Decentralization Act of 1982. No local panchayats have used this option, however, in part because the value of urban and rural structures (for example) has not been clearly designated as the "tax handle." The scope of such a real estate tax would need to be expanded to be sure that it included the value of all new urban and rural structures not now on the tax rolls.

2.9.3 Improving Allocative Efficiency

The most important and basic requirement for efficiency in human resource development for industrialization as a whole has been addressed by Recommendation 1 above. The most basic requirement is to have a broader base of literate, trainable labor available to agriculture, small business, and industry. There also is a need for advanced technical manpower in areas where Nepal has a longer run strategic advantage, such as hydroelectric power, irrigation, and tourism, and a strategic need for efficient managers in the public and private sectors.

Beyond this there must be developed intermediate skills of all types. Many of the costs of doing this are developed in the section on costs (2.6) above. Good current data exist on the returns to the major levels and types of education and in the different types of employment (industry, civil service, agriculture, etc.). When the 1986-1987 Household Budget Survey data are available they will provide further information on the return to investments in education at all levels.

The MOEC is faced with competing demands from many different subsectors of education. Most programs usually want more resources, and it is very difficult to manage these competing demands and to make decisions on the basis of what is best for economic growth and widescale employment as called for by the Seventh Five Year Plan. For an objective source of facts relevant to budget decisions, an

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independent, comprehensive data source and a stronger analytical capability is needed in the MOEC.

Recommendation 4. The MOEC should develop access to independent sources of data such as the 1986-1987 National Household Budget Survey, tracer studies, and national manpower surveys, and further develop its capacity to analyze these sources for help in decision-making based on the returns to education, thereby helping the education sector investments relate more closely to the needs of the economy. Such data would permit refinements to current estimates of social rates of return for the different levels and types of education. This also would provide independent evidence about returns in relation to costs, where the shortages are most acute, and hence where the relative increments are most needed for the use of scarce resources among competing programs.

Recommendation 5. With respect to over expansion of separately tracked secondary schools offering training in narrowly defined specific skill areas, caution should be used.

Recommendation 6. Continuing emphasis should be given to providing special incentives and facilities for encouraging women's increased participation in education. Women are an underutilized resource in the nation. Their potential contributions to industrialization, business skills, teaching, and the professions are being underutilized. The education of women through the lower secondary level also can make significant contributions to reduced population growth.

In conclusion, the above six recommendations show that the economic evidence on the relative contributions of different levels and types of education to per capita economic growth can offer a great deal of insight and guidance to efficient and equitable resource allocation in developing the nation's large human resource base. However, there are also insights into the future about long run strategies related to comparative economic advantages such as in hydroelectric power, irrigation, and tourism, that need to be taken into account in developing the highly skilled manpower needed to support these areas.

Annex 2.1

Interviewees

Uttam Amatya, Assistant Secretary, Programme and Evaluation Section, Ministry of Education & Culture

Ganesh Bahadur, Governor of the Nepal Rastra Bank (Central Bank of Nepal)

Michael K. Bowkerd, Senior Project Officer, Primary Education Project, UNICEF, PEP Office, Maharajgunj

Joseph Bredie, World Bank

Peter Crowley, SETI, ERD

Om Prakash Gupta, Professor of Educational Administration, Department of Educational Planning and Management, Tribhuvan University

Dolakha Bahadur Gurung, Acting District Education Officer, Tanahun, Damauli, Tanahun

Madhav P. Mainali, Executive Director, Research Centre for Educational Innovation and Development, Tribhuvan University

Kedar Mathema, Program Officer, The World Bank, Resident Mission, Nepal

Anand Lal Pradhan, Director, Regional Education Directorate, Western Development Region, Pokhara

Som Pudasaini, Consultant, National Commission on Population

Bhasker P. Risal, Chief Project Officer, Nepal Rastra Bank (Central Bank of Nepal)

Keshav Raj Sharma, Deputy Director, Central Bureau of Statistics

Ashok Shrestha, New ERA

Prayas M. Shrestha, New ERA

Birendra Rumar Singh, Acting District Education Officer, Kaski, Pokhara

Durgesh Man Singh, Member, National Planning Commission

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Annex 2.2

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3. EDUCATION SYSTEM MANAGEMENT

Good management includes planning, budgeting, implementation, monitoring, and evaluation. More development plans fail because of poor management than because of lack of resources, and therefore good management is an important element in every education system. Good management is necessary for the efficient and effective use of all national resources, including those provided by government as well as those provided by external assistance.

The significant role of management extends across all subsectors in education, and the magnitude of the management of educational resources has become even more important for Nepal since the objectives of the Basic Needs document of May 1987 have been added to those of the Seventh Plan.

This chapter assesses the role of the Ministry of Education and Culture (MOEC) in the management of education. It begins with a brief overview of the education system so that the status of the management system as it exists today (1987) can be understood in its proper historical setting. Next, a summary is given of the current status of the management system within the MOEC, including its goals, structure and functions, staffing, incentive system, and opportunities available for staff training. An analysis of the current status is then made, which identifies existing needs and constraints to management and derives a set of conclusions about the status. On the basis of the above analysis, a set of recommendations is made to enhance the effectiveness of the education system management.

3.1 HISTORICAL SETTING

Without an understanding of the historical setting of an education system, no valid analysis can be made of its current status. The objective of this section is to provide this setting.

Background

The history of the development of management structures in Nepal is well documented and analyzed in *Planning for People* (1979, Chapter 4). The administration before 1951 was dominated by the Rana regime, when the country was not managed with a view to the well-being of the nation as a whole. Following the disturbances and conflict of late 1950, and the Delhi Agreement of 1951, the national administration was largely influenced by the British colonial administrative system through the Indian Civil Service administrators who worked closely with the

new administration in Nepal. This system was not effective in meeting the challenges of a new nation and three phases of reform followed.

The Administrative Reforms Planning Commission (ARPC) during 1956-1957 recommended an administrative reorganization of the country, which was never implemented, based on the Indian block system. The ARPC recommended that the 32 existing districts be reformulated and grouped into seven divisions. In the second phase, the Nepali Congress government in 1959-1960 further developed the ARPC block system, but neither was this plan implemented. The third district administration reform proposal, which included the Panchayat System, was made and implemented in 1961. This major move toward decentralization, which still comprises the structure of development thrust today, was made in response to the very highly centralized Rana administration.

The Panchayat System was intended to involve the Village Panchayats (local councils) in the overall system of government, giving them a voice in the management of the nation. Local administration under this system was to be based on 75 districts. This is the administrative structure that is still in place in 1987, the 75 districts having been divided into fourteen development zones and five development regions: Eastern (16 districts), Central (19 districts), Western (16 districts) Mid-Western (15 districts), and Far-Western (9 districts). These are shown on the map in Figure 3.1.

Educational activities in Nepal are under the jurisdiction of the MOEC, as described in detail within this chapter. Guidance for the development of the educational system has been provided to education officials in a series of seven five-year development plans, the first of which was prepared in 1956. The nation is now under the guidance of the Seventh Plan, covering the years from 1985 to 1990. Other planning documents which are significant are the National Education System Plan (NESP), which in 1971 was promulgated to make education more relevant to the development needs of the nation, and the Basic Needs document of May 1987 which, among other policies, set a target of achieving universal primary education by the year 2000 A.D. These current documents that guide the work of the MOEC are explained further in the text below.

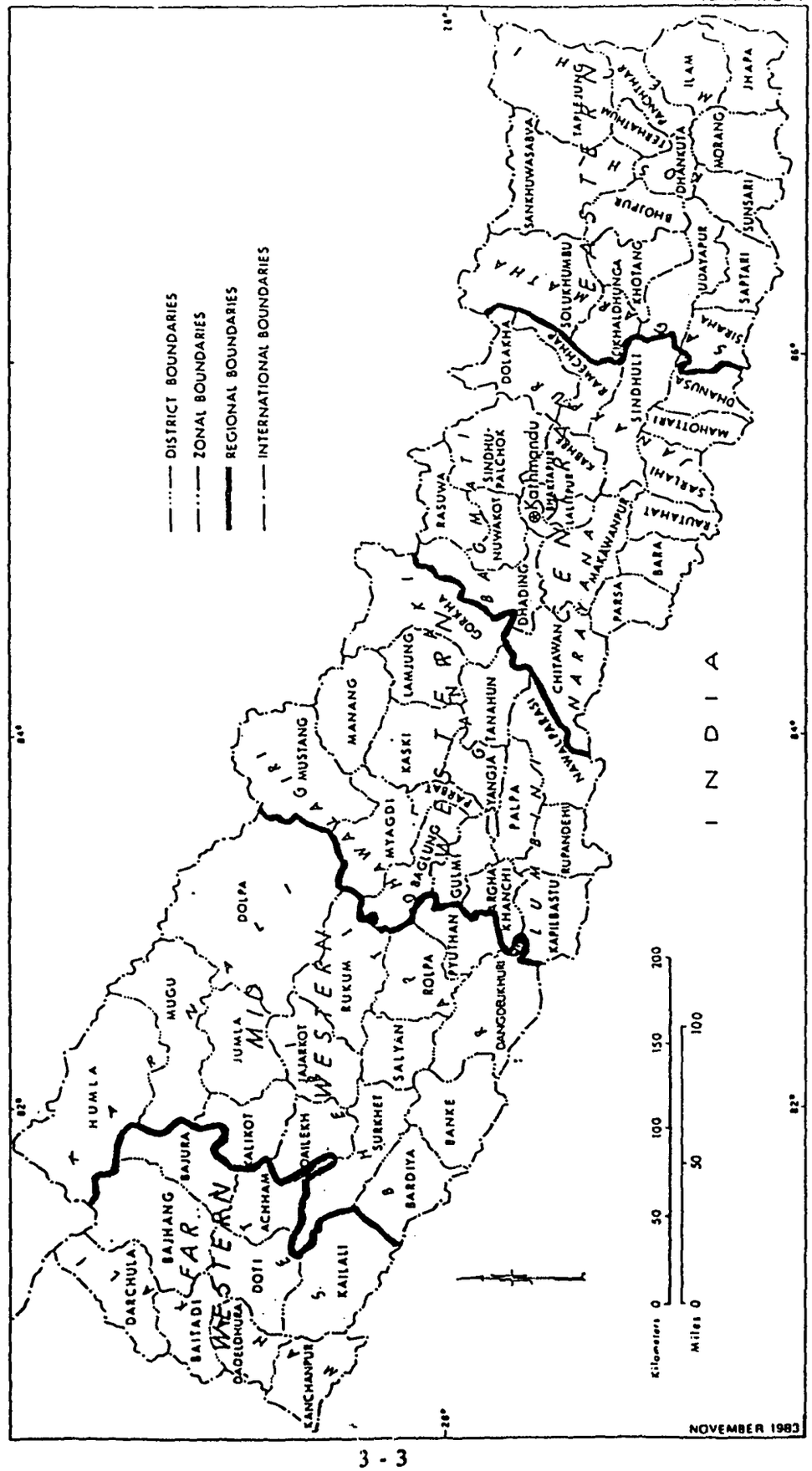
Scope of Chapter

The scope of this chapter covers all aspects related to the management of education in Nepal. This includes the structure, organization, and functions of the central offices of the MOEC down to the district level components of the system:

Figure 3.1

Nepal Administrative Regions, Zones, and Districts

IBRD 17641



the School Management Committees (SMCs), the supervisors, the headmasters, and the teachers. The major focus of this chapter is on the MOEC central offices, although the district, school, and classroom aspects of the management of education are covered to some extent. These latter aspects of the management of education are treated in more detail in the chapters on primary and on secondary education. An analysis of the management of the private schools is not within the terms of reference for this sector assessment.

Sources of Information

A major starting point for the information upon which this chapter is based was the UNESCO-sponsored study of educational management in Nepal that was completed in 1984. This document was an important source of background material and provided an initial listing of priority needs in the domain of educational management. The information in the UNESCO report was used as the basis for structured interviews that were conducted with the heads of all major divisions in the MOEC and informed educators in Nepal. In addition, interviews were held with district education officers, regional education officers, and school supervisors and teachers in both urban and rural areas. The results of these interviews, and a review of several relevant documents, provide the foundation for the information in this chapter. All interviewees and the background documents are cited in the annexes to this chapter.

3.2 STATUS

This section covers the institutional goals of the MOEC, a description of its structure and organization, the current staffing level, the performance incentives, and the training opportunities available to the staff. The basic information in this section on status serves as the foundation for the analysis provided below in Section 3.3.

3.2.1 Goals

The overall goals of the MOEC originate with the guidance and directives provided by HMG, as decided at a general level by the Cabinet. These general guidelines are made operational through policy and implementation guidelines as discussed below.

Policy

The administrative organization of the MOEC is shown in Figure 3.2. This figure, which is described more fully in Section 3.2.2 below, indicates that the policy of the MOEC is set by the National Education Committee (NEC). The NEC advises the MOEC and the Secretary of Education on ways to implement the overall operations of the MOEC. The NEC operates in an advisory capacity to the MOEC; the direct reporting line for the Minister of Education is to the Cabinet.[1]

Various documents and five-year plans also determine the policy of the MOEC. One of the most prominent of these was the National Education System Plan (NESP), which in 1971 was prepared to make education more closely related to national development goals. Important features of the NESP involved increasing the vocational component of secondary education to make it more relevant to the production of trained manpower, improving curricula and textbooks, and decentralizing educational administration to give more responsibilities to the local levels (Regional, Zonal, and District Offices). Although later plans reversed the vocational and technical emphases in the general secondary schools, most aspects of the NESP are today still reflected in education policies and plans.

The Seventh Plan

The Seventh Plan sets forth the national development objectives for Nepal for the years 1985 to 1990, giving targets and general guidelines. In May of 1987 HMG published a detailed program, amplifying the plan's goal. The program aims to satisfy the basic needs of the nation, to the equivalent of Asian standards, by the year 2000 A.D.

Increased access to basic social services, including education and health care, will require financial resources that may be far beyond HMG's current and anticipated revenues. The particular challenge to the MOEC is to contribute to the most effective and efficient uses of all resources available to the education sector under the current plan period and in the future. Because of the current and anticipated scarcity of financial and manpower resources in the sector, good management will be a key factor in meeting all objectives set for the education system.

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[1]A reorganization of the MOEC has recently been approved, following the preparation of this report (August 1987). The new administrative organization is shown in Annex 3.3.

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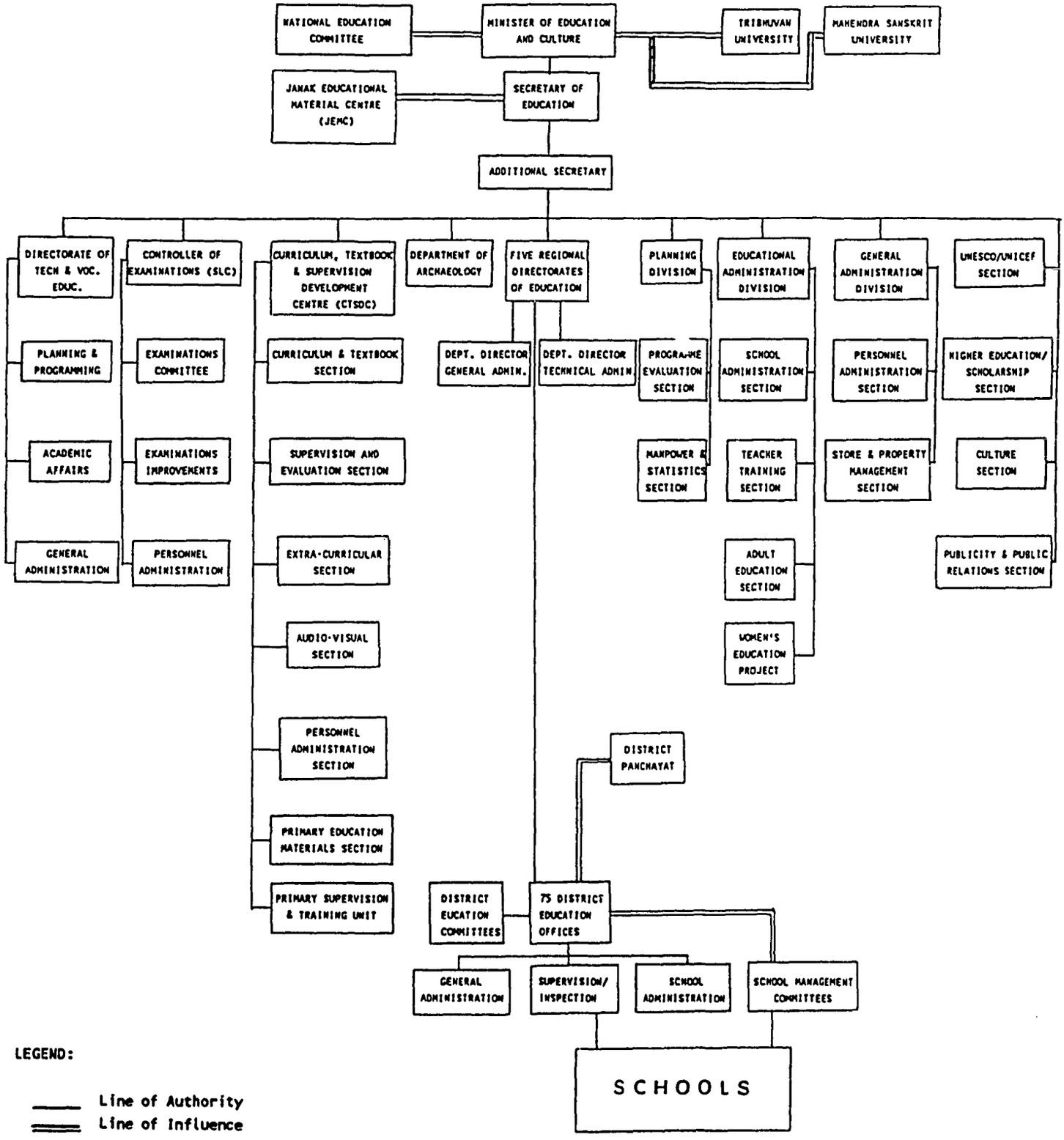
Figure 3.2

Administrative Organization of the MOEC



Responsibilities

Responsibilities of the MOEC include the management of all educational activities in the country. This covers planning, implementation, monitoring, and evaluation--four key components for effective education. The levels of education comprise primary, secondary, and all post-secondary programs, including technical and vocational education. According to information from the MOEC for 1985, this includes management of education for 1,812,098 primary students in 11,869 schools, 496,821 secondary students in 4,899 secondary schools, and 648 vocational and technical students in 12 vocational and technical schools throughout the 75 districts.

These responsibilities cover management of the full range of support services for this system, which includes but is not limited to the following: curriculum, textbooks and related materials, teacher training and placement, certification, and budgetary support. This is a gigantic management task, and one that affects the well-being of all students in the nation. In addition, as established in the chapter of this assessment that covers the economic and fiscal analysis, the effective management of basic education can have positive effects on achievement and economic growth.

Organizational Overview

The overview of the organization of the MOEC, which is described in more detail within the following section, is shown in Figure 3.2. This indicates that the Minister of Education, who in this position is an ex officio member of the Cabinet, is at the head of the MOEC. Reporting to him is the Secretary of Education, who is more directly responsible for the day-to-day operations of the MOEC. The major divisions of the MOEC are the following: the Planning Division; the Educational Administration Division; and the General Administration Division. Other units of the MOEC include the Directorate of Technical and Vocational Education; the Office of the Controller of Examinations; the Curriculum, Textbook and Supervision Development Centre (CTSDC); the Department of Archaeology; the Janak Educational Material Centre (JEMC), a public enterprise directly under the Secretary of Education; and the five Regional Directorates of Education. Also reporting to the Additional Secretary of Education are four sections: the UNESCO/UNICEF Section; the Higher Education/Scholarship Section; the Culture Section; and the Publicity and Public Relations Section. All sections have the same status, but the Additional

Secretary is more directly involved in managing the last four sections. Directly under the five Regional Directorates, which are located in the five development regions of the country, are the 75 District Education Offices (DEOs), and the schools are directly under the jurisdiction of these offices. Following the 1985-1986 decentralization, planning has been done at both the central and the district levels. At the central level, for example, planning is done for the trade schools and higher education. Planning at the district level is done for primary education and adult education. The district level planning is facilitated by the Local Development Officers, one per district.

Several interviewees stressed the key role of the District Education Officers in the administration of the education system. These officers are close to the delivering end of the education system and are very aware of the educational needs at the grassroots level throughout the nation. There are 3,199 employees of the MOEC, excluding the teachers and headmasters. These are shown in Table 3.1, broken down by organizational units.

People's participation in the management of this system is through direct influence upon the Cabinet by people's representatives in the Rastriya Panchayat (i.e., parliament), and at the district levels where guidance is given to the District Education Offices by the District Panchayat. In addition, the School Management Committee (SMC) for each school has a strong voice in school management, including the hiring of permanent members of the teaching staff.

The responsibilities within the MOEC are divided generally into planning, which is done at the central level, and administration, which is done at the level of the Regional Directorates of Education and below. The de facto division of these two responsibilities, according to some interviewees, is such that the planners and decision-makers are the joint secretaries (i.e., division heads) and the implementors are the heads of the sections within the divisions of the central offices of the MOEC.

3.2.2 Structure and Functions

This section describes in more detail the structure and organization of the MOEC. It describes the MOEC, including its structure, people's participation, information flow, centralized decision-making, fiscal management, facilities and logistics, planning data, and external assistance agency coordination.

Table 3.1

MOEC Personnel List (2066/1987)

Office	Spec. Class	Gazetted 1st Class				Gazetted 2nd Class				Gazetted 3rd Class		Non-Gazt 1st Class		Non-Gazt 2nd Class		Non-Gazt 3rd Class		Non-Gazt 4th Class		Mixed Class	No Class	Lowest Grade	Total
	Secretary	Add'l Secretary		Joint Secretary		Under Secretary		Assistant Secretary		Section Officer		Nayab Subba Junior Officer		Kharidar Senior Clerk		hukhiya Clerk		Bahidar Junior Clerk		Typist	Driver	Peon	
	Adm	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	Tec	Adm	
1. Office of Sec. of Education	1									1				1								1	4
2. Additional Secretary		1										1										1	3
3. Planning Division					1							1										1	3
4. Programme & Evaluation Sec.							1			3		3		2						2		1	12
5. Manpower & Statistics Sec.							1			3	2	3		2						2		1	14
6. Budget Section						1				2		10		3						3		2	21
7. Educational Admin. Division				1								1										1	3
8. School Administration Sec.						1		1		1	2	2	2	2						1		1	13
9. Teacher Training Sec.							1			1	1	1								1		1	6
10. Adult Education Sec.							1			1		1		1						1		1	6
11. General Admin. Division				1								1										1	3
12. Personnel Admin. Sec.						1				3		4		8						4	5	7	32
13. Store & Property Mgmt. Sec.						1		1		1		3	1		3		1			1		15	27
14. UNESCO/UNICEF Sec.						1				2		2								1		1	7
15. Higher Ed/Scholarship Sec.						1				4		4		2						2		1	14
16. Culture Sec.						1				2		2								1		1	7
17. Publicity & Pub. Rel. Sec.						1				1		1	1							1		1	6
18. Curr., Textbook, & Supervision Devel. Centre (CTSDC)					1	2	3	1	4	3	36	12	11	10	1					16	3	10	113
19. National Education Comittee	1				1	2	1			1		4		1						1	1	3	16
20. Department of Archaeology				1	1	2	1		3	3	14	4	20	8	1	3	3	1		3	5	8	81
21. Offices under Archaeo. Dept.						2	6		1	4	30	26	31	29	19	20	18	32	5	8	2	301	534
22. Controller of Examinations					1	1	1	1	1	4	1	17		14						7	2	10	60
23. Directorate, Tech. & Voc. Ed.					1	1	2	1			4	4		1						2	1	4	21
24. Eastern Regional Directorate*					1	14	1	4	3	15	51	59	64	46		39				22	6	65	390
25. Central Regional Directorate*					1	19	1	1	3	17	52	66	84	25		46	1			21	8	69	414
26. Western Regional Directorate*					1	15	1	3	3	13	56	55	79	22		47				18	5	61	379
27. Mid-Western Reg. Directorate*					1	13	1	4	1	7	36	50	41	22		44				18	2	59	299
28. Far-Western Reg. Directorate*					1	8		3	1	5	22	30	24	13		25				10	2	36	180
29. Janak Ed'n Material Centre	1	1			5	6	3			50	29		100		129		77		54	9	14	53	531
Total	3	2		3	16	93	25	20	20	147	336	367	458	212	193	224	100	33	59	155	56	717	3199

Source: MOEC, Personnel Administration Section: Deputy General Manager, JEMC.

*Note: There are 16 districts in the Eastern Region, 19 in the Central, 16 in the Western, 15 in the Mid-Western, and 9 in the Far-Western.

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The major responsibility for the smooth functioning of the education system rests upon the MOEC administrative and managerial staff. The effective and efficient functioning of the entire education system depends more upon them than upon any other component of the entire system. The focus of this chapter is upon the processes within the management system.

The ultimate criterion with which to assess system effectiveness, of course, involves a more global analysis of the system outputs, the many graduates of the education and training institutions under the auspices of the MOEC. The value of these trainees and graduates, as compared to the unit and cycle costs for preparing each of them to join the nation's workforce, is covered in the economic and financial analysis presented in Chapter 2, and in the more detailed analysis of the subsectors related to primary education (Chapter 4), secondary education (Chapter 5), teacher education (Chapter 6), vocational and technical training (Chapter 7), and nonformal education (Chapter 8).

3.2.2.1 Structure. The location of authority within the MOEC has been depicted above in Figure 3.2. As indicated briefly above in Section 3.2.1, the National Education Committee (NEC) provides general policy guidance to the MOEC. The NEC was formed after the implementation of the NESP, and was established under the chairmanship of the Minister of Education. In addition to its responsibility to monitor and evaluate the implementation of the NESP, it is responsible for setting national education policies. The NEC also is empowered to modify the NESP as necessary and to issue directives to offices concerned with its implementation.

The NEC is an important body in the education system of Nepal. The vice-chancellor of Tribhuvan University (T.U.) and the Secretary of the MOEC are members of this 9-member committee. The Member-Secretary is a full-time member, and most of the remaining are ex officio members. The relatively small secretariat is headed by the Member-Secretary. The NEC is an autonomous body, although all of its staff are members of the MOEC. It reviews the progress of activities in the education sector, and has the authority to commission study teams to assess educational issues at the policy level.

The MOEC was first established in 1951. The most significant change in the responsibilities of the MOEC came with the 1971 introduction of the NESP. HMG's decision at that time to divide the country into four Development Regions (and later

into five) affected the MOEC structure. The structure of the MOEC has changed from time to time to meet its expanding responsibilities.

The MOEC is headed by the State Minister of Education, who also is an ex-officio member of the Rastriya Panchayat. The highest non-cabinet member of the MOEC is the Secretary of Education, who is mainly concerned with the administration of the MOEC. There is an Additional Secretary, directly under the Secretary as shown in Figure 3.2, who assists him with his administrative responsibilities.

The administrative responsibilities of the MOEC are handled through three major divisions, each headed by a joint secretary. These are the following: the Planning Division; the Educational Administration Division; and the General Administration Division. In addition to these three divisions, there are other divisions, departments, and directorates within the MOEC, each also directed by joint secretaries. These are also shown on Figure 3.2, and are the following: the Directorate of Technical and Vocational Education; the Office of the Controller of Examinations; the Curriculum, Textbook and Supervision Development Centre (CTSDC); the Department of Archaeology; and the five Regional Directorates of Education (RDOs). The Janak Education Material Centre is an organization under the auspices of the MOEC, but it functions as an autonomous corporation; and it is therefore administered under the rules and regulations for Government Corporations. In addition, there are four sections that report directly to the Additional Secretary. These are the following: the UNESCO/UNICEF Section; the Higher Education/ Scholarship Section; the Culture Section; and the Publicity and Public Relations Section.

3.2.2.2 Functions. The paragraphs within this subsection describe the functions of the MOEC, depicted in Figure 3.2, in the following activity areas: general responsibilities; policy formulation and planning; information flow; data collection and use; curriculum and textbooks; equipment and educational materials; school administration; examinations; supervision and inservice training; teacher management; technical and vocational training; and adult education. The functions of the Department of Archaeology, Tribhuvan University, and Mahendra Sanskrit University are not included below, as they are not within the terms of reference for this sector assessment. Also excluded from the offices shown in Figure 3.1 are the functions of several smaller sections whose activities are not directly related to those aspects of the MOEC management covered by this chapter.

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General Responsibilities

As summarized in the 1984 UNESCO study of educational management in Nepal (pp. 12-13), the following are among the responsibilities of the MOEC. (Since the 1984 study other responsibilities have been added. These include an evaluation of the MOEC programs every four months. Also, with regard to the third item in the list below, since the second year of the seventh plan the NPC only has to approve "priority" projects and not "general" projects.)

- To provide necessary information to the National Education Committee for policy decisions
- To assist the National planning Commission in the formulation of periodic plans
- To prepare annual programs on the basis of the development plan and submit (them) to the National Planning Commission for formal approval
- To formulate necessary regulations for school level education
- To prepare projects and negotiate with donor agencies
- To allot new schools and additional teacher quotas to the districts
- To provide grants to the schools through District Education Committees
- To keep accounts of financial expenditures and prepare statements for auditing
- To monitor progress of various projects and programs
- Personnel Administration of its employees
- To provide grants to the University
- To implement the adult education programs and monitor their performances
- To prepare materials for the adult education program
- To prepare (plans) for the training of the inservice teachers
- To get educational laws and bye-laws enacted

Policy Formulation and Planning

As described above in Section 3.2.1, the NEC is responsible for setting policy for the MOEC. The implementation plans of HMG are prepared on a five-year basis. The Seventh Plan, as all other preceding development plans, includes targets for the education sector. The formulation of the education components of the

five-year plan begin in the Planning Division of the MOEC, where they are prepared with inputs from all of the concerned offices of the MOEC. There also is participation by the District Panchayats in the planning of district-level educational development programs. Broad guidelines provided by the National Planning Commission provide a general framework for preparation of the draft plan for education. After the NPC approves the five-year implementation plan for education, it is submitted to the National Development Council. At this highest body the plan is reviewed, modified if necessary, and then formally adopted.

The plan approved by the NPC provides the framework for preparation of annual plans by the MOEC. These within-MOEC annual plans are prepared by the Planning Division, which coordinates this preparation with all concerned offices. Annual plans for priority projects are approved by the NPC. All projects are coordinated with the Ministry of Finance, to ensure that the annual plan is financially feasible. A difficulty with this complex preparation of annual plans is that the entire cycle lasts from four to six months.

Information Flow

The flow of information among Ministries is reported to be a serious area of concern. Because of the relationship between education and activities in many other sectors, effective educational planning requires a free exchange of information on a timely basis. Interviewees as well as document sources indicate that this free flow of information does not take place.

With respect to the flow of information among offices within the MOEC, this was reported to have been a problem in the past. A recent step to improve this flow involves weekly meetings of division heads and the Secretary of Education within the MOEC, and monthly meetings with this same group that also include section chiefs. The nature and amount of information exchanged at these meetings could still be improved, but most reports indicate that the meetings have increased internal communication.

Data Collection and Use

Data collection is fragmented in the MOEC, and the data quality is poor. Both the Educational Administration Division (School Administration Section) and the Planning Division (Manpower and Statistics Section) collect data within the MOEC. The former office collects information related to the evaluation of school programs and the latter collects general statistical information on students, teachers, schools,

examinations, and similar basic data. These two units of the MOEC sometimes collect these data at different times of the year, and on different forms. Some of the same information is requested on both forms.

There are a number of problems related to the quality and timeliness of the data. Much of the flow of data from the schools to the MOEC, through the District Education Offices, is very slow. The central offices of the MOEC have no effective authority to enforce the completion and timely submission of these forms. In addition, there currently are not sufficient funds available to validate the information. Many interviewees consistently report that it is common for some headmasters to fill in these forms inaccurately. For enrollment reports, for example, DEOs are reported to sometimes just increase the prior year figures by about five percent. There is no independent source of information about the data reported by these two units of the MOEC, and hence no way for concerned offices to assess their quality and accuracy.

All available data are now used to support planning done by the MOEC. The kinds of data collected by the MOEC could be changed, however, to better support planning. There is not a sufficiently close relationship between the design of the database and the policy questions that should be addressed by the MOEC's Planning Division and, ultimately, the NEC and the NPC. Also, the data collected are not of sufficiently established accuracy, and are not made available on a timely enough basis, to effectively support planning. The planning of the MOEC, the NEC, and the NPC could be more effective, and more targeted on the priority needs of education, if supported by higher quality, more reliable, and timely data.

The history of planning in the education sector is characterized by relatively abrupt changes in policies affecting the structure of the educational cycles, curriculum content, and supervisory practices. A highly visible example was the introduction of the semester system at T.U., which was abandoned after only a few years for a return to the annual examination system. Planning based on data would be more stable, and contribute to the more efficient use of resources in this important sector. Planning units within the MOEC, and the NEC and the NPC, at present are not fully staffed and have few trained officials that can serve them by providing data and special studies to support the development of their plans and policies. Some recent steps have been taken to remedy this in the Manpower and Statistics Section of the Planning Division. With assistance from the IEES Project, this section has recently supplied data and projections that have been used in planning.

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Curriculum and Textbooks

The curricula for the primary and secondary cycles are prepared by the Curriculum, Textbook and Supervision Development Centre (CTSDC). Curriculum design is the responsibility of a professional team reporting to the Curriculum Coordination Committee. The CTSDC identifies textbook writers, and then contracts for the preparation of textbooks based on the approved curricula. The textbooks are produced by the Janak Education Material Centre (JEMC), and the distribution of the books is done by Sajha Publishers, a Public Enterprise.

New editions of textbooks are prepared and printed each year. It is the intention of this rather expensive annual procedure, which makes it impossible to achieve economies of scale in printing costs, to make corrections and improvements in the books from year to year. Some reports indicate, however, that very few changes are actually made from year to year.

Equipment and Educational Materials

There is not enough general office equipment in the central offices of the MOEC. Photocopiers, typewriters, word processors, computers, telephones, and other basic equipment required for effective administration are not available in adequate numbers, and are sometimes not in working order. Reports indicate that the shortage of equipment is especially acute in the District Education Offices.

There are shortages of educational materials in all of the schools, as covered in more details within the chapters on primary and secondary education. It is the responsibility of the MOEC to initially furnish the District Education Offices and schools with equipment, but the responsibility of the recipient units to maintain, repair, and replace the equipment. Without sufficient funds, of course, the equipment becomes non-operational within a relatively short time.

School Administration

The administration of schools is highly decentralized. Every school in the nation is under the direction of a School Management Committee (SMC). This SMC is under the direction of the local Pradhan Panch (i.e., chief of the village panchayat) in most cases, and membership includes the school headmaster, a teacher, two members nominated by the District Education Office, one guardian (i.e., student parent or sponsor), and one social worker. The SMC is a very powerful force at the school level. One of its most powerful sources of influence is its

ability to appoint and evaluate all teachers from a list of possible candidates prepared by a selection committee of the DEO. It also must approve the school budget. The headmaster is responsible for academic aspects of the school administration, including teacher assignments and teaching loads, academic records, and similar tasks.

The SMC system was established to give local communities an influence over the operation of their schools. These committees, in fact, represent strong political forces in school administration. Many individuals report that they do not contribute to effective instruction in the schools. Because of the political aspects of the SMCs, there are some cases where teachers are appointed as personal favors rather than on the basis of their qualifications and teaching ability. If a headmaster does not have the authority to fire an ineffective teacher, he does not have any effective way to enforce directives regarding the teacher's behavior.

Examinations

There are two kinds of examinations in the primary and secondary cycles of the education system, internal examinations through Grade 10, and the all-important external School Leaving Certificate (SLC) examination at the end of Grade 10. Through to Grade 10 internal examinations are given in the middle and at the end of each year, the latter determining whether or not the student passes to the next grade. These internal examinations are developed, administered, and graded by each individual school. Thus, there is no consistent standard across schools with regard to promotion from one grade to the next within the primary and secondary cycles.

At the end of the primary cycle an external final examination is developed, administered, and graded by the District Education Office. And at the end of the secondary cycle a final external examination is developed and graded by the Regional Directorate of Education Office in each of the five development regions.

The most important examination is the SLC, which is fully described and discussed in Section 5.1.4.5 of the secondary education chapter of this assessment. Some students who complete Grade 10 are not allowed to even sit for the SLC examination. Before they are allowed to do this they must take a Grade 10 examination set by their individual school. Only those students who do well on this examination are "sent up" (i.e., allowed to take the SLC). As pointed out in the secondary education chapter, this is done in order to increase the passing percentage of students from individual schools, because government financial

assistance to secondary schools is reduced if their percentage of SLC passes is too low (i.e., below 15 percent of those sent up) for three consecutive years. This encourages some schools to send up only their best students in order to maintain an artificially high SLC pass rate.

The Office of the Controller of Examinations within the MOEC prepares, administers, and grades the SLC. As discussed more fully in Section 5.1.4.5 of the secondary education chapter, this examination is of unproven reliability and validity, and yet it has a strong influence on the lives of all students who take it. In addition, there were reports of irregularities in prior administrations of the examination, which cast further doubts on its usefulness either as a certifying examination for academic achievement at the end of secondary education or as a screening examination for entrance into higher education. Beginning three years ago the MOEC has taken steps to address the problems of these irregularities in examination administration.

Supervision and Training

The supervision and school-site inservice training of teachers is the responsibility of the school supervisors in each District Education Office. All primary and secondary school supervisors are expected to spend 25 days of each month visiting schools, conducting inservice training courses for teachers, and generally monitoring the operations of the schools. This supervision, however, rarely takes place. Many supervisors spend most of their time in the District Education Offices doing administrative jobs, and rarely visit schools. On the occasion of these rare visits, it is reported, very little supervision is accomplished.

The main reason given for the lack of effective supervision is the lack of funds for the supervisors' travel allowances and daily allowances (TA/DA). Even if sufficient TA/DA were to be made available, which does not appear to be likely in the opinion of some, a large number of the supervisors lack sufficient professional training to perform their complex assignments effectively.[2] Given the high degree of absenteeism among school teachers, and the general low quality of professional training many of them receive, this lack of effective supervision is especially detrimental to the attainment of effective classroom instruction.

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[2]Since the draft of this report (August 1987) Field Allowances have been instituted for primary and secondary inspectors. The primary inspectors are given 200 rupees monthly for 30 days in the field and the secondary inspectors are given 280 rupees on the same basis. If 30 days are not spent in the field, these allowances are proportionately reduced.

The supervisors are soon to be designated as inspectors, with an increased emphasis on the monitoring aspects of their jobs. This simple re-designation, however, will not solve all of the problems of supervision. Professional training is also needed, in many cases, and there still will be travel impediments associated with the lack of TA/DA.

Teacher Management

The product of the educational system is the achievement of the students. Teachers manage the instruction that delivers this product, and hence are a critical component of the system. The management of these teachers themselves is thus particularly important.

The management of teachers begins with their selection. This is technically done by a Teacher Selection Sub-Committee of the District Education Committee in each district. The sub-committee establishes a pool of teachers that they consider qualified, and all permanent teachers must be selected from this group. The SMC, however, can appoint teachers from outside this pool, although only on a temporary basis.

Once teachers are employed, on either a temporary or permanent basis, their daily activities are under the direction of the headmaster. As pointed out above, the headmaster has not hired the teachers, nor can he fire them. His influence over their teaching practices, of course, is significantly reduced by this arrangement. Further, most headmasters are promoted from the ranks of the teaching profession and have no formal training in administration. Thus, the management of teachers, from their initial selection for some of them and continuing to their daily classroom activities, is not conducted in an environment conducive to obtaining their most effective classroom performance.

Technical and Vocational Training

The Directorate of Technical and Vocational Education is the division responsible for coordinating all technical and vocational activities within the MOEC. Chapter 7 of this assessment is devoted entirely to this topic. Because of the importance of coordinating technical and vocational training with projected manpower needs of the nation, and to regulate the equivalence of the various training programs, HMG has established a Technical and Vocational Education Committee. The committee includes representatives from related ministries, the

private sector, and non-governmental organizations. It advises the MOEC on all matters related to technical and vocational education.

Adult Education

Adult education is the responsibility of the Adult Education Section of the MOEC's Educational Administration Division. The adult education activities focus primarily on literacy training, and this program is covered in Chapter 8 of this assessment. Basically, the MOEC has developed an effective set of literacy materials, and it makes them available at cost to the many government agencies and non-government organizations (NGOs) which use them in their own programs. These materials emphasize literacy skills, but they also teach functional skills that are particularly relevant to rural areas. Although the funds for adult education are very limited, comprising less than one percent of the current budget, the program is efficiently managed. The operations of this section are an excellent example of the use of limited HMG funds to leverage private sector (NGO) support for programs desired by government.

3.2.2.3 People's Participation. People's participation at the community level significantly contributes to meeting the costs of the school system. Local communities, for example, pay for 25 percent of teachers' salaries at lower secondary and 50 percent at secondary. There are no complete and aggregated records of the total amount of this assistance, but it is certain that the central budget figures considerably underestimate the total funds spent for education in Nepal because they do not include local contributions. These contributions are large, covering the construction and maintenance of primary and secondary school buildings and a significant amount of the salaries of the teachers. This contribution is essential for the financing of primary and secondary education.

The structure of the people's participation is shown in Figure 3.2, presented earlier in this chapter. This figure illustrates the two levels of influence on the management of the District Education Offices. The first is the direct line of authority from the central offices of the MOEC, through the Regional Directorate of Education. In addition, however, each District Education Office is under the influence of the District Panchayat, which is headed by the Chairman of the District Panchayat. While this dual reporting coordinates the activities of the DEO with the overall planned development of the district under the District Panchayat, it also brings with it all of the problems of serving two masters.

At the school level, as described above, the headmaster also has a dual reporting role. One is to the MOEC, through the DEO and the regional office, and one is to the local control system through the SMC. The head of each SMC is generally nominated from the local panchayat, and thus the SMC is connected into the People's Participation system.

To further facilitate the people's participation in the management of schools and educational activities, a District Education Committee has been formed for each district. The chairman of this committee is the ex officio chairman of the District Panchayat.

This system allows participation of local communities in the support of the primary and secondary education in their own areas. The system does, in fact, produce significant financial support for these schools. It is only through a continuation and increase of this cost sharing that the goal of universal primary education will be able to be achieved and sustained. The managerial complexities of dual reporting, however, lower the efficiency of the administration of the school system at the district and school level.

3.2.2.4 Centralized Decision-Making. Although HMG has made a public commitment to decentralization, the decision-making process within the MOEC is highly centralized. This is due to several factors, including the history of a high degree of central control both preceding and following the Rana administration. Another factor is the lack of precise job descriptions that clearly specify what decision-making authority resides at each administrative level. Even though job descriptions exist, the sociology of the civil service does not particularly encourage or reward individual initiative, by some reports, and this makes section officers and even higher officers reluctant to make decisions at their level. Instead, there is a common practice of forwarding a "tipani" file upward on the administrative ladder so that each officer on the way to the top can add comments to the file. The final decision is made at extremely high levels for many activities, some of which should be made by lower level officers. Relatively minor matters, it has been reported, have often reached the desk of the Minister of Education and Culture.

Short cuts are available for very urgent decisions, but the functioning of the MOEC is often bogged down because of the long time taken to process many relatively simple matters. There is, of course, some advantage to upper level officers that accrue to them because of this system. It gives them virtually complete control over all decisions within the ministry. This permits the easy

application of political forces to ministerial management, a factor which some individuals report does in fact influence many of the MOEC's activities.

An implemented policy of decentralized authority would increase the efficiency of the MOEC throughout its structure. For this to be done effectively requires more than a directive setting forth decentralization as the policy of HMG. It requires actions that convince middle and lower level officers that a long history of highly centralized decision-making and control has changed, and there is the political will to make this a reality. In the opinion of some observers, this has yet to be done.

3.2.2.5 Fiscal Management. The accurate projection of financial requirements for annual operations of the MOEC, as well as for management of funds that have been made available, are important capabilities. Predicting requirements for annual activities that do not vary from year to year is relatively easy, but it is particularly difficult to plan for new activities and for rapid expansion of existing activities. The MOEC does not have sufficient capabilities in this area.

A further problem in fiscal management is the fact that the MOEC does not have the final authority for the allocation of HMG's financial resources among sectors, as this rests with the Ministry of Finance (MOF). Because of this, it is especially important that the planning and associated projections of financial needs given to the MOF be accurately presented and effectively defended.

There is a tendency to underspend the development budget, something which is often encouraged by the MOF. Accurate fiscal reporting on expenditures within each fiscal year is very important so that officers authorizing disbursements can know on a timely basis how much of their allocations have been spent.

It appears that at present the MOEC does not have staff sufficiently trained in fiscal estimations, budget preparations, and expenditure reporting procedures for fully effective operations.

3.2.2.6 Facilities and Logistics. The central MOEC, the Regional Directorates of Education, and the District Education Offices do not have adequate facilities and logistics support to enable them to function effectively. Most of the section offices of the MOEC do not have the minimum facilities, such as telephones, photocopiers, transportation, working tables, and bookcases. Telephones are provided only to the division level offices, and even these are not always in working order. The section level offices are supposed to have extension telephones, but most of these are not in working order.

The Regional Directorates of Education and the District Education Offices generally do not have adequate facilities, and neither do they have the transportation which is so essential for their functioning. In many of the cases where these offices do have vehicles, they do not have sufficient funds for their operation and maintenance. Inspectors of schools cannot perform their primary function without adequate transportation, and thus considerable amounts of salary funds are virtually wasted because these individuals cannot visit the schools for which they are responsible.

3.2.2.7 External Assistance Coordination. This topic is treated more fully in Chapter 9, which covers many aspects of external assistance activities. The major point to be made here is that externally sponsored projects utilize a significant amount of the funds spent on education in Nepal and should be closely managed as part of the overall program of the MOEC. External assistance projects involve the expenditure of many millions of rupees and many extend over several years. These are fully covered in Chapter 9 and other parts of this assessment, so their specific descriptions will not be repeated here. What is important to emphasize here is that the management of these projects should be more fully integrated into plans and programs of the MOEC. After all, many of these projects are operated with funds borrowed by Nepal, albeit on concessionary terms, and they should be spent in accordance with the overall development plans of the nation. Even projects based on grant funds should support aspects of the five-year plans identified by the nation. Externally funded projects should not be based on grant or lending priorities of the bilateral or multilateral agencies, which may or may not be in harmony with Nepal's development plans.

Project planning is often done by the external assistance agencies themselves, designed to suit their own priorities, and the planning is often done by a team of outside "experts" working in Nepal for short periods and with little local participation in the planning process. Because of the lack of local participation, the costs of these projects are often based on external standards for what can be afforded, and little attention is given to the reasonableness and affordability of the post-project recurrent costs that must be borne by HMG. Because of this, many expensive "showcase" projects may function at a high and effective level while external funds are available, but collapse when the project ends and the continuing burden of these excessive costs falls upon the shoulders of HMG.

Institution building requires long-term support, often well beyond the five-year period for many external assistance agency funded projects. Also, project managers brought from outside Nepal may operate these projects effectively during the life of the project, but unless local staff are trained and given the opportunity for long-term on-the-job experience after this training, they will not be able to manage these projects. Hence, the institution building aspects of funded projects are often addressed through training, but not fully addressed by sufficient on-the-job experience following this training.

A major effect of this condition is that large amounts of external assistance funds, which could be spent to support national goals, are instead wasted on efforts that do not directly benefit Nepal in the long-run. People's expectations are raised in the areas benefitting from many of these projects while they are operated with external funds, only to result in disappointment when the projects end and HMG cannot continue to fund the efforts because of the high recurrent costs. The net result of this fragmented approach to the use of external assistance funds is that much of HMG policy in education is not supported by this important source of funds, and the influence of the policies of external assistance agencies on how the funds are spent makes them a de facto participant in the formulation of government policy.

A closer coordination of external assistance funds, as discussed more fully in Chapter 9, would solve this problem by focussing the activities of external assistance agencies on government policies, plans, and objectives in the education sector.

3.2.3 Staffing

The structure and functional aspects of the MOEC, as described above, provide the operating framework for the education sector. The operating force in the sector, in the final analysis, depends on the qualifications and performance of the staff members working in the ministry--from the highest ranking officers to the classroom teachers. This section covers these aspects of the management of education.

Technical vs. Administrative Cadre

There are two general types of staff within the MOEC, the members of the technical cadre and of the administrative cadre. Members of the technical cadre are those persons with technical training in education. They are permanent

employees of the MOEC and not subject to transfer. Members of the administrative cadre, however, can be transferred among the various ministries. Of the 665 gazetted members of the MOEC staff, 268 (40 percent) are members of the administrative cadre and 397 (60 percent) are members of the technical cadre. Of the 1,817 non-gazetted staff, 991 (55 percent) are administrative and 826 (45 percent) are technical. Considering the total of 2,482 for both of these groups combined, 1,259 (51 percent) are administrative and 1,223 (49 percent) are technical.

The MOEC is not regarded by many civil servants as a desirable place to work, according to some reports, and there is hence a significant turnover among the administrative cadre. This reduces operational efficiency, as new persons in jobs take some time to learn the duties associated with a new ministry. As shown above, an extremely large number (51 percent) of the MOEC staff are subject to transfer. The administrative cadre includes some very key positions within the MOEC. The District Education Officers, for example, belong to the administrative cadre. This has two implications detrimental to efficiency. First, the District Education Officers have no professional training in education, for the most part, and thus are usually not qualified for these important positions. Second, there is a very high turnover among individuals assigned to these positions.

This situation would be partly improved if some of the better staff would be moved from the administrative to the technical cadre, but many employees do not want this. They do not wish to be locked into the MOEC, but instead want to have the option left open for them to be transferred to more desirable positions in other ministries. Another difficulty is that the Public Service Commission can certify individuals in technical positions even though they do not have the required skills. Regardless of these considerations, it is clear that an increase in the numbers and quality of the MOEC's technical cadre would significantly improve effectiveness as well as reduce turnover.

Numbers

The numbers of staff of the MOEC have been presented above in Table 3.1. This table shows the allocation of the 3,199 MOEC employees, excluding teachers and headmasters, for all divisions and major sections and units of the Ministry. As one of the larger employers in the nation, and perhaps the largest when the teachers are included, the MOEC can be a major force in development. It is important that this very large workforce be managed effectively.

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Table 3.1 also presents the technical versus administrative breakdown of staff for each of the following levels within each unit: special class; gazetted 1st class; gazetted 2nd class; gazetted 3rd class; non-gazetted 1st class; non-gazetted 2nd class; non-gazetted 3rd class; non-gazetted 4th class; mixed class; no class; and lowest grade.

This large number of employees should be enough to manage the current responsibilities of the MOEC, assuming that all are trained and qualified, motivated, and working effectively at their jobs. Even given the increased responsibilities of the expansion required for providing universal primary education, these numbers should be sufficient within most sections. Effective management would enable the MOEC to achieve most of its targets with this number of positions.

Qualifications

It was generally reported that the basic qualifications for the staff were sufficient for their job responsibilities. Many of the higher level staff have been trained abroad, and even greater numbers have been trained in Nepal and in the region. The scope of this assessment did not include a determination of the formal training for every staff member of the MOEC, but the general impression is that formal qualifications are adequate for most positions. At the field level, in the opinion of the MOEC central staff, there is a need for more training of the headmasters, supervisors, and District Education Officers.

Motivation

The motivation of the MOEC staff is not as high as it could be under better conditions. This is partly due to the incentive system (which is discussed below in Section 3.2.4) and partly due to lack of effective discipline. Low salaries, a weak incentive system, a heavy workload at management and other levels, a sometimes unclear delegation of authority, and imprecise job descriptions all make staff utilization less than optimal. Most of these problems, fortunately, can be addressed at the policy level with improved management at the higher and middle levels of the MOEC. The potential for improved managerial effectiveness is present.

Field Staff Effectiveness

The effectiveness of the field staff, from the District Education Offices downward in Figure 3.2, is relatively low. To begin with, as set forth above, the District Education Officers are members of the administrative cadre and generally

have no formal training in educational management. In addition, as also explained above, the District Education Officers have dual responsibilities, to the District Panchayat and to the MOEC, and these two authorities do not always have the same objectives. Further, the lack of sufficient facilities and logistics hampers the effectiveness of these offices.

Supervisors are not generally trained for their jobs and have too many schools to manage given their limited time and travel funds. As some interviewees emphasized, many of these supervisors are good and work very hard at their jobs. In general, however, it was felt that the supervisory system is not at present functioning very effectively.

The headmasters, whose important role in the managing of schools has been referred to above, generally have had no training in school management or budgets. They are generally persons who have been promoted from the ranks of the teaching profession, and in most cases do not effectively manage their schools.

3.2.4 Incentives

The incentive system for MOEC employees does not adequately support effective and efficient performance. The history of Nepal's experience with various approaches to personnel practices is interestingly presented in Stiller and Yadav's book *Planning for People* (1979, p. 119-122). They explain the difficulties with making effective job performance a major criterion for advancement in an environment where many other factors also influence such decisions. Nevertheless, unless quality of performance influences advancement, it will be difficult for the MOEC to operate effectively.

It is important to recognize that problems of low performance are often motivational rather than a question of capabilities. As Shrestha has clearly stated in a recent seminar in Nepal organized by Integrated Development Systems (1983, p. 132), the performance of Nepalese in the private sector in Nepal, and working with foreign counterparts here and in other countries in international agencies, is at a high level. *It is the working environment, therefore, that accounts for the differences in performance between the public and the private sectors.*

An improved incentive system, linking advancement to quality of performance, and removing personal preferences that allow superiors to advance subordinates on the basis of highly subjective grounds, would significantly increase the productivity of the current staff of the MOEC.

3.2.5 Available Training

As noted in the above paragraphs, there is no presently identified need for highly specialized training among the central staff of the MOEC. There may be gaps in certain specialized areas, but these have not yet been clearly identified. At the field level, however, there are considerable needs for training that have been already cited. These particularly include training for District Education Officers, supervisors, and headmasters. This section briefly summarizes available training resources, mostly local, that might be used for needs that are already known and for ones that may yet be identified.

Ministry of Education and Culture

Some training is provided in-house to the MOEC staff. The field offices of the MOEC, such as the Regional Directorates of Education and the District Education Offices, sometimes organize short-term training, workshops, and seminars. Although the exact numbers of trainees from these programs are not readily available, it is certain that they do not fill the current needs for the training of MOEC field level staff. Also, there are not sufficient funds and trained instructors for these internal programs to train all of the necessary District Education Officers, supervisors, and headmasters in the foreseeable future.

The MOEC also sometimes organizes one-time training programs, often in the form of a workshop or a seminar, in collaboration with institutions outside the MOEC. This type of training program, requiring no hiring of staff and no modification of the existing infrastructure, may possibly be most appropriate and cost-effective for some types of training.

Other ministries have their own training institutions, and some MOEC staff believe that administrative staff training needs are sufficient to justify a similar training institution for the MOEC. It is not possible to assess this position without a more thorough assessment of training needs than was done for this present study.

The training of teachers is covered in the chapters of this assessment dealing with primary education, secondary education, and teacher education.

Ministry of General Administration

The Ministry of General Administration (MOGA) has a Training Division that regularly offers short-term training for non-gazetted employees of HMG in general administration and office management. The MOGA, in the past, has offered

inservice training for 2nd and 3rd class gazetted officers, but has discontinued this since the establishment of the Nepal Administrative Staff College.

A major administrative level offering of the MOGA is the Administrative Assistant Training course. This is a course that many HMG administrative staff take before joining the Public Service. The curriculum for this course covers topics such as office management and official procedures, Administrative Acts and Regulations of HMG, fiscal administration, and general administration. This is an intensive course of five hours per day, and it lasts from five to six weeks. Trainees take this course in groups of 40, the drop-out rate is less than one percent, and the cost per graduate is very low at about Rs 350. No information was readily available on the evaluation of the skills imparted by this training, but it certainly is a potentially effective source for training administrative staff of the MOEC.

The MOGA offers no specific courses relevant to the technical cadre of the MOEC. It does, however, allocate a significant number of advanced scholarships, grants, and fellowships from external assistance agencies in the fields of administration and management. Should training needs in these areas be identified, this could be a potential source of training for gazetted officers of the MOEC. From 1978 to 1986 the Training Division of the MOGA sent 896 candidates abroad for high level training in general administration and management. Since management of education is so critical for the effectiveness of activities in the education sector, this is a source of training in this skill area. The high-level training of specialists abroad could be used, in cooperation with existing local institutions, to eventually provide in-country training programs for these specialties.

Nepal Administrative Staff College

The Nepal Administrative Staff College (NASC) could be an effective source of in-country training for the MOEC. The NASC, located at Jawalakhel, Patan, has 99 staff members, including 35 high-level trainers and 36 assistants, plus support staff. It was established in 1982 and, with respect to the focus of this chapter, has as part of its goal the following objectives: to provide training for employees of HMG and Public Enterprises (Government Corporations); to identify ways to improve the capability of management in these target institutions; and to conduct research related to the preparation of training materials and improving the utility of training.

The programs of the NASC are primarily in general administration and management for the gazetted officers of HMG and Public Enterprises. The NASC does not have staff experts in the field of education, and thus cannot offer the full range of training that might be identified for the MOEC. However, the NASC can assist with MOEC training in the important areas of general administration and personnel management. Also, the NASC can organize special programs on request. It prepared and gave a six-week training program for 23 District Education Officers in 1984, for example, and an eight-week program for 13 secondary school supervisors in 1985. Training for headmasters, educational administrators, technical educational administrators, and supervisors, however, is generally not regarded by the NASC as within its purview.

The duration of the NASC training varies according to the program requirements. These range from two- to six-day seminars for very specific purposes, to general programs for gazetted 2nd and 3rd class officers of from five to six weeks. The drop-out rate for NASC courses is insignificant and the costs per participant for the training average about Rs 7,130, which is comparatively very high. The college receives significant support from the European Economic Community, but the majority of its funds come from HMG.

Tribhuvan University

Tribhuvan University had an Institute of Education (IOE), recently renamed the Faculty of Education (FOE), that offered courses and programs of relevance to the MOEC. The university in the past offered a three-month intensive course for school supervisors, and also offered special short-term programs for secondary school headmasters, model school headmasters, and for both headmasters and supervisors of primary schools. At the present time, however, the only regular courses offered that are relevant to educational administration and supervision are the B.Ed. and the M.Ed. courses.

The B.Ed. courses are for secondary school teachers and the M.Ed. program is for higher-level training for primary and secondary teacher educators as well as educational administrators, curriculum specialists, and supervisors.

Many individuals interviewed, both at the central and the field offices of the MOEC, maintained that the university courses are too academic in nature and do not reflect the realities of education in Nepal. Courses on classroom practices, for example, were said to not reflect the realities of classrooms in remote areas--lack

of instructional support materials, late arrival of textbooks, and shortages of basic supplies such as chalk, maps, and posters.

Out-of-Country Training

Many training opportunities are made available from international agencies and governments, such as India, Pakistan, the United Kingdom, the United States, UNESCO, UNICEF, and so on. Some of these are scholarships and grants and are offered for educational administrators, personnel administrators, headmasters, and other kinds of educators.

There does not appear to be any central clearinghouse for all of this training, and it certainly is not controlled by the MOEC. Part of the allocation of training programs depends on individual external assistance agencies, and this is not controlled by HMG as closely as it might be.

Some of these invitations for conferences, seminars, workshops, and scholarships are channeled through the UNESCO/UNICEF section of the MOEC. There does not appear to be a mechanism to do two important things: coordinate all external assistance agency training opportunities so that they match the needs of HMG as opposed to the agencies' interests in offering training in specific areas, and allocating these training opportunities to areas most likely to meet Nepal's need for new skills and knowledge.

3.3 ANALYSIS

Based on the information presented above, this section contains an analysis of the needs in this area and the current constraints to meeting them. Based on this, a set of seven conclusions is derived from this analysis, and seven recommendations are presented.

3.3.1 Needs

The analysis of needs related to the education system management follows the same order of topics as used in the status section: structure and functions; staffing; incentives; and training. These are presented below in Sections 3.3.1.1 through 3.3.1.4. This section on needs will not present again the basic information, given above in the status section, from which these needs are derived.

3.3.1.1 Structure and Functions. Needs identified in this section relate to the relevance of the structure and functions of the MOEC to the Basic Needs goals for

education; decentralization; data collection and use; manpower planning coordination; external assistance agency coordination; and facilities and logistics. Each of these is separately discussed.

Basic Needs Relevance

The present structure of the MOEC is not sufficient to fully support the major increase in responsibilities required to implement the Basic Needs activities related to universal primary education. There needs to be a strengthened unit, with an adequate number of well-trained staff, having specific responsibility for managing primary education, and with strong coordinating links with the MOEC sections related to primary school teacher training.[3] Responsibility for primary education is currently under the School Administration Section of the Educational Adminstration Division, which is not sufficiently staffed at present to manage this massive expansion program.

Decentralization

For the MOEC to operate more efficiently and effectively, sufficient authority and decision-making powers have to be released from the higher levels and truly delegated to middle-level officers and field offices. Much authority has in fact been delegated downward, but many decisions are not being made on a decentralized basis. Staff need general guidelines that clearly set forth the goals and objectives of the MOEC. They should be informed that their duty is to make decisions, appropriate to their levels, that are related to the mission of the MOEC.

Data Collection and Use

All data collection needs to be done by a single unit within the MOEC for purposes of cost savings, avoidance of duplication, and the most efficient use of personnel trained in data collection and analysis. The current existence of two separate units for this purpose, in different Divisions of the MOEC, is not an effective use of scarce manpower and equipment resources. There also needs to be a closer connection between planning done by the Planning Division of the MOEC, and by the NEC, so that data can be gathered that will enable these planning units to make informed choices among policy options. Data based planning is an absolute

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[3]Since this report was drafted (August 1987) a new organizational unit has been added to the MOEC to handle these responsibilities (see Annex 3.3).

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requirement for efficient allocation of resources and for the achievement of operational effectiveness within the Ministry.

Manpower Planning Coordination

Closer coordination is needed between programs of the MOEC and projected national manpower needs. This is particularly true for planning the curriculum and trainee flows in the areas of technical and vocational training, but it also has relevance for curriculum planning in primary and secondary education. To do this most effectively would require more precise information about manpower demand to be made available. The current manpower demand information is only collected for six broad categories of technical manpower, and at three levels for each of these areas. Also, this manpower demand information does not take into consideration the projected needs in the areas of administrative or managerial personnel, or the anticipated requirements for teachers. The government manpower statistics focus only on the public sector requirements, and do not reflect the projected manpower needs of the private sector. In addition, it is reported that the actual hiring practices of the Public Service Commission do not follow the projected needs. Without an improvement on the demand side of manpower information, the MOEC and other related ministries concerned with training will not be able to effectively adjust their education and training programs to meet the development needs of the nation.

External Assistance Agency Coordination

Considerable improvement is needed in the coordination of external assistance agency activities to focus them more on the priority development needs of HMG. Such a coordination unit exists in the Ministry of Finance--the External Aid Division. In order for the MOEC interests to be better represented at the MOF, the MOEC's capabilities should be strengthened in the areas of planning and budgeting.

Facilities and Logistics

Considerable improvement of facilities and logistics is needed for the effective functioning of the MOEC. Basic office equipment is needed at the central as well as the field offices, and funds for transportation are desperately needed for the supervisory staff of the field offices.

3.3.1.2 Staffing. The needs related to staffing concern the areas of staff continuity and motivation, and are separately cited below.

Continuity

There needs to be less turnover of staff. In the central offices of the MOEC this is particularly important for the technical as well as the administrative cadres, and an important need is for more MOEC central staff to be in the technical cadre. Fewer leadership changes are needed so that there can be a continuity of staff and the policies and practices associated with individual staff members. Turnover at the District Education Officer level is also particularly disturbing to district-level operations.

Motivation

Staff motivation for the timely performance of job duties must be increased if effectiveness is to improve. Possible means to increase motivation are presented immediately below in the section on incentives.

3.3.1.3 Incentives. Staff performance can be improved through better incentives. These are discussed below in terms of needs in the areas of remuneration, initiative, delegation of authority, and performance evaluations.

Remuneration

Remuneration for the MOEC staff needs to be increased so that the better and more effective staff can be retained. Across-the-board increases are not financially feasible, because of the high aggregate total cost. Also, such increases are not effective because they reward ineffective staff as well as effective staff. Some attention needs to be given to ways to remunerate the most effective MOEC staff for their performance. Selective salary increases based on effective job performance might be financially affordable as well as effective, despite difficulties with the administrative feasibility of such a plan.

Initiative

Individual initiative needs to be encouraged and used as part of the reward system. Since individuals in public service generally advance in rank and salary with the passage of time, unless they make grave mistakes, their most reasonable course of action under present conditions is to make as few decisions as possible.

This conservative approach reduces the number of mistakes they may possibly make. It also, of course, greatly impedes the operations of the MOEC. The internal incentive system needs to be modified so that it becomes more reasonable and rewarding for individuals to exercise initiative than to pass decisions (and the associated chances for mistakes) further up the ladder of authority.

Delegation of Authority

In addition to the encouragement of individual initiative, more authority should be delegated to middle-level and lower-level staff. The current highly centralized authority must be changed if the administrative machinery of the MOEC is to become more effective. The delegation has to be actual, and not just nominal. This implies a review of job descriptions and a change in the reward system so that staff who for years have been discouraged from exercising authority can now not only feel free to make decisions but also feel obligated to make some decisions.

Performance Evaluations

Performance evaluations have to be reformulated so that financial rewards, promotions, and increased responsibilities can be based on criteria that are relevant to effective management of the education system: effective performance of assigned duties; exercise of authority appropriate to levels of responsibility; proven initiative in getting the right jobs done; and other behavior related to achieving institutional goals of the MOEC. Length of service and formal training or educational qualifications are currently the major basis for advancement when, in fact, these are probably not highly related to job performance. The use of performance as a major criteria for advancement is not easy and in fact has been tried in the MOEC in the past. Nevertheless, past difficulties with a potentially effective means to improve job performance should not be a deterrent to trying again (in a different way) to make job effectiveness a major factor in performance evaluations.

3.3.1.4 Training. As indicated above in the section on status, it is the opinion of many individuals interviewed that the MOEC staff have the qualifications necessary to perform their jobs effectively. This section on training does not imply that this is a major area of need. Comments are offered here on the role of a needs analysis prior to any significant training effort, and factors of training versus those of motivation.

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Needs Analysis

There is no general need for training on any widespread basis within the MOEC. Interviewees and various documents suggest a need for training for District Education Officers, headmasters, and teachers. Training can be very expensive, and can be ineffective if the wrong information and skills are imparted by the training. Therefore, the major point of this section is that any training should be preceded by a thorough needs analysis so that these sorts of costly mistakes can be avoided. Training teachers in advanced methods of pedagogy, for example, could be a costly mistake if these teachers do not know the basic content of the curriculum they are to cover. Training headmasters in details of accounting when their basic skills in accounting are lacking is another example. Finally, it should be emphasized that training will not of itself guarantee effective job performance. Training must be focused on the required skills and knowledge, and the trainees must return to a job situation where their training can be used effectively. *In other words, the entire system of the work environment must be considered in order to improve organizational effectiveness, and no single input can make a significant impact if not coordinated with the whole working environment.*

Training vs. Motivation

As indicated in the closing part of the paragraph above, the motivational aspects of the work environment need to be attended to as well as the skills and qualifications of the staff. The staff have to believe that their initiative and hard work will be rewarded, and that advancement will not be based on cautious performance and personal contacts. Unless changes are made so that job performance is related to advancement, the management problems of the MOEC will continue and the efficiency of the entire education management system will remain unresolved.

3.3.2 Constraints

Constraints are restrictions to the attainment of objectives of the MOEC. Several constraints are identified from the information in the status section, and they are presented below: data quality and timeliness; centralized decision-making; structure; staff utilization; staff turnover; effectiveness of external assistance agency contributions; and people's participation.

Data Quality and Timeliness

Data are not collected on the basis of what information is needed to support various policy options, particularly with respect to implementing the educational component of the Basic Needs Strategy of HMG. Those data that are collected are gathered in a costly way partly because there are two data collection units within the MOEC with overlapping responsibilities. Data that are collected are not received on time, and the MOEC cannot compel the districts to submit them on time. In addition, the partial information reported from the field offices is very likely not reliable, and no measures are taken to validate them. In summary, the data that are collected are not directly policy related, are not reported in a timely manner, and are of unknown (and questionable) accuracy.

Centralized Decision-Making

The highly centralized decision-making in the MOEC is a major constraint to speedy and effective implementation of HMG's goals and objectives. Unless this is changed, the achievement of universal primary education by the year 2000 A.D. is not likely to be achieved. The internal efficiency of the MOEC is greatly reduced by this hierarchical concentration of power.

Structure

There are some structural constraints to effective operations. There is not a separate section for implementation of the program for universal primary education and there should be strong sections responsible for the collection, analysis, and reporting of all data for policy formulation, planning, and implementation.

Staff Utilization

Staff utilization has constraints related to highly centralized decision-making, performance evaluations not sufficiently based on job effectiveness, insufficient internal flow of information within the MOEC, and discouragement of individual initiative. In some cases, additional skills and knowledge related to job descriptions are lacking, but training should only be used where needs are clearly identified and where programs are specifically targeted to these needs.

Staff Turnover

The rapid turnover of staff is a constraint to efficient operations. This constraint is found at high levels in the MOEC and has particularly been identified as a problem at the District Education Officer level. Continuity of operations is disturbed, and efficiency temporarily reduced, whenever there are staff changes.

Effectiveness of External Assistance Agencies

The lack of full external assistance agency coordination under HMG direction is a constraint to effective use of these rather large amounts of funds. This topic is treated fully in Chapter 9, but at this point it is important to mention that a closer alignment of external assistance agency projects with HMG goals and objectives would greatly enhance the effectiveness of these funds.

People's Participation

As pointed out in the status section, the local contributions to education made by people's participation is essential for the funding of basic education. The dual authority over the District Education Offices, associated with their responsibilities both to the District Panchayat and to the MOEC, comprises a constraint to their effective operation with respect to people's participation.

3.3.3 Conclusions

The following conclusions are based on the above information and analysis of the management of education. They cover the following areas: policy; decision-making; organizational structure; incentives; staff turnover; classroom management; and staff training.

Conclusion 1. Policy. Policy making is not sufficiently supported by data based analysis; nor is its implementation adequately guided by data based planning and feedback from operational programs.

Conclusion 2. Decision-Making. The highly centralized decision-making system slows down the operations of the entire education management system, and consequently hinders the timely and effective implementation of all policy and plans. (This could be relieved by full implementation of the decentralization plan.)

Conclusion 3. Organizational Structure. The current organizational structure could more effectively support the universal primary education organization goals with a strengthened unit responsible for primary education; and overall policy, planning, and management would be improved by a closer coordination of data collection, analysis, and reporting.

Conclusion 4. Incentives. The reward system does not encourage individual initiative, and advancement is not directly related to quality of job performance.

Conclusion 5. Staff Turnover. Operational efficiency and effectiveness is hampered by excessive staff turnover at many levels. It is particularly a problem at higher levels, where turnover can bring about associated policy changes, and at the District Education Officer level, where changes affect management of field level policies and practices.

Conclusion 6. Classroom Management. Effective classroom management, and hence instructional effectiveness, is hampered by the lack of sufficient technical and managerial expertise at the levels of the District Education Officers, supervisors, and headmasters.

Conclusion 7. Staff Training. Current training programs are too academic and not based on required job skills. Programs for training District Education Officers, supervisors, headmasters, and teachers must be low-cost in order to handle the training needs within cost constraints; and any teacher training programs must be associated with the availability of suitable instructional materials in the classrooms, following the training, for the training to be cost-effective.

3.4 RECOMMENDATIONS

The following recommendations, which are listed in priority order, focus on the major concerns related to management of the education system. They are derived from the analysis of needs, constraints, and conclusions in the preceding sections of this chapter.

Recommendation 1. Improve coordination between existing data collection and analysis activities. A major result of this improvement will be enhanced support for more informed policy development by the MOEC, and for better work by the

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Planning Division. The consolidation and sharing of current data collection and analysis will make more efficient use of staff and personnel now working independently on these activities. More fully coordinated collection of data will also enable the MOEC to function more effectively with any agency concerned with manpower planning.

This coordination should include authority for data collection, so that District Education Offices will be compelled to submit their data forms on time. Coordination should include data sharing and cooperation with regard to data collection. This way, schools' evaluation and routine statistical data could be used by either unit. Also, the present duplication of data collection will disappear and cost savings will be realized.

Implied in this recommendation is an analysis of staff skills, and the providing of any necessary training. Based on informal discussions, training in data analysis and reporting is likely to comprise an area of need. Also, additional hardware and software may be needed.

Recommendation 2. Decentralize more administrative tasks and responsibilities. More delegation of responsibility is necessary for the improved management that will be required for current tasks of the MOEC as well as for the management of the complex goal of attaining universal primary education by the year 2000 A.D. Staff at the middle and lower levels must have clearly defined areas of responsibility, within which they feel free and responsible to make decisions. This will require endorsement and implementation from the highest levels in the MOEC if it is to be successful, and it also implies the surrender of some influence at the higher levels in the organization.

At the level of the District Education Offices, and the schools within their jurisdictions, there should be less dependence upon higher administrative levels for decision-making within certain well defined bounds. The type of change that would improve classroom management, for example, would be to allow headmasters to dismiss temporary or permanent teachers not fulfilling their teaching obligations.

As part of the process to encourage more local participation in this decentralization, the MOEC could monitor the amounts contributed by the local communities. The levels of local contributions could be used to guide the payment of central contributions, with more funds going to those communities that give more local support. Also, this information could be used to give public recognition to communities that support their schools most generously.

Recommendation 3. Strengthen the Programme and Evaluation Section of the Planning Division. The Programme and Evaluation section should maintain close contact with all external assistance agencies operating in Nepal, and keep these agencies informed of HMG's priorities in the education sector. When presented with data-based identification of needs in the education sector, most external assistance agencies will be willing to modify their own priorities to best meet the development needs of Nepal. Such coordination also will avoid duplication of activities among these agencies, thus making more effective use of this major source of funds in the education sector.

Because of the need to meet the universal primary education target, the MOEC should make additional personnel commitments to the section responsible for this task. Achievement of this task will also be assisted by the improved data that will be available from the implementation of Recommendation 1, and will be helped by the better planning that these data will allow.

Recommendation 4. Improve staff incentives by relating rewards to effective performance. The performance evaluation system must reward effective performance of individuals if the education management system is to function effectively as a whole. "Effective performance" has to be clearly defined to include individual behavior that enhances system efficiency. An extreme example is the problem with teacher absenteeism, which is reported to occur at alarmingly high rates in some schools. If teachers were not paid when they did not report to school and remain through the day, absenteeism would decrease. This might not ensure effective teaching, but it would be a step in the right direction.

In addition to financial awards, public recognition of outstanding performance can be a strong motivator for effective performance if everyone understands the basis for making the awards. Such awards made on the basis of personal friendships, for example, are relatively meaningless when compared to those made on the basis of outstanding contributions to education.

Recommendation 5. Reduce staff turnover. Policy changes can be made that will reduce staff turnover, and will result in more effective performance. One example of such a policy change would be to shift some of the key positions in the MOEC from the administrative cadre to the technical cadre. The District Education Officers would be a good example of the type of position that could be shifted.

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Other policy changes could focus on improving the incentive system, as cited in Recommendation 4, so that remaining in the MOEC becomes a more attractive career for the individuals who might otherwise seek better opportunities outside the Ministry.

Recommendation 6. Conduct a training needs analysis. A training needs analysis should be conducted to identify any lack of knowledge and skills among the central staff of the MOEC, the District Education Officers, the inspectors, the headmasters, and the teachers. As stated in this chapter, qualifications are less a problem than lack of incentives for the central staff. Nevertheless, there may be some sections with personnel who require training in specific areas. With respect to the District Education Officers, inspectors, and headmasters, however, there seems to be general agreement that many of them lack the skills and knowledge required for the effective performance of their duties. (The needs for teacher training are covered in Chapter 6.)

This training needs analysis should not be based on a survey of formal qualifications, but instead should be based on an assessment of actual knowledge and skills possessed by the individuals. For positions where there are large numbers of incumbents, such as District Education Officers, inspectors, and headmasters, a sampling of the total pool would be sufficient to identify generic training needs, thus reducing the costs and time needed for such an analysis. One outcome of this analysis might be a transfer of staff within the MOEC so that knowledge and skills are more closely related to job requirements. Another possible policy option that might result from implementation of this recommendation could be the establishment or adaptation of a training institution for MOEC administrators, depending on the training needs identified (see following recommendation).

Recommendation 7. Train staff with on-site programs, using existing institutions, in specific areas identified by the training needs analysis. In order for the training to be cost-effective, it should all be done in Nepal. In addition to savings in travel and related costs, on-site training is less attractive to individuals who want to attend training programs for non-professional reasons.

Whenever possible, existing programs should be used as the first choice. There are a variety of programs cited in this chapter that might be considered at the MOEC itself, the Ministry of General Administration, the Nepal Administrative Staff College, and the Faculty of Education at Tribhuvan University. If existing training

programs are not available to meet the identified needs, then the second choice should be the modification of existing programs. The third choice should be the setting up of new programs to suit these needs, but this should be done within existing in-country institutions and using available local instructors whenever possible. This not only is a three-step approach which minimizes training costs, but it also builds in-country training capabilities. Out-of-country training should be used only when none of the above three types of training are available. Out-of-country training is very expensive. Even if the funds for such training are loaned on a concessionary basis by external assistance agencies, it involves training which is often not suited to the local setting with respect to content and cultural sensitivities, and it does not contribute to the strengthening of local training institutions.

Finally, the training programs should use competency-based evaluations for course completion. Certification should be based on the demonstrated acquisition of skills and knowledge and not on class attendance. This implies a specific development of a curriculum in terms of objective behavioral outcomes related to job performance, and less emphasis on theory and overly academic instructional content. The objective of each program should be to improve job performance of course completers, based on the skills and knowledge identified by the training needs analysis advocated by Recommendation 6.

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Annex 3.1

Interviewees

Phaneendra Ratna Bajracharya, Undersecretary (Personnel Administration Section), General Administration Division, MOEC

Lokesh Raj Dali, Manager, Science Equipment Division, JEMC

DEO, District Education Office, Kavre, Dhulikhel

Dolakha Bahadur Gurung, Acting District Education Officer, Tanahun, Damauli

Balaram K.C., Secondary School Supervisor, District Education Officer, Kavre, Dhulikhel

Phaneendra Man Malla, Campus Chief, Education Campus, Kathmandu

Sarbagya Bhakta Malla, Reader, Central Department of Educational Planning and Management, Tribhuvan University

Keshab Prasad Nepal, Joint Secretary, Planning Division, MOEC

Sharad Chandra Pandel, Deputy General Manager, JEMC

Vishwanath Poddar, Director, Primary Education Project (PEP)

Anand Lal Pradhan, Director, Regional Education Directorate, Western Region, Pokhara

Bishnu Gopal Risal, Joint Secretary, Training Division, Ministry of General Administration

Ramesh Kumar Shah, Administrative Officer, SEP

Gopinath Sharma, Joint Secretary, Educational Administration Division, MOEC

Prabhakar Sharma, Project Education Officer, Science Education Project (SEP)

Balaram Shrestha, Reader, Department of Planning and Management, Tribhuvan University

Bimal Lal Shrestha, Acting Chief, PMU/PSTU, CTSDC

Kedar Nath Shrestha, Chief, Curriculum, Textbook and Supervision Development Centre (CTSDC)

Khadga Man Shrestha, Director, Directorate of Technical and Vocational Education, MOEC

Ram Bhakta Shrestha, Deputy Director of Studies, Nepal Administrative Staff College (NASC)

Birendra Kumar Singh, Acting District Education Officer, Kaski, Pokhara

Iswar Prasad Upadhyay, Controller of Examinations, MOEC

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Annex 3.2

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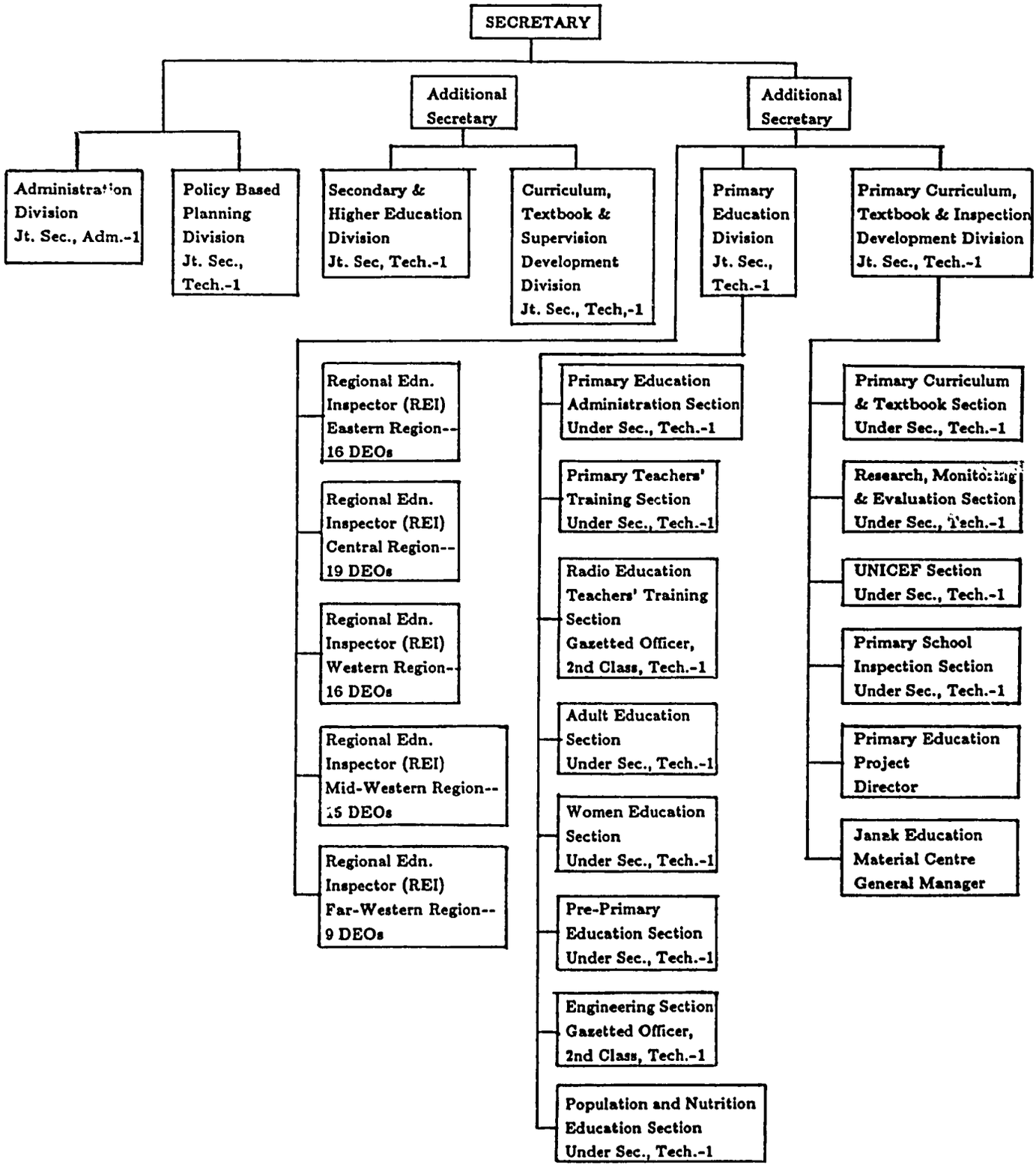
Annex 3.3

New Administrative Organization of the MOEC



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4. PRIMARY EDUCATION

This chapter covers primary education in Nepal: the current status; an analysis of needs, plans, and constraints related to implementing plans for the future; and a set of conclusions and recommendations for the more efficient use of resources in the subsector. Primary education is central to social and economic development and is a major area of emphasis for the Ministry of Education and Culture (MOEC). Nepal is planning to universalize primary education by the year 2000 A.D. and is preparing to devote significant human and financial resources to achievement of this goal. Success will depend on providing quality inputs which enhance the effectiveness of the system and motivate its participants.

4.1 STATUS

This section on status covers the historical setting for primary education, the national goals and strategies to achieve the subsector goals, characteristics of the schools, and a description of the subsector.

4.1.1 Historical Setting

Although the current system started in 1954, based on a model recommended by the Nepal National Education Planning Commission, the history of primary education in Nepal began in ancient times. There were six types of primary schools in the country before 1954: the English system, the Basic Education system, the Sanskrit system, the Gompa (Buddhist monastic) system, the Madarsa (Muslim school) system, and the Bhasa Pathsalas (vernacular schools). The commission of 1954, however, prescribed a common curriculum for all schools seeking government recognition and financial support through grants-in-aid. The commission established instructional objectives for primary education and proposed to introduce initial free primary education, followed by compulsory primary education as soon as possible.

Meanwhile, Nepal became a member of the Karachi conference under UNESCO sponsorship. Ministers of Education from several Asian countries represented there agreed that universal, free, compulsory primary education would be attained in each member nation by 1980. A plan was prepared by Nepal to meet that objective. However, the Karachi Plan mandate was not realistic with respect to Nepal's extremely low beginning point of 500-600 primary schools nationwide and less than 10 percent of the primary school-age children enrolled in these few schools.

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Later educational planning bodies, including The All-Round National Education Committee (1961) and the UNESCO Mission to Nepal (1962), also emphasized the need to expand primary education. Before 1971, primary education was the responsibility of local communities except for a limited number of government-sponsored schools. With the implementation of the National Education System Plan (NESP) in 1971, primary education received added attention. To increase access to primary education and maintain certain standards, government took responsibility for managing the schools centrally and, beginning in 1975, provided free primary education through Grade 3.

The Fifth Plan (1975-1980) sought to enroll 64 percent of the total primary school-age children (6-8 years) in primary school which was then Grades 1 through 3. In fact, a 90 percent enrollment was achieved by 1980. The Sixth Plan (1980-1985) also emphasized primary education but added special attention to improving access for girls and for children in more remote areas. Under the Sixth Plan, primary education was to be publicized widely with an emphasis on the improvement of instructional quality. In 1981, primary school was expanded from three to five years. Primary education also was to be extended to enroll 75 percent of the primary school-age population (now 6-10 years).

The rapid development of primary education has been appraised as outstanding in the Asian region by organizations such as UNESCO and the World Bank. Within only nineteen years (1951-1970) the number of primary schools increased from 321 to 7,256 and enrollment increased from 8,505 to 449,141. This high growth rate for primary education is very likely the result of a number of factors such as Nepal's sudden exposure to the outside world in 1951, the expansion of educational and related aspirations following the political upheaval of 1951, a series of planning efforts by government, a growing consciousness about the value of education, land reform, the growth of tourism, and other related factors.

4.1.2 National Goals and Strategies

The Seventh Plan (1985-1990) has a target of enrolling 87 percent of the primary school-age children (6-10 years). Education will remain free for Grades 1-5 and textbooks will continue to be distributed free to Grade 3 and to girls in Grades 4 and 5 in remote areas. The Plan proposes opening 1,000 more schools and adding 12,838 more teachers.

The Plan calls for compulsory primary education on an experimental basis to be undertaken voluntarily by town panchayats. The Plan favors a policy of privatization of primary schools where local leadership and resources are available. Pre-primary education is to be expanded to help reduce the high repetition rates in Grade 1.

The Basic Needs Approach to Development (1987)

The MOEC recently has prepared an education sector program guide for meeting the basic national needs by the year 2000 A.D. according to the Asian standard as directed by His Majesty the King. This document specifies the attainment of universal primary education of five years' duration and of desirable quality by the year 2000 A.D. The program at the primary level, however, is only meant to be universal in a voluntary and not in a compulsory sense (i.e., universal access). To achieve this target, the enrollment of boys must increase by 21 percent and girls by 157 percent.

Strategies

The strategies adopted by the MOEC for the expansion of primary education include the following incentives: free primary education, distribution of free textbooks, and privatization of schools. Primary education was declared free at the King's Coronation in 1975, and free textbooks have been distributed to Grades 1-3 since 1978. There are plans to gradually implement a program to make textbooks free for Grades 1 to 5 throughout the country by the year 1998 A.D. Beginning in 1988 textbooks will be distributed free to boys, as well as to girls, in remote areas. The success of these two strategies has been shown by the remarkable growth in primary school enrollments between 1971 and 1981. The annual growth rate for this period was over 11 percent. In the last four years, in the absence of new incentives, the annual growth rate has averaged about seven percent with the trend showing decreasing growth in enrollments.

Privatization, the third incentive, has become possible through the relaxation of government policy so that private schools can more easily receive government recognition. Privatization means giving government recognition to schools that are managed using only local resources. Schools may be completely private, or government supported schools may operate additional grades privately. Since this policy was implemented in 1981, a number of private schools, particularly boarding schools and English medium schools, have been opened. It is believed that the growth of

private schools has helped to reduce the outflow of children of affluent families to attend schools in India.

The employment of female teachers in primary schools has been considered a viable strategy to increase girls' enrollment. This strategy will be discussed in more detail in the teacher section (4.1.4.2) and in the Teacher Education chapter.

Besides the formal government channels for promoting primary education, a number of organizations working under the Social Services Coordinating Council are directly or indirectly involved in various projects related to primary education, including those which are internationally funded. The education of handicapped children has also been gaining priority in government plans and in the social welfare programs of various non-governmental organizations (NGOs).

4.1.3 Structure, Administration, and Distribution of Primary Schools

The following sections review the structure of the primary school cycle and the distribution of schools with respect to location, the school-age population, and the number of children attending school. The administrative structure and processes relevant to the school level activities are then discussed.

4.1.3.1 Organization and Distribution. The primary school cycle is five years with students expected to enter school at age six. There were 11,869 primary schools in 1985, a growth of 1.8 percent over 1984. Most primary schools are independent units with Grades 1-5; some are operated in combination with either lower secondary schools (Grades 1-7), or with upper secondary schools (Grades 1-10). Since the expansion of primary education from three to five grades in 1981, 14 percent of primary schools have not been fully upgraded to five grades. (See Table 4.1 for the distribution of the commonly occurring sizes of school units.) As the government moves from a 5-2-3 to a 5-5 structure, eliminating the lower secondary level (6-7) as a separate unit, approximately 2,285 schools will have to be either down-graded to primary only schools (Grades 1-5) or upgraded to full secondary schools (Grades 1-10).

The following paragraphs briefly discuss private schools, primary school locations, geographical density of schools by region, density with respect to school-age children, and average school size.

Table 4.1

School Distribution by Grade Combinations (1985)

Region	Grades										
	1	1-2	1-3	1-4	1-5	1-7[1]	1-8/9	1-10	6-10[2]	8-10	Total
Eastern Region	41	73	94	64	1,622	566	37	248	14	5	2,764
Central Region	92	109	125	239	1,747	594	62	318	26	14	3,326
Western Region	95	84	129	97	1,686	542	34	284	25	1	2,977
Mid-Western Region	31	89	113	130	954	336	33	101	8	3	1,798
Far-Western Region	27	40	44	39	610	247	16	77	9	8	1,117
All Nepal	286	395	505	569	6,619	2,285	182	1,028	82	31	11,982
% of All Schools	(2%)	(3%)	(4%)	(5%)	(55%)	(19%)	(1.5%)	(9%)	(.7%)	(.3%)	(.3%)

Source: Manpower and Statistics Section, MOEC, 1986 (unpublished)

Note: Incomplete primary schools which are government aided will add a new grade each year until they have a full 5 grades. Many of the incomplete primary schools are privately funded.

[1]Includes Grades 1-6 schools.

[2]Includes Grades 6-8 and 6-9 schools.

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Private Schools

The number of completely privately managed schools has been increasing dramatically. There were 439 private primary schools reporting to have 67,238 students and 1,623 teachers in 1985. (See Table 4.2 for more details.) Student enrollment has grown by more than 200 percent since 1984. Nevertheless, less than four percent of all students are enrolled in private schools. Since private schools cannot be compelled to complete government data collection forms, their exact number is not known. However, the above figures probably underestimate the total. Most private schools are located in urban areas. Many start teaching English at Grade 1, which explains part of their popularity.[1]

Table 4.2

Private Education in 1984-1985 (2041-2042)

Level	Schools		Students		Teachers	
	1984	1985	1984	1985	1984	1985
Primary	228	439	20,194	67,238	323	1,623
% increase		93%		233%		402%
Lower Secondary	88	210	5,907	16,813	138	610
% increase		137%		185%		342%
Upper Secondary	250	278	27,303	34,741	998	1,236
% increase		11%		27%		24%
Total	566	927	53,404	118,792	1,459	3,469
% increase		64%		122%		138%

Source: Manpower and Statistics Section, MOEC, *Educational Statistical Report of Nepal*, 1986.

[1]In 1986, based on information which became available after the August 1987 draft of this assessment was prepared, 8.7 percent of all Grades 6 and 7 were supported completely privately. These enrolled 8.1 percent of all lower secondary students. At the secondary level, 27.7 percent of all Grades 8, 9, and 10 were completely privately supported. Just over 19 percent of all secondary students are enrolled in these grades. Privately run primary grades also exist but they are less common; 2.6 percent of all primary grades, which enroll 3.1 percent of all primary students, are run privately.

Under the Seventh Plan (1985-1990), no new government-aided lower secondary (6-7) or upper secondary (8-10) schools will be opened. Nonetheless, the number of schcols with these grades is increasing as local communities expand primary schools by using their own resources. Pre-primary schools are also managed privately. In 1985, 266 reported to the MOEC with a total enrollment of 20,867. They had 1,067 teachers of which 61 percent were female. Student enrollment in pre-primary schools grew by 4[illegible] percent over 1984.

Primary School Location

The District Education Committee (DEC) decides where new primary schools are to be located. These decisions are based on criteria that include the availability of students and physical facilities as well as the proximity of other primary schools. However, this process is often influenced by political pressure as village Pradhan Panchas (i.e., chiefs of the village panchayats) seek to locate new schools at places of their choice. To discourage the use of such political pressure and to plan for the new teachers needed to universalize primary education by the year 2000 A.D., the MOEC is currently undertaking a school mapping study. The study will identify the location of existing schools and, using panchayat level population projections of the primary school-aged population, identify the number of teachers and location of schools needed over the next 13 years.

Geographical Density

The density of primary schools varies among the geographical regions. Nepal is divided into three geographical areas which are, from South to North, the Tarai, the Hills, and the Mountains. In addition, the country is divided into five Development Regions from East to West. Each development region encompasses districts from at least two or three of the geographical areas. In the Eastern Tarai there is approximately one school per seven square kilometers diminishing to one school per 19 square kilometers in the Mid- and Far-Western Tarai. In the Eastern Hill districts, the density is also about one school per seven square kilometers, diminishing to about one per 12 square kilometers in the Far-Western Hills. For all Mountain districts, school density is about one school per 29 square kilometers. The relatively high density of schools in the Eastern, Central, and Western Tarai (an average of one school per 7.6 square kilometers), where the terrain is flat, suggests that most students should be within walking distance of a school. Where the topography is more rugged and more of the land area uninhabited, the density of

schools declines. Since Hill and Mountain populations are widely scattered, no general statement about school accessibility can be made for children living in these areas. Nonetheless, accessibility is a known problem, especially for children living in small villages in more isolated areas.

Density with Respect to School-Age Children

The distribution of schools with respect to the population of school-age children, however, reflects the government's recognition that there must be relatively more schools in remote areas in order to serve this population. In the Central and Eastern Tarai, for example, there are approximately 350 school-age children for each primary school; this ratio declines to about 275 in the Far-Western Tarai. In the Hills, a ratio of about 150 school-age children per school remains fairly constant all across the country. In the Mountains the ratio is about 84 per school. This distribution is not, however, indicative of the number of children of primary school-age actually enrolled in school. This will be discussed in Section 4.1.4.1.

Average School Size

The average primary school size varies from 252 students per school in the Tarai districts of the Eastern Development Region to 36 per school in the Mountain districts of the Western Development region (see Table 4.3). Tarai schools are generally nearly double the size of Hill schools and often triple the size of Mountain schools. Average class size within schools varies from 45 in the Tarai to 26 and 16 in the Hills and Mountains respectively (see Table 4.4). In general, Tarai schools are more highly concentrated and larger, both in terms of total student numbers and average class size, than schools in other parts of the country.

4.1.3.2 Administration. At the central level, the MOEC is responsible for educational planning, budgeting, and evaluation. The Regional Education Offices (REOs) and the District Education Offices (DEOs) located within the regions are responsible for implementing these plans and monitoring activities at the school level. This section describes the administration system at the school level and at the district level as it relates to school administration.

Table 4.3

Average Primary School Size

by Geographical Location and Development Region (1985)[1]

Location	Development Region					
	Eastern	Central	Western	Mid-Western	Far-Western	Area Average
Tarai	252	176	235	192	222	211
Hill	121	129	146	98	105	124
Kathmandu Valley[2]	148					148
Mountain	106	101	36	52	95	77
Regional Average	169	169	160	110	120	153[1]

Source: Manpower and Statistics Section, MOEC, *Educational Statistical Report of Nepal*, 1986

[1] The average primary school size for privately managed primary schools is 153. The average primary school size in urban areas is 282.

[2] Kathmandu Valley districts are often treated separately from Hill districts, the geographical area in which the valley is located, because of the atypically high percentage of urban schools and children in these districts.

Each school is governed by a School Management Committee (SMC). Its members are the Pradhan Pancha or a representative appointed by the District Education Committee (DEC), the headmaster who is member secretary, a guardian (a parent or sponsor of a child) appointed by the village panchayat, a ward member also appointed by the village panchayat, and a benefactor of the school appointed by the SMC. The SMC's responsibilities include maintaining the physical facilities, hiring and firing teachers (particularly those who are temporary), overseeing the general management of the school, preparing the school budget, and managing the school funds including providing salaries and allowances to teachers. Funds to maintain the school and to provide furniture and other materials must be obtained by the SMC from the local community. In poorer communities, free labor may be the only resource available. Without funds for materials, maintaining school facilities adequately is beyond the means of many communities.

Table 4.4

Average Primary Class Size

by Geographical Location and Development Region (1985)

Location	Development Region					
	Eastern	Central	Western	Mid-Western	Far-Western	Regional Average
Tarai						
Grades 1-5	53	38	52	42	48	45
Grade 1	86	66	94	77	88	79
Hill						
Grades 1-5	25	28	31	21	22	26
Grade 1	49	58	62	44	50	54
Kathmandu Valley						
Grades 1-5		57				51
Grade 1		98				98
Mountain						
Grades 1-5	22	22	8	12	17	16
Grade 1	44	48	12	28	42	36
Area Average						
Grades 1-5	33	35	32	22	27	30
Grade 1	60	60	62	45	56	58

Source: Manpower and Statistics Section, MOEC, (unpublished) 1986

Note: The range of average class size for Grade 1 is as follows:
Tarai -- 113 in Nawalparasi to 61 in Sarlahi
Hills -- 74 in Makwanpur to 31 in Pyuthan
Mountains -- 51 in Sankhuwasabha, Dolakha and Bajhang
14 in Manang

The SMC is expected to meet once every three months. It reports on its activities to the District Education Officer. The SMC is liable to dismissal by the DEC if it fails to manage the school satisfactorily, misappropriates the property of the school, or disobeys orders from the DEC. In effect, the District Education Officer has only indirect control over what happens in the schools. He does, however, have the authority to withhold government funds from the schools. According to reports from District Education Officers and other educators, SMCs often do not fulfill their responsibilities. This may be due to a lack of understand-

ing about their responsibilities or due to a lack of genuine interest in the school since three of the five members are appointed by the DEC or are politically elected officials.

The following quote, from a study of trained teachers in Kabrepalanchok (Karmacharya, 1982), gives some insight into the functioning of the SMCs.

> A mixed reaction was found among the teachers in this study toward the activity of their school committees. In half the schools, school committees were reported to be very helpful in mobilizing the community to help the schools. In other schools, the committees were said to be passive. In two schools, the headmasters had virtually ignored the existence of the committee. In some schools, the headmasters and the teachers charged that the president of the committee had misused the property and funds of the schools. In one school, a donation of about Rs 2000 was raised from villages, but the school teachers were not able to use the money because it was in the hands of the Pradhan Pancha, who was the president of the school committee. . . . In one school, the teachers said that there was no need for a school in that area. The president (a Pradhan Pancha) had brought the school for his own personal and political benefit. (pp. 189-190)

Each school has a headmaster whose responsibilities, according to the 1971 Legal Code, include the following: keeping the school records, supervising the teachers and calling regular meetings, setting the school schedule, attending to school discipline and cleanliness, enrolling students and arranging for examinations; keeping records of warnings and punishments to staff and reporting these to the SMC and DEO; planning for extra-curricular activities; and submitting suggestions to the SMC for teacher transfers, promotions and rewards, and approving teacher leaves. The headmaster also has the authority to expel students. He is expected to establish a promotion committee of teachers to advise him on student promotions. He needs permission from the DEO to open new sections as classes become overcrowded. Although his responsibilities are numerous, his role is generally advisory to the SMC; in many areas he may act only in consultation with others. His power is restricted administratively and financially by the DEO and the SMC.

Apart from the specially funded education projects (see Section 4.1.4.7), there is no program for training headmasters to manage the 22 responsibilities assigned to them in the 1971 Legal Code. For these 22 responsibilities, they receive only an additional Rs 30 per month over the salaries of teachers. Because headmasters are rarely more qualified than their teachers, and lack an understanding of their administrative and supervisory roles, they exert little control over the teachers who often offer passive resistance to unwanted policies.

Although headmasters receive little remuneration and no training for their position, educational administrators are still optimistic that they play a critical role in education. When asked why some schools perform better than others under similar conditions, school administrators often cite the leadership of the headmaster or of some outstanding community member. Recent research in other countries supports the assertion that the headmaster's leadership is a critical factor in creating an effective school.

On a monthly or quarterly basis, each school receives its allocation for teacher salaries and office supplies based on a budget request from the SMC's. This is deposited in the school's bank account in the district headquarters or distributed directly by the DEO. In either case, collecting the salaries often necessitates several days' walk to the district center, usually by a teacher or a headmaster, thus disrupting the functioning of the school. Several District Education Officers interviewed during the sector assessment noted that some SMCs will submit budget requests for more than the number of teachers currently at the school but within the allocated number of positions. Without means to verify school requests and given local political pressure, District Education Officers often find it difficult to withhold government funds from these schools.

Supervisors from the DEO are responsible for visiting schools to collect data, supervising teachers, improving school standards in discussions with headmasters and teachers, evaluating teachers, and assisting with any problems a school may be having. In 1984, the 33 percent field allowances previously given to supervisors was curtailed and the budget for travel allowance and daily allowance (TA/DA) was reduced. As a result, supervisors now rarely go into the field and then only in response to a specific need. Therefore, the supervisors are not fulfilling their functions and the schools have been operating in isolation from the district administration. Although the SMCs have been required to submit regular salary and other information to the DEO, there is no process for verifying the accuracy of their statements.

4.1.4 System Characteristics

This section reviews the following characteristics of the primary education subsector: students, teachers, curriculum, examinations, facilities and equipment, and the quality of instruction. The section ends with a review of the costs of primary education.

4.1.4.1 Student Enrollments and Characteristics. There were 1,812,098 primary school children in 1985. This represents a growth of 3.7 percent over the 1984 enrollment and a ten-fold increase over the last 25 years. (See Table 4.5 for additional historical data). The school population is concentrated in the heavily populated Tarai, which accounts for 39 percent of the enrollment while representing only 17 percent of the land area. The Hills and the Kathmandu Valley have 45 percent of the enrollment and 68 percent of the land area, and the Mountains have 7 percent and 15 percent respectively. About three percent (57,221) of the students are enrolled in schools located in the 29 town panchayats, which constitute the urban areas.

Table 4.5
Growth of Primary Education

Growth Bases	Year 1971	1976	1981	1985
Number of Schools	7,634	8,768	10,628	11,873
Annual Growth (%)		2.8%	3.9%	2.8%
Number of Students				
Boys	346,398	612,055	1,014,265	1,270,449
Annual Growth (%)		12.1%	10.6%	4.6%
Girls	64,107	150,408	373,736	541,649
Annual Growth (%)		18.6%	20.0%	7.7%
Total	410,505	762,463	1,388,001	1,812,098
Annual Growth (%)		13.2%	12.7%	6.9%
Gross Enrollment (%)[1]				
Boys	35.0[2]		98.8	111.5[3]
Girls	7.1		39.7	50.0
Total	21.6		70.6	82.1

Source: Manpower and Statistics Section, MOEC, *Educational Statistical Report of Nepal* (Selected years).
Notes: [1]National Planning Commission, *Population Monograph of Nepal*, p. 142
[2]For 1970 not 1971
[3]For 1984 not 1985

Grade 1 enrollments increased by less than one percent from 1984 to 1985. In 1986, however, there was a 4.3 percent growth in Grade 1 enrollments. At the same time, total primary school enrollment increased by 2.5 percent, suggesting that the increase in Grade 1 enrollments is partly counterbalanced by a greater loss of children in the upper grades as compared with 1985.

The following paragraphs discuss gross and net enrollments, Grade 5 retention, girls' enrollments, school participation, drop-out and repetition, and enrollment projections.

Gross and Net Enrollments

More important than the actual enrollments are the percentages of school-age children that they represent. Enrollment rates are reported as either gross or apparent enrollments and as net enrollments. Gross primary school enrollments include children who are under-age (younger than 6) and over-age (older than 10). Net enrollments include only the number of school-age children (6-10) enrolled. Gross and net enrollments are compared with the total school-age population (6-10 years) to yield the gross and net enrollment rates. Gross enrollment rates, by definition, are always larger than net enrollment rates. The gross enrollment rate published for 1985 by the National Planning Commission is 82 percent. The figure released by the MOEC is 77 percent. The difference is the result of using slightly different population projections for the 6-10 age population group.

Regardless of the absolute figures, it is instructive to look at the relative differences across districts. Table 4.6 shows the 1985 gross enrollments for boys and girls, and the distribution of schools per 1,000 school-age children, given separately for each development region and geographic area. Table 4.7 shows the 1985 gross enrollment range and the districts that fall within that range.

Some of the lowest gross enrollments occur in a group of districts in the Central Tarai: Dhanusha, Mahotari, Sarlahi, Rautahat, and Parsa. On the other hand, districts with high gross enrollments tend to be Hill districts in the Eastern, Central, and Western Developmental Regions.

The reason often given for low gross enrollments is the low participation of girls in those areas, particularly in the Tarai. However, increasing girls' enrollment will not necessarily have a major effect on gross enrollment rates. Dhanusha district, in the Central Tarai, with a gross enrollment of 42 percent, provides an instructive case. There the girls' gross enrollment rate is 20 percent. If girls' enrollment were increased to equal boys' enrollment (i.e., 50% boys, 50% girls enrolled in school), total gross enrollment would increase to only 68 percent. Other reasons for the low enrollment rate can also be discounted. Access is a relatively minor issue. The density of schools in Dhanusha is among the highest in Nepal, and the schools are not particularly overcrowded. The average class size in Dhanusha is 37, low even for the Tarai where the average class size is 45. Clearly, many boys

as well as girls are not enrolled in the district. Increasing access by building more schools is not likely to solve this problem. Schools need to be encouraged to find ways to enroll children who currently do not attend.

The net enrollment rate for 1985, published by the MOEC, is 57 percent. By development region, the breakdown is as follows: Eastern, 52 percent; Central, 60 percent; Western, 74 percent; Mid-Western, 48 percent; and Far-Western, 47 percent.

Table 4.6

Gross Enrollments (1985)

Area	Access (Distribution of schools per 1000 school-age population)	Participation (Gross Enrollment %)		
		Boys	Girls	Total
Eastern Development Region (EDR)	4.6	98.8	54.8	77.4
Central Deveiopment Region (CDR)	4.3	97.7	44.7	72.5
Western Development Region (WDR)	6.5	134.7	71.1	103.5
Mid-Western Development Region (MWDR)	6.1	105.2	29.2	67.6
Far-Western Development Region (FWDR)	5.6	110.7	22.5	67.5
Total	5.2	107.3	48.7	78.9
Mountains	8.7	111.7	37.2	75.3
Hills	6.8	128.4	59.4	94.2
Tarai	3.0	87.7	40.2	65.2

Source: 1. Ministry of Education and Culture, *Educational Statistical Report of Nepal*, 1986 (2042), Kathmandu: MOEC

2. The age group population for 1985 is derived from projections developed by the sector assessment team as shown in Chapter 2. The breakdown by gender is based on proportions obtained in the 1981 census.

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Table 4.7

Gross Enrollments by District (1985)

Percentage	District	Frequency
Less than 50%	Danusha, Mahotari, Sarlahi, Rautahat, Parsa, Kalkikot, Jajarkot	7
50% to 60%	Udayapur, Saptari, Sindhuli, Bara, Mugu, Jumla, Bajhang, Kailali	8
60% to 70%	Morang, Sunsari, Solokhumbu, Khotang, Rupendehi, Rukum, Rolpa, Salyan, Pyuthan, Dang, Dailekh, Banke, Bardiya, Bajura, Accham, Doti	16
70% to 80%	Siraha, Dolakha, Sindhupalchok, Rasuwa, Dhading Manang, Baitadi, Dadeldura	8
80% to 90%	Taplejung, Panchtar, Jhapa, Bhojpur, Okhaldhunga, Ramechap, Nuwakot, Kabrepalanchok, Makwanpur, Nawalparasi, Kapilbastu, Darchula, Kanchanpur	13
90% to 100%	Bhaktapur, Banglung, Humla, Dolpa	4
100% to 120%	Ilam, Shakhuwasabha, Tehrathum, Dhankuta, Lalitpur, Gorkha, Lamjung, Tanahun, Palpa, Gulmi, Arghakanchi, Myagdi, Surkhet	13
Over 120%	Kathmandu, Chitwan, Kaski, Syanja, Mustang, Parbat	6

Source: Manpower and Statistics Section, MOEC, 1986, (unpublished)

According to the 1971 Education Code, students who have not reached the age of 6 years are not to be admitted to Grade 1. Admitting under-age children is a common practice, however, but school administrators are reluctant to acknowledge this in official reports. Probably as a result of this, eight districts listed no under-age children and others no doubt under-reported their under-age students, thus exaggerating the net enrollment rate.

According to MOEC statistics for 1985, 22 percent of the students enrolled in primary schools are over-age, but this probably also reflects under-reporting. The percent over-age reported by districts ranged from one percent in the Hill districts of Ramechap and Makawanpur to 33 percent in Surkhet and 38 percent in Salyan, also a Hill district. A 1984 CERID study reported that the average age of enrolled students was in general two to three years above their expected age.

There are no data available on the enrollment of students by caste or by socio-economic status. Given the economic constraints to sending children to school expressed by families and school personnel, it is reasonable to assume that the more economically advantaged and higher caste groups have higher participation rates in elementary education.

Grade 5 Retention

The ability of districts to retain students to Grade 5 can be considered an indicator of the efficiency of the system. A rough measure of the retention rate is the ratio of number of students in Grade 5 to the number in Grade 1. For every 100 children in Grade 1, there are an average of 31 students in Grade 5 in Tarai districts, 36 in the Kathmandu Valley districts, 24 in the Hill districts, and 19 in the Mountain districts. Even these figures mask the range within each geographical region. For example, Hill districts may have a Grade 5 retention rate as low as 13 (Makwanpur) or as high as 33 (Panchtar and Khotang). There is a slight tendency for retention rates to decline from east to west in all three geographical regions.

Several factors may affect the ability of schools to retain students to Grade 5. Students may be more likely to stay in schools with more qualified (SLC-pass) teachers and trained teachers. Retention should also be higher for complete primary schools with five grades so students do not need to change schools in mid-cycle. Smaller class sizes for Grade 1 should also reduce the drop-out rate and thus increase retention. A statistical test (multiple regression) can be performed to determine if the data show the expected relationships among these variables and Grade 5 retention rates. Such a test found that it is highly probable that all of these relationships exist. Such associative relationships, however, do not necessarily imply causal relationships. Some of these factors are more strongly associated with Grade 5 retention than others. The strongest relationship was between the percentage of qualified teachers in the district and the Grade 5 retention rate.

Girls' Enrollment

According to Table 4.5, girls' enrollment has been growing faster than boys' enrollment and accounting for a slowly increasing percentage of total enrollment. Girls comprised nearly 30 percent of the total primary school enrollment by 1985, and urban area girls were about 34 percent of the enrollment. The level of girls' enrollment varies across the country, as shown in Table 4.8. It is particularly low (13 percent) in the Hill and Mountain districts of the Far-Western Region. The reasons for these low regional percentages are the same for the country as a whole but are made more severe by the generally low level of literacy and the poorer economic conditions found in the Far-Western Development Region. Families do not value education for girls, and girls are kept from school to work in the home and care for their younger siblings. Nonetheless, girls' enrollment increased 33 percent between 1984 and 1986 in the Far-Western Development Region, compared with 10

286

percent for the country as a whole. Even though fewer girls enroll in school than boys, they tend to progress at a rate only slightly less than that of boys (see Tables 4.9 and 4.10).

Table 4.8

Percentage of Girls Enrolled in Primary School (1985)

Geographical Area	Development Region					
	Eastern	Central	Western	Mid-Western	Far-Western	Geographical Area Average
Tarai						
Grades 1-5	35%	26%	25%	26%	22%	29%
Grade 1	35%	25%	28%	28%	23%	29%
Hill						
Grades 1-5	32%	33%	36%	19%	13%	31%
Grade 1	36%	33%	38%	22%	17%	33%
Mountain						
Grades 1-5	35%	22%	46%	16%	13%	24%
Grade 1	37%	26%	40%	19%	16%	26%
Regional Average						
Grades 1-5	34%	29%	34%	21%	16%	30%
Grade 1	36%	30%	36%	24%	19%	31%

Source: Manpower and Statistics Section, MOEC, *Educational Statistical Report of Nepal*, 1986

The MOEC recognizes that it faces a major challenge in increasing girls' enrollments. The distribution of free textbooks to girls in Grades 4 and 5 in the more remote areas and the special teacher education programs for under-SLC women are two strategies designed to increase girls' enrollment. An education project in the Far-Western Development Region and many non-governmental organizations (NGOs) operate nonformal literacy classes for out-of-school girls. Chapter 8, on Nonformal Education, discusses these programs in more detail. The Basic Needs Program identifies strategies for increasing girls' enrollment including the provision of scholarships and funds for uniforms.

Table 4.9

Drop-Out and Repetition Rates (1983-1984)

Rates		Grade 1	2	3	4	5
Total	Drop-Out	.22	.05	.02	.08	.07
	Repetition	.39	.23	.18	.19	.17
	Promotion	.39	.72	.80	.73	.76
Boys	Drop-Out	.22	.05	.01	.09	.07
	Repetition	.39	.22	.18	.19	.17
	Promotion	.39	.73	.81	.72	.76
Girls	Drop Out	.25	.06	.06	.06	.04
	Repetition	.37	.24	.18	.20	.20
	Promotion	.37	.24	.18	.20	.20

Source: Manpower and Statistics Section, MOEC, *Report on Dropouts and Repeaters 2040-2041*, 1985

Note: See Annex 4.6 for more recent drop-out and repetition rates.

Table 4.10

Survival Rates (1981-1985)

Year	Grade 1	2	3	4	5
Boys					
1980	100				
1981	100	48			
1982	100	49	42		
1983	100	50	44	38	
1984	100	48	43	40	33
1985	100	48	40	40	34
Girls					
1980	100				
1981	100	45			
1982	100	47	37		
1983	100	46	40	31	
1984	100	50	40	36	29
1985	100	46	43	36	33

Source: Manpower and Statistics Section, MOEC, calculated from *Educational Statistical Report of Nepal* (various years)

School Participation

Several studies have investigated factors which influence school participation in Nepal. A 1984 CERID study on the determinants of education in rural Nepal found that gender was the major predictor of school participation. The study also found school attendance positively associated with household factors such as adult literacy, per capita income, Nepali as the first language, and school factors such as distance to school and the presence of Nepali-speaking teachers. Teachers with ethnicity similar to the students, but who could speak Nepali, were found to have a positive impact. The presence of qualified and trained teachers, however, had less of an impact. The literacy of the adult family members was found to be the single most important determinant that can be altered through programmatic intervention.

A 1986 UNESCO study on participation in school, conducted in the Tarai, confirmed these findings. In addition, it found that the presence of younger siblings in the family only slightly decreased girls' chances of participating in school. Nutritional status was also related to school enrollment.

Drop-Out and Repetition

Once children begin school, they are very likely to repeat a grade and drop out before completing the primary cycle. According to a 1986 MOEC study, 22 percent of the children who start Grade 1 graduate from Grade 5 (derived from Table 4.9). The graduation rate is highest in the Tarai and lowest in the Mountains. It is encouraging to note that once enrolled in the system, the behavior of girls with respect to drop-out and repetition rates is not notably different from that of boys.[2]

Wastage and therefore decreased efficiency occur as students repeat grades and drop out. The greatest wastage is caused by repeaters rather than drop-outs. The average repetition rate is .23, and the average drop-out rate is .09. The efficiency of the primary school system is 53 percent.[3] (See Section 2.6.1 for a more complete discussion of efficiency.) If all entering students graduated without repeating a grade, the efficiency would be 100 percent.

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[2]See Annex 4.6 for updated rates which present a less optimistic picture of repetition and drop-outs in primary school.

[3]The revised repetition and drop-out rates in Annex 4.6 show that repetition accounts for about 33 percent of the wastage and drop-outs account for about 67 percent. The overall efficiency of the primary school cycle is 39 percent.

According to the 1986 MOEC study, 70 percent of all drop-outs occur at Grade 1 as do 53 percent of all repetitions (see Table 4.9). Many explanations for these high rates have been offered. Some of these are: (1) there are a large number of under-age children in Grade 1 who tend to repeat or drop out; (2) children often are expected to spend two years in Grade 1, the first learning the alphabet and numbers and the second covering the remainder of the curriculum; (3) students enroll to receive free textbooks and then drop out; (4) students drop out because their labor is needed at home or in the fields; (5) students become bored with school; and (6) parents do not see the relevance of primary education and therefore do not support their children's education. While assertions are numerous, there is little research to support any of these explanations.

A 1987 study by CERID found that socio-economic factors such as economic pressures and parental indifference towards the value of education were the major reasons that children dropped out. Educators further removed from the school setting, such as District Education Officers and supervisors, identified school-related as well as socio-economic factors. They noted that "most primary schools in rural communities are not functioning in a reasonably satisfactory manner" (p. 12).

Data collected for this sector assessment, on 15 schools selected from each of the geographical locations, examined attendance data for all Grade 1 students--those who pass, drop out, and repeat. The purpose of this study was to provide more detail than earlier studies on the ages and attendance patterns of these three groups of students. Table 4.11 shows the variation of pass, repetition, and drop-out rates across various ages for Grade 1 students.

Table 4.11

Percentage of Grade 1 Students Passing, Repeating, and Dropping out by Age

	Status			
Age	Passers	Repeaters	Drop-outs	Total
4-5 Years	24%	43%	33%	100%
6 Years	33%	37%	30%	100%
7 Years	37%	32%	31%	100%
8 Years	49%	28%	23%	100%
9 and above	32%	20%	48%	100%

Source: Sector Assessment, unpublished, (1987)

Note: Six hundred sixty-three students are included in this sample. Of these, 18 percent are 4-5 years, 33 percent are 6 years, 28 percent are 7 years, 13 percent are 8 years, and 8 percent are 9 and above.

It is often assumed that the under-age children are most likely to drop out and repeat. Although Table 4.12 indicates that this is the case, it is not strikingly so. Children of all ages show high drop-out and repetition rates. Children who are eight years old appear to be the most successful group; their pass rates are highest and drop-out and repetition rates lowest. Unfortunately, it not known how many of these have already repeated Grade 1.

Little is known about the attendance patterns of drop-outs and repeaters. Table 4.12 gives the percentage of days of school attended by each group--students who pass, repeat, and drop out.

Table 4.12

Grade 1: Percent of Total School Days Attended

	Status		
Age	Passers	Repeaters	Drop-outs
4-5 Years	74%	49%	26%
6-7 Years	69%	67%	37%
8 and above	75%	63%	42%

Source: Sector Assessment, unpublished, (1987)

Children who repeat are found to attend school almost as often as those who pass, suggesting that low attendance is not a major cause of repetition. Older children generally attend school more consistently. This observation, combined with their higher pass rate, suggests that maturity may be an important factor in school success.

The study also examined the attendance pattern for each student throughout the year. Passing students attend school regularly throughout the year as their attendance percentage indicates. Repeaters also tend to attend throughout the year but less frequently. One might expect drop-outs to attend even more sporadically throughout the year. This, however, tends not to be the case. Most attend as consistently as do passing students until they drop out, whether after two, three, or more months of school. The reasons for their abrupt departure may be related to the need to join the agricultural workforce, but students also depart at times not related to the agricultural cycle. Their departure also could reflect a loss of interest in attending school. It is often suggested that students come to school only to receive free textbooks and then depart quickly. In this study, however, only fifteen percent of the drop-outs attended school for fifteen days or less.

Projections

The MOEC has projected the following primary school enrollments from 1986 to 2000 A.D. in order to meet its target to enroll all children age 6-10 by that year.

1986	1,871,104
1991	2,196,235
1996	2,577,862
2000[4]	2,930,383

Meeting these targets requires an annual enrollment growth rate of 3.26 percent over the period. As discussed in Chapter 2, there also will need to be a significant decrease in drop-out and repetition rates if these targets are to be achieved. The government has assumed these rates will drop to nearly zero by the year 2000 A.D.

These projections may be optimistic for several reasons. First, the growth in Grade 1 enrollments, as listed below, has generally been declining. Maintaining an annual growth rate of 3.2 percent may thus prove difficult.

1982-1983	8.0%
1983-1984	6.3%
1984-1985	0.6%
1985-1986	4.3%

Second, there is no evidence that drop-out and repetition rates have declined over the last five years. Retention rates presented in Table 4.9 show that progression rates have not changed from 1980 to 1985. This suggests that drop-out and repetition rates have remained stable. The New Era study (N.D.) on free textbook distribution also found that textbook availability did not affect the drop-out and repetition rates in their sample of schools.

The government is currently focussing its efforts on expanding access to primary education by planning for increased numbers of teachers and school facilities. These should help to increase the primary school enrollment rate. As discussed earlier, however, there are areas, especially in the Tarai, where schooling is accessible but students do not attend. To meet its targets, the government must seriously attend to developing policies and programs to encourage more students who now have access to schooling to attend and to reduce their drop-out and repetition rates.

[4]Revised projections as of January 1988, which were not available when this report was drafted (August 1987), were: 2,349,918 for 1991, 2,762,562 for 1996, and 2,928,984 for 2000.

4.1.4.2 Teachers. One hundred percent of primary teachers' salaries are paid by government, thus assuring that primary teachers are available to all schools. The success of primary schooling depends on the teachers' ability and dedication since these teachers and the government provided textbooks are the only resources available to many schools. The primary teaching force has grown at an annual rate of 9.5 percent over the last ten years to a total of 51,266 by 1985 (see Table 4.13). This section describes these teachers' qualifications, training, and employment status. It also reviews the status of the teaching profession. The distribution of teachers with respect to the primary student population is examined as a resource allocation issue. Finally, this section discusses the number of teachers needed to universalize primary education by the year 2000 A.D.

Table 4.13

Primary Teachers (1985)

	All Teachers	Female Teachers
Unqualified		
Under SLC		
Total	13,939	1,452
Trained	5,502	774
Qualified		
SLC		
Total	32,171	2,841
Trained	9,628	993
Intermediate		
Total	4,961	509
Trained	1,172	191
Bachelors/Masters		
Total	195	68
Trained	60	25
Total		
Total	51,260	4,870
Trained	16,362	1,983
Percentages:		
Trained	32%	41%
Qualified	73%	70%

Source: Manpower and Statistics Section, MOEC, *Educational Statistical Report of Nepal*, 1986

Qualifications

Government policy requires a primary teacher to have a School Leaving Certificate (SLC) as the minimum qualification. However, the supply of SLC teachers has not been able to meet the demand and many under-SLC teachers have been hired. Table 4.14 shows that 27 percent of the teachers did not have an SLC in 1985. This represents a sharp drop in the percentage of unqualified teachers from the 42 percent in 1976. Table 4.15 also shows that the distribution of qualified teachers varies widely across the country. The Eastern Development Region has the highest percentage of qualified teachers, which is not surprising given that this area has a long tradition of educational development. The Mid- and Far-Western Development Regions, on the other hand, are generally less developed. They have had less access to education and lack a pool of educated manpower relative to the rest of the country. As a result, there are fewer qualified teachers (49 percent) found in these regions.

Training

Trained teachers are those who have passed a training course recognized by the government and are thus entitled to receive the monthly allowance for trained teachers. Table 4.14 gives the percentage of trained and qualified teachers from 1976 to 1985. The government has been less successful in providing trained teachers than in providing qualified teachers. Over a ten-year period, the percentage of trained teachers has declined from 39 to 32. This decline has occurred as the teaching force has expanded rapidly without a comparable increase in training opportunities. As a result, the policy was changed to no longer require that teachers be trained to become permanent employees. In contrast to the distribution of qualified teachers, all development regions have comparable percentages of trained teachers (Table 4.15).

Most of the teacher education programs for primary teachers are designed to train unqualified teachers (see Chapter 6, on Teacher Education, for more details). As a result, the percentage of unqualified teachers who are trained has not been declining; in fact, their numbers increased by three percent from 1984 to 1985. Thirty-nine percent of the unqualified teachers in 1985 were trained; only 21 percent of the qualified teachers were trained according to the MOEC. Numbers, however, are more revealing; 8,437 unqualified teachers are untrained; 26,467 qualified teachers are untrained. Government training efforts are focussed on the much smaller group of unqualified teachers. A major commitment of resources and a shift in the target population is necessary if a fully trained teaching force is to be achieved as part of the universalization of primary education.

Table 4.14

Trained and Qualified Teachers (1976-1985)

Year	Number	Percent Qualified	Percent Trained
1976	20,775	58	39
1977	23,395	61	38
1978	24,652	63	39
1979	26,384	63	37
1980	27,805	65	36
1981	29,134	67	36
1982	32,259	68	36
1983	38,131	69	34
1984	46,484	71	32
1985	51,266	73	32

Source: MOEC, Manpower and Statistics Section, *Educational Statistical Report of Nepal*, 1976-1986

Table 4.15

Trained and Qualified Teachers by Development Region (1985)

Development Region	Total	Percent Qualified	Percent Trained
Eastern	12,320	83	32
Central	14,187	77	34
Western	13,312	79	29
Mid-Western	7,154	49	29
Far-Western	4,293	49	36
Nepal	51,266	73	32

Source: MOEC, Manpower and Statistics Section, *Educational Statistical Report of Nepal*, 1986

Female Teachers

Nine percent of all primary teachers are female (see Table 4.13 for details). Seventy percent of them are qualified, and 41 percent are trained. In general, female teachers are better trained than their male counterparts and have approximately the same level of qualifications. The low numbers of female teachers reflect the low level of education generally attained by women in Nepal and the fact that in many areas it is still not appropriate for women to work outside the home. Female teachers are more concentrated in urban areas where levels of education are higher and attitudes towards women's roles are more liberal.

Government has been trying to increase the number of female teachers through a special teacher training program for under-SLC girls from more remote areas. (This is described in more detail in Chapter 6.) Government hopes that the presence of more female teachers in schools will encourage more girls to enroll. The associative relationship between the percentage of female teachers and the percentage of girls enrolled in school in each district can be estimated by a statistical test (a linear regression). This test demonstrates a statistically positive relationship between these two percentages, indicating that more girls are enrolled in schools where there are more female teachers. This relationship is even stronger when districts only in Mountain locations and the Mid- and Far-Western Development Regions are considered. This is encouraging given that government policy is to employ more female teachers in these areas to encourage more girls to enroll.

Employment Status

Teachers can also be categorized by their employment status; those who are permanent and therefore have job security, and those who are temporary. Only qualified teachers are eligible to become permanent. To become permanent, teachers must pass an oral and a written test given by the District Teacher Selection Committee which operates under the District Education Committee. When the Teacher Selection Committee is notified of vacant positions by the schools, it advertises for candidates to apply.

Fifty percent of the primary teachers are permanent and 50 percent are temporary. In other words, half of the teachers do not have job security. The average number of years of teaching experience is 10.5 for permanent teachers and 3.1 for temporary teachers. Clearly there is a high attrition rate among the temporary teachers. Using this information on teaching experience, attrition rates can be estimated. These estimates suggest that the annual attrition (drop-out) rate for temporary teachers may be as high as 20 percent and as low as 1 to 1.5 percent (including retirement) for permanent teachers.

MOEC data from Palpa, a Hill district, indicate that 76 percent of the temporary teachers are qualified and, therefore, eligible to become permanent. The high number of qualified temporary teachers suggests that there may be unnecessary delays in the process of becoming permanent although there are no data on how rapidly this actually happens. Delays may discourage teachers from remaining in the profession.

Salaries

Teacher salaries are based on academic qualifications and years of teaching experience. There are four catagories based on academic qualifications: Grade 10 pass and below, one or two subject fail in the SLC, SLC-pass, and intermediate (two years of higher education) pass. These have starting monthly salaries of Rs 565, Rs 605, Rs 675, and Rs 850, respectively. Each year of experience advances a teacher one step on the salary scale up to 20 years. These step increases range from Rs 8 per month for the least qualified to Rs 15 per month for the most qualified teachers. In addition, there is a monthly training allowance of Rs 65 for teachers who have received training.

To attract qualified teachers to the more remote areas, the government offers salary supplements of up to 110 percent of the teachers' base salary. Data from 1982 to 1985 indicate that this policy has been partially successful. The percentage of unqualified teachers during this period has fallen from 60 to 51 percent in the Mid-Western Development Region, and from 56 to 45 percent in the Far-Western Development Region. These regions contain some of the most remote areas in Nepal. For the other development regions, the average decrease in the percentage of unqualified teachers was from 25 to 18 percent. Nonetheless, the remote areas still have large numbers of unqualified teachers.

Teaching as a Profession

It is commonly recognized that teaching is a low status profession in Nepal as it is in many other countries. Teachers complain that salaries are inadequate and that there is insufficient opportunity for advancement. Teaching conditions are difficult; physical facilities are poor and instructional materials are minimal. Teachers sense a lack of support from the community and the School Management Committees. SMCs have been known to appoint unqualified teachers, for example, even when qualified teachers were available. It appears to be difficult to attract new recruits to the profession as shown by the low enrollments in the teacher

education programs. (See Chapter 6 for more details.) The high attrition rate among temporary teachers suggests that it is also difficult to retain those who do begin to teach. Teaching is often combined with other jobs. Rural teachers, for example, often engage in farming with teaching as a secondary job.

Teacher Distribution

Teachers are the most expensive educational resource provided by the government. It is therefore important to examine the efficiency of their allocation. The student/teacher ratio is a useful measure of the distribution of teachers. The government has established a policy of allocating teachers according to the following approximate student/teacher ratios: Hills, 30:1; Mountains, 20:1; and the Tarai and urban areas, 40:1. (See Annex 4.4 for details on criteria established by Basic Needs.) Table 4.16 presents the actual student/teacher ratios in these areas and by Development Region. The ratios are approximately as prescribed in the Hills and Mountains but higher than prescribed in the Tarai and the Kathmandu Valley.

Table 4.16
Student/Teacher Ratio
by Region and Location (1985)

Development Region and Location	Student/Teacher Ratio
Development Region	
Eastern	37:1
Central	39:1
Western	35:1
Mid-Western	28:1
Far-Western	31:1
Total	35:1
Location	
Tarai	46:1
Hills	30:1
Kathmandu Valley	58:1
Mountain	23:1

Source: MOEC, Manpower and Statistics Section, *Educational Statistical Report of Nepal*, 1985

These data, however, mask the variation in this ratio that occurs both across and within districts. Within the Hill districts in 1985, for example, this ratio ranged from 23:1 in Lamjung and Rolpa to 38:1 in Kabrepalanchok and Gulmi. For the school level, MOEC data are available from a sampling of schools in Palpa District, where the student/teacher ratio should be 30:1 according to government policy. Within this district, the student/teacher ratio in 1986 varied from as low as 8:1 in some schools to as high as 53:1 in other schools. If the 30:1 ratio would be strictly applied for the sample of 166 schools, 23 schools would receive more teachers and 113 schools would loose one or more teachers. Only 30 schools had the correct allocation of teachers. There was a net excess of 154 teachers in the 166 schools which the government was supporting with full salaries. Rolpa, a Hill district in the Mid-Western Development Region, is another case in point. Based on the 30:1 student/teacher ratio, there were 145 excess teachers in 1986. This represented about 36 percent of the teaching force in Rolpa. This inequitable and excessive allocation of teachers is an unnecessary drain on government resources.

Teacher Projections

The Basic Needs document projects that 88,565 teachers will be needed by the year 2000 A.D. in order to reach the target of universal primary education. This represents a 3.7 percent annual growth rate between 1985 and 2000. Given that the number of teachers has grown by 10 percent from 1984 to 1985 and by 22 percent from 1983 to 1984, this growth rate seems modest. The Seventh Plan (1985-1990) stipulates that a total of 12,570 teachers will be added to the teaching force or about a 0.5 percent annual increase. The number of new, SLC-pass teachers needed each year seems reasonable given the number of students who pass the SLC each year. The question remains, however, as to whether these qualified people can be attracted to the teaching profession and to work in the more remote areas where teachers are most needed. If not, the government will have to continue to rely on significant numbers of unqualified teachers to meet its targets.

Since all teachers are to be trained by the year 2000 A.D., 63,765 teachers will need to be trained. The government projects that 8,115 teachers will need to be trained between 1988 and 1991, 4,548 per year between 1991 and 1996, and 3,336 per year between 1996 and 2000.[5] In 1985, less than 1,500 inservice teachers and only

[5]The revised projection for teacher training (January 1988), which was not available when this report was drafted (August 1987), indicates that 72,200 teachers have to be trained by the year 2000 A.D.

225 qualified inservice teachers were enrolled in training programs. Since all teachers are to be qualified by the year 2000, this second figure is particularly important. If the government is to meet its targets, significant resources will need to be devoted to this effort.

4.1.4.3. Curriculum. The curriculum is the core of an educational program. It serves many purposes which fundamentally determine the quality and quantity of education that children receive. It sets standards, defines the scope and sequence of what is to be learned, guides textbook writers, and influences the content of teacher training. The beliefs and aspirations of a nation are embodied in the school curriculum. To serve all these ends, a curriculum needs to be a carefully crafted and clearly written document. Theories of pedagogy and cognitive development should shape the structure and sequence of the content to provide a sound basis for learning. The following sections on the curriculum cover the objectives and structure, curriculum development, curriculum analysis, textbooks, and teachers' guides.

Objectives and Structure

According to the National Education System Plan (NESP), one of the goals of primary education is to impart literacy education. This means that students regarded as literate should be able to understand books that are simply written, express their thoughts and knowledge in plain spoken and written language, and solve simple problems by understanding the simple rules of arithmetic. This section examines in more detail the curriculum developed to support this fundamental goal and the textbooks derived from it.

The general objectives for primary education are given below. These serve as the basis for the more specific grade and subject objectives discussed later:

A. Development of Civic Knowledge

1. To stimulate feelings of fidelity and loyalty towards the country, the King and the polity,

2. To develop the spirit of responsibility, cooperation and goodwill as well as to cultivate the habit of honoring others' ideas and feelings,

3. To arouse interest in national and local festivals and to develop the feelings of unity,

4. To acquaint students with the contribution made by national heroes to the welfare of the nation.

B. Development of Physical and Mental Health

1. To enable students to understand the importance of their physical and mental condition,

2. To help students to be neat and clean through the understanding of the major health related facts,

3. To acquaint them with the proper method of using one's leisure time.

C. Development of Knowledge

1. To enable students to read books written in simple Nepali, to speak in plain language and to express both orally and in writing what one has learned or known,

2. To enable students to understand simple arithmetic rules and to solve simple arithmetic problems

3. To arouse interest in cultural activities such as dancing, singing, arts, etc.

D. Development of Scientific Knowledge

1. To arouse curiosity to learn and understand more,

2. To help understand facts in one's environment, the interrelations among them and the benefits from them,

3. To arouse motivation to learn truth through the study of facts.

The primary education curriculum has been changed several times since 1956. The NESP-recommended curriculum for Grades 1-3 and the curriculum for Grades 4-5, framed in 1981, are the curricula in use today (Table 4.17).

Weightage (instructional emphasis) in the curriculum (Table 4.17) refers to class periods per week and the full marks are those assigned for examinations. Grades 4 and 5 were previously a part of the lower secondary level. When the primary education cycle was converted from three to five years in 1981, the Grades 4 and 5 curricula were instituted as described above. English, Sanskrit, Mathematics, Science and Health, and Moral Education (all new subjects) were introduced in Grade 4. The curricula for Nepali and social studies were recently combined to economize on the cost of books. A single textbook now covers both subjects for Grades 1 to 3.

Table 4.17

Primary Education Curriculum

Subject	Grades 1-3 Weightage	Grades 1-3 Full Marks	Grades 4-5 Weightage	Grades 4-5 Full Marks
Nepali	40%	300	20.5%	150
Sanskrit	-	-	5.1%	50
English	-	-	17.9%	100
Arithmetic/Mathematics	30%	200	15.4%	100
Social Studies	20%	100	15.4%	100
Physical Education[1]	10%	50	5.1%	50
Science & Health	-	-	(10.3+5.1)%	70+30
Moral Education	-	-	5.1%	50
Totals	100%	650	99.9%	700

Source: Ministry of Education and Culture; Curriculum, Textbook and Supervision Development Centre, *Primary Education Curriculum, Grades 1-3 and Grades 4-5* (two volumes), Kathmandu, CTSDC, 2038 (1981)

[1]For Grades 1-3, Physical Education includes hygiene, handicrafts, and drawing to be taught through practical activities rather than books.

Curriculum Development

An overview of the curriculum development process is presented in Figure 4.1. Structurally, the process involves a three-tiered system for both curriculum development and revision with the Curriculum Coordinating Committee at the top, the Supervision Committee in the middle, and Subject Committees at the bottom. Schools and training institutes provide feedback to these committees as requested. The process begins with the Subject Committees, composed of subject specialists from the Curriculum, Textbook and Supervision Development Centre (CTSDC), which designs the curriculum. The curriculum is then sent to the Supervision Committee which vigorously scrutinizes the plans, sending them back to the Subject Committees for changes as necessary. Finally, the curriculum is sent for final approval to the Curriculum Coordinating Committee, chaired by the State Minister of Education.

The process for curriculum development and revision is based on consensus aided by expertise and judgement. Missing from this carefully structured process is a component for field testing the curriculum, involving teachers, headmasters, and various specialists.

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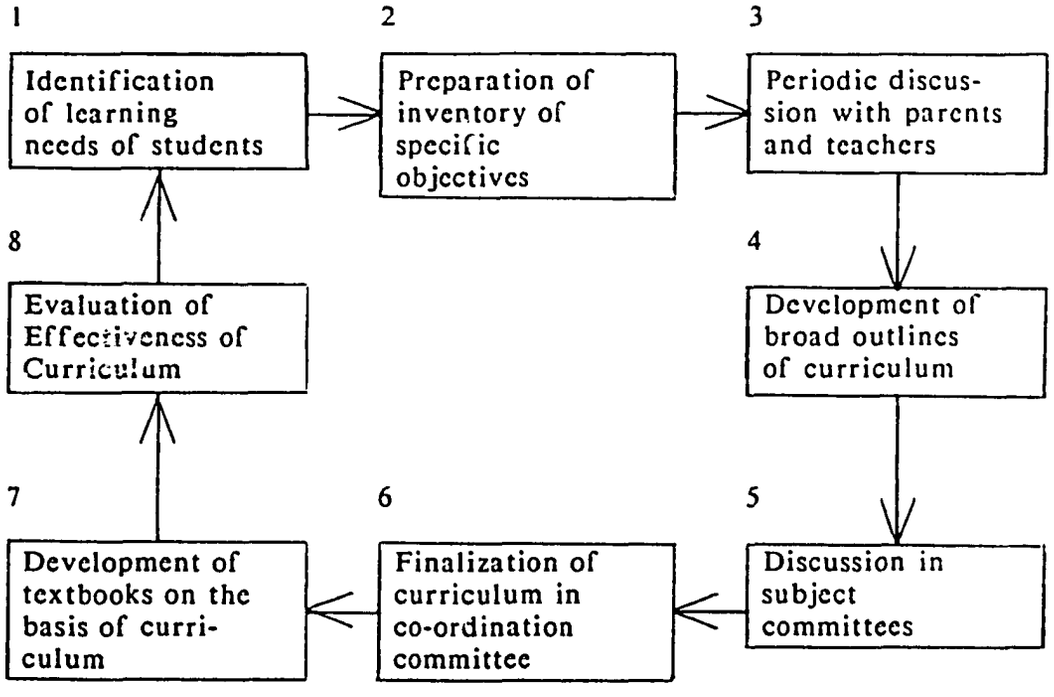
Figure 4.1

Curriculum Development Process



Source: CERID, *School Level Curriculum; an Historical Perspective*, NEC, 1985

Analysis

An examination of the curriculum for a few subjects at a specific grade level provides some assessment of the quality of the curriculum development process described above. Since Grade 1 provides the foundation for literacy, the language arts and arithmetic curricula for that grade have been reviewed. Selections are presented in Annex 4.3.

There are several features of these curricula worth noting. First, many of the objectives are too general to guide and control the content of the textbooks. For example, first graders are expected to "read words and sentences with understanding." Nowhere, however, is the level of vocabulary or the complexity of the sentence structure specified. Similarly, there is a lack of specificity as to what "reading correctly" means; or what "writing clearly with understanding" entails. The curriculum, while it does define general skills and the information to be covered, does not define the specific skills and information to be taught at each grade level.

Developing a set of objectives for Nepal that bridge the gap between the general objectives of the curriculum and material presented in the textbooks will involve deciding what is specifically involved in learning the Nepali language. What are the essential aspects of language that must be understood to become a literate person?

Second, the content of the curriculum in some areas appears too limited and in other areas too complex for the student audience. For example, the content for the Grade 1 language arts/social studies is limited to family relations, school topics, animals and birds, and games. In contrast, the content for the Grade 1 arithmetic curriculum includes multiplication and division concepts. A 1980 study of children's cognitive development in Nepal compared curriculum content in Grades 4 through 6 with students' capacities to understand selected mathematical concepts. The study concluded that, in a number of areas, the curriculum made demands beyond the cognitive capabilities of the students and therefore was not appropriate.

Textbooks

The MOEC provides free textbooks to all students in Grades 1-3 and to girls in Grades 4 and 5 in remote areas. In the first three grades, there are two textbooks for each grade, a *Mahendra Mala* series for language arts and social studies and an arithmetic series. These standard texts serve all parts of the country. Their average cost is Rs 16.05 per grade. There are seven textbooks for both Grades 4 and 5 having a total cost of Rs 45.10 and Rs 51.40, respectively. The textbooks are printed by the Janak Educational Material Centre (JEMC), a government-owned corporation. They are distributed by Sajha Prakashan, a private company which has 27 branches and 99 agents throughout the country, and by JEMC which has established five textbook depots. Sajha Prakashan receives a distribution commission of 15-35 percent of the cost of the books. UNICEF supplies the paper for the free textbooks, and also assists with the distribution by flying textbooks to the more remote regions.

Textbooks are written on the basis of the curriculum. The CTSDC asks an experienced person to write a textbook or opens the process for bidding. The selected author's only official guide is the curriculum. The newly written textbook is evaluated by various committees within the CTSDC which include curriculum specialists and subject teachers. It is revised based on comments by these committees but it is not field tested. Existing textbooks are also periodically revised. Editing is done by the CTSDC and JEMC.

A CTSDC Workshop on Textbook and Reading Materials at the Primary Level in 1985 identified the following problems with the textbooks: (1) though new editions are published each year, facts and figures are seldom corrected, (2) there is no process for pre-testing textbooks in terms of their quality and usefulness, (3) uniformity and balance in the content of the textbooks is lacking, and (4) the time allocated for writing a textbook is too short. In general, the analysis done by the workshop participants found the textbooks lacking in "originality or novelty." The stories were found to be often uninteresting and the illustrations ineffective. Conflicting or incorrect information is given which is also confusing for the teacher. Despite recent improvements in *Mahendra Mala, Grade 1*, and reincorporation of the materials for learning the alphabet, much could still be done to improve the quality of the textbooks.

Although the report also noted problems with the distribution of textbooks, these problems appear to have been solved. Most DEOs are receiving the textbooks in time for the start of school. Given the diverse topography of Nepal, this is a significant accomplishment.

The total number of free textbooks distributed by the government has increased dramatically since 1981. In that year, 1,958,520 textbooks were distributed; the number was 3,192,243 in 1986. Providing free textbooks is becoming increasingly costly and there is a growing demand to make the textbooks also free for all students in Grades 4 and 5. Even with UNICEF providing free paper, 60 percent of the cost, which includes printing and distribution, must be paid by the government. This amounts to about Rs 1.5 million per year. Students are expected to return their textbooks at the end of each year. This rarely happens and, when it does, the books are not used a second time. The books become badly damaged or lost as they are carried to and from school. The schools have few facilities for safely storing books if they are not distributed to the students to take home, and students and parents expect that new books will be distributed each year.

As a result, new books are given to all students each year. No accounting records are maintained for the numbers of free textbooks distributed; textbooks are requested by the DEOs in surplus numbers and then distributed as soon as received due to a lack of storage facilities. Textbooks are distributed to all first graders, about 22 percent of whom drop out during the year, and about 39 percent of whom repeat Grade 1. The wastage of textbooks thus represents a huge cost to the government. HMG views recycling books as the only reasonable way to reduce textbook costs, and proposals have been made to reward students who return books

in good condition at the end of the year. There are also plans to gradually phase in the distribution of free textbooks to all students in Grades 4 and 5 by 1998-1999.

The following are some notable features of the Grade 1-to-3 language arts and arithmetic textbooks. There are no teachers' guides available for these subjects and grades so the textbooks themselves are the only guide available to teachers.

With respect to *Mahendra Mala*, the language arts/social studies series (Grades 1 to 3):

1. All three books follow a similar format with respect to the reading selections. Each selection is followed by a series of standard student exercises.

2. The illustrations and reading selections seem to be very appropriate to Nepal, especially to the rural Hill populations.

3. These books provide practically no directions to the teacher about what objectives are to be accomplished with each reading selection. The social studies content to be learned is relatively clear, but specific grammar or spelling rules or language skills cannot be as easily determined from the text. Since there are no teachers' guides, even the most trained and skilled teachers would have difficulty using these books effectively. Grade 1 offers more teacher suggestions than the other grades. Most of these instruct the teacher to construct more practice exercises modeled after the ones in the textbook.

4. The Grade 1 *Mahendra Mala* introduces the letters in alphabetical order, teaching students to recognize, read, and write each letter in that order. This ordering suggests a lack of theory to direct instructional design. Alphabetical order rather than frequency of use or ease of recognition determines the order of presentation.

5. In the Grade 3 textbook, 53 percent of the instructional pages contain reading selections. The remaining pages present student exercises that follow the same pattern for each selection. These exercises include reading and copying, reading and understanding, sentence completion, short answer questions, fill-in-the-blanks, correcting sentences by looking at the text, and suggestions for group work. It is difficult to determine the learning objectives associated with these exercises.

With respect to the arithmetic series for Grades 1 to 3:

1. The concrete objects presented appear to be familiar to the students and culturally appropriate.

2. However, many of the concepts of addition and subtraction are presented through abstract illustrations. These are difficult to understand.

3. Concepts move very quickly from the concrete to the abstract.

4. The Grade 1 textbook contains one note to the teacher, and the Grades 2 and 3 textbooks contain 1 and 4 notes, respectively. In essence, the textbooks give little guidance to the teacher.

5. In the first grade textbook there are no review exercises to help students retain what was learned in earlier lessons.

6. The scope of material covered in these textbooks is striking. By the end of Grade 1, as specified in the curriculum, students are learning multiplication tables to five and many representations for the fractions one-half and one-fourth. By the end of Grade 3 they are multiplying three-digit by three-digit numbers, dividing three-digit by one-digit numbers, and manipulating complex fractions.

In summary, the lack of clarity and specificity noted in these textbooks arises partly from similar problems in the curriculum. Since textbook writers are expected to follow the curriculum very closely, the textbook writing process may not allow skilled writers to amplify needed areas without more direction. Trained as well as untrained teachers will find it difficult to teach from these textbooks. More attention to learning theory and child development is needed as well, both in the design and in the sequence of lessons. Such use of theory would present students with concepts in a form and at a pace that would facilitate learning.

In the absence of any controlled studies, it is difficult to assess students' or teachers' understanding of the textbooks and their usefulness as a learning resource. Since the textbooks are available in every school, it would be valuable to have information on their effectiveness.

Teachers' Guides

As mentioned above, there currently are no teachers' guides available. Prototypes are being developed by the Primary Education Project, and may eventually be distributed nationally. A materials development specialist has noted that teachers are reluctant to read and follow teachers' guides, especially if they have to take them to class. Teachers are more responsive to using brief pamphlets that give them clear, easy-to-understand background information on what they are to teach.

Teaching Directives have been developed by CERID for all subjects at all grade levels as a part of the CERID/IDRC (International Development Research Centre) Instructional Improvement in Primary Schools (IIP) project (see Section 4.1.4.7). These Directives present unit-by-unit objectives, materials, and directions for the teacher. In some cases there are also suggestions for student practice exercises and evaluation. These Directives have been used extensively by teachers participating in the IIP project. Other projects do not seem to have made use of these materials nor do there appear to be plans to disseminate them beyond IIP. This is unfortunate because they appear to be a useful model for developing teachers' guides or some form of support material for teachers. Since these Directives have been used by teachers, information should be readily available on how they have been used and how they can be improved.

4.1.4.4 Examinations. For the first four grades, each primary school is responsible for developing and administering examinations to the students at the end of the year. Students who pass are promoted to the next grade, and those who fail are expected to repeat that grade. The Grade 5 examination, however, is prepared at the district level by a committee of supervisors and teachers; questions are then distributed to each school. Administration of the examination varies from district to district. Most districts allow the schools to administer and correct the examinations and, therefore, determine who will pass to lower secondary school. Some districts, however, have the examinations corrected at the district level and the results announced by the District Education Office.

At present, it appears that this examination neither limits the number of students going on to lower secondary education nor controls for the quality of those who do continue. Indirect evidence for this is available from the 1986 MOEC drop-out study, which presents data for 1983-1984. If promotion rates for Grade 5 are not different from Grades 3 and 4, it may be concluded that the Grade 5 examination does not significantly impede progress to the next grade. This is in fact the case. Eighty percent of the Grade 3 students enroll in Grade 4; 73 percent of the Grade 4 students enroll in Grade 5; and 76 percent of the students in Grade 5 pass to Grade 6. Also, the pass rates for Grades 3, 4, and 5 examinations are 83, 80, and 83 percent, respectively. This suggests that the Grade 5 examination, even though designed at the district level, is no more rigorous than the final examinations for Grades 3 and 4.

4.1.4.5 Facilities and Equipment. The local community is responsible for providing and maintaining the school building, grounds, and furniture. The type of school building varies with the climate, the type of building material available, and the wealth of the community. Although some facilities are well built, most are generally known to be inadequate. Most classrooms are small and dark, with earth floors and few windows. In the Tarai areas they may be little more than thatch-roofed open areas.

No systematic studies have been done of school facilities but a baseline survey of 260 participating schools, conducted in 6 districts by the Primary Education Project, found the following: most schools had no latrines or compound walls and a third had no drinking water facilities. On a scale of 1 (very poor), 2 (poor), 3 (good), and 4 (very good), selected facilities in these schools received the following average ratings:

blackboard and chalk	2.7	roof and walls	2.3
windows	2.2	floors	2.1
furniture	2.1		

In other words, most of the facilities were rated only slightly better than poor. The level of cleanliness was also poor and the school headmasters felt there was little cooperation from the community (2.4 rating).

Through the Ministry of Local and Panchayat Development (MLPD), UNICEF has provided roofing material to about 850 schools since 1978. UNICEF now has a new policy of making construction grants available to communities on a cost reimbursement basis through various projects such as the Small Farmers' Development Project. Japan has given a bulk shipment of a five years' supply of roofing materials to be distributed through the MLPD. This is expected to be sufficient to provide roofs for 75-80 percent of the primary schools by 1990.

Many NGOs involved in rural development have education components in their programs. They often give grants to schools to construct classrooms, build latrines and drinking water systems, renovate buildings, and build furniture. For example, Action Aid in 1985-1986 gave free learning materials to five primary schools and construction grants to 19 schools in their project area. There are no readily available data for assessing the extent of NGO involvement in these activities.

The government is concerned about the quality of primary school facilities. The two most pressing problems are light and space. If it is too dark to see and so crowded that students disturb each other and do not have space to read and write, then the low quality of the facilities will interfere with learning. Where

facilities are inadequate classes will often meet outdoors. Except for extreme cases, it is difficult to assess whether the quality of existing school facilities directly affects learning or only indirectly affects learning by influencing the morale of those working in the schools.

Studies in other countries have not related the quality of school facilities to learning. However, over-emphasis on improving school facilities beyond providing a minimum standard of light and space may take funds away from more productive uses, such as for inputs to education that are widely recognized as being directly related to instructional outcomes.

4.1.4.6 Quality of Instruction. The discussion of quality of instruction covers student achievement, trained teachers, time on task, teaching style, and incentives.

Student Achievement

A direct and relevant measure of the quality of instruction is student achievement. Unfortunately, there is no standardized primary school terminal examination given in Nepal to assess student achievement and little research has been done in this area. A 1980 New ERA study of literacy retention, by those who had passed Grade 3 and who were 1-4 years out of school, found their achievement to be at the Grade 2 level. Their ability to write was less than their ability to read. In the application of literacy skills, participants seemed to be at the semi-literate level. In a 1982 CERID study, a basic literacy test was given to over 2,000 students in 12 districts who had just completed Grade 3 and entered Grade 4. Literacy categories were based on scores on the literacy test. Only 20 percent of the students had gained full literacy, 51 percent were literate, 21 percent were semi-literate, and the remainder partially literate or illiterate. Children in the Eastern Development Region achieved the highest rate of full literacy (30 percent), those in the Far-Western the lowest (12 percent). The highest scores were in reading, followed by writing and arithmetic. There appeared to be no difference in the achievement level of native Nepali and non-native Nepali speakers. Boys performed better in arithmetic than girls did but not in the other subjects. The study noted there were not "any great differences in the performance level of students in the Tarai and in the Hills." A third study, also by CERID (1984), tested the achievement of 1,976 students at the end of Grade 5. Scores were found to be below satisfactory. The average score was 45 out of 100 marks in Nepali and 30 out of 100 in mathematics. These studies present a consistent pattern of under-achievement among primary school students. Arithmetic appears to the most difficult subject for students to learn and reading Nepali the easiest.

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Trained Teachers

Efforts have been made to improve the quality of instruction through teacher training. However, most studies of Nepali teachers have found little difference in classroom behavior between trained and untrained teachers. One CERID study (1984) of primary teacher classroom performance found that there is "not much difference in AR [activity ratio], TQR [teacher question ratio], and SIR [student involvement ratio] of trained and untrained teachers." Most studies tend to show more attitudinal than behavioral differences between trained and untrained teachers.

Trained teachers explain that heavy teaching loads, the lack of instructional materials, and limited physical facilities discourage the applications of new skills learned in training. One trained teacher interviewed during a study of teachers in Kabrepalanchok (Karmacharya, 1982, p. 145) summarized the situation as follows:

> In the beginning I was very ambitious to do everything learned in training. I devoted my morning and evening time to preparing lesson plans and instructional materials. However, although I was constructing and collecting materials at my own expense, the materials were broken, lost and spoiled due to the lack of storage space. Still we have no tables and chairs in the classrooms. The important thing is that nobody motivates or provides incentive for commitment to work and applying new skills. There is no difference between a teacher who works hard and one who does not do anything. Several times I felt that I was foolish for trying to behave differently from others. All these things have hampered me and slowly I have left off all my efforts.

The following is from an interview (p. 149) with another trained teacher in the same study:

> [In a first grade class], one campus trained teacher taught numbers and their values, but did not use any aids except for a few pictures drawn on the chalkboard. [An interview followed.]
>
> Q. You could have used some concrete objects to clarify the concept of numbers. Why did you not do that?
> A. Yes, I could. But the class is so big that I cannot even teach. I hate to teach in first grade.
> Q. Why do you say that?
> A. Did you not see how the students were packed into the class? How do you expect me to use concrete materials or activities in that class?
>
> The class had 95 students. Three fourths of the students were sitting on old straw mats, and others sat on the concrete floor. Due to lack of space, it was difficult for the teacher to move around to keep students in order.

Time on Task

Another measure of the quality of instruction is time on task--the amount of time students are engaged in learning activities. The government has stipulated that a school must operate for 220 days per year. Each school, though, may determine its own calendar depending on the agricultural cycles and climate of its locality. As a result, schools may have very different schedules. In general, there is a one- or two-month vacation during the planting season or during the cold season. According to data collected for the sector assessment in 15 schools, the number of teaching days was found to vary from 156 to 232 days.

Student absenteeism further reduces time on task. A school mapping study in the Far-Western Development Region (Nepal Research Centre, 1982, p.128) found that the rate of absenteeism in Doti District rose from about 20 percent during the slack agricultural season to about 55 percent during the peak agricultural season. Data in Table 4.12 indicate that students who pass, i.e., those with the best attendance records, attend less than 75 percent of the time. Even when school is open and students are present, it has already been noted that teachers are not regular in their school and class attendance. It is reasonable to conclude that time spent on task is well below what it might be.

Time on task may also be limited when teachers have to teach more than one grade at a time. Although the government has tried to provide one teacher for each grade, this has not been possible or appropriate in many schools with low enrollment. A rough estimate of the extent to which teachers engage in multi-grade teaching can be made as follows. There were about 56,000 primary school grades in 1985 (accounting for the fact that some schools do not have the complete 1-5 grade structure). There were 51,266 teachers leaving about 4,700 grades, or slightly over eight percent of the total, not covered by a teacher. This is probably a conservative estimate since a number of schools have more than one section at each grade level and since teachers are not likely to be distributed as evenly as this calculation assumes. As a result, 10 to 15 percent of the schools may require teachers to engage in multi-grade teaching. If teachers are to be distributed more efficiently, according to government policy with respect to student/teacher ratios, then this percentage would increase dramatically as excess teachers would be eliminated. Teachers are not trained or oriented to conduct multi-grade classes, so it seems likely that these excess grades are left unattended. The result is a further decrease in the time that students spend on task.

Teaching Style

Teachers tend to teach by subject area across grades. The dominant activity in the classroom is teacher lecture punctuated by very brief questions requiring choral "yes" or "no" answers from the students. Teachers tend to interact with the class as a whole rather than with individual students. Learning is basically rote memorization of the alphabet, arithmetic tables, or material from the textbooks. Written work tends to involve solving arithmetic problems or copying from the textbook. Textbooks are virtually the only instructional materials available. They provide whatever information students are to learn and whatever guidance teachers receive. It is no surprise that chanting from the textbooks is a significant daily activity. Schools can often be heard before they are seen.

The following is a quote from a study of trained teachers in Kabrepalanchok District (Karmacharya, 1982). It characterizes the learning process and the problems faced by teachers.

> . . . a trained teacher gave dictation in a language class in Grade II. Approximately 25 or 30 percent of the students either watched a nearby friend taking dictation or did nothing. The teacher saw that but did nothing. I asked the teacher why he did not say or do anything to the students who were not doing the classwork.
>
> I. I saw some of the students doing nothing while you were dictating. Why did you not say anything to them?
> T. What am I supposed to say or do? I asked them to take dictation. (He seemed slightly irritated and said nothing else.)
> I. Is that all you want to say?
> T. What should I say? There are some students who never do what they are asked to do. They do not bring pens and paper. What can I do with them?
> I. Did you try to inform their parents?
> T. I do not have time to visit the parents, the other teachers and I have taken this problem to the headmaster. He sent a letter to the parents asking them to provide pens and paper for their children.
> I. Then what happened?
> T. (He smiled) You saw the result in class.
> I. You mean nothing happened?
> T. Right.
>
> During tiffen [tea time] break I asked the headmaster, in front of the teachers, about the problem of providing paper and pencils to the students. During this group discussion, I was informed that the parents were tired of buying pens and paper for their children. The cheapest pen cost about one rupee, and a tablet with 16 pages cost about the same price. Within a week, pens were lost and tablets used up. Though primary education was free, for most parents it was still proving to be expensive because they had to pay for everything except tuition fees and books. (pp. 156-7)

The traditional patterns of learning and instruction have proven difficult to change. Many seminars and published articles have reviewed thoroughly and eloquently why Nepali schools have low instructional quality. Their major conclusions can be summarized as follows:

1. Primary schools often begin late and end early in the day, thus curtailing the instructional day.

2. Teachers are not motivated to attend school or class regularly; there are no incentives to do so and no punishments for non-performance.

3. Teachers who are willing to work find little support from their schools or from the district supervisors.

4. Most teachers are untrained and those who are trained do not use the methods they have learned.

5. Teaching conditions are difficult; school facilities are poor, classrooms are often overcrowded, and instructional materials other than textbooks are inadequate or non-existent, and schools often lack storage facilities.

6. There is parental pressure to pass students regardless of capabilities. Repeating a grade is costly and reaching higher levels of schooling is regarded as equivalent to learning.

7. There is no valid evaluation system to impose standards on the schools.

8. There is a lack of support from the School Management Committees and apathy within the communities. This apathy arises from illiteracy and a belief that once parents send their children to school, their responsibility is finished.

Incentives

The MOEC is beginning a program to evaluate every school on the basis of its physical facilities, academic achievement, student enrollments, extra-curricular activities, financial management, and administration. A comprehensive form to collect this information was sent to each school in 1985. The data are being entered on the national computer; considerable time is required as the data base is very large. Each school will be assessed on the basis of its performance in each category. The ten primary schools scoring the highest in each district will be awarded cash prizes. According to the Basic Needs Document, the prizes will range from Rs 1,000 to Rs 25,000. These schools will be identified by the School Administration Section of the MOEC, and each district will be notified of the results. Awards will be made on Education Day. Data analysis is still in progress so no awards have yet been made. (See Annex 4.5 for more details.)

Schools need encouragement and recognition, and the awarding of cash prizes is an important incentive. The process for evaluating schools is highly centralized and quantified. The success of the system will depend on how correctly and carefully schools complete the evaluation forms. Without supervisors regularly visiting schools, it is difficult to assess the accuracy of the data. Thought should be given to allowing flexibility in the system to recognize schools for their efforts to improve, as well as their actual achievement. Incentives should be targeted to encourage schools to respond to the particular needs of universalizing primary education. Implementing a complex evaluation system such as this one is not easy. Hopefully the process will be monitored carefully and adjustments made as needed.

Instructional quality is a significant issue for Nepal. Students are not achieving at expected levels due to school factors and to community attitudes. These factors must be overcome if Nepal is to benefit fully from its investment in primary education. Enhancing instructional quality will not only improve student learning, but it should also encourage students to stay in school and encourage new groups of students to enroll.

4.1.4.7 Costs, Financing, and External Assistance Agency Support. The first section below covers the costs of primary education; this is followed by a discussion of the sources of funds for these costs. External assistance agency support is then discussed, with a description of several externally funded projects.

Costs

The costs of primary education are borne by HMG, the local community, and individuals. The government supports the basic recurrent costs of primary education; teachers' salaries, textbooks, and some basic supplies. Local communities are expected to provide and maintain the physical facilities and furniture and provide other needs not covered by the government.

Although primary education is basically free (i.e., there are no tuition or textbook charges), there are still costs that must be borne by the family. Occasionally, for example, a school charges additional fees for sports equipment and other extra-curricular activities. Also, children are expected to provide their own pens and copy books and a school uniform is required in many areas.

In Chapter 2 (Section 2.6.1), the unit costs for primary education are estimated to be Rs 432 per year although amounts vary from Grades 1 to 5. Of this amount, the government pays about 64 percent of the unit cost, while the remainder is borne by the local community and individuals.

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Costs of the primary school cycle are higher than five times the unit cost because of wastage caused by drop-outs and repetitions. Because of these factors, 9.46 instructional years are required per graduate resulting in a cycle cost of Rs 4,087. If the internal efficiency were ideal, the cost per graduate would be only slightly more than half of this amount.[6]

Financing

Recognizing the importance of primary education, the government has been devoting an increasing proportion of the total education budget to primary education. Primary education received 26.3 percent of the education budget in 1977-1978, and this increased to 36.3 percent in 1986-1987.

The annual budget for education is prepared by the MOEC with input from the Regional Education Offices (REOs) and the District Education Offices (DEOs). With the start of the new fiscal year in mid-July, the budget is disbursed quarterly to the REOs and DEOs. The DEO then distributes funds to schools based on teacher information received from the School Management Committees.

External Assistance Agency Support

External assistance agencies have been involved in education in Nepal for over 30 years. Their activities at the primary level now focus on projects to improve the quality of primary education. A brief discussion of the most important externally funded projects is given immediately below.

The SETI project. In cooperation with UNDP, UNESCO, and UNICEF the MOEC undertook a project in 1981 to transform rural education into a force for rural development. Education for Rural Development (ERD) in the Seti Zone, known as the SETI project, seeks to make the basic educational system more efficient and effective, to make teachers a resource for rural development, and to introduce changes into the basic education system to enhance the solving of major problems confronting rural people. The project is being implemented in three districts of Seti Zone in the Far-Western Development Region: Doti, Bajura and Bhajang--some of the most remote and educationally disadvantaged areas in Nepal. Most of the schools in these districts are included in the project.

[6]Using the updated drop-out and repetition rates (see Annex 4.6), 12.84 instructional years are required per graduate, resulting in a cycle cost of Rs 5,546. These data were not available when the draft of this report was prepared (August 1987).

The five main objectives of the project are to:

1. Enhance school facilities by improving existing school compounds by, for example, planting trees and vegetable gardens and building latrines and compound walls; and by constructing new primary schools.

2. Provide supplemental graded readers which emphasize development themes.

3. Train teachers in new teaching techniques, the development and use of instructional materials, and rural development works.

4. Manage adult education classes emphasizing literacy and development.

5. Manage female education (Cheli Beti) classes for primary aged girls (6-12 years) to help them enter the formal school system.

The project has developed a unique and decentralized system through which the inputs of the project are delivered. The activities are conducted primarily through the school cluster system. This involves a group of Resource Center Schools, each responsible for providing support, materials, training, and supervision to about nine Satellite Primary Schools. The Resource Centers run 7-day and 21-day teacher training programs on contract from the project, supervise the Satellite School teachers both in their classrooms and as they conduct adult education and Cheli Beti (girls' education) classes, and conduct regular Friday meetings for Satellite School teachers. There are multiple levels of supervision within the project. Project staff, District Education Office staff, and Resource Center teachers all provide support to the Satellite Schools.

The second unique aspect of the project is its system of "payment by results." The project pays immediately for activities completed, whether for school buildings built by the community or for training programs and literacy classes managed by teachers. The ability of the project to meet its commitments is an important source of motivation for the participants.

According to project documents, the accomplishments by early 1987 included the following: 30 Resource Centers serving 250 primary schools had been established; over 2,000 teachers, headmasters, School Management Committee Chairmen, and other local leaders had attended a range of training programs to improve the quality and supervision of classroom teaching, and to equip teachers with skills related to rural development in health, agriculture, and community development; communities in Bajhang and Doti completed 226 programs to improve school facilities; 217 sets of prototype Teaching Learning Materials and 661 blackboards had been distributed; and 33 supplementary readers for primary students had been developed.

A 1986 evaluation by CERID summarized the project as follows: the school cluster system had a positive impact on the quality of education in rural areas; and the project has been notably successful with the physical improvement of school facilities, the provision of supplementary readers, and the development of a support system for teachers including Friday meetings. The study, however, stressed that more attention needs to be given to helping teachers improve their teaching practices and to helping the Resource Center schools provide support that leads to teachers' professional development. Unfortunately, there are no data available concerning the impact of the project on student attendance or achievement.

The project began its second five-year phase in early 1987. The objectives of this phase are: to have the REOs and local DEOs assume full responsibility for implementation of the project; to complete and prepare the innovative approaches of the project for national distribution; and to pilot-test the 10-month In-Service Teacher Training Program.

The recurrent costs of implementing the project are not available, so it is difficult to assess what the costs to HMG would be if all the activities were to be undertaken, on a non-project basis, as a regular part of the MOEC program. The costs of the training programs, however, are available. The 21-day teacher training program costs Rs 980 per participant or Rs 47/day/participant. The 7-day refresher training program costs Rs 501/participant or Rs 72/day/participant. These costs include food for the participants and materials. They do not include the cost of the instructor's time.

The Primary Education Project (PEP). In 1984, the MOEC undertook a major project to improve the quality of primary education. Funding is provided by HMG and the World Bank/IDA, and technical assistance is provided by UNICEF. The Primary Education Project (PEP) has three major areas of activity: primary schools, the examination system, and administrative capacity at the central level. This section reviews the project activities related to primary schools. Six districts and about 554 schools are involved in this aspect of the project.[7]

[7]In 1988 these figures have increased to 76 Resource Schools and 747 Satellite Schools, based on information available after the preparation of the draft of this report (August 1987).

The major activity of the project is to develop a school cluster system in which one Resource School serves 8-12 Satellite Primary Schools. Many aspects of the model are based on the SETI project. Resource Persons are assigned to each of the Resource Schools. Their role is to conduct 12-day and 10-day training programs for the Satellite School teachers as well as shorter training programs for head-masters and School Management Committees. In addition, they supervise the Satellite School teachers, conduct monthly meetings of these teachers at the Resource School, organize extra-curricular activities, and arrange for the rotation of a mobile library. These Resource Persons receive training from the staff of the Primary Supervision Training Unit (PSTU) within the CTSDC and are supported by Field Coordinators assigned to each of the DEOs. In addition, the project provides each participating school with a basic set of instructional materials, supplementary readers, and teacher's guides developed by the Primary Materials Unit (PMU) within the CTSDC. The project began by training Grade 1 teachers and is gradually expanding to include teachers in the higher grades. The project encourages teaching all subjects to a single grade. This is known as grade teaching. This is a significant innovation since most teachers are accustomed to teaching by subject across grades.

The project is operating in six districts--Jhapa, Dhankuta, Tanahu, Kaski, Dang, and Surkhet. Two are Tarai Districts and four are Hill Districts. These are located in the Eastern, Western, and Mid-Western Development Regions. None are in remote areas. There are 48 Resource Center Schools covering 506 Satellite Schools; 28 new Resource Centers will be added this year in the same districts.

The project is involved in some major construction projects: new buildings for the Project Implementation Unit, the CTSDC, the Office of the Controller of Examinations, two Regional Education Offices, and four District Education Offices. In addition, each Resource School is receiving one additional multi-purpose room and there is a program of school rehabilitation with community participation for the Satellite Schools.

A 1986 CERID evaluation of PEP summarizes the progress of the project as follows: the cluster system has been well received by the local communities; Friday meetings are an effective forum for teachers to share and solve their problems; and grade teaching has improved student attendance and interest and has improved the physical appearance and cleanliness of the classrooms. Many teachers, initially skeptical, now feel very positive about grade teaching.

The study noted, however, that the roles of Resource Persons and Field Coordinators need to be clarified and greater emphasis needs to be placed on supervising the instructional program of the Satellite School teachers. Given the complexity of the design and the extensive inputs required, the project appears to be making good progress, particularly in the development of materials and the training of Resource Persons and participating teachers. There are no data on the impact of the project on student attendance or student achievement.

Some training costs of the project are available but, as with the SETI project, they do not include administrative overhead and other implementation costs. The 12-day teacher training at the Resource Center Schools costs Rs 1,100/participant or Rs 92/day/participant. This includes a training allowance of Rs 30 per day per participant as well as the five instructional books given to the teachers and materials for constructing instructional materials. It does not cover the cost of the Resource Person who conducts the training. This adds about Rs 3/day/participant to the cost. The 10-day materials development training is projected to cost Rs 528/participant and Rs 53/participant/day. These costs are slightly higher than those listed for the SETI project primarily because PEP teachers receive a daily training allowance. Training in Kathmandu for Resource Teachers and Field Coordinators is more expensive, averaging about Rs 178/participant/day.

Instructional Improvement in Primary Schools (IIP). CERID began a four-year project in 1982 to improve the quality of instruction in primary schools. Funding was provided by the Canadian IDRC. The objectives of the action and research project, operating at seven schools in two districts, were to:

1. Prepare teachers to implement student-centered and activity-oriented teaching techniques.

2. Teach parents to facilitate their child's learning at home.

3. Develop a set of learning materials for primary school students.

4. Train teachers to develop and use classroom instructional materials.

5. Document the process of instructional transformation and its impact on student achievement.

The project operated at seven lower secondary and primary schools; four were in Kaski, a Hill District in the Western Development Region, and three in Dhanusha, a Tarai district in the Central Development Region. In addition, two control schools were selected in each district. Recognizing that fundamental changes in teachers'

traditional attitudes and behavior were required, the project adopted a strategy of involving teachers in the design and production of instructional materials. The project also developed Teaching Directives (unit-wise directions giving student-oriented activities), instructional materials, manuals, student workbooks, supplementary materials, and self-learning modules. Pictorial books and posters were developed for parents. These were all designed to be practical and relevant to the needs of their target audiences.

The major implementors of the project were two field researchers assigned to each district who worked directly with the teachers. They supervised classes, gave demonstration lessons, and consulted with teachers about their problems. Teachers participated in five workshops in which the development and use of instructional materials were emphasized. They also met regularly to discuss problems and progress.

Because the project was designed with a significant research component, the impact of the project was carefully monitored. Unlike the SETI and PEP projects, there is information on student achievement and teacher behaviors. The general outcomes of the project can be summarized as follows: there was a marked change in teacher behavior; students became more involved; there was an increase in homework assignments and the checking of students' copies; and teachers displayed a broader variety of teaching techniques including the use of role playing, demonstrations, and discussions. There were also changes in teachers' attitudes. With respect to students, the drop-out rate declined, and over a three-year period the students performed significantly better in Nepali, mathematics, and social studies than those in the control group schools. Over a three-year period, the achievement of the Grade 1 students showed a steady improvement over each prior year.

While these three projects described above have been implemented in different parts of the country, with varying strategies for improving primary education, all recognize that the *process of quality improvement demands a multi-faceted approach.* Simply training teachers or providing better materials alone will not change the system. Only by multiple interventions at the school level can the culture of schools gradually change in ways that will improve student learning. *These multiple interventions include teacher training and continued support; providing instructional materials which facilitate the teaching and learning process; and community and parent education programs.*

These three projects, although experimental and requiring additional inputs, have some important implications for the improvement of primary education throughout the country. Single inputs, such as have been tried in the past, have not been found effective for improving the quality of primary education. Unfortunately, these projects tend to operate in isolation from each other. Each designs its own teacher training program and develops its own instructional materials for students and teachers. There is extensive duplication of effort which could be better utilized in developing a single well-tested approach to training and a single set of effective instructional materials.

Another interesting project is the Schools for Underprivileged Children that is managed by the Sanothimi Technical School with funding from the International Underprivileged Children's Education Programs (UCEP). Known as telescopic education, students complete the first seven years of education in three and one-half years. As described below, the project provides a model for ways to deliver primary education to disadvantaged children who would not otherwise come to school. Classes meet six days a week from 7 a.m. to 9 a.m. Allowing for a few holidays, they meet for more than 300 days per year. These classes are held in regular school buildings, before the regular school day, and use government approved textbooks. They have a relatively small student/teacher ratio of 25:1. The students enroll when they are between 10 and 12 years old and are therefore slightly more mature than most primary school children. This enables them to pursue a more intensive course of study. There is also a strong incentive for the students to participate--admission to the Sanothimi Technical School upon completion.

4.2 ANALYSIS

In order for HMG to meet the goals for primary education several major tasks must be accomplished. This section presents these as needs and discusses plans currently under consideration for addressing them. Several constraints, or restrictions on attaining the goals of primary education, are then presented. These needs provide the basis for an analysis of the primary educational system focussing on the five analytic themes of external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing. This analysis forms the basis for the conclusions presented at the end of this section and the foundation for the recommendations in the final section.

4.2.1 Needs

The Seventh Plan (1985-1990) calls for a major expansion of primary education. This has been amplified in the 1987 Basic Needs Document to include the universalization of primary education by the year 2000 A.D. This will require (1) providing new school facilities and teachers for children in areas without current access to schools; (2) expanding the enrollment of under-represented groups, particularly girls and economically and socially disadvantaged children; and (3) reducing the high rate of drop-outs and repetitions, particularly in Grade 1.

The Seventh Plan also calls for improving the quality of primary education. This will require attention to (1) the instruction provided by the teachers; (2) the instructional materials available in the schools; and (3) the system of supervision and administration. Raising the quality of these inputs will improve the quality of primary education.

4.2.2 Plans

To develop a rational basis for determining the location of new schools as the system expands, a school mapping study is in its initial stages. The study will use school-age population projections to determine the numbers of teachers to be assigned to each panchayat over the next 13 years. The local panchayat will then be responsible for determining the location of teachers and school units to best serve the primary school-age children.

The Basic Needs Document specifies several changes to be implemented to strengthen the control of the administrative system. The designation of authority for the district and school levels will be consolidated in the DEO. District Education Officers will become District Education Inspectors (DEIs) and supervisors will become Assistant Education Inspectors. The DEI will hire and fire teachers and assign them to schools according the number of students enrolled and as vacancies arise.

Teachers will be allocated on the basis of a 20:1 student/teacher ratio in the Mountain Districts, 30:1 in the Hills, and 40:1 in the Tarai and urban areas. (See Annex 4.4 for more details.) Teachers will be appointed on the recommendation of the Teacher Selection Committee which serves as a Public Service Commission for teachers. Individuals who have not passed the SLC will no longer be appointed as teachers. The Teacher Selection Committee will be composed of three persons: one appointed by the Regional Educational Inspector, one a representative of the District Education Board, and one an Assistant Education Inspector.

School Management Committees will only be able to appoint teachers assigned by the DEI. The SMCs will be able to recommend that a teacher be fired, but the final decision will be made by the DEI. Assistant Education Inspectors, who will be responsible for evaluating the performance of the teachers, will make recommendations to the DEI concerning teachers' continued employment and promotion. Teachers will be fired if their academic qualifications are not appropriate to the job or if they do not perform satisfactorily.

SMCs will be able to hire headmasters from a list of teachers possessing leadership qualities and a good reputation. This list will be prepared by the DEI. The SMCs' main responsibilities will be, with the assistance of the District Panchayat: (1) to manage the school finances including funds received from the government, the district panchayat, student fees and other local sources; and (2) to maintain and improve the physical facilities of the school. They will have an advisory role with respect to teachers' employment status.

The SMCs will also be critical for developing strategies to increase student enrollment, particularly for girls. Membership on the committee has been altered to involve more local, non-political individuals. The chairman, for example, will be nominated by the DEI from among those who have supported the school or will be the Pradhan Panch. There will now be three parents, often called guardians, on the committee instead of one. The largest donor to the school and the headmaster will also be on the committee along with a ward member. (A ward is the basic political unit within a panchayat.) The member secretary will be appointed by the committee members. Under this reorganization the District Panchayats, with their power to levy local taxes, will be expected to play a more important role in financing the schools, especially in providing funds for construction of new schools.

The strengthening of the authority of the DEI and Assistant Education Inspectors, particularly at the expense of the School Management Committee, is an effort to bring more accountability to the system and to assure higher quality and more stability in the teaching staff. SMCs will no longer be able to hire temporary teachers, who are often unqualified, or use the hiring of teachers for their own vested interests.

The Assistant Education Inspectors will be responsible for evaluating the attendance and performance of teachers in each school as well as verifying the information given by each school on their evaluation forms. Assistant Education Inspectors will be the essential link between the schools and the DEI, where decision-making authority will now be concentrated. According to the plan, one

assistant inspector will be posted to each of the nine sub-districts of a district and will be responsible for supervising the schools in his area. The key to effective monitoring is frequent visits to schools in order to encourage sustained efforts by the school and to assure the flow of information to allow efficient allocation of resources--teachers' salaries, textbooks, and other inputs. Ideally schools should be visited five to six times each year. Plans for training Assistant Education Inspectors and DEIs for their new roles will need to be carefully developed.

HMG recognizes that teachers often do not attend school regularly, and that when at school they often do not attend class. To provide both accountability and incentives, HMG is planning to provide for four promotion categories for primary teachers. SLC-pass teachers will start teaching at promotion category 4, intermediate-pass teachers at promotion category 3. The highest level is promotion category 1.

Teacher attendance and performance will be evaluated by the Assistant Education Inspectors and recommendations made for their promotion if their performance is satisfactory. In addition, the DEIs are encouraged to offer special recognitions and prizes to outstanding teachers. If teachers do not meet expected standards, the DEI can issue an order to the School Management Committee that they be fired. The new plans provide teachers with greater security since transfers will only be authorized by the DEI and not the SMCs.

The success of the inspectorate system is based on the Assistant Education Inspectors and the DEIs' being able to make decisions and take prompt action in response to irregularities in the system. Experience indicates that this can be difficult to manage. Special efforts will be needed to introduce these changes with a strong commitment for enforcement from all levels of government.

The new Basic Needs system will provide incentives for good performance and penalties for poor performance. The system assumes that teachers, headmasters, and School Management Committees know how to perform, but that they only lack the motivation to do so. Hence, the new system may not provide sufficient ways to help people learn to do a better job. Yet, one cause of poor performance may be that people do not know how to do their jobs well, in which case they need opportunities to learn as well as incentives to perform.

In addition to these changes in the administrative system, HMG is planning to continue implementation of two projects, SETI and PEP, which provide useful models for improving the quality and relevance of primary education. These projects are invaluable resources in terms of the materials and programs they have developed and with respect to the implementation lessons they hold for the larger system.

HMG is also planning to enhance the involvement of the local community and increase local resources to support primary schools. The District Panchayat will be involved in raising funds for constructing and maintaining school buildings. The School Management Committees will be expected to undertake their responsibilities more conscientiously.

4.2.3 Constraints

There are a number of constraints to meeting the goals set by HMG. These relate to human, political, and bureaucratic factors as well as limited financial resources.

Constraint 1: Parental Attitudes. One constraint to the expansion of primary school enrollments is parental attitudes. Many parents are illiterate and do not recognize the value of education. Therefore, they do not encourage their children to go to school or to remain in school once enrolled. Parental attitudes detrimental to schooling are also influenced by economic conditions; the immediate value of children's labor at home or in the fields is greater than the perceived distant value of a primary education. The immediate costs of schooling outweigh the perceived future benefits. Parents, therefore, are both reluctant and economically discouraged from sending their children to school.

Constraint 2: Teachers' Status. Teachers in Nepal generally have low social status. They complain that their salaries are low, that they receive little professional recognition, and that their working conditions are difficult. As a result, it is difficult to recruit capable manpower to the teaching profession and to retain those who do enter it.

Constraint 3: Political Influences. Past and recent experience has been that the government is vulnerable to political pressures. These pressures constrain efforts to implement new programs and can lead to the misallocation of resources. When financial and human resources are distributed by the central government, there are pressures to make them immediately available to all. This makes it difficult for HMG to manage experimental programs which initially focus inputs on small areas. It is also difficult to experiment with different policy options.

Constraint 4: Bureaucratic Complexity. The bureaucratic system in Nepal is complex. Planning and decision-making authority is focussed at the central level while implementation responsibilities are given to the local and district levels. As a result, decisions to enforce existing policies or undertake new activities often require time-consuming approval from multiple levels of government. This discourages local initiative. A feeling has also evolved since the 1971 implementation of the NESP that the government is responsible for education since it provides textbooks, pays teachers' salaries, and determines who will be allowed to teach. These policies have led local communities to adopt a "wait and see what will come from the government" attitude.

Decentralization is a policy central to HMG's approach to development. Through decentralization, local resources can be mobilized more effectively for development. It is important to recognize that decentralization may be incompatible with plans to strengthen the authority of the DEI.

Constraint 5: Diffuse Decision-Making. Decision-making responsibility is often allocated to groups rather than individuals, thus further blurring authority and discouraging individual initiative. For example, headmasters take action with the concurrence of the SMC, and District Education Officers in consultation with the District Education Committees. Sharing responsibility not only limits liability for mistakes but also discourages initiative and action. Action is also constrained by the political forces represented on these committees.

4.2.4 Issues

Themes of internal and external efficiency, access and equity, administration and supervision, and costs and financing provide the basis for the following analysis of the primary education subsector. The status section (above) provides the background information on which these analyses are based.

4.2.4.1 External Efficiency. External efficiency refers to the relevance of the school programs to the anticipated activities of those who will complete the primary cycle. More than half of the students who enter Grade 1 do not complete the primary cycle and, of those who do, about 30 percent do not continue to higher grades. Clearly, a major issue related to external efficiency is the relevance of primary education for those children for whom this is the only education they will receive. The most important goal of primary education is to provide basic literacy;

it is clear from studies in many developing countries that basic literacy has far-reaching positive impacts on fertility rates, agricultural development, health, and sanitation. This basic literacy goal is appropriate both for personal improvement and for meeting national social and economic development needs.

The question is to what extent does the present curriculum promote basic literacy and to what extent do students achieve basic literacy by the time of their enrollment in Grade 4, the target year for literacy identified by HMG. As discussed in the status section, the curriculum addresses basic literacy but lacks the detail needed to develop an effective program. This problem is reflected in the textbooks. The language arts textbooks offer practice in reading but provide no direction as to what skills are to be taught. In the arithmetic textbooks, students are expected to master abstract concepts before developing a foundation based on concrete experience. The difficulty of teaching basic literacy is compounded by an absence of guides for teachers to explain to them how to teach these basic skills. In terms of actual achievement levels, the few studies that have been done suggest that the level of literacy achieved does not meet expected standards. Students do not have sufficient skills to perform at a functionally literate level.

No clear standards are set for what children are to know and be able to do by the end of Grade 5. As a result, teachers help students memorize what is in the textbooks because there is no other goal toward which to teach. The Grade 5 leaving examination, currently administered by the districts, could set such standards but currently does not.

For those students continuing to secondary school, primary schools should provide the basic competencies needed for further academic study. English and Sanskrit are added to the Grade 4 and 5 curricula, which support the secondary level curriculum. In the absence of a standardized Grade 5 examination, it is difficult to assess how well prepared the students are for further study. Many secondary school headmasters and teachers, however, often complain that the students are not adequately prepared.

4.2.4.2 Internal Efficiency. Internal efficiency issues reflect how well the primary education system utilizes available resources to accomplish its goals. Internal efficiency indices included in this section are student flow, teacher performance, instructional materials, and teacher distribution.

Student Flow

As reflected in high drop-out and repetition rates, wastage is a central issue for assessing the internal efficiency of primary schools. As mentioned above, drop-out and repetition rates are high, especially for Grade 1. Nearly nine and one-half years of education must be provided to produce a Grade 5 graduate.[8] The reasons for this wastage are multiple and relate to economic and family background characteristics as well as to school factors. While no careful study has been done, the presence of under-age children and the large class sizes in Grade 1 (double those of other grades) no doubt contribute to the high drop-out and repetition rates.

Teachers often expect children to spend two years in Grade 1 since they come to school not recognizing the alphabet and numbers. This expectation may be a self-fulfilling prophecy; expecting students to be retained, teachers do not devote much effort to teaching them. The attendance patterns for students who drop out suggest another factor at work. Many of them come almost daily to school for two, three, or four months and then drop out. Their initial commitment is high and their disappearance is not always timed to the demands of the agricultural cycle. This pattern suggests that students lose interest in school; in the absence of strong parental pressure, boredom may lead them to drop out of school. District level officials have also recognized instructional quality as a factor influencing students to drop out.

Teacher Performance

Instructional quality depends heavily on teacher performance in the classroom. Traditional modes of instruction, in which students are passive listeners with little opportunity for active involvement or individual attention, discourage student attention and learning. Of even more concern than the quality of teacher performance in the classroom is the fact that teacher absenteeism is high and teachers spend little time teaching in the classroom even when at school. It seems reasonable to expect that learning would be increased just by improving teacher attendance, regardless of instructional style or materials used. However, with no adverse consequences for poor attendance and no incentives to perform more regularly, it is not surprising that teachers behave as they do. Teachers may be least interested in teaching the youngest students where classes are largest, students are unruly, and appropriate materials are most significantly lacking.

[8]Almost 13 years are required according to the more recent updated drop-out and repetition data that were not available when the draft of this report was completed (August 1987).

Instructional quality, at least as reflected in student retention rates, seems to be positively associated with teachers' academic qualifications. This supports the government's policy to hire only SLC-pass teachers for primary schools.

HMG's policy to provide training to all teachers by the year 2000 A.D. is of more questionable value, since there is no evidence thus far that trained teachers are more effective than untrained teachers. The reasons for this are associated with the school culture which discourages innovation, the ineffectiveness of the training programs, and the lack of incentives for teachers to use what is learned in training. If training programs are to be expanded, all of these factors must be considered if HMG is to receive any benefits from the massive investment that will be required.

Instructional Materials

Instructional materials also affect instructional quality and therefore the efficiency of the system. Studies in numerous other countries indicate that instructional materials, especially textbooks, have a clear and consistent positive influence on student achievement. In fact, these may comprise the single input which most improves learning. A recent review by the BRIDGES Project, of the use of soft technologies for primary education in developing countries, notes that ". . . with untrained and undertrained teachers, well-designed textbooks and instructional materials are essential" (Thiagarajan and Pasigna, 1987, p. 23).

The government has been very successful in distributing textbooks to primary school students. This is no easy task in Nepal. Given that many developing nations are not able to provide students with textbooks, the effort is a real tribute to HMG's efforts to support primary education. Unfortunately, the effectiveness of these materials is limited, as mentioned in the discussion of external efficiency. In addition to the points made above, there are few opportunities for students to practice what they have learned. There is only one textbook in Grades 1 to 3 that gives students practice in reading. The arithmetic textbooks present information but provide limited opportunities for practice. One reason trained teachers do not teach significantly differently from untrained teachers may be that the quality of the instructional materials does not permit teachers to apply what they have learned in training.

Providing textbooks is costly to the government. Students in Grades 1-3 receive new, free textbooks each year, although the government had planned that they would be recycled. A lack of storage space in the schools and the poor

condition of books at the end of a year of heavy use have led government to provide new textbooks each year. Students and parents now expect new books each year. Savings could be realized if books were reused or if printing costs could be reduced at least for materials that students take home, or if an effective combination of reusable and nonreusable instructional materials could be identified.

Teacher Distribution

There are inefficiencies associated with the unequal allocation of teachers to schools. HMG tried to provide one teacher for each grade at the primary level but this often results in very low student/teacher ratios and a waste of financial resources. Extrapolating from school level data available from Palpa and Rolpa, HMG may be supporting about 5,000 teachers (10 percent of all primary teachers) in excess of the prescribed student/teacher ratios. This represents an annual over-expenditure of about Rs 37 million rupees on teacher salaries. According to the Basic Needs plan, these inefficiencies should be eliminated.

4.2.4.3 Access and Equity. Access to primary education is associated with the availability of spaces for all students in the primary age cohort of the population (6-10 years). Equity addresses the extent to which educational opportunities are available regardless of sex, socioeconomic status, ethnic group membership, or other characteristics not under individual control.

Access

Providing physical access to schools is of major concern to the MOEC as it plans for the universalization of primary education. In the more remote Hill and Mountain areas, physical access is definitely an issue although the size of the population not having access is not known. Given the difficult terrain, and the tendency of the population to be scattered and live in marginally habitable areas, providing physical access will always be a challenge. Meeting this challenge is made feasible by the desire of each community to have its own primary school. In the First Plan (1956-1961), the construction of primary schools was one of the few areas in which the government exceeded its targets and then by an impressive 283 percent. Although this occurred some time ago, indications are that this same desire persists. There are lists in most districts of primary schools waiting to receive government permission to open. There is a strong political desire by local elected leaders to open a school in every village.

HMG has made a major commitment to provide primary education throughout the nation. Remote area teacher allowances, free textbooks to girls in those areas, and smaller student/teacher ratios are evidence of government's efforts to focus resources on geographically disadvantaged areas.

Equity

More difficult than providing physical access is enrolling populations of students who currently have access to schools but do not participate. Girls are traditionally under-enrolled in schools--only 30 percent of primary school children are girls. Girls' enrollment rates are slightly higher in urban areas (34 percent). Socially and economically disadvantaged groups are also under-enrolled. Economic conditions restrict the participation of these students as do parental attitudes that tend not to value education.

HMG must involve more girls and disadvantaged students to achieve universal primary education. This will require developing alternative approaches for the delivery of primary education since children who must labor for the family are not able to attend school daily from 10 a.m.-4 p.m. Plans to expand enrollment will need to include incentives as well as more convenient schooling times and locations to increase the participation of these under-served groups. Plans should also encourage local initiative to develop effective models since local communities are most familiar with the problems confronting those who do not participate. The Schools for Underprivileged Children Program, discussed in Section 4.1.4.7, offers one interesting model.

4.2.4.4 Administration and Supervision. Administration and supervision is concerned with the management of the primary education subsector and the extent to which it enables the system to operate effectively. Accountability, decentralization, and incentives emerge as issues within administration and supervision.

Accountability

Accountability is a major issue in the administration of the educational system as it relates to (1) hierarchical authority--the control of one level of the system over another and (2) the location of decision-making responsibility.

The MOEC provides funds for teachers' salaries and free textbooks, but has difficulty monitoring the distribution of these resources. With virtually no system of supervision, schools are not accountable for the quality of the data they provide

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to the DEO, for how they allocate funds for teacher salaries, or for the distribution of textbooks. As a result, considerable wastage occurs. Even where the appointment of authority is clearly specified, political pressures intrude which weaken the implementation of decisions and undermine authority as officially specified. District Education Officers may decide on the location of a new school using the objective criteria defined in the Legal Code only to have the decision reversed at a higher level.

A tendency to share the locus of decision-making also tends to diffuse accountability. As mentioned earlier, implementors must often make decisions in consultation with policy or supervisory committees. This diminishes their authority and discourages their initiative. Supervisors, or Assistant Education Inspectors according to the new plans, have to report to DEIs who make decisions. Headmasters have little direct control over their schools although they have considerable responsibilities for assuring that they operate properly. They must exert their influence through their membership on the School Management Committees.

Decentralization

Decision-making authority, planning for the allocation of education resources, and control over the distribution of educational inputs such as teachers and textbooks are centralized in the MOEC. The government, however, recognizes the need to involve local communities in more fully supporting primary education in order to achieve its objectives of expanding access and improving quality. Local communities, however, are reluctant to accept more responsibility without a commensurate increase in control over what happens in their local school. How to give more responsibility to local communities, while at the same time assuring that standards are maintained, represents a major challenge. Decentralizing authority while maintaining control in certain key areas will require some fundamental changes in a system which historically has had centralized authority.

Incentives

There has been no adequate incentive and reward mechanism to encourage the system to function effectively. Teachers attend school and class irregularly; textbooks are distributed without careful attention to the correct numbers needed. There have been no incentives for teachers to improve their classroom behavior, for headmasters to expand school enrollments, or for School Management Committees to

fulfill their responsibilities to maintain school physical facilities. Although the necessary components are present (schools, teachers, textbooks, blackboards, etc.), the system lacks sufficient control and incentives to transform these inputs into a functioning system that achieves the desired goals.

4.2.4.5 Costs and Financing. Issues related to the costs of primary education, and financing (sources of funds) for meeting these costs, are reviewed in this section. Details of the primary education costs, including the assumptions for their estimation, are given in Section 2.6.2 of Chapter 2.

Costs

The government has made a major effort to eliminate economic barriers to school attendance. Although most direct school costs paid by parents have been eliminated for primary education, parents must still provide pens and copy books and in many areas uniforms as well. These direct costs to parents, as well as the forgone value of the children's labor, still appear to be significant barriers to participation by the children of poorer families.

The costs to government for primary education are also high, and higher than they need to be. The cycle cost of primary education, including the total government and individual/private expenditure, is Rs 4,087; drop-out and repetition rates result in the cycle cost being more than it would be if there were no drop-outs or repeaters.[9] Specific programs to reduce repetitions and drop-outs, and to improve the quality of instruction, would significantly reduce these cycle costs.

Financing

Given the high costs of providing free primary education throughout the country for all children, the government expects local communities to provide increased financial support to schools. Communities are expected to build and maintain school buildings, and provide furniture and other materials. There is general agreement that present physical facilities are inadequate and that School Management Committees have not been fulfilling their responsibilities. More effective means need to be identified for accessing local resources. There are plans

[9]Updated repetition and drop-out rates, based on information not available at the time the draft of this report was prepared (August 1987), give a cycle cost of Rs 5,546. This is about three times higher than the cycle cost would be if there were no drop-outs or repeaters (see Annex 4.6).

to involve the District Panchayats more directly in school financing since they have the power to levy local taxes. Many areas have a wealthier elite that will also need to be encouraged to support education. Chapter 2 discusses more detailed options for accessing local resources.

External assistance agencies have a significant role in funding experimental projects. Government could more effectively utilize the successes of these projects to forge a single cost-effective plan for improving the quality of primary education.

Increased expenditures for education will be needed to provide additional teachers and more textbooks as the system expands, and to implement the inspector system and the cash awards that will be offered to successful schools. Financing improvements in the quality of education is an additional demand on already scarce resources. Decentralization of these efforts to local communities, with the government offering incentives to encourage improvements in quality, is one possible solution. Implementation supported and endorsed by local initiative is less costly than implementation from the top down. When communities organize themselves, interest and commitment naturally evolve, and resources are likely to be used more efficiently. Decentralization as a strategy may allow HMG to attend both to quality improvements and to expansion of access.

4.2.5 Conclusions

The following conclusions are based on the preceding analyses. These conclusions form the foundation for the recommendations in the final section of this chapter.

1. **Universal Access.** The physical targets for universal access to education are relatively reasonable given local community desires to have primary schools. A school mapping project is currently in progress to identify where new schools should be located so that all primary-age children will have access to a primary school.

2. **Equity (Universal Enrollment).** Enrolling children who currently do not participate, even though they have access to schools, is a more difficult task that will require flexibility and incentives to encourage participation. Without special attention to this problem, the universalization of primary education will be difficult to achieve. Just as free textbooks initially increased enrollments, further means of attracting students must be identified.

3. **Retention.** Drop-out and repetition rates are high. The greatest wastage occurs in Grade 1. This increases both unit and cycle costs, as discussed more fully in Chapter 2.

4. **Curriculum.** The curriculum lacks sufficient detail about the knowledge, skills, and attitudes that children are to learn in primary school. More specificity is needed to provide a base for developing improved instructional materials and for setting clear achievement standards for Grade 5 graduates.

5. **Instructional Materials.** Wastage within the system cannot be reduced without improving the quality of instructional materials. The high drop-out and repetition rates at Grade 1 may largely be due to a lack of instructional materials appropriate to the needs of children beginning school and the expectations teachers have for them. Improving the quality of instructional materials may also attract new entrants to school. Improvement is essential if basic literacy is to be attained by Grade 5.

6. **Teacher Performance.** Teacher performance can be improved by assuring that (1) teachers are held accountable for their jobs, particularly for attending classes regularly; (2) they have instructional materials to support their teaching and clear objectives for them to accomplish; (3) they have a support system to develop and promote their sense of professional capability; and (4) they are recognized for teaching well. The PEP and SETI projects provide useful models for improving the quality of primary education. The successful aspects of these programs have important implications for the system as a whole.

7. **Parental Attitudes.** Many parents do not support their children's participation in school. In addition to economic constraints, their own illiteracy and their lack of awareness of the critical role parents must play in education contribute to their lack of support. Experimental projects have shown that parents can be successfully educated to support their children's education. HMG needs to support programs to increase adult literacy and role awareness.

8. **Local Support and Decentralization.** Educational plans are generally made at the central level, which also controls the distribution of resources. As a result, there are few incentives and opportunities for local communities to develop their

own capabilities to manage and improve their schools. However, local support is essential if HMG is to enroll all primary age children in school at a realistic cost within current budget constraints. Communities need to create a demand for education, provide and maintain facilities, and expect high performance from teachers. To encourage this local support, the government must decentralize some of its decision-making authority and encourage communities to find ways to help themselves. Local initiative is critical to the improvement of primary education at costs that are affordable. Centrally funded projects have shown some successes but at recurrent costs higher than the government is able to bear for country-wide implementation. Local initiative could greatly reduce the costs of implementing successful aspects of these projects.

9. **Teacher Allocation.** The government is limited in its ability to control the allocation of resources. As a result, the current allocation of teachers within some districts is both uneven and excessive, resulting in an inefficient use of funds. Considerable savings could be realized if teachers were allocated according to government policies for student/teacher ratios.

10. **Accountability.** The government is limited in its ability to enforce teacher attendance and performance as well as to control their hiring, firing, and transfer. An inspection system based on frequent visits to schools by inspectors empowered to take action, in support of or against schools and teachers, would build accountability into the system. Plans have been made for such an inspection system.

11. **Special Projects.** The PEP, SETI, and IIP projects provide useful models for improving the quality of primary education. The MOEC needs to assure more coordination of activities among these projects so that efforts are not duplicated. The MOEC also needs to plan for ways to implement the more successful aspects of these projects in affordable ways.

4.3 RECOMMENDATIONS

To achieve universal primary education by the year 2000 A.D., the government has decided to: (1) assure universal access to schools for all children; (2) promote universal enrollment of all children; (3) promote universal retention of all children

through Grade 5; and (4) improve the quality of primary education. This demands careful planning and efficient use of resources if these objectives are to be achieved. The following recommendations are not exhaustive; they do not address every area of need in primary education. Rather, they recognize that resource constraints will not allow the government to act simultaneously in all areas of need, but instead that the government must emphasize those areas where the investment of limited resources is likely to have the greatest impact. The recommendations assume that improving the quality of instruction is key to meeting many of these objectives, to encouraging out-of-school children to enroll in school, and to reducing drop-out and repetition rates. When children and parents believe that children are becoming proficient in reading, writing, and arithmetic through high quality instruction, then children will be motivated to come to school and stay through the primary cycle.

As mentioned earlier in this chapter, improving the quality of instruction will require multiple interventions. These include the improvement of instructional materials, the training of teachers, the development of a professional support network for teachers and other teacher incentives, and enhanced financial and educational community support for schools. Such multiple interventions present the government with an overwhelming task. Therefore, these recomendations identify strategies that are believed to be the first and most critical step to improving the quality of education. They identify the improvement of instructional materials as the most crucial need of primary education and recommend that resources first be allocated to meeting this need. Teacher training and support become effective when teachers have quality materials with which to work. The recommendations then identify ways to improve the administrative support system and to encourage local initiative in seeking ways to expand primary school enrollments. There is also a suggestion for ways to reallocate resources to finance the earlier recommendations and a final recommendation for more extensive use of data analysis and policy studies to support the planning and policy making process.

These recommendations identify priority areas for government action. This does not mean that other areas such as teacher training (also addressed in Chapter 6), the improvement of physical facilities, or the provision of incentive systems to out-of-school children, are unimportant but rather that they can be more effectively accomplished once these priority recommendations have been implemented.

Improved Educational Materials

Recommendation 1: Develop the specific skills, attitudes, and knowledge to be learned by primary school children, based on the general objectives of the primary curriculum. The primary curriculum presents broad outlines of what is to be covered in Grades 1-5. Specific steps in the form of detailed, sequential objectives related to skills, knowledge, and attitudes now need to be developed to support the curriculum. The specific objectives should bridge the gap between the general objectives and the textbook material and activities. These specific objectives, in fact, are needed to make the textbooks or other instructional materials more effective for helping children develop basic literacy and attain the other objectives of the curriculum. The language arts and mathematics curricula require special attention since they form the core of the literacy skills. The task is complex because it involves the application of theories of learning, cognitive development, and curriculum development to the achievement of these objectives. Once these objectives are specified, they can serve as the basis for the preparation and revision of instructional materials which will expand students' opportunities to learn.

Recommendation 2: Develop instructional materials that are self-directing for teachers and/or students. This should be undertaken upon completion of Recommendation 1. The implementation approach should be incremental. In the first step, more directions could be added to the existing textbooks either as footnotes for teachers or by identifying learning objectives in the body of the textbook and in the introduction to the student exercises. Grammar and skill instruction in language arts could even replace some of the student exercise material. Future steps could involve development of alternative formats that would provide more self-directing materials. These might include the following: instructional guides for teachers, self-instructional workbooks for students, or various combinations of these for use with the existing textbooks. Attention should be given to designing materials that will facilitate instruction and learning in Grade 1, particularly the learning of sounds, letters, simple words, and numbers. Such materials would increase the efficiency of instruction in Grade 1 and thereby reduce the time needed to cover the curriculum and the tendency of many students to spend two years in Grade 1. Quality Grade 1 instructional materials are essential for reducing the high repetition rates at this grade. Materials development should also recognize that many schools have multi-grade classrooms and that within all

classrooms students demonstrate a wide range of abilities. At present, it is felt that materials are designed for the average student.

Experience in other developing countries has shown that incorporating a few basic principles of instruction in learning materials produces significant gains in achievement. These kinds of instructions include: requiring active student participation, giving immediate feedback to students on the correctness of responses, dividing learning tasks into meaningful units, providing appropriate examples, and allowing opportunities for practice. Incorporating these principles into the development of well-designed instructional materials can help make teachers more effective. Such materials are especially needed when teachers are untrained and undertrained.

Recommendation 3: The cost of printing and distributing revised and/or additional instructional materials should not exceed the amount currently spent for providing free textbooks. This means that less expensive ways need to be found to produce more materials. There are a number of ways to do this. The following suggestion can serve as an example for further discussion.

The MOEC is planning to renew efforts to recycle textbooks, thus eliminating the cost of their yearly replacement. To effectively recycle books, however, students should not be allowed to take them home but only to use them at school. Parents and students, however, expect children to receive books and it is important to provide opportunities for learning and practice at home. Workbooks which students are given each year could be developed to complement and enhance the material in the textbooks. In addition, workbooks would provide students with paper and opportunities for writing. Since students are often not able to provide their own copy books, workbooks would provide at least a partial solution to this problem. If new textbooks are provided only every three years, for example, the funds saved could be used to publish and distribute the workbooks. The cost of these should be considerably below the cost of textbooks since less expensive paper could be used. The books in the adult literacy series, *Naya Goreto*, are published for a cost of about Rs 6 for nearly a hundred pages of text and illustrations. A hundred pages could provide students with extensive opportunities for reading, writing, and arithmetic practice.

The lack of storage facilities at schools is often a major obstacle to recycling textbooks. If schools are allowed to sell the workbooks for a small fee (e.g., Rs 1), these funds could be used for building storage facilities. Of course, workbooks

should be given free to students who cannot afford to buy them, but recovering even part of their cost should make students value the books more and provide the schools with funds for needed storage and other materials.

The Administrative System

Recommendation 4: Implement the school inspectorate system as planned but assure that Assistant Education Inspectors visit schools on at least a bi-monthly basis. In effect, this represents a recentralization of authority in order to increase the accountability of schools and teachers. The implementation of other recommendations will depend on regular contact between schools and Assistant Education Inspectors (AEIs). Since assistant inspectors will have more of a policing role than currently played by supervisors, the standards for holding schools accountable need to be clearly specified in terms that can be objectively measured. For example, objective judgments about teaching quality may be more difficult to make than assessments of teacher attendance or student achievement. In addition, AEIs must have sufficient authority to make decisions consistent with their responsibilities.

The inspectorate system assumes that teachers and headmasters know what to do but, given the absence of accountability and incentives, they are not performing adequately. While this assumption may be partially correct, it seems likely that teachers and headmasters also need opportunities to learn how to do a better job and need access to resources to support their efforts. The next recommendation addresses these needs.

Recommendation 5: Develop policy guidelines and incentives for schools to form their own clusters of Resource Schools and Satellite Schools based on a review of the PEP and SETI Projects. This recommendation will decentralize selected aspects of school administration to balance the trend to centralization, develop cost effective ways to improve access to primary education, and improve the quality of instruction.

The PEP and SETI projects both have developed viable clustering models which provide a mechanism for channeling resources to schools and for giving professional support to teachers. They are, however, implemented from the top down, i.e. from the central and district level. As a result, implementation costs may be prohibitively high when nationwide implementation is considered, and the demand for trained manpower may exceed the capacity of the system. This recommendation

proposes that local schools be encouraged to form their own clusters within guidelines provided by the MOEC. Initiative would come from the schools and only those schools wishing to participate would do so.

These clusters would be responsible for: improving the quality of their educational program; and identifying and implementing ways to expand primary school access to underserved populations, particularly girls. Through a system of support, schools can be encouraged to improve, experiment, and solve their own problems.

Obviously, there must be significant incentives for schools to participate. Incentives that would be available only to schools in a cluster could include the following: (1) access to training programs which lead to recognition as a trained teacher; (2) access to supplementary materials such as those developed by SETI, PEP, and IIP; (3) construction funds; (4) funds for existing or additional personnel to implement the cluster program; (5) reassignment of personnel decisions to individual schools (headmasters or SMCs) given proven performance; and (6) permission to levy an education tax through the District Panchayat.

Decentralizing efforts for improving the quality and accessibility of education should be less costly and more efficient than centralized implementation efforts. There are several reasons for this. Local resources are more likely to be utilized when there is local initiative and the utilization of these resources will more likely be efficient. Given the magnitude of the task of providing universal primary education, the MOEC needs to decentralize certain aspects of authority and responsibility to accomplish its goals.

Recommendation 6: Establish resources for program implementation within each District Education Inspectorate. This will enable the DEIs to provide information and training to local leaders and educators for establishing a cluster system and for channeling resources to these schools once the clusters are established. These resources would need to be coordinated with the inspection process but in such a way that efforts to improve it do not conflict with inspection responsibilities. The resources needed for program implementation in the District Education Inspectorate would parallel the growth of the number of schools in the cluster systems.

Recommendation 7: Adhere to the policy that only those students six years of age and above be allowed to enroll in Grade 1. Older students are more mature than under-age children and therefore are more likely to be successful in school. This policy will reduce Grade 1 class sizes and should also reduce the number of students repeating that grade.

Recommendation 8: Expect all districts, according to policy, to administer and be responsible for grading the Grade 5 examination. By controlling the Grade 5 examination, districts can set standards for primary schools both in terms of the literacy skills and the knowledge that students are expected to achieve by the end of primary school. A district level examination can be an incentive for primary schools to increase the time that teachers spend in the classroom and the quality of their instruction. Care needs to be taken, though, that such an examination encourages learning and understanding and not merely the rote memorization of material in the textbooks.

District Education Officers will probably need guidance in how to develop effective tests. A pool of sample questions could be developed to serve as models for district personnel developing the test. Test construction is a skill that should be incorporated in training programs offered to DEI personnel.

Recommendation 9: Create a significant role for headmasters by giving them clearly separate authority from the School Management Committees, by requiring training for their positions, and by increasing their allowances. Headmasters are an important link in the chain of communication and authority which extends from the MOEC to the teachers. Because headmasters are at the school level, they are in the best position to promote instructional quality and expanded access. They cannot do this without appropriate authority, training, and incentives.

Recommendation 10: Train DEO (DEI) staff, particularly District Education Officers (Inspectors), supervisors (Assistant Education Ispectors), accountants, and those responsible for program implementation. These personnel need to be thoroughly familiar with their role responsibilities and the extent of and limitations to their authority. District level staff presently receive no training. This reduces their ability to fulfill their functions, particularly for the planning and budgeting required by the MOEC and for improving the effectiveness of primary schools. As roles are redefined with the introduction of the inspectorate system, training becomes even more essential. If teachers are to be encouraged to teach more effectively, they need to be supported by staff who are competent in their respective areas.

Resources Allocation

Recommendation 11: Reassign teachers within and across districts to adhere to the student/teacher ratios specified in the Basic Needs Document and to expand access in areas without schools. Abolish positions that exceed present needs. The reduction of teacher numbers exceeding the present ratios would provide significant savings to HMG. Reallocating existing teachers to new areas identified in the school mapping study would reduce the cost of hiring new teachers required to implement universal primary education.

Planning and Policy

Recommendation 12: Support the planning and policy making process with analyses of existing data and with policy studies when existing data sources are not sufficient. The objective of universalizing primary education is clear. The most effective means of achieving this objective, however, have not yet been identified in detail. Costs of alternative policies, and their relative benefits, have to be estimated for policy selection to be made. A careful analysis of existing data and policy research studies to address policy issues facing the government would enhance the effectiveness of the planning process.

Annex 4.1

Interviewees

Kedar Nath Shrestha, Director, Curriculum, Textbook and Supervision Development Centre

Vishwanath Poddar, Director, Primary Education Project

Bimal Lal Shrestha, Head, Primary Materials Unit, Primary Supervision Training Unit

Bishwa Nath Adhikari, Director, Janak Educational Material Centre

Madhav Mainali, Director, Research Center for Educational Innovation and Development (CERID)

Peter Crowley, Director, SETI Project

Balaram Joshi, Principal, Sanothimi Technical School

Tika Raj Joshi, District Education Officer, Kathmandu

Prayag Man Shrestha, Under-Secretary, Ministry of Education and Culture

Annex 4.2

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Annex 4.3

Selections from Primary Curriculum

The following selections are roughly translated from the Nepali version of the Grade 1 primary school language arts and arithmetic curricula. No substantive sections of the language arts curriculum are omitted.

Grade 1: Language Arts Curriculum, including Social Studies. (These are based on four general objectives identified for the language arts curriculum).
[After presenting four general objectives for language arts, the following Grade 1 curriculum is presented.]

Objectives: The student should be able to:

1. Pronounce the letters,
2. Describe orally objects and pictures,
3. Read simple sentences made up of simple and complex words,
4. Write letters combined and simple,
5. Write simple sentences from dictation or from the textbook.

Content: area and order:

1. Simple letters
2. Simple and combined letters
3. Pronunciation of simple and combined letters
4. Word construction
5. Sentence construction

Lessons:

1. House and family
2. School
3. Animals and birds
4. Games

Form:

1. Story
2. Poems
3. Essay

Subject Matter within Lessons (more detail on these is given in the social studies curriculum):

1. Relations within the family
2. School: teacher, friends, school building, classroom
3. Animals and birds: cow, dog, cat, duck, chicken, crow, etc.
4. Games: butterfly, swing, hide and seek, etc.

The teaching process is to include: moving from simple to complex, starting using simple letters, teaching using the word method, teaching listening, speaking, reading and writing skills through stories, poems, and essays.

[There follows one page of brief explanations of simple letters, complex letters, different pronunciations, word construction, and sentence construction.]

The following are areas to be covered and the amount of emphasis they are to receive: 0=none, 1=general, 2=twice as much, 3=more than 2.

Listening:

Be able to distinguish sounds of the alphabet (1)
Be able to distinguish similar sounds (1)
Listen carefully (1)
Understand when others use different types of sentences: question, exclamation, etc. (2)
Observe gestures while listening (1)
Listen to and understand simple words (1)
Listen to and understand the main idea (1)
Listen and be able to repeat (1)
Listen and be able to retell in order (1)

Speaking:

Pronouce all letters of the alphabet (1)
Increase vocabulary according to the grade (1)
Speak politely (1)
Describe events (0)
Speak in a normal way (1)
Express one's own ideas (0)
Retell what is read in a book (0)

Reading:

Distinguish letters similar in shape (2)
Read from left to right (2)
Read words and sentences with understanding (1)
Read sentences understanding the word order (1)
Read about events with understanding (0)
Read critically and express one's own opinions (0)
Read correctly and clearly (0)
Read prose and poetry correctly (0)

Writing:

Write using eye-hand coordination (1)
Write all simple letters of the alphabet and all different vowel sounds (2)
Sit and hold a pencil correctly while writing (2)
Write combined letters with all vowel sounds (0)
Write all letters with good handwriting and proper spacing (0)
Write with understanding of pronunciation (0)
Write clearly with understanding (0)
Write material read and heard (0)
Write to express one's own ideas (0)

Emphasis given in marks--total = 300

Skill	Grade 1	Grade 2	Grade 3
Listening/ speaking	200	150	100
Reading	50	75	100
Writing	50	75	100

While the translation of the above curriculum may not be exact, it serves to give a sense of the extent and detail of the curriculum. Only selected portions of the arithmetic curriculum for Grade 1 are given below since this curriculum is more detailed.

Grade 1: Arithmetic Curriculum. Based on 9 general objectives of the arithmetic curriculum the student will be able to:

1. Distribute, select, and compare different groups of locally available objects,
2. Express groups in number,
3. Read and write numbers from 0 to 100
4. Understand place value up to 2 places
5. Distinguish between ordinal and cardinal numbers and recognize up to ninth in order,
6. Add and subtract numbers up to 2 place value,
7. Be ready for multiplication and division,
8. Recognize circular and rectangular pictures,
9. Express the fraction 1/2 and 1/4 in figures,
10. Understand and use kilograms, meters, hours, and coins for weight, length, time, and currency, and
11. Solve simple problems of daily life using addition and subtractiion.

Content (samples selected from 9 different units):

Unit 1: Pre-number activties

1. Collect small pieces of brick, sticks, marbles, leaves,
2. Observe and divide objects into groups,
3. Select objects through manipulation,
4. Test groups by matching,
5. Keep objects in order according to size and shape.

Unit 3: Numbers and Numerals

1. Collect and count materials and use them,
2. Compare numbers 1 to 9 in their natural order,
3. Count up to 9 in ascending and descending order,
4. Read and write symbols from 1 to 9 in numbers and words,
5. Concept of numerical order,
6. Concept of 0.

Unit 4: Multiplication and Division

1. Count forward and backwards from 0 to 8 by twos,
2. 0 to 9 by threes,
3. Concept of multiplication as repeated division,
4. Concept of division and repeated subtraction.

Annex 4.4

Basic Needs Criteria

Student/ Teacher Ratios[1]	Number of Students by Area				
	Mountain	Hill	Tarai	Town Panchayat	Number of Teachers
	- 20	- 30	- 40	25- 40	1
	21- 40	31- 50	41- 60	41- 70	2
	41- 69	51- 99	61-120	71-120	3
	70- 99	100-149	121-160	121-160	4
	100-200	150-200	161-200	161-200	5

Criteria for School Location[2]	Distance from Student's Home to School			
	Mountain	Hill	Tarai	Town
	1 km	1.5 km	2 km	1 school in each ward

Distance Between Schools	Areas			
	Mountain	Hill	Tarai	Town Areas
	2 km	3 km	4 km	no restriction

Catchment Areas for Schools (hexagonal in shape)	Areas			
	Mountain	Hill	Tarai	Town Areas
	3 km^2	6 km^2	10 km^2	---

[1]After these figures, one teacher for 40 additional students.

[2]If the density of students exceeds 600 in one ward, there may be two or more schools but each school must have at least 200 students.

Annex 4.5

School Evaluation Plan

To raise the standard of education in schools

by way of incentive (encouragement) and competition

In connection with the request made on Jestha 1, 5, 12 and 15 of 2041 B.S. by the Ministry of Education and Culture of His Majesty's Government, the following directives were provided by His Majesty the King:

1. As there is a great need to uplift the deteriorating standard of education in most of the schools in the country, the Ministry should take various appropriate (positive) steps to this end. With this objective in mind, a sense of competition should be aroused and encouraged in the outstanding Primary, Middle and High schools of the district and to set a rewarding trend for those schools with satisfactory performance. Such a trend should also be adopted at the zonal level and for this purpose, a rule should be formulated to separate and earmark Rs. 1 lekh out of the grant assistance of HMG to every District Panchayat.

2. A practical regulation should be formulated and implemented as to how qualitative level of education can be raised by means of incentive and competition.

In line with the royal directives, to raise the quality of education in schools by encouraging competition and setting a rewarding trend and by means of incentive and competition among outstanding schools, it is always important that a single yardstick be consistently used in evaluating the various aspects of all the schools in the kingdom. By using a single yardstick for evaluation, it will be easy to distinguish between outstanding schools and poor schools at district, zonal, regional and national levels. As an incentive, a trend is to be set to provide district-level, zonal-level, regional-level and national-level awards to outstanding schools and at the same time by pointing their weaknesses, opportunity for improvement will be provided for those schools with poor performance.

The task of evaluating different aspects of all the schools of the kingdom is quite a difficult one. As it is necessary to collect statistical description (data) for this work, a Form named 'School Description 2042' has been prepared and made available to all the districts of the kingdom. For correct evaluation of the schools, it is important to collect accurate and complete statistical description.

Therefore, active participation of Director from the Directorate, experts and other education officers from the education sector is of great importance.

Classification of Schools to be Evaluated

and the Evaluation Norms

Except for the national-level Budhanilkantha School, Regional-level Gandaki school and International level schools to be set up in future, evaluation will be carried out for all other schools of the kingdom approved by the government. The schools to be evaluated are as follows:

1) Primary schools with Class 1 to 5, which have already conducted the final examinations.

2) Middle schools with Class 1 to 7, which have already conducted the final examinations.

3) High schools with Class 1 to 10 or Class 6 to 10, which have already completed the SLC examinations. This also includes Sanskrit High Schools.

With an objective of encouraging competition among schools having similar level, type and geographical aspects, the schools at each level will be classified in 4 groups and evaluated at the following levels:

Classification of School	Primary School With Class 1-5	Middle School With Class 1-7	High School With Class 1-10 or 6-10
A. Boarding schools of the Kingdom	National level	National level	National level
B. Schools within town Panchayats	National level	National level	National level
C. Schools in remote areas (recognized by the government)	Regional level	Regional level	National level
D. Schools in other village Panchayats	District level	Zonal level	National level

Fixing Norms and Minimum Marks

A total of 1,000 Marks, provided for the evaluation of schools, will be divided as follows:

Physical aspect of school	--	250
Educational aspect	--	500
Extra activities	--	100
Financial aspect	--	75
Administrative aspect	--	75
TOTAL		1,000

By using the proposed yardstick for evaluation, average Marks for each group of schools at each level will be calculated on every point given above and the sum total of the averages will fix norms for each group. Each group obtaining more marks than the fixed norms and at the same time securing the minimum marks given below will be considered outstanding:

School Group	Minimum Marks Out of 1000
Boarding schools	750
Schools within Town Panchayats	600
Schools within Village Panchayats	450
Schools within Village Panchayats of remote areas (recognized by the government)	300

Cash Prize and Letter of Appreciation

Arrangements will be made to award Letter of Appreciation, Cash Prize or both for the outstanding schools.

Annex 4.6

Drop-Out, Repetition, and Promotion Rates: 1983-1984 (2040-2041)

The following table gives drop-out, repetition, and promotion rates based on a 95 percent sample of all primary schools. The data were collected by the School Administration Section of the MOEC as part of its program to evaluate schools. Because these figures are based on data from nearly all the schools, they are more reliable than those previously published by the Manpower and Statistics Section in 1986 for these same years (2040-2041).

		Grade				
	Rates	1	2	3	4	5
Total:	Drop-Out	.27	.17	.15	.17	.14
	Repetition	.30	.16	.12	.12	.11
	Promotion	.43	.67	.73	.71	.75
Boys:	Drop-Out	.26	.16	.15	.16	.13
	Repetition	.29	.15	.12	.11	.11
	Promotion	.45	.69	.73	.73	.76
Girls:	Drop-Out	.29	.18	.17	.17	.13
	Repetition	.31	.17	.15	.16	.14
	Promotion	.40	.65	.68	.67	.73

Source: School Administration Section, MOEC, 1987, unpublished

		Total	Girls
Note:	Number of years needed to produce one graduate	12.84	14.18
	Average study years per entrant	3.55	3.45
	Efficiency of the primary school cycle	39%	35%
	Graduation per 100 entrants	28.	24.
	Wastage due to drop-outs	67%	66%
	Wastage due to repeaters	33%	34%

5. SECONDARY EDUCATION

Secondary education in Nepal has grown very rapidly during the last four decades and is now available throughout the Kingdom. Along with this expansion there have been several major changes in the objectives and the curriculum of secondary education.

There are problems of access to the system, since the concentration of facilities is in the Kathmandu Valley and, as with other government services, the Mid-Western and Far-Western Development Regions have fewer facilities than either Kathmandu or the border cities in the Tarai.

The current major goal of secondary education is, by implication, preparation for higher education. This results in a system from which most students leave unqualified for either university entrance or for many of the better jobs. The system has very low internal and external efficiency.

The pressure to pass an ultimate examination presses the system to emphasize rote memory of academic materials, and to disregard preparation either for the current job market or for more technical national development tasks. It does, however, prepare school leavers for clerical, accounting, and other office positions.

5.1 STATUS

This description of the present status of secondary education includes sections on the historical setting, national goals and strategies, structure, and program. The program section includes descriptions of schools and students, teachers, curriculum, administration, examinations, quality of instruction, costs and financing, and facilities and equipment.

5.1.1 Historical Setting

Beginning

Modern secondary education began in Nepal in 1853, when Durbar High School (now Bhanu Madhyamik Vidyalaya) was established, the first of its kind in Kathmandu. Its chief purpose was to educate the sons of the nobility. Access by all was not available until many years later. There were only eleven secondary schools with 1,680 students by 1951. These were in the principal commercial and industrial towns outside Kathmandu and in the capital. The national literacy rate at that time was only two percent.

Modernization

The Nepal National Educational Planning Commission (NNEPC, 1956) laid the foundation for modernizing the educational system in its pioneering report, *Education in Nepal*, published by the College of Education in Kathmandu in 1956. The present configuration of the education sector is a consequence of the implementation of several recommendations of the NNEPC.

With regard to secondary education, the commission had recommended establishment of multi-purpose vocational secondary schools and general secondary schools in different parts of the country. The plan for multi-purpose vocational secondary schools failed because, in the perception of parents and students, vocational education could not compete with the general stream of secondary education in offering career prospects and an elite future. The Sanskrit stream lingered on with limited support. While the general system featured an explicit emphasis on the modernization of education, it may be characterized as having an elitist orientation.

Another educational planning body was appointed in 1961. Its assignment was to study progress in education, to identify its weaknesses, and to make recommendations. This body, the All-Round National Committee on Education, acted independently, without reviewing either the recommendations made by the NNEPC or the extent of their implementation. Some of the recommendations of this body, found in *Report of the All-Round National Committee on Education 1961* were implemented in other sub-sectors, but nothing new was initiated with respect to secondary education.

In 1962 a two-person UNESCO Mission surveyed progress in education and made major recommendations (Wood and Knall, 1962). Most of these, however, were merely replicas of the original NNEPC recommendations.

Thus the initial conceptual basis for secondary education was derived from the early recommendations of the NNEPC of 1956, and that foundation prevailed until the advent of the National Education Committee in 1971, which prepared the *National Education System Plan* (NESP).

Development Orientation

The NESP in 1971 added a strong development thrust to the education system, stating that education should support nation building. Education goals had not been clearly stated by the previous educational planning bodies, and the NESP document was a significant achievement in this regard. The Preface stated:

The Plan is primarily aimed at counter-acting the elitist bias of the inherited system of education by linking it more effectively to productive enterprises and egalitarian principles.....The Plan calls for unifying education into one productive system that serves the country's needs and aspirations. The concept of education as an end to white-collar jobs is being replaced by a new concept that regards education as an investment in human resources for the development of the country.

5.1.2 National Goals and Strategies

The NESP set forth the following goals for the education sector:

1. To produce citizens who are loyal to the nation, monarchy and national independence and who remain ever alert and active toward their rights and duties under the Panchayat System.

2. To develop, preserve, expand and extend such learning, science, technology and skill as may be necessary for the development of the country and to produce a cadre of able workers who can shoulder responsibilities in every development sector.

3. To inculcate the following qualities in all: a. Moral integrity, b. Habits of work, c. Self-reliance, d. Creativity, e. Scientific approach, f. Powers of appreciation, g. Aesthetic awareness, h. Cosmopolitanism.

4. To preserve, develop and propagate the national language and literature, culture and arts.

National Goals of Secondary Education

While the goals for the entire education sector were clearly stated, the national goals for secondary education were not specifically set forth in the NESP. There was only one goal mentioned in it; another source has added a second goal, which was only a derivative from the general goals of education stated in the preceding section. The two goals are as follows:

1. "to create useful citizens by laying special stress on vocational training," (NESP, pp. 6-11).

2. "to produce disciplined, ideal citizens through teaching about loyalty to the country, the Crown, and God." (*Secondary Education Curriculum, Part I*, p. 6).

The overall national goals of education are comparable with such goals in many other countries. But the goals for the secondary cycle do not match the comprehensiveness of the national goals. The NESP document's framers intended some sort of terminal character for secondary education, at least for some students. This was to be attained through vocationalization. Had the government been able to implement a policy in that direction, a foundation for building this terminal character into secondary education might have been created. But the present situation indicates very little terminal character in secondary education.

Since the NESP there has been no other national education planning body, or even a policy declaration in this regard. Therefore, with the exception of the eight vocational/technical trade schools, the objective of the system is to access higher education. It has been characterized as a "straight highway system, in which all try to get to the end of the road." Each level of the whole system is basically preparation for the next level.

Peoples' Participation

Peoples' participation has been an important consideration in Nepal. Because of the increasingly significant role of the School Management Committees throughout the country, schooling is one of the most decentralized activities of Government. While the curriculum itself is centralized to maintain standards of quality, and textbooks are prepared on a national basis to reduce costs and assure quality, construction of local school buildings has remained a major contribution of the local people. School Management Committees also participate in selection of teachers and other matters pertaining to personnel management.

5.1.3 Structure

As with primary education, the secondary structure has shifted three times since 1970. Initially there were three years of lower and two years of upper secondary after five years of primary schooling (5+3+2). With the NESP (1971), it changed to four years of lower and three of upper secondary, following three of primary (3+4+3). In 1981 it changed again to five plus two plus three (5+2+3). There are plans for another shift, combining lower and upper secondary, so that the system soon will be five years of secondary following five of primary (5+5).

While there is curricular uniformity in lower secondary education at present, there are three different streams in upper secondary: the Sanskrit Stream, the General Secondary Stream, and the Trade Stream (technical/vocational). Of the

496,821 students enrolled in all secondary education in 1985, about 1,500 (0.6 percent) were in the Sanskrit stream, and only 502 (0.2 percent) were in technical (trade) schools. At that time there were 3,578 lower secondary schools and 1,321 upper secondary schools, of which 20 were Sanskrit schools and 8 were trade schools. There were 254,354 students in lower secondary, of whom 65,535 (26 percent) were girls, and 242,467 students in upper secondary, of whom 55,276 (23 percent) were girls.

5.1.4 Program

This section describes features of the secondary school program such as the growth of schools and enrollment of students, teachers, curriculum, administration, examinations, quality of instruction, costs and financing, and facilities and equipment.

5.1.4.1 Growth of Schools and Enrollment. Secondary education, from the pre-1951 period to the present, has been characterized by rapid growth and continuous change. The growth is illustrated in the first portion of this section; the change in both objectives and curriculum is described in the second portion.

The growth of lower secondary education (Grades 6-7) and secondary education (Grades 8-10) is presented in Table 5.1, and these two-level figures are added to show the status of the new secondary structure as proposed and almost certain to soon be instituted.

The growth of secondary level education (Grades 6-10) during the 1951-1985 period is demonstrated by the fact that the number of schools increased from 11 to 4,899, and students increased from 4,899 to 496,821. The number of students in 1951 had become the number of schools in 1985.

Age-group population data are not available for the period prior to 1971. Table 5.1 presents the estimates of age-group enrolled in schools according to both the old structure and the proposed structure for the 1971-1985 period. The table depicts the following 5 trends:

1. Boys outnumber girls. In terms of the proposed new structure (6-10), 35.1 percent of the boys' population participated versus 13.1 percent of the girls' in 1985. The gender difference is found throughout the 1971-1985 period.

2. The growth in the quinquennial periods is uneven, due partly to the lack of systematic records of school enrollments and partly to the rates of drop-outs and repetition at the primary grades which might have varied greatly from year to year.

3. Though boys still far outnumber girls in enrollment, girls have made considerable progress in growth rates for age-group participation throughout the period. For example, compare the growth in age-group participation by gender as shown below (see Table 5.1 for details).

	1971-76	1976-81	1981-85	1971-85
Boys	1.0	13.4	3.7	6.1
Girls	2.8	17.1	11.1	10.1

One interpretation of the above differences is that a "leveling off" of the growth curve for boys has been slowly approaching, while for girls the trend has been a continuous rise, though not of a steep nature -- the "leveling off" for girls is far away.

4. An implication of the above is that the nation needs to promote girls' enrollment to reduce the existing disparity between the genders' access to secondary education.

5. Considerable progress has been made in secondary education. It should be noted, however, that enrollment figures tend to cover several anomalies in the system, an issue taken up below.

Knowing the number of drop-outs, for example, is important for understanding the flow of students through the cycle. While drop-outs from secondary schools are not as high as for primary education, as reported in the prior chapter, they have been about 10 percent each year. These have been about 12 percent for Grade 6 and 11 percent for Grade 7 in lower secondary. And in upper secondary, they are about 10 percent for Grades 8 and 9, and then increase to 53 percent for Grade 10. This phenomenon is associated with the School Leaving Examination (SLC), and is discussed below in Section 5.1.4.5.

Table 5.1

Development of Secondary Education: 1971-1985 (2028-2042)

Schools and Age Groups		Year 1971 (2028)	1976 (2033)	1981 (2038)	1985 (2042)	Growth Rate per Annum (%) 1971-76 (2028-33)	1976-81 (2033-38)	1981-85 (2038-42)	1971-85 (2028-42)
No. of Schools									
Lower Secondary (LS)		677	2289	2786	3578	27.6	4.0	6.5	12.6
Upper Secondary (US)		494	520	918	1321	1.0	12.0	9.5	7.3
Total (T)		1171	2809	3704	4899	19.1	5.7	7.2	10.8
Students Enrolled									
Boys	LS	44,255	57,786	135,203	188,819				
	US	56,612	61,524	117,065	187,191				
	T	100,867	119,310	252,268	376,010				
Girls	LS	8521	12,274	34,361	65,535				
	US	10,229	12,536	27,266	55,276				
	T	8,750	24,810	61,627	120,811				
Total	LS	52,776	70,060	169,564	254,354				
	US	66,841	74,060	144,331	242,467				
	T	119,617	144,120	313,895	496,821				
Age-Group Enrolled (%)									
Boys	LS	15.3	17.6	36.4	40.7	2.8	15.6	2.8	7.2
	US	15.6	15.0	25.5	30.8	-0.8	11.2	4.8	5.0
	T	15.4	16.2	30.4	35.1	1.0	13.4	3.7	6.1
Girls	LS	3.6	4.5	10.9	16.7	4.6	19.4	11.3	11.6
	US	3.2	3.5	6.8	10.5	1.8	14.2	11.5	8.9
	T	3.4	3.9	8.6	13.1	2.8	17.1	11.1	10.1
Total	LS	10.0	11.6	24.7	19.7	3.0	16.3	4.7	8.1
	US	9.8	9.7	16.8	21.3	-0.2	11.6	6.1	5.7
	T	9.9	10.5	20.3	24.9	1.2	14.1	5.2	6.8

Sources:
1. MOEC, *Educational Statistical Report of Nepal* (1972-1985 Annual Series), Kathmandu, MOEC
2. National Planning Commission Secretariat, Central Bureau of Statistics, *Population Census-1971*, Kathmandu, Central Bureau of Statistics, 1985
3. National Planning Commission, Secretariat, Central Bureau of Statistics
4. *Statistical Pocket Book, Nepal, 1984.* Kathmandu: Central Bureau of Statistics, 1982

Notes:
1. It is assumed that teachers in the secondary schools also teach the lower secondary grades.
2. The lower secondary and secondary grade figures are combined (T) to show the status of the proposed secondary school structure (Grades 6-10).
3. The age-group population for 1976 is interpolated by applying the 1971-81 age-group specific growth rate (by gender).
4. The age-group population for 1985 is derived from projections developed by Jay Salkin, as shown in Chapter 2. The breakdown by gender is based on the proportions obtained in the 1981 population census report (Source 3 above).
5. The school and enrollment figures reported above for 1971 are from the 1972 records, because the figures for 1971 are not available. The estimates of the age-group enrollment are based on the 1971 population census report, and as such are a bit inflated.

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Migration

Another phenomenon apparently not well-documented is out-migration from Nepal by secondary students. Some families from Kathmandu invest heavily to send their children to school in Darjeeling. Informal sources suggest that about 3,000 are now enrolled there. If out-migration over the southern border to secondary schools in India is added, similar sources estimate that the total may be in the range of 10,000. From the perspective of the total secondary school population this may be of no consequence at this time. However, the reasons why parents feel it necessary to make the expenditures involved may be related to quality factors as perceived by these parents.

Geographic Distribution of Secondary Schools

In 1985 there were 3,578 lower secondary schools and 1,321 upper secondary schools. Of these 4,899 schools, 576 (12 percent) were in the Mountains, 2,730 (56 percent) in the Hills (which includes Kathmandu Valley), and 1,593 (33 percent) in the Tarai.

Of the lower secondary schools, 3,294 (92 percent) were in rural areas and 284 (8 percent) in urban areas. Of the upper secondary schools, 1,140 (86 percent) were in rural areas and 181 (14 percent) in urban areas. Table 5.2 shows the 1985 distribution of all secondary schools by Development Regions.

Table 5.2

Secondary Schools by Development Region (1985)

Region	Lower Secondary	Secondary	Total
Eastern	865	303	1,168
Central	1,000	420	1,420
Western	886	344	1,230
Mid-Western	478	145	623
Far-Western	349	109	458
Total	3,578	1,321	4,899

Source: MOEC, *Educational Statistical Report of Nepal, 1985*

5.1.4.2 Teachers. From 1976 to 1985, the total number of teachers in lower secondary schools increased from 7,930 to 11,120 (40 percent). In the secondary schools, the number of teachers increased from 3,439 to 7,242 (111 percent) during the same period.

In addition to the growth in numbers, the quality of teachers has improved. In 1976, for lower secondary, only 67.7 percent were "qualified," and 38.3 percent had been "trained." By 1985 these percentages had increased to 83.8 and 41.9, respectively. "Qualified" is used in Nepal to refer to teachers who have at least the minimum academic level of certification for the particular position (SLC, I.A., B.A., etc.). "Trained" means those who have also had formal training in education or pedagogy. For the secondary schools there have not been increases in the proportions of qualified and trained teachers, but the proportions have remained relatively stable despite more than doubling the numbers of teachers. Full details are given in Tables 5.3 and 5.4.

Teachers are also gaining experience as time passes. A 1986 study reported that lower secondary teachers had an average of seven years' experience, and secondary teachers an average of eight years (based on preliminary data, 52 districts reporting, MOEC Manpower and Statistics Section, 1987).

Two observations can be made concerning the data in Tables 5.3 and 5.4. First, the proportion of qualified teachers has increased over nine years (1976-1985) at the lower secondary level, but not at secondary. The staffing improvement at lower secondary may be related to: (1) demand for higher qualifications, (2) teachers' academic upgrading while on the job, or (3) the movement to this level of qualified teachers from the primary school level. The reason why no change is shown at the secondary level may be related to the high proportion of teachers who already have at least a B.A. The lower secondary schools might have relaxed the governmental regulation about the entry minimum (e.g., at least an I.A. or equivalent).

The second observation based on Tables 5.3 and 5.4 relates to the impact of the teacher training programs. More trained teachers have entered the profession. This impact appears higher at secondary than at lower secondary, although the proportion of trained teachers has not increased as much compared to the proportion of trained teachers at the primary and lower secondary levels.

The student/teacher ratio, while changing over the years, was 23:1 in both lower and upper secondary by 1985. The ratios for the five development regions and Kathmandu Valley are given in Table 5.5.

With the sparse populations in the Mountain areas, the 1985 student/teacher ratios in lower and secondary were 14:1 and 21:1 respectively, while they were 30:1 and 41:1 in the Hills, and 24:1 and 39:1 in the more densely populated Tarai. The 1985 ratios were 24:1 and 39:1, respectively, in Kathmandu.

Table 5.3

Academic and Training Status of Secondary Teachers: 1976-1985 (2033-2042)

Year		Lower Secondary			Secondary		
B.S.	A.D.	Number	Qualified (%)	Trained (%)	Number	Qualified (%)	Trained (%)
2033	1976	7930	67.7	38.3	3,449	96.6	50.0
2034	1977	8774	71.5	39.1	3,665	97.4	56.4
2035	1978	9416	67.1	41.0	3,948	98.0	63.0
2036	1979	10,536	70.2	39.4	4,265	98.0	63.0
2037	1980	11,693	72.7	39.2	4,683	98.5	62.3
2038	1981	12,245	75.8	39.5	4,909	98.1	62.5
2039	1982	10,820	81.9	42.0	5,634	95.5	62.4
2040	1983	10,146	83.2	42.6	5,764	95.6	58.6
2041	1984	10,602	82.4	43.7	6,467	95.7	55.0
2042	1985	11,120	83.8	41.9	7,242	95.7	53.0

Sources: MOEC, *Educational Statistical Report of Nepal, 1976-1985* (Annual Series)

Notes: 1. The decrease in number of lower secondary teachers in 1982-83 is due to the change in the structure of lower secondary school from 4 to 2 years.

2. Minimum qualifications required for teachers:
Lower Secondary-- Intermediate passed (IA pass) (Intermediate Certificate in Nepal is given, typically, after two years of study after SLC at one of the campuses of the university system);
Secondary--Bachelor degree (BA pass).

3. Qualified teachers are those who have the minimum qualification irrespective of training.

4. Trained teachers are those who have received teacher training (of varying durations) irrespective of their academic qualifications.

Table 5.4

Distribution of Teachers by Qualification and Change in Distribution, 1976 and 1985

Lower Secondary Level

Year	Distribution by Qualification (%)						Proporation Qualified
	U-SLC	SLC	IA	BA	MA	TOTAL	
1976	2.90	29.42	58.36	8.89	0.43	7,930	.6768
1985	1.42	14.79	72.45	10.95	0.39	1,120	.8379

Extent of change in the proportions of qualified teachers (IA and above).
Proportion test value: Z = 25.17 (p<.01) Significant

Upper Secondary Level

Year	Distribution by Qualification (%)						Proporation Qualified
	U-SLC	SLC	IA	BA	MA	TOTAL	
1976	0.14	0.09	3.20	88.89	7.68	3,439	.9657
1985	0.10	0.25	3.93	90.22	5.50	7,242	.9572

Extent of change in the proportions of qualified teachers (BA and above).
Proportion test value: Z = 2.18 (p<.05) Significant

Based on *MOEC, Educational Statistical Report of Nepal, 1976 and 1985* (Annual Series)

Table 5.5

Student/Teacher Ratio for Secondary Schools by Region (1985)

Region	Lower Secondary	Secondary
Eastern	25:1	40:1
Central	25:1	34:1
(Kathmandu Valley)[1]	(22,24,32)	(22,39,43)
Western	21:1	32:1
Mid-western	14:1	14:1
Far-western	18:1	18:1
Total	23:1	23:1

Source: MOEC, *Educational Statistical Report of Nepal, 1985.*

[1] These figures are for the three Districts in Kathmandu Valley (parts of Bhaktapur, Kathmandu, and Lalitpur).

There are also differences between public and private schools in the student/teacher ratios, as well as other factors. These are illustrated in Table 5.6.

Table 5.6

Public and Private Secondary Schools (1984)*

		Schools	Students	Teachers	Student/Teacher Ratio
Lower Secondary	Private	88	5907	138	43:1
	Public	3420	238,928	10,602	23:1
Secondary	Private	250	39,903	998	40:1
	Public	1235	216,473	6467	33:1
Total	Private	338	45,810	1136	40:1
	Public	4655	455,401	17,069	27:1

Source: *A Brief Overview of Nepal's Educational Statistics* Kathmandu: MOEC (n.d.) p. 22.

*While figures here are disaggregated by private and public schools, these figures are combined in all other tables.

An additional factor is related to the high proportion of all secondary teachers who are "temporary" rather than "permanent." For lower secondary, one recent study in 52 of the 75 districts showed only 58 percent of teachers on a permanent status. For secondary, only 56 percent were permanent. Informed sources suggest, and these figures imply, that the turnover of teachers may be relatively high among the over 40 percent who are only temporary.

Permanent teachers tend to stay on the job for their whole career. Interviews with district and regional education officers suggest that most "permanent" teachers remain in service until their retirement. Only about 5 percent of them are likely to leave for other employment prior to retirement.

Absenteeism of teachers is a problem. Teachers are allowed up to 21 days of various types of leave each year in addition to school vacations and holidays. In addition, many teachers are reported to miss class from time to time for personal reasons.

Some parents and students complain about teacher absences. However, none of the district or regional education officers interviewed for this assessment maintained any records of teacher attendance. When the teacher absenteeism problem was raised in interviews, the usual response was that there is no travel allowance or daily allowance for supervisors to visit schools. Therefore, supervisors did not supervise teacher attendance. Headmasters, of course, could be required to maintain such records, and some of them do.

One District Education Officer reported that he had six supervisors for secondary schools, but no travel funds at all. He said he had requested that the MOEC reduce the number of supervisors to two, and provide funds for them to travel to visit schools. He reported that this had been officially rejected.

One study (Gupta, 1982) analyzed teacher absenteeism in one Kathmandu school, which had 45 full-time teachers, over a three-month period. In the month of Shrawan (July-August), 26 teachers were absent for a total of 117 days; in Bhadra (August-September), 39 were absent for a total of 259 days; and in Aswin (September-October), 24 were absent for a total of 88 days. During that three-month period, there was a loss of 2,320 teacher instructional hours, and a loss of 185,600 student study hours.

The extent to which that school is typical of others is not known. Most persons interviewed, however, indicated that absenteeism is a serious problem. There are, of course, many dedicated, serious teachers, who may be giving more time and energy to school responsibilities than might be expected, considering their low salary levels.

5.1.4.3 Curriculum. The objectives of education in the NESP document (1971, p. 11), and later in the Secondary Education Curriculum (CTSDC, 1981, p. 6), total just two (see Section 5.1.2) unless more are added as deductions from the broad national objectives in the parent document (NESP). Fourteen years later, the National Education Committee elaborated the objectives into the following nine headings on the occasion of the 1985 Education Day.

- to generate respect for labor
- to prepare productive citizens for national development
- to develop faith in God, loyalty to the country and King
- to develop a sense of discipline

- to enable students to opt a higher education major with the provision of a wide variety of subjects to choose from
- to lay the foundation for higher education
- to develop high level qualities as self-reliance, honesty, co-operativeness, world brotherhood, and responsibility
- to bring about national integration by harmonizing different economic and social interests
- to strengthen national solidarity by integrating multi-cultural traditions and by bringing about uniformity in the intellectual tradition (CERID, *School Level Curriculum*, (1985). Kathmandu: National Education Committee, p. 24).

The curriculum has been in a state of gradual change in recent years, both in terms of objectives and the actual pattern of courses. This constraint is one of the most critical aspects of the secondary education subsector which accounts for uncertainty and instability.

As part of this assessment, the secondary education objectives were examined for the period covering the last five decades. There is a trend in the goal specifications from more specific statements in the earlier years (like "to provide communication skill in English") to broader general statements in more recent times (like "to generate respect for labor"). Some of the broad generalizations, however, are found over all of the years. These include national loyalty and "respect" for work and the vocations, if not actual development of vocational and technical skills.

The Seventh Plan (1985 - 1990), published by the National Planning Commission in Kathmandu in 1985, lists the objectives of lower secondary education for the present as: " . . . to build the character of students, develop in them the feeling of dignity of labor, stimulate in them the habit of working and to prepare basis (sic) for secondary education" (p. 748). The "objective of secondary education," according to the same document, "is to prepare citizens capable of making contribution for all round development of the country and to impart basic knowledge for obtaining higher education" (p. 749). The same document sets a target of lower secondary education facilities to be provided to 43 percent of children of 11-12 years of age. It also states that "arrangements will be made for imparting secondary education to 36 percent of children of 13-15 years age group."

The present curriculum for lower secondary school includes ten subjects. The relative weight given to each, in terms of instructional time and the examinations which follow, is assigned by a system of "marks." The total is 700 marks. Nepali language is given the most weight, with 120 marks (17 percent). Sanskrit language is given 30 marks (4 percent). Three other subjects are given 100 marks (14 percent) each: English, Mathematics, and Social Studies. Additional subjects are Science, 80 marks (11 percent); Physical Education, 50 marks (7 percent); Moral Education, 50 marks (7 percent); Pre-vocational Education, 50 marks (7 percent); and Health, 20 marks (3 percent). (Percentages are rounded).

The upper secondary school curriculum now changes between Grade 8, on the one hand, and Grades 9 and 10. Each part of the curriculum has a total of 700 marks. In Grade 8 there are 100 marks (14 percent) each for English, Nepali, Mathematics, Vocational, and Science and Health; and 200 marks (29 percent) for the combined group of History, Geography, and Panchayat. For Grades 9 and 10, English, Nepali, Mathematics, and Vocational remain at 100 marks each. But 200 marks of Optional subjects are offered, along with 100 marks of "Extra-optional" subjects.

The Optional subjects include Science, Language, Social Studies, Commerce, Sanskrit, Home Science, and Miscellaneous. The Vocational group includes Home Science, Office Management and Accounts, Agriculture, Industrial Education, Karmakanda (Religious Rites), and Education. Of these latter subjects, some subjects are offered only in some secondary schools.

5.1.4.4. Administration. The administrative organization of education is the same for all levels of education. The chart on the next page shows the organizational structure of education. Broken lines indicate independent status, unbroken lines indicate dependent status.[1]

[1]Since the preparation of the draft of this report (August 1987), the functions of the District Education Commissions have been shifted to the ad hoc Teacher Selection Committees and the Commissions have been done away with.

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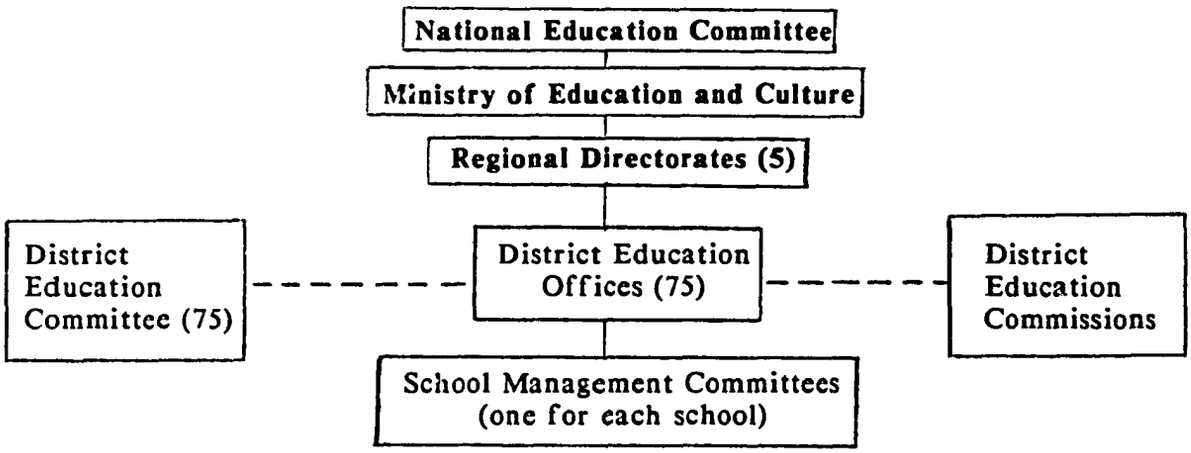

The roles and functions of these structures are as follows:

1. The National Education Committee (NEC) is the highest level policy-making body.

2. The MOEC is responsible for implementing the policies formulated by the NEC and for having any self-initiated policies approved by the NEC; it oversees the general administrative functions of issuing directions and orders and controls the entire education system.

3. The Regional Directorates coordinate the activities of the District Education Offices (DEOs).

4. The DEOs are the district level educational authorities, responsible for carrying out the MOEC programs within their respective districts.

5. The District Education Committees are authorized to plan, organize, and operate all schools in the district. The District Education Officers are member secretaries of these committees, which are chaired by the Chief District Officers.

6. The District Education Commissions function as public service commissions in preparing lists of potential deserving candidates for teacher vacancies. The power to appoint teachers is vested in the School Management Committees (SMCs). (See footnote 1 on prior page.)

7. Each school has a School Management Committee directly responsible for its management. With the 7th Amendment of the Education Code (Central Regional Education Directorate, 1981), the SMCs have been vested with more powers.

The principal features of school administration in Nepal can be summarized as follows:

1. School administration has remained a replica of the total structure of the government bureaucracy. "No attempt has been made in Nepal to develop school administration peculiar enough to suit the management needs of the schools" (Shrestha, K.N., 1982, p. 60).

2. The administrative structure of education exerts indirect control over the actual operation of schools. The grants-in-aid system has been used as a powerful instrument of control. Moreover, the MOEC has the power to give and withdraw recognition to schools, including the private schools.

3. The administrative system is basically staffed with administrators, not educators. Although the NESP created a supervision structure and appointed trained manpower to do the work of school supervision, and had the excellent vision of instituting quality improvement in schools, effective supervision does not take place at the district level.

4. "His Majesty's Government has always been adopting the policy of partial financing of the cost of school operation [at the secondary level]. Similarly, it has developed administrative structure to maintain partial control of the schools" (Shrestha, K.N., 1982a, p. 61).

5. The grants-in-aid system, the centrally-located decision making power, the centralization of the examination system, and the structure of educational administration all stabilize the present nature of the secondary sub-sector and discourage change.

5.1.4.5 Examinations. Probably no aspect of the secondary education is as significant, as crucial, and as powerful as the examinations in controlling other components of this subsystem.

There are examinations at the end of each year in lower and upper secondary. For a student who has completed the examination at the end of Grade 10 (the final year), there is the School Leaving Certificate (SLC) examination.

Individual schools are responsible for setting the year-end examinations, and all other aspects of their administration. They are based on the curriculum set by the MOEC, but individual schools determine the questions, the style of administration, the procedures for grading, and the grades received by each student. The examination at the end of Grade 10, known as the qualifying test for SLC, or "sending up" examination, is set and graded by the District Education Office.

The SLC examination is different. It is a nationwide test administered by the Office of the Controller of Examinations (OCE) in the MOEC. A standard examination is produced for the entire country, with questions in both Nepali and English, and administered at many different locations. There were 109 examination centers in 1983. The examination has both essay and short-answer questions, covering each subject in the curriculum. Since there are so many small examination centers, separate papers are prepared in most subjects so there can be three sittings, which contributes to the work load and reduces comparability of scores on separate papers.

The SLC grading is not standardized. Various individuals are employed as examiners or "graders" to score the papers. The examiners may be teachers, head-masters, university staff, or others. They are paid on the basis of the number of papers scored. With the exception of some mathematics questions, they are usually not given sample "correct" answers, nor are they given procedures for assigning marks to individual items. Graders may apply different scoring standards, and an identical answer to the same question at two different locations may be given different grades. The OCE is now in the process of improving quality control for grading.

No studies of the validity or reliability of the examination have been reported, but a representative of the University of Cambridge Local Examinations Syndicate studied the whole system in 1983. His report discussed features such as the cognitive, equity, and efficiency effects of current questions. He also made recommendations for improving the management of the examinations process. A team from that Syndicate later conducted a study for the OCE with support from the World Bank (University of Cambridge Local Examinations Syndicate, 1985). They commented that "Papers are seriously restricted in the range of skills tested, concentrating mainly on the factual recall of textbook information and sometimes encouraging the repetition of learned model answers based on textbook exercises."

Failure rates have been moderate for each grade of the lower and upper secondary cycles, but significantly high for the SLC. The 1972-1973 passing percentages for each grade of the two cycles and for the SLC are given in Table 5.7. It is an anomaly that the percentage of students who failed the lower secondary examinations was 11 percent, and 16 percent failed the upper secondary examinations, while the percentage of students who failed the SLC was 65. The analysis of failures and flow of students through the secondary cycles, as presented in Chapter 2, is consistent with these data.

Table 5.7

Students Passing Secondary School Examinations by Grade: 1972-1973 (2029-2030)

Grade/SLC	Percentage Passed
6	88%
7	89%
8	90%
9	84%
10 (pre-SLC)	76%
SLC	35%

Source: Aryal, et al., 1984, p. 67

The numbers of students who took the SLC, and the percentages who passed, are given in Table 5.8 for 1967 through 1985. This table includes all those who took the SLC examination each year. That encompasses regular students, who have just completed Grade 10, plus others such as exempted, compartmental, and private students. Recent estimates of numbers of SLC failures, only among those who have completed Grade 10, run above 30 percent.

One study of the SLC reports that the subjects most frequently failed are English and mathematics (Shrestha, 1975, pp. 29-30). These are major subjects at both lower and upper secondary levels, presently accounting for 100 marks each of 700 marks at each level.

A study of Palpa District in 1985 is illustrative of the situation assumed to prevail throughout Nepal. That year 577 students took the Grade 10 examination and 316 passed. Then 323 took the SLC examination itself, and 112 of the group passed. The 323 is assumed to include some private students and possibly some who had failed in part before and were repeating. At best, therefore, only 19 percent (i.e., 112 of 577) of the Grade 10 students passed the 1985 SLC examination in that district.

Table 5.8

SLC Results (1967-1985)

Year	Number Appeared[1]	Number Passed	Percentage Passed
1967 (2023)	9,218	3,624	39.3
1968 (2024)	12,134	5,871	48.4
1969 (2025)	15,597	8,294	53.2
1970 (2026)	17,192	5,271	30.7
1971 (2027)	17,192	5,157	30.0
1972 (2028)	15,772	5,267	33.4
1973 (2029)	16,202	5,829	36.0
1974 (2030)	21,286	7,813	36.7
1975 (2031)	27,729	11,250	40.6
1976 (2032)	32,720	7,208	22.0
1977 (2033)	35,189	10,939	31.1
1978 (2034)	41,008	13,961	34.0
1979 (2035)	48,443	13,551	28.0
1980 (2036)	63,989	18,789	29.4
1981 (2037)	72,819	15,608	21.4
1982 (2038)	79,968	13,337	16.7
1983 (2039)	80,886	16,434	20.3
1984 (2040)	100,001	23,824	23.8
1985 (2041)	99,862	29,546	29.6[2]
1986 (2042)	52,559	15,180	28.9[3]
Total	859,766[3]	236,753	27.5

Source: MOEC, *Educational Statistical Report of Nepal, 1965-1985* (Annual Series)

Notes:

1. The number of students appearing at the SLC Examinations includes four categories: (a) regulars, (b) exempted, (c) compartmentals, and (d) private. The regular students are the new SLC candidates, the exempted are the SLC repeaters in all subjects (for having failed subjects more than the minimum and by wide margins), the compartmental students are those who are allowed to take portions of the examinations (those failing up to two subjects by narrow margins), and the private students are those who do not study in formal schools but sit officially for the examination by qualifying through the pre-SLC school-based qualifying test.

2. The reduction in numbers of students taking the SLC in 1985 and 1986 and the increased pass proportions are not related to the total students in secondary schools, which has continued to increase. Instead, it is associated with the new policy of government that if a secondary school's percentage of students passing the SLC examination falls below 16 percent for three consecutive years, it will not be entitled to any government financial support until its pass rate improves. This policy does not apply to schools in the remote regions.

3. Additional data for 1987, including only regular and private students, indicate that 49,777 of them took the examination, and 17,201 (34.85 percent) passed.

The low proportion of students passing the SLC examination, compared with those who complete Grade 10 and then pass the district pre-SLC examination, may be attributed to (1) the nature of the SLC examination itself; (2) the grading procedures; (3) the practice of requiring "SLC Pass" to pass all subjects while, within individual schools, a student might pass some subjects and be allowed to continue through the system while picking up particular subject failures later; and (4) more flexibility within individual schools in providing supplementary examinations as needed. On the other hand, (1) pressure from local people to keep students moving up from one level to the next is great, and (2) from the perspective of local school administrations there are financial reasons to keep as many students in class as possible. However, since the examination is actually used as a screening device for entry to higher education, those factors may only be symptoms of the present situation, rather than its causes.

If the SLC is viewed primarily as an entrance examination which qualifies students for the limited number of places in higher education, then a more realistic measure of successful completion of secondary education becomes the Grade 10 examination, which is also known as the pre-SLC, or SLC qualifying examination. By this latter measure, the whole secondary education system could be regarded as much more efficient, since 89 percent of the lower secondary students passed their examinations in the sample years illustrated above, and 83 percent passed all internal school examinations in upper secondary schools that year (Aryal, et al., 1984, p. 67). This examination, administered by each District Education Office, tends to have approximately 80 percent of students passing over the years.

In its present form and structure, the SLC examination sets the pace and limits the quality of all instruction at the secondary school level. The examination is regarded as the single measure of success for the system. Administrators, teachers, students, and parents value the system primarily on the basis of the probability of a student achieving the SLC. A natural consequence of this situation, as found in many countries with external examinations, is teaching toward an examination. Teachers emphasize rote memory of the types of questions found in prior examinations, practice memorization of sample answers, and other activities that discourage creativity and independent thinking.

The administration of the SLC is gradually being decentralized. At present, certain examination papers from one development region are sent to another region for grading. There are tentative plans to gradually shift more and more of the responsibility for examination administration to the regions and districts. This may

even include setting of the questions, invigilating, marking the papers, analyzing the results, and distributing the results.

Commenting on the SLC, the Asian Development Bank Study (ADB, 1986 p. 37) states the following (see also Aryal, et al., 1984, p. 78 from whence ADB obtained its data):

> "Another disturbing fact is that the percentage of successful candidates is falling every year. Assuming that the standard of examination papers evaluating the capabilities of learners remained the same from year to year, then the percentage of students passing the SLC Examination during the period as a whole [1970-83] ranged from 16.7 per cent to 53.2 per cent, with a mean of 28.8 per cent. On the one hand, the number of SLC candidates increased almost every year; on the other hand, the percentages of successful candidates were extremely low, crossing the upper limit of 50 per cent only once out of 16 times. The correlation between the number of SLC candidates and the percentage of them passing it comes to -0.67. [This correlation is based on 2023-2038 data.] This measure of correlation is high negative and significant, indicating a reverse relationship between the growth of secondary education as represented by the increasing number of SLC candidates and the efficiency of the school system as amply reflected in the profile of SLC Examination results of 16 years, holding other variables constant."

Steps might well be taken to encourage schools to give a higher percentage of "pass" marks among those who take the examination, as indicated in note number 2 for Table 5.8, above.

One fallacy in this analysis may relate to the lack of standardization for the SLC grading. Since individual graders apparently are free to decide how many marks might be given for the identical answer to a given question, the assumption that "SLC Pass" is either a valid or a reliable measure of the "efficiency" of the secondary school system may be unwarranted. Whether the judgment of individual teachers and headmasters, as given in the Grade 10 or the pre-SLC examination, is any more or less appropriate as a measure of system efficiency, remains to be demonstrated.

What is the criterion of success in school level education remains a question which no one may be able to answer, since the SLC is not a satisfactorily standardized examination administered under "controlled" conditions. In addition, instances of administrative irregularities are often cited concerning various SLC Centers, potentially invalidating parts of the process.

The team from the University of Cambridge Local Examinations Syndicate, cited above, made many relevant comments and suggestions about the SLC. The ones most relevant to this discussion are the following:

The problem of multiple sittings is the greatest single obstacle to successful reform leading to a real improvement in the quality of the SLC examination. The aggregation of raw marks in this way ignores the inherent differences between subjects in terms of their distinctive mark distribution patterns.... This method of grading allows the choice of subjects, within the options permitted by the SLC entry regulations, to become a factor - possibly a significant factor - determining the results of some candidates.

The Office [of the Controller of Examinations] is critically short of material and human resources and all OCE staff are fully engaged with purely administrative tasks.

Papers are seriously restricted in the range of skills tested, concentrating mainly on the factual recall of textbook information and sometimes encouraging the repetition of learned model answers based on textbook exercises.

The need to set and moderate different papers for each of four sittings within a short period immediately before the examination remains a serious obstacle to progress.

This unstructured system of quality control is inappropriate to the current situation. The SLC examination has experienced more than a decade of dramatic growth in candidate entries. Several subjects now generate more than twenty thousand answer books in each of the two main sittings. Marking on this scale cannot be reliably checked without a much greater devolution of responsibility.

At present examiners have little more than the written instructions and their experience to guide them.... Answers to more open ended questions requiring interpretation, evaluation or imagination on the part of the candidate are likely to create serious problems of inter-marker reliability.

The nature of the documentation and procedures for recording and checking marks is cumbersome and involves much duplication of effort. An unusual additional problem is presented by the practice of recording marks in either the Arabic or Nepali numbering systems.

And, regarding reporting on results:

This procedure is extremely demanding of OCE time and manpower and creates serious congestion at the Office for several weeks.

5.1.4.6 Quality of Instruction. The numbers of upper and lower secondary schools are increasing, as are the number of students. But the proportion of trained teachers at the upper secondary level is decreasing (see Table 5.3). And the sheer presence of teachers who are qualified academically does not guarantee effective teaching.

The quality of textbooks is reported by some to be improving, as is their more timely distribution. Others complain that the books, although produced within the country with some local illustrations, are too simple for the secondary school level, and are difficult to acquire in many locations. Beyond textbooks, other instructional materials, from chalkboards to science laboratory equipment, to posters and charts, seem to be far less than adequate to support quality instruction.

For secondary schools in a system where the major goal is the achievement of an SLC, one important measure of quality of instruction is the proportion of students who pass this examination. Although there are problems with the validity of the SLC examination, as discussed above in Section 5.1.4.5, analysis of the SLC results may have some relevance to the quality of instruction.

According to one interviewee, the inefficiency of secondary schools is reflected in the low numbers of SLC passes, attributed to the widespread poor quality of teaching. For example, the SLC results of four years (1981-1984) for all secondary schools in the sixteen districts of the Western Development Region are presented in Annex 5.3 and summarized in Table 5.9. These were provided to the assessment team by the Regional Education Officer during an interview. The lower part of the table in Annex 5.3 summarizes the 15 district results: for the 3 development zones, and for the entire region.

To improve teaching, the government has recently changed the regulations for payment of its grants-in-aid. If a secondary school fails to have at least 15 percent of its students who take the SLC examination pass for three consecutive years, the government will stop its grant-in-aid to that school.

The extent to which the school system is inefficient, leading to high proportions of students' failures in the SLC, can be seen from two sets of information, one presented in Table 5.9 which summarizes four years' achievement (1981-1984) of the 16 districts under the Western Development Region and Annex 5.3 which presents the same information in greater detail.

First, consider the annex. The bottom rows show that the proportions of schools failing to meet the official minimum pass percentages in the SLC (i.e., not below 16 percent) for the four years of study (1981-1984) were in the order 54.3 percent, 42.4 percent, 46.9 percent, and 32.4 percent (88/162, 82/198, 114/243, and 93/287, respectively). The proportions of schools with 0 percent achievement were in the order 10.5 percent, 6.6 percent, 7.4 percent, and 10.1 percent. There seems to be a little improvement in the situation discussed here after the implementation of the above-stated regulation. It is more likely that this improvement was due to

Table 5.9

SLC Passes from Western Region Schools: 1981-1984

	A	B	C	D	E	F	G	H	I	J	K	L
	No. of years (times) out of . . . years (times)											
DISTRICT	4/4	3/4	2/4	1/4	3/3	2/3	1/3	2/2	1/2	1/1	Total f	Three consecutive years
Kaski	1	5	9	4	--	3	1	1	2	3	29	3
Lamjung	--	2	2	9	1	1	1	1	2	--	19	3
Gorkha	--	--	2	--	2	--	--	--	1	--	5	2
Tanahu	2	3	5	3	--	--	--	--	3	4	20	3
Syangja	--	2	4	7	--	1	1	--	--	1	16	1
Manang	--	--	--	--	--	--	1	--	--	--	1	--
GANDAKI ZONE	3	12	22	23	3	5	4	2	8	8	88	12
Palpa	--	3	8	3	1	--	1	1	2	3	22	2
Rupandehi	2	1	6	2	1	1	1	1	3	2	20	4
Kapilvastu	--	3	2	2	--	--	--	1	2	--	10	--
Nawalparasi	--	7	3	--	--	--	--	--	2	2	14	5
Arghakhanchi	--	1	4	2	1	1	--	1	--	1	11	1
Gulmi	--	--	2	5	--	--	1	1	2	1	12	--
LUMBINI ZONE	2	15	25	14	3	2	3	5	11	9	89	12
Parvat	1	--	2	5	--	3	--	--	2	4	17	1
Baglung	--	--	--	--	--	3	4	2	--	3	12	--
Myagdi	--	2	1	2	1	--	--	--	2	1	9	2
Mustang	--	--	--	--	--	--	--	--	--	--	--	--
DHAULAGIRI ZONE	1	2	3	7	1	6	4	2	4	8	38	3
TOTAL: WESTERN DEVELOPMENT REGION	6	29	50	44	7	13	11	9	23	25	217	27

Source: Western Regional Education Directorate (n.d.). *School Profile, 1985-86* (Vidyalaya Vivaran, 2041-42). Pokhara: WRED

Notes:
1. During the period 1981-1984 (the data are combined), one school in Kaski failed to attain the official minimum all the four times or years (Column A), five schools failed to attain the minimum in three out of four times (Column B), and so on.
2. During the same period, three schools in Kaski failed to attain the minimum for three consecutive years or times. (Column L; it includes also the Column A cases).
3. The prescribed official minimum is 16 percent.
4. For more details see Annex 5.3.

the schools' practice of disqualifying several students at the pre-SLC qualifying tests, administered at the district level in several places, than due to improvements in teaching. The fear of being financially penalized by the government for poor results in the SLC must have forced several schools to disqualify their weaker students from taking the SLC examination.

Second, refer to Table 5.9. There were only five districts in which no schools were penalized for having results below the minimum for three consecutive years, although the results in four of them are not any better -- the schools in these four districts simply avoided the penalty by breaking the chain of poorest results in time (see column L). Between 1981 and 1984 there were 215 cases of schools' performance below the minimum (column K). A rough estimate (not exact because of variation in school numbers from year to year) would be that the proportion of schools performing worse than the concessionary minimum ranged between 55 percent and 32 percent in the Western Development Region during this period. The situation in most parts of the country might have been worse than in this region because this region is comparatively better in terms of its profile of educational development.

Even with this pressure on the schools exerted by the changed regulations, in this region only eight of the 287 secondary schools (2.7 percent) had over 90 percent of students passing the examination, another group of 30 schools (10.5 percent) had 60-89 percent of students passing, and a third group of 89 schools (31.0 percent) had 30-59 percent of students passing.

Thus, with more than half of the schools unable to get even 30 percent of their students through the examination, it can be safely inferred that either the quality of instruction is very poor, or the examination system itself is not a valid and reliable criterion.

Although several factors are responsible for the high rates of SLC failures, the quality of instruction in the secondary schools contributes to a high proportion of the variation in achievement. The university blames the secondary schools for not preparing better quality students, the secondary schools blame the lower secondary schools, and the lower secondary schools blame the primary schools, where everything is said to go wrong.

There has been very little systematic research on the quality of instruction in the secondary schools. One study compared teaching behaviors of Nepalese and American teachers (Pfau, 1981, pp. 2-3). Although it may not be valid to compare the performance of teachers in the U.S.A and Nepal, in the sense that each group

works in a different context and in different value systems, the comparison still yields some potentially useful information about the Nepalese situation which is consistent with opinions about teachers and teaching in Nepal held by informed and educated Nepalese citizens. The results of this study follow:

1. Nepalese teachers did not use the ideas of students during class as often as the U.S. teachers did.

2. Nepalese teachers allowed students to spend less time expressing their ideas and opinions in class than U.S. teachers allowed their students.

3. Nepalese teachers lectured and talked more than U.S. teachers during Grade 2 and Grade 5 classes. No significant differences were found between Nepalese and U.S. teachers lecturing at Grade 9, however.

4. Nepalese teachers asked much shorter questions than U.S. teachers. These shorter questions nearly always required one or two words for a response, or other predictable short answers.

5. Nepalese teachers expected students to give much shorter answers than did U.S. teachers.

6. Nepalese teachers gave fewer directions for students to do things. Their directions were also much shorter than those of U.S. teachers.

7. In science classes, Nepalese Grade 5 students spent no time in laboratory work (i.e., no hands-on experiences) or library work, and nearly none observing demonstrations. U.S. students spent significantly more time performing these activities.

Another Nepalese study (Mali, 1982) indicates how school conditions and lack of adequate facilities restrict the instructional effectiveness of the teachers. The five restrictive factors identified by the study were: (1) overcrowded classrooms, (2) lack of educational facilities, (3) too many classes per teacher, (4) low socioeconomic status of teachers, and (5) lack of performance evaluation of the teachers.

A CERID study (Sharma, et al., Eds. 1984), of trained and untrained teachers at primary and secondary levels in Nepal, detected the impact of training more at the secondary than at the primary level. The study made the following comments about the behavior of trained secondary school teachers:

> . . . the desirable effects of the training programme are discernible in some important areas, as for example the teachers who are trained are, by and large, found to be student oriented. They are likely to let students have practice and to use instructional materials for more effective teaching.
>
> However, the need of making the training programme more appropriate and relevant should not be lost sight of . . .

It has also been observed that a great number of trained teachers are still using the methods of direct teaching and they involve the students very little in the learning process.

Another study of secondary education in Nepal concludes with the statement: "The degree to which this problem of educational wastage [at the secondary level] affects the efforts, resources and even the morale of the nation is indeed high" (Aryal, et al., 1984, p. 76).

Considering the youth and rapid growth of secondary education, the situation seems full of opportunity for the future. Quantity has come first. Now quality and efficiency must be addressed.

5.1.4.7 Costs and Financing. This section presents a brief summary of the costs of lower and upper secondary education. A more complete discussion of these unit and cycle costs is given in Section 2.6.3 of Chapter 2. Details of the computations of unit costs are in Section 2.6.3.1 and of cycle costs in Section 2.6.3.2. The above sections set forth the assumptions used for calculating the full costs for a single year of secondary school (the unit cost) and the full costs to produce a completer of the secondary system (the cycle cost).

The full costs of secondary education consist of the basic costs to government, the indirect or administrative costs to government, the costs of teachers' salaries, and the costs paid by parents or guardians at the school level. Precise information on each of these components of schooling costs is not readily available for any school system, and estimates for them are used in Chapter 2. The bases for these estimates, and the actual figures used, are set forth in Chapter 2. Readers who wish to estimate unit and cycle costs based on different assumptions may adjust the figures of Chapter 2 to derive alternate estimates of these costs.

The assumptions in Chapter 2 yield an estimated full financial unit cost to schools and students per annum of Rs 784 for lower and Rs 895 for upper secondary education. Given adjustments for progression rates within the secondary system, the Chapter 2 assumptions provide an estimated full financial cycle cost of Rs 13,602. When compared to the ideal cost of producing a secondary school completer (i.e., no repetitions or drop-outs) of Rs 4,253, this cycle cost represents an excess of Rs 9,349 over the ideal. When compared to this ideal cost, the secondary education system is only 30.9 percent efficient, given that 16.17 instructional years are needed to produce each graduate.

5.1.4.8 Facilities and Equipment. The ADB education sector study of 1984 states "The physical facilities in Nepalese schools are far from satisfactory. Most of the school buildings do not meet even minimum health requirements: They are neither clean, well lighted nor spacious; many have no separate bathrooms for boys and girls; many have no mats for the children to sit on." (p. 15) The same report, in a section on secondary education, goes on to say, "The position regarding physical conditions in schools and other teaching facilities is quite frustrating."

A recent study conducted by CERID (Mali, 1982) indicates how school conditions and teaching facilities in Nepal do not permit the teachers to teach effectively. Among factors that hinder their performance are overcrowded classrooms and the lack of educational facilities.

In their study of secondary education, Aryal, et al. (1984) asked teachers' opinions on the availability and use of instructional materials in three sample districts (Gorkha, Jhapa, and Kapilbastu). A majority of teachers complained that ". . . instructional materials were not adequately available in their schools. Most schools had no instructional materials other than blackboards . . . student experimentation with objects was practically nil in these schools . . . It was plain that students got through the science course without having any experience of practical activities as demanded by the curriculum" (p. 110).

The same study found that available space in secondary schools was below one square meter per student. Most of the schools lacked furniture. There were no chairs and tables for teachers in most classrooms. Benches and desks for students were inadequate in each classroom.

Another study (New ERA, 1975) found that several teachers did not use any materials for teaching even though the schools had a stock of them.

Secondary education may be characterized as lacking adequate facilities and equipment. Those who teach and those who learn must carry on that effort with minimum technological support.

5.2 ANALYSIS

This section presents an analysis of needs, policy, plans, constraints, and issues in secondary education, followed by conclusions derived from this information. After an examination of needs and plans for secondary education, the major visible constraints and issues are identified. The chapter then examines some of the less visible constraints and issues on the basis of the status of the sub-sector presented earlier in this chapter. Finally, a set of conclusions based on this analysis provides the foundation for recommendations in the final section.

5.2.1 Needs

The needs in secondary education are both quantitative and qualitative. Quantities of schools and students have been expanding, increasing pressure for more teachers, buildings, and facilities. The need for maintaining quality with expansion has been a problem in the past, and it will be a continuing challenge with the increased pressure for expansion.

Among the needs identified are the following:

- Expansion vis-a-vis the policy of universal primary education by the year 2000 A.D.
- Extension of educational opportunities to disadvantaged groups and locations to increase equity
- Improvement in the quality of instruction
- Reduction of the educational wastage, primarily through changes in the examination system
- Improvement in supervision and administration
- Increased relevance of what is learned to the developmental needs of the country

Government has announced the goal of achieving universal primary education by the year 2000 A.D. The numbers of students likely to be involved in that expansion are discussed in Chapters 2 and 4. The implications for secondary schools are presented here.

Tables 5.10 and 5.11 offer projections of the numbers of students likely to be in secondary schools by the year 2000 A.D., if the goal for primary education is achieved. The first projection assumes the same rate of movement from primary to secondary levels and the current student/teacher ratios.

Universal primary education implies some arrangements for secondary education in order to provide opportunities for students who complete primary school. The Basic Needs Strategy concentrates heavily on universal primary education but is silent about the upper levels of education. The Seventh Plan, which covers activities through 1990, has specified enrollment targets as 43 percent of the 11-12 age group at lower secondary and 36 percent of the 13-15 age group at upper secondary.

Table 5.10
Enrollment and Teacher Requirements for
Basic Needs Case (Scenario 1): 1985-2000 [1]

Enrollment	1985	1990	1995	2000
Lower Secondary	254,364 (29.7%)	378,809 (42.3%)	434,368 (41.3%)	513,868 (43.9%)
Secondary	242,467 (21.3%)	345,876 (25.6%)	456,092 (32.3%)	531,611 (31.7%)
Total Secondary	496,831 (24.9%)	724,685 (32.3%)	890,460 (36.1%)	1,045,479 (36.7%)
Teacher Requirements				
Lower Secondary	11,120	16,470	18,886	22,342
Secondary	7,242	10,481	13,821	16,109
Total Secondary	18,362	26,951	32,707	38,451

[1] Based on 100% of age group in primary school by the year 2000, and assuming constant student/teacher ratios, constant repetition rates, constant drop-out rates, and constant continuation rates. Details are given in Chapter 2.

There are no policies about secondary enrollment beyond that date. It is clear that the universal primary education proposal is an incomplete plan in the sense that it provides no policy indicators for structuring the entire educational pyramid. As the universal primary education plan is implemented, many thousands of children will press toward higher levels. This eventually will force planners to consider the entire system, and this kind of planning requires considerable lead time.

This section presents two different enrollment scenarios based on different sets of assumptions. The first scenario (Table 5.10), called the Basic Needs Case or conservative estimate, is based on the assumptions of holding all system variables constant: student/teacher ratios, drop-out rates, and grade-to-grade continuation rates. It also assumes 100 percent of the age cohort will be enrolled in Grade 1 by the year 2000 A.D. It should be noted that the Basic Needs Document has not stated that universal primary education means 100 percent enrollment in Grade 5, the final primary cycle grade. This makes Scenario 1 all the more conservative.

Table 5.11

Enrollment and Teacher Requirements for

Increased Efficiency Estimate (Scenario 2): 1985-2000 [1]

Enrollment	1985	1990	1995	2000
Lower Secondary	254,364 (29.7%)	405,768 (45.4%)	660,076 (62.8%)	924,012 (78.9%)
Secondary	242,467 (21.3%)	358,122 (26.5%)	621,728 (44.0%)	1,051,367 (62.7%)
Total Secondary	496,831 (24.9%)	763,890 (34.0%)	1,281,804 (52.0%)	1,975,379 (69.4%)
Teacher Requirements				
Lower Secondary	11,120	17,642	28,699	40,174
Secondary	7,242	10,852	18,840	31,860
Total Secondary	18,362	28,494	47,539	72,034

[1] Based on 100% of age group in primary school by the year 2000, and assuming constant student/teacher ratios, reduction in repetition rate and drop-out rate, and increase in both continuation and graduation rates. Details are given in Chapter 2.

The second scenario (Table 5.11) is based on several assumptions related to the improvement of internal efficiencies. It is reasonable to be optimistic that variables within and outside the school system will continue to improve, influencing enrollments and the level-to-level flow of students. Hence, an optimistic, or liberal set of estimates is presented as Scenario 2. The assumptions with respect to each of the new efficiencies reflected in this scenario are described in detail in Chapter 2.

Even larger numbers are projected in Table 5.11. There it is assumed that the present educational system will become more efficient. Starting with the same population projections, it assumes reductions in the repetition rate and in the drop-out rate, and an increase in the proportion of students continuing in school, as well as an increase in the proportion successfully completing each level. It assumes no change in the current student/teacher ratios. For the year 2000, student numbers rise to almost two million, and teachers are over 70,000.

Statements by MOEC officials indicate that there are plans to increase financial support for primary education in order to meet the Basic Needs goal by the year 2000, but not to make parallel investments in secondary education. Given limited financial resources, one possible strategy to accommodate the increasing numbers of primary school graduates would be to leave government grants-in-aid to secondary schools at present levels, only adding sufficient funds for expanding textbook preparation, the SLC examination system, and other basic support costs. This strategy assumes that local communities, parents, and other private sources would bear most of the costs of any expansion of secondary schools.

Projecting such a situation, where secondary school enrollments are maintained at their present levels, but primary grows to 100 percent of the age cohort by the year 2000 A.D., almost 369,000 students would complete primary school that year. Openings for them in lower secondary would include only 136,000 places. Therefore, 63 percent of primary school leavers would have no secondary school opportunities available except for additional private schools inside or outside of Nepal. The number of students potentially seeking secondary school entrance in the year 2001 is projected to be nearly 230,000 assuming some of the individuals may not want to go to further education.

The preceding analysis was based on the medium variant projection of population growth as described in Chapter 2. If population grows according to the high variant projection, assuming constant 1985-1986 rates of progression from class to class, by the year 2000 there would be approximately 577,000 students completing primary school (see Chapter 2).

But if the continuation rates to secondary school remain as they are now, then there would need to be 518,000 places in secondary by the year 2000. This projection assumes that by the year 2001 there will be 977,000 students in lower and 1,030,000 in upper secondary, for a total of over two million in Grades 6 through 10.

Using the most conservative of these estimates, (i.e., Table 5.10) Nepal might double the number of students in secondary schools in twenty years, and need physical facilities for approximately 500,000 more students than are now in the system. As for teachers, the most conservative projection (Table 5.10) suggests an increase from 18,362 in 1985 to 38,451 in 2000, or the addition of over 1,339 teachers per year over the 15-year period. And that does not take into account the normal attrition due to retirement, change of job, and other factors. Thus, there may be a need for significant expansion of the number of secondary school teachers, buildings, and other facilities.

With regard to quality, there are many additional needs. This includes increased and more effective supervision of teachers. More than a control on absenteeism, this includes inservice training to keep teachers familiar with new textbooks and other instructional materials, curriculum changes, and perhaps most important, to motivate them to be more effective teachers.

Another aspect of quality is related to the discipline of both teachers and students to be present in class, the reward of academic performance, and working toward the national objectives of education. The development of appropriate professional rewards and penalties may be one of the most significant needs. It can lead to satisfaction of other needs such as the need for improving instruction, for reducing wastage and drop-outs, for committed public participation in local school management, and for a sense of public accountability among school personnel.

The study by Shrestha (1982b), which focused on successful secondary schools is revealing on this point. Among the conclusions were:

> The dedication (commitment), efficiency, leadership of the headmaster have been the most important factors that led to the development of the case schools. Participatory decision making has been a rule in all these case schools. Teachers are involved in major decisions of the schools. All four headmasters played their role, first as teacher, and only second, as headmaster. All these schools have developed some mechanism to maintain good rapport with the students. Efforts are made to develop a sense of dedication among the teachers. Each of these schools makes every effort to get the maximum number of students' excellent performance on the SLC examination.

There is also a need for increased relevance to the world of work on many aspects of the curriculum. Since the present secondary schools are, in fact, "terminal" for many students, their utility might be increased if the present mathematics courses were modified to include some accounting, if language courses included some instruction on how to teach those languages, and if science had more examples from Nepal's agriculture. These are merely examples of potential gradual and modest "vocationalization" of the curriculum.

Other needs may include the need for revision of textbooks from time to time, the need for diversification of school types (perhaps increasing technical and vocational streams), and the need for promoting participation by disadvantaged groups and in disadvantaged areas.

5.2.2 Policy

The most significant matter of policy is the announcement of government to achieve universal primary education by the year 2000 A.D. Implications of this policy for secondary education are mentioned is the last section. Whether it will be the policy of government to provide additional support for the almost inevitable expansion of secondary education, or to rely more heavily on private finance for secondary levels, is a critical policy question.

There is a tendency for every formal educational system to be a selection device for societies to separate their controlling elite from lower classes. As the costs to individual families for secondary education increase, the access by wealthier families increases, and equity is diminished.

The extent of cost sharing of public finance between central government and local governments, or local communities, is another serious matter of policy. Increasing decentralization of financial resource generation for individual schools can be a major force for accountability within the school, as well as for relevance of the academic program to the world in which school leavers will make their way.

Decentralization of the financial base is only one aspect of policy, however. Other aspects include decentralization of curriculum control, management of teaching staff (appointments, promotions, terminations, etc.), instructional materials preparation, responsibility for buildings and equipment, examinations, and certifications.

One policy option for quality control is to maintain central control of curriculum and instructional materials, and to seek as much decentralization as possible in financial resource generation. A problem can occur within such a system if the curriculum fails to meet the perceived needs of parents and others in the community.

Overcentralization of examinations can lead to a curriculum based on rote memory of anticipated answers to examination questions. Overcentralization of examinations can also result in unmanageable work loads for those who must process the papers. However, excessive decentralization of invigilation of examinations, for example, could lead to manipulation of the system to benefit local students. Some balance between local and central control, as well as local and central financial support, may be a desirable policy goal.

It has been suggested that when a school has been able to demonstrate effective management of its own resources, there might well be a move, on a gradual and experimental basis, toward more decentralization of matters such as examinations.

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5.2.3. Plans

Topics covered in this section include plans for a changed system of inspection as part of the administration of secondary education, plans for quality improvement of the SLC examinations, and other plans for improvement of secondary education.

The Inspectorate System

The MOEC now has a plan to introduce a new version of the 30-year-old inspectorate system, doing away with the present supervision system. This new proposal is waiting for official sanction to begin its implementation. The plan was expected to possibly come into effect before the end of 1987, at the time the draft of this report was prepared (August 1987).

According to this plan, the District Education Officer will be called the Chief Inspector and the present supervisors will become Assistant Inspectors of Schools. They will have increased responsibilities and authority, but their new role will be less professional and more administrative. The inspectors will have the authority to give recognition to new schools, to ensure the quality of functioning of schools (including the monitoring of teacher absenteeism), to withdraw recognition of schools which fail to meet or maintain the prescribed conditions, or to reduce the grants-in-aid. The earlier emphasis given by the NESP, toward using the supervision system as a mechanism for improving the quality of teaching, is likely to be diminished because inspectors are likely to assume the role of "policing" rather than assisting the schools with professional expertise focused on quality of instruction.

Quality Improvement of the SLC Examination

Because of the centralized nature of the SLC examination processing, the Office of the Controller of Examinations (OCE) is under a heavy and constant workload. This condition has arisen because the OCE was initially established to manage the testing and certification needs of an education system which had an enrollment of only a few hundred students. The student size has since grown several times. There were 95,923 students who took the examination in 1985, and the OCE has only 60 staff. The logistics of managing an examination system for such a vast number of examinees calls for some new measures to relieve the load on this office, as well as to improve the efficiency of the management of the system, and perhaps curtail the alleged irregularities in the current system.

New proposals are being prepared. These include a plan for the regionalization of the SLC procedures ranging from scoring of the answer books to tabulating the scores and maintaining the records. The central office that now does all this work will coordinate the regional processes of testing, certify and do the work of a national record keeper, and conduct appropriate research on the validity and reliability of testing and other matters.

Other Proposed Plans

Among the new measures to be adopted there are other plans for reform of various aspects of secondary education. One relates to the improvement of the grants-in-aid system. The current policy of withholding or reducing the grants-in-aid funds to schools with less than 15 percent student success at the SLC examination for three consecutive years will be continued, but it will be accompanied by certain measures such as paying 10-20 percent extra grants to schools doing better on the SLC, and a 20 percent reduction of the grants-in-aid funds to schools with poor performance instead of penalizing them with complete withdrawal of funds. Even private schools, which now are not given any grants, will be given grants if they perform better. (This information was given in an interview.)

Another proposal focuses on giving incentives to the School Management Committees for increased public participation in school management. Presently, all members of these committees are nominated or serve as ex-officio members. The new arrangement will allow the co-option of 50 percent of the total membership with representatives of parents and local elites, all to be chosen by the concerned schools. It should be noted, however, that these representatives are not to be elected. The intention of the framers of the regulation seems to be to keep the schools away from politics.

Another contemplated change is in the area of the secondary school curriculum. Several options are being suggested, but which will be selected is not yet certain. Science, which is not compulsory in the present curriculum, may be made compulsory. It is very likely that the number of subjects required for the SLC examination may increase from the present seven to at least eight.

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5.2.4 Constraints

The constraints in secondary education are related to the rapid growth of the entire system over the last thirty-six years, and to the frequent changes in the goals, structure, and curriculum. As illustrated in the early parts of this chapter, the system has changed significantly every ten years since 1951.

Even with a consistent government policy, it would have been a difficult challenge to develop secondary education from a system with 1,680 students in eleven schools in 1951 to a system with 496,831 students in 4,899 schools by 1985. But to do that while shifting major objectives every ten years was even more problematic.

And the attempt to make a massive system-wide conversion from an academic orientation to a more vocational orientation with the 1971 NESP was not done gradually. The rapid conversion had apparently failed even before the end of the following decade. The goal of harnessing the secondary schools to nation-building tasks may have been attempted too quickly and with too little strategic preparation. The consequence of the abandonment of that attempt by 1981, and a return to more academic and less development task-oriented approaches, was a second major hardship for the system.

Related to this growth and the frequent curriculum changes has been the problem of quality of inputs. While the present textbooks seem adequate, the high proportions of temporary teachers, of untrained and unqualified teachers, and of teacher shortages in specific fields such as science have been a major constraint to better performance of the system.

The attempt to achieve quality control through a nationwide examination for the SLC has also been a constraint to secondary education. The numbers who take the examination each year have increased so rapidly that the small and under-equipped staff of the Office of the Controller of Examinations has been unable to cope with the increased workload. The difficulty with transportation and communication among seventy-five districts, scattered over some of the most difficult terrains in the world, has made multiple sittings necessary for the annual examinations. That, plus the problems of administration in many different centers in some districts, has made invigilation of the SLC examination almost uncontrollable, even with support from Chief District Officers and district police officials.

Add to those problems the difficulty of standardizing grading procedures among many different individuals who neither meet each other, nor share special training for the marking process, nor grade against standardized responses. And when that is considered with respect to an examination which itself encourages rote memory of answers to anticipated questions, the whole secondary education system is seen to have significant problems.

The major problem is related to a situation in which the examination results have powerful control over the future lives of all students. Results determine who shall enter higher education, and who shall not. Within higher education, the SLC results may determine which field of study will be open to the student. But more severe, perhaps, the examination results determine which category of public and private employment may be open to the former student, and perhaps the salary classification which will determine earnings for a lifetime.

Compared with other constraints such as lack of financial resources, shortages of trained and experienced teachers, overcrowded classrooms in inadequate buildings, weak administration and supervision, and even lack of professional discipline and incentives for professional performance, the examination system may be the greatest single constraint to further evolution of secondary education in Nepal.

Qualified Manpower

Table 5.3 showed the status of secondary school teachers in terms of qualifications and training. Information on the nationwide distribution of qualified and under-qualified teachers, and on trained and untrained teachers by principal subjects (such as mathematics, science, and English, which most students fail in their SLC examinations), is not presently available. High proportions of temporary teachers, plus shortages of qualified teachers in many areas, make the teacher scarcity a serious constraint.

Discipline and Incentives

Several issues are related to the high rate of absenteeism of both students and teachers. They include lack of a "controlled" situation during the examination time, and lack of objective criteria for rewarding the better performing teachers. The discipline of a work ethic is not apparent. This remains an outstanding constraint in the system.

A judicious system of rewards and punishments for creative teaching is not in operation. Favoritism in the appointment, transfer, and promotion of teachers is reported to be high. Teachers are often surprised to see who gets the nationally awarded honors and prizes. The criteria for these awards are not made public. There is uneven distribution of decision-making power between the administrators and the headmasters, the headmasters and the teachers, and the teachers and the students.

Lack of Professionalism

A less visible but more powerful constraint relates to the lack of professionalism among teachers. There is a teachers' association at the primary level and another at the secondary level recognized by the government. These organizations have not played even rudimentary roles in initiating and promoting the professional behaviors of the teaching profession. A part is also played by the government policy of controlling the orientation and activities of the teachers' organizations. It appears rather unusual that the constitution of the teachers' union was framed under the directives of the MOEC.

Teachers are divided into strong political ideology groups, and the union members have been talking more about their rights and less about their duties and responsibilities. To date, teacher seminars, teacher workshops, and professional upgrading activities have been sponsored and conducted either by the MOEC or the University or the external assistance agencies, and there are very few cases of teacher-initiated professional events.

Probably because of the orientation of the teachers' association, the government has not allowed collective bargaining. There was a long struggle by teachers to get the MOEC to recognize their organization. Equally difficult was the long struggle by teachers to earn the benefits of pensions and other fringe benefits at par with other civil servants.

The establishment of professional organizations may foreshadow, for the administration, unionized activities threatening the maintenance of order. These curbs on the growth of professionalism, either due to control from above or to politicization from below, affect the growth of a sound educational system. While these sociological and cultural facts are often not publically recognized, they nevertheless are real.

Irrelevance of Secondary Education to Economic Development

In spite of all the achievements, secondary education in Nepal by 1987 is still constrained because it carries vestiges of an expatriate system which may be largely irrelevant to the realities of rural life in this country. The NESP partially dismantled the negative effects of external influences on the sub-sector. However, secondary education remains only remotely linked to the Nepalese economy and the realities of daily life.

Perhaps the most significant constraint in the educational system of Nepal is the practice of depending on easily available external assistance agency funds and unevaluated advice from foreigners without integrating them with resources from within. This practice undercuts the utility of and the rewards for a truly vigorous, creative, dynamic, and functional educational system which would help the next generations of Nepalese people become all that they have the potential to become.

In summary, the following are the constraints to secondary education:

1. **Frequent changes in goals, structure, and curriculum.** With a major shift in each decade, the sub-sector has been constantly off balance.

2. **Inadequate quality of inputs.** With textbooks which are scanty and marginally adequate, and very little else in the way of instructional materials or facilities, and a high proportion of temporary and untrained teachers, inputs to secondary education are a constraint on quality.

3. **A school leaving examination with no proven reliability or validity.** This most critical constraint features large numbers of students being examined in many scattered examination centers with test instruments that are not standardized, and with procedures lacking uniformity and quality control.

4. **Shortage of qualified teachers.** With a high proportion of teachers being temporary, they tend to be untrained in education, and many are not qualified in the fields of instruction to which they are assigned.

5. **Discipline and incentives.** Since there are few incentives in the system for teachers or students to take their work seriously, there is a general lack of discipline.

6. **Lack of professionalism.** Neither teachers themselves nor the system which employs them vigorously promote professional and scholarly patterns of behavior.

7. **Irrelevance of secondary education to economic development.** Neither the highly academic curriculum, nor the teaching and learning styles which tend to disregard problem solving, nor the dominance of external knowledge systems, make secondary education relevant to the internal development needs of Nepal.

5.2.5 Issues

The issues described below are based on the above-cited needs, policies, plans, and constraints. These issues are discussed within the analytic framework of the following five themes: external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing.

5.2.5.1 External Efficiency. The external efficiency of an educational sub-sector is defined as the degree to which the knowledge, skills, and attitudes it imparts are relevant to further education, the job market, the lives of its graduates, and the society as a whole.

If the system goal of preparation for higher education is taken as a criterion for measuring external efficiency, then the system could be considered less than 30 percent efficient.

While the pass rate is much higher in some of the most expensive private schools, and some of the best public general higher secondary schools have better than 90 percent of students passing the examinations, the elitist bias produced by the system is only efficient if separation of a small group for leadership and control is a goal of the system, which it is not stated to be.

Nevertheless, many who complete secondary school enter the job market directly, and for them secondary education may be the only formal "vocational education" they receive. From this perspective, as a type of terminal and vocational preparation, the system may be more efficient than from mere consideration of marks on the SLC examination.

For example, the system does produce people who are literate in both Nepali and English, and who have some skills in mathematics. They enter the job market as junior accountants, as clerical office workers, and in many other assignments supporting the evolving tourism, manufacturing, transportation, agricultural, and service industries. Many enter informal or nonformal apprenticeship programs for further skill training.

Another way to assess external efficiency, therefore, is to consider the proportion of those who get through the system by learning what they need to know to survive in society. Although numerical data are not available, indications are that those who complete lower secondary have higher earning capacity than those who have completed only primary school. And those who complete Grade 8 or Grade 9 have an advantage over those who complete only Grade 7.

Since 80 to 90 percent tend to progress from each grade to the next, and about 80 percent of those in Grade 10 have traditionally passed the examination for the completion of that year, the whole system appears much more efficient if the SLC examination is not regarded as the sole criterion for success. If, for example, the SLC examination were considered to be the entrance examination for higher education (and perhaps renamed), and each school were allowed to give its own school leaving examination, the efficiency of the whole system might shift from around 25 percent to around 30 percent.

An initial disadvantage of this approach might be the obvious difference between a certificate from a "good" school compared to one from a "weak" school. But that difference would be real and well known. An advantage of this approach would be that, if each secondary school were allowed to conduct its own examination, the OCE could devote itself to developing and implementing measures to improve the national examination system. Reduced pressure of numbers might even enable the OCE to more easily improve the SLC's validity and reliability, and thus its utility both to higher and to secondary education.

This change would be only cosmetic. There are also more fundamental needs for improving the quality and quantity of secondary education. But a simple "name change" in the national examination might both add to the morale of students and staff in secondary education, and make the whole system more effective. The present SLC examination is, in fact, the entrance examination for higher education. The present approach confuses that function with certification that an individual has actually completed secondary education. The present approach penalizes students for the weakness of their schools. A plan in which each school administers its own "final examinations" and awards its own certificates would allow the system to "complete" closer to 75 or 80 percent of its students.

Assuming the whole system will continue to do what it can to improve the quality of its performance, and to enhance its internal efficiency as discussed below, the issue is whether that can be accomplished better by identifying the present examination as a school leaving certification or as a higher education entrance

certification. Both the psychology of motivation and the reputation of a young and rapidly growing secondary education system are at stake.

Studies of the job performance or academic performance in higher education of the SLC graduates practically do not exist. Available information indicates that their performance level is generally low both in higher education and in job situations. A previous study undertaken on secondary education for the World Bank (Aryal, et al., 1984) included an opinion survey of 32 university teachers on the academic ability of the SLC graduates entering intermediate level courses. Below is a summary of the study's results:

1. The products of the private secondary schools were better in terms of their adaptabilities to higher education.

2. About half of the entrants from the general secondary schools could read and write the national language satisfactorily. Regional, caste, and ethnic influences were noted in language abilities.

3. Teachers of English felt that only about 10 percent were good in English and the rest did not even have a workable background. Of this 10 percent, about two percent graduated from private schools and the rest from general secondary schools.

4. The science teachers had opinions similar to those of the teachers of English. Although entry into science courses requires higher SLC scores in mathematics, science, and English, the students were found to be weak in these very subjects. It implied that their SLC marks were not valid predictors of their abilities. The science teachers complained that teaching in English posed problems of understanding among students, while teaching in Nepali posed technical and practical problems.

5. The mathematics teachers reported that SLC graduates who took mathematics for their optional subject, in addition to the compulsory mathematics course, performed better in the university courses. About 10 percent of the students were very good and most of these were from the private schools. Another 20 percent, from the general public secondary schools and who also were first division passers (minimum marks = 65 percent), did well with the science courses. The remaining students had difficulty, compelling about 20-25 percent of the entrants to leave the science courses in favor of studies in the humanities.

The results of the study are summarized as follows:

> . . . it seems that schools rarely complete courses according to the prescribed curriculum. They lack teachers trained in specific subjects; practical experiences for students are almost nil; teaching is textbook centered and lecture-dominated; and worst of all, most students do not have sound [regular] study habits. In this situation, it is idle to expect quality in school products. (p. 87)

There are no tracer studies of secondary school drop-outs or of SLC graduates not continuing to higher education. Some formal training opportunities are available for them but these are extremely limited. The available openings are in training programs related to areas such as teaching, Assistant Nursing/Midwifery (only for females), Auxiliary Health Services, Leather Work, Weaving and Sewing, Pottery and Ceramics, Electrical, Mechanical, and Technical training. But in these programs the school drop-outs or SLC failures also have difficulties, for the SLC holders are generally preferred.

The SLC graduates also have difficulties in the job market, mainly because they have to compete with holders of even higher academic qualifications. Rendered thus unemployed, they often pursue higher studies as private students. Had their secondary schooling been relevant to the market demands, their situation might not have been so frustrating.

5.2.5.2 Internal Efficiency. Measures of internal efficiency reflect how effectively a part of the educational system uses available resources to achieve specified educational outcomes. Internal efficiency may be considered to have two dimensions: the relationship of what enters and what exits various parts of the subsector, and the relationship of quality to costs between entry and exit points.

Given their history of rapid expansion, the secondary schools have not achieved remarkable internal efficiency. Although efficiency is affected by school size and student/teacher ratios, present conditions in Nepal indicate major problems in these areas.

Schools vary in size and tend to be overcrowded. However, they reflect normal conditions in the country. Student/teacher ratios in lower secondary, at slightly more than 20:1, are probably appropriate. Ratios of one to somewhat over thirty at the upper secondary level are also within the range of what might be expected.

More serious, perhaps, are the relatively high percentages of temporary teachers, as well as proportions who are unqualified (lacking appropriate levels of academic certifications) or untrained (without special training in education). Among lower secondary teachers in 1985, 16.21 percent were unqualified, although only 4.28 percent of secondary school teachers were unqualified.

Training of teachers is another matter. Many secondary school teachers may have the minimum general academic qualifications, but no training in teaching. In 1985, only 41.9 percent of lower secondary teachers had been trained, and only 53 percent of upper secondary teachers. To the extent that teacher training results in fewer drop-outs and grade failures, the lack of training for so many teachers lowers internal efficiency. Unfortunately, few reliable studies of the relationship between teacher qualifications and training, and student performance, are available specifically for Nepal.

One study, however, has appeared recently. Parajuli (1987) studied the impact of several teacher variables, including training, on students performance in the SLC examination in English, mathematics, and science. For all students who took the SLC in Kaski district in 1983, Parajuli found the following: (1) the impact of qualifications and experience was evident in all subject areas; (2) holding teacher qualifications constant, training had no impact on students' performance in any subject; and (3) students taught by specialized teachers in English and mathematics did better than those taught by unspecialized teachers. Worldwide experience suggests that internal efficiency increases where such teacher training is practical and relevant to actual classroom performance.

The 1972-1973 data presented earlier in Section 5.1.4.1 may not be representative of the present situation. However, at that time about 45 percent of students were dropping out during the lower secondary and over 50 percent during the upper secondary cycle. These figures are much higher than the failure rates on examinations, and it is assumed that many of the drop-outs later return to school.

Examination failures are about 11 percent for lower secondary and 17 percent for upper secondary for each year. While these figures may not be high as measures of progress through the system, they are low compared to the percentage of failures on the SLC mentioned in the last section, which tends to be over 65 percent each year.

The issue of quality control is significant. With teachers who may not be qualified, and who have little training in pedagogy, it is not surprising that emphasis on rote memory to get students through examinations has remained the dominant modality of education. But since pass levels for all grades within the system are set locally, schools need internal discipline to fail those who have not mastered the curriculum for each level. Since income to schools is directly related to the numbers of students who continue through the system, there is internal pressure to pass even those students who have learned very little. It is common practice to promote students even though they may have failed two or three subjects of seven or eight. When this is coupled with community pressure, there is a tendency to pass most students. This makes the system appear more internally efficient than it may actually be.

When students eventually take an external examination, after completing grade 10, they tend to do quite poorly. However, with the lack of evidence of validity or reliability for the SLC examination system, extensive inferences based on this information may be unwarranted.

5.2.5.3 Access, Participation, and Equity. Table 5.12 presents two sets of data: the first is related to access to secondary education, and the second to equity.

In this assessment, access is defined as the quota of schools per 1,000 children of the specified age-group--11-12 for lower secondary, 13-15 for upper secondary, and 11-15 for the total of these cohorts. Participation is defined as the proportion of these age cohorts, broken down by gender and location, enrolled at each level. Access represents the ability of the government to provide schooling facilities. Equity represents the extent to which individuals are able to utilize these facilities regardless of gender, location, or ethnic membership. The data in this section present no information related to equity as a function of ethnic membership. The data in Table 5.12 are organized by the development region, the geographical sub-region, the Bagmati Zone, and the Kathmandu Valley.

With regard to access, from the east to the west the quota of schools per 1,000 of the age-group population increases for lower secondary. This same general trend is found, with some exceptions, for upper secondary. Similarly, following the topographical structure of the country, moving north from the plains (Tarai) to the hills, and then to the high mountains, the distribution of schools for the size of the age-group population gradually increases for lower secondary. For the secondary level, this trend is not found.

Table 5.12

Access and Equity at Lower Secondary and Secondary (1985)[1]

AREA	Access: Distribution of Schools Per 1,000 AGP			Participation: LOWER SECONDARY			SECONDARY			TOTAL: LS + S		
	LS	S	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Eastern Dev. Region	3.8	1.0	0.2	41.5	18.9	30.9	32.9	12.5	23.3	36.6	15.3	26.6
Central Dev. Region	3.7	1.2	2.3	42.7	19.2	32.2	34.6	12.7	24.6	38.1	15.4	27.8
Western Dev. Region	4.8	1.4	2.9	44.9	19.9	33.2	31.4	11.1	21.9	37.2	14.8	26.8
Mid-Western Dev. Region	4.3	1.0	2.4	29.6	7.6	19.4	20.8	4.6	13.1	24.6	5.8	15.8
Far-Western Dev. Region	5.1	1.3	3.0	37.5	5.7	23.2	23.2	2.7	13.8	29.6	4.0	18.0
Total (Nepal)	4.2	1.2	2.5	40.7	16.7	29.7	30.8	10.5	21.3	35.1	13.1	24.9
Mountains	6.4	1.2	3.4	33.8	8.7	22.2	22.1	4.0	13.7	27.0	6.0	17.3
Hills	4.7	1.2	2.6	41.3	17.1	29.9	28.7	10.2	19.9	33.9	13.0	24.0
Tarai	3.2	1.1	2.0	41.5	17.7	30.9	35.6	12.4	25.1	38.3	14.8	27.7
Bagmati Zone	4.2	1.3	2.5	49.5	27.6	39.5	38.6	19.4	29.8	43.0	22.7	36.7
Valley	4.7	2.0	3.0	73.7	54.2	65.0	63.1	39.3	52.2	67.3	45.1	57.3

Sources:
1. MOEC, *Educational Statistical Report of Nepal*, 1985 (2042), (for enrollment data).
2. Projections developed by assessment team member Jay Salkin; details are shown in Chapter 2.

Notes: The area and gender breakdowns are based on proportions reported in the 1981 population distribution.

[1]Access: As distribution of schools per 1,000 age-group population (AGP).
Participation: Level enrollment as percent of AGP.

This uneven distribution of schools with regard to population may partly be ascribed to the topography and partly to the practice of opening schools where there is political motivation. Kathmandu Valley is the seat of political power, and has the highest percentage of the age-group in secondary schools. The last two rows of Table 5.12 show that in the Kathmandu valley and its surrounding Bagmati Zone the enrollment is higher, as a percentage of the age-group, than elsewhere in the country.

Several of the country's upper and lower secondary schools are under-populated. The enrollment patterns may follow the topography of the land. Where the population is most dense, there are more students per school, as illustrated in Table 5.13.

With respect to access, there is a fairly good distribution of secondary schools throughout the country. As most of the people are rural, most of the schools are in rural places, as shown in Table 5.14. However, these tend to be the smallest schools, with least students per school.

And among the development regions, the greatest numbers of secondary schools are in the Central Development Region, which includes the Kathmandu Valley. This is shown in Table 5.15.

Regarding equity, as these tables suggest, the access to schooling is unevenly distributed among the development regions, among the geographical regions, and with respect to gender. The difference between male and female enrollment is pronounced everywhere, in differing degrees from place to place, with the girls enrolled in lower percentages than boys in every category. For the country as a whole 35 percent of the boys' age cohort are enrolled in secondary education, but only 13 percent of the girls are enrolled. Kathmandu valley is significantly different for both sexes, with 67 percent of the boys and 45 percent of the girls. The low for both boys and girls is in the mountains, with only 27 percent and 6 percent of the age-groups respectively enrolled.

There are also some disparities related to the location of secondary schools. If enrollment is compared with location of schools, for lower secondary, the regions with the largest numbers of schools per person of the age cohort are the Western, Mid-Western, and Far-Western Development Regions. However, the highest enrollments, as a proportion of the age cohort, are in the Eastern, Central, and Western Development Regions.

Table 5.13

School/Student Ratios for Secondary Schools by Topographic Areas (1985)

Area	Level	School/Student Ratio
Mountains	Lower Secondary	1:35
Hills	Lower Secondary	1:64
Tarai	Lower Secondary	1:97
Mountains	Secondary	1:111
Hills	Secondary	1:164
Tarai	Secondary	1:232

Source: MOEC, *Educational Statistical Report of Nepal*, 1985

Table 5.14

Rural/Urban Distribution of Secondary Schools (1985)

Level	Rural	Urban	Total
Lower Secondary	3,294	284	3,578
Secondary	1,140	181	1,321
Total Secondary	4,434	465	4,899

Source: MOEC, *Educational Statistical Report of Nepal*, 1985

Table 5.15

Secondary Schools by Development Region (1985)

Development Region	Lower Secondary	Secondary	Total
Eastern	865	303	1,168
Central	1,000	420	1,420
Western	886	344	1,230
Mid-Western	478	145	623
Far-Western	349	109	458
Total	3,578	1,321	4,899

Source: MOEC, *Educational Statistical Report for Nepal*, 1985

A similar phenomenon is found when the Hills, Mountains, and Tarai are compared. The Mountains have a relatively high number of schools per potential student, and the Tarai has the higher enrollment per potential student. The Hills are relatively high in both categories.

With regard to the upper secondary schools, while the Central and Mid-Western Development Regions have among the higher proportions of both schools and enrollments, the Far-Western and the Eastern show the same inequity mentioned above. The Far-Western has a higher proportion of schools per person in the age cohort, but the Eastern Development Region has a much higher proportion of its cohort enrolled. And the Far-Western Development Region has one of the lowest proportions enrolled.

From the above it may be inferred that the major problem is equity rather than access. Secondary schools are scattered throughout the country. But enrollment of boys is higher than enrollment of girls, and proportions of the age cohorts actually enrolled are higher in some places than in others.

In addition to matters of access and equity, another disparity is the significant differences among the quality of different schools. This is indicated by the proportion of Grade 10 students who pass the SLC examination. Although the validity and reliability of the examination have been questioned above, informed sources suggest that some upper secondary schools have excellent records and others have done very poorly. Charts on the wall in District Education Offices show a few schools where 70 to 80 percent of those taking the examination pass, and many schools where the percentage is between 5 and 15 percent. As reported above, the more expensive private schools tend to have better passing records than the general public secondary schools.

Access to the higher quality secondary schools, because of costs to parents discussed earlier in this chapter, is beyond the reach of even the middle class population, let alone the 40 percent of the population now living below the poverty line.

5.2.5.4 Administration and Supervision. The present supervision system is generally regarded as not working well. Many interviewees reported that supervisors do not have sufficient travel funds (Travel Allowances and Daily Allowances, or TA/DA) to visit schools. Their titles are planned to be soon changed to "inspector," and sufficient travel funds are expected to be provided. Given the general scarcity of funds in the education sector, the intention for sufficient TA/DA to be provided cannot be regarded as a guarantee that funds will be forthcoming.

This proposed change in the roles of supervisors is supported by some who feel that teachers know what to do, but tend to be absent from class only because there is no monitoring operation to ensure that they do attend. Others believe that this is no assured solution to absenteeism.

Having a cadre of inspectors who monitor and report on teacher absences may help, but this is not the only factor affecting the low quality of secondary education, as discussed above in Section 5.1.4.6. If there are rewards for teachers who attend, and penalties for teachers who do not, there may be improvements in the schools. In addition, headmasters may do a better job of keeping records and completing reports on time if there is regular on-site inspection.

A similar matter involves the extent of people's participation in local school management. Which matters should be left to the local School Management Committees, and which should be handled by central Government through its officers at district level? Decentralization would encourage more people's participation, but government may fear the loss of quality control. However, if curriculum design, textbook preparation, and examinations are controlled centrally, there may be less need for central regulation of other aspects of administration and supervision.

Financial accountability for government grants-in-aid could also be partly decentralized, with district staff monitoring each school and being held responsible for the accuracy of periodic reporting.

From the perspective of discipline, political involvement at each level can ensure local people that professionals in the school system serve them well. On the other hand, if those in power are more concerned with short-term gains than long-run benefits through the quality of the education offered to their children, then no system of supervision is likely to provide accountability.

5.2.5.5 Costs and Financing. The cost analysis in Section 2.6.3 of Chapter 2 indicates a unit cost of Rs 784 per annum for lower secondary and Rs 895 per annum for upper secondary.

The cycle costs for a graduate of the secondary education cycle, including an SLC pass, are estimated to be Rs 13,602 per student. That includes an estimated government cost of Rs 6,675 and an estimated family and community cost of Rs 6,927. When compared with a model "ideal" cost for completing this cycle, in which a much higher proportion of the students who enter would actually achieve the certification (estimated at Rs 4,253), this cost is judged to be excessively high. (See Section 2.6.3 of Chapter 2, for details of this calculation.)

A major reason for the high cost is the small proportion of students who actually pass the SLC examination. A cycle cost based on the completion of Grade 10 examinations only would be only about Rs 6,299 per student.

To place this in context, the cost of secondary education is approximately Rs 6,299 per student. The cost of a School Leaving Certificate is Rs 13,602 per student, or an additional Rs 7,303. In terms of the "ideal" cost mentioned above, of Rs 4,253 per student, the present system is 67 percent efficient in moving students through the secondary education cycle, but only 31 percent efficient in providing them with a School Leaving Certificate.

Government provides just under 50 percent of the secondary education costs, and other sources (primarily local) finance the remaining 50 percent. Total cycle costs for secondary education as detailed in Chapter 2, including both lower and upper secondary schools, are estimated at Rs 13,602, of which government sources provide Rs 6,675 and non-government sources (family and community) provide Rs 6,927.

The issue for future financing relates to private versus public sources, and also to central government versus local community sources. Part of this issue is how much of the costs should be covered by fees, paid by the families of students themselves, compared to the proportion financed by public sources.

Families with sufficient financial means can send their children to private schools. By paying more, they expect better education for their children. Poor families do not have that choice. And since there are fees and other costs even in public secondary education, the poorest do not usually get to secondary school at all.

Thus, decisions on sources of finance will determine which economic groups may participate in secondary education. If more costs are financed through fees, then participation in the subsector is likely to become more elitist, increasingly reserved for the children of wealthy families. If more costs are financed from public sources, government financial requirements will expand.

Some kind of joint financing, between central government and local community sources, may be fruitful in two ways. First, it would help the central government bear the increasing costs. Second, the center may be able to exercise professional quality control (through curricular, textbook, examinations, and teacher training requirements), while the community groups may ensure more accountability. Accountability at the community level could be measured in terms such as efficient functioning of schools, teacher attendance, and the proportion who pass the national examinations.

5.2.6 Conclusions

There are eleven conclusions in this section, based on the assessment of the current status of secondary education as described in the early part of this chapter and on the analysis presented above.

Conclusion 1. Rapid Growth and Achievement. Secondary education has demonstrated an outstanding achievement by growing from a subsector with eleven schools and 1,680 students in 1951 to 4,899 schools (both lower and upper) and 496,821 students in 1985. Further, there are a few scattered schools where dedicated and competent teachers, stimulated by creative and disciplined headmasters, do an outstanding job of preparing secondary school students both for higher education and for life in the future.

Conclusion 2. Lack of Program Stability. Rapid growth, and frequent change of objectives and curriculum, have created many difficulties for the national secondary education subsector. There is a need for program stability during the anticipated continued growth. Implementation and implementability of plans and programs should guide the setting of goals and plans for this subsector.

Conclusion 3. Low Quality of Instruction. The general poor quality of instruction is reflected in the high proportion of failures on the SLC examinations, as well as in other indices of instructional quality.

Conclusion 4. Examination Deficiencies. The present SLC examination process is a major constraint to secondary education. The organization, staff, facilities, and procedures for invigilating, marking, and standardizing have not kept pace with the rapid growth in work volume. The present examination process needs further study of its reliability and validity.

Conclusion 5. Enrollment Demand Pressure. Demand for secondary education is likely to continue over the next two decades. To meet this demand would require major increases in the subsector capacity, probably doubling the numbers of students and teachers by the year 2000 A.D. This would stress vital inputs to the subsector, such as numbers of teachers, classroom space and other instructional facilities, and operating funds. Increased cost-sharing with local communities may be necessary. While capitalizing on the trend toward privatization, however, steps should be taken to maintain quality of instruction.

Conclusion 6. Poor Quality of Supervision. Supervision is currently insufficient. At present there are supervisors in the districts, but not enough of them actually travel to the schools. There is a lack of the necessary inspection to control teacher absenteeism, to train teachers to keep up with curriculum changes, and to motivate teachers to become more effective.

Conclusion 7. Decreasing Curriculum Relevance. There is a trend toward decreasing relevance in the secondary education curriculum. Increased relevance to the world of work is a prominent need. There is opportunity for gradual shifts toward more applications of the principles being taught to problem solving in the current Nepalese context. This could be accomplished without any major change in the curriculum and would support the current goals for the subsector. The present curriculum includes too few examples of how to use mathematics in accounting. Students could later teach the languages being learned and teach how to apply science to generation of electric power, to agricultural production, to new industry, and to other such needs.

Conclusion 8. Teacher Incentives Lacking. The system provides insufficient rewards to teachers for professional achievement. There is a need for new approaches to incentives and recognition for careers in secondary school teaching.

Conclusion 9. More Accountability Needed. There is a need for increased accountability throughout the system. Headmasters should report regularly on teacher and student attendance, and rewards to teachers should reflect their achievements in the classrooms and laboratories. This could become a part of the regular reporting requirements for District Education Offices.

Conclusion 10. Low Internal and External Efficiency. The secondary subsector is highly inefficient, both from external and from the internal efficiency perspectives.

Conclusion 11. Better Inservice Training Needed. Since a high proportion of the present teaching staff has not had training in education or pedagogical techniques, more adequate and flexible inservice training is needed.

3

5.3 RECOMMENDATIONS

Development comes through change, which normally requires modification of existing patterns of human behavior in order to evolve new patterns. Such change has a better chance of being accepted and persisting over time if each step is carefully fitted into existing situations, introduced incrementally, and implemented slowly and gradually. The recommendations below, based on the preceding analysis of the subsector, are offered to support this type of development.

Reform Examinations (Recommendations 1-5)

Recommendation 1. Separate the School Leaving Examination from the university entrance examination. The present SLC Examination serves the purpose of testing and certifying students for entry into higher education more than the purpose of testing and certifying students for having completed the secondary level of education. A single mechanism cannot serve both of these purposes effectively. Hence, a new mechanism to carry out the latter purpose (testing and certifying for completion of secondary level education) should be instituted. With due standardization this would make the SLC an entrance examination for higher education, in which case the name would need to be changed. An alternative would be to institute a university-based entrance examination for higher education, leaving the SLC Examination to perform its current functions. In the absence of either of these two recommended mechanisms, the education system of the country assumes the characteristics of a "straight highway system."

Recommendation 2. Decentralize the administration of the SLC Examination to the regional level. A system in which each development region manages its own examining and certifying procedures would reduce much of the present burden on the Office of the Controller of Examinations (OCE). This would facilitate the introduction of curricula best suited to the needs of the regions. The central standardization of the curriculum and the uniform treatment of schools, while viable for certain matters such as promotion of national interests and culture, is not viable in view of the increasing numbers of students from various strata of life and in view of increasing differentiation of the economic needs of the regions. With regionalization, the present OCE could act as the coordinator of the examinations systems and carry out several improvement measures including the research which now is absent.

Recommendation 3. Continue present efforts to revise and improve the SLC examination. Improvements in question papers, field administration, invigilation, marking of papers, and processing of results should be supported. Recommendations recently made by the Cambridge Syndicate to the Office of the Controller of Examinations should be implemented. These recommendations include improvements such as the following: installation of computer hardware and software; establishment of in-house facilities for small scale confidential and large scale non-confidential document reproduction; redesign of current documentation to allow for an increase in micro-electronic applications for storage, retrieval, and analysis of data; and decentralization of some of the functions of the office to the districts.

Recommendation 4. Validate examinations. Systematic research should be conducted on the validity and reliability of the examination process as a measure of achievement of secondary education, as a predictor of success in higher education, and as a preparation for various employment opportunities.

Recommendation 5. Develop prototype examinations. Prototypes of testing and evaluation materials should be developed on the contents of SLC syllabi, so that teachers as well as students may get instant feedback through their administration to students. Examination graders could also be trained to score the copies of these prototypes.

Decentralize Finance and Administration (Recommendations 6-9)

Recommendation 6. Expand cost-sharing with local communities. Further decentralization of financial support is recommended in order to cope with increasing numbers of secondary school students. If the government continues its grants-in-aid to secondary schools at the present levels, parents and communities should pay an increasing proportion of the total costs. This calls for increased flexibility by government in encouraging individual schools to be accountable to parents for the quality of education. It also calls for academic quality controls on a national level (as through continued supply of ever better textbooks and instructional manuals), and financial incentives to local schools for increased access to secondary education by disadvantaged groups, as well as for expansion of buildings and facilities.

Recommendation 7. Decentralize district level administration. Central government support to district level administration and supervision should also be decentralized. Increased accountability at district levels would be encouraged by decentralization of financial management. Decisions regarding the numbers of supervisors or inspectors, and the amounts of funds for travel to visit schools, could be made within the district. The district, in turn, should be held accountable for verification that government grants to individual schools are utilized for their intended purposes.

Recommendation 8. Fund disadvantaged children. A system of scholarships for disadvantaged children should be created in order to promote equity for members of this group.

Recommendation 9. Change grants-in-aid base. The formula for grants-in-aid to individual schools might be shifted to a multiple-criteria base. Criteria such as the numbers of students, schools' performance on national examinations, proportion of girls enrolled, extent of coverage of remote areas, local investment in science laboratories, and similar indices could be used to determine the size of the grants-in-aid.

Improve Instructional Quality (Recommendations 10-14)

Recommendation 10. Increase practical applications. Continue the gradual modification of textbooks to include more application of principles to practical problem solving. This could include applied areas such as accounting, teaching, tourism, transportation, forestry, manufacturing, and agriculture. The present form of vocational education in the general secondary schools, with objectives of increasing students' appreciation of the dignity of work, does not seem to be achieving its objectives. Alternative approaches should be implemented. These could include options such as arranged work assignments for students during vacation periods; non-curricular tours of industrial, commercial, agricultural, and other workplaces; special programs at school assemblies featuring talks by successful former students who are now succeeding in various jobs; and others. Any further "vocational" classes in the secondary schools should be limited to those vocations which are typically practiced in the locality.

Recommendation 11. Improve and localize teacher training. Short and intensive inservice teacher training programs for those teachers who have university degrees, but no background in pedagogy, should be offered as near to school locations as feasible. Such training programs should get due recognition. High priority should initially be given to training the headmasters, who then could train their teachers while on-the-job.

Recommendation 12. Reward master teachers. Expand the system of national and community rewards for master teachers. These might be based on criteria such as: (1) quality of instruction, (2) creative use of teaching aids, (3) innovative development of instructional materials, (4) high achievement of former students, and (5) unusual length of service. Other incentives and types of recognition should also be developed.

Recommendation 13. Establish school evaluations. The MOEC should establish a school evaluation program conducted by a team of professional experts. These evaluations might even be considered as part of the base for awarding grants-in-aid to individual schools.

Recommendation 14. Establish a materials production unit. A materials production unit should be established to prepare low-cost instructional materials for secondary school use. The Janak Education Material Centre could be expanded to produce more than merely textbooks. Perhaps the CTSDC's materials production unit could be mobilized.

Annex 5.1
Interviewees

Dolak Bahadur Gurung, District Education Officer, Damauli, Tanahu District

Anand Lal Pradhan, Director, Regional Education Directorate, Western Development Region, Pokhara

Suresh Raj Sharma, Professor of Chemistry, Tribhuvan University

Kedar Nath Shrestha, Director, Curriculum, Textbook and Supervision Development Centre (CTSDC), Ministry of Education and Culture (MOEC)

Birendra Kumar Singh, Acting District Education Officer, Kaski District, Pokhara

Narsing N. Singh, Secretary, Ministry of Education and Culture (MOEC)

Iswar Prasad Upadhyay, Controller of Examinations

Many parents of secondary school students

Annex 5.2

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Annex 5.3

A Four Years' Profile of Students Passing the SLC Examinations from Schools in the Western Development Region: 1981-1984 (2038-2041)

District	Year	0%	1-15%	16-29%	30-59%	60-89%	90-99%	100%	Total No.of Schools
1. Kaski	2038	3	13	3	-	1	-	-	20
	2039	1	7	10	4	-	1	2	25
	2040	3	15	7	2	1	1	-	29
	2041	5	8	7	10	2	1	-	33
2. Lamjung	2038	1	1	1	7	4	-	1	15
	2039	3	12	3	-	-	-	-	18
	2040	3	6	4	6	2	-	1	22
	2041	2	1	5	10	3	-	1	22
3. Gorkha	2038	-	1	1	7	-	1	1	11
	2039	2	1	3	6	1	1	-	14
	2040	-	3	3	7	3	1	-	17
	2041	2	1	1	8	4	2	1	20
4. Tanahun	2038	3	7	3	-	-	-	1	14
	2039	-	7	3	4	-	-	-	14
	2040	2	8	6	1	-	-	-	17
	2041	2	8	7	4	1	-	-	22
5. Syangja	2038	1	11	6	1	-	-	-	19
	2039	1	6	4	11	-	-	-	22
	2040	-	4	5	11	2	1	-	23
	2041	-	2	9	12	4	-	-	27
6. Manang	2038	-	-	-	-	-	-	-	1
	2039	-	1	-	-	-	-	-	1
	2040	1	-	-	-	-	-	-	1
	2041	-	-	-	-	-	-	-	1
7. Palpa	2038	3	10	3	2	-	-	-	18
	2039	2	4	7	6	1	-	-	10
	2040	2	9	2	7	2	1	-	23
	2041	3	6	5	6	5	-	2	27
8. Rupandehi	2038	2	7	4	-	-	-	-	13
	2039	-	6	5	4	1	-	-	16
	2040	1	13	5	1	-	-	-	20
	2041	3	6	3	7	4	-	-	23
9. Kapilvastu	2038	1	4	1	2	-	-	-	8
	2039	-	2	3	3	-	-	-	8
	2040	-	5	3	4	-	-	-	12
	2041	1	6	4	2	-	-	-	13
10. Nawal Parasi	2038	1	8	1	-	-	-	-	10
	2039	1	4	3	2	-	-	-	10
	2040	3	10	2	-	-	-	-	14
	2041	2	2	6	7	1	-	-	18

(table continued)

Annex 5.3 (continued)

District	Year	0%	1-15%	16-29%	30-59%	60-89%	90-99%	100%	Total No.of Schools
11. Arghakhanchi	2038	-	2	2	3	-	-	-	7
	2039	1	6	1	1	-	-	-	9
	2040	-	5	2	2	1	-	-	10
	2041	1	6	2	3	1	-	-	13
12. Gulmi	2038	-	-	4	5	1	-	-	10
	2039	-	6	4	2	-	-	-	12
	2040	-	2	7	6	-	-	-	15
	2041	1	6	4	7	1	-	-	19
13. Parbat	2038	-	5	2	4	-	-	-	11
	2039	1	4	4	5	-	-	-	14
	2040	1	4	8	6	-	-	-	19
	2041	4	6	6	4	3	-	-	23
14. Baglung	2038	-	-	-	-	-	-	-	-
	2039	-	4	3	1	-	-	-	8
	2040	-	8	2	1	-	-	-	11
	2041	1	4	6	3	-	-	-	14
15. Myagdi	2038	2	2	-	1	-	-	-	5
	2039	1	2	2	1	-	-	-	6
	2040	2	4	2	-	-	-	-	8
	2041	2	1	2	4	1	-	-	10
16. Mustang	2038	-	-	-	-	1	-	-	1
	2039	-	-	1	-	-	-	-	1
	2040	-	-	-	1	1	-	-	2
	2041	-	-	-	2	-	-	-	2
GANDAKI ZONE	2038	8	33	14	15	5	1	3	79
(Nos. 1-6)	2039	7	33	24	25	1	2	2	94
	2040	9	36	25	27	8	3	1	109
	2041	9	21	29	44	14	3	3	125
LUMBINI ZONE	2038	7	31	15	12	1	-	-	66
(Nos. 7-12)	2039	7	28	23	18	2	-	-	75
	2040	6	44	20	20	3	1	-	94
	2041	11	32	24	32	12	-	2	113
DHAULAGIRI ZONE	2038	2	7	2	5	1	-	-	17
(Nos. 13-16)	2039	2	10	10	7	-	-	-	29
	2040	3	16	12	8	1	-	-	40
	2041	7	11	14	13	4	-	-	49
WESTERN	2038	17	71	31	32	7	1	3	162
DEVELOPMENT	2039	13	71	57	50	3	2	2	198
REGION	2040	18	96	57	55	12	4	1	243
(No. 1-16)	2041	29	64	67	89	30	3	5	287

Source: Western Regional Education Directorate (n.d.). *School Profile, 1985-86 (Vidyalaya Vivaran, 2041-42)*, Pokhara: WRED

6. TEACHER EDUCATION

This chapter presents the current status of teacher education in Nepal. An analysis of needs and plans as well as constraints and issues, relating to both preservice and inservice teacher training, is also presented. A set of conclusions is derived from this analysis and form the foundation for major recommendations stated at the end of the chapter.

6.1 STATUS

This section presents the current status of teacher training. Current preservice and inservice programs are described in detail and teacher requirement projections are made.

6.1.1 Historical Setting

The history of teacher education in Nepal dates back to 1948 when the Basic Teacher Training Center was established to train primary school teachers for basic schools. However, the center was short-lived and was discontinued after the Normal Schools were established in 1956.

As recommended by the Nepal National Education Planning Commission (NNEPC), the College of Education was established in 1956 to train secondary school teachers. Simultaneously, the mobile normal schools were set up in different parts of the country to train primary school teachers. The College of Education provided a four-year B.Ed. program for teachers who had passed the School Leaving Certificate (SLC) examination. A one-year B.Ed. was introduced to train graduates from other disciplines. The normal schools offered a ten-month professional training program for students who had passed Grade 8. On the recommendation of the All-Round National Committee on Education (ARNCE, 1962), the permanent Primary School Teacher Training Centers were established, thus discontinuing the mobile normal school network. These training centers and the College of Education trained over 9,000 primary teachers and about 700 secondary teachers between 1956 and 1971.

The adoption of the National Education System Plan (NESP) in 1971 opened new prospects for the development of teacher education. Teacher training became popular overnight as a result of NESP policies that made formal training in education mandatory for obtaining tenure in school teaching and introduced a salary differential between trained and untrained teachers. Meanwhile, teachers' salaries

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were raised to a level that was comparable to other jobs with similar academic degree requirements. The NESP posed a new challenge to teacher education institutions. To cope with this, a high level workshop of teacher educators was held in 1971 which prepared a teacher education plan to meet the new demand for trained teachers and other educational personnel (IOE, 1973).

Consequently, all teacher training institutions, the College of Education, the Primary School Teacher Training Centres, the National Vocational Training Centre, and the English Language Training Centre, all under the Ministry of Education, were amalgamated into the Institute of Education under Tribhuvan University (T.U.). The Institute of Education (IOE) became the sole agency responsible for teacher training and related activities.

The scope of activities of the IOE was considerably enlarged and diversified. During 1972-1978 the IOE conducted 15 varieties of training programs for teachers without the SLC, teachers with the SLC (secondary school graduates), and Intermediate in Arts, B.A., and M.A. holders at its sixteen campuses. The programs were diversified in several ways: in level (primary, lower-secondary, secondary, and degree); in types (general, pre-vocational, vocational, and special); in duration (5 months to 2 years); in emphasis (general, major-minor combinations); and in field orientation (on-the-spot program, internship, and practice teaching). In addition, the NESP called for the IOE to develop an academic program for teachers to upgrade their academic standing by every training program in which they participated. This plan helped thousands of primary teachers to qualify for lower-secondary and secondary school teaching.

The higher expectation placed by the NESP on teachers and their training brought about a large increase in enrollment at the campuses of the IOE. Consequently, the IOE was compelled to stretch its training capacity to the maximum. The academic nature of the IOE programs, while helping upgrade teachers for higher positions, has limited immediate impact on school teaching. Moreover, the integration of the Education Campuses into Multiple Campuses resulted into a gradual deterioration in the quality of teacher education.

Although the concept of a multiple campus was adopted by T.U. to facilitate sharing of manpower and other resources, it did not materialize in practice. Usually, the multiple campus is headed by a campus chief from a discipline other than education. The focus of administration and the allocation of resources have centered on a discipline favored by the campus chief. Inadequate allocation of resources and frequent transfer of staff have adversely affected the quality of

teacher education. Teacher training was confined to mere academic lectures in the classroom.

While the IOE was expanding and consolidating its program, the seventh amendment of the Education Code in 1980 acted as a countermeasure to curb the further growth of teacher education because the ratified code states that training is not compulsory for obtaining tenure in teaching. This policy has adversely affected the enrollment and the quality of teacher education programs.

During the 1980's, the IOE experienced a decline in student enrollment and a reduction in the scope of its activities. The total enrollment dropped from 6,178 in 1980 to 2,826 in 1981. Meanwhile, the MOEC has undertaken various innovative projects, mainly with external agency assistance, in which the training of teachers has been a major component. Consequently, there is less inclination to send inservice teachers for longer duration training at education campuses.

6.1.2 National Goals and Strategies

Nepal's education policies and five-year periodic development plans have consistently emphasized teacher training as a crucial factor for the improvement of the quality of the education system. The target of the Seventh Plan (1985-1990) is to train 2,895 primary, 1,035 lower secondary, and 825 secondary school teachers. The plan also provides scholarships for producing 90 lower secondary and 90 secondary school teacher for 18 remote districts. About 8,000 inservice teachers will be trained through the USAID-sponsored Radio Education Teacher Training (RETT) project within the plan period. The Seventh Plan has also emphasized the need for appropriate training in order to bring qualitative improvement to science, mathematics, and English teaching.

To achieve universal primary education by the year 2000 A.D., the national goal is to train all primary school teachers, numbering about 63,765 to be trained between 1988 and 2000 and of which about 35,000 are untrained teachers. Out of these 35,000 untrained teachers, seventy-six percent have passed the SLC, which is a basic requirement for being a primary school teacher. However, they have not received any professional training related to primary school teaching. The remaining twenty-four percent of these untrained teachers (8,437) are both under-qualified, that is below SLC, and have not received any professional training related to their job.[1] In addition, the MOEC has set the goal of training 1,000 science teachers so that the standard of science teaching will be considerably improved.

[1]A recent policy decision has established the SLC as the minimum qualification for a primary school teacher.

The major past strategy for training teachers has been the campus-based degree-oriented teacher education programs. The Regional Directorates of Education and the District Education Offices occasionally have organized short-term training workshops for teachers of the respective regions and districts in selected subject areas such as science and mathematics.

With the implementation of innovative projects in education, such as the Seti Education for Rural Development (SERD) and the Primary Education Project (PEP), intensive on-site inservice training has been emphasized. In both of these projects, the strategy of Resource Centres and Cluster Schools has been utilized to provide training to teachers in the project areas. The short duration training program is organized by a Resource Person (RP) in the Resource Centre for the teachers of the 8-10 schools that belong to the school cluster.

The proposed strategies for training primary teachers include campus/training centre based programs, regionalization of training programs with the Regional Directorates of Education playing an effective role in training, vacation courses, and mobile training units for districts where the proportion of trained teachers is particularly low.

6.1.3 Structure

Teacher training programs are organized under two major institutions: Tribhuvan University (T.U.) and the MOEC. The long-term inservice and degree-oriented programs are conducted at the education campuses of T.U., whereas the short-term inservice training is managed by different agencies under the MOEC.

At the very outset, it should be noted that as teachers are not required to complete training before beginning their employment as teachers, inservice training, either the long-term or the short-term, is their first opportunity to acquire basic skills in teaching.

The preservice teacher education programs follow a 2+2+2 structure, after the SLC, leading to the Proficiency Certificate in Education, Bachelor in Education, and Masters in Education, respectively. The Proficiency Certificate in Education program is designed to train lower-secondary school teachers, the B.Ed. to prepare secondary teachers, and the M.Ed. to prepare teacher educators and specialists in areas such as curriculum, evaluation, and educational administration. The major purpose of these preservice programs is to prepare professionally trained educational personnel for schools, education campuses, and other agencies. In addition, a ten-month women's teacher training program is conducted for under-SLC girls

recruited from rural and remote areas to prepare them for primary school teaching in their respective villages. Some education campuses of T.U. provide five-month primary teacher training programs for inservice teachers who have passed the SLC (see Section 6.1.4.1 for more details).

These preservice programs are offered both to preservice students who come to study on their own and to inservice teachers who are sent by the MOEC for longer duration training.

The programs offered by T.U. through its education campuses are indicated below:

Eastern Development Region	**Programs**
Illam Campus	Proficiency Certificate in Education
Dhankuta Multiple Campus	B.Ed., Proficiency Certificate in Education, Women's Teacher Training program
Siraha Multiple Campus	Proficiency Certificate in Education
Central Development Region	
Birgunj Multiple Campus	B.Ed., Proficiency Certificate in Education
Tahachal Campus	B.Ed., Proficiency Certificate in Education
Faculty of Education, Kirtipur	M.Ed., B.Ed.
Sanothimi Campus, Bhaktapur	B.Ed., Proficiency Certificate in Education
Education Campus, Kathmandu	M.Ed., B.Ed.
Western Development Region	
Gorkha Campus	Proficiency Certificate in Education
Pokhara Multiple Campus	B.Ed., Proficiency Certificate in Education, Women's Teacher Training program
Butwal Multiple Campus	Proficiency Certificate in Education
Mid-Western Development Region	
Surkhet Campus	Women's Teacher Training Program, Proficiency Certificate in Education
Jumla Campus	Women's Teacher Training Program

There is no education campus in the Far-Western Development Region. Out of these thirteen campuses, five campuses offer programs at the proficiency certificate level. These campuses had one-year primary teacher training programs until 1981 when they were discontinued and replaced by a five-month package program for training primary school teachers. The Jumla Campus conducts the women's teacher training program only. The remaining seven campuses have the capacity to conduct B.Ed. programs. The M.Ed. program is offered at only two campuses.

The shorter-duration inservice training programs and the ten-month Radio Education Teacher Training (RETT) are organized by different agencies under the MOEC. These programs are indicated below (see Section 6.1.4.2 for more details):

MOEC Projects	Programs
Primary Education Project	Short-term (12 days)
Seti Education for Rural Development	Short-term (21 days)
Radio Education Teacher Training	RETT-I 117 lessons broadcast over 10 months (pedagogy)
	RETT-II 140 lessons broadcast over 10 months (content areas)
Science Education Development Project	Science Master Teacher Training (3 months)

6.1.4 Programs

Training programs for teachers can broadly be classified into two categories--preservice and inservice programs. However, it should be noted that inservice teachers are assigned to preservice degree-oriented programs by the MOEC.

6.1.4.1 Preservice Programs. The following preservice programs are organized by T.U. education campuses: the Women's Teacher Training Program; the Proficiency Certificate in Education; the Bachelor in Education; and the Masters in Education. These are each described below:

1. **Women's Teacher Training Program:** This is a special non-credit ten-month program started in 1971 to train girls recruited from rural and remote areas, as well as from disadvantaged sections of the population, and send them back to their villages as primary school teachers to raise girls' enrollment in primary schools. It is anticipated that the presence of female teachers in rural schools will encourage parents to send their daughters to primary schools. Hostel facilities and monthly stipends are provided to all trainees. This programs is supported by a network of eleven feeder hostels which provide opportunities for girls from backward areas to complete their secondary schooling (called the upgrading program) and later join the teacher training program. The Women's Teacher Training Program is financially and technically assisted by UNICEF and NORAD (Norwegian Agency for Development). This program is conducted at four education campuses: Dhankuta, Pokhara, Surkhet, and Jumla.

2. **Proficiency Certificate in Education:** This is a two-year program after the SLC. Upon completion of this program, the candidate becomes eligible to teach lower-secondary school. The trainee may specialize in any two subject areas from among the general or vocational subjects taught at the lower-secondary level.

3. **Bachelor in Education:** This is a two-year course, following the Proficiency Certificate in Education or the Proficiency Certificate level studies in Science and Social Sciences. After completing this course, the trainee is eligible to become a secondary school teacher. A one-year B.Ed. program is also offered to other B.A. or B.Sc. graduates. In the two-year B.Ed. program, the trainee may specialize in two areas from the general or vocational subjects that are taught at the secondary level.

4. **Masters in Education:** This is a two-year program after the Bachelor in Education. The trainee may specialize either in one of the professional education areas, such as curriculum and evaluation, or educational administration, or may specialize in one of the subject areas such as English, mathematics, and history. This program is primarily for preparing teacher educators to staff the education campuses.

Enrollment

The target and actual enrollment trend for the Women's Teacher Training Program, from 1979-1985, are indicated in Table 6.1. The enrollment figures in the Women's Teacher Training Program have all through these years been near the target. The overall intake figure for the last seven years indicates that about 96 percent of the quota has been realized.

The enrollment patterns in teacher education programs that are conducted by T.U. are indicated in Table 6.2. Enrollment in teacher education programs peaked in 1979 and 1980 (6,198 and 6,178 respectively) and declined thereafter mainly because training was no longer compulsory for tenure in teaching and because of the consequent deemphasis on sending inservice teachers for training on the part of the MOEC.

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Table 6.1

Target and Actual Enrollment of Women's Teacher Training Program

LOCATION	YEAR														TOTAL	
	1979		1980		1981		1982		1983		1984		1985			
	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
Pokhara Campus	90	72	80	71	80	84	80	69	90	90	100	90	90	77	610	553
Dhankuta Campus	54	56	60	59	60	75	60	61	65	62	75	62	65	41	439	416
Surkhet Campus	36	31	40	50	40	50	40	35	66	66	65	66	50	69	337	367
Jumla Campus	--	--	--	--	10	10	10	17	15	9	26	16	15	16	76	68
Total	160	159	180	180	190	219	190	182	236	227	266	234	220	203	1,462	1,404

Source: Education of Girls and Women in Nepal (CERID, 1986b).
The data for the year 1985 are collected from the Office of the Women's Education Project, MOEC.

Note: T = Target; A = Actual

Table 6.2

Enrollment in Teacher Education Programs (T.U.)

Year	Low Level	Proficiency Certificate in Education		Bachelor in Education		Masters in Education		Total
		Yr-1	Yr-2	Yr-1	Yr-2	Yr-1	Yr-2	
1977	490	2,309	451	637	639	19	25	4,570
1978	964	2,239	333	981	351	13	3	4,884
1979	913	3,019	547	1,313	329	60	17	6,198
1980	953	2,482	800	1,115	682	103	43	6,178
1981	309	1,390	507	-	537	-	83	2,826
1982	253	665	1,863	551	397	91	50	3,870
1983	310	1,375	969	859	322	118	66	4,019
1984	693	622	907	843	395	-	75	3,535
1985	416	817	959	120	862	171	62	3,407
1986	341	1,060	964	788	292	117	68	3,630
Total	3,642	15,978	8,300	7,207	4,806	692	492	43,117

Source: Planning Division, Tribhuvan University

Note: Low level training includes the ten-month Women's Teacher Training Program and the five-month primary teacher training in which teachers do not get university credits. The enrollment in these programs are shown here to indicate the total enrollment.

Curriculum

The curriculum of preservice teacher education programs can be categorized into three broad areas. These are general, professional, and specialization areas. The details are indicated in Table 6.3. As this table indicates, the emphasis in the Women's Teacher Training Program was on equipping women teachers with skills for teaching and for organizing development related activities. Other preservice programs were designed to provide a sound professional background and to develop skills in teaching two subject areas taught at the school level. The content areas and professional education courses are taught concurrently in these programs. The two-subjects specialization is considered appropriate given that the sizes of the lower secondary and secondary schools are small in Nepal. Trainees participate in six-week-long practice teaching in cooperating schools at the end of the training program.

Teacher Educators

With the expansion of teacher education programs in the 1970s, the number of teacher educators increased considerably at the T.U. education campuses. Concurrently, efforts were made to upgrade these newly recruited teacher educators both academically and professionally through an in-country M.Ed. program and by sending them to India and overseas for advanced studies. Still, the professional status of teacher educators, as assessed in 1986 (T.U., 1986), is far below the satisfactory level.

Out of 438 teacher educators, 230 have M.Ed's and other advanced training or academic degrees (Ph.D.'s) related to their field of work. These teacher educators are both qualified and trained. Another 104 teacher educators have M.A.s or M.Sc.s in content areas which they have been teaching at education campuses. But they have not participated in any professional training in relation to teacher training. The remaining 121 teacher educators (approximately 28 percent) are under-qualified (that is, they do not have an M.A. or M.Ed.), but they have received longer-duration training in their fields of specialization. These teacher educators are mainly concentrated in vocational areas.

The distribution and numbers of teacher educators at different education campuses, as shown in Table 6.4, is very discouraging. Most of the qualified and trained teacher educators are concentrated in four campuses within the Kathmandu Valley with heavy concentration in the Faculty of Education, Kirtipur. The outlying campuses such as Illam, Siraha, Jumla, and Surkeht are very poorly staffed.

Table 6.3

Curricular Contents of Preservice Teacher Education Programs

Area	Women's Teacher Training Program (10 mo. Non-Credit)		Proficiency Certificate in Education (Two Years)		Bachelor in Education (Two Years)		Bachelor in Education (One Year)		Masters in Education (Two Years)	
	Course Title	Full Marks	Course Title	Full Marks	Course Title	Full Marks	Course Title	Full Marks	Course Title	Full Marks
General		200		250		...		...		...
	Nepali	50	Nepali	100						
	Rural Development	50	English	100						
	Home Science	50	Nepal Study	50						
	Population and Environment Ed.	50								
Professional		800		200		300		300		400
	Education	100	Introduction to Education	50	Foundation of Education and Curriculum Development	100	Foundation of Education and Curriculum Development	100	Foundation of Education	100
	Teaching Nepali	100	Elementary Educational Psychology	100					Learning Theory and Evaluation	100
	Teaching English	100	Student Teaching	100	Educational Psychology	100	Educational Psychology	100	Practicum	100
	Teaching Math	100			Student Teaching	100	Student Teaching	100	Thesis or Research Methods (or one course in specialization area)	100
	Teaching Soc.St.	100								
	Teaching Science	100								
	Health Education	50								
	Arts & Crafts or Physical Education	50								
	Practice Teaching	100								
Specialization		...		700		800		200		400
			Any two subject areas taught at lower-secondary level (e.g.English)		Any two subjects from general or vocational subjects taught at secondary level (e.g.,English)		Two courses from Methods of Teaching (e.g., Teaching Math in Secondary School)	100	Any one of professional education or subject description (e.g., English)	
			English Structure	100	Introduction to Linguistics	100	Teaching Science in Secondary School	100	Phonetics and Phonology	100
			Speech and Oral English	100	Reading & Writing	100			Syntactic Theory	100
			Reading & Writing	100	Intro. English Literature	100			Applied Linguistics	100
			Methods of Teaching English	50	Methods of Teaching English	100			Teaching English as a Foreign Language	100

Source: Courses of Study for Different Teacher Education Programs. T.U. Institute of Education, 1980.

Table 6.4

Status of Teacher Educators in Different Education Campuses (1987)

	Campus	Assistant Instructor		Instructor		Assistant Lecturer		Lecturer		Reader	Professor	Total
		Temp	Perm	Temp	Perm	Temp	Perm	Temp	Perm			
1.	Illam	1	-	5	-	1	9	-	-	-	-	16
2.	Dhankuta	2	-	-	-	3	10	-	8	1	-	24
3.	Siraha	-	-	-	-	-	6	-	3	-	-	9
4.	Birgunj	-	-	2	2	8	15	-	7	1	-	35
5.	Faculty of Education, Kirtipur	-	-	-	3	6	22	-	48	23	10	112
6.	Tahachal	-	-	-	-	9	19	-	18	1	-	47
7.	Sanothimi	-	5	-	9	5	42	-	14	1	-	76
8.	Education Campus	-	-	-	1	-	3	-	10	5	-	19
9.	Gorkha	-	-	2	1	6	6	-	1	-	-	16
10.	Pokhara	1	-	2	-	12	15	-	8	-	-	38
11.	Butwal	1	-	3	1	6	14	-	3	-	-	28
12.	Surkhet	1	-	1	-	10	3	-	1	-	-	16
13.	Jumla	1	-	-	-	4	1	-	-	-	-	6
	Total											432

Source: Personnel Administration Division, Tribhuvan University.

Consequently, the standard of teaching varies widely among the campuses. Moreover, there is a shortage of teacher educators in areas such as science education, mathematics education, and English language education.

Instructional Facilities

The instructional facilities at the education campuses did not keep pace with the increasing number of trainees and faculty members. Between 1974-1975 and 1978-1979, some physical facilities were constructed at some campuses. Since then only repair of existing facilities has been done. Development of physical facilities has been suspended at present, although there are pressing needs for more and better physical facilities at some campuses. The expenditure pattern on teacher education for FY 1985-1986 reveals 98.42 percent for recurrent and only 1.58 percent for capital expenditures. With salary and wages requiring about 82 percent of the expenditure, very little remains for improving the instructional facilities. Consequently, the development of training materials and field-oriented activities was gradually reduced due to the lack of funds.

Internal Efficiency

The intake and output figures of the Women's Teacher Training Program for 1979-1984 are given in Table 6.5. In these six years 603 trainees passed of a total intake of 1,024. Thus, the efficiency ratio of the Women's Teacher Training Program is about sixty percent. The drop-out rate is about four percent. An encouraging fact is that the pass percentage in the Women's Teacher Training Program has increased from a low of 32 percent in 1979 to a high of 87 percent in 1984. The flow of trainees in the different teacher education programs is shown in Table 6.6.

The crude progression rates exhibit substantial variability from 1978 to 1986. During this period, the average progression rate for the Proficiency Certificate in Education was about 55 percent. Data collected from Tahachal Campus indicate that during the period 1983-1987, out of 790 students enrolled in the first year, 649 students progressed to the second year. This indicates a crude progression rate of 82 percent. This finding suggests that progression rates may vary widely from one campus to another.

Table 6.5

Retention and Pass Figures in the Women's Teacher Training Program

	Dhankuta			Pokhara			Surkhet			Total		
Year	Intake	Appeared in End of Year Exam	Pass	Intake	Appeared in End of Year Exam	Pass	Intake	Appeared in End of Year Exam	Pass	Intake	Appeared in End of Year Exam	Pass
1979/80	59	59	8	73	73	35	31	31	9	163	163	52
1980/81	59	59	31	71	61	27	49	--	--	179	128	58
1981/82	75	75	55	84	84	46	--	49	49	159	208	150
1982/83	61	53	18	69	57	26	50	50	25	180	160	69
1983/84	62	57	48	90	85	76	35	32	15	187	174	139
1984/85	42[1]	--	--	90	85	75	66	65	60	156	150	135
Total	316	303	160	477	445	285	231	227	158	1,024	975	603

Source: Education of Girls and Women in Nepal (CERID, 1986b).

[1]Not counted in the total intake because of their not having completed the course when the data were collected.

Table 6.6

Flow of Trainees in Different Teacher Education Programs

Year	Proficiency Certificate in Education		B. Ed.		M. Ed.	
	Yr-1	Yr-2	Yr-1	Yr-2	Yr-1	Yr-2
1977	2,309	451	637	639	19	25
1978	2,239	333	981	351	13	3
1979	3,019	547	1,313	329	60	17
1980	2,482	800	1,115	682	103	43
1981	1,390	507	-	537	-	83
1982	665	1,863	551	397	91	50
1983	1,375	969	859	322	118	66
1984	622	907	843	395	-	75
1985	817	959	120	862	171	62
1986	1,060	964	788	292	117	68

Source: Planning Division, Tribhuvan University

As the enrollment data for the B.Ed. program include both the one-year and the two-year programs, it is not meaningful to estimate the progression rates from the total enrollment. Data available from the T.U. Planning Division for five Education Campuses for three years (1982-1984) show that 707 students have continued to the second year out of the total 909 students, which indicates an average progression rate of 79 percent. For the M.Ed. program, the average progression rate is 88 percent.

The enrollment and outflow of different teacher education programs are shown in Table 6.7. The data in Table 6.7 are fragmentary and at best can only be used to roughly estimate the outflow from different teacher education programs. The Proficiency Certificate in Education and the Masters in Education are of two year's duration each. As such, the outflow in any given year could be compared to one-half of the enrollment two years earlier for a rough approximation of the completion rate. The Bachelor in Education program is of two types - one-year and two-year durations. So, the outflow of the B.Ed. program could be compared with 70 percent of the enrollment two years earlier to estimate the completion rate.

Table 6.7

Teacher Education Programs, Enrollment, and Outflow: 1977 - 1987

	Proficiency Certificate		Bachelor in Education		Master in Education	
Year	Enrollment	Outflow	Enrollment	Outflow	Enrollment	Outflow
1977	2,309	856	637	622	19	24
1978	2,239	766	981	857	13	4
1979	3,019	1,041	1,313	719	60	17
1980	2,482	390	1,115	733	103	49
1981	1,390	423	NA	716	NA	11
1982	665	42	551	67	91	3
1983	1,375	702	859	NA	118	7
1984	622	31	843	NA	NA	NA
1985	817	NA	120	NA	171	NA
1986	1,060	NA	788	NA	117	NA

Source: Planning Division, Tribhuvan University

Over the period from 1979 to 1984, 2,629 students completed the Proficiency Certificate program. Compared to one-half of the enrollments over the period two years earlier, i.e., from 1977 to 1981, of 6,112 the crude completion rate is estimated to be 43 percent. For the Bachelor's program, 2,235 students completed from 1979-1984 which, compared to the enrollment over the period 1977-1982 of 4,597, 70 percent of which would be 3,218, indicates a completion rate of 70 percent.

For the Master's program, for which there are some gaps in the data, the outflow of 87 graduates from 1979-1983 compared to the enrollments of 286 from 1977 to 1982 suggest a crude completion rate of (87/143=) 60.8 percent.

Relevance and Impact

The Women's Teacher Training Program has had a positive impact on increasing girls' enrollment and on developing positive attitudes among rural people toward female education (CERID, 1986b). The CERID study also revealed that the performance of women primary teachers was found to be satisfactory. In addition, they have served as "role models" in rural communities, contributing to the welfare of the family as well as that of the community.

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No systematic mechanism exists to determine the relevance and impact of teacher education programs. The Board of the Education Faculty annually reviews the relevance of contents of different programs and makes necessary adjustments. These reviews have led to periodic reforms in teacher education curricula. However, the complaint remains that teacher education programs are too theoretical and academic.

Few studies have attempted to assess the impact of teacher education programs. A study on the effectiveness of the B.Ed. program at one of the Education Campuses in Kathmandu indicated that students of schools with trained teachers performed better at the SLC examination than students of schools which had no trained teachers (Shrestha & Malla, 1982). A high percentage of trained teachers stated that they believe their training had improved their teaching behavior and that they had tried to use some of the techniques learned in the training. A majority of the responding headmasters appreciated the sense of regularity, cleanliness, and smartness of their teachers that were trained at the campus. However, they were not satisfied with the skill level of their trained teachers in preparing lesson plans and in making adequate use of instructional materials.

Another study conducted by CERID (1984) on the performance and attitudes of trained and untrained teachers showed that trained science teachers adopted more indirect methods of teaching, which involve active student participation, than untrained ones. The difference in the use of indirect teaching was not significant between trained and untrained primary teachers. In other subject areas, the attitudes of trained teachers were significantly more positive than those of untrained teachers with respect to use of different teaching techniques, use of questioning, evaluating pupil progress, caring for individual differences on the basis of needs and interests of students, and promoting student participation in classroom activities. The study also noted several restricting factors, such as lack of instructional materials, large class size, and heavy workloads, that hindered trained teachers from playing their professional roles efficiently.

Summary of Preservice Programs

Considerable progress has been made in establishing education campuses in different parts of the nation and in organizing different levels of preservice teacher education programs. However, the preservice programs have remained theoretical and academic. The T.U. Faculty of Education has 432 professional staff, but the appropriate distribution and placement of teacher educators have not taken place.

Due to limited budgetary allocations, the instructional resources have remained inadequate at all education campus. The internal efficiency of preservice programs is less than satisfactory and the impact of trained teachers on schools is less than expected. Thus, there is a need for increasing instructional resources at education campuses to provide practical and relevant training programs to the preservice teachers. Only then will the internal efficiency and the impact of the training programs be improved.

6.1.4.2 **Inservice Programs.** There are five major inservice teacher training programs that are described below. These are the following: the Five-month Package Program; the Radio Education Teacher Training Project; the Seti Education for Rural Development Project; the Primary Education Project; and the Science Education Project.

The five-month package program is conducted by T.U. and the remaining inservice programs are managed under different projects. In addition, Regional Directorates of Education and the District Education Offices conduct short-term seminars and workshops for teachers. However, these are conducted only occasionally and do not follow a regular pattern. Thus, these programs are not dealt with here.

1. **The Five-Month Package Program:** This is a special non-credit program for primary school teachers selected by the MOEC. The emphasis is on skills needed for teaching primary school subjects. A similar five-month program is also conducted for lower-secondary school teachers of science, English, and mathematics. This program is offered at selected education campuses. During the present academic session, this program is given at Surkhet, Butwal, Sanothimi, and Tahachal Campuses.

2. **The Radio Education Teacher Training (RETT) Project:** This USAID-sponsored project was designed to increase access to training by rural and remote area teachers. Training was delivered via regular radio broadcasts (165 hours) supported by self-instructional materials (four textbooks). In August 1980, 117 teachers in five pilot sites were selected and given an orientation for their participation in the first experimental year. This RETT I was designed to provide professional training to under-SLC primary school teachers. RETT II was begun in 1984 with the goal of developing a radio course in English, mathematics, science and Nepali, the four subjects causing the most SLC failures. In 1986, 117 twenty-minute

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English language lessons were pilot-tested with 171 teachers in five districts. A revised version of this series is scheduled to be broadcast to over 400 teachers in 10 districts during 1987.[2]

3. **The Seti Education for Rural Development (SERD) Project:** The SERD project is an undertaking launched by His Majesty's Government of Nepal with support of UNDP, UNESCO, and UNICEF in 1982 in the Seti Zone, which is one of the most backward regions of the country. Consistent with the philosophy of this project to make education support rural development, the SERD project developed a practical training program with a focus on instructional improvement and linking school activities with rural development. The project organized a 21-day training program for primary school teachers followed by a 7-day refresher training program in the succeeding year. Selected teachers were also provided with a 12-day health training program. A variety of other training programs for Headmasters, School Management Committee members, and adult education teachers were provided under the project. Most of the training was organized in Resources Centre schools, which are leading schools in clusters of 8-12 schools. The best teachers are awarded with a ten-month training opportunity at the project headquarters.

4. **The Primary Education Project (PEP):** This project began in September 1984 with an IDA credit of US $12.78 million and UNICEF technical assistance. The goal is to achieve low-cost qualitative improvement in primary education by means of teacher training, provision of supplementary materials, and a support system including regular supervision of classroom instruction. The training of teachers is done by the Primary Supervision and Training Unit (PSTU) at the Curriculum, Textbook and Supervision Development Centre (CTSDC) of the MOEC. Primary school teachers are given a 12-day training program followed by 10-day and 9-day refresher training programs in succeeding years.

The training program is conducted at Resource Centre schools. The design of the PEP visualized the clustering of groups of 7-14 schools within a maximum walking distance of three hours from a centrally located school. The individual school unit in the cluster is called a satellite school and the central school is called the Resource Centre (RC). The RC is conceived as the central venue for most of the project activities such as teacher training, supervision, and the supply of educational materials to the schools in a cluster.

[2]Efforts are underway to direct RETT and other project-based training programs toward training inservice teachers who have passed the SLC.

The PEP followed a cascade system of teacher training. The PSTU staff (eight in the PSTU and another seven in the Primary Materials Unit) were trained by UNICEF advisors and local experts. These trained individuals now organize training for Resource Persons (RPs) who, in turn, conduct training programs for teachers in the Resource Centre. In 1985, the PSTU staff conducted six-week training programs for 24 RPs from 24 school clusters established in the same year in six of the 75 districts in the country (four in each district). These RPs conducted 12-day training programs for primary school teachers in their respective school clusters. The RPs also organized two-day seminars for the Headmasters and School Management Committee members of the schools in the cluster.

5. **The Science Education Project:** The Science Education Project is a six-year project (1984-1989) funded by the Asian Development Bank and His Majesty's Government. The technical assistance is provided by UNDP with UNESCO as the implementing agency. The project is designed to improve the quality of science and mathematics education in Grades 6-10 of secondary schools by setting up a network of science and mathematics resource centers called SEDUs (Science Education Development Units). Twenty-five SEDUs are planned to be established which will be staffed by Science Master Teachers (SMTs). These SMTs will be responsible for organizing and conducting inservice training programs at the SEDU. The project also supports some campuses of Tribhuvan University to increase the output of science and mathematics teachers. Two-year in-country fellowships are available for 1,020 students to study for the Certificate in Science or science education, or for a B.Ed. specializing in science education.

A group of 35 SMTs was trained for three months in 1987. Twenty-five SEDUs have been established in different parts of the country. About 1,000 science teachers and 450 mathematics teachers from 700 secondary schools will receive four-week training at the SEDUs between 1987 and 1989.

Enrollment

The target and actual enrollment of five-month inservice primary and lower-secondary training are shown in Table 6.8. The trend clearly indicates a reduced emphasis on longer-duration inservice training. Even with a decreasing quota allocation, the actual enrollment has fallen behind the target by more than fifty percent at the primary teacher training level (1984-1986) and by about sixty percent at the lower secondary teacher training level.

Table 6.8

Target and Actual Enrollment in the Five-Month Package Program

Year	5-Month Primary Teacher Training		5-Month Lower Secondary Teacher Training	
	Target	Enrollment	Target	Enrollment
1982	2,800	600	-	240
1983	2,800	600	-	150
1984	510	165	135	44
1985	510	391	135	44
1986	575	225	135	75

The RETT I project had a target of enrolling 1,000 teachers the first year (1981) and then 2,500 teachers per year until the need for qualified under-SLC-pass teachers would be met. By 1985, RETT I had enrolled 5,593 teachers in its ten-month program of five one-hour broadcasts per week. The RETT II project has completed pilot-testing 117 twenty-minute English language lessons with 171 teachers in five districts in 1986. A revised version of this series was planned to be broadcast to over 400 teachers in 10 districts in 1987.

The SERD project provided 21-day training to 720 teachers by the end of 1986. Four hundred and five of these teachers have received second cycle seven-day refresher training. In addition, 307 teachers have received 35-day adult teacher training and another 105 have participated in the 35-day Cheli Beti (out-of-school girls) teacher training by the end of 1986. During this period, 114 teachers participated in the 12-day Health Training course.

Under the Primary Education Project, 532 teachers received 12-day training in 1985 and these teachers also participated in ten-day second cycle training in 1986. The number of teachers who participated in 12-day training in 1986 was 458. In addition, two-day orientation seminars are organized for the Headmasters and the Chairmen of School Management Committees.

Curriculum

The inservice training programs have emphasized the acquisition of teaching skills. The shorter-duration programs have focused on specific skills and on the use of project generated materials. The course outlines for the five different inservice programs are shown in Table 6.9. Obviously, the project-sponsored training programs have focussed on skills and materials that are immediately applicable to classroom situations. Further, the SERD training program has also included some development components such as afforestation.

Teacher Trainers

The campus teachers who conduct five-month programs have learned much from experience, but most of them are not specifically trained to conduct training courses. The status of these teachers indicates that most of them are M.ED.s and thus qualified for their jobs. However, these teacher educators need to be up-dated in training methodologies and exposed to the realities of the school situation. On the other hand, the experienced and qualified staff are concentrated in the Kirtipur Campus.

The RETT professional staff who write radio scripts and prepare self-instructional materials are inadequately trained to do these highly technical jobs and they lack a strong foundation in the pedagogical aspects of training. Some of the staff have recently completed their professional training abroad.

The SERD project has mostly B.Ed.s with some teaching experience and/or experience as a school supervisor. They lack both specialized training and experience in teacher training.

The Primary Education Project has a pool of experienced staff (seven at the PMU and eight at PSTU). About one-third of these staff have a Master's degree in education and the rest have B.Ed.s only. Only a few of them have experience in teacher training.

The Science Education Project is staffed by four science specialists, two mathematics specialists, and one English specialist. These specialists have Master's degrees and experience with curriculum development and teacher training. There are four expatriate technical advisors working on the project.

In all of these projects, most of the staff are recruited internally from Regional Directorates of Education, from District Education Offices, and from other departments of the MOEC. Some are recruited by open competition. The practice of recruiting experienced teacher educators from Tribhuvan University is almost non-existent.

Table 6.9

Curricular Contents of Different Inservice Programs

Five-Month Primary Teacher Training		Five-Month Lower-Secondary Teacher Training (Any One of English Science & Math)		Radio Education Teacher Training I	SETI Education for Rural Development (21-Day Training)	Primary Education Project (21-Day Training)
Education	100	Method I (Theory)	100	Education	First Week	Intro to the Project
Teaching Nepali	100	Method II (Practical)	100	Teaching Nepali	Intro to the Project	Lesson Planning
Teaching Math	100	Probability & Stat.	100	Teaching Maths	Use of Blackboard	Preparation and Use of Instructional Materials
Teaching Social Studies	100	Modern Math	100	Teaching Social Studies	Methods:	Teaching Nepali
Teaching Science	100	Geometry	100		--Question/Answer	Teaching Social Studies
Teaching English	100				--Discussion	Teaching Health
Health (First Aid)-- (30 hours of Practical Instruction)					--Story Telling	Teaching Maths
					--Demonstration	Preparation of Lessons and Related Materials
					--Role Play	Integrated Teaching
					--Exercise	Practice Teaching
					Use of Stick Figures	
					Teaching/Learning Materials	
					Second Week	
					Preparation of Lesson Plans, Model Lessons and Related Materials in Nepali, Social Studies, Health Education, & Maths	
					Third Week	
					Practice Teaching	

Sources: 1. Courses of study for five-month package program. Institute of Education, Tribhuvan University, 1982.
2. Course outlines collected from related projects.

Instructional Facilities

The project-sponsored training programs have more instructional facilities than the campus-based programs. The RETT I project distributed radio sets and self-learning materials to the trainees. Both SERD and PEP provide teacher's guides and sets of teaching materials to the trainees. Detailed planning and significant preparatory activities take place before conducting inservice training programs. The Science Education Project has developed teacher's guides in science and mathematics and also plans to distribute science equipment to the participating schools.

Internal Efficiency

The percentage of successful candidates in the five-month program is about 90 percent. In RETT I, about fifty percent of the teachers have passed the final examination. In both SERD and PEP, since training has been made compulsory for selected teachers of project schools, the internal efficiency has remained high.

Relevance and Impact

Although the five-month program is specially designed to increase the number of trained primary school teachers, the output has been low and has been decreasing over the last few years. No systematic evaluation has been done to determine the impact of this program on the instructional standards of primary schools.

The evaluative study of RETT I (Butterworth, et al., 1983) has revealed that RETT has successfully reached the target group of untrained rural primary school teachers. RETT seems to have some impact on teachers' knowledge of education and subject areas in the primary school curriculum. However, it seems to have less of an impact on their teaching techniques. The study noted that the impact of RETT was constrained by implementation problems and the lack of institutional support to the project.

The evaluation study of RETT II (Shaw, et al., 1987) recommended that the Radio Education Division (RED) should direct its programming at a larger audience, including all SLC-passed teachers. The team further recommended that the RED should administratively evolve into an independent Distance Education Center, servicing all of the radio education needs of the MOEC.

The evaluative study of SERD (CERID, 1986) revealed that the 21-day inservice training supported by regular supervision has had some positive impact on classroom teaching. The trained teachers reported that the level of their classroom teaching improved greatly in terms of better student activities, use of more teaching aids, and higher motivational levels among the students. However, class observations by the evaluation team showed that the class instruction was still dominated by the teachers talking, indicating the need for focussing training on the techniques that lead to students' active participation and learning. The integration of instructional and rural development components into teacher training is appropriate in the Nepalese context and a significant achievement of the SERD project.

The evaluative study of PEP (CERID, 1986a) indicated that the 12-day teachers' training proved to be effective in changing the traditional approaches to teaching and encouraging a wider range of teaching behavior. The two major areas of the training which have been helpful to the project school teachers, and which they have put into practice, are preparation and use of instructional materials and use of varied teaching methods. One distinct outcome of the training program has been the adoption of grade teaching in early primary grades by most of the teachers. The evaluation team also observed that classroom management, display of instructional materials, cleanliness of the classrooms, and student discipline had improved, particularly in those schools where grade teaching had been adopted. Several trained teachers noted that heavy teaching loads, large class sizes, inadequate knowledge and skills, and lack of funds are serious constraints preventing them from applying what they were taught. They also made a number of suggestions to improve the program and requested a longer-duration training.

Instructional Improvement in the Primary School Project

This project was conducted by CERID for a three-year period (1982-84) in three schools in each of two districts, Kaski and Dhanusha. The results have amply demonstrated a positive effect for a three-way approach. This has involved intensive teacher preparation requiring their participation in the design and development of materials, provision of supplementary materials for students, and parental involvement in children's education. This has improved students' achievement levels and those aspects of school culture that promote active student participation in learning.

6.1.5. Capacity

The annual capacity of various preservice and inservice programs, based on the past enrollments cited above, are summarized as follows:

Preservice Programs	Capacity	Location
Women's Teacher Training Program (10-month under-SLC training)	300- 350	Five education campuses
Proficiency Certificate in education	1,300-1,400	Ten education campuses
Bachelor in Education	800-1,000	Six education campuses
Masters in Education	80- 120	Two education campuses
Inservice Programs		
Five-month primary teacher training	900-1,200	Four education campuses
Five-month lower-secondary training	150- 250	Four education campuses
Radio Education Teacher Training	1,000-1,500	Nationwide
Seti Education for Rural Development	300- 400	Five districts of Seti Zone
Primary Education Project	500- 900	Six districts
Science Education Project	500- 750	25 SEDUs

6.1.6 Teacher Requirements Projections

Of 51,266 teachers in 1985, only about thirty-two percent were trained. Thus, there was a huge backlog of about 35,000 untrained teachers. In order to achieve universal primary education by the year 2000 A.D., the number of teachers required to staff primary schools and the number of teachers to be trained are shown in Table 6.10.

The primary teacher requirements presented in Chapter 2 are slightly higher (91,575 compared to 88,565) than the figure in Table 6.10. The number of teachers to be trained is synchronized with the Five-Year Development Plans. Thus, the number of teachers to be trained is quite high within the remaining three years of the current Seventh Plan. Considering the total teacher requirements, 4,905 teachers need to be trained each year which includes 2,036 teachers who are already in schools and 2,869 preservice teachers.

Table 6.10

Primary Teacher Requirements

Year	Total Number of Teachers	Number of Teachers to be Trained		
		Old	New	Total
1988	58,977	2,036	6,079	8,115
1989	64,241	2,036	6,079	8,115
1990	69,505	2,036	6,079	8,115
1991	72,017	2,036	2,512	4,548
1992	74,529	2,036	2,512	4,548
1993	77,041	2,036	2,512	4,548
1994	79,553	2,036	2,512	4,548
1995	82,065	2,036	2,512	4,548
1996	83,365	2,036	1,300	3,336
1997	84,665	2,036	1,300	3,336
1998	85,965	2,036	1,300	3,336
1999	87,265	2,036	1,300	3,336
2000	88,565	2,036	1,300	3,336
Total				63,765

Source: *Programs to Fulfill Basic Needs in Education.* MOEC, 1987

In 1985, of the 11,120 lower-secondary and 7,242 secondary school teachers, about 46 percent were trained. The teachers required for secondary schools and their training requirements are shown in Table 6.11. About 2,085 teachers need to be trained each year. This includes 774 teachers who are already working in secondary schools and 1,311 preservice teachers. As the policy of adopting five-year secondary education has already been made, the secondary teacher requirements are shown in one column, including both lower-secondary and secondary teachers.

6.1.7 Costs and Financing

The unit cost per student of the teacher education programs conducted by Tribhuvan University is shown in Table 6.12. From 1977 to 1986 the average unit cost per student year was Rs 3,580 and the average per graduate cycle cost was Rs 7,865. The average unit cost per student is gradually increasing and was Rs 5,630 per student for 1986.

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Table 6.11

Secondary Teacher Requirements

Year	Number of Teachers			Number of Teachers to be Trained		
	Lower Secondary	Secondary	Total	Old	New	Total
1988	14,185	8,962	23,147	774	1,311	2,085
1989	15,384	9,642	25,026	774	1,311	2,085
1990	16,479	10,481	26,951	774	1,311	2,085
1991	17,205	11,350	28,555	774	1,311	2,085
1992	17,563	12,232	39,795	774	1,311	2,085
1993	17,838	12,962	30,800	774	1,311	2,085
1994	18,263	13,475	31,738	774	1,311	2,085
1995	18,886	13,821	32,707	774	1,311	2,085
1996	19,623	14,133	33,756	774	1,311	2,085
1997	20,361	14,521	34,882	774	1,311	2,085
1998	21,044	15,010	36,054	774	1,311	2,085
1999	21,687	15,557	37,244	774	1,311	2,085
2000	22,342	16,109	38,451	774	1,311	2,085
Total						27,105

The unit trainee costs for the different inservice primary teacher training programs are indicated in Table 6.13. These data show that the unit cost per trainee per day ranges from Rs 24.06 to Rs 46.65. Since the programs vary in duration, size, content, and approach, it is not possible to make a meaningful comparative analysis of the unit cost of different inservice programs. Neither is a cost effectiveness analysis of inservice programs currently feasible, as data on the effects of different programs on students' achievement level are not available. Furthermore, all inservice programs are at formative stages of evolving into practical and relevant training programs that can be effective in the Nepalese context.

Table 6.14 presents the allocation of public expenditures for education and the share for teacher education for the period 1977-1985. The decreasing amount of financial resources allocated to teacher education has a detrimental effect on the quality and consolidation of training programs conducted by education campuses of Tribhuvan University.

Table 6.12

Teacher Education Programs: Cost per Student and per Graduate

Year	Total Enrollment	Public Expenditure (in '000 Rs)	Cost per Student
1977	4,570	11,969	2,619
1978	4,884	13,744	2,814
1979	6,198	13,889	2,241
1980	6,178	12,266	1,985
1981	2,826	14,359	5,081
1982	3,870	14,592	3,771
1983	4,019	15,574	3,875
1984	3,535	18,745	5,302
1985	3,407	18,790	5,515
1986	3,630	20,436	5,630
Total	43,117	154,364	3,580

Source: 1. Planning Division, Tribhuvan University
2. *A Survey of Teacher Education in Nepal* (T.U., 1986)

Table 6.13

Unit Cost of Primary Teacher Training

	Program	Unit Cost per Trainee (Rs)	Unit Cost per Trainee per day
1.	Five-month Training Program (Sanothimi Campus)	3,609	24.06
2.	Seti Education for Rural Development Project (21-day)	980	46.65
3.	Primary Education Project (21-day)	436	36.33
4.	RETT Project (10-month)		
	Per Enrollee	2,494	8.31
	Examination Candidate	2,797	9.32
	Passing Trainee	8,589	28.63

Source: Training cost data from related projects

Table 6.14

Proportion for Teacher Education

of Total for Education Sector

(Rs x 1,000)

Year	Expenditures on Education	Expenditures on Teacher Education	% Share for Teacher Education
1977	270,331	11,969	4.43
1978	315,342	13,744	4.36
1979	330,580	13,889	4.20
1980	384,232	12,266	3.19
1981	534,849	14,359	2.68
1982	734,000	14,592	1.99
1983	815,708	15,574	1.91
1984	838,671	18,749	2.24
1985	1,240,717	18,790	1.51

Source: *A Survey of Teacher Education in Nepal* (T.U., 1986)

Note: The expenditure for teacher training incurred by the MOEC is not included in the above figures.

6.2 ANALYSIS

On the basis of information provided in the preceding section on status, teacher training needs and plans, as well constraints and issues relating to teacher education, are now presented.

6.2.1 Needs

The capacity of training institutions and on-going inservice programs is far below what is needed to meet the requirements for trained teachers. To achieve universal primary education (UPE) by the year 2000 A.D., there is a need to train about 5,000 teachers per year. The present capacity of the T.U. education campuses and two projects (PEP and SERD) can train only about 2,000 teachers each year. The RETT program can cover about 1,000 teachers a year but this should be increased.

Given the current pace of training, the project-based inservice training can hardly train all the teachers in the project districts. These projects usually recruit only two teachers from schools of a cluster. Thus, the PEP will address only 65 percent of 5,852 teachers in six districts and the SERD will cover about 60 percent of the teachers with their training programs. Moreover, there is a need for linking and integrating short-term inservice training with the minimum essential (five-month) training planned for a primary school teacher.

Not only is the quantitative expansion of teacher education called for to achieve UPE by the year 2000 A.D., but also there is a need to raise the relevance and quality of teacher training programs. For this, the existing teacher training curricula should be revised to include practical and relevant content and methods. The facilities in the education campuses should be considerably upgraded to support these changes.

Various training programs of different agencies and under different projects can potentially contribute to the evolution of a practical and relevant training program. But there is no coordination among these programs. Thus, there is a need for coordination and a more unified direction for teacher education.

At present, there is a shortage of trained English, science, and mathematics teachers. The capacity of the education campuses to produce those teachers is very limited. Thus, there is an urgent need to prepare competent teacher educators, and to increase financial resources to train science, mathematics, and English teachers.

Finally, there is a need to specify clearly the roles of preservice and inservice programs. There is as much a need for preparing preservice teachers before they enter teaching as for training inservice teachers.

6.2.2 Plans

The inclusion of a teacher training component in the programs to fulfill basic needs in education is a significant step in the right direction. Teacher training is a critical factor that will help reduce wastage in primary education and raise its effectiveness. The proposals to create regional and district level structures to provide practical and on-the-spot training represent a sound approach.

The Seventh Plan (1985-1990) has modest quantitative targets and emphasizes qualitative aspects of the teacher training program. The plan has also emphasized the consolidation of efforts to provide teacher training through radio.

Tribhuvan University has reduced its enrollment targets for education campuses because of the fewer numbers of inservice students who are sent for training by the MOEC. The Faculty of Education is in the process of establishing a Department of Primary Education to promote research and development of practical programs to train primary school teachers. In addition, this department will provide special courses for primary teacher educators.

Various projects, such as SERD, PEP, and SEDC, have developed their own teacher training plans without consultation with other agencies. Thus, there is no comprehensive plan for integrating these different training programs. This represents a very inefficient use of scarce resources.

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Finally, there are no plans for producing teacher trainers and for providing support services to trained teachers when they start teaching. Both of these needs have to be met for the nation to have the capacity for producing a continuing supply of trained teachers.

6.2.3 Constraints

The major constraints in the teacher education sub-sector can be grouped under the following six headings, which are briefly discussed immediately following their listing:

1. Lack of clear direction
2. Lack of clarity with respect to programmatic components and training modalities
3. Lack of competent teacher educators
4. Lack of a distinct and separate administrative structure
5. Lack of incentives for training due to waiving of compulsory teacher training
6. Decreasing budgetary allocations

1. **Clear Direction.** There is no clear and consistent commitment to teacher training. In principle, nobody denies the importance of teacher training. In practice, when it comes to allocation of adequate resources and provision of manpower, teacher training is the first item to be cut. The 1971 policy that made training compulsory for tenure was reversed in 1980. There is also a lack of clarity with respect to the nature and direction of preservice and inservice teacher training programs. The MOEC emphasizes inservice training only. But, if preservice preparation is not given due consideration, the quality of education may suffer in the long run.

2. **Programmatic Components and Training Modalities.** Each project or agency develops its individual curriculum and training materials, and promotes its own modalities. There is no clear agreement about the minimum knowledge and skills necessary for effective teaching and the most effective way to impart them. Thus, there is no standard approach and format for teacher training.

3. **Teacher Educators.** During the development phase of teacher education (1960s and 1970s), most faculty members were trained abroad. At present, there is no plan for producing the needed numbers of competent teacher educators, particularly at the primary level. There is thus a shortage of competent teacher educators at education campuses and this shortage will become more serious over time if this problem is not addressed. Even in projects with strong training components, the staff do not have sufficient background and training in teacher education. This lack of appropriately qualified and adequately trained manpower is a serious constraint to the quantitative expansion and qualitative improvement in teacher education.

4. **Administrative Structure.** Under the MOEC, there are at least four agencies conducting teacher training (PEP, SERD, RETT, and SEDC). The work of these agencies has not been fully utilized because of a virtual absence of coordination. Although there is a training section in the Education Administration Division of the MOEC, the efforts and directions of different training programs are nevertheless not effectively coordinated or monitored.[3] At Tribhuvan University, more than half of the thirteen education campuses are under multiple campus adminstration, where the campus chief is from a discipline other than education. At these campuses, education is treated as a subject in humanities or social science which does not require practical preparation and experience in the classroom. Thus, teacher training has become more academic and isolated from the realities of the classroom situation. There is no administrative mechanism to coordinate and direct the efforts of the different education campuses. Thus, there is no separate administrative structure for teacher training either at the MOEC or Tribhuvan University.

5. **Incentives for Teacher Training.** After the 1981 waiving of compulsory training for tenure in teaching, the popularity of teacher training has diminished considerably. The MOEC has recently decided to adopt a four-tier promotional system in primary school teaching. Teacher promotion will be based on training and job performance as evaluated by district school inspectors. It is anticipated that this measure will attract teachers to training.

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[3]A coordination committee recently has been constituted to bring about coordination among different agencies.

6. **Decreasing Budgetary Allocations.** Due to decreasing budgetary allocations for teacher education, as a percentage of the total education budget, inservice and preservice programs have both been reduced drastically. The development of training materials, workshops for teacher educators, and other research and development activities in teacher training have diminished because of insufficient funds. Teacher education at the university is virtually at a standstill at present because of the lack of resources.

6.2.4 Issues

Major issues pertaining to teacher training are quality and relevance of training programs, accreditation and certification of inservice programs, and cost and effectiveness of different training modalities. These issues are discussed below within the five analytic themes of external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing.

6.2.4.1 External Efficiency. External efficiency refers to the relevance of the training program to the subsequent activities of the teachers. The project-based short-term inservice training programs are relevant and have the most immediate impact on classroom instruction. This is to be expected as the closer the training is to the work situation, the more relevant and more effective it becomes.

Many educators believe that the longer duration formal preservice teacher training is less relevant and has a lesser impact on improving classroom instruction. Although there is no compelling evidence to support this belief, the issue of the relevance and impact of different teacher education programs deserves serious consideration. This is especially important where educational resources are scarce and must be used as efficiently as possible. Although there have been various efforts at reforming the teacher education curriculum, the basic preservice curriculum remains essentially theoretical in nature. This is partly due to the lack of research into the required skills and knowledge for effective teaching in Nepal, and party to the lack of an effective dialogue between the university and the consumer of their graduates, the schools and other related agencies.

Other factors that have reduced the quality and relevance of teacher training are: (1) training is no longer required for permanent teaching positions; and (2) lack of instructional materials and of incentives for good work do not inspire trained teachers to apply what they have learned. Primary school teaching has remained an unattractive and unchallenging job. Teachers are only minimally

involved in the development of school programs and instructional materials. Thus, the issue of external efficiency should be viewed from two points of view: increasing the relevance and utility of training programs on the one hand, and on the other hand providing necessary material, morale, and professional support to teachers while they work.

The second major issue is the accreditation and certification of short-term inservice teacher training programs. In order to ensure the optimal impact of these training programs, the inservice teachers should be able to accumulate credits and be certified as trained teachers. This accreditation and certification should be based on the demonstrated acquisition of knowledge and skills relevant to effective teaching, not merely the attendance at training programs.

6.2.4.2 **Internal Efficiency.** The issues of internal efficiency are related to the quality of instruction and output of the teacher education program. It may be considered to have two dimensions: (1) the relationship of what enters to what exists; and (2) the relationship of quality to cost.

Since teaching is not regarded as a very attractive job, most of the preservice students in teacher training programs have weak academic backgrounds. Meanwhile, the education campuses are not offering challenging enough programs to attract more qualified students. Lack of training materials and other instructional facilities have restricted the opportunities for conducting practical and effective training programs. The motivation and morale of teacher educators are low. Some education campuses do not have appropriately qualified and trained staff. The instructional process at the education campuses is characterized by a large amount of lecturing by teacher educators and note-taking on the part of students.

The average progression rates are 53 percent for the Proficiency Certificate in Education, 65 percent for the B.Ed. program, and 81 percent for the M.Ed. program. The quality of instruction in the preservice programs needs to be improved in order to reduce drop-out rates in the Proficiency Certificate and the B.Ed. programs. The drop-out rates in the five-month and shorter-duration inservice programs are negligible.

The unit cost per student at the education campuses is rising because of decreased enrollment. The trainee/teacher educator ratio is 8.4:1. As salaries and wages consume 82 percent of the total expenditures for teacher education, there are insufficient financial resources for programmatic improvement at the education campuses.

6.2.4.3 Access and Equity. Access to teacher training is concerned with the availability of sufficient places for those who qualify to participate in the program. Equity concerns the extent to which training opportunities are accessible to people of different ethnic groups, gender, and location.

Thirteen education campuses that are located throughout the nation provide access to training to those who are willing to join teacher training programs. The education campuses admit almost all students who apply to them.

About 25 percent of the total enrollment in the teacher education programs are girls. The MOEC has had a special program since 1971, the Women's Teacher Training program, to increase the numbers of female teachers. In addition, the MOEC provides quotas and scholarships for students and inservice teachers in remote areas to participate in the teacher training programs.

6.2.4.4 Administration and Supervision. The issues in administration and supervision are concerned with the management of training programs and the quality control of training activities.

The preservice training programs are managed by the T.U. through its education campuses. The MOEC selects and sends inservice teachers for longer-duration training. At present, there is no administrative unit in the University to coordinate and monitor teacher training activities at different campuses. The assignment of staff and the budgetary allocations are made by the T.U. Central Office. However, there is no mechanism for quality control of different training activities among the education campuses. There is also a lack of communication among education campuses.

The shorter-duration inservice training programs are managed by different projects under the MOEC. There is no common curriculum across these training programs.

The T.U. and the MOEC have been conducting their training programs in their own ways with different content and approaches. There is a need for more coordination between the MOEC and the T.U. Faculty of Education.

6.2.4.5 Costs and Financing. Costs refer to the amount of funds required for conducting teacher training programs and financing refers to the sources of these funds.

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The unit cost per student per year in the preservice programs was Rs 5,630 in 1986. A total of Rs 20 million was spent on preservice teacher education programs in 1986. About 98 percent of the total amount is for recurrent costs and only two percent is for capital costs. Salaries and wages account for 86 percent of the total recurrent costs. Thus, there are very limited funds remaining for instructional improvement at the education campuses. Scholarships are provided to 20 percent of the quota allocated for different teacher training programs which accounts for six percent of the total costs of teacher education. The major issue facing preservice teacher education program is the rising recurrent costs which consume almost all available financial resources and leaves little for substantive program improvement.

The unit costs per trainee in the inservice training programs vary from Rs 436 for the PEP 12-day training program to Rs 3,609 for the five-month program and Rs 8,589 for the ten-month RETT program. Stipends, travel and daily allowances, and food are the major costs in the shorter-duration inservice programs. Less than five percent of the total amount is spent for the instructional materials in these programs. The unit costs per trainee per day show that the shorter-duration inservice training is more expensive than the longer-duration training. This is to be expected because of the economics of scale available to those programs of longer duration.

The major source of funds for the preservice teacher education program is HMG grants to the university. The Women's Teacher Training Program is financially supported by UNICEF. HMG provides 96 percent of the total costs of the teacher education program. Student fees provide the remaining four percent. Thus, the preservice teacher education program is virtually totally dependent on the government subsidy. At present, there is no external assistance agency support to the regular T.U. teacher training programs.

The inservice teacher training programs managed by the MOEC are financed by different external assistance agencies (RETT by USAID, PEP by an IDA loan and UNICEF, SERD by UNDP and UNICEF, and the Science Education Project by ADB). The major issue relating to the financing of different inservice training programs is whether the MOEC can sustain these programs after the external assistance agency support is withdrawn.

6.2.5 Conclusions

The following ten conclusions summarize the main findings from the above analyses.

Conclusion 1. The capacities of the on-going preservice and inservice programs are far below the requirements to achieve UPE and to improve the quality of teaching at the secondary level.

Conclusion 2. The emergence of different directions and modalities for teacher education is due to the absence of a coordinating structure and the lack of clarity with respect to the functions of different agencies.

Conclusion 3. The quality and efficiency of the preservice training programs are adversely affected by their theoretical orientation, inadequate preparation of teacher educators, unavailability of training materials, lack of adequate financial resources, and above all by the fact that training is not required for tenure in teaching.

Conclusion 4. Different agencies (e.g., the MOEC and T.U.) and projects (e.g., PEP, SERD, and RETT) develop their own teacher education plans and curricula without mutual consultation or coordination.

Conclusion 5. Teacher education planning is generally done in isolation without due consideration given to plans for preparing teacher trainers and developing a support system for the newly trained teachers.

Conclusion 6. The project-based inservice programs have made impressive progress. However, these programs should be closely coordinated and monitored. The accreditation of inservice programs is an emerging concern, and could become a serious problem.

Conclusion 7. Education of teachers is costly and needs to be linked closely to the utility and impact of training on the quality of instruction.

Conclusion 8. There is no definite policy concerning the preparation and employment of preservice teachers.

Conclusion 9. There is no plan for adequate preparation of teacher educators working in either inservice or preservice programs.

Conclusion 10. The teacher education program is, in general, hampered by not being considered a professional preparation program.

6.3 RECOMMENDATIONS

The following fourteen recommendations for teacher education are given in priority order. They are based on the analysis presented in this chapter.

Recommendation 1. Clarify the status and role of teacher education in the total educational context in order to have it maintain a clear and consistent direction. Considering the crucial role of teacher education in raising the efficiency and effectiveness of the education system, it is important to consider the teacher education program as a national priority. It is also necessary that the minimum essential training be made mandatory for entering and obtaining tenure in teaching. This can be done on a phased basis.

Recommendation 2. Specify the minimum essential levels of skill and knowledge required for primary and secondary school teachers. A standard curriculum should be developed with a required core component for all training programs and an optional component which may vary with the needs of teachers or with the philosophies of different training organizations.

Recommendation 3. Consider all teacher education as a professional program with due consideration given to preparing faculty members, developing training materials, and maintaining a balance between theoretical and practical content. In order to design and implement practical and relevant teacher training programs, it is necessary that the education campuses be converted into unitary campuses and that adequate financial and material resources be made available for practical activities at the campuses and for a school-based practicum. Opportunities should be provided for teacher educators to upgrade their knowledge and skills, and to prepare training materials.

Recommendation 4. Develop a multi-media package for inservice teachers, including the use of radio and self-instructional modules involving face-to-face contact with experienced teacher trainers, so that they can fulfill minimum training requirements. Such a package would ensure active participation by inservice teachers and promote the introduction of new technology into teacher education. The training needs of teachers from difficult geographic contexts should also be addressed by the multi-media training package.

Recommendation 5. Establish a coordinating mechanism to integrate all teacher education programs. A Teacher Training Coordination Board should be established at the national level to consider plans and policies for the consolidation of the teacher education programs.

Recommendation 6. Establish a teacher education accreditation board to maintain minimum standards and a unified direction for teacher education. A Teacher Education Accreditation Board can be constituted at the national level to examine contents and modalities of different teacher training programs. On the basis of periodic observation and study, the Board could accredit different programs and make suggestions for their improvement.

Recommendation 7. Include plans for training of inservice teachers and preparation of preservice teachers in a comprehensive plan for teacher education. The planning of inservice and preservice teacher training should be done separately with a clear assignment of responsibilities to different training agencies.

Recommendation 8. Organize inservice training programs as close to schools as possible and promote the use of Resource Centres for the recurrent training of the inservice teachers. This will help to make training programs practical and relevant to the local situation, and will have the most immediate impact on classroom instruction.

Recommendation 9. Provide the minimum essential inservice training to as many teachers as possible and the longer-duration degree-oriented training to the selected ones who have demonstrated excellent professional performance. In order to raise the quality and the effectiveness of school programs, it is important to give basic minimum training to all untrained teachers now in primary and secondary schools.

Recommendation 10. Develop a cadre of primary teacher educators to facilitate the training of primary school teachers as visualized in the programs to fulfill basic needs in education. The preparation of teacher trainers is a prerequisite for making training programs effective.

Recommendation 11. Develop standard materials for inservice and preservice primary teacher training. This should include a teacher's guide, reference materials for teachers, and samples of teaching aids.

Recommendation 12. Synchronize the strengthening of existing institutions (education campuses) and the creation of new structures (regional training centres and mobile teams) to match the training capacity with teacher requirements. In order to ensure an adequate supply of trained teachers for the expanding education system, the intake capacity and programs of the education campuses can be improved. The establishment of the regional training centers should be synchronized with the long-term plans for training inservice (including refresher courses) and preservice teachers. These regional training centers, through satellite centers as necessary, should organize programs to meet the training needs of teachers of all 14 zones of the country.

Recommendation 13. Clarify the role of T.U. in the preparation of teachers by a reorganization of the Faculty of Education. The T.U. Faculty of Education should consult with the MOEC in conducting different teacher education programs at its campuses so that its production is consistent with teacher requirements in different districts.

Recommendation 14. Entrust the T.U. Faculty of Education, in addition to regular preservice programs, with the design and implementation of appropriate teacher educator programs, and have them undertake research and prototype projects to enhance the efficiency and effectiveness of teacher education. For the long-term improvement of the teacher education program, the preparation of the cadres of primary teacher educators and other specialists (such as science and mathematics educators) is a prerequisite. Similarly, a strong research base is required for identifying effective training materials and modalities.

Annex 6.1

Interviewees

Prithu Charan Baidya, Campus Chief, Tahachal Campus, Tribhuvan University

Neelam Basnet, Chief, Education of Girls and Women in Nepal (EGWN) Project, Ministry of Education and Culture (MOEC)

Peter Crawley, Chief Technical Advisor, Seti Education for Rural Development (ERD) Project

Toran Bahadur Karki, Chief, Science Education Project, MOEC

Keshab P. Nepal, Joint-Secretary, Planning Division, MOEC

Panna Lal Pradhan, Chief, Planning Division, Tribhuvan University

Margaret Sands, Chief Technical Advisor, Science Education Project, MOEC

Bimal Man Shrestha, Head, Primary Supervision Training Unit/Primary Materials Unit (PSTU/PMU), Primary Education Project

Madan Man Shrestha, Campus Chief, Sanothimi Campus, Tribhuvan University

Kedar Nath Shrestha, Chief Specialist, Curriculum, Textbook and Supervision Development Centre (CSTDC), MOEC

Satya Bahadur Shrestha, Liason Officer, Seti Education for Rural Development Project, MOEC

Shankar Lal Singh, Under-Secretary, Training Section, MOEC

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Annex 6.2

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7. TECHNICAL AND VOCATIONAL TRAINING

During the past seven development plan periods, from 1956 to the present, Nepal has built infrastructures in communication, industry, energy, and other sectors. The expansion of opportunities in the education sector has produced many educated individuals who are qualified to plan and manage activities of the other sectors. It has recently become recognized, however, that there is a greater shortage of skilled and motivated technical and vocational manpower than anything else needed to support development. The preparation of a sufficiently large trained and motivated workforce, in fact, has been very slow. The current technical and vocational workforce is insufficient in size, adversely affecting a large number of development activities at their planning, operational, and maintenance phases. The shortage and inadequacy of technical and vocational manpower is more acute in rural than in urban areas. The most vital and costly component of any development effort has always been manpower, affecting the planning and progress as well as the quality of the work performed.

7.1 INTRODUCTION

A review of the past performance in the area of technical and vocational training indicates that higher level technical manpower has either been procured externally or Nepalese have been trained in other countries. Middle level manpower has been trained in Nepal. Non-local individuals are generally employed here as unskilled or semi-skilled laborers. Therefore, participation in implementation of the development activities, even those in rural areas, has not directly benefited the local people. If these people had been given some sort of training the situation would have been very different. It would have offered employment opportunities locally and the people would not need to seek jobs elsewhere, leaving their traditional activities behind.

Low agricultural yields, decreasing availability of marginal farming land, a high population growth rate, and other factors are making the life of the rural population increasingly more difficult. These pressures are causing them to leave subsistence farming and look for work in other sectors. This is one reason why almost everyone with sufficient schooling wants to leave the agricultural sector. However, the slow national economic growth has not provided modern sector employment for the ever-increasing numbers of job seekers. One of the main reasons for the slow economic growth appears, in turn, to be the delay in the

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preparation of sufficient numbers of skilled and efficient manpower. The lack of sufficient financial resources to support the rate of modernization, of course, has also been a constraint in this area.

7.2 STATUS

This section on the status of technical and vocational training begins with an overview of the subsector history. This is followed by a description of the national goals, strategies, and trends in this subsector. The structure of the subsector is next described, and the section closes with detailed descriptions of the various training programs.

7.2.1 Historical Setting

Some formal technical training programs for the newly required skills were initiated by government departments during the late 1950s and early 1960s. These were established to train junior agricultural technicians, auxiliary nurse-midwives, mechanical craftsmen, and civil works supervisors. These programs were, however, designed only to meet the internal manpower requirements for newly initiated development activities. The programs were later upgraded to a level that trained middle-level supervisory technicians. This changeover of programs, unfortunately, caused the production of basic level manpower to be reduced rather than expanded.

The imbalance between technical manpower supply and demand is well documented in the National Education System Plan (1971-1976). Committed to the production of various kinds and levels of manpower, the Plan document emphasized the need for training large numbers of basic level skilled manpower from the vocational wings of the secondary schools. This vocationalization and technification of education was, in fact, one of the main thrusts of the NESP. Lower secondary schools were asked to start pre-vocational education, general secondary schools were asked to allocate 22 percent of their curriculum content to technical and vocational subjects, and the vocational secondary schools were asked to provide 44 percent. All schools were provided resources to build vocational workshops, produce vocational training materials, and provide vocational instructors.

The schools, however, found the resources inadequate to equip the vocational workshops with necessary training materials; also, the schools could not get sufficiently experienced vocational teachers. It eventually was realized that the preparatory planning and the fiscal resources for such a program were insufficient.

Further, the students were mainly interested in a general education and did not favor learning technical and vocational subjects.

In summary, the vocational schools failed for four reasons. First, they lacked adequate resources and skilled teachers; second, there were too many vocational schools established; third, students and their guardians were more interested in the preparation for higher education than in the acquisition of terminal usable skills; and fourth, the skills imparted by the vocational schools were not sufficient to prepare graduates for jobs available in the modern sector marketplace.

7.2.1.1 Technical Education Program. After a study undertaken by CERID to evaluate the efficiency of the vocational education program, the vocational schools were phased out. Compulsory vocational education in secondary schools was replaced by the skill-intensive technical education program that was also known as the Trade Schools Plan. Before beginning the Trade Schools Plan the National Education Committee seriously considered two alternatives: (1) drastically reducing the number of vocational schools from 120 to about 28 with about two in each zone, and strengthening the remaining schools with enough resources and suitable teachers in adequate numbers; and (2) separating the vocational schools altogether from general schools and having a skill-intensive vocational training program in a more effective environment. The second alternative was chosen and finally adopted in 1979.

A Technical and Vocational Education Committee (TVEC) was established under the Development Act of 1956 for the management of technical schools. The Directorate of Technical and Vocational Education, which is a division of the MOEC, functions as its Secretariat. The Directorate coordinates the training activities of the technical schools, conducts feasibility studies for establishing new schools, designs curricula, conducts final examinations to certify successful candidates, approves the program of each technical school, and allocates financial resources to the schools. It operates within the policy guidelines established by the TVEC.

7.2.1.2 Needs for Reformulating Policies. The strong commitment of government to train different kinds and levels of manpower is well documented in the NESP. For this reason the NESP emphasizes technical and vocational education. The following five conditions still existed when the NESP was developed in 1971, and a new policy on skill training activities was thus needed.

1. A large number of school drop-outs had to be taught some skills that would help them obtain a job near their homes, and thus save them from possible dislocation from farming and other similar socio-economic activities in their villages to go elsewhere in search of employment.

2. Modern sector development activities were taking place both in urban and in rural areas. These activities required newer skills and, if these skills could not be found locally, persons from other countries would come to Nepal to fill these jobs. This would eventually deprive the local inhabitants of the full benefits of the development activities taking place in their areas.

3. The training programs offered by different agencies had to be coordinated properly so that the skill training offered by one agency would be recognized by the other agencies.

4. A skill grading and skill testing process had to be instituted so that persons with skills but with no formal qualifications could be employed.

5. There had to be a standard certification of skills for all the skill training programs.

7.2.1.3 **Need for Technical Schools.** The vocational courses offered by the general and vocational schools after NESP were not good enough to meet these requirements. The employment opportunities that emerged after the NESP were in the areas of construction, mechanics, electricity, plumbing, health, and agriculture trades, but the vocational schools did not have programs in all these areas. Therefore, it was realized that there was a need to establish separate technical schools to produce such basic level manpower. The following nine principles directed the establishment of the separate technical schools.

1. The production of basic level manpower was to be in the areas where demand was the highest.

2. The development of the program to separate it from the general secondary school system so that intensive skill training courses could be provided.

3. Raising the curricular weightage of the trade areas to 80 percent and allowing the training to take place mostly in the workshops or farms rather than in the classrooms.

4. The use of qualified, experienced, and motivated instructors.

5. Admitting only school drop-outs aged 15 or over which, in fact, forms a large group of needy youths.

6. The provision of one-year on-the-job training with prospective employers, with evaluation of the trainees to be made by the employers.

7. The schools had to offer three-year training programs on a regular basis, but short-term and crash programs in trade areas could also be included.

8. The technical schools established in the rural areas were to offer training in construction, agriculture, and health trades; and those established in urban areas were to offer courses in general mechanics, auto mechanics, plumbing, carpentry, and electrical trades.

9. Foreign assistance was to be sought for capital development of these schools. The operating costs of the schools and stipends to the students were to be met by government.

The rural technical schools of Jiri, Lahan, Dhankuta, and Jumla draw students from their neighboring districts. They supply manpower to the integrated rural development activities in their areas. Manpower demand in the trade areas taught at these schools is high enough to avoid immediate unemployment problems among their graduates. The urban technical schools established in the Kathmandu Valley produce manpower for the private, semi-government, government, and self-employment sectors.

7.2.2 National Goals, Strategies, and Trends

Goals

The goals for technical and vocational training are basically related to national development goals. These are to raise incomes of the people, fulfill their basic needs, provide employment, and increase production of goods and services. In recent years, a great deal of emphasis has been placed on the fulfillment of basic needs. Technical and vocational training can help fulfill basic needs by providing necessary manpower to produce goods and services, and by developing skills that will increase employment.

The educational policy established by the NESP stresses making the school system a producer of basic level manpower. This policy has now been changed. Yet, at the secondary level, a separate stream of vocational technical education has been created. The higher education policy still maintains its emphasis on the preparation of technically trained manpower.

Strategies

The present national strategies regarding vocational and technical education can be summarized as follows:

1. Providing an orientation to various vocational areas at the secondary school, through a compulsory vocational education subject.

2. Expanding the technical (trade) schools for increased production of basic level manpower in the rural and urban areas.

3. Promoting technical education at higher levels.

4. Transferring below-SLC (School Leaving Certificate) level training courses of the university technical institutes to the technical schools.

5. Expanding technical and vocational training programs of various ministries, particularly training conducted by the Cottage and Village Industry Department of the Ministry of Industries and by the labor supply center of the Ministry of Labor, and similar places.

6. Incorporating short-term on-the-spot training for local farmers and artisans under the integrated rural development projects.

7. Developing Nepalese manpower to replace foreign workers by providing appropriate kinds and levels of skill training.

8. Developing a skill testing system and certification program to increase the employment of self-trained or institutionally trained persons.

9. Encouraging self-employment by providing various facilities including credit.

Trends

The trends in vocational and technical education are as follows:

1. Vocational education at the school level now remains just one of the subjects taught, without the specific objective of providing skill training. The resources to support the subject are insignificant, and practical components are almost completely absent.

2. The technical (trade) schools were developed mainly during the Sixth Plan (1980-1985) period. There are a number of additional schools being planned, but government has now become cautious of rapidly expanding trade schools.

3. The non-SLC technical training programs in the technical institutes of the university have served a useful purpose, but the university wants to move them from the university as soon as possible.

4. Technical education programs of various ministries and departments are designed to develop particular types of manpower needed for their own activities only.

5. There is a continuing shortage of basic level manpower in the nation, especially in the rural areas.

7.2.3 Structures

The Directorate of Technical and Vocational Education of the Ministry of Education and Culture (MOEC) offers basic-level to middle-level training programs in its newly established technical schools. The Directorate has plans to set up more schools in different parts of the country. The Technical Institutes of the University also offer basic- and middle-level courses in various trades. Besides the MOEC, other ministries such as Labor and Social Welfare, Industries, Communications, etc., have also organized regular training activities and they are described below in this chapter.

7.2.3.1 Ministry of Education and Culture (MOEC). The MOEC has been involved in vocational education since the mid-1960s. During 1960-1970, a number of secondary schools were converted into multi-purpose schools providing vocational education in agriculture, industrial arts, secretarial science, and home economics. During 1971-1980 vocational education was made compulsory in all secondary schools and many schools offered intensive vocational courses. All this has now been abandoned. There is now only one compulsory vocational education subject in secondary schools, carrying about 13 percent of the curricular hours.

The technical schools plan is now the principal mechanism for vocational education. Students who cannot continue to higher education for various reasons can now enroll in these schools and become skilled in various areas.

The technical schools are of the following three types:

1. Lower secondary level technical schools, such as Sanothimi Technical School.

2. Secondary level technical schools, such as Karnali Technical School.

3. Higher secondary level technical schools, such as the Mechanical Training Centre.

Technical schools can be either public or private. The Lalitpur Technical School, for example, is managed by the private sector.

7.2.3.2 Other Ministries. The training programs of other ministries are generally established to produce manpower needed for their own activities only. The Ministry of Labor and Social Welfare, and the Department of Cottage and Village Industries of the Ministry of Industry, however, have some programs intended to equip youths with easily employable skills.

Department of Labor of the Ministry of Labor and Social Welfare

The Labor Supply Centres of the Department of Labor provide training to unskilled workers, and also provide an employment exchange service. During 1980-1985 the centres trained nearly 5,000 persons in skill areas such as painting, weaving, wiring, and brick-making. The Department of Labor also operates a vocational training center in Biratnagar that covers the areas of fitting, welding, machine shop, sheet metal, and blacksmithy.

Ministry of Industry

The Department of Cottage and Village Industries of the Ministry of Industry provides training in Kathmandu and four other regional centres. The main areas for training have been the mechanical and electrical trades, but training is also given in textiles, carpentry, electricity, leather work, and sewing/knitting.

Ministry of Communications

Training in the area of telecommunications is provided by the Ministry of Communications. This training is given to SLC-pass students to become training operators, and to Intermediate Science (two years of college)-pass students to become technicians. The Ministry also provides inservice training for telecommunications workers.

Other Ministries

Other ministries such as the Ministry of Water Resources, and institutions like the Royal Nepal Airlines and the Civil Aviation Department, also provide training.

7.2.3.3 NGOs and Private Agencies. There are some non-governmental organizations (NGOs) engaged in technical and vocational training activities. Operation of the Lalitpur Technical School is a good example of such an activity. The United Mission to Nepal, during its 25 years of existence in Nepal before 1982, started the training program of the Butwal Technical Institute based on an

apprenticeship model. This program later was integrated with the programs of the Ministry of Industry. There are, however, a considerable number of informal apprenticeships at the household level. Carpet weaving, making of Dhaka shawls and caps, handicrafts, woodworks, etc., are the skills profoundly propagated through the apprentices.

Training provided by NGOs can be categorized as follows:

1. In-plant training for workers
2. Private technical schools
3. Training operated at local levels by voluntary organizations

The training provided by private agencies is of the following three types:

1. Apprenticeship training
2. Training in typing and secretarial skills and in tailoring provided by various private institutes
3. Training provided by construction agencies at project sites

7.2.3.4 Relationship of the MOEC with NGOs. The MOEC works with various NGOs conducting adult education programs. It has prescribed specific rules for operation of general private schools and private technical schools. Private enterprise is represented on technical and vocational education committees and on skill testing bodies.

7.2.4 The Skilled Manpower Development Program

The production of skilled manpower needed for the development of various rural development activities and modern sector activities, such as construction of roads, housing activity, industries, hydroelectric power installations, construction of dams and bridges, provision of health services, has never been fully adequate. An organized manpower production system has not yet emerged. The government departments in the past have trained manpower mostly for their internal needs within a particular period of time. Newly undertaken project activities have mostly trained their own manpower. Contractors have hired some local people but many projects have hired people from India.

Only recently has the government made efforts to produce various levels and kinds of technical manpower within the country. The establishment of technical schools and technical campuses under the MOEC and the University has been a major recent development. The University produces mostly high- and middle-level

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manpower, although some of its campuses also train basic-level craftsmen and the technical schools train manpower at the basic and middle levels. Both of these systems usually offer courses of longer duration.

7.2.4.1 Participants. The development of construction, mechanical and electrical trades, health services, and agricultural activities was necessary because Nepal needed infrastructures and manpower for communications, industries, power supply, health, education, and agricultural development. The training activities therefore focused their programs to produce such manpower. Table 7.1 shows the details of the existing technical schools. These details include the trades offered, the duration of training, catchment districts served, entry qualifications, total graduates produced, and the funding agency that helped establish the programs. The plans to extend these existing programs through the establishment of proposed additional technical schools are shown in Table 7.2. Table 7.3 shows the programs offered by the university and other agencies. The difference between the programs of the technical schools and the university is that the former emphasize skill proficiency through training experience in the field, whereas the latter emphasize more institution-based training. Locations of the programs are shown in the map (Figure 7.1).

The training programs offered by the agriculture and medicine campuses of the university offer short courses at most locations. The training activities of the other ministries are generally designed to impart skills to those who may not have any academic preparation, and these programs are designed to promote the employment prospects of the youths. These training activities are shown in Table 7.3.

7.2.4.2 Instructors. There have been only two Instructor Training programs in Nepal. First, the Sanothimi Campus of the university has offered Prevocational Teacher's Training (Proficiency Certificate level) in home science, business education, and industrial education (Bamboo works, Woodworks, Metalworks, Electricity, and Construction). The Sanothimi Campus has also offered Vocational Training (Bachelor's level) for the same three areas. The duration of the training for both levels is two years each and the total enrollment capacity for both the levels is 400. Second, the Institute of Engineering at Thapathali offered a one-year Instructor Training course in mechanical engineering with funds from the ILO for the first two years.

Table 7.1
Existing Technical Schools

No	Name	Date of Estab-lishment	Trades offered	Duration of training	Enroll-ment Capacity	Recognition of Certificate	Catchment Districts	Qualifica-tion for Training	Total Graduates since opening of school	Foreign Assistance
	1	2	3	4	5	6	7	8	9	10
1	Mechanical Training Balaju/Kathmandu	1982	General Mechanics Electrical Trade Sanitary Fitter	3 yrs. 3 yrs. 3 yrs.	24 24 24	Technician Certificate (STSLC)	All over Nepal	Grade X Passed for all trades	263	SATA
2	Karnali Technical School, Jumla	1980	Construction Agriculture Health	4 yrs. 4 yrs. 4 yrs.	16 16 13	Craftsman Certificate (TSLC)	Humla Dolpa Jajarkot Kalikot Mugu Jumla	Grade VII Passed for all trades	51	UMN
3	Jiri Technical School, Dolakha	1983	Construction Agriculture Health	4 yrs. 4 yrs. 4 yrs.	20 20 12	Craftsman Certificate	Dolakha Solu Ramecchap Sindhu-palchowk Okhaldhunga	Grade VII Passed for all trades		SATA
4	Lahan Technical School, Siraha	1982	Agriculture Construction	4 yrs. 4 yrs.	25 25	Craftsman Certificate	Siraha Udayapur Saptari Sindhuli Solu	Grade VII Passed for both trades		ADB
5	Uttarpani Technical School, Dhankuta	1982	Agriculture	4 yrs.	25	Craftsman Certificate	Dhankuta Tehrathum Sankhuwa Sabha Bhojpur	Grade VII Passed		ODA Khardep
6	Lalitpur Technical School, Lalitpur	1982	Wood Works Metal Works Leather Works Secretarial Science	2 yrs. 2 yrs. 2 yrs. 3 yrs.	16 16 8 12	Training Level	All over Nepal	Grade V Passed Grade X Passed	11 12	Oxfam Tears Fund (Private)
7	Sanothimi Technical School, Bhaktapur	1983	Auto Mechanics Gen. Mechanics Gen. Fitters Tailoring Agriculture	4 yrs. 4 yrs. 1 yr. 1 yr. 1 yr.	16 16 16 32 18	Craftsman Level Training Level	Students of UCEP Schools	Grade VII Passed	78	UCEP DANIDA (Private)

Source: Directorate of Technical and Vocational Education

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Table 7.2
Proposed Technical Schools

No	Name	Duration of Training	Qualification for Training	Trades offered	Enrollment Capacity	Annual Production Capacity	Recognition of Certificate	Catchment Districts
	1	2	3	4	5	6	7	8
1	Seti Technical School, Doti	4 years	Grade VII Passed	Construction Agriculture Rural Mechanics	25 25 25	20 20 20	Craftsman Certificate	Achham Doti Dadeldhura
2	Rapti Technical School, Dang	4 years	Grade VII Passed	Agriculture Construction Rural Mechanics Health Works	25 25 15 25	20 20 12 20	Craftsman Certificate	Dang Salyan Rukum Pyuthan
3	Bheri Technical School, Surkhet	4 years	Grade VII Passed	Agriculture Construction Rural Mechanics Electrical Trade	25 25 25 25	20 20 20 20	Craftsman Certificate	Surkhet Bardia Dailekh Banke
4	Dhaulafiri Technical School, Mustang	4 years	Grade VII Passed	Lodge Management Sovenir Making Fruit Processing Wool Processing Trekkers Guide	20 20 20 20 20	16 16 16 16 16	Craftsman Certificate & Training Level	Parbat Baglung Myagdi Mustang
5	Hetauda Technical School, Hetauda	6 months to 4 years	Grade VII Passed	Mechanics Electrical Trade Construction Travel & Tourism Library Science Secretarial Practice	8-32 15 15 15	6-25 6-25 6-25 12 12 12	Training Level	All over Nepal
6	Hunan's Technical School, Sanothimi	1 to 3 years	Grade VII to S.L.C. passed	Architectural Asst. Interior Design & Decoration Commercial Art Medical Lab Tech. Food Technology Pharmacy Occupational English Office Management Garment Technology Hotel & Lodge Mgmt.	25 25 25 15 15 15 15 25 25 25	20 20 20 12 12 12 12 20 20 20	Training Level to Technician Level	All over Nepal

Source: Directorate of Technical and Vocational Education

Table 7.3

Training Programs of Other Agencies

Agency	Trades offered	Duration of Training	Enrollment Capacity	Recognition of the Certificate	Entry Qualification
Tribhuvan University					
Dharan Campus	Mechanical	3 years	72	Craftsmen	Grade 7 pass
	Electrical		48		
	Construction Works		72		
	The same three trades	2 years	16 in each trade	Technician	Craftsmen
Pulchowk Campus	Civil	2 years	Total 650	Technician	S.L.C.
	Architecture				
	Electrical and mini-hydro-electric				
	Refrigeration				
	Machining and Fitting				
	Electronics & Communication				
Thapathali Campus	General Mechanics	2 years	30	Technician	S.L.C.
	Automechanics		30		
Pokhara Campus (Planned to begin from 1987)	Electrical	1 year	60	Skill Trade	Grade 8
	Mechanical	1 year	60		
	Construction	1 year	60		
	Electrical	2.5 years	60	Technician	S.L.C.
	Mechanical		60		
	Construction		60		

Source: MTC-Instructor Training Project (SATA), 1985 (table continued)

Table 7.3 (Continued)

Agency	Trades offered	Duration of Training	Enrollment Capacity	Annual Output	Recognition of the Certificate	Entry Qualification
Tribhuvan University						
Lamjung Campus	Agriculture	1 year	160	128	JTA	SLC
Paklihawa Campus		1 year	160	128	JTA	SLC
Janakpur		1 year	160	128	JTA	SLC
Khumaltar/Tripureswor	Livestock	1 year	100	80	JTA	SLC
Nepalgunj	Auxillary Nurse Midwives	2 years	40	32	ANM	Grade 8
Bharatpur		2 years	40	32	ANM	Grade 8
Tansen		2 years	40	32	ANM	Grade 8
Surkhet	Community Medical Auxillaries	1 year	40	32	CMA	SLC
Tansen		1 year	40	32	CMA	SLC
Pokhara		1 year	40	32	CMA	SLC
Dhankuta		1 year	40	32	CMA	SLC
Department of Labour						
Labour Supply Centres (Nepalganj, Hetauda, Butwal, Itahari, Dhangarhi, Jhapa)	Carpentry, masonry brick making, slate cutting, boiler operating, press compositing, house wiring, cutting & stitching, hair cutting, textile weaving	3-6 months	Total capacity 350 per batch		- Technician Skill Trade	- -
Vocational Training Centre, Biratnagar	General Mechanics:					
	Arc Welding	6 months	25 per batch	40	Skill Trade	Grade 8
	Benchshop Practice	6 months	25	40	-	
	Blacksmithy Shop	6 months	25	40	-	
	Sheet Metal Work	6 months	25	40	-	
	Machine Shop Practice	6 months	25	40	-	

Source: (ILO, 1986)
JTA Junior Technical Assistants
SLC School Leaving Certificate

Table 7.3 (Continued)

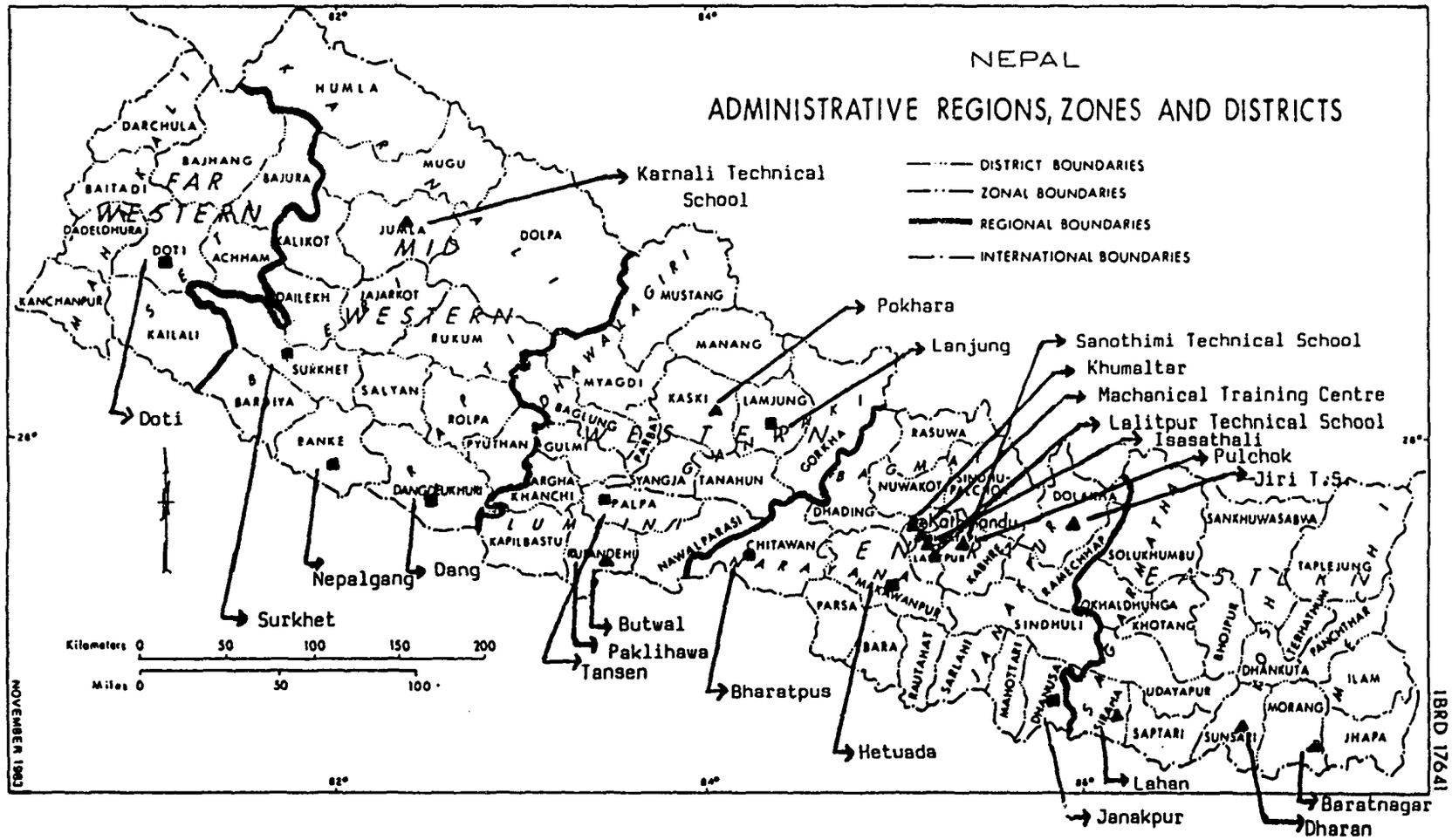
Agency	Trades offered	Duration of Training	Enrollment Capacity	Recognition of the Certificate	Entry Qualification
Department of Cottage and Village Industries					
Butwal Technical Institute (BTI)	Cabinet Making Industrial Office Worker Mechanic (filter, welder) Electrician Surveyor	4 years	4 per year	Craftsmen	Grade 8
Training Centres					
Kathmandu	Electrical	2+1 year*	Total 60 in each year	Non academic craftsmen certificate	Grade 10
	Mechanical	2+1 year*			
Dhankuta	Electrical	2 years			
Pokhara	Electrical	2 years			
	Mechanical	2 years			
Surkhet	Mechanical	2 years			

Source: (ILO, 1986)

*2+1 year indicates one additional year of training to those who have successfully completed 2 year course on electrical and mechanical trades.

Figure 7.1

Distribution of Technical Schools and Technical Campuses



The supply of qualified and trained technical school instructors has always been a problem. Within the existing technical schools, external assistance agencies have provided training opportunities in foreign countries, but the number of such opportunities are very few. These institutions also have had the services of expatriate staff in their earlier years and some still have this assistance. Table 7.4 indicates that the training need in any particular area has not been large enough to justify the establishment of a separate training center. Even for the proposed new schools, except for the areas of construction, electricity, and mechanics, the need for instructors in any particular trade is not particularly high. The estimated need for instructors to staff the proposed technical schools is shown in Table 7.5.

7.2.4.3 Curriculum and Materials in the Technical Schools. As stated above, there are two types of schools: the Rural Technical Schools, and the Urban Technical Schools. A thorough survey of the manpower requirements for any area is made before its selection as a site for a new technical school. The types of trades and numbers of trainees are also determined by the projected ten-year demand pattern. As the education and training are skill-intensive and conducted for local and immediate use, operations of these schools are closely coordinated with local development activities. The training includes the production of manpower to help protect the environment; educate people in preventive health care, nutrition, and the value of family planning; provide self-employment skills in small-scale industries; and provide skills and knowledge for activities such as improved agricultural production.

The rural technical schools serve the areas where they are located and supply skilled manpower for rural development programs. The main training areas in these schools are rural construction engineering (i.e., builder's trade), agricultural extension, community health, rural mechanics, and rural electrification.

The urban technical schools produce manpower for larger development projects such as the construction of roads, highways, hydroelectric projects, and industries. These schools produce skilled manpower in the builder's trade, industrial engineering, auto-mechanics, electrical, plumbing, and related areas. In the urban areas, as in the rural areas, manpower estimates are coordinated with the anticipated user agencies. The linkage of education with on-the-job training is emphasized.

Table 7.4

Number of Instructors Working in Various Trades

Trades	Technical Schools	University Campuses	Department of Cottage & Village Industries	Department of Labor
Agriculture	28			
Health	12			
Construction	15	80		
Electrical	10		10	
Mechanical	21	40	15	
Sanitary Fitters	4			
Tailoring	3			
Metal works	4			
Woodworks	4			
General	13			
Theoretical Teachers & Supervisors for BTI			28	
All Trades				25
Totals	114	120	53	25

Source: MTC - Instructor Training Project, SATA, 1985

Table 7.5
Additional Requirements for Instructors

Trades	Technical Schools	T.U. Campus
Agriculture	42	
Wool Production	7	
Lodge Management	7	
Tourist Guide	7	
Construction	42	
Electricity	28	
Mechanics	28	
Leather Craft	7	
Health	7	
Hotel Management, Travel & Tourism, Food Reservation, Catering	28	
Commercial Practice Library Science, Beauty Cosmetology	23	
Architectural Assistantship, Interior design, Commercial Arts, Fashion Textile, Photography	35	
Welding Course	4	
General	13	
All Engineering Trades		54
Totals	278	54

Source: MTC - Instructor Training Project, SATA, 1985

In addition to offering longer courses for training technical manpower at the craft and technician level, the technical schools also offer short-term programs for new skill entrants as well as for inservice trainees who want to upgrade their skills. The technical schools also conduct condensed courses for skill upgrading as requested and paid for by specific user agencies. Some of the selected technical schools are also planning to conduct technical teacher training programs for specific trades.

A high proportion of time in the curriculum is devoted to actual skill training. The curriculum mostly includes skills which can be used with local materials. The degree of proficiency acquired is the basis for evaluation rather than achievement in general education. The following durations have been prescribed for formal training:

Lower Secondary Technical School--2 years

Secondary Technical Schools--(3 + 1=) 4 years (three years for training and one year on-the-job training with prospective employer)

Higher Secondary Technical Schools--3 years

Only about 20 percent of the curricular weightage is given to general subjects, which include Nepali, English, Nepal studies, general science, and mathematics. The remaining subjects cover practical training (64 percent) and theoretical lessons on the related trade (16 percent). Again, for evaluative purposes technical schools have allotted 30 percent of the marks for internal assessment and 70 percent for the annual examination.

7.2.4.4 Achievement. Each technical training school has its own testing process. The tests and evaluations in the technical school system are made by the Directorate of Technical and Vocational Education of the MOEC. The evaluation of the performance of the trainees during their one-year, on-the-job experience is made by the employers.

Most of these technical training programs were started around 1982-1983, and their level of output is not known yet. But some of the programs started earlier have already produced graduates.

The Mechanical Training Center (MTC) was established in 1964 and had an intake capacity of 12 in mechanical trade until 1982; after that, two more trade

areas were added and the intake capacity was raised to 72. A total of 263 graduates have been trained at the MTC since it was established. A tracer study by SATA in 1984, based on a sample of 113 of the 187 graduates that had been produced at that time, indicated that 65 percent of the them were then working in the skill areas in which they had been trained. This indicates that the quality of their training had been satisfactory. A tracer study of the Sanothimi technical school, made by Danida, indicated that out of the first group of nine all obtained jobs immediately.

The number of applicants seeking admission to all of the technical schools is ever rising. Some technical schools received applications for 7-8 times the number of available places. The popularity of the program is indicated by this factor also: for the last 3-4 years there has been a great demand by the members of the Rastriya Panchayat (The National Assembly) for expansion of the technical school system so that each of the 75 districts has one. The outputs of some of the programs are shown below:

Name of the Technical School	Date Established	Present Enrollment Capacity	Total Output
Mechanical Training Centre	1964	72	263
Karnali Technical School	1980	45	51
Sanothimi Technical School	1983	98	90
Lalipur Technical School	1982	52	23

The drop-out rates for mechanical trade in the MTC, and for construction trade in Jiri Technical School, has been high (about 30 percent) but in other trades the rate has been low. The high drop-out rate, according to the Director of TVED, has been attributed to two major reasons. Those taking mechanics also sat for the SLC examination and left this former course when they passed the SLC. The reason for the high drop-out rate in Jiri Technical School was because of the expulsion of some of these students on discipline grounds.

Similarly, university run basic- and middle-level training programs are evaluated by the respective institutions under the general direction of the university.

Training programs operated by the various other ministries, non-governmental organizations, and private agencies have their own evaluation systems. Government

department programs of longer duration, usually those of two years or longer, are recognized by the public service commission.

The only private-sector-run program which has been given recognition for job entry to the government services is for typing skill.

The recently established National Skill Testing Authority, which has representatives from the Ministry of Education, the University, the Department of Labor, the technical committees, the Ministry of General Administration, the Public Service Commission, the employers, and the labor organizations, has developed standards for engineering related trades and already has conducted tests for basic-level skills in seven trades. This system is designed to give formal recognition for skills not based on institutional training or paper certification and also to establish the equivalence of various short-term and crash programs conducted by different agencies including the integrated rural development programs and other development projects.

7.2.4.5 Quality of Instruction. The quality of instructions varies among the training programs. Technical schools, the training programs of the university, and the other training programs with a strong practical orientation and adequate facilities have been good. Butwal Technical Institute, the Vocational Training Center, Biratnagar, and the four regional training centres of cottage and village industries have also been good in quality and acceptability. This is because most people trained at these places are reported to be working in the areas in which they have received training.

The other training programs, such as those of the labor supply centres, the cottage and village industries in different parts of the country, and the Panchayat and Local Development Ministry, have as their main objective training in skills that improve the employability of the rural and urban youths. No reliable data, however, are available about the employment status of such trainees.

7.2.4.6 Facilities and Equipment. All of the technical schools and training programs of the university have good facilities. Since most of these programs were initiated by external assistance agencies, physical facilities such as buildings, workshops, and equipment were fully developed at the beginning. These facilities and equipment are maximally used. But the use of such facilities for longer periods has required a significant amount of training materials and good repair and maintenance services, which have not been very satisfactory.

Other training programs, though they have attractive instructional packages, generally lack good facilities and equipment and also face shortages of qualified and experienced instructors.

7.2.4.7 Administration and Supervision. Different ministries offering technical and vocational training and supervision have different operating systems. The MOEC is responsible for coordinating various training activities and managing the technical schools. At the operational level the school administration is assisted by a School Management Committee. In the case of the training programs conducted by other ministries, the relevant directorate assigns the responsibility for these duties. The administration and supervision of the MOEC and the TVEC will be discussed separately.

Ministry of Education and Culture (MOEC)

The MOEC is the highest administrative body that formulates, executes, and evaluates the policies and plans identified by the National Education Committee. It is headed by a Minister, a Secretary, an Additional Secretary and three Joint Secretaries, several Under Secretaries, and other supporting staff.

The MOEC functions through a number of Directorates, some of which are regional and others of which are national in scope. In addition, there is a network of 75 district offices.

Technical and Vocational Education Committee (TVEC)

The TVEC has representatives from the Planning Commission, the MOEC, the Local Development Ministry, the Labor Ministry, the Cottage and Rural Development Department, the Health Department, employers, the University, and the National Education Committee. It is chaired by the Minister of Education and Culture (Figure 7.2). The four major responsibilities of the Committee are to do the following:

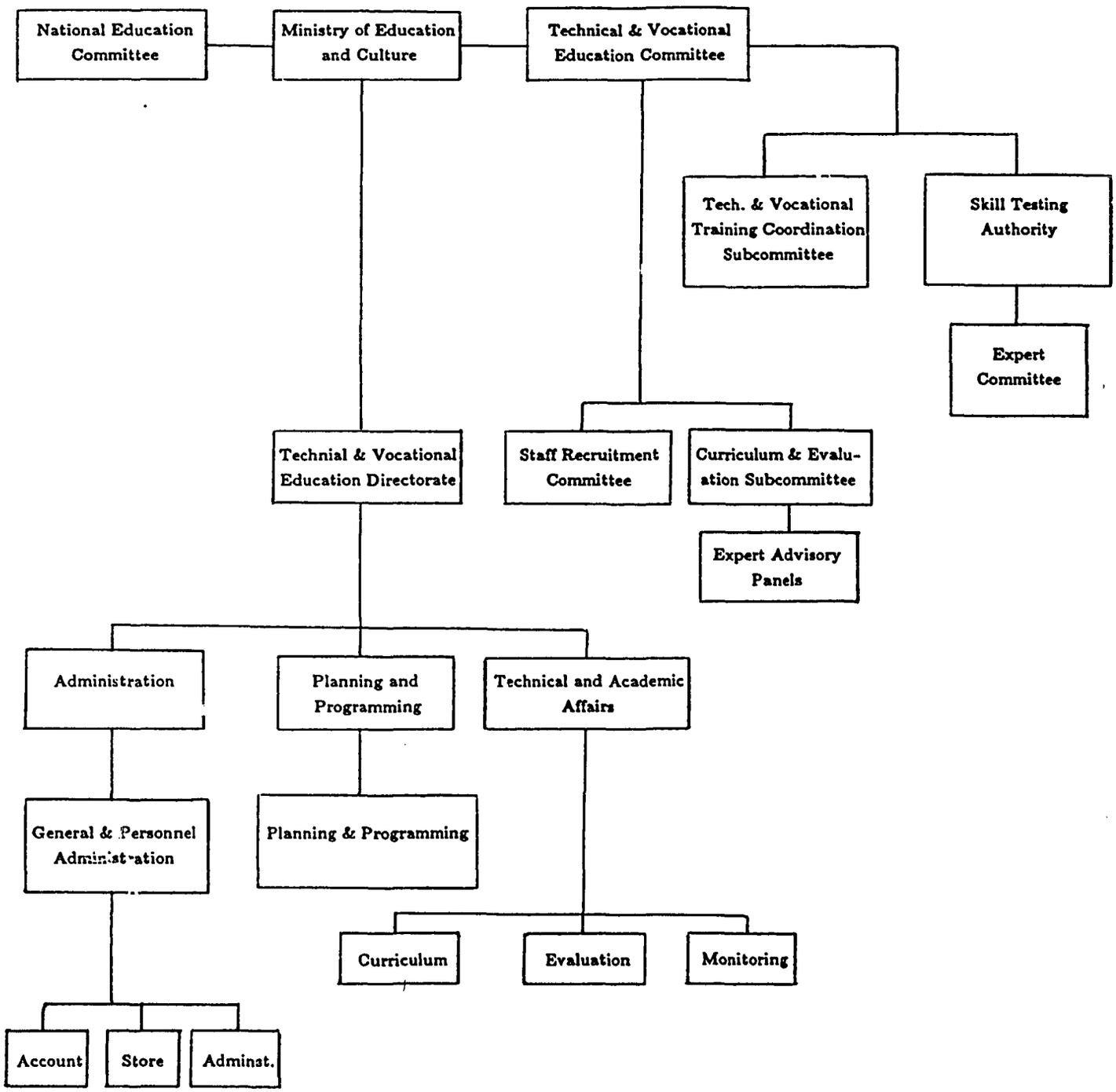
1. Frame policies and programs for promoting skill development, skill grading, certification, and instructor training.

2. Issue directives to the Directorate of Technical and Vocational Education for cataloging all the skill training programs in the country, classifying the skills, promoting the welfare of workers, identifying skill needs of the rural areas, and formulating the policies regarding skill-instructor's service conditions.

3. Make decisions regarding the expansion of technical schools.

Figure 7.2

Organizational Structure of the Directorate of Technical and Vocational Training



4. Coordinate, standardize, and certify the skill training programs conducted by the ministries, industries, and other organizations.

National Skill Testing Authority (NSTA)

The National Skill Testing Authority was established to standardize the skills and recognize the skills available in the private sector. It is envisaged that NSTA also will eventually standardize the institution based training.

Directorate of Technical and Vocational Education

A Directorate of Technical and Vocational Education has been set up under the MOEC to coordinate the training activities of the existing technical schools, conduct feasibility studies for setting up new schools, design curricula, arrange examinations and certification, approve the programs of each technical school, and allocate resources. It acts on the policy guidelines established by the TVEC. The Director of this division of the MOEC is the Member-Secretary of the TVEC. There are three Deputy Directors--one for planning and programming, one for academic affairs, and one for administration.

School Management Committee

According to the Regulations regarding the Management of Technical Schools (1982) each of the technical schools has a School Management Committee whose members are from the local intelligentsia. The Committee is responsible for the overall management of the school. The School Management Committee also is responsible for generating public support and good will for the technical schools. The Zonal Commissioner and the Principal of the technical school are the Chairman and the Member-Secretary, respectively, of the technical school. The overall responsibility for the academic and administrative matters of the school has been given to the Principal. The technical schools function under the direction of the TVEC.

7.2.4.8 Costs and External Assistance Agency Support. Skill training activities are conducted by various agencies. Besides, the MOEC operates technical schools, and Tribhuvan University operates technical education programs. As mentioned earlier, the Department of Cottage and Village Industries, Department of Labor, Ministry of Panchayat and Local Development, and others also have been offering skill training activities. Data on the extent of participation of these agencies are available, but information on the costs is very scattered and limited.

From the data available on the enrollments and costs at the technical schools operated by the Directorate of Technical and Vocational Education, the unit costs can be roughly estimated. However, these estimates of the unit costs could not be based on actual output of the students, because some of these schools have only been in existence for four years. The costs, therefore, are based on enrollment figures only. Similarly, necessary course completion and student flow data are not available for calculating the cycle costs. The unit costs of the technical education for the five schools (Table 7.6) averages almost Rs 24,150 for the enrollment of 684 students. These estimated unit costs range from a low of Rs 11,915 per student to a high of Rs 32,000.

The budget breakdown for major headings indicates that the bulk of the budget has been allocated to construction and maintenance, followed by salary and allowances (Table 7.7). The cost of construction and maintenance has mostly been provided by external assistance agencies. The analysis of HMG's contribution versus foreign assistance for the five technical schools indicates that the major share has been paid by foreign assistance, though it is observed that the proportion from external sources has gradually decreased over the years 1981 to 1985 (Table 7.8).

Under the present arrangements, the government provides the operational costs (including salary, allowances, stipends for the students, etc.) and the costs of physical development, equipment, training facilities for the teachers; the external assistance agencies provide the expatriate staff.

The costs calculated on the basis of students enrolled at the various types of training programs in the year 1984-1985 (Table 7.9) indicate that the unit cost is lowest for the training provided by the Department of Cottage and Village Industries. This is followed by the Vocational Training Center of the Department of Labor where the unit cost is Rs 4,435. The high unit cost at Sanothimi Technical School and other technical schools is because these schools provide residential facilities and pay monthly stipends to the trainees. The low enrollment capacity is another factor contributing to the higher unit cost.

7.3 ANALYSIS

To become self-sufficient in the supply of middle- and basic-level skilled manpower within the country, and to expand employment opportunities for neo-literate and semiliterate youths, is a goal of HMG. The programs in operation to address this goal, and the plans that are being designed to accompany them, are analyzed in this section. The analysis is based on the needs, plans to meet these needs, major constraints, and major issues in the subsector.

Table 7.6

Budget for Technical Schools: 1981-1982 through 1987-1988

(Rs in thousands)

TECHNICAL SCHOOLS	YEARS					1987/88		
	1981/82[1]	1982/83[1]	1983/84[2]	1984/85[2]	1985/86[2]	Budget	Enroll-ment	Unit Cost (Rs)
Karnali Technical School, Jumla	543	2,031	3,529	2,482	3,588	4,280	145	29,517
Lahan Technical School, Lahan	1,929	2,558	4,620	2,388	2,698	1,549	130	11,915
Jiri Technical School, Jiri	100	1,263	5,601	1,865	4,202	3,602	132	27,287
Dhankuta Technical School, Dhankuta	3,081	5,822	5,019	1,451	1,237	2,560	80	32,000
Mechnical Training Center, Balaju	5,999	6,333	10,385	3,982	3,735	4,531	197	23,000
TOTAL	11,652	18,007	29,154	12,168	15,460	16,522	684	24,150
Change Over Previous		+54.5%	61.9%	-52.3%	+27%			
Average Change Over Five Years		18.24%						

Sources: [1]Ministry of Finance
[2]Directorate of Technical and Vocational Education

Table 7.7

Budget for the Five Technical Schools

(Rs in thousands)

Technical Schools	Headings	Year 1983/84	1984/85	1985/86
1. Karnali Technical School, Jumla	Salary/allowance	578	706	790
		(16.4)	(28.4)	(22.0)
	Administration	351	470	397
		(9.9)	(18.9)	(10.0)
	Construction/maintenance	2582	1288	2385
		(73.2)	(52.0)	(66.5)
	Library	5	3	3
		(.1)	(.1)	(.1)
	Training costs	13	15	13
		(.4)	(.6)	(.4)
	Total	3529	2482	3588
		(100)	(100)	(100)
2. Lahan Technical School, Lahan	Salary/allowance	245	659	708
		(4.4)	(35.3)	(16.8)
	Administration	986	308	606
		(17.6)	(16.5)	(14.4)
	Construction/maintenance	3655	630	2470
		(65.2)	(33.8)	(58.8)
	Library	10	8	8
		(.2)	(.4)	(.2)
	Training costs	705	260	410
		(12.6)	(14.0)	(9.8)
	Total	5601	1865	4202
		(100)	(100)	(100)
3. Jiri Technical School, Jiri	Salary/allowance	578	706	790
		(16.4)	(28.4)	(22.0)
	Administration	351	470	397
		(9.9)	(18.9)	(10.0)
	Construction/maintenance	2582	1288	2385
		(73.2)	(52.0)	(66.5)
	Library	5	3	3
		(.1)	(.1)	(.1)
	Training costs	13	15	13
		(.4)	(.6)	(.4)
	Total	3529	2482	3588
		(100)	(100)	(100)

(table continued)

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Table 7.7 (Continued)

4. Dhankuta Technical School, Dhankuta	Salary/allowance	480	454	623
		(9.4)	(31.3)	(50.4)
	Administration	999	469	420
		(19.5)	(32.3)	(33.9)
	Construction/maintenance	3405	356	4
		(68.5)	(24.5)	(0.3)
	Library	30	21	21
		(0.6)	(1.5)	(1.7)
	Training costs	105	151	169
		(2.0)	(10.4)	(13.7)
	Total	5019	1451	1237
		(100)	(100)	(100)
5. M.T.C. Balaju	Salary/allowance	595	473	1332
		(5.7)	(11.9)	(35.7)
	Administration	723	737	2361
		(7.0)	(18.5)	(63.2)
	Construction/maintenance	6261	1137	17
		(60.3)	(28.5)	(0.5)
	Library	5	4	4
		(.4)	(.1)	(.1)
	Training costs	2801	1631	21
		(26.9)	(41.0)	(.5)
	Total	10385	3982	3735
		(100)	(100)	(100)

Source: Strategies for National Manpower Development in Nepal (ILO, 1986)

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Table 7.8

Budget Allocations and Proportions of Government (HMG) and Foreign Assistance in Technical Schools

(Rs '000)

Technical Schools	1981			1982			1983			1984			1985		
	Total Allocations	HMG	Foreign Assistance	Total Allocations	HMG	Foreign Assistance	Total Allocations	HMG	Foreign Assistance	Total Allocations	HMG	Foreign Assistance	Total Allocations	HMG	Foreign Assistance
1. Karnali T.S.	-	-	-	2031	679	1352 (66.6)	3475	903	2572 (74.0)	2479	1234	1245 (50.2)	3548	1211	2337 (65.8)
2. Lahan T.S. Lahan	1929	295	1634 (84.7)	2558	278	2280 (80.1)	4554	1346	3208 (70.4)	2386	1002	1348 (58.0)	2698	948	1750 (64.8)
3. Jiri T.S. Jiri	100	-	100 (100)	1263	133	1130 (89.5)	5452	542	5000 (91.7)	1865	1040	825 (44.2)	4202	1242	2960 (70.4)
4. Dhankuta T.S. Dhankuta	3081	181	2900 (94.1)	5822	319	5503 (94.5)	4899	822	4077 (83.2)	1451	580	871 (60.0)	1237	767	470 (38.0)
5. M.T.C Balaju	5999	552	5447 (90.8)	6333	883	5450 (86.1)	10302	1169	9133 (88.6)	4082	1352	2730 (66.9)	3735	1335	2400 (64.3)

Source: Ministry of Finance

Notes:
1. There is slight difference in the estimates of allocations as received from DTVE and Ministry of Finance.
2. Figures in parentheses indicate percentage.

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Table 7.9

Unit Costs of Technical and Vocational Training Centres (1984-1985)

Centre	Total Enrollment	Total Expenditure	Unit Cost (in Rs)
1. Sanothimi Technical School	172	2,739,491	15,927
2. Mechanical Training Centre, Balaju	129	1,251,165	9,699
3. Six Labour Supply Centres	972	7,114,481	7,319
4. Vocational Training Centre	40	177,388	4,435
5. Department of Cottage and Village Industries, Kathmandu	674	141,275	2,096

Source: Concerned Centres

7.3.1 Needs

The Sixth Plan (1980-1985) established fulfillment of the basic minimum needs as its main objective. The basic needs identified were food, clothing, shelter, fuelwood, drinking water, skill-based primary education, primary health care, sanitation, and minimum rural transport facilities. The Seventh Plan (1985-1990) was also designed to fulfill basic needs and added the following target relating to technical and vocational training: expanding skill-based education by increasing basic-level vocational training facilities. The other targets of the Seventh Plan, which also required the regulated supply of adequate manpower, included the following:

1. Raising food production at an average annual rate of 4.1 percent (need to supply agricultural extension workers).
2. Developing the textile industry (need to supply industrial tradesmen).
3. Expanding the access to drinking water facilities to 69 percent of the population (need to supply construction tradesmen).
4. Improving the quality of health services in rural areas (need to supply community health workers).

The Program for the Fulfillment of Basic Needs, a document recently released (May 1987) by the National Planning Commission, has outlined the programs required for bringing the level of the basic services in food, clothing, shelter, education, health, and security to the average Asian standard by the end of the year 2000 A.D. Achieving this goal has been a firm Government commitment. This document also emphasizes the increased production of skilled manpower to contribute to economic growth that will lead to achievement of the above targets and which also will provide employment opportunities to a large number of youths by equipping them with easily employable skills.

An analysis of the manpower supply and demand over the last few years indicates that in 1981 the labor force participation rate for the population 10 years and over was 65 percent and about 200,000 people were being added to this labor force annually. The Nepalese labor force is overwhelmingly dependent on agriculture and diversification of occupations is very limited. In 1981, the proportion of the labor force engaged in agriculture was 91.39 percent, in the manufacturing industries 3.12 percent, and in service activities was 5.8 percent. The continued high dependence on agriculture for employment is mainly due to the

slow expansion of non-agricultural sector activities. Further, Nepalese manpower have not been able to take full advantage of the new jobs created by development activities because they lack the requisite skills.

Employment for the educated group in the country has mostly been in the public sector such as civil service, public enterprises, and education institutions. Out of 84,484 persons employed by the Civil Service in 1984-1985 there were 33,000 technical personnel. This 33,000 covered agriculture, medicine, engineering, forestry, mining, and other areas.

The Seventh Plan cited a shortage of 8,788 persons in technical areas when compared with estimated requirements from the Sixth Plan. It was observed that the gap between the estimated requirements and actual supply was widening.

There is a discrepancy in the supply and distribution of various levels of manpower. The rural areas generally have acute shortages of technical manpower and the urban areas have shortages in basic-level manpower. This situation has impeded the implementation of development programs.

The manpower requirements for the private sector have not been systematically assessed. The private sector activities include farming, fisheries, handicrafts, transportation, garment making, tourism, and others. The activities in the private sector, except for fisheries, handicrafts, and a few others, are deficient in quality and quantity.

The main determinants of the manpower demand are the following:

1. The projected annual economic growth rate of 4.5 percent in national income, with about 3.5 percent in the agricultural sector and 5.7 percent in non-agricultural sectors, demands a greater supply of skills.

2. The manpower requirements for fulfilling the basic needs before the year 2000 A.D.

3. The manpower required for the replacement of the present supply.

4. The manpower needs of the rapidly expanding private sector investments.

5. Increased emphasis on rural development through an administrative decentralized system that needs higher level manpower to work in rural areas.

The main determinants for manpower supply are the following:

1. Informal acquisition through family perpetuation.

2. Formal training and institutions.

3. Nonformal training.

4. Training in foreign countries, mostly for the higher level and specialized areas.

Informal training activities exist more in farming, cottage crafts, masonry, carpentry, shopkeeping, and related areas.

The formal education system is the main source of manpower supply. Tribhuvan University trains technical manpower, mostly of high- and middle-levels, with some campuses even offering basic-level training in agriculture, medicine, engineering, and forestry. The newly established technical schools system prepares basic-level and middle-level manpower in engineering, agriculture, and health trades. The capacities of the technical schools have been low and the capacity of the university system has remained more or less static for the last ten years.

The nonformal training programs have been provided by the Cottage and Village Industry Department for illiterate adults for a period of 3-12 months in the areas of handicrafts, electricity, mechanics, carpentry, and related skills. Labor Supply Centres, Women's Training Centres, Integrated Rural Development Programmes, and the Adult Education Section of the MOEC are the other agencies engaged in training for various nonformal skills. The expansion of all these programs has been restricted by resource constraints and insufficient job prospects.

Large numbers of school or university graduates have been seeking jobs in the administrative services. Others have been employed in teaching and in the private sector. A small vocational input in their education could have given them better job prospects in other productive sectors. Therefore, courses in business management, accounting, electronics, and other practical skills seem highly desirable for general education graduates.

Government has so far been the biggest employer. But the policy of decentralization and promotion of private sector development, and increasing productivity in the various sectors leading to the meeting of basic needs, naturally demands the expansion of skill training activities.

In the Seventh Plan the priority industries to be promoted in the private sector are those relating to the production of Food & Food Material, Textile and Weaving Material, Construction Material, Health Material, Education Material, and Light Engineering Material. Also emphasized are the Export Promotion industry and cottage scale products. For further details, see Annex 7.3.

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The demand projection for the total manpower during the Seventh Plan period is shown in Table 7.10. There is an overall deficit in the manpower supply for all three levels shown in the table.

7.3.2 Plans

The plans to expand technical and vocational education programs have been based on the Seventh Five-Year Plan manpower projections and on the recommendations of the task force (May 1987) set up by the MOEC.

The MOEC plans to expand the technical school system. The task force set up by the MOEC has made the following recommendations.

1. The number of technical schools will be increased to about 20 with at least one in each zone within the Eighth Plan period.

2. Apprenticeship training programs will be developed in larger size industries and various industrial areas.

3. Instructor training programs will soon be initiated and for this the existing technical schools will be asked to organize instructor training programs on their premises.

4. The Technical and Vocational Education Directorate will be strengthened technically and administratively.

5. The National Skill Testing Authority will be given more responsibilities and greater autonomy. The career development plan for the technical cadre will be prepared by the National Skill Testing Authority (NSTA).

6. Technical schools will serve as a nucleus to other neighboring satellite training programs; they also will be responsible for organizing short-term and crash programs.

7. University-run craftsmen training programs will gradually be handed over to the technical directorate.

8. The facilities of the vocational schools will be utilized to offer smaller capacity separate programs for willing students and out-of-schools youths.

9. The projected enrollment capacities and the projected outputs are shown in Table 7.11; the output target is about 80 percent of the enrollment target.

10. A production-cum-training model of programs will also be initiated.

The Department of Cottage and Village Industry will organize training programs to train additional manpower at the entrepreneur, artisan, and mechanical workers' level and to enhance the existing level of knowledge and skills of such manpower. A total of 1,340 persons will be trained for a period of two years in

Table 7.10

Demand Projection for Total Manpower during The Seventh Plan Period (1985-1990)

Manpower classification	Stock by the end of the Fiscal Year	Deficit During the Sixth Plan	Demand projection for additional manpower	Demand projection for total manpower	Total estimated posts required the end of the F.Y. 1989/90
1	2	3	4	(3+4) 5	(2+5) 6
1. High Level	5,330	1,272	2,609	3,881	9,211
1.1 Engineering	2,155	350	951	1,301	3,456
1.2 Health	965	130	411	541	1,506
1.3 Agriculture	1,537	672	825	1,497	3,034
1.4 Forestry	208	122	137	259	467
1.5 Scientists & Technicians	465	-2	285	233	748
2. Medium Level	10,023	3,312	4,555	7,867	17,890
1.1 Engineering	4,577	883	2,349	3,232	7,809
1.2 Health	1,996	585	912	1,497	3,493
1.3 Agriculture	2,353	1,713	634	2,347	4,700
1.4 Forestry	442	82	310	392	834
1.5 Scientists & Technicians	655	49	350	399	1,054
3. Basic Level	15,325	4,194	4,906	9,100	24,425
1.1 Engineering	5,935	1,604	1,753	3,357	9,292
1.2 Health	2,627	1,032	431	1,463	4,090
1.3 Agriculture	3,461	1,611	1,684	3,295	6,756
1.4 Forestry	1,726	-180	202	22	1,748
1.5 Scientists & Technicians	1,576	127	836	963	2,539
Grand Total	30,678	8,778	12,070	20,848	51,526

Source: Seventh Five Year Plan Document

Table 7.11

Training Capacities of the Regular Training Programs

Agency	Trades	Levels	Enrollment Capacity	Output Capacity
Technical Schools	General Mechanics	Technician Certificate	24	20
	Electrical	Technician Certificate	24	20
	Sanitary Fitters	Technician Certificate	24	20
	Construction	Craftsman Certificate	61	48
	Agriculture	Craftsman Certificate	86	68
	Health	Craftsman Certificate	25	20
	Auto Mechanics	Craftsman Certificate	16	12
	General Mechanics	Craftsman Certificate	16	12
	Woodworks	Training Level	16	12
	Metalworks	Training Level	16	12
	Leatherworks	Training Level	8	6
	Secretarial Science	Training Level	12	6
	General Fitters	Training Level	16	6
	Tailoring	Training Level	32	25
	Agriculture	Training Level	18	14
Proposed Technical Schools	Construction	Craftsman Certificate	100	80
	Agriculture	Craftsman Certificate	75	60
	Rural Mechanics	Craftsman Certificate	65	52
	Health	Craftsman Certificate	25	20
	Electrical Trade	Craftsman Certificate	50	40
	Tourism (Lodge Management, souvenir making, trekker's guide)	Craftsman Certificate	30	24
	Fruit Processing	Training to Technician Level	15	12
	Animal	Training to Technician Level	NA	NA
	Wool Processing	Training to Technician Level	15	12
	Library Science	Training to Technician Level	NA	NA
	Secretarial Practice	Training to Technician Level	NA	
	Trades related to Women (Architectural assistance, design & interior decoration, commercial costs, pharmacy, garment making, hotel & lodge management, etc.)	Training to Technician Level	500	400
Tribhuvan University	Mechanics	Technician	106	NA
	Electrical	Technician	76	NA
	Construction Works	Technician	76	NA
	Architecture	Technician	NA	NA
	Refrigeration	Technician	NA	NA

(table continued)

Table 7.11 (continued)

Agency	Trades	Levels	Enrollment Capacity	Output Capacity
	Machining & Fitting	Technician	NA	NA
	Electronics	Technician	NA	NA
	Civil Engineering	Technician	NA	NA
	Electrical & mini-hydroelectrics	Technician	Total 500	520
	Auto mechanics	Technician	30	24
	Mechanics	Craftsman	72	56
	Electrical	Draftsman	48	40
	Construction Works	Draftsman	72	56
	Mechanical	Skill Trade	60	48
	Electrical	Skill Trade	60	48
	Construction	Skill Trade	60	48
	Agriculture	JTA Level	480	384
	Livestock	JTA Level	100	80
	Midwives	JTA Level	120	96
	Community Medical Auxiliaries		160	128
Department of Labour, Labour Supply Centre	Construction Trades and Industrial Engineering Trades	Skill Trade	Above 700	560
Vocational Training Centre	Mechanics, arc Welding, etc.	Skill Trade	125	100
Department of Cottage Industries			NA	NA
Butwal Institute	Cabinet Maker (Carpentry & Metal Works	Technician	16	12
	Industrial Office Worker	Technician	16	12
	Mechanic (Fitter, Welder)	Technician	16	12
	Electrician	Technician	16	12
	Surveyor	Technician	16	12
Department of Cottage Industries Training Centres	Electrical	Craftsman	60	48
	Mechanical	Craftsman	60	48

Source: Mechanical Training Centre, Instructor Training Project, 1985

general technical subjects, 345 persons will receive advanced training, 210 persons will be trained to produce handmade paper, 410 to produce ready-made garments, 4,600 persons will be covered under few-weeks-long mobile training, and 275 prison inmates will be trained in vocational subjects.

An intensive program for industrial expansion and development will be implemented through the Cottage and Small-Scale Industries Department Board. This program will cover projects such as cottage and small scale projects operated with World Bank assistance and Integrated Rural Development Projects, Industrial Village Projects, and projects to be sponsored by Swiss assistance in Dolakha and Sindhupalchowk districts. Under these projects 5,500 persons will be trained in motivation, entrepreneur development, and management, and 9,600 persons will be given skill development training. In addition, 2,710 schemes (village projects) will be prepared and distributed, 1,380 industrial units will receive technical assistance, and the materials and implementation support equivalent to Rs 15.2 million will be supplied. Sales services will also be provided through the direct development of the products of such industries.

During the five-year plan period the Labour Supply Centres aim at a further expansion of their areas of activity to train 4,740 persons, including 650 women, in subjects such as cutting, knitting, tailoring, carpentry, press-composition, masonry, machine-operation, milling, biri-making, apprenticeship, boiler operation, textile-mechanics, tire-resoling, machine-maintenance, jute-binding, welding, fitting, brick-laying, wiring, spinning, and stone-cutting. These Centres, it is also envisaged, will undertake skill-surveys of 600 Panchayats.

The Sixth Plan had envisaged, in light of the need to replace foreign labor by enhancing the productive skills of local labor, the establishment during the plan period of one more Labour Supply Centre in addition to those which have already been established. However, this did not materialize for a number of reasons and hence a Labour Supply Centre will be established at Pokhara during the Seventh Plan period. This Centre is expected to train 525 persons in different skills during the plan period and to undertake skill-surveys in 100 Panchayats.

7.3.3 Constraints

The following five factors have been the major constraints to the development of technical and vocational education.

1. Unavailability of reliable manpower requirements data both for the public and the private sectors.

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2. The high costs within skill-intensive training programs for physical development, equipment, maintenance allowances, residential facilities, teachers' salaries, and (most important) the continuous supply of training materials.

3. Shortages of trained and qualified instructors. This is mainly because the salary and service conditions are not sufficient to motivate and attract good instructors, the social status of instructors is low, and instructor training programs are not available.

4. Inadequate employment opportunities in the private sector. These have not been able to support training programs (viz. apprenticeship training).

5. Lack of support from the influential sector of the society because they do not find such programs suitable for their children.

7.3.4 Issues

The analysis of the subsector relating to external and internal efficiency, access and equity, administration and supervision, and costs and financing will now be discussed. The above sections on status, needs, plans, and constraints provide the foundation for this analysis.

7.3.4.1 External Efficiency. The analysis of external efficiency is concerned with the questions of program relevance. That is, to what extent has the training received in technical and vocational education institutions been useful? Has the training been good enough to provide linkages between program content and comfortable earnings, satisfactory job performance, and better career prospects and to provide an adequate base for more advanced training? These topics are discussed in this chapter to the extent that information is available.

External efficiency is examined along two dimensions. First, to what extent do the training institutions produce sufficient numbers of skilled workers to meet the manpower demands of the country. Second, to what degree is the training appropriate to the skills required for employment. It is particularly important that graduates of the technical and vocational institutions have skills in marketable services, as well as skills related to self-employment, so that they can contribute to the nation's economic growth.

Assessing the external efficiency of the various technical and vocational education programs in Nepal is difficult. Most of the programs were initially designed to train manpower for the development activities being undertaken by the respective government departments. Only recently have the technical school programs, labor supply centers, and the university started training manpower for the

general job market. The employers' assessment of the quality of this training, the length of time each trainee remains on the job, and the resulting changes in wages and career structures, are dependent on the results of new programs. These results have not yet been fully determined. The recently started Technical School System had its first output only in 1987 after a training period of three years at the school and one year on the job.

Two of these schools have had evaluations of their programs. The Danida evaluation mission, which recently assessed the Danida-assisted Sanothimi Technical School, observed that all nine trainees were employed after completing their general foundation course and the supplementary course on welding and turning. Similarly, 25 of the 30 tailoring graduates were employed at garment factories.

A similar but more detailed study was conducted in 1984 by the Swiss Association for Technical Assistance (SATA) evaluation mission. This was a tracer study of graduates from the SATA-aided Mechanical Training Centre (MTC), which was established in 1964. The annual intake capacity at MTC was only 12 until 1982. The study traced 113 (61 percent) of the 187 graduates. The study showed that 65 percent of the former trainees were then working at jobs related to their training. The study also found that 62 percent of the graduates interviewed expressed dissatisfaction with their present positions because they had not been able to progress to a higher level of education. The report therefore questioned whether the MTC was training the right target group because their social and employment ambitions exceeded the training objectives of the MTC. The recent MTC graduates even reported that they had difficulties finding jobs.

These results should not be underrated, but the graduates of the MTC in many cases found jobs within four months, and in most cases they did not want to leave Kathmandu for jobs, thus restricting their employment opportunities. The prospect of self-employment has also recently improved, particularly with the rapid growth of housing construction activities in Kathmandu.

The Institute of Engineering of T.U. operates programs at Thapathali and Dharan for non-graduate level trainees. The Institute reports that their graduates do not have much difficulty finding jobs. Although no tracer study has been made for these programs, the Dharan Campus informed the ILO mission, which prepared the report on *Strategies for National Manpower Development in Nepal* (ILO, 1986), that 14 students from their two-year mechanics program were offered jobs by a cigarette company near Hetauda before they had finished their course and that they were paid double the average salary of such workers.

A tracer study of graduates from the Department of Cottage and Village Industries (DCVI) programs was conducted in 1985. This study was based on a random sample from four of the five development regions. The sample included 190 former DCVI participants and identified their post-training employment opportunities as well as the increase in their income attributable to their training. The results of the survey (Table 7.12) indicate that a large proportion of the graduates (56 percent) were unemployed, and only 25 percent were self-employed. The reasons given for unemployment (Table 7.13) show that the training was insufficient as expressed by 50 percent of the graduates, whereas 42 percent thought that there were no jobs available. About 4 percent thought that the salary was too low, and another 4 percent lacked the credit required for employment.

The report examines the problems of existing DCVI courses and concludes that more relevant training can be prepared and more appropriate target populations selected by the utilization of the ILO-developed Training for Rural Gainful Activities (TRUGA) methodology.

In conclusion, the individual reports, sectoral studies, and the current Five Year Development Plan, have all highlighted the need to expand employment opportunities for all categories of Nepali workers. As stated earlier, skills training alone does not create employment. In this respect government, through its development plans and sectoral activities, has initiated programs to encourage investment both in public and private enterprises which should provide more employment opportunities for trained workers. Education or training for income generating skills, whether for government service, wage earning employment, or self-employment, must be based on a careful study of forthcoming manpower needs as well as existing development plans. Curriculum standards and certification should be designed or adapted to meet the real and evolving employment needs of Nepal and should not remain static and inflexible in the face of anticipated changes in demand.

During a recent unofficial tour of the Western Development Region, His Majesty the King has said, "Factors such as dedication, skills and resources are preconditions for material development; whereas national tradition, culture, religion and dedication to these values help enhance national morale. Keeping these in mind, we have to continue to adopt newer technologies and techniques to speed up the modernization of the country on the one hand and preserving our values based on social ideals such as discipline, morality, honesty, and mutual respect on the other." The coordination of skills, resources, dedication, and morality with the

Table 7.12

Summary of DCVI Tracer Study (1985)

Type of Employment	Before Training		Presently	
	Number	Percent	Number	Percent
Wage Employed	8	4.2	29	15.3
Self-Employed	18	9.5	48	25.3
Both	2	1.1	7	3.7
Unemployed	161	84.7	106	55.7
Missing data	1	0.5	-	-
Total	190	100.0	190	100.0

Source: DCVI/ILO Feasibility Study (1985)

Table 7.13

Reasons Given for Unemployment

Reasons Given	Numbers	Percent
Insufficient Training	53	50.0
No Job Available	45	[illegible].6
Too Low Salary	4	[illegible]
Require Credit	4	4.3
Total	106	100.0

Source: DCVI/ILO Feasibility Study (1985)

emerging technologies and techniques will ensure that well trained and motivated manpower will be available to meet employment opportunities as they arise. But the problem still remains as to how the increased employment opportunities can be created before the introduction of additional skilled manpower into the labor market produces skilled unemployment.

7.3.4.2 **Internal Efficiency.** This chapter considers the effectiveness of measures adopted to strengthen technical and vocational training activities. As pointed out in the Status section, higher capital development costs, higher training costs, and the reluctance of the Ministry of Finance to meet these higher unit costs of training are the causes hindering the expansion prospects of the skill training programs in Nepal. Therefore, there are efforts to maximize the internal efficiency of the system through optimal use of the available resources, thus reducing the high unit and cycle costs associated with technical and vocational training. In order to accomplish this, there are searches for alternative cost-effective, skill-intensive, and easily expandible training means. The ten major concerns and issues related to the training process are discussed below.

1. There are numerous models offered for technical and vocational training, but many do not have clearly defined curriculum and evaluation systems. This may be because there are no reliable manpower estimates available or because the employers are not clear as to what type of skills they are actually looking for.

2. An adequate supply of qualified instructors has always been a problem. A strong training program for instructors is lacking in the country. Most current instructors do not have pedagogic training.

3. The average student/teacher ratio has been 8:1 and, when compared to the general education ratio of 30:1 at the secondary level, the ratio is not bad. But the turnover of the instructors has resulted in the loss of instructional quality.

4. The demand for places in technical schools has been very high, but their capacities have only been able to admit 10-15 percent of the candidates. The Mechanical Training Centre, for example, can accept only 74 candidates into each of its three trade streams out of 500 or so applicants.

5. The academic, nutritional, and social backgrounds of some applicants do not allow them to be admitted, though they may be the people who most need to learn such skills.

6. The jobs available in the public sector are very much of the more general type than the more specific type. This causes pressure for the more general type of technical or vocational education.

7. The experience gained from the operation of the technical schools, and the facilities created at these schools, has not fully been utilized for planning and initiating other training programs. This is mainly because of the shortage of instructors and the shortage of funds to support the living expenses of the trainees.

8. Shorter duration training programs with good self-employment prospects have not yet been seriously introduced. Skills like beekeeping and packing techniques have not yet been implemented.

9. The conditions of service for the instructors in terms of salaries, allowances, promotion prospects, and training opportunities have not been good enough to attract instructors. Those engaged, in fact, have been over used but not suitably remunerated.

10. The attrition rate of trainees has been quite high, contributing to high unit and cycle costs. In the mechanics trade at the MTC and in the construction trade at Jiri Technical School, the rate has been as high as 30-40 percent. The high attrition rate is attributed to the very low academic level of some entering students, expulsion of some students on disciplinary grounds, and opting for general higher education by the students once they have been able to raise their achievement in academic subjects. Cases of repetition have been almost non-existent. And the situation is slowly improving.

7.3.4.3 Access and Equity. Access is concerned with the availability of the training opportunities for those who qualify to participate in an educational program. The special feature of technical and vocational training is that the skills learned must be highly relevant to the job market, and jobs should be available immediately after the training since there is always a chance of losing the skills if

they are not practiced continuously. To minimize the attrition rate, the selection of the right group of people with the right age and right attitude is of great significance. Since the opportunities created are very few, the guiding principle for providing access has been that the training centers be as much dispersed as possible in different parts of the country in both rural and urban settings. In Figure 7.1 of the Status section the distribution pattern has been shown.

Most of the training programs have been developed in areas where employment prospects after the training appeared good, at least in the public sector. Only three of the major training institutions (Dhankuta, Jiri, Jumla) are located in rural settings, the remaining ones are either in Kathmandu or in other urban areas. Much of this training is offered in trades that traditionally have been regarded as more suitable to men. But the newly established institutions have other trades, like health and agriculture, that are accessible to women as well. One polytechnic, for example, is being developed exclusively for women. The proposed technical schools are being developed in the rural areas and will offer trades suitable for both sexes and will help improve access, particularly for less advantaged individuals.

The data available, though, do not clearly specify the sexes of the participants. From interviews with officers of the Technical and Vocational Education Directorate it appears that, in the technical schools, the health trade has more than 50 percent females trainees. In the agriculture trade the number of female participants is growing, but in the engineering-based trades like mechanics, auto mechanics, electricians, sanitary workers, and fitters the female enrollment is almost nil. The proposed Women's Polytechnic, with a capacity of 500 exclusively for female participants, would reduce the disparity in female participation.

The locations of the technical schools and other training programs in various parts of the country, and the policy of selecting students from the neighboring districts on a quota basis, is another factor which seems to provide more access to technical and vocational training for the people living in remote areas.

The present policy of government meeting the entire cost of training, and paying even the maintenance cost to financially and academically handicapped school dropouts who enter training, is indicative of the policy of equity that is being adopted in technical and vocational education.

7.3.4.4 Administration and Supervision. There is an overall shortage of technical and professional manpower at the central level, particularly in the Directorate of Technical and Vocational Education of the MOEC, in the Department

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of Labour, and in the Department of Cottage and Village Industries. This has seriously handicapped these units in their efforts to revise curricula, evolve better evaluation procedures, prepare prototypes of training materials, and develop suitable supervision models. Because of the lack of these, the maintenance of uniform standards has not been possible. University run programs, for that matter, have been better off.

The administration of technical schools, TU, and other ministries' programs has been sufficiently decentralized. The technical schools have management committees with representatives from district level offices of the relevant departments. The zonal commissioner or the Chief District Officer is the chairman of the committee. This influential committee has been helping procure land for the schools, and training facilities for the students in agriculture, hospitals, and other areas. On the whole there have not been any major problems of administration. The existence of a separate Directorate for technical and vocational education has made the administration easier. A high level committee on Technical and Vocational Education, with representatives from the university, Ministries of Education and Culture, Panchayat and Local Development, Agriculture, Industries, Labour and Social Welfare, and employers has been active in the management of the Technical School System. This committee, however, has not even been able to effectively coordinate the training programs of various agencies. Therefore, it is being realized that a stronger coordinating committee needs to be established for this purpose.

7.3.4.5 Costs and Financing. Before discussing this topic, it appears important to differentiate between costs and financing. Costs refers to the amount of funds required to accomplish a given task and financing refers to the sources or these funds.

Costs

There are several issues relating to costs, which cover the amounts and the ways funds are used in the overall situation in Nepal. Most of the skill training programs have been supported by external assistance agencies. The support has been obtained from the initial stage of project proposal preparation through to physical development, equipping, instructor training, and curriculum development. Government has been providing the recurrent expenses for the operation of the programs once the external support has ended.

The unit costs for technical training in Nepal, as in all other countries, has

been very high. The fact that the trainees are now provided with accommodation and a maintenance allowance, plus the high cost of training materials and instructor's salaries, has made these programs very expensive. The quality, efficiency, and credibility of the training programs are of great importance for impressing potential employers. Therefore, the rigor in training activities, the high number of contact hours practicing the skills, and the longer duration of the courses were thought important for the technical schools. Now that the infrastructure is established and the program is running smoothly, the Directorate of Technical and Vocational Education wants to add short-term training activities in related skills to each of the technical schools.

Adding such programs and assigning the existing and proposed schools to supervise nearby satellite training centers would dramatically reduce the unit and cycle costs of the training. The technical schools could prepare the curricula and instructional materials for such centers and, if the trainees are drawn from the neighboring areas, the accommodation and living allowances may not have to be provided. Associating training with production of marketable services and products, which has been done elsewhere, could also reduce the costs of training.

For the development of physical infrastructure and providing equipment for the proposed technical schools, foreign assistance will, however, still be necessary. Such assistance may also have to be provided for the operation of the programs in their initial years.

Financing

At present government is financing the entire program either through external assistance or from the treasury. All students are paid stipends. Students have not been paying any fees except in Jumla Technical School, which has been charging Rs 25.00 per month per student.

Two new approaches are being proposed. First, the training should be supplemented with production activities so that up to about 25 percent of the costs are recovered by income the schools receive. This has been introduced in most technical schools but the earnings so far have not exceeded 10 percent of the total costs. But if properly planned there are prospects of earning up to 25 percent of the recurrent costs of the schools.

The second approach being considered is to change the programs to be more like the apprenticeship model of training so that the costs of practical training, of training materials, and of paying for the maintenance allowance by the government

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would be reduced. This would also involve the production sector, including industries, to make some contribution to the costs of training.

7.3.5 Conclusions

From the analysis of the status, needs, and constraints presented above, the following five major conclusions can be drawn:

Conclusion 1: The efforts made by government to promote technical and vocational education have been good.

Conclusion 2: The early experience with managing vocational training concurrently with academic education did not succeed, but the emergence of the technical school system as a substitute has been an appreciable improvement in this subsector. The importance of the emphasis on the maintenance of quality, and caution against expanding the training model too rapidly, has been learned from this early experience and will influence the future planning and operation of such programs.

Conclusion 3: Government plans to expand the technical school system to a number that can be managed comfortably, to increase the intake capacities of the university-run programs, and to co-ordinate the various activities of different government ministries, non-governmental agencies, and private agencies. These plans need to be implemented without delay.

Conclusion 4: The reluctance to provide sufficient financial support for the existing programs has an adverse effect on the quality of training.

Conclusion 5: The need for continued external assistance to support technical and vocational education should never be under-emphasized.

7.4 RECOMMENDATIONS

In this section ten major recommendation are presented concerning policy, programming, and implementation aspects of technical and vocational education. These recommendations are based on the above analysis of the status and projected needs.

Recommendation 1. Create an Integrated Skill Development System. This body should be assigned the following responsibilities:

1. Make more realistic manpower estimates for public and private sector needs.

2. Coordinate the training provided by the various agencies with regard to curricular content and the equivalence of their various programs.

3. Develop more effective and less expensive training modules suitable for rural development and employment generation.

4. Evolve a career development system for technical manpower at different levels.

5. Propose a manpower production system based on projections of manpower supply and demand.

6. Update and modernize the existing training programs.

7. Update and strengthen the data collection and processing system. This would help avoid duplication, strengthen planning, and help develop a suitable career development system for the technical cadre.

Recommendation 2. Strengthen the National Skill Testing Authority by providing adequate technical, administrative, and financial support. This would facilitate recognition of skills which have not been developed through the formal system, and also would help standardize the programs conducted by different agencies.

Recommendation 3. Conduct a detailed survey of the vocational training needs of the rural areas, of the urban and semi-urban areas, and also of women, to promote employability. This will help identify useful vocations for future training. With improvements in the road network, modernization of agriculture, development of hydroelectric plants, expansion of housing activities, execution of integrated development programs, etc., a number of new employment opportunities are emerging. The extent of these new skill requirements should be estimated more precisely so that skill development programs of the right types can be developed.

Recommendation 4. Give more attention to the instructor training needs. The smooth supply of qualified and experienced instructors is necessary to ensure training quality. Experience has shown that one of the main reasons for the failure of a number of vocational training activities was the lack of suitable instructors. There is no organized instructor trainer center in the country to produce and upgrade instructors for technical education and vocational training programs.

Recommendation 5. Since the cost of skill training is always high, government should commit the necessary funds and also explore alternative and less expensive training models. An apprenticeship training program, for example, can be a more cost-effective model. Some measures can be tried for decreasing the unit cost of training. Increasing the enrollment capacity of centers, decreasing the duration of training programs, operating the centers on a shift basis, etc., for instance, could help reduce the unit cost. While doing this, however, the quality of the training should be maintained.

Recommendation 6. Take steps to give more dignity to basic- and middle-level skills. The skill proficiency and the dignity given to the skill should not be compared with the length of education in other areas. The skills imparted by lower level training have so far been used by the private sector. The public sector does not have attractive offers for skilled craftsmen, nor have they seriously thought about giving good status to such skills. The private sector, although it offers employment opportunities to persons with basic- and middle-level skills, is not organized well enough to offer career development opportunities to these workers.

Recommendation 7: Increase the proportion of the government budget allocated for technical education and vocational training to at least 5 percent to expand training opportunities. Currently, only about 1.5 percent of the education budget is allocated for this purpose, and this amount is insufficient to expand activities in this area. The bulk of the education budget supports general education. Technical and vocational education has so far received only a small share of the total. Industries and other development activities have not provided funds for manpower development.

Recommendation 8. Help industries and the private sector develop technical education and vocational training systems by providing them with the technical expertise to do this. This can add leverage to the use of government funds for training in the technical and vocational subsector.

Recommendation 9. Continue and increase the allocation of external assistance to the development of technical education. The development of infrastructures for

technical training with government resources alone would be very difficult. Development of physical infrastructure, procurement of equipment, training of instructors, etc., are capital-intensive aspects. Without an adequate provision of these components, effective skill training cannot be achieved. In the initial years of developing such skill training centers, external assistance would greatly be needed.

Recommendation 10. Formulate more specific government policies for skilled manpower development. In the absence of such policies the qualitative and quantitative growth in the technical and vocation area will not be possible. Several agencies are presently engaged in skill training activities. The university, the labor department, the cottage and industry department, the Ministry of Panchayat and Local Development, and the Ministry of Education and Culture are the major agencies. But which of the agencies are supposed to do what type of training is not yet clear. Keeping current records of the needs, and identifying the agencies to help meet the needs, would also greatly help with the accreditation aspects of this issue.

Annex 7.1

Interviewees

Jeevan Adhikary, Principal, Jiri Technical School

B.R. Joshi, Principal, Sanothimi

Patrick Leo, Co-principal, Mechanical Traning Centre, Balaju, Kathmandu

Laxmi Bahadur Manandhar, Principal, Mechanical Training Centre, Balaju, Kathmandu

Keshab Prasad Nepal, Joint Secretary, Planning Division, MOEC

Hans R. Ptifer, Co-principal, Jiri Technical School

Khadga Man Shrestha, Director, Directorate of Technical and Vocational Education, MOEC

N.N. Singh, Secretary, Ministry of Education and Culture (MOEC)

Ratna Bahadur Tamrakar, Deputy Director, Directorate of Technical and Vocational Education, MOEC

Anil Upadhyay, Director, Under-priviledged Children Program, Sanothimi

Annex 7.2

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Annex 7.3

Seventh Plan Priority and Other Private Sector Industries to be Promoted, and Industrial Projects to Have Attained Self-Sufficiency

Industry	Proposed Number	Investment (in Rs million)
1. Higher Level (Priority)		
1.1 Food and Food Material		
Sugar Mill	1	102.9
Scheme Milk Powder	1	39.6
Soya Milk	1	68.0
Baby Food	1	22.6
Biscuits and Confectionary	1	3.4
Juice Cider, Brandy	1	1.6
Modernization of Rice	20	16.0
Tea Processing Mill	2	30.0
Sub-Total	28	284.0
1.2 Textile and Wearing Material		
Integrated Textile Mill	2	1,000.0
Textile Mill	3	75.0
Decentralized Powerloom[1]	-	78.85
Spinning Mill	4	880.3
Cloth Processing	4	56.0
Thread Processing (starch and dye)	4	20.0
Towel	4	10.4
Tapestry	3	12.0
Wool-Processing (blanket)	20	2.0
Acrylic Yarn	1	25.0
Leather Shoes	4	23.2
Canvas Shoes	1	15.9
Cotton Carpet	1	2.0
Sub-Total	35	2,200.63
1.3 Domestic and Construction Material		
Builder Hardware	1	0.6
G.L.S. Bulb	2	21.0
Electric Materials	1	6.0
Plywood	1	8.8
Mini-Cement Plant	1	20.0
Industrial Lime	2	3.9
Stone Industry	2	35.0
Sub-Total	10	95.3
1.4 Health Material		
Medicine	1	3.52
Bath Soap	1	3.0
Sub-Total	2	6.5

[1]It is estimated that half of these industries will be cottage industries.

(annex continued)

1.5	**Educational Material**		
	Offset Printing Press	1	8.0
	Stationery Materials	5	3.2
	Writing Material	1	2.0
	Pencil	1	3.2
	Printing Ink	1	1.3
	Paper	1	175.0
	Sub-Total	10	192.7
1.6	**Light Engineering Material**		
	Nuts, Hinges, Bolts, Screws	1	2.5
	Hand Tools	3	2.6
	Fan and Electric Motor	1	13.8
	Energy Meter	1	5.5
	Power Carburetor & Consideration/Transformer	1	5.3
	Water Meter	1	1.2
	Small Electric Motor	1	1.2
	Bathroom Materials Alloy & Electroplating	1	2.6
	G.I. Pipe Fittings	1	2.5
	Fitting of Pumpset Used in Irrigation	1	6.3
	Cycle Fitting	1	15.0
	Water Turbine	1	12.0
	Automatic Loom & Parts	1	5.0
	Sub-Total	15	75.5
1.7	**Export Promotion Industry**		
	Starch and Glucose	1	20.6
	Herbs Processing	1	15.0
	Mushroom Production	1	1.4
	Malt	1	32.5
	Ready-Made Garments	15	12.0
	Leather Processing	1	10.0
	Jute Carpet	1	49.5
	Industrial Gloves & Aprons	1	1.0
	Computer Software	1	4.5
	Sub-Total	23	145.9
2.	**Cottage Level (Priority)**		
	Different Industries, Cottage, & Small-Scale Industry Program	7,500	450.0

(annex continued)

Annex 7.3 (continued)

Industry	Proposed Number	Investment (in Rs million)
1. **Higher Level (Other)**		
Vegetable Ghee Industry	1	68.3
Steel Furniture	1	1.0
Synthetic Detergent	1	4.0
Radio Receivers & Voltage Stabilizers	1	16.1
Wet Cell Battery	1	7.6
Sodium Silicate	2	2.8
Scientific Glassware	1	10.0
Body Building of Bus & Trucks	1	1.0
Bleaching Powder	1	6.0
Reclamation of Used Oil	1	2.3
Carcass Utilization Plant	1	10.0
Distribution Welding & Transformers	1	8.9
Wooden Parquet	1	7.2
Furniture Industry (Wooden)	1	3.1
Camel Back	1	1.9
Micro Cellular Sheet	1	1.4
Sugarcane Wax	1	2.0
Tyre and Tube	1	454.7
Caustic Soda	1	16.5
Sodium Sulphide	1	1.0
Letter Press	3	2.5
Electric Arc Furnish	1	163.7
Wax Paper Wrap	1	5.2
Welding Electrodes	1	4.2
Fertilizer Blending Plant	1	9.0
Lamp Bulb	1	5.0
Auto Lift Spring	1	80.0
Cosmetic Processing Material	1	1.0
Noodle	1	11.6
Tea Processing/Blending	1	820.6
Dyestuff	1	4.3
Urea Fertilizer[1]	1	---NA--
Sub-Total	36	1,723.0
2. **At Cottage & Small-Scale Industry Level (Other)**	3,400	132.0
Production-Oriented Services	7,500	450.0

[1]Project area and other detailed descriptions are being researched.

(annex continued)

Industrial Products to Have Attained Self-Sufficiency

1. **Self-Sufficient Products**
   1. Flour
   2. Processed Fruit
   3. Biscuit
   4. Confectionary
   5. Beer
   6. Alcohol (except high quality)
   7. Soft Drink
   8. Cigarette, Bidi (except high quality)
   9. Noodle
   10. Animal & Poultry Feed
   11. Hosiery Goods
   12. Washing Soap
   13. Matches
   14. Wooden & Steel Furniture
   15. Polythene Pipe
   16. Plastic Bag
   17. Plastic Slipper
   18. Carbon Paper
   19. Envelope & General File
   20. Dry Cell Battery (V-20 size)
   21. Iron Rod
   22. Marble-Chips

2. **Products Likely to Achieve Self-Sufficiency**[2]
   1. Vegetable Ghee
   2. Tooth Paste
   3. Paint
   4. Agricultural Tools
   5. Electric Conductor
   6. General Electric Wire
   7. Aluminium Utensils
   8. Plastic Utensils

[2]On current demand and capacity basis only.

8. NONFORMAL EDUCATION

This chapter on nonformal education (NFE), reviews the current status of the literacy activities coordinated by the Adult Education Section (AES) of the Ministry of Education and Culture (MOEC) in Nepal. These literacy activities, including the Nonformal Education for Rural Development or adult education program, are analyzed with respect to HMG's main needs, plans, and constraints, and in the light of five major issues related to literacy activities. These issues are external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing.

Conclusions are derived from these analyses and a related group of recommendations are then offered in support of the current government policy and its strategy for implementation. The terms of reference for this sector assessment do not include a survey and analysis of the extensive array of activities undertaken by other ministries and agencies in the domain of nonformal education.

8.1 INTRODUCTION

Nepal's education system is currently facing a number of development challenges with regard to the nation's social and economic growth and its goal of improving the quality of life for the Nepalese people. The adult education program of the MOEC is one of the current activities that has been identified by HMG as a strategically central factor in the new Basic Needs thrust.

During the last decade a very small proportion of the annual education budget (less than 1 percent) has been designated for the AES, the unit of the MOEC responsible for literacy activities. The Section has a significant leadership and technical assistance role in the field--its strategy being to use available resources to the greatest extent possible. This pragmatic approach is appropriate in Nepal where there are many needs and limited resources to meet them.

HMG's decision to continue and to expand the literacy program is a wise one. The MOEC has a substantive and effective literacy program to offer. It makes this program available to any agency registered with HMG and with an infrastructure appropriate to support literacy activities.

Several reasons support HMG's decision to encourage investments in the Nonformal Education for Rural Development program. Recent research, for example,

has shown that the educational level of parents is the single most important factor that determines whether or not Nepalese children attend and complete primary school. This is of special relevance to the educational level of adult males in Nepal because so few women attend school. The AES literacy program is closely linked to other rural development activities and requires community participation--all of which are priorities of HMG. Moreover, it is well-established that increased literacy rates are directly associated with increases in agricultural production, decreases in fertility rates, and improved health status--all national priority needs.

8.2 STATUS

This chapter focuses on literacy activities related to the MOEC for two important reasons. First, literacy is a specific objective of the new Basic Needs program and the MOEC is identified as having the major role in this area. Second, this chapter focuses on the programs and activities that can be directly influenced by the MOEC.

Between 1951 and 1971 a literate person in Nepal was defined by HMG statisticians as one who could read and write in any language. The most recent census (1981) and a subsequent demographic sample survey (1986) altered this definition to include anyone who could read and write in any language with understanding. Based on this current HMG definition, the 1981 literacy rate was 23.5 percent. The *Demographic Sample Survey 1986/87 First Report* indicates that the rate had risen to 34.8 percent by 1986.

The MOEC's major present concern is to implement feasible plans that meet the nation's Basic Needs objectives for education as set forth early in 1987. For the AES, this involves providing literacy training to over five million adults by the year 2000 A.D. The first part of this chapter describes the current status of nonformal education in Nepal because this is the foundation for any expansion.

This section on status initially summarizes the historical setting and trends, gives an overview of national goals and strategies, and describes the structure of the NFE subsector in terms of the specific focus of this chapter as described above. The second part of this section gives a more detailed description of the various aspects of the AES's literacy activities. It addresses the following topics: approach; participants; facilitators; curriculum, methods, and materials; achievement; quality of instruction; facilities and equipment; administration and supervision; and costs and financing.

8.2.1 Historical Setting and Trends

Nonformal education is an ancient tradition in Nepal. Family skills have been handed down for centuries from one generation to the next. This transmission of a particular set of knowledge and skills initially was limited to specific ethnic groups and castes for an extensive period of time, however, because specific kinds of activities have traditionally been associated with a particular caste.

One outcome of the change in government in the early 1950s was the establishment of a Board of Education. This Board instituted the Nepal National Education Planning Commission which envisioned for the nation an integrated approach to literacy and life skills development (e.g., health, agriculture, and income generation). HMG faced an immense task at this time in the area of literacy--only two percent of its population was literate.

Education for the large numbers of untutored poor, especially in the rural and remote areas, was viewed as a critical need and the Adult Literacy Programme was begun. Frank Laubach, an international literacy expert, was invited to work with five Nepalese professionals to develop the first literacy materials for the program. This group prepared a primer and a four-part reader. The Nepal National Education Planning Commission also recognized the need for post-literacy materials, teachers, village libraries, and radio education. Adult literacy programs were to be administered by the Ministry of Education.

The adult education goals of the 1971 National Education System Plan (NESP) were consistent with those established in the 1950s. Two new adult education programs were begun: literacy classes and a Functional Adult Education Programme. The NESP also recognized at an early date the need for coordination among the several agencies already involved in literacy activities. Coordination allows for greater coverage by preventing duplication, and encourages a more efficient use of available materials and resources.

In 1977, while the above-mentioned programs were still in operation, a new approach to adult education was considered necessary and its development was started. Its objectives were to systematize adult education, to make it more efficient, and to focus it more directly on the nation's development needs. With assistance from USAID, (including technical assistance from World Education, Inc.), the MOEC began to develop a flexible package of materials based on the needs of daily life and designed to assist adult learners with changing their attitudes, behavior, and skills to better equip them to participate in the development process. The current program, which is called Nonformal Education for Rural Development

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and described later in this chapter, is the result of these activities that started in 1977.

The four national censuses conducted since 1952 have included literacy data. Table 8.1 shows literacy rates for persons over 10 years old by gender and average annual increases between the censuses as cited in the *Population Monograph of Nepal* (1987). The national literacy rate was 23.5 for combined genders in 1981, and a 1986 demographic sample survey indicated it had increased to 34.8 by 1986. These rates show significant increases since 1954 when the literacy rate was 5.3. Although there have been substantial increases in literacy rates over the years, the figures in Table 8.1 indicate that these increases are primarily a function of males becoming more literate. Between 1952 and 1986 male literacy rates increased from 9.5 to 51.8 whereas female literacy rates only changed from 0.7 to 18.0. And, average annual increases in female rates were never as high as those for males (e.g., the 1961-1981 annual increase for males was .930 and for females was .485). As a result, the gender literacy difference has increased since the early 1950s.

Table 8.1

Literacy Rates for Persons over 10 Years Old by Gender and Average Annual Increases between Censuses

Gender	Literacy Rates (%) for Persons Over 10 Years Old					Average Annual Increases Between Censuses			
	1952/54	1961	1971	1981	1986[1]	1952/54	1961-1971	1971-1981	1961-1981
Both Genders	5.3	8.9	14.3	23.5	34.8	.488	.540	0.920	.730
Male	9.5	16.3	24.7	34.9	51.8	.850	.840	1.020	.930
Female	0.7	1.8	3.7	11.5	18.0	.138	.190	0.780	.485

Sources: Population Monograph of Nepal (1987).

[1]Age 6 years and above. *Demographic Sample Survey 1986/87, First Report* (1987).

Table 8.2 gives literacy rates by age group and gender from the three most recent censuses (1961, 1971, and 1981). According to the data, literacy rates have increased for all age groups over time. Adult literacy programs have contributed to improved literacy rates for those who were 15 years or over in 1961. The substantial increases in rates for individuals between 10 and 19 years in 1981 is partially due to improved access to primary schools as a result of education policies introduced in 1971-1972.

Table 8.2
Literacy Rates by Age and Gender for the Three Most Recent Censuses

	1961			1971			1981		
Age Groups	Both Genders	Male	Female	Both Genders	Male	Female	Both Genders	Male	Female
6 - 9	---	---	---	11.1	16.4	5.5	21.6	27.8	15.2
10 - 14	9.2	14.5	3.1	23.8	35.8	9.6	38.8	50.8	21.2
15 - 19	11.4	19.5	2.4	21.9	35.4	7.1	33.6	48.2	17.5
20 - 24	10.6	20.2	1.6	17.0	30.9	4.1	26.5	41.7	12.6
25 - 29	9.1	17.4	1.2	18.3	24.4	2.5	23.0	36.3	10.1
30 - 34	8.4	16.4	1.2	10.5	20.3	1.6	19.3	31.8	7.8
35 - 39	9.0	16.4	0.9	9.8	17.6	1.4	17.5	27.6	6.7
40 - 44	7.8	15.4	0.9	8.7	16.4	1.1	14.6	23.7	5.5
45 - 54	7.5	14.3	0.8	8.7	15.7	1.0	13.4	17.3	4.8
55+	6.4	13.0	0.6	6.5	12.6	0.7	11.2	19.1	4.0
Not Stated	3.5	8.3	1.8	---	---	---	---	---	---

Source: Population Monograph of Nepal (1987)

As might be expected there are disparities between the literacy rates of urban and rural areas. They may be summarized as follows for 1981 and 1986:

Table 8.3
Urban and Rural Literacy Rates by Gender for 1981 and 1986

	Urban		Rural	
Gender	1981	1986	1981	1986
Both Genders	50.5	62.7	21.4	32.5
Male	61.1	77.7	31.9	49.9
Female	38.2	47.5	10.3	16.1

Source: *Demographic Sample Survey 1986/87, First Report* (1987)

These figures show urban versus rural differences and again underscore increasing gender differences in literacy. Interestingly, figures from the *Population Monograph of Nepal* indicate the Central Development Region ranked third in overall literacy rates in 1981 (22.7), falling behind the Eastern Development Region (27.4) and the Western Development Region (25.8).

Although significant progress has been made, there are still major challenges in the field of literacy training. Even the Central Bureau of Statistics (CBS) cautions that it was not able to administer a functional literacy test in the most recent census and survey, and there may therefore be some bias in the reported literacy figures. The CBS suggests that biases may be caused by individuals who interpret a person's ability to read and write their own names as evidence of literacy or by parents who exaggerate the degree of literacy achieved by their daughters of marriageable age. The CBS further notes that reported literacy rates throughout Asia are usually exaggerated by 10 to 25 percent.

Table 8.4 lists the number of literates from MOEC sponsored activities from 1956 through 1984. For the years 1972 through 1984 the target number, actual numbers, and the percent of target are listed. The table indicates that the MOEC came relatively close to its target most years.

Table 8.4

Number of Literates from MOEC Sponsored Activities (1956 - 1984)

Year	Target Population	Achievement	Percentage
1956	N.A.	1,000	N.A.
1957	N.A.	7,525	N.A.
1958	N.A.	5,500	N.A.
1959	N.A.	6,000	N.A.
1960	N.A.	20,375	N.A.
1961	N.A.	9,800	N.A.
1962	N.A.	4,800	N.A.
1963	N.A.	17,050	N.A.
1964	N.A.	26,500	N.A.
1965	N.A.	18,240	N.A.
1966	N.A.	8,260	N.A.
1967	N.A.	19,095	N.A.
1968	N.A.	16,965	N.A.
1969	N.A.	19,745	N.A.
1970	N.A.	2,101	N.A.
1971	N.A.	40,999	N.A.
1972	100,000	61,370	61.4
1973	100,000	73,900	73.9
1974	100,000	98,805	98.8
1975	100,000	92,294	92.3
1976	100,000	87,307	87.3
1977	125,000	94,932	75.9
1978	N.A.	2,572	N.A.
1979	20,000	14,429	72.1
1980	36,000	10,000	27.8
1981	28,000	20,684	73.9
1982	100,000	64,612	64.6
1983	150,000	101,471	67.6
1984	135,880	101,471	74.4

Sources: Dhauvadel, S.N. et al., *Literacy and Nonformal Adult Education in Nepal*, (in Nepali), (1979).

For the over three decades that the MOEC has been active in literacy there has been consistency in the goals for adult education: to link literacy to development so it is a supporting tool for that process as well as a result of that process. Unfortunately, outcomes have consistently fallen short of the established targets.

8.2.2 National Goals and Strategies

The Seventh Plan (1985-1990) is currently being implemented. It was developed under the policy guidance provided by the 1971 National Education System Plan, the adult education components of which have been summarized immediately above. The goal for adult education in the Seventh Plan is to have an adult literacy program that contributes to development through the education of a large number of adults who will make substantial contributions to national development when they become literate. The literacy program target for this goal is to make approximately 1,500,000 adults literate during the plan period: (750,000 are to be made literate through the general literacy program and 750,000 through the Functional Adult Education Programme.)

National goals for education were further explicated in the Basic Needs Strategy outlined by HMG in 1987. Literacy is regarded as an important way to improve the majority's living standards. As part of the commitment to provide basic education to all by the year 2000 A.D. the target is to provide literacy training to 5,345,631 adults in the next 13 years to:

- enable individuals of 15-34 years of age to read, write, and do simple mathematical calculations.
- increase adults' awareness of their situations and their self-confidence.
- provide information essential to daily life on topics such as agriculture, health, cottage industry, family planning, forestry, and population education.
- inform the nation about its political system and development activities.

The Basic Needs Strategy selects the current MOEC program which is described below as the one that should be promoted, implemented, and supported, and identifies the MOEC as the key agency for advocating and implementing the literacy program. This implementation includes policy formulation; materials development, production, and distribution; training; coordination; and direction.

The MOEC recognizes the magnitude of this task and has selected a strategy designed to use all available resources for literacy activities in the most efficient manner. It has selected a single program as the national program: Nonformal Education for Rural Development (or Nonformal Adult Education Programme). This program receives HMG support and the MOEC has invested in materials development and other activities in support of the program since 1977.

The AES provides a limited number of literacy activities through District Education Offices (DEOs). Equally important, however, is its role as a coordinating agency--facilitating governmental and non-governmental agencies in their efforts to provide literacy training. The MOEC works openly and closely with any registered organization that wishes to cooperate with it. In this regard, the MOEC serves as a technical assistance agency for those organizations involved in literacy training. For example, it provides materials at cost, and training for trainers at almost no cost, to all requesting registered agencies. This pragmatic approach to solving a difficult problem is an excellent way to make efficient use of limited resources. (This approach is further detailed below in Section 8.2.3.)

The current situation demands pragmatism if the goals and objectives of the literacy program are to be met. Many factors (e.g., difficult terrain, lack of human and financial resources, and economic hardship) make it difficult to meet targets on time. Furthermore, because the population growth rate has been higher than originally projected, the literacy rates have not increased as much as expected. As a result, the goals of the Basic Needs Strategy must be considered in light of there now being fewer literates than originally anticipated and the possibility of continued high population growth rates. The need to make large numbers of adults literate is further complicated by the fact that those who have received literacy training may lose their literacy skills if they are not engaged in activities that specifically support literacy retention.

The trend shows an increase in the absolute number of literates and the data suggest that the literacy rate is also increasing. Indeed, remarkable progress has been made since 1951 when the literacy rate was estimated at two percent. The question remains as to whether it is increasing at a sufficient pace to achieve the year 2000 A.D. targets in view of the high rate of population growth.

8.2.3 Structure

This section describes the structure only of that portion of the NFE subsector concerned with literacy training. It includes activities of the AES and other

governmental agencies and non-governmental agencies (NGOs) engaged in literacy training.

8.2.3.1 Ministry of Education and Culture. The MOEC has primary responsibility for education throughout the nation. Figure 8.1 shows the administrative organization of the MOEC. The AES is under the Educational Administration Division. The Section is headed by an Under Secretary for Adult Education who is assisted by a Section Officer.

Figure 8.2 shows the current organizational structure of the AES and lists the posts. The Section is divided into 6 units: Administration, Curriculum, Program, Training, Evaluation, and Population Education. The Administration unit is responsible for personnel and general administration. Materials are developed in the Curriculum unit. When necessary, local technical advisors are hired as consultants by the section. Planning, programming, and implementation are carried out by staff associated with the Program unit. The officers in the Training unit provide training to facilitators and offer a variety of workshops. The Evaluation unit is primarily responsible for maintaining records of enrollment reports, supervisory reports, and teachers' progress reports. The curriculum specialist of the Population Education unit ensures that population education information is included in NFE activities. This work is done in cooperation with the United Nations Family Planning Association (UNFPA). The AES is seriously understaffed. Furthermore, only 5 of the 23 staff members are permanent. This means that staff turnover is very high.

The MOEC is involved in two separate literacy programs. Nonformal Education for Rural Development is the major program of the AES, and the literacy activities of the Seti Zone Project are in an experimental phase. The Seti Zone Project is partially supported by the United Nations Development Program (UNDP) and UNICEF. The Nonformal Education for Rural Development program has been selected as the national program and is directly under the AES. The Section has a working, but not control, relationship with the literacy activities of the Seti Zone Project which is based in its own Education Project Office as shown in Figure 8.3 by the broken line between the Project Offices and the Education Administration Division under which the AES falls. The SETI Project has two experimental literacy programs. The Functional Literacy Programme for Adults is a general one and the Cheli Beti Programme is especially designed for young girls.

Figure 8.1

Administrative Organization of the MOEC

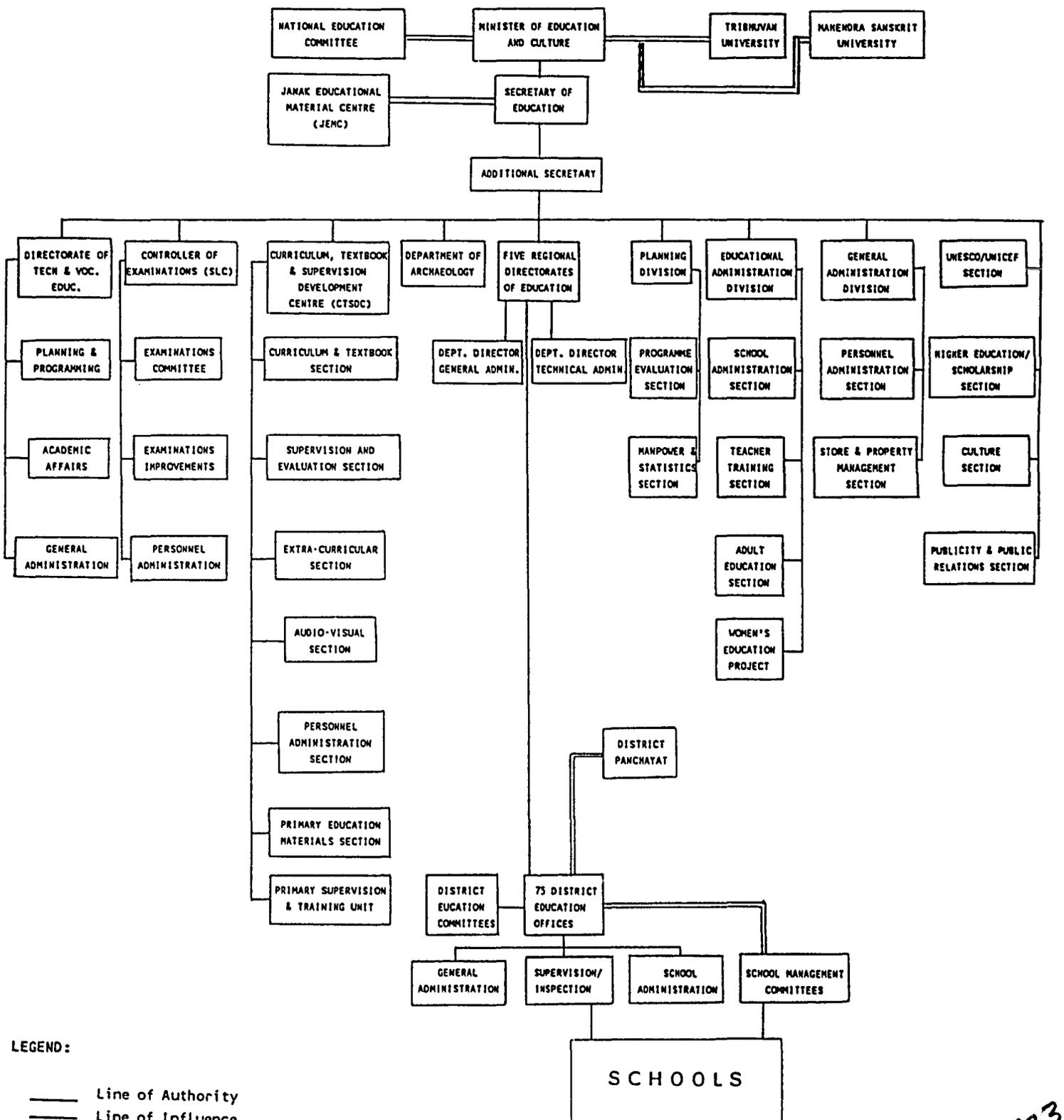
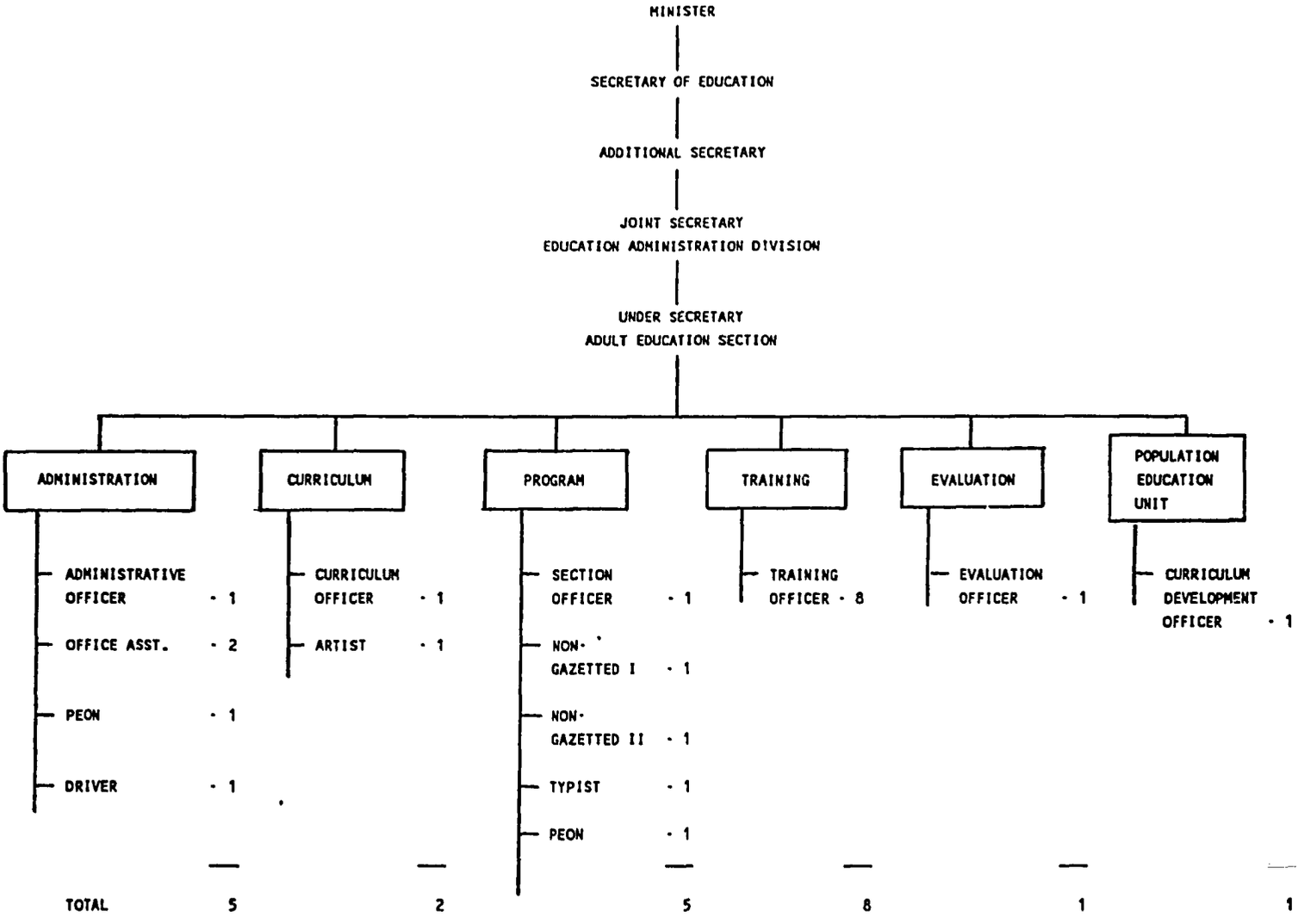


Figure 8.2

Organizational Structure of the Adult Education Section

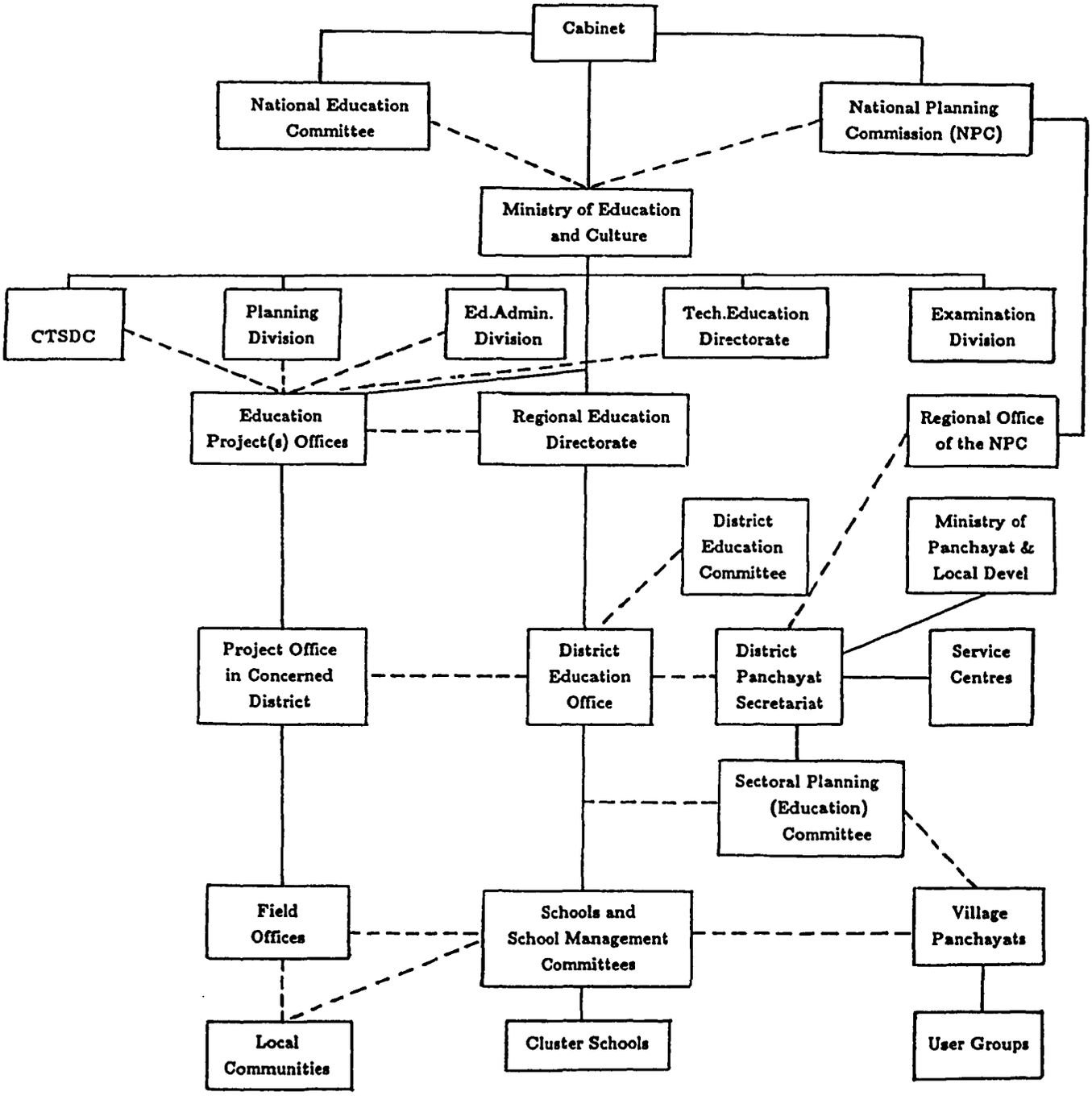


SOURCE: MOEC

Figure 8.3

Educational Planning and Implementation Structure

HIS MAJESTY'S GOVERNMENT



——— Control Relationship

-------- Working Relationship

Source: Manandhar, T.B. ND. Increasing the Relevance of Education for Rural Development: The Nepalese Experience

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The AES offers some of the NFE for Rural Development activities directly. It has 535 facilitators who are responsible for literacy classes in 24 of the 75 districts. These facilitators report through the District Education Officers who, in turn, report to the MOEC in Kathmandu through the established ministerial channels. The process for determining which areas will receive literacy classes directly supported by the MOEC is described below in Section 8.2.4.8.

The AES also serves a directing, managing and administering role. It coordinates literacy activities in the nation, develops and makes materials available, and provides training and other technical assistance. In this role it facilitates the work of other organizations wishing to use the materials and methods of the Nonformal Education for Rural Development program. The MOEC and the AES play an important advocacy role in support of literacy activities. Examples of how they do this include the national and regional seminars and workshops they conduct.

8.2.3.2 Other Organizations Cooperating with the AES. The AES regards its technical assistance role as the most critical one with regard to increasing access to literacy activities nationwide. It recognizes that it does not have enough staff or funds to provide literacy opportunities to all adults and encourages other agencies to use its materials and other technical support to set up literacy activities. Governmental agencies and NGOs are cooperating in this regard. Table 8.5 lists the 20 organizations formally cooperating with the AES in 1986-1987. This list includes other units of the MOEC, other government agencies such as the Ministry of Panchayat and Local Development (MPLD), and local and foreign NGOs. UNICEF finances the literacy activities of the following development programs and projects: Small Farmer's Development Project, Production Credit for Rural Women Programme of MPLD, and Basic Services for Rural Development Programs of MPLD. An unknown additional number of agencies is also using MOEC materials and technical services.

8.2.3.3 Other Literacy Programs. Literacy has a high value in Nepal and is recognized as a tool to personal and group achievement in the development process. Consequently, many agencies are asked to provide literacy classes. In response to these requests several agencies have developed their own courses and materials. There is no currently available complete listing of these organizations or their courses.

Table 8.5

Organizations Cooperating with the

Adult Education Section: 1986-1987

Small Farmer's Development Project
Basic Services for Local Development (BSLD) Programs, MPLD
Women Development Programme (Production Credit for Rural Women Programme, MPLD)
Education for Girls and Women in Nepal, Women Education Unit, MOEC
Integrated Hill Development Project (IHDP), SATA
Nutrition section, MOEC
Lutheran World Service
Action Aid/Nepal
USC Canada/Nepal
Save the Children, USA
Women Service Co-ordination Committee (PACT/WEI Project)
Agricultural Projects Service Centre
Dhading Development Project
Nepal Leprosy Eradication Project
Educational Training Service
Redd Barna
Nonformal Education Service Center
Research Centre for Education Innovation and Development
Women Training Centre

Source: MOEC

8.2.3.4 International Linkages. The AES is actively involved in an international network of organizations engaged in functional literacy. With assistance from the Asian Cultural Centre for UNESCO (ACCU/Japan), a workshop has been offered on the development of materials to be used by new literates. Some of the materials developed in the workshop held in Nepal have been adapted and distributed by the ACCU for use as prototypes in other Asian countries. These include the book, *Cooperative for Better Life*, and the dice game, *Let's Plant Trees.*

The adaptation of materials from Nepal for other countries should not come as a surprise. In 1985 the MOEC was awarded a first prize by UNESCO for the picture posters that are part of the national Nonformal Education for Rural Development literary program. This award illustrates the high regard international literacy experts have for the Nepali literacy materials.

Similarly, the AES has adapted a number of materials for new literates under the ACCU's Asia/Pacific Joint Production Programme. Examples include *The Path to a Happy Life* and the *Use of Water* poster. The AES has also established a close linkage with UNESCO's Principal Regional Office for Asia and the Pacific (PROAP), which is located in Bangkok and focuses on literacy and adult education. AES staff have participated in a number of regional literacy workshops organized by PROAP, and PROAP has helped the AES organize national workshops, seminars, and training in support of literacy activities.

8.2.4 The Literacy Program

This part of the chapter describes the components of the literacy activities of the AES. It primarily focuses on the two programs directly related to the AES (Nonformal Education for Rural Development and the Seti Zone Project literacy activities) and the programs of the 20 organizations listed in Table 8.5. Literacy training is provided in Nepali, the national language. Two other organizations were visited, and the data that were collected are included as examples of literacy activities outside the purview of the AES. Data on even this limited portion of the overall NFE subsector were scarce. Each of the 22 organizations listed were visited and administered a set of questions. These data were then compiled for this chapter. Although data are not complete and there are doubtless some inaccuracies as well, this compilation is an important first step in understanding the foundation upon which the MOEC can build its future literacy activities.

It must be emphasized that there are many more literacy activities than those described under the terms of reference for this chapter. For example, the data presented here for the Women Training Centre describe activities only in Kathmandu. Fieldworkers from the Centre offer literacy activities in many villages but data for these activities were not available in the capital city. Better information on the range of organizations providing literacy training would provide greater understanding of the organizational foundation upon which additional opportunities might be built.

8.2.4.1 Philosophical Basis of the NFE for Rural Development Program. Nepal has adopted an approach to literacy that is an adaptation of the method pioneered by the Brazilian philosopher and educator Paulo Freire. It is described as an adaptation because the approach also incorporates knowledge, experience, and materials from other literacy activities.

For Freire literacy is meaningless unless accompanied by the development of a critical consciousness. In his view, critically conscious persons are those who are aware of their own dignity, understand the basic causes of daily problems, and are aware of their own ability to influence their environment. Freire described and promotes a mode of instruction which enables individuals to develop an understanding of their situations at the same time they are acquiring literacy skills.

The Freirian method uses a problem-posing approach in which "generative themes" are discussed and reflected upon. Learners separate nature and human culture. Nature exists on its own and culture is what mankind adds to it. This approach suggests that people can alter and control their environment. Key words serve to introduce generative themes which are meaningful to participants and which at the same time introduce the letters and sounds of language.

8.2.4.2 Participants. Table 8.6 summarizes enrollment data on literacy classes. Most of the data in this table describe the activities of the AES and the 22 organizations discussed in Section 8.2.4. Figure 8.4 shows the distribution of literacy activities provided by these organizations. Literacy training is available in more than 60 of the 75 districts. Districts not served include some in the Tarai as well as in some of the more remote areas. Some districts have very few literacy classes. Others may be served by more than one organization although care is taken to avoid duplication. The Gorkha District, for example, is served by Save the Children/USA and the AES. But, although these agencies are operating in the same district, their classes are not held in the same villages.

According to Table 8.6 there are 53,806 participants enrolled in the 1,868 classes most closely associated with the NFE for Rural Development program. The AES reaches 30 percent of the participants. There are insufficient data to draw conclusions regarding program completers versus enrollees. The limited data do indicate, however, that the program will have to expand significantly to meet the targets set by the Basic Needs Strategy. Class size ranges from 8 to 50 participants, with the mode between 25 and 30.

Literacy classes are available to individuals from age 6 to 45 years, depending on the program. Because so few girls attend school these classes provide an important access to basic educational skills for girls and women. Some of the classes are provided to women and/or girls alone and many of the mixed gender classes range from 37 to 95 percent female enrollments.

Table 8.6

Enrollment in Literacy Classes: 1986-1987

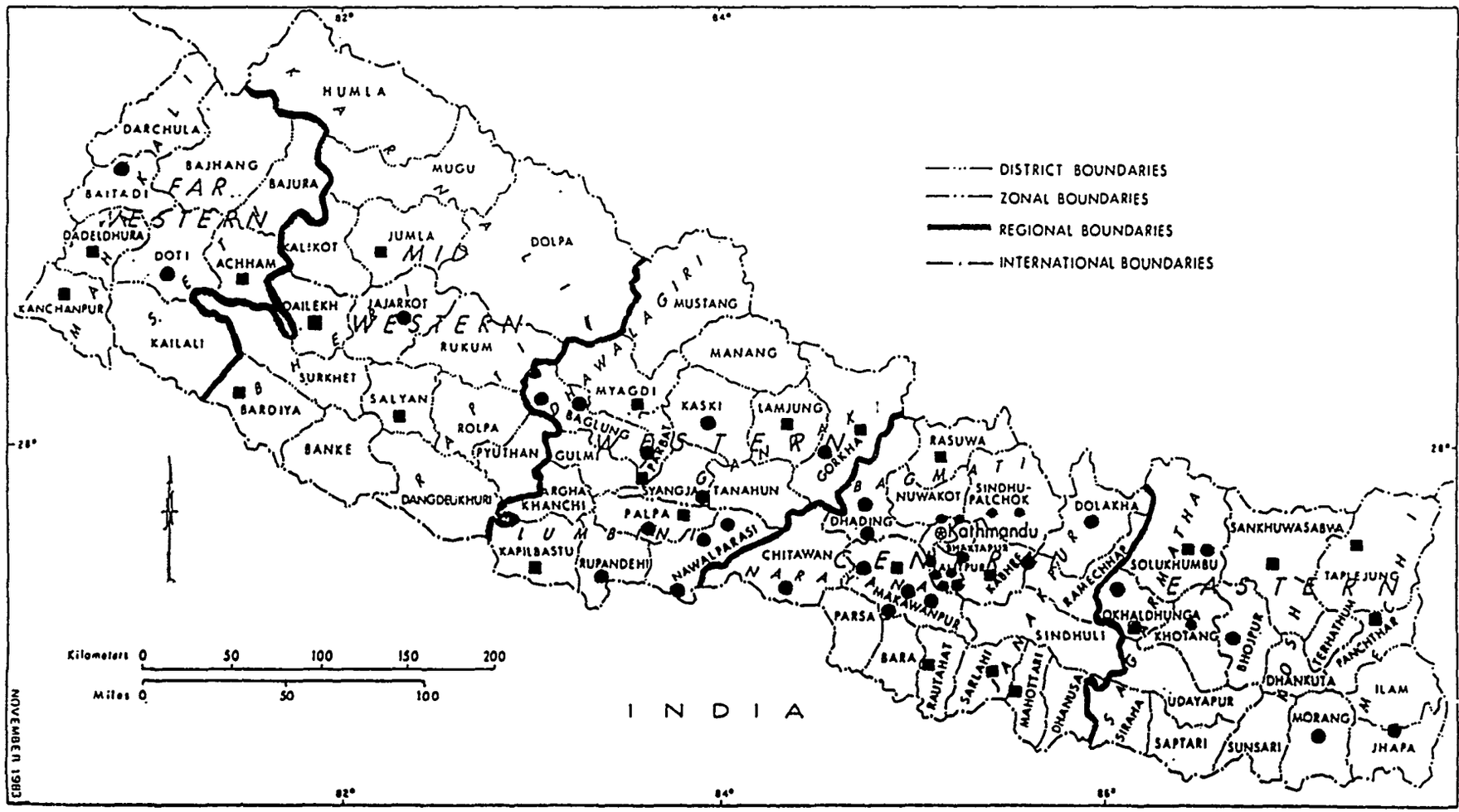
Organization/Project	No. Districts	No. Classes	No. Participants	% Female	No. per Class	Completion Rate %	Age
Adult Education Division, MOEC	24	535	16,050*	60+	30	80 - 90	15 - 45
Small Farmer's Dev. Project	62	282	8,480*	50*	30	N.A.	N.A.
Basic Services for Local Development (BSLD) Programs, MPLD	6	36	1,080	60***	30	Most	N.A.
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	33	66	1,960	100	30	83	N.A.
The Women's Education Project Women Ed. Unit, MOEC	5	35	700	100	20	N.A.	N.A.
UNICEF: Seti Zone Project		113	2,825	60 - 70	25	90 - 95	N.A.
Chelí Beti		39	760	100	19		6 - 13
Small Farm Family Program	N.A.	282	11,280	N.A.	40*	N.A.	N.A.
IHDP/SATA Project	2	80	1,600	60	20	90	N.A.
Nutrition Section, MOEC	5	34	680	44	20	80 - 90	N.A.
Lutheran World Service	1	4	152	74	50	70	N.A.
Action Aid/Nepal	1	34	N.A.	N.A.	25 or less	N.A.	16 - 40
USC Canada/Nepal	3	10	250	66	30	N.A.	N.A.
Save the Children/USA	1	50*	1,150*	85	15 - 30	N.A.	N.A.
Women Service Co-ordination Committee (PACT Project W/NEW ERA, WEI)	3	6	185	100	30	50	N.A.
Agricultural Projects Service Centre (APROSC)**		-	-	-	20	All	N.A.
Dhading Development Project(GTZ)	1	110	2,934	48*	20	80	N.A.
Nepal Leprosy Relief Association	1	1	25	20	25	40	N.A.
Educational Training Service****							
Redd Barna (Save the Children/Norway)	1	6	130	N.A.	23	N.A.	N.A.
Nonformal Education Service Center		69	1,776	N.A.	25	85 - 90	15 - 25
CERID	1	4	87	37	20	100	N.A.
Women Training Centre, MPLD	1	2	16	100	8 - 20	95	N.A.
United Mission to Nepal	5	N.A.	N.A	N.A.	N.A.	N.A.	N.A.
Service Centre Adult Education Programme (SPACE)	3	70	1,686	95	25	80	N.A.
TOTALS		1,868	53,806				

* Approximate or Estimate
** Not Active this year
*** One district only
**** Unable to contact

Source: Interview Data.

Figure 8.4

Distribution of Literacy Activities: 1986-1987



IBRD 17641

The Cheli Beti Programme, which is part of the Seti Zone Project, is especially designed for young girls who have not attended school. Two hundred and ten of the AES classes are organized by local women's organizations and provide learning opportunities solely to women. Similarly, the Literacy Programme for Primary School Age Out of School Girls, part of the Women's Education Project, is also designed exclusively for girls. Girls are encouraged to attend school after completion of this program.

Although more than 50 percent of the nation speaks Nepali, the language of instruction, the figure is probably significantly lower for women and girls. The caste system has traditionally separated individuals of different castes and socioeconomic levels. The literacy program attempts to provide learning opportunities for all and, in many cases, offers mixed-caste classes.

From the available data, completion rates appear to be relatively high compared to those of other countries. They range from 40 to 100 percent. Those engaged in providing literacy activities emphasize how highly participants value the classes. The major reason for dropping out is competing work responsibilities.

The current program will not meet the current national literacy targets. To do so, over 407,000 adults would have to become literate each year. This year, records indicate that approximately 13 percent of that number were reached and this percentage does not take drop-outs into account.

8.2.4.3 Facilitators. Teachers have an important role in many learning activities. The approach chosen by the MOEC requires the facilitator and participants to form a learning team, and therefore the role of the facilitator as a contributor to the learning process is especially important.

Table 8.7 contains summary data on facilitators from agencies involved in the Nonformal Education for Rural Development program. Available data suggest that 1,873 facilitators were actively working with learners in 1986-1987. Some of these are required to have a Grade 7 or 8 pass from the formal education system although some agencies only require that the teacher be literate. The MOEC prefers a Grade 8 pass so the facilitator will be equivalent to the minimally qualified primary school teacher. In a few agencies very recent graduates of the program have taken over facilitator responsibilities. Many of the agencies use primary school teachers or "social workers" (individuals engaged in social/development-related activities) from a village as facilitators.

Table 8.7

Data on Facilitators Engaged in Nonformal Education for Rural Development Program: 1986-1987

Organization/Project	No. Facilitators	Facilitator/ Participant Ratio	Qualifications	Training	Pay (in Rs)
Adult Education Division, MOEC	535	1:30	Grade 8	9 days initially 3 days in-service	200/month 150/month (Supplies)
Small Farmer's Dev. Project (ADB)	282	1:30	N.A.	N.A.	200/mo
Basic Services for Local Development (BSLD) Programs	36	1:30	N.A.	N.A.	200/mo
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	66	1:30	N.A.	N.A.	200 - 250/mo
The Women's Education Project Women Ed. Unit, MOEC	35	1:20	N.A.	N.A.	10/day
UNICEF: Seti	113	1:25	Grade 7 or 8	35 days	13.5/day
Cheli Beti	39	1:19	Grade 7 or 8	35 days	13.5/day
Small Farm Family Program	282	1:40	N.A.	N.A.	N.A.
IHDP/SATA Project	80	1:20	N.A.	N.A.	12/day
Nutrition Section, MOEC	34	1:20	N.A	N.A.	10/day
Lutheran World Service	4	1:38	N.A	N.A.	300/day
Action Aid/Nepal	34	1:25	N.A	7-10 days initially 5-7 days in-service	10/day
USC Canada/Nepal	10	1:25	N.A	N.A.	200/mo
Save the Children/USA	50	1:23	Grade 7 or 8	10-12 days Refresher Course	250/mo 100/mo
Women Service Co-ordination Committee (PACT Project W/NEW ERA,WEI)	6	1:22	N.A.	N.A.	250/mo
Agricultural Projects Service Centre (APROSC)*			-	-	-
Dhading Development Project(GTZ)	110	1:27	N.A.	12 days	200/mo
Nepal Leprosy Relief Association	1	1:25	N.A.	N.A.	600/mo
Educational Training Service**					
Radd Barna (Save the children/Norway)	6	1:23	N.A	N.A.	200/mo
Nonformal Education Service Center	69	1:26	Literate	2-3 weeks	10/day
CERID	4	1:22	N.A.	N.A.	250/mo
Women Training Centre(MPLD)	2	1:8	N.A.	N.A.	No extra for literacy class
United Mission to Nepal	N.A.	N.A.	N.A.	N.A.	Volunteer
Service Centre Adult Education Programme (SPACE)	75	1:23	N.A.	N.A.	10/day
TOTAL	1,873				

* No program in 1986-87.

** Unable to contact.

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Facilitators often do not have the desired qualifications. This is due to the lack of availability of qualified individuals, particularly in rural and remote areas. The advantage of this is that costs can be kept low because remuneration is low. There are other costs, however. Often an individual with low qualifications has difficulty understanding the guidebook and the concepts that are critical to the methodology.

The facilitator has pedagogical as well as administrative responsibilities. In addition to managing daily classes the facilitator must also manage the facilities and equipment needs, keep records, receive and distribute materials, manage resource persons, maintain records and forward them to the appropriate people, and cooperate with supervisors.

Local residents or individuals who have demonstrated their commitment to stay in the area are preferred. Whenever possible the MOEC recommends employing female facilitators as that enhances the likelihood of women and girls enrolling in classes. Data on the total number of female facilitators were not available. Of the 535 employed by the MOEC, 195 are female.

Generally, facilitators are provided with training. Initial training varies in length from 7 to 35 days and there may be from 3 to 7 days of inservice training. The MOEC program consists of 9 days preservice and 3 days inservice training. Most training occurs in the districts. Training emphasizes participatory methods and the importance of development messages. This emphasis on participatory methods is key to the Freirian approach. Unfortunately, many facilitators lack the skills to encourage participants to engage in active discussions. Some individuals have observed that the range of development topics (e.g. health, agriculture, nutrition, and forestry) requires a very well-trained facilitator.

Facilitators do not generally have very large classes. Facilitator/participant ratios vary from 1:8 to 1:40. It should be noted, however, that small rooms often may hamper learning in classes of 20 to 25 participants.

Only the United Mission to Nepal depended on volunteers for teaching literacy classes. And this organization noted that now that the MOEC was offering classes in more districts facilitators no longer wish to work without remuneration. Some organizations provide literacy as part of their other development activities, such as the Women Training Centre of the MPLD, and do not provide additional payment. For those facilitators who are paid, the payment does not vary a great deal from organization to organization. Most pay facilitators approximately Rs 200 per month. The AES and Save the Children/USA provide monthly allowances for materials.

Some organizations pay on a per daily lesson basis, believing that this encourages teacher attendance.

8.2.4.4 Curriculum, Methodology, and Materials. As noted above, the predominantly used MOEC-developed curriculum and materials are based on an adaptation of the Freirian approach. Key words are used to teach literacy both through analysis (words are broken into syllables) and synthesis (known syllables are used to make new words). In this approach, participants and facilitators comprise a learning team which uses discovery methods (problem identification, discussion, and understanding) to learn key words and to discuss themes relevant to their own lives. Themes might be poverty, economic structures, or availability of water, for example.

Description of the MOEC-Promoted Program

The purpose of the curriculum is to assist adult learners to identify their problems and analyze their situations with regard to topics such as health, family structure and planning, hygiene, agriculture, and animal husbandry while learning basic literacy and numeracy. The curriculum is designed for a six-month course, where classes of at least two hours duration are taught six days a week. The methodology is designed to be problem-posing and participatory with a goal of developing the potential of adults in the classes.

Four 96-page primers, called *Naya Goreto* (A New Trail), present the literacy course material in Nepali (MOEC, 1987). These are accompanied by a teacher's guide (which is also available in English) and supplementary materials. These will be described in this section. (Equipment is described below in Section 8.2.4.7.)

Ideally, every participant receives a complete set of books, a blank notebook, and a pencil. The written language and arithmetic are introduced slowly in the books, so learners have frequent opportunity to practice newly acquired skills while they learn other new ones. Lessons are introduced by themes relevant to participants' daily lives. Discussion of each theme is initiated from an illustration which appears in the book and with one of the posters from the poster set provided to each class. Discussion takes place in small groups which then report to the class on their activities. The facilitator's guidebook assists the facilitator to ensure that identification, analysis, experience, and feelings questions are all addressed by the class.

After the discussion has ended the facilitator introduces the key word for that session. Key words are in Nepali, the national language, which uses the Devangari script. There are consonants combined with vowel signs and vowels; each has only one sound, and each is a syllable. Letter cards (provided to each class) are used to show the written symbols for the syllables and to show how words can be analyzed into syllables and the syllables then recombined into new words.

The books introduce numeracy by beginning with counting in traditional Nepali style and then moving to numbers, addition, subtraction, multiplication, and division. Stories play an important role in the program, some carrying over from one book to the next. The introduction of comic book style encourages readers to move from left to right and from the top to the bottom of a page.

In addition to the posters and syllable cards mentioned above, three games are provided to each class. These are introduced early in the first cycle of classes. All of these materials are used in many literacy activities throughout the country--both by government agencies and by NGOs. Table 8.8 lists 20 organizations and the number of sets of materials they have received from the MOEC at cost.[1] The MOEC tries to keep costs as low as possible and has attempted to meet the demand for its materials in a timely manner by putting publication of its materials out for competitive bid.[2] Others are using these materials as well. For example, the United Mission to Nepal has been given permission to reprint MOEC materials for its own use.

Table 8.9 provides some general information related to the literacy courses under consideration. Courses vary in length from three months to a year. Most are two hours a day for six days each week. Agencies may use their own materials, those from the MOEC, or a combination of both.

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[1]Since completion of the draft of this report (August 1987) the AES has distributed materials for the 1987-1988 year. The number distributed is significantly higher than for 1986-1987. Summary data are included in Annex 8.4.

[2]Prices for AES materials have also become available since the completion of the draft of this report. These are provided in Annex 8.5. As shown in the table, they are very reasonable, especially in cases where the MOEC has been able to print large runs of a single document.

Table 8.8

Ministry of Education and Culture Distribution of

Sets of Literacy Materials: 1986-1987

Agency	Sets of Materials[1]
Small Farmer's Dev. Project	9,000
Basic services for Local Development (BSLD) Programs	2,360
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	1,800
Education for Girls and Women in Nepal, Women Ed. Unit, MOEC	255
Community Development Project	250
IHDP/SATA Project	1,860
Nutrition section, MOEC	1,115
Lutheran World Service	100
Action Aid/Nepal	1,250
USC Canada/Nepal	240
Save the Children, USA	1,000
Women Service Co-ordination Committee (PACT Project)	700
APROSC	30
Dhading Development Project	3,400
Nepal Leprosy Eradication Project	71
Educational Training Service	250
Redd Barna	140
Nonformal Education Service Center	
CERID	
Women Training Centre, Dhunkuta	12
Total	23,833

Source: MOEC

[1] Where no number appears, materials were provided but no charge assessed.

Table 8.9

Literacy Course Length, Content, and Post-Literacy Activities

Organization/Project	Course Length	Days/Wk	Hours	Materials Source	Post-Literacy Activities	Material
Adult Education Division, MOEC	6 mo	6	2	MOEC	No	Yes
Small Farmer's Development Project (ADB)	6 mo	6	2-2.5	MOEC	Yes	Yes
Basic Services for Local Development (BSLD) Programs (MLPD)	6 mo	6	2	MOEC	No	No
Women Development Programme (Production Credit for Rural Women Prog., MPLD)	6 mo	6	3	MOEC	Yes	No
The Women's Education Project Women Education Unit, MOEC	160 days	6	1.30-2	Seti Project	No	No
UNICEF: Seti	129 days	N.A.	N.A.	Own	No	Yes
Cheli Beti	160 days	N.A.	N.A.	Own	No	Yes
Small Farm Family Program	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
IHDP/SATA Project	150 days	6	2.5	MOEC + IHDP	Yes	Yes
Nutrition Section, MOEC	6 mo	6	2	MOEC/UNICEF	No	No
Lutheran World Service	7 mo	6	2	MOEC/SPACE/ UNICEF/WIF	Yes	Yes
Action Aid/Nepal	6 mo	7	2	MOEC	Yes	Yes
USC Canada/Nepal	6 mo	6	2	MOEC	Plan	Plan
Save the Children/USA	6 mo	6		MOEC + Own	Yes	Yes
Women Service Coordination Committee (PACT Project w/New ERA, WEI)	8 mo	6	1-2.5	MOEC	Yes	Yes
Agricultural Projects Service Center (APROSC)[1]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Dhading Developing Project (GTZ)	6 mo	6	4	MOEC	No	Yes
Nepal Leprosy Relief Association	9 mo	6	2	MOEC + Netherlands Leprosy Relief Assn.	No	Yes
Educational Training Service[2]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Redd Barna (Save the Children/Norway)	6	6	N.A.	MOEC	No	No
Nonformal Education Service Center	N.A.	N.A.	N.A.	Own	Yes	Yes
CERID	12 mo	3	2	MOEC/CERID/MOH	No	Yes
Women Training Centre (MFLD)	3	6	2	Own	Yes	No
United Mission to Nepal	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Service Centre Adult Education Program (SPACE)	7 mo	6	2	Own	No	Yes

Source: Interview Data

[1]No literacy activities in 1986-87.
[2]Unable to contact.

Utility of the MOEC-Promoted Materials

The materials are very well received. Those individuals responsible for literacy activities cite how well they are liked by learners and they are evaluated by the user agencies as easy to use. The facilitator's guide is well written and helpful. It emphasizes the first part of the course, however. There is some concern among users that the wording in the guide may be too difficult for neo-literates who assume the responsibility for teaching a literacy course.

For many agencies literacy is one component of development activities that are occurring in an area where they are working. For example, Action Aid and Save the Children/USA are engaged in integrated rural development projects where literacy is just one of a number of activities. They find the content of the primers very relevant to their development work.

Several organizations indicate that the four books take more than six months to master. This may be because the discussions and proposed solutions from the literacy course are, in fact, put into action in the field by activities such as building pit latrines and thus slowing the pace of the course. Some organizations suggest that the training provided may be insufficient and that this is why the course does not progress as quickly as planned.

The MOEC is concerned that their materials might not be relevant for use in all regions. For example, the illustrations, which depict only Hills situations, may not be suitable for the Tarai where the majority of the population lives. In addition, a significant percentage of the population does not speak Nepali as a first language so there may be difficulties teaching reading and writing skills at the same time that a new language is being learned. However, several of the NGOs indicate that they are able to use the materials without difficulty in a wide range of contexts.

Seti Zone Project Materials

The Seti Zone Project has also developed a series of materials for its Functional Literacy Programme for Adults and for the Cheli Beti Programme. These materials also are based on a problem-solving approach and are development oriented. They were specifically developed for the Western Region. The adult education program materials consist of 129 individual lessons; 18 of these are practical activities such as building latrines and about 20 of them concentrate on numeracy. There are 160 lessons for the Cheli Beti Programme which are adapted from the original materials but focus on a village girl who serves as a role model for young girls.

The materials are used extensively by the project and considered good by others. Project sponsors would like the MOEC to examine the materials carefully and consider possibly incorporating them into the nationwide literacy system. It is interesting to note that project sponsors also use the MOEC-promoted materials in literacy components of some of their other projects and have found these materials adequate for the Western Region.

Post-Literacy Materials

There are considerable amounts of post-literacy materials now available or in the planning stages. There is shared concern about literacy retention and the availability of appropriate written materials, particularly in the remote areas. The Seti Zone Project is experimenting with the establishment of Village Resource Centres (VRC). These centers would serve as depositories for written materials and a focal point in the village for encouraging literacy activities. So far, the Seti Zone Project is not satisfied with the results but will make adaptations in its approach in the project's second phase.

As shown in Table 8.9 the majority of the organizations contacted provide post-literacy materials to help villagers retain their newly-gained literacy skills. Many also encourage the establishment of post-literacy activities such as goat raising or cooperative formation.

The MOEC provides post-literacy materials on population education, forestry, cooperatives, and general development information. The Seti Zone Project has completed 15 sets of supplementary materials and plans to produce 10 more this year. Several other ministries, such as the Ministry of Health, have developed written materials which are easy to read and which are used fairly extensively in literacy activities. Other organizations are also actively involved. For example, Action Aid has begun to develop post-literacy materials; UNICEF/UNDP produces a wall newspaper, is experimenting with a commercial comic called *New Scene*, and distributes its "memory cards" for oral rehydration therapy suitable for neo- as well as non-literates; the Nonformal Education Service Center produces a periodical called *Hamro Bhaasaa* (Our Language); and the United Mission to Nepal has some stories available. Table 8.10 lists some of these materials, indicates where they may be obtained, and gives their costs.

One concern mentioned by many persons interviewed is that the materials are not developed from a basic set of several hundred words. Rather, materials use different vocabularies which makes reading and comprehension much more difficult for new literates.

Table 8.10

Partial List of Post-Literacy Materials: 1986-1987

ITEM	CONTENT	AVAILABLE FROM	COST IN RS
Card Game	Health & Nutrition	United Mission to Nepal	23
Poster Sets	Various Subjects	United Mission to Nepal	240
Haamraa Keta Ketiharuko Nimti Ban (Forests for Our Children)	Forestry	MOEC	4
Sukhi Jibanko Laagi Saajhaa Sansthaa (Cooperative for Happy Life)	Agriculture	MOEC	3
Anoupachaarik Sichhyaamaa Janashankhyaa Sichhyaaa (Population Education in Nonformal Education)	Population	MOEC	40
Dainik Jibanko Laagi Upyogi Gyaan (Useful Knowledge for Daily Life)	Health & Forestry	MOEC	6
Haamro Bhaasaa (Our Language)	Various Subjects	Nonformal Education Service Centre	N.A.
Aghiloo Paailo, Padhna Lekhana Sikou ra Sikaau (First Step, Learn and Teach, Reading and Writing)	Various Subjects	United Mission to Nepal	6
Naba Drisya (New Scene)	Various Subjects	UNICEF	10
Naba Drisya (New Scene)	Various Subjects	UNICEF	10
Gaun Ghar (Village, House)	Health & Agriculture	UNICEF	1
Laleko Dukha (Trouble of Lale)	Community Development	ERDP, Seti Zone Project	N.A.
Haamro Gaun (Our Village)	Community Development	ERDP, Seti Zone Project	N.A.
Dui Didibahini (Two Sisters)	Family Life	ERDP, Seti Zone Project	N.A.
Swostha Banaze (Nutrition Game)	Health	MOEC	2.75
Sapha Ghar Nai Sukhamaya Ghar Ho (Clean House for Better Living)	Sanitation	MOEC	2.75
Ananpachurik Sikihama Jana Sikihu (Field Worker's Guide for Population Education in NFE)	Population Education	MOEC	N.A.

(table continued)

Table 8.10 (continued)

ITEM	CONTENT	AVAILABLE FROM	COST IN RS
Sukhi Pariwar (Happy Family)	Family Life	ERDP, Seti Zone Project	N.A.
Shahashi Pariwar (Courageous Family)	Family Life	ERDP, Seti Zone Project	N.A.
Dhaam (Traditional Healer)	Health	ERDP, Seti Zone Project	N.A.
Garib Pariwar (Poor Family)	Community Development	ERDP, Seti Zone Project	N.A.
Parishram Garaun Udyami Banau (Let Us Be Industrious by Working Hard)	Community Development	ERDP, Seti Zone Project	N.A.
Garedekhi Ke Hundanara (What Can't Be Done If Tried)	Community Development	ERDP, Seti Zone Project	N.A.
Jangal Sabaiko Saajha (The Jungle Is the Friend of All)	Forestry	ERDP, Seti Zone Project	N.A.
Gaunmaa Kukhuraa Paalan (Poultry Farming in th` Village)	Poultry	ERDP, Seti Zone Project	N.A.
Sahansilataa (Tolerance)	Community Development	ERDP, Seti Zone Project	N.A.
Pachhi Ke Hunchaa (What Happens in Future)	Community Development	ERDP, Seti Zone Project	N.A.
Paropakar Paraun (Let Us Be Benevolent)	Community Development	ERDP, Seti Zone Project	N.A.
Udhyami Pariwar (Labourious Family)	Family Life	ERDP, Seti Zone Project	N.A.
Naya Goreto (New Trail 5th Step)	Population Education	MOEC/Adult Education Division	N.A.
Nayaa Saachhyarharuko Laagi Nirman Tathaa Utapaadan Garne Bisayamaa Nirdesan Pustikaa (Guide Book for Development and Education of Materials for Neo-Literates)	Various Subjects	MOEC/Adult Education Division	N.A.

Source: Interview Data

8.2.4.5 Achievement. This section of the chapter addresses learning achievements. The ability of the program to meet its nationally-set numerical targets has been discussed in Section 8.2.4.2. It is difficult to measure the literacy program's achievement for two reasons. First, it is not clear that there is one single standard of "literacy" that is used by even the majority of organizations providing literacy opportunities and there is no test for the widely accepted census definition. Second, the literacy program openly states that it has dual purposes. In addition to providing skills in reading, writing, and numeracy, the program is also designed to teach participants to understand and participate in solving development problems. For this reason alone, a simple test of literacy skills as traditionally conceptualized is insufficient.

One of the objectives of the "3Rs" (reading, writing, and numeracy) is to provide young people with sufficient background to enter Grade 3 or 4 in primary school. Anecdotal evidence indicates that those who select this route to primary school are easily able to compete in Grade 3 and some can compete in Grade 4. In this regard the program appears to be meeting its targets. Those who have attended the literacy classes before attending school may have some problems in the formal system, however. They tend to find the range of topics covered in primary school somewhat limited and miss the discovery and discussion methods that are used in the literacy program. One of the reasons most frequently cited for children not moving from the literacy program to primary school is that they cannot be spared from the work day for the amount of time required by primary school.

For many agencies, completion of the course is accepted as sufficient evidence of literacy achievement. The AES provides certificates to completers. Other agencies use tests that have been developed to access the amount of knowledge that has been retained from the lessons. Private Agencies Collaborating Together (PACT), an NGO, appears to have been a leader in this. It funded the Women Service Coordination Committee for implementation and technical assistance and, together with New ERA, has developed pre- and post-tests. Action Aid also uses post-tests developed by PACT to assess participants' progress through the MOEC's four primers.

In interviews each agency was asked to make any comments or suggestions they wished. Without any prompting several organizations commented on how useful the literary activities had been in meeting other project objectives, such as better practices in agriculture, family planning, or forestry. Therefore, the lack of

quantitative data on achievement should not be interpreted as an indication of the non-utility of the literacy activities.[1]

8.2.4.6 Quality of Instruction. There are few data indicating the quality of instruction in the literacy program. Certainly the quality of instruction is decreased in those areas where sufficient materials are not available or where faults in the distribution system cause materials to not be available when needed. Informal data suggest that this happens fairly frequently, especially in the remote areas.

Two items mentioned frequently during interviews suggest a need to improve the quality of instruction: many agencies have increased the length of the literacy course and the length of facilitator's training. Some facilitators, especially those trained in the early part of the program, apparently have little trouble assisting a class to complete the four primers in six months. Others require eight or ten months. This may be because the trainers of facilitators need refresher work rather than being a reflection of the facilitators themselves. Nevertheless, the result is that it is taking the learners longer than planned to complete the course. Most agencies have indicated a need to increase the length of training for facilitators so they can become better able to use the materials and the teachers' guide and gain a better grasp of the methodology which is unfamiliar to most of them.

Individuals who have observed classes in the field say that despite all the training efforts most facilitators resort to the methods they each know best. As a result participants sit in rows and are "taught" rather than partake in a problem-oriented discussion. Thus, the underlying principle of the approach (discussion and problem-solving) is violated. This problem is further exacerbated by the initial shyness of participants.

8.2.4.7 Facilities and Equipment. This section discusses provision of materials as well as facilities and equipment. There is little information on facilities. Materials and supplies required for the literacy program are not readily available and every attempt has been made to keep costs down.

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[1]Since completing the draft of this report (August 1987) WEI has drafted *An Assessment of Impact in the National Literacy Programme of Nepal.* This document indicates positive changes in skill level and in attitude and knowledge among female participants that can be attributed to the literacy classes.

Table 8.11 contains information regarding facilities, materials, and equipment. In almost all cases the community is responsible for providing facilities for literacy classes. Very frequently this is a school building which can be used after school hours. Two problems seem to arise with regard to facilities. Rooms are often too small to accommodate group work and the games that are part of the program. Furthermore, lack of sufficient lighting is often a problem. Most classes are offered at night as this is when adults have completed their daily tasks (usually from about 8:00 to 10:00 p.m.). This means that lighting is necessary, most often from kerosene lamps. Such lighting is expensive, especially in remote areas.

In most instances both materials (e.g., books, posters, and games) and supplies (e.g., pencils, blackboards, and lamps) are provided by the sponsoring agency. In only a few instances do participants make a contribution.

8.2.4.8 Administration and Supervision. Throughout the NFE subsector there is a recognition of the critical part played by the management and supervisory structure in providing quality literacy classes. For example, an individual from Action Aid said, "Supervisors are the backbone of our programme" and the Seti Zone Project attributes much of its success to its strict discipline, especially in administration and supervision. The amount of discipline in the supervisory structure varies considerably from organization to organization. Some depend more on word of mouth reporting whereas others have formally structured systems. For example, Action Aid uses supervisory forms that each supervisor must complete and submit to the organization after each supervisory visit.

The paragraphs below describe how the AES administers and supervises the classes that it sponsors, how it coordinates the activities of other agencies, and how other agencies administer and supervise their literacy activities.

Classes Sponsored by the Adult Education Section

The AES has limited funds for expansion and because of this uses a quota system to allocate literacy activities to each district. The procedure is summarized in Figure 8.5. The AES distributes quotas to each district and informs the District Education Office of the numbers. It is the responsibility of the District Education Committee (DEC) to assign classes to particular villages. Each village applying to the DEC must provide possible locations for the classes and assist with the formation of a Management Committee (MC). The MC is responsible for selecting the location, appointing a facilitator, organizing the classes, setting monthly

Table 8.11

Facilities and Equipment for Literary Activities

Organization/Project	Location	Provider Materials	Supplies
Adult Education Division, MOEC	Usually School	MOEC	MOEC
Small Farmer's Dev. Project (ADB)	Community provides	Sponsor	Sponsor
Basic Services for Local Development (BSLD) Programs (MLPD)	Community provides	Project	Project
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	Community provides	Project	Project
Education for Girls and Women in Nepal, Women Ed. Unit, MOEC			
UNICEF: Seti	Usually School	Project	Project & MOEC
Cheli Beti	Usually School	Project	Project & MOEC
Small Farm Family Program	N.A.	N.A.	N.A.
IHDP/SATA Project	School or Project Rent	Project	Project & Learners
Nutrition Section, MOEC			
Lutheran World Service			
Action Aid/Nepal	Community provides		
USC Canada/Nepal			
Save the Children/USA	Community provides	Project & Participant	Project
Women Service Co-ordination Committee (PACT Project W/NEW ERA,WEI)	Community provides	Project	Project
Agricultural Projects Service Centre (APROSC)*	Community provides	Project	Project
Dhading Development Project(GTZ)	Community provides	Project	Project + DEO
Nepal Leprosy Eradication Project			
Educational Training Service**			
Redd Barna (Save the Children/Norway)	School or home	Project	Project + Learners
Nonformal Education Service Center	Community provides	Sponsor	Sponsor
CERID			
Women Training Centre(MPLD)	Project	Project	Project
United Mission to Nepal	N.A.	N.A.	N.A.
Service Centre Adult Education Programme (SPACE)	Community provides	Project	Project

* No literacy activities in 1986/87.
** Unable to contact.

Source: Interview Data

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meetings, and managing the budget. Facilitators and supervisors are paid and supervised through the DEO with reporting going through the DEO to the MOEC. Supervision may be the responsibility of a local secondary teacher or the DEO supervisor. Teachers who have the added responsibility of adult literacy classes are paid an additional Rs 200/class for each class they offer. The DEO supervisors are paid Rs 15/visit. Every class receives four supervisory visits during a six-month cycle.

Figure 8.5

Process of Assigning Literacy Classes

MOEC	DEO Education Committee	Agencies District Level	Managing Committee
Distribute quota	Contact agencies	Locate areas	Select right spot
	Provide quota	Form Managing Committee (help)	Fix time
	Check duplication		Collect participants (30)
			Appoint teacher
			Publicize
			Conduct meeting once in a month
			Handle budget

Source: MOEC

Relationships between Adult Education Section and Other Agencies

The AES maintains a collegial and open relationship with other agencies engaged in literacy training. It does not attempt to interfere with the policies and operations of the agencies and is noted for its willingness to work with them and to assist them in any way possible. There is high regard among other government agencies and NGOs for the way the AES staff relate to others engaged in literacy activities. Many of the policies and procedures set by the AES (such as salary structures) are followed by other agencies.

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Other Government Agencies and NGOs Engaged in Literacy Activities

There is a variety of arrangements for administration and supervision among the agencies providing literacy opportunities. Table 8.12 provides data relating to administration and supervision. As shown in the table, only two organizations have to administer fairly large supervisory staffs which are, in some cases, spread over a wide area of the country. Supervisor-to-class ratios are not generally high, ranging from 1:1 to 1:32. This is related to the time it takes to travel from village to village.

For those organizations that use their own supervisory structure there seem to be two popular approaches. The first is to select supervisors specifically for literacy activities (for example, Save the Children/USA does this). Stipends for supervision vary considerably. They range from Rs 200/cycle to Rs 750/month to Rs 25,000/year. (In the last example this probably included payment for supervising primary schools as well.) Others, mostly those who have literacy activities as a component of other development activities, make supervision of literacy classes part of a general supervisor's regular activities (for example, Redd Barna and Women Training Centre).

Other organizations use the existing supervisors based in the DEOs. In some cases these supervisors are paid an additional honorarium. Where this occurs, they are compensated according to the AES policy.

Some agencies have found the need to have another field management level between the supervisors and headquarters. For example, the Nonformal Education Service Center has four coordinators who are paid Rs 1,000/month. They are responsible for ensuring that supervisors perform properly.

8.2.4.9 Costs and Financing. As is common with NFE activities worldwide, unit and cycle cost data on literacy activities are not readily available. Of the organizations surveyed, only four had unit costs calculated and available. Other organizations were able to supply information on the costs of some or all of the components of their literacy activities. This lack of available data in Kathmandu may be because those most knowledgeable about literacy classes are working in the field.

Table 8.13 summarizes available information on costs and indicates how they are borne. Unit costs, that is the annual per student costs, range from Rs 200 to Rs 365. It is unlikely that these costs include management costs which probably add another 15 to 25 percent. These unit costs are relatively low. The information provided by the majority of the organizations only gives partial costs. These data are fairly consisent with those from agencies that have calculated their unit costs.

Table 8.12

Summary Data on Administration and Supervision: 1986-1987

Organization	No. Supervisors	Supervisor: Class Ratio	No. Visits/ Time Unit	Salary in Rs
Adult Education Division, MOEC	N.A.	N.A.	4/cycle	DEO Supervisor 15/visit
		1:1	N.A.	Teacher 200/cycle
Small Farmer's Dev. Project (ADB)	282*	1:1	N.A.	200/cycle
Basic Services for Local Development (BSLD) Programs (MPLD)	N.A.	N.A.	N.A.	DEO Supervisor no stipend
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	66	1:1	N.A.	Part of project activities
The Women's Education Project Women Ed. Unit, MOEC	5	1:7	N.A.	DEO Supervisor
UNICEF: Seti	N.A.	N.A.	N.A.	20,000 - 25,000/year
Cheli Beti	N.A.	N.A.	N.A.	20,000 - 25,000/year
Small Farm Family Program	N.A.	N.A.	N.A.	N.A.
IHDP/SATA Project				
Nutrition Section, MOEC	21	1:32	N.A.	15/supervision
Lutheran World Service	4	1:1	N.A.	Part of Project activities
Action Aid/Nepal	N.A.	N.A.	1/wk	700 - 750 /mo
USC Canada/Nepal	3	1:3	1/month	Part of Project activities
Save the Children/USA	5	1:10*	N.A.	500/Contract
Women Service Co-ordination Committee (PACT Project W/New ERA,WEI)	3	1:2		1,400 - 1,500/mo(8 mo)
Agricultural Projects Service Centre (APROSC)**				
Dhading Development Project (GTZ)	30*	1:4*	N.A.	DEO Supervisor gets add'l 200/cycle
Nepal Leprosy Relief Association	1	1:1	N.A.	No salary (voluntary)
Educational Training Service***				
Redd Barna (Save the Children/Norway)	N.A.	N.A.	N.A.	Use existing community development workers
Nonformal Education Service Center	12	1:6	1/wk	500/mo
CERID	2	1:2	N.A.	Part of Project activities
Women Training Centre (MPLD)	1	1:2	N.A.	Part of project activities
United Mission to Nepal	N.A.	N.A.	N.A.	N.A.
Service Centre Adult Education Programme (SPACE)	12	1:6	N.A.	*350/cycle

* Approximate

** Not active 1986-87. No supervisors before.

*** Unable to contact.

Source: Interview Data

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Table 8.13

Costs and Financing of Selected Literacy Activities: 1986-1987

Organization/Project	Cost per Participation (in Rs)	Costs borne by Participant	Other
Adult Education Division, MOEC	200	No	MOEC
Small Farmer's Dev. Project (ADB)	32 (excluding text)	No	Sponsor
Basic Services for Local Development (BSLD) Programs (MLPD)	40 (Materials)	No	Project
Women Development Programme (Production Credit for Rural Women Programme, MPLD)	200	No	Project
The Women's Education Project Women Ed. Unit, MOEC	N.A.	No	UNICEF and Organization
UNICEF: Seti	295	No	Project
Cheli Beti	365	No	Project
Small Farm Family Program	N.A.	N.A.	N.A.
IHDP/SAWA Project	74 (Materials)	Some contribute 5 - 10	Project
Nutrition Section, MOEC	172.84(Including teachers' salary)	No	Organization
Lutheran World Service	50 (Materials)	Contributions (Rs. 5 - 10)	Organization
Action Aid/Nepal	N.A.	No	Sponsor
USC Canada/Nepal	77 (Materials)	Contributions (Rs. 7)	Organization
Save the Children/USA	40 (Material)	Contributions 16 - 22	Sponsor
Women Service Co-ordination Committee (PACT Project W/New ERA,WEI)			
Agricultural Projects Service Centre (APROSC)*			
Dhading Development Project (GTZ)	70 (Materials)	No	Project
Nepal Leprosy Relief Association	114 (Excluding text & teachers' salary)	No	Organization
Educational Training Service**			
Redd Barna (Save the Children/Norway)	N.A.	Yes(Contribution)	Sponsor
Nonformal Education Service Center	N.A.	Yes(Rs. 5 deposit)	Sponsor
CERID	N.A.	No	Project
Women Training Centre (MPLD)	10 (Supplies)	No	Sponsor
United Mission to Nepal	N.A.	Na	Na
Service Centre Adult Education Programme (SPACE)	240 (Including everything	No	Organization

* No literacy Activities in 1986-87.

** Unable to contact.

Source: Interview Data

Cycle costs, the cost of a literacy program completer, consider the relationship between the unit cost and the average length of time it takes for an individual to complete the literacy cycle. Thus, the cycle cost is one indicator of the program's internal efficiency (how efficiently available resources are used). As noted in Section 2.6.7 of Chapter 2 of this assessment, cycle costs range from Rs 200 to Rs 900. This suggests that some programs are very efficient whereas others may be using four times the resources they should be.

The AES receives most of its financial support from the MOEC. The amounts received by the Section for both regular and development activities, and that amount as a percentage of the education budget, are presented in Table 8.14. Funds for adult education come from the Development Budget. In only one year, 1977-78, has adult education received more than 1 percent of the budget. Currently it receives only .33 of 1 percent of the financial resources for education. Since 1982 the general trend has been a decrease in resources for adult education. Over the decade education has received approximately 10 percent of the national budget each year.

For literacy programs conducted by other agencies the major portion of the costs are borne by sponsors and/or projects, showing the importance of external assistance to the subsector. In only a few instances are participants required to make contributions. These are very small as can be seen from Table 8.14. They may be returned upon completion of the course or they are put into a group fund that is administered by the group for village development activities upon course completion.

8.3 ANALYSIS

This part of the chapter identifies the important needs, plans, and constraints as the country moves toward achieving its literacy goals. Progress towards these goals is then reviewed through an examination of the program issues in regard to five themes: external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing. A set of conclusions and recommendations is then derived from this analysis.

8.3.1 Needs

The preceding part of this chapter, which reviewed the status of nonformal education as defined in the terms of reference for this study, points to needs in six general areas. These are summarized below.

Table 8.14

MOEC Financing for Adult Education:

1977-1978 through 1987-1988

Year	Expenditure (Rs 000)	Percentage of Education Budget
1977/78	2,979	1.07
1978/79	1,762	0.55
1979/80	2,408	0.69
1980/81	3,064	0.71
1981/82	4,348	0.76
1982/83	8,123	0.97
1983/84	7,402	0.83
1984/85	2,600	0.29
1985/86	4,224	0.34
1986/87	3,162	0.25
1987/88	4,462	0.33

Source: MOEC, Planning Division.

Expansion

To meet the goals for the year 2000 A.D., there will have to be a significant expansion of national literacy activities. This expansion will not only need to involve an increase in the number of classes but also in the capacity to provide management with regard to activities such as training and the provision of literacy materials.

Coordination

The current strategy being employed by the AES involves a variety of government agencies and NGOs. There is a need for improved coordination among these agencies, particularly with regard to factors such as development of post-literacy materials. Expansion will most likely involve an even larger number of organizations, making the need for coordination an even higher priority.

Facilities and Equipment

A major difficulty affecting the learning process is the lack of adequate facilities for night classes. Available rooms (often classrooms) in many cases are too small for the group activities which are a basic part of the program's methodology and there are inadequate lighting facilities. Even if a lamp is available, kerosene may be unavailable or too expensive.

Facilitators

Facilitators play an extremely important role in the literacy activities. There are two critical areas of need regarding them: qualifications and training.

- Agencies require different qualifications for facilitators yet none seem to have identified what it is that makes a successful facilitator. There is a need for a better understanding of the effective qualifications so the right kinds of individuals can be recruited.

- There is a need to improve facilitator training so facilitators are more effective in meeting the dual purpose of the literacy activities.

Measurement of Literacy

There is a need for a better understanding of what is meant by "literate" and for the development of a simple test to measure literacy. This could serve to measure individual and program achievement, assist in determining literacy skill retention, and contribute to better census data.

Post-Literacy Support

There is a need to ensure that the substantial gains made through literacy activities are not lost because participants do not have sufficient opportunities to maintain and improve their newly-gained skills. There are three concerns in this area: materials, vocabulary selection, and activities.

- There are some post-literacy materials now available and several agencies are in the process of developing others. There is a need for coordination and cooperation so that agencies are aware of what is available and so that those engaged in materials development do not duplicate what is already being undertaken by other organizations. There is also a need to develop practical, low-cost ways to get post-literacy materials to the new literates in the villages.

- Some concern exists that persons developing literacy and post-literacy materials are not using the same basic vocabulary and as a result this is discouraging for new literates who have difficulty moving from one written document to another. There is a need for a basic vocabulary that will be used by all agencies in literacy and early post-literacy materials.
- There is a need to encourage and nourish post-literacy activities. There are two reasons that support this need. First, literacy will only be maintained as long as it is a useful tool. And second, it will be perceived as useful only to the extent that new literates can use their skills to improve income-generating activities. The dual purpose of the Nonformal Education for Rural Development program requires that literacy activities increase adults' awareness of their situations and provide information essential to daily life. Thus, it is important that development-related activities evolve from literacy classes.

8.3.2 Plans

The MOEC's current plans regarding the literacy activities of its AES include the following:

Maintenance of approximately the current level of financing (as a percentage of the education budget) for the Section

The decision not to increase the budget is primarily because there are limited funds in the sector and primary education is the first priority. Also, it is believed that the strategy adopted by the Section, that of cooperating closely with other government agencies, donors, and NGOs in the subsector, is appropriate and should be continued.

Expansion of the program primarily through cooperation with an increased number of government agencies and NGOs

Because of its budget and personnel restrictions, the Section will continue to increase its services incrementally, and to play its role as a technical assistance agency providing materials, training, and guidance to registered organizations with interest, ability, and infrastructure for providing literacy services. The rationale for this approach is that it is more efficient to use existing infrastructures than to develop new ones or add new responsibilities to already burdened district and local education offices.

Continued national and international networking

Consistent with its technical assistance role, the AES intends to continue to work closely with agencies in the subsector and to serve as a leader in the field. It also plans to continue its international networking which has provided extremely valuable training opportunities and has facilitated recognition of the work of the MOEC throughout the entire region.

A leadership role in materials development and provision

The AES wishes to maintain its position as a leader in the development of literacy and post-literacy materials. It plans to combine its own resources with donor support for this purpose. It also plans to continue its policy of making materials available as extensively and as cheaply as possible. The AES has no inventory as there are insufficient funds in its budget to accumulate a backlog of materials. As a result there have been delays between requests for materials and their delivery. USAID has agreed to provide a grant so the Section can build an inventory of literacy materials. This should prevent agencies from having to wait a long time before their requests are filled.

8.3.3 Constraints

A constraint is a restriction within the NFE subsector with respect to attaining its objectives. The five major constraints to realizing HMG's goals are summarized below.

Lack of Financial Resources

The very serious budget constraints faced by the MOEC and its decision to concentrate its efforts in primary education mean the AES must continue to function with its meager budget allocation. It will have to be realistic about what it can achieve, and continue to be creative so it uses all available funds (both MOEC and donor) in the most efficient manner. The MOEC will also have realistic expectations regarding what the AES can achieve. This constraint will affect the literacy program and post-literacy activities.

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Lack of Personnel

The staffing level in the AES will be a serious constraint as attempts at expansion are made. Staff are well-trained with regard to materials development but there is a significant amount of work to be done in this area. An increase in the number of cooperating government agencies and NGOs will result in increased demands on the training staff. Furthermore, coordination of a larger number of activities in the subsector will require increased personnel for management and administration.

There a few very well qualified facilitators and it may be some time before they will be available. This lack of key personnel throughout the NFE subsector could seriously hamper achievement of literacy targets and achievement within the classes.

Lack of Reliable Data

A major constraint to the NFE subsector is the lack of basic information. This makes it impossible to measure progress reliably and extremely difficult to make reasoned decisions for planning and implementation. This also contributes to the lack of close coordination among involved organizations.

Insufficient Recognition of the Importance of the Literacy Program

Commitment of resources to a subsector is a result of it being recognized as having a significant role in achieving stated goals. Investments in adult literacy have proven their value in terms of outcomes critical to national development. These have included increased enrollment of children in primary school, decreased fertility rates, increased agricultural production, and improved health status. All of these outcomes are desperately needed and they are key elements needed to attain the goals of the Basic Needs Strategy. Yet there have been no increases in resource allocations to the subsector sufficient for it to meet its Basic Needs goals.

The Environment

There are physical, cultural, and economic barriers that will have to be overcome. The terrain, the monsoons, and the agricultural cycle place constraints on literacy activities. Cultural constraints on women's movements make it difficult to provide them with learning opportunities. And economic hardships may make it difficult for individuals to complete the learning cycle.

8.3.4 Issues

When the available data are examined in light of the goals, needs, plans, and constraints a number of basic issues emerge. These are discussed below under the following themes: external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing.

8.3.4.1 External Efficiency. External efficiency refers to the relevance of the Nonformal Education for Rural Development program to subsequent activities of its participants. It is concerned with the personal and social utility of literacy activities. There are five major issues with respect to this theme.

Immediate Program Utility

Available data indicate that the program is efficient in terms of facilitating reading and writing skills in Nepali and in providing participants with information and knowledge that is immediately applicable to improving their capability to deal with their environment. Participants are able to use the knowledge they have gained and this has been demonstrated through the establishment of activities such as goat-raising. Thus, it is externally efficient at both the personal and social levels.

Measurement of Literacy and Other Skills

The lack of a simple means for measuring the literacy level of a program participant means that it is impossible to determine exactly how externally efficient the program is. That is, it is difficult to estimate how useful the program really is. The program methodology is designed to help learners develop their self-confidence. Only anecdotal evidence exists to suggest that the program is successful in this regard.

Post-Literacy Support

The external efficiency of the program may be very short-lived. Although no measures were available to indicate how long participants retained their literacy skills there is ample evidence worldwide to indicate that unless literacy skills are practiced and developed they will not be maintained. In fact, the evidence shows that they will be lost without post-literacy support. There is a lack of materials for new literates, a plan for maintaining existing literacy skills, and an effective distribution system for those materials that now are available. These pose a serious

problem for maintaining literacy in the nation. Investments in the literacy program by HMG and other agencies will be wasted if these skills are lost.

Role of Literacy in Development

The potential for investments in literacy to assist in the resolution of some of the major development problems facing the nation may not have been fully taken into account in allocating resources. Literacy has a critical effect on the development process. The effects of a good literacy program extend far beyond reading, writing, and improvement of local circumstances. Increases in literacy rates are directly associated with decreases in population growth, increases in agricultural production, increases in popular participation in development, and improvements in health status. All of these are essential if Nepal is to develop further and the objectives of the Basic Needs Strategy are to be met. Thus, the external efficiency of literacy activities can extend far beyond the effects that are traditionally measured. It is possible that the potential of literacy as a tool in the development process could be further exploited in the country.

Linkages with Formal Education

Some completers from the literacy program are able to continue and compete favorably in the formal school system. This is another external efficiency indicator. The existence of literacy activities for young people specifically designed for this purpose, especially for girls, is to be commended and encouraged as one way to increase enrollment of girls in primary school. It might be desirable to further explore relationships and linkages with regard to equivalency between the literacy program and primary school.

Available data indicate that individuals who participate in the program and improve their literacy skills are also more likely to have a more positive attitude towards educating their children. In this way the literacy program contributes to increased enrollments in primary school.

8.3.4.2 Internal Efficiency. Measures of internal efficiency reflect how effectively the nonformal education subsector uses available resources to achieve its stated goals. Consideration of how resources are used in the subsector raises a variety of questions regarding implementation strategy, coordination, facilitators, materials, language of instruction, data availability, and measurement of literacy skills. These are discussed immediately below.

Implementation Strategy

The decision of the AES to utilize the resources and infrastructures of other organizations to supplement its own limited budget and to extend literacy activities as much as possible is an indication of very high internal efficiency. By serving as a technical assistance agency and leader in the field of literacy the Section's funds are highly leveraged.

Coordination

Decentralization of literacy activities requires coordination. This does exist but could be improved. For example, several agencies have developed similar games and several others are planning to develop post-literacy activities on the same or similar topics. Resources would be much more efficiently used if agencies coordinated in terms of production of post-literacy and other materials. In addition, the existing teachers (about 60,000) and schools (about 15,000) are an important potential resource for the MOEC's literacy activities.

Facilitators

A number of questions regarding facilitators remain. It is not known what are the best qualifications to search for when hiring them. As resources in the subsector are so limited and facilitator salaries appear to be one of the major inputs, it is important that those most likely to succeed be hired as facilitators. A great deal is expected of facilitators. They are expected to teach literacy and numeracy and to have an understanding of local level development problems and their alternative solutions. The training they receive is good but it is not clear that it is adequate for the varied demands of their task.

Materials

Again, the strategy selected by the AES suggests significant internal efficiencies. A large proportion of development costs for the materials that have been developed under the aegis of the Section were borne by external assistance agencies. Materials development activities provided an opportunity for staff of the Section to be trained in the area and this capacity for development of new materials remains.

The planned use of USAID funds to build an inventory of literacy materials, to improve the availability and timeliness of delivery of materials to requesting

agencies, represents an additional efficiency. Delay of materials delivery has hampered learning in the past and use of external assistance funds for such "one time only" costs is an excellent strategy.

The materials themselves are relatively efficient. Reports indicate that they contribute positively to the learning process. There could be some improvements, however, especially in the facilitator's guide. There is concern that some of the materials are too prescriptive and that they need to be of greater interest to adults.

Language of Instruction

The Nonformal Education for Rural Development program is available in Nepali. This provides an opportunity for adults who do not know how to read and write the national language an opportunity to do so. In some instances, however, instruction in Nepali might serve as an initial impediment to those who are not familiar with the language. This is most likely to be the case for women who have not had as many opportunities as their male counterparts to speak this language which is commonly used outside the home environment.

Data Availability

Very few data are available within the subsector and the available data are seldom comparable. This means it is impossible to be definitive about the efficiency or effectiveness of activities in the subsector. The lack of data is particularly distressing as the country has a strategy and materials which are of very high quality. Yet it is difficult to document and proclaim the achievements because they have not been measured. Relatively small investments could remedy this problem.

Measurement of Literacy Skills

The extent to which young people can move from NFE activities into primary school is also an indicator of the internal efficiency of the literacy program. There are no measures of learning, however. This lack of measurement also means that it is difficult to determine if there are some parts of the primers that need revision to facilitate improved learning in specific domains.

8.3.4.3 Access and Equity. Access to literacy classes is concerned with the availability of sufficient places for those who qualify to participate in the program. Equity concerns the extent to which the available opportunities are accessible

regardless of characteristics such as location, gender, caste, or language. These are discussed immediately below.

Access

There are insufficient literacy classes for those who wish to enroll and are qualified to do so.

Equity

Classes are not available in all districts and some districts are served by more than one agency. Some of the very remote areas are among those not being served. Unfortunately, there are insufficient data to gauge the magnitude of the access problem. The available data indicate that a large number of programs are specifically for women and in many of the mixed gender classes more than 50 percent of the participants are female. The focus on making learning opportunities available to women and girls is appropriate as female literacy rates are so low compared to those of males, and so few girls attend school.

Some agencies stress that classes are "mixed caste" but there were no data to indicate their proportion of the total number of classes. Nor is there information to indicate to what extent classes actually do have participants from several castes.

Increasing numbers of people speak Nepali, the national language, even though it is not their first language. There are some, particularly women, who are not comfortable speaking Nepali. As a result, language could be an obstacle to participation in literacy activities.

8.3.4.4 Administration and Supervision. Issues relating to administration and supervision concern the management and quality control of literacy activities. Based on the data presented earlier, this section summarizes relevant issues.

Administration of Adult Education Section Activities

The activities of the AES in Kathmandu are well administered. All reports indicate that the technical assistance activities are conducted very professionally and collegially. If problems are encountered, they are addressed and solutions are sought. The Section also manages field operations. In this area it shares many of the same constraints that other subsectors face with a decentralized system (for example, varying quality among supervisors and difficulties with materials distribution), and there are concerns that its implementing capability is very limited.

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Increase in the size of the Section's field operations without corresponding increases in staff and finances to manage them will probably result in less efficient and less effective classes as a result of decreased technical support. It might be necessary to introduce an alternative mechanism for administration and support if significant expansion of the program is realized.

In general, it is believed that the NGOs are better implementers of the literacy program than the MOEC. This is because the NGOs are viewed as having stronger administrative and supervision structures.

Role of the Supervisor

In many cases the role of the supervisor is not clearly defined, although this is not the case for all agencies Some organizations have evidence that the supervisor can be critical in terms of ensuring that quality learning takes place. Yet, there is little information on what it is that these supervisors do, or are, that makes the difference. What information does exist is transmitted orally. Very few of the organizations contacted even used supervisory forms to provide a structure for allowing feedback from the cla ses to the supporting organization.

Overlapping Supervisory Structures

More than one organization may be working in a single district, or even cluster of villages. Because each may have its own supervisory system, there are often overlapping supervisory structures. This represents an inefficient use of personnel. At the present, it would not be feasible or even reasonable to expect any agency to reorganize the variety of supervisory structures into one system. This would be costly and, given the current constraints, probably much less efficient than that which now exists. Similar organizations working in the same panchayat or district might be encouraged to cooperate more closely, however.

8.3.4.5 Costs and Financing. This section of the chapter addresses issues concerned with costs and financing of literacy activities. Costs refer to the amount of funds required to accomplish literacy activities and financing refers to the sources of these funds.

Data Needs

There is very little readily available information on the costs and financing of literacy activities. Where data on costs are available they seldom include

management and other indirect costs. This lack of information, combined with the lack of information on achievement, makes it very difficult to accurately determine how efficiently resources are being used.

Costs and Cost Sharing

The available data do suggest that costs are relatively low, although they vary considerably from agency to agency. The data also indicate that, compared to literacy activities in many other countries, the drop-out rates are also fairly low--again indicating efficiency. It is important, however, to keep in mind the data constraints mentioned earlier.

There is not a significant amount of cost sharing. In most cases sponsors provide all funds for the literacy program. In those few instances where participants are required to make a contribution it is appropriately modest. Also it is not really a contribution to the literacy activity, as it is more often an investment for post-literacy activities or a deposit which is returned upon course completion.

Financing an Expanding Program

Much of the expansion planning assumes an increase in external assistance agency activities in the area. This may not be realistic as several of the sponsors contacted, who are already collaborating with the AES, indicated they are not able to extend their activities even though there is a great demand to do so. The major constraint they cite is lack of financial resources rather than staff resources. Most of the agencies believe that it is possible to find enough skilled individuals to staff expanded programs.

The inability of the organizations currently working with the AES to expand means that the Section is going to have to identify and recruit additional agencies to provide literacy activities if the national targets are to be met. A detailed and carefully developed plan of action accompanied by committed resources will be required if this expansion is to become a reality.

8.3.5 Conclusions

The preceding analysis has produced 18 conclusions that are given below. These are grouped into four topical areas: critical concerns, approach, outcomes, and financial.

Critical Concerns

There are three areas of critical concern that emerge from the analysis.

Conclusion 1. HMG will have great difficulty meeting literacy targets given the constraints that are facing implementation of the program.

Conclusion 2. The many issues surrounding post-literacy must be addressed soon if the substantial investments and achievements to date are not to be lost.

Conclusion 3. The data on literacy activities are very poor. The amount and quality of relevant data must be improved to facilitate better planning, implementation, and measurement of achievements of the literacy program.

Approach

The following six conclusions are made regarding approach.

Conclusion 4. The AES of the MOEC has selected an excellent strategy for implementing the Nonformal Education for Rural Development program.

Conclusion 5. Those individuals engaged in NFE activities, both within and outside the MOEC, are dedicated professionals who have a genuine concern for the learners and for the implementation of literacy activities.

Conclusion 6. The Nonformal Education for Rural Development program is a very good example of a project that was initiated with external assistance agency support but for which HMG has taken over responsibility and has fully integrated into the existing government structure.

Conclusion 7. Coordination of all government and NGO activities is a critical component of the selected strategy and will be even more important as program expansion occurs. There is a need to improve coordination. It is important to note that coordination is here distinguished from control.

Conclusion 8. There are indications that the policy role of the AES is strong from the MOEC in Kathmandu all the way to the villages. For example, salary structures in most of the programs using the four primers are consistent with those established by HMG.

Conclusion 9. The current literacy program provides an excellent opportunity for adults to learn to read and write in the national language.

Outcomes

Six conclusions relate to the outcomes of the Nonformal Education for Rural Development program.

Conclusion 10. The program is very relevant to the lives of the people it is reaching and it appropriately addresses the needs and development goals of the country.

Conclusion 11. The materials are very good. They are liked and used extensively. Some minor improvements and adaptations could be made, especially in the facilitator's guide, but they serve as an excellent foundation for literacy activities in the nation.

Conclusion 12. The very decentralized nature of NFE activities in the nation has resulted in field programs that are very "hands-on". Much of the management and information on literacy activities exists only at the district level or below.

Conclusion 13. People's participation in literacy activities is generally very high. Most programs require local contributions in the form of locale and there are often local committees that monitor activities.

Conclusion 14. The emphasis on women as target learners is appropriate. It should be increased in support of increasing national literacy rates and primary school enrollments.

Conclusion 15. Good facilitators and supervisors are crucial to successful literacy activities. Greater efforts need to be directed toward better selection and training of these cadres.

Financial

The following three conclusions regarding financial matters emerge from the data and analysis.

Conclusion 16. The Nonformal Education for Rural Development program uses financial resources very efficiently. Data suggest that unit and cycle costs are fairly low. Unfortunately, there is the possibility that this efficiency could be interpreted as a lack of need for financial support. Care should be taken not to make this error of interpretation.

Conclusion 17. Much of the financing of the nation's literacy program is the result of a "patchwork" of money from international organizations.

Conclusion 18. External assistance agency support plays a critical role in the nation's literacy program.

8.4 RECOMMENDATIONS

The MOEC has a mandate regarding literacy targets in relation to the Basic Needs Strategy and it has delegated responsibility for these activities to its AES. Policy has been clearly stated. A strategy for its implementation has been selected and is in the process of being carried out. Eight recommendations are given below for improving implementation of the existing policy. These are provided in priority order.

Each recommendation is accompanied by a rationale. This is followed by a set of specific actions. It is assumed that the recommended actions, if adopted, would be carried out by the AES. In cases where the AES might wish to employ consultants for the activity it is assumed that AES staff would also be closely involved in the process. In some cases the AES might wish to consider requesting external assistance agency funds to finance suggested actions, especially when they entail "one time only" costs.

Recommendation 1: Improve basic information on literacy activities.

Rationale. Good implementation is dependent on good planning and good data are essential for good planning. There currently is very little accurate information to support policy development, planning, or decision-making. Development of a simple, easy to use and manage database on literacy activities in the nation is essential for improved implementation and for setting and reaching appropriate literacy targets.

Specific Actions. Basic information is needed on which organizations are engaged in literacy training and the extent of their activities. It is important to know the location of the program, its content and nature, what materials are used, whether the program is combined with other development-related activities, the number and characteristics of participants, the number and characteristics of facilitators, the number and characteristics of supervisors, the structure of the administrative and management system, costs and financing, the nature of evaluation within the program, drop-out rates, levels of achievement, what facilities and equipment are required, whether the program produces its own materials, the extent of community participation, and the nature of post-literacy activities.

The easiest way to do this would be to build the database gradually with the AES by asking cooperating agencies to complete a simple form along the lines of the one that was used to collect data for this chapter of this sector assessment. Each year this form could be updated and, as new agencies begin to use the

MOEC'S Nonformal Education for Rural Development program, information on their activities could be added to the database.

To get a better understanding of activities in the subsector immediately, a simplifed survey could be conducted. The scope of the survey would clearly depend on available resources but again it could be based on a very basic questionnaire. If finances permitted it would be ideal to visit sites of those activities that keep their data in the field and do not forward it to Kathmandu.

The data could be tabulated manually, if necessary. Ideally, the AES would have a small computer in which it could keep its data and from which it could provide summaries for its own planning and for that of the Ministry.

Setting up the database, conducting the initial survey, and providing a computer, printer, monitor, software, and basic supplies is an example of what could appropriately be requested from an external assistance agency. On-the-job training and database upkeep would be the responsibility of the Section. This is consistent with how it has used external funds in the past and this activity would not require large financial inputs.

Recommendation 2: Develop and implement a specific strategy for increasing the number of government agencies (including schools) and NGOs cooperating with the AES.

Rationale. Literacy can contribute positively to the nation's development and to achieving targets of the Basic Needs Strategy, but to make an impact a significant number of adults must be reached. To ensure that literacy opportunities are available to a large number of people it will be necessary to have a detailed plan of action for encouraging additional government agencies and NGOs to participate in the literacy program. The continued use of NGOs is especially important as HMG considers moving to a massive scale because there is a concern that increased dependence on the formal school structure might "formalize" the NFE program more than is desirable.

Specific Actions. An important first step would be to develop a mechanism for identifying additional government agencies and NGOs who might be contacted regarding their interest in cooperating with the AES by providing literacy activities. A short presentation could be developed and made to any interested agencies.

A basic survey of government agencies and NGOs engaged in development projects could be conducted. This could easily be carried out by the AES staff or by individuals selected by them.

Examples of how literacy activities might be expanded include having development projects, such as dam construction, provide literacy classes at no cost for their workers and asking literacy facilitators to teach morning as well as evening classes to reach out-of-school youth. Should the National Development Service be reinstituted it might be worth exploring its potential as a literacy corps.

Recommendation 3: Strengthen the AES.

Rationale. The AES has excellent materials but it needs sufficient staff to develop and support an entire package. This package should include improved capacity in planning, organizing, communications, technical expertise, training, and implementation.

Specific Actions. What is being discussed for the AES is very ambitious and it needs to develop a systematic approach to meet its goals. A first step is to develop a comprehensive plan. The section needs to be strengthened to carry out this crucial step.

Recommendation 4: Reconsider budget allocations to the AES.

Rationale. The AES needs additional resources to meet its goals. The present allocation of less than 1 percent of the education budget is not sufficient.

Specific Actions. Provide the AES with a budget that is more realistically tied to the program. It should be based on a realistic and detailed plan submitted by the AES (see Recommendation 3). At this time it might be appropriate to consider creating an Adult Education Division.

Recommendation 5: Develop and implement a post-literacy program.

Rationale. Gains in literacy are lost unless there are materials and activities available for new literates to practice their skills and put them to use. Because there are so few written materials available in the villages at present, investments in literacy will be wasted unless something is done to make such materials available.

Specific Actions. A post-literacy program is needed that makes the most efficient use of available resources. A strategy similar to the one for literacy activities might be the most appropriate. It could begin with a determination of what post-literacy materials and activities are currently being implemented in the nation and by which agencies. Then those agencies not engaging in post-literacy activities might be encouraged to add such activities to their programs based on

experiences with existing materials and activities. It would also be important to determine which agencies plan to develop materials and in what topical areas.

With this information available it would be easier to coordinate existing activities and develop an effective plan for materials development and expansion of post-literacy activities. For example, an expansion activity might include working with the Ministry of Information and determining its interest in developing a simply written and easy-to-read newspaper for new-literates in the villages.

Again, a simplified survey might be the best way to start. This could be the responsibility of the AES which would use consultants if it wished. Implementation of the long-term strategy would require staff and other resources from the AES and this would need to be addressed by the MOEC.

Recommendation 6: Develop a simple and appropriate literacy test.

Rationale. There is a need to measure achievement gains to learn whether participants have attained literacy and to determine how well new-literates are retaining their skills.

Specific Actions. Develop, field test, and revise a very simple literacy test. This test could be based on the work already pioneered by CERID and other organizations engaged in similar work. The test needs to be based on an agreed-upon basic definition. It might be linked to primary school criteria. Once the test is ready, make it freely available to all government agencies and NGOs engaged in literacy and post-literacy activities. This activity should be conducted under the aegis of the AES.

Recommendation 7: Gain a better understanding of the role of facilitators and improve their support.

Rationale. Facilitators play a critical role in literacy activities yet they are often inadequately prepared for their work. Better facilitator preparation should result in improved outcomes from investments in literacy.

Specific Actions. Identify what it is that makes a successful facilitator and what aspects of these characteristics can be developed within a training program. Determine from the facilitators where they are having the greatest difficulties and what kinds of assistance or training are the most helpful, and then reorient literacy activities accordingly.

Implementation of this recommendation would require a small, field-based research study that could be conducted by the AES or individuals selected by the Section. If any recommendations requiring permanent changes in the activities of the Section were adopted the Section would have to be able to assume any additional financial responsibility.

Recommendation 8: Gain a better understanding of the role of supervisors and improve their support .

Rationale. Supervisors are the link between the planning and support agencies and the field level activities. Improved linkages between these levels can encourage feedback mechanisms and efficiencies.

Specific Actions. Conduct a field-based study to determine what makes a good supervisor and how better supervision can be implemented, then reorient the literacy activities in this area on the basis of the findings. This should be the responsibility of the AES.

Annex 8.1

Interviewees

Prakash Adhikari, Education Director, Action Aid

Caroline Arnold, Project Director, UNICEF

Dikpal Keshari Baidya, Project Officer, Agriculture Development Bank, SFD Division

Michael Borkhardt, Training Expert, Dhading Development Project

John Comings, World Education, Inc.

Alan Court, Program Officer, UNICEF

Peter Crowley, Chief Technical Advisor, UNESCO

Dinesh Dhungel, Director, Nonformal Education Service Centre

Robert Dolce, Consular Officer, U.S. Embassy

Hemanta Raj Joshi, Field Co-ordinator, Research Centre for Educational Innovation

Ghanendra Kafle, Deputy Research Officer, New ERA

Kishor Khadka, Training Officer, Service and Development Centre Adult Education Program (SPACE)

Bhola K. C. Nutrition Specialist, Nutrition Unit, Ministry of Education and Culture (MOEC)

Deepak K. C., Program Officer, Save the Children/USA

Ann Lycett, Education Officer, United Mission to Nepal

Bharat Bahadur Pant, National Expert, Education Sector, Integrated Hill Development Project

Tika Prasad Pokhrel, Program Director, Norwegian Save the Children

Ramesh Rayamajhi, Administrator/Account Officer, Lutheran World Service

Stacy Rhodes, Deputy Director, USAID

B. K. Sharma, Senior Program Officer, Save the Children/USA

Santa Ram Sharma, Financial Administrator, Lutheran World Service

Chij K. Shrestha, World Education, Inc.

Dil Bahadur Shrestha, Under-Secretary for Adult Education, MOEC

Malina Shrestha, Administrative Assistant, The Women's Education Project, MOEC

Shree Ram Shrestha, Project Officer, Unitarian Service Committee of Canada

Gorakh Bahadur Singh, Section Officer, Basic Service for Local Development Ministry of Panchayat and Local Development (MPLD)

Amrit P. K. Sunari, Deputy Director, Save the Children/USA

P. B. Tandukar, Section Officer, Adult Education, MOEC

Bishnu Thapa, Instructor, Women Training Centre, MPLD

Keshab Thapaliya, World Education, Inc.

Netra Tumbahangfe, Assistant Research Officer, New ERA Resource Development Project, Baglung

Annex 8.2

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Annex 8.3

MOEC Distribution of Literacy Materials Sets: 1987-1988

Agency	Sets of Materials			
	Naya Goreto 1st Step	2nd Step	3rd Step	4th Step
Action Aid	3,300	1,700	2,800	2,400
Lutheran World Service	601	899	756	551
CHDP	405	381	347	330
Samai Sudhar Club	150	150	150	150
Examination Section, Basantpur	120	120	1	120
Dhading Development Project	3,000	3,000	3,000	3,000
Sindhu Palchowk (IHDD)	1,440	1,440	1,440	1,440
Women Development Section	2,500	x	2,500	2,500
Samai Kalyan. Committee	84	21	63	84
Women Education Project (MOEC)	860	860	860	860
UMN	138	138	213	141
JNSP (MOEC)	1,350	1,350	1,350	1,350
USC Canada	56	x	108	53
Agriculture Development Bank	27,080	26,030	24,740	24,740
Dolakha (IHDD)	1,050	1,050	1,050	1,050
Save the Children Federation	150	150	150	150
CERID	30	31	31	31
Nari Bikash Ayojana	45	45	45	45
Redd Barma	400	400	400	5,500
Save the Children Fund	x	160	x	x
Total	42,759	37,925	40,004	44,495

Annex 8.4

Prices of Nonformal Adult Education Materials

Produced by the Adult Education Section of the MOEC

Name	Price in Rs
New Trial: First Step	6.14
New Trial: Second Step	6.14
New Trial: Third Step	5.39
New Trial: Fourth Step	5.83
New Trial: Fifth Step	19.50
New Trial: Facilitators Guide Book	15.71
Discussion Poster	24.50
Numeracy Calendar	18.41
Letter-Introducing Calendar	22.93
Educational Game	29.00
Educational Materials (necessary for a class)	9.00
Be Healthy (nutrition game)	2.75
Way to a Happy Life (poster)	3.50
Use of Water (poster)	5.00
Cooperative for a Happy Life	3.75
Forests for Our Children	4.00
Useful Knowledge for Daily Life	6.00
A Clean House is a Happy House	2.00

9. EXTERNAL ASSISTANCE

The purpose of this chapter is to examine external assistance to education in Nepal. Human resources development has been and remains a priority of HMG, and is also a priority for multilateral and bilateral funding agencies. This chapter addresses external assistance to the education sector, a major component of the nation's human resources development effort. External assistance in this chapter is defined as all development related multilateral and bilateral funding resources from outside Nepal.

External assistance can be an asset to development. It is an asset to the extent that it is used efficiently and effectively, and in support of a nation's goals. This chapter assumes that it is desirable that external assistance to the education sector be supportive of and contribute to the goals and objectives of HMG to develop human resources.

9.1 INTRODUCTION

The education system faces a number of challenges with regard to supporting the nation's social and economic development and improving the quality of life for the majority of the people. HMG has identified education as one of the sectors selected to assist it in meeting the targets of the Basic Needs Strategy by the year 2000 A.D. Achieving these objectives will require significant financial and human resources, and external assistance is viewed as one important source of these funds.

The purpose of this chapter is to present and analyze information regarding external assistance, also referred to as "donor support," to the education sector. A focus on the education sector is appropriate because, in the long run, the efficient and effective mobilization of resources in this sector will help achieve the major objectives of the Basic Needs Strategy in education as well as in related sectors. Research has demonstrated that investments in education have derived benefits in other sectors such as health, population, and agriculture. This extension of the effects of education sector investments makes such expenditures particularly cost-effective. There is also a shorter-term reason for focusing on external assistance to the education sector. Education is one of the social sectors and it was the social sectors that were the focus of the most recent Nepal Aid Group meeting.

Chapter 2 of this assessment addresses the relationships between investments in the education sector and effects throughout the rest of the economy. To

prevent duplication, such issues are not addressed here unless they are crucial to understanding the financing of the education sector.

External assistance agencies have been active in Nepal for a little over 30 years. This is a relatively short period of time when compared with external assistance to many other countries. Yet there are many external assistance agencies active throughout the country. They have contributed to planning and design as well as the implementation of many development activities in all sectors. As a result, they share both in the successes and failures that have been part of the development process.

The education sector is no exception in this regard. Many external assistance agencies are contributing to its programs, and they have had a significant role in assisting Nepal to shape its educational system, with all its strengths and weaknesses. Numerous external agencies have provided assistance in many areas throughout the sector.

This chapter focuses on the major external assistance agencies currently contributing to the education sector. It does not address all of the educational activities supported by all of the external assistance agencies. Emphasis is placed on the major contributors for several reasons. It is more efficient to initially concentrate limited planning and management resources on those activities supported by substantial financial resources because directing these activities appropriately can have major impacts. Once HMG is satisfied with the ways it is working with and using the resources of major external assistance agencies it can then extend its planning and management resources to those external assistance organizations with less extensive, but nevertheless important, educational activities. Furthermore, it is the support from these major agencies that can most effectively be leveraged (that is, used to obtain the highest returns on existing financial resources) by the MOEC to enable it to meet the objectives of the Basic Needs Strategy.

9.2 STATUS

This chapter focuses on the current status of external assistance to the education sector. Particular attention is paid to the MOEC and its role in relation to this assistance. The first two parts of this section on status summarize the historical setting, give an overview of national goals for external assistance in the sector, and describe the sector as it relates to external assistance. The third part of this section gives a more detailed description of the investment strategies and procedures of the major external assistance agencies.

External assistance data presented here are based on a variety of formal and informal sources. Much of the information is financial, technical, and administrative in nature. It addresses how much funding is committed to which activities in the sector, and how these funds are organized and managed. Such information is often sensitive because external assistance is influenced by the goals and interests of individuals, organizations, and sovereign states. Much of the relevant information is informal and as a result is often not specifically documented. This chapter relies on a variety of sources, and much of the discussion of issues is derived from the data and analyses of the preceding chapters of this assessment.

9.2.1 Historical Setting

It was not until 1950 that Nepal opened its borders and allowed external assistance agencies to participate in the development process. This happened when 100 years of political power was taken from the Rana families and returned to King Tribhuvan who began the process of leading the nation to a democratic system of government. External agencies played a significant role in the nation's development in these early years in all sectors, including education. And they have continued to do so under the present King (Tribhuvan's grandson) who assumed the throne in 1975.

The Seventh Plan (1985-1990) for national development is currently being implemented. External assistance in the education sector must be viewed in the context of the Plan's objectives which are to:

- increase production
- increase productive employment opportunities
- fulfill the minimum basic needs of people

Early in 1987 a more detailed Basic Needs Strategy was announced. This contains specific objectives for the education sector relating to providing universal primary education (UPE) by the year 2000 A.D.

Although a small country geographically, Nepal's climatic, environmental, and cultural diversity is great. This diversity adds to the development challenges which have been and continue to be shared by HMG and the external assistance agencies.

9.2.2 Context, Structure, and Nature of External Assistance

This part of the chapter addresses three related topics. These are the context for foreign assistance, how it is secured and monitored, and the extent of current contributions to the sector.

9.2.2.1 Context. As described in Chapter 2 of this assessment, Nepal has been engaged in a series of macroeconomic activities to address fiscal and management problems. A major concern has been the quality of development expenditure in most sectors, including education. Inefficient use of development funds has been partially attributed to the process for project selection and implementation.

It is recognized that in the long run all sectors will have to be addressed in terms of the efficiency and effectiveness of the use of development resources. An improved capacity to use all available funds appropriately and in a timely manner (i.e., absorptive capacity) is viewed as one of the major challenges facing Nepal. This improvement will be critical for the education sector as well. It would mean that the MOEC would be more able to develop and implement programs and projects that are consistent with policy, mobilize domestic resources, and focus external funds more efficiently and effectively.

Table 9.1 shows expenditures and foreign aid commitment and disbursements in the education sector from 1974-1975 to 1985-1986. As shown in the table, development expenditures exceed regular expenditures almost every year. This can be partially explained by the inclusion of primary school teacher salaries in the development budget. External assistance commitments have varied considerably from year to year, but for most years constitute a very large portion of the MOEC's development budget.

The general trend has been for external assistance disbursements to increase over the past ten years. This is to be expected as assistance has increased and commitments are usually made for periods lasting several years. It is important to note the increasing importance of loan funds in the sector over the last few years.

The amounts discussed so far only show part of the total expenditures for education, however. Educational activities are financed by a range of sources. A sizable proportion of these expenditures are provided by community participation, fees, and other contributions not shown in Table 9.1. (These are discussed in more detail in Chapters 2, 4, and 5 of this assessment.) This review covers external assistance and government expenditures alone and thus understates the total flow of resources to education.

Table 9.1

Education Sector Expenditures and Foreign Aid Commitment and Disbursements: 1974-1975 through 1985-1986

(in Rs millions)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86
Regular Expenditure	60.9	77.1	67.9	69.1	80.8	82.5	98.6	106.8	129.4	137.2	161.4	207.4
Development Expenditure	93.3	152.3	185.6	201.2	234.5	48.1	285.6	412.3	604.6	678.6	644.2	879.4
Total Expenditure	154.2	229.4	253.5	270.3	315.3	130.6	384.2	519.1	734.0	815.8	825.6	1087.0
Foreign Aid Commitment	4.0	72.7	24.6	127.2	4.0	25.0	30.3	289.3	353.2	248.3	341.4	47.8
Aid Loan Disbursements	N.A.	---	---	---	0.6	1.2	3.2	27.1	27.4	57.9	52.7	74.1
Aid Grant Disbursements	N.A.	21.9	12.7	25.7	21.4	21.0	28.3	49.7	140.5	80.9	49.2	120.5

Source: Ministry of Finance, *Economic Survey Fiscal Year 1986-87* (various tables) and author calculations

9.2.2.2 **Structure.** This section addresses three separate areas. These are the loci of control for external assistance, interaction among assistance agencies and between them and the MOEC, and the approval process that governs the way external assistance agencies work with the MOEC.

- **Loci of Control.** The MOEC is the final authority on educational policy. Final responsibility for decisions regarding external assistance to education is with the Foreign Aid Division and the Program and Monitoring Section of the Ministry of Finance (MOF), however. This office monitors and coordinates external assistance for all sectors. It works closely with the National Planning Commission (NPC) which has to approve every externally assisted project. In this process, the MOF consults with relevant ministries and other government agencies, as appropriate. The MOF is primarily concerned with cost-benefit analyses, project viability, and rules and regulations governing external assistance.

Within the MOEC, external assistance is coordinated by the Programme and Evaluation Section of the Planning Division. Staff from this unit are responsible for developing plans for external assistance and for coordinating with the MOF, NPC, and the various external assistance agencies.

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- **Assistance Agency Interactions.** The MOEC generally deals with external assistance on an individual agency basis, unless specific activities are jointly funded by more than one agency. Discussions concern specific activities, both planned and on-going, of relevance to the MOEC and a particular assistance agency. Although all projects have a formal relationship with the MOEC, only some have offices that are near to the Ministry. For example, the Primary Education Project (PEP) will be housed next to the Ministry's main building and its work is overseen by the Primary Education Project Executive Committee. And the Education for Rural Development in Seti Zone project, which is supported by three agencies, has a separate office in the MOEC compound. Some projects are housed in offices provided by the assistance agency and further away from the MOEC.

The MOEC occasionally calls meetings of organizations assisting in the sector. The assistance agencies have also tried recently to meet occasionally. There are two reasons for these meetings. Some agencies have felt the need to coordinate their activities in the sector so there will be less duplication of effort. Secondly, some have wanted to share their field experiences and to learn from those of others similarly engaged. They have regarded these meetings as an excellent opportunity to share professional and technical information. Representatives of HMG have usually been invited to meetings called by those involved in the education sector and they have attended. These meetings are no longer being scheduled.

- **Approval Process.** The general approval process for *multilateral* assistance is described below. Loans and grants in the education sector require a similar approval process. The process is more formal and precise for loans than for grants. This is because the terms of loans are usually more stringent and have longer term effects than those of grants. Similarly, the process for securing bilateral assistance is usually less complicated than for multilateral assistance. The approval process involves at least three HMG agencies: the MOEC, the MOF, and the NPC. In most cases, especially those involving loans, a representative of the Ministry of Law and Justice (MOLJ) will participate at the time of loan negotiations. If projects involve other HMG agencies, these will also have a role.

As the key line agency, the MOEC has technical responsibility. The MOF has a Foreign Aid Division which monitors all foreign aid and is responsible for approving all financial commitments made by HMG. The NPC is responsible for developing national level policy and the five-year plans for its implementation. The NPC is also responsible for ensuring that project proposals in the sector are consistent with national plans and policies.

The initial step, after recognition of a need that can be addressed through the use of development funds from an external multilateral agency, is to **identify the project.** This may be done by the MOEC or the agency, but it requires permission from the MOF. The second step is **project preparation,** which is the responsibility of the external assistance agency in consultation with the MOEC, MOF, and NPC. Project preparation is often conducted by a team of consultants who are usually recruited by the external assistance agency but require approval by the MOEC and MOF. At **pre-appraisal** the magnitude of the grant or loan is assessed and discussions begin on the conditions for the financial support. At this point it is likely that there will be compromises accompanied by changes in the scope and possibly the design of the proposed project.

The fourth step is **project appraisal.** This provides an opportunity to ensure that all concerned with the proposed project are well informed and to resolve issues that emerge during discussions. **Negotiation** follows as the next step. This may be conducted in Nepal or in the external assistance agency's home or regional office. A team headed by a representative of the MOF usually has this responsibility. HMG may designate a senior official from the concerned ministry as team leader. There may be changes in design at this time. The NPC, MOEC, and MOF need to be sure that their particular concerns--cost-sharing, conditionality, procurement, and technical assistance--have been properly addressed. The final step, **agreement,** consists of the MOF signing the agreed-upon document. No project agreement will be signed unless it has the NPC's approval. If there are no major problems this entire series of steps takes approximately six months to one year.

The procedure for *bilateral* aid can be much simpler. The initial steps are often conducted by the MOEC and the concerned assistance agency. The MOEC then requests approval from the NPC and communicates with the MOF, which makes formal contact with that agency. The project preparation process then begins. The process for grants is much simpler although it contains the same basic elements.

9.2.2.3 Nature of External Assistance. What is the contribution of external assistance to the sector? Table 9.1 summarizes the extent of external assistance to the sector in relation to education's regular, development, and total expenditures for the years 1974-1975 through 1985-1986. Over the period covered in Table 9.1, external assistance disbursements accounted for between 19 percent (1976-1977) and 130 percent (1982-1983) of the regular budget. This indicates a high dependence on external assistance although these figures are inflated because, as noted earlier, the

salaries of primary school teachers are included in the development budget. The table also shows an increasing amount of external assistance in the form of loans, even though grants still constitute the major form of disbursement almost every year.

Table 9.2 provides summary information on current externally financed activities. Note that the table does not include funds for education that are channeled through government agencies other than the MOEC, nor does it include HMG contributions. There are other educational projects, such as support to the skill development of civil servants and to the labor scheme, that are relevant to the sector but not included because they are not closely linked to the MOEC.

The Asian Development Bank (ADB), the World Bank (listed in the table as IDA), the United Nations (UN) system agencies, and the United States Agency for International Development (USAID) are the major contributors to the sector. This small group of external assistance agencies together contributes to all subsectors. Other external assistance agencies are also active in all of the major subsectors: primary, secondary, teacher education, higher, technical and vocational, and nonformal. These activities are summarized briefly in the next section of this chapter.

Budgets vary considerably from project to project as do the proposed implementation times. Because there was no detailed information on planned expenditures, it is not possible to examine year-to-year commitments by subsector. Proposed activities suggest there may be major future investments in teacher education as well as in technical and vocational education, neither subsector identified as the MOEC's highest priority for meeting objectives of the Basic Needs Strategy. The information on several planned projects (Table 9.2) also indicates continued interest by external agencies in assisting the nation's education system.

9.2.3 Description of External Assistance Contributors

Although much of the detailed information on external assistance levels in Nepal is not readily available there is a substantial amount regarding the activities of external assistance agencies. Much of this comes from Annex III ("The Development Context") of USAID/Nepal's 1987 *Country Development Strategy Statement.* Other documents and interviews have also provided data for this section.

The activities of major external assistance contributors are described briefly below. Further details may be found in relevant chapters of this assessment. In discussing these contributions it should be remembered that the MOEC is a key participant in all of these activities even though it would be too cumbersome to list the MOEC as a co-participant in every description. Table 9.2, referred to earlier,

Table 9.2

Externally Financed Education Activities: 1986-1987

Project/Activity Title and Number	Funding			Nature of Assistance
	Source*	Amount (Rs Millions)	Duration	
Science Education Project	ADB/UNDP/ UNICEF	216.93	1983-89	Improve the quality of Science and Maths Education at the secondary level
Teacher Education**	ADB	328.50	1988-89	Upgrade Teachers' Education in the Country
TA-Teacher Education**	ADB	6.57	1987	Project Preparation
Technical Schools**	ADB	258.00	1988	Train mid-level skilled manpower
Education II	IDA	326.50	1982-88	Improvement in the areas of technical and crafts training
Primary Education Project	IDA	316.05	1984-89	Improvement of primary schools, examination system, and management capacity
Women Polytechnic**	INDIA	102.00	N.A.	Technical education up to Diploma level to benefit students and housewives
Tribhuvan University, Medical Education	JICA	34.54	1980-88	Improve medical education capability, technical guidance, advice, and training to the staff assigned to the project
Jiri Technical School	SATA	18.00	1986-91	Construct/furnish physical facilities, develop course materials, 4-yr training (JTS, JTA, ANM), training for teaching staff
Mechanical Training Centre	SATA	14.40	1985-90	Train 24 mechanics, electricians, sanitary fitters each year, conduct short-term and instructor training courses
Kirtipur Institute of Education	SATA	10.50	1975-87	Assist in training math teachers and University Teachers, assist in setting up labs

(table continued)

*See Acronym List for full name.
**Planned, not currently operational.

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Table 9.2 (continued)

Project/Activity Title and Number	Funding			Nature of Assistance
	Source*	Amount (Rs Millions)	Duration	
Primary School	UNICEF	N.A.	Ongoing	Provision of paper to enable HMG to supply free textbooks to primary students
Education for Girls and Women**	UNICEF/UNESCO/ NORAD	34.4 (UNICEF only)	1978-88	Improve educational access and skills for girls and women
Education for Girls and Women	UNICEF/UNESCO/ NORAD	N.A.	1988-98	Improve educational accers and skills for girls and women
Education for Rural Development	UNDP/UNICEF/ UNESCO	28.67	1981-86	Develop basic education for promoting rural development
TA-Primary Education Project	UNDP	60.50	1982-88	In support of Second Education Project financed by IDA and provision of fellowships
National Commission for UNESCO	UNESCO	26.28	On-going	Curriculum material, rural development training packages, textbooks, teaching aids, and teacher training
RETT-II	USAID	135.45	1984-89	Teacher training by radio instruction
PVO-World Education	USAID	13.03	1987-90	Expand Literacy Program
Improving the Efficiency of Educational Systems (IEES)	USAID	5.59	1984-88	Improve the effiency and management capacity of the education system
Institute of Agriculture and Animal Science (IAAS) Project	USAID	361.42	1985-91	Improve the capability of IAAS to meet agricultural and animal science manpower needs
Institute of Forestry (IOF) Project	USAID	291.845	1987-95	Improve the capability of IOF to meet forestry manpower needs

Sources:
1. USAID/Nepal. *Country Development Strategy Statement* (Annex III)
2. Interviews: ADB
3. *Nepal Country Program Paper*, 1987-1990

*See Acronym List for full name.
**Planned, not currently operational.

contains summary information on the projects mentioned below. The contributors are listed in alphabetical order.

Again, it is emphasized that this summarizes available information only with regard to the major contributors to the education sector. Every agency listed participates in other sectors in Nepal, and some agencies engaged in educational activities are not included. Furthermore, the role of volunteers, including the Peace Corps and Voluntary Service Overseas, is extensive but not described here.

Asian Development Bank (ADB)

Funds from the ADB to the education sector focus on linking it with the agricultural sector to improve agricultural performance nationwide. Historically, the ADB has been an active supporter of vocational education and technical schools. It has extended a loan to HMG for the Science Education Project, which includes support from the United Nations Development Programme (UNDP) and UNESCO (United Nations Educational, Scientific, and Cultural Organization). It is currently planning a Teacher Education project to upgrade teachers' education. Discussions of the Technical Schools project were recently reactivated at HMG's request.[1]

Federal Republic of Germany (FRG)

Assistance for the FRG worldwide is being primarily targeted toward self-help groups. Within this context, education and vocational training are priorities for the FRG in Nepal. For the most part these are integrated into larger projects such as the Dhading District Development Project. Teacher training, materials production, and aid to schools are components of the Bhaktapur Development Project. The FRG also provides teachnical assistance to support the preservation of cultural sites in the Kathmandu Valley and Swayambu.

India

India was one of the first nations to provide assistance to Nepal, beginning in 1951. In the education sector India's first major contribution was assistance with the establishment of Tribhuvan University. The government of India currently provides a small amount of support for Colombo Plan experts to give technical assistance to various departments of the university and to government ministries

[1]Since completion of the research for the draft of this chapter (August 1987), a final meeting on the Technical Schools Project has been scheduled.

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engaged in training. Cultural scholarships for higher education in India are also available. India provides in-kind support related to forestry documentation and museums. The establishment of a Women's Polytechnic has been discussed but little progress has been made.

Japanese International Cooperation Agency (JICA)

As a result of its interest in the health sector the Japanese government is currently supporting the Tribhuvan University Medical Education project. This project aims toward the long-term development of medical research capacity through continued support to the Tribhuvan University Hospital which was established with support from Japan. The project is directed towards allied health personnel as well as physicians. There are a number of Japanese volunteers serving in the sector and JICA has provided roofing for primary schools through the Ministry of Panchayat and Local Development. JICA also provides support for modernization of the national museum.

Swiss Association for Technical Assistance (SATA)

Swiss assistance began in the late 1940s when a team assisted with the preparation of Nepal's development strategy. Current assistance to the education sector is in technical and vocational training and the university. SATA contributes to the Jiri Technical School, the Mechanical Training Centre, and the Mathematics Department of the Kirtipur Faculty of Education at Tribhuvan University. The education component (including teacher training, nonformal education, and materials production and distribution) of the Integrated Hill Development Project is coordinated by the MOEC. Activities are in Dolakha and Sindukalchock districts.

United Kingdom (UK)

The UK contributes to the education sector although much of its aid has historically been in support of the infrastructure, such as roads and bridges. Assistance has been provided to the Nepal Administrative Staff College, experts assisted the Institute of Engineering at Dharan and the trade school at Uttarpani, and scholarships were provided. The British Council also provides support to the Budhanilkantha school and the Institute of Medicine at Maharajgunj. There are discussions concerning British Council support for teaching English as a Second Language, and concerning the reopening of the resource center for science education under the Khosi Hill Area Rural Development Project.

United Nations Development Programme (UNDP) and the United Nations (UN) System

UNDP is operating its Fourth Country Programme which closely conforms with the Seventh Plan. A significant amount (9.4 percent) of UN funds in Nepal are committed to human resources development. UNDP, the United Nations International Children's Education Fund (UNICEF), and UNESCO are all contributing to the Education for Rural Development in the Seti Zone (SETI) project. This project has three objectives: to make basic education more efficient and effective, to help teachers serve as a force for rural development, and to make the basic curriculum content more relevant to solving the daily problems faced by rural people. The SETI project does this by improving school facilities, developing and providing additional educational materials, training teachers, providing adult literacy classes, and offering classes for primary school age girls that help them enter formal school. UNDP and UNESCO also provide technical assistance in support of the Secondary Science Education project.

UNICEF plays an active role in several other projects. It provides technical assistance to the Primary Education Project, which is described under the World Bank supported activities, and cooperates with the Norwegian Agency for Development (NORAD) and with UNESCO in the Education for Girls and Women Project. UNICEF also supplies paper to the MOEC so it can provide textbooks at no cost to children in the first three primary grades. Literacy activities in several projects in other sectors are also supported by UNICEF, as are Child Care Centres.

United States Agency for International Development (USAID)

USAID has been active in Nepal's education sector since 1951. It is currently supporting four projects in the sector. RETT II (Radio Education Teacher Training) is directed towards improving the content knowledge of teachers who have not passed the School Leaving Certificate (SLC) examination. The Improving the Efficiency of Educational System (IEES) project is funded by USAID. Its purpose is to help Nepal improve the efficiency of its educational system and strengthen its capability for educational planning, management, and research. The Institute of Agriculture and Animal Science (IAAS) project is designed to improve the capability of the IAAS to meet agricultural and animal science manpower needs. Similarly, the Institute of Forestry (IOF) project aims to improve IOF's capability to meet manpower needs in the forestry sector. USAID also sponsors a Development Training project which provides overseas training for individuals from a variety of sectors.

There are plans to initiate the Literacy Program Expansion Project to increase the number of people served by the Nonformal Education for Rural Development program and to improve the program's efficiency and effectiveness.

World Bank

Support from the World Bank has been in the form of IDA (International Development Agency) credits. Human resource development recently has become a priority area of Bank lending. Education II supported the building of the Pokhara campus of the University where technicians and craftspeople are trained for the Western Development Region. It also assisted with the establishment of the Skill Testing Authority and is working with HMG to improve the career structure for technicians in the civil service. There are plans to extend this project.

The Primary Education Project (PEP) started in 1984 with funding from the World Bank and technical assistance from UNICEF. PEP has three major thrusts: support to primary schools, strengthening of the examination system, and improvement of management capacity at the central level. Primary school support is going well and significant progress has been made with regard to improving management in the Office of the Controller of Examinations. Little progress has been made in the area of improving administrative capacity.

9.3 ANALYSIS

This part of the chapter identifies the important needs, plans, and constraints as the nation moves towards more effective utilization of external assistance. Progress towards this goal is reviewed in the context of several issues that have emerged from the data collected for this and other chapters of this assessment. A set of conclusions and recommendations is then derived from this analysis.

9.3.1 Needs

The Seventh Plan and the Basic Needs Strategy identify education as an important sector with specific targets. Major areas of need are identified by HMG for the sector to meet its targets. These are summarized immediately below.

Support for Expansion and Qualitative Improvement

Goals for education specify both quantitative and qualitative improvements between now and the year 2000 A.D. This will require more funds than have

generally been available to the sector over the last few years. Increased financial support is not all that is needed, however. These additional activities will also require personnel increases at most levels within the MOEC.

Improved Use of External Assistance

Current externally assisted projects should be more closely integrated into the MOEC's program. A strengthened MOEC professional staff could help avoid duplication and could encourage closer working relationships between projects and the MOEC's staff. It also could support improved management and educational activities. Better coordination between the MOEC, the MOF, and external assistance agencies would significantly improve the use of external funds.

Mobilization of More External Assistance

The available resources of HMG will not be sufficient to meet the education targets, given that there are Basic Needs targets to meet in several other sectors. Thus, HMG will have to work with external agencies to obtain the necessary funds to meet these education targets.

9.3.2 Plans

This section summarizes six aspects of HMG's plans for external assistance in the education sector.

1. Emphasize the use of external assistance in the education sector. Any available government funds are likely to be used primarily to increase the budgets of several other sectors to assist in meeting their Basic Needs objectives. Even the current education budget is seen as a burden--salaries make up such a large proportion that there are limited funds available for even materials or supplies.

2. Seek external assistance in the form of grants rather than loans. This is understandable because the amounts needed are substantial and all loans have to be repaid, no matter how generous their terms.

3. Utilize available HMG funds to the fullest extent possible for the quantitative expansion of the system. That is, use HMG resources to provide universal access to Grades 1-5 by the year 2000 A.D. It is recognized that access does not guarantee participation and that participation is partly dependent on the quality of primary education. External assistance is seen as an important source for funding qualitative improvements.

4. Acquire additional support for primary education. External assistance is considered an important funding source for attaining objectives of the Basic Needs Strategy. For example, the MOEC would like to continue to receive support from UNICEF for textbooks. In fact, the Ministry would like to see this support increased.

5. Limit the number of external assistance agencies participating in a single project. Having several agencies active in the same project is viewed as cumbersome and difficult to manage. With the exception of loans, which are more flexible, HMG prefers to have only one external organization active in a given project.

6. Continue existing external support in the other education subsectors. This means that the MOEC does not wish external support to be withdrawn from other subsectors (such as technical and vocational or secondary education) and be rechanneled into primary education. It wishes all other subsectors to continue to receive financial support from external agencies.

9.3.3 Constraints

The MOEC faces an enormous challenge meeting the objectives of the Basic Needs Strategy. Part of this challenge is obtaining resources for the immense technical and logistics tasks ahead. There are several constraints related to acquiring external assistance and using it effectively. These are summarized immediately below.

- **Local Costs.** It is difficult to provide the local costs, matching resources, and personnel time that are the usual conditions for loans and that are increasingly being required for the receipt of grants. It is often difficult to provide these resources, and even when they are available it is not easy to manage them in the most efficient and effective manner. Meeting such conditions may mean that resources have to be diverted from other important tasks.

- **Unwillingness to Sign Loan Agreements.** This constraint effects both the amounts and timing of funding. Many of the education targets included in the Basic Needs document are extremely costly. Loans usually provide more funding than do grant agreements, but they are more expensive to accept. Dependence on grants may mean that it takes longer to gather the needed financial resources for expansion and/or qualitative improvement. A large number of smaller grants may also place further burdens on an already strained management structure.

- **Lack of a Comprehensive Plan for the Sector.** Currently there is no detailed and comprehensive plan that sets forth the full costs for meeting the objectives of the Basic Needs Strategy. Consequently, there is no plan for approaching external funding agencies or for making substantive and attractive proposals to them.

Some evidence suggests that there is interest on the part of external assistance agencies to provide more support to the nation's educational system. The issue for some agencies, then, is not the availability of funding but whether it will be used appropriately. External assistance agencies are increasingly being required by their supporters to be accountable for the results of their investments.

- **Competing Goals.** External assistance agencies provide support to those areas where their own organizational goals are also met. External assistance is most efficient when the goals of the funding agency are in close accord with those of the MOEC. Competing organizational goals of different agencies sometimes are a serious constraint to success in the sector.

9.3.4 Issues

Several issues emerge from an examination of the data on external assistance to the sector. These are discussed immediately below. These issues are separated into different topical areas for discussion, but many are closely interrelated.

9.3.4.1 Leadership Role of the MOEC. The MOEC needs to have a stronger leadership role with regard to external assistance in the sector. The lack of clear direction regarding external assistance is sometimes an impediment to its effective use both by HMG and the assistance agencies. This is further complicated by the lack of consistently good lines of communication within the MOEC. As a result, those engaged in approved externally funded activities many find that instead of receiving very little direction they may be faced with contradictory sets of directions.

The lack of clarity regarding who makes which decisions related to day-to-day implementation of externally-assisted activities means that decision-making within the MOEC is often a very slow process. External assistance agency representatives, with pressures and time constraints from within their own organizations, may perceive this as a vacuum. And, in some cases, those associated with external assistance agencies move in to fill this perceived decision-making vacuum to meet

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their own deadlines and further develop their own proposals. This in effect allows the external assistance agencies to assume the leadership role--sometimes when it is inappropriate. In some cases the inability of the MOEC to take the initiative is a result of its staff being over-extended. Many have very heavy workloads.

The resulting stress between the MOEC and project staffs is exacerbated because more flexible project budgets may mean that working for external assistance agencies provides professionals with greater rewards such as larger salaries and more job flexibility. Thus it sometimes appears that those working in projects have much better conditions of work.

The apparent inequities between the public and private sectors are not unique to this country. They also exist in the more developed and other less developed countries. It is essential that the MOEC recognize the variety of factors that contribute to external assistance agencies taking the initiative, however. By doing this the MOEC can then identify the steps it can take to make the use of external assistance more collaborative and to use available funds more effectively.

9.3.4.2 Coordination of External Assistance. Each external organization presently works directly with the MOEC (and other agencies as appropriate) in developing and implementing the activities that it supports. In spite of the work of the Foreign Aid Coordination Committee, external assistance agencies sometimes discover that more than one of them are proposing identical activities without coordinating them or, even worse, proposing activities with competing objectives. This is because there is no overall, detailed plan for external assistance, compounded by inadequate communication within the MOEC and among all involved in external assistance.

A possible result of this kind of situation is that the relationships between the MOEC and external assistance agencies may not be as good as they might. There may be a tendency to wonder whether one organization or another is withholding information or making it more difficult to meet objectives in a timely manner.

There is wide recognition of a need for coordination and that this role should be assumed by the MOEC and not the external assistance agencies. Individuals representing the MOEC and the external assistance community are aware of this critical need for coordination in the sector. The external assistance agencies are unwilling to take the first step at this time without some indication from the MOEC that this is desired.

9.3.4.3 Investment Priorities. One result of the lack of clear directions and an accompanying detailed plan is that there is no detailed list of investment priorities for the sector. Currently, only vocational and technical education is given as a priority. The MOEC needs to identify additional areas where it desires educational investments and to determine for which ones it plans to seek external assistance. If this were to occur, it would be less likely that the comment "donors are too pushy" would be heard because it would be more difficult for external assistance to be channelled to activities not consistent with HMG priorities.

Investment priorities must be developed in light of the benefits of the investments. This is particularly the case where loan funds are being used. If the benefits to be obtained from a project do not exceed the costs (including the interest) then the net result of the activity is a loss.

Facing this issue demands some hard decisions. For example, there are plans to invest heavily in teacher education with loan funds. History and current wisdom show that enormous sums have already been invested in this area yet there are limited data to show which of the many "experiments," approaches, and modalities have been successful and in what ways.

Indeed, the lack of evaluative data comparing the learning outcomes of many projects (not just teacher education) is disturbing, especially given the number of studies that have been conducted. A responsible approach to agreeing to the use of loan funds would certainly ensure that they are invested in the most cost effective activities. To agree to use such funds without some level of confidence in the value of the project suggests a very unwise use of limited and expensive resources. This may mean that there need to be delays in starting new projects until some reliable or indicative information on cost effectiveness is available.

9.3.4.4 External Assistance Agency Inflexibility. External assistance agency representatives in Nepal often have to promote goals, objectives, and subsector priorities that have been determined at a higher level in their organizations' bureaucracies. Even though they might question these priorities, they are professionally obligated to promote them. Furthermore, promotion and continued transfer to professionally interesting assignments are dependent upon an individual representing his or her organization in a manner deemed appropriate by that organization.

These pressures on individuals in the international assistance community are often communicated as inflexibility to the MOEC representatives. The MOEC feels that particular kinds of projects or activities are being advocated and in a way that makes negotiation to a shared set of objectives difficult or, in some cases, impossible.

9.3.4.5 Externally Driven Projects. There are and have been a number of excellent projects in the education sector, many of which have contributed to improving the nation's educational status. Yet there is a commonly held opinion that the individual projects reflect the goals of the external assistance agencies rather than those of HMG and the MOEC. One individual responded, "Donors are supporting their own babies."

There are several reasons for this. First, it is important to recognize that external assistance agencies do have their own priorities and these are usually well understood by their representatives even if they are not explicitly set forth in project documentation. The existence of funding agency priorities is quite appropriate. The MOEC should have its own priorities as well. It is important for external assistance agency representatives to understand and share the MOEC's priorities. A serious problem exists when external assistance agency priorities take precedence over those of the nation rather than there being some shared set of priorities that are addressed and funded collaboratively by the external agency and the MOEC.

It is natural for individuals from both the MOEC and external agencies to want to start afresh rather than building on existing activities when there is support available in the form of a new project. This would be appropriate only to the extent that it is consistent with efficient and effective use of resources and with the MOEC's policy and plans.

Most external assistance agencies begin with the best of intentions for collaborative work with the MOEC at all stages of the project. Other issues that have been discussed above (such as the lack of a comprehensive plan, lack of coordination, lack of information on sector investment priorities) combined with tight deadlines, pressure to spend money, and pressure to provide the home office with quantitative results all work against collaboration and teamwork. As a result, even the external assistance agency representatives who are the most committed to the concept of collaborative work find that they have to make some compromises.

9.3.4.6 Project Orientation. There is a generally accepted approach that views projects as separate from the mainstream activities of the MOEC even though HMG policy views them as essential to fulfillment of national education goals. Most projects are viewed as "experimental." It is understood that their outcomes might be considered for integration into the MOEC program once the project is over. This short-term, project orientation encourages several impediments to the development and improvement of the nation's educational system, however.

A system that views projects as outside or peripheral to its main mission has made the decision to isolate those projects and their personnel. Every day these projects and their technical personnel are gathering important information that could contribute to the MOEC's achievement of its major goals. Instead this information is used by only that agency because there is so little information flow between those involved in the sector or, even worse, it is lost altogether.

The fact that projects may not be regarded as essential parts of the overall activities of the Ministry means that external assistance is likely to have very little long-term impact. Large scale implementation of even a very successful project is unlikely because the MOEC staff are not familiar with the project and do not have a vested interest in continuing its better aspects.

Regarding these projects as "experimental" is also incorrect because they are not sufficiently controlled with regard to data on their outcomes. There is no requirement that the projects assess their effectiveness in relation to costs, for example. Although many projects have assessed education or training unit costs, these are for budget purposes and not in relation to educational goals which is the purported *raison d'etre* of the activity. An experimental activity demands evaluation of outcomes.

A project orientation often means that once the external funding terminates so do the elements of the project. There is no commitment to sustainability. In many cases, this means that the investments have, at best, provided short-term benefits. In other cases the investments may just be lost. This is not always the case, however. The MOEC has demonstrated its ability to integrate project activities into its ongoing programs. Two examples of this are the RETT II project and the current adult literacy program. The process whereby this was achieved deserves attention.

9.3.4.7 "Us versus Them" Syndrome. Rather than viewing themselves as a team concerned with the sector, representatives of assistance agencies and the MOEC seem to view themselves as being on different, and perhaps even opposing teams. There are good reasons for this. When processes get bogged down and critical deadlines pass, external assistance agencies become impatient and go around the bureaucracy in order to meet their time deadlines. And, by dealing with agencies only individually the MOEC does not encourage the external assistance community to view itself as part of the same team as the MOEC. Simple aspects such as external agencies keeping different work hours from the MOEC and obvious selective information-sharing also draw attention to the differences between organizations.

Representatives of external assistance agencies sometimes fail to recognize the wisdom that Nepalese colleagues can contribute to the project context. And failure to take time to understand vast cultural differences may leave individuals mystified by the way things are done. The final outcome may be a lack of trust among many of those working within the sector.

9.3.4.8 Absence of a Developing Knowledge Base. Active coordination supports better management and administration and also provides an opportunity for sharing important technical information. Many individuals working in the external assistance agencies recognize that they can learn much from others who are engaged in similar kinds of work. This learning could improve their own work and make their own projects more effective.

Again there are simple things that could be accomplished. For example, those engaged in educational activities could agree on common field allowances, avoid duplication of efforts in areas such as materials development, or share technical information on a regular basis. Where this kind of sharing does exist it is sporadic, limited, conducted under less than desirable circumstances, and often does not include representatives of the MOEC. Thus, much important learning is lost.

9.3.5 Conclusions

The preceding data and discussion of issues form the foundation for six major conclusions. These are summarized immediately below.

Conclusion 1. External assistance is and will continue to be an important component of education sector financing.

External assistance to the sector has been significant over the years. The results have been mixed, however, and both the external assistance agencies and the MOEC share the responsibility for the results. HMG and the MOEC plan to continue to seek and use external assistance in the sector. There is evidence to suggest that external assistance agencies wish to continue to assist the nation as it further develops and improves its education system.

Conclusion 2. HMG does not have the influence it should have on the focus of external assistance in the education sector.

External assistance agencies often display leadership with regard to project activities in the sector. This may not be by choice. Although the MOEC has the authority to manage the system it does not always use it. And when it does the reasons for how and why things are done may not be fully understood by the affected external assistance agencies.

There are many reasons why the MOEC does not take a leadership role in the sector. Some of these could be overcome relatively easily. Assuming a stronger leadership role will involve commitment--not only of human resources but also to a planning process and implementation of its product.

Conclusion 3. External assistance activities will continue to be fragmented until there is a specific policy on external assistance accompanied by a detailed, comprehensive plan for the sector which includes priority areas for external assistance.

The MOEC has a major challenge ahead as it plans and implements programs to meet the objectives of the Basic Needs Strategy that have been set for the sector. It will need to coordinate external assistance activities carefully. If this is not done external assistance will continue to come into the sector but it may not be in the MOEC's priority areas. Even worse, if the assistance that is provided is not coordinated it might require the use of valuable MOEC technical, management, and administrative talent that should be focused on other activities. There is no incentive for external assistance agencies themselves to develop such a plan, nor would it be appropriate for them to do so.

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Conclusion 4. There is a need for formal planning if external assistance is to be used in a more efficient, effective, and coordinated manner.

A good plan requires a long-term view as well as attention to detail. It has to be consistent with policy and be closely attuned to long-term goals. At the same time it has to be flexible and be able to accommodate innovations and adaptations as the plan period progresses.

A good plan usually makes implementation easier. It shows what has to be done when and by whom and provides opportunities to measure progress along the way. It may take courage and strength at some points. It also allows for the identification of areas where the MOEC and assistance agency priorities are in accord. If followed, however, a good plan should result in improved performance throughout the sector which could be claimed by all involved.

Conclusion 5. This is an appropriate time to introduce changes in the relationships between the MOEC and external assistance agencies involved in the sector.

Both the MOEC and representatives of the external assistance agencies are acutely aware of the challenges they face in the sector. Both know that all possible resources will have to be coordinated in order to meet the objectives of the Basic Needs Strategy. They share the goal of attending to those objectives.

The increased attention to the Basic Needs Strategy by all agencies means that many are reassessing their activities and attempting to determine if they might be better focused on the country's needs. The MOEC recognizes that it needs to use external assistance more efficiently and effectively. The external assistance agencies are eager to learn from others, and are also facing pressures from their funding sources to be more accountable for project outcomes in relation to investments.

Conclusion 6. The MOEC does not collect sufficient information from its external assistance agencies.

There is very little information on the benefits that have accrued from the various external assistance activities in the sector. In particular, there is a lack of evaluative material on the educational outcomes--even when there have been very large investments made. Most of the information that exists remains with the projects. As a result, the MOEC has little data on which to base decisions about future activities.

9.4 RECOMMENDATIONS

Four recommendations are made related to external assistance. These recommendations suggest a major alteration and improvement in the relationships between the MOEC and the external assistance agencies. If accepted and implemented they will require substantial changes in the behavior of all involved and an acceptance of greater accountability. Thus, these few recommendations constitute a serious challenge to all participants engaged in external assistance.

Recommendation 1. Adopt a more aggressive position with regard to external assistance in the sector and initiate this by developing a detailed and comprehensive plan for using external funds.

This will involve setting realistic and scheduled priorities for the sector. Specific annual targets consistent with the priorities will have to be identified. Next, the kinds and amounts of different resources that will be required will have to be identified. An assessment of existing and anticipated government resources should be made and compared with the assessment of total resource requirements. Existing external assistance activities should then be examined to see which of those needs they are meeting. The remaining needs should be considered carefully and put in priority order for funding consideration by current and potential external assistance agencies.

This priority listing should be a major guide for decisions regarding assistance to the sector. That is, project selection (whether for grants or loans) should be based on these MOEC-defined needs. In some cases it might be necessary to ask external assistance agencies to redirect current projects, but this should not be done if the agency does not wish to alter an existing agreement with HMG.

It must be recognized that there will be some costs attached to this approach if it is selected. For example, it may be necessary to ask some external assistance agencies to delay or redirect project design activities. It may also be necessary to indicate to an agency that their proposed contributions are not necessary because they do not fit government priorities--it is difficult to refuse funding but it may be a necessary step.

Developing such a plan should have high priority. Without it, it will be difficult to continue to seek additional external assistance in a rational manner. Sufficient staff must be delegated to the task for it to be done properly.

Recommendation 2. External assistance agencies should be more sensitive to their role as contributors to a sector that is the responsibility of individuals representing HMG.

The issue of a perceived vacuum resulting from a slow decision-making process has already been discussed in this chapter. Representatives of the MOEC often find themselves in the uncomfortable position of trying to address high pressure for action from external assistance agency representatives before decisions have passed to them through appropriate channels in the Ministry.

The MOEC staff recognize that funding agencies often have good ideas and well conceived proposals. They also believe, however, that external assistance agencies are too inflexible, that they are not sufficiently willing to adapt their proposals to existing conditions or rational goals nor do they appreciate the difficulties faced by the MOEC staff. The MOEC is also concerned that new project proposals often reflect primarily the goals and directions of the external assistance agencies and that these have usually been determined outside of Nepal. Once a project is in operation, the MOEC staff is concerned that inflexibility means that ultimately the project suffers.

Recommendation 3. Recognize the value of continual coordination of external assistance at the MOEC level and strengthen coordination activities.

This will be most effective if there is a detailed and comprehensive plan which can provide guidelines for all involved in the sector. Coordination of activities might be most fruitful if they begin with a focus on sharing technical and professional information and insights on specific topics such as effective supplementary primary education instructional materials, calculating unit and cycle costs of training activities, or methods of monitoring supervisory activities. These meetings could be an expansion of the current effort of various project boards. In addition to providing all concerned with useful information, such meetings would provide MOEC personnel with opportunities to become better acquainted with the different aspects of the variety of project activities. In these sessions it would be easy to correct any misunderstandings and come to agreement on simple matters such as policies regarding vehicle use.

These meetings would serve as a useful foundation for occasional meetings where the MOEC and external assistance agencies could review overall progress in the sector, discuss needs in the light of priorities, and provide each other with professional advice. This would be particularly useful if assistance from another

external assistance agency were about to be sought. For example, those currently implementing projects might assist the MOEC with evaluation of certain design aspects of proposed projects.

Commitment to coordination may require assigning additional MOEC staff to work in the area of external assistance. These staff must be able to work effectively with the range of involved units in the MOEC and with current and potential external assistance agencies. The responsible unit in the MOEC should also have the authority to work closely with the MOF and other governmental agencies such as the NPC on an informal basis.

Recommendation 4. Participate more actively with external assistance agencies in professional activities.

Both the MOEC and project staff represent some of the most creative educators who are accustomed to working under difficult conditions. They have much to offer one another professionally and should take advantage of the opportunities that collegial work provides.

The MOEC staff should take a more active role in new project design so that these projects are consistent with MOEC priorities and to ensure that the staff are fully informed about the goals and objectives of new projects before they begin. Involvement in activities such as evaluation would give MOEC staff experience with the various projects and would make the MOEC more knowledgeable about the strengths of the different projects in the sector.

Annex 9.1

Interviewees

Uttam Amatya, Assistant Secretary, Programme and Evaluation Section, Ministry of Education and Culture

Caroline Arnold, Education Advisor, UNICEF

Barbara Butterworth, Education Advisor, Improving the Efficiency of Educational Systems (IEES) Project

Dalheue Coue, Senior Country Officer, Asian Development Bank

Kedar Mathema, Representative, the World Bank

Jean Meadowcroft, EHRD Officer, USAID

Margaret Sands, UNESCO Advisor, Science Education Project

Babu Ram Shrestha, Under Secretary Foreign Aid Division, Ministry of Finance

Narsing N. Singh, Secretary, Ministry of Education and Culture

Annex 9.2

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