REPORT NO. 56

A FRAMEWORK FOR JUSTIFYING BANK-ASSISTED EDUCATION PROJECTS IN ASIA:
A REVIEW OF THE SOCIOECONOMIC ANALYSIS AND IDENTIFICATION OF AREAS OF IMPROVEMENT

by

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February 1992

The views expressed in this paper are those of the author and do not necessarily reflect the views and policies of the Asian Development Bank.
FOREWORD

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This study report presents a review of the socioeconomic analysis of Bank-assisted education projects and proposes a comprehensive framework of criteria for justifying such projects. The use of this framework is expected to strengthen the justification of education projects in Bank's operational project documents.

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Officer-in-Charge
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OVERVIEW

The overall objective of this paper is to review the Bank's policies and practices regarding the socioeconomic analysis of education projects. Forty-three appraisal reports of Bank-financed education projects constituted the dataset for this review which was done against benchmark information contained in the Guidelines

The paper contains five chapters. The objectives, scope of the study and the review methodology are presented in the Introduction (Chapter I). The review results are reported in Chapters II to IV, which center around ten topics considered relevant in the socioeconomic analysis of education projects. Chapter II discusses for the EMCs concerned: (i) the harmony between policy framework and project objectives; (ii) the education system and its performance; and (iii) manpower considerations and external efficiency. Chapter III presents the following topics: social and financial considerations, cost-benefit analysis, cost-effectiveness approach and risk assessment. The fourth chapter presents the framework for project justification and the Benefit Monitoring and Evaluation System. Finally, the main conclusions are presented in Chapter V.

The basic question underlying the study centers around the criteria or rationale for approval of Bank-assisted education sector projects. The main output is a comprehensive framework of criteria which should be used in justifying education projects. Project viability and sustainability are considered to be the overall justification criteria. Different criteria have been classified into seven more or less homogeneous categories: (i) pre-design criteria; (ii) specific design criteria; (iii) economic impact; (iv) social impact; (v) institutional impact; (vi) education system related criteria, and (vii) environmental impact. (i) The first category has two subcriteria which are of a macro nature and should be considered during project identification, namely: (a) the project is consistent with the government's (sub)sectoral policies and priorities; and (b) the project is consistent with the Bank's operational strategy in the (sub)sector and/or in the country. (ii) While all categories of criteria should be considered during project preparation, a number of subcriteria are particularly important at project design stage, such as: (a) incorporation of lessons of experience; (b) cost-effectiveness; (c) risk minimization; (d) social and environmental assessment; and (e) donor coordination. In the absence of a formal economic internal rate of return (FIRR) analysis, due to difficulties in expressing education benefits in monetary terms, demonstrating that the project input-mix constitutes a cost-effective means provides an important economic criterion for project justification. Application of the cost-effectiveness approach requires the identification of at least two

Asian Development Bank, Guidelines for Economic Analysis of Education Projects, (Manila, 1987), Appendix II.
feasible alternatives for each of the major project components. Due consideration given to the specific design criteria is expected to result in cost reduction and/or benefit enhancement. (iii) Economic impact criteria constitute a third major category comprising the following subcriteria: (a) cost savings; (b) consolidation of achieved benefits; (c) higher earning potential; (d) enhanced economic productivity; and (e) health related benefits. (iv) Social impact criteria are being given an increasingly greater weight in justifying education projects. They comprise regional, gender- and income-related equity as well as social backwardness of certain groups of people. These four subcriteria are usually highly interrelated and two or more criteria are often addressed at the same time. Focus on education for females belonging to a socially backward class in a rural, economic backward region of the country, would address the equity issue from the four viewpoints. Poverty alleviation concerns are included in the social impact criteria, in particular in income-related equity. (v) Due consideration given to institutional impact criteria is expected to lead to a broad category of benefits through an improved policy framework, strengthened planning and managerial capability of project related institutions as well as enhanced political stability. (vi) Internal efficiency (e.g., as indicated by dropout rate, repetitions and achievement scores), external efficiency (e.g., as indicated by curriculum relevance and increased employability) and education system productivity are closely related criteria which are specific to education projects. Qualitative improvement of education, often a major project objective, aims at increased internal efficiency and higher educational output through strengthened planning, managerial and supervisory capacity, improved monitoring and evaluation of performance standards for students, teachers and programs, higher retention and completion rates and last but not least, well-trained teachers using appropriate facilities, equipment, relevant instructional materials and good teaching methods. (vii) Finally, the group of environmental impact criteria encompasses subcriteria such as: (i) harmony of the architectural design of facilities within the physical and man-made environment; (ii) provision of community facilities (water supply and sewerage, drainage, sanitation); and (iii) energy utilization.

The review of project documents and the feedback workshop discussions revealed the following: (i) absence or paucity of detailed quantitative data on internal efficiency indicators in the project education institutions; (ii) ineffective management information system (MIS) for educational planning and evaluation, hampering the application of PMME; (iii) paucity of information on, and assessment of, the role and performance of the private sector in educational development; (iv) inaccurate long-term projections of manpower; (v) paucity of data to assess and enhance the external efficiency situation; (vi) limited social analysis during project preparation stage; (vii) paucity of data on private costs and benefits; (viii) general lack of a consistent application of the cost-effectiveness approach; and, finally, (ix) the need to apply a more complete and coherent framework encompassing all relevant criteria for justifying education projects.
The review also suggested areas where further empirical research could help update and refine existing methodological guidelines. These areas include: (i) short-term monitoring of labor market requirements and underlying short-term manpower demand projection methodology; (ii) social analysis as a tool to contribute to better project design; (iii) performance analysis of education projects; (iv) application/applicability of cost-effectiveness analysis; (v) application/applicability of a more formal private and social IRR analysis; and (vi) further research to elaborate a more coherent framework of criteria for justifying investment projects in the education sector.
<table>
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<td>AR</td>
<td>Appraisal Report</td>
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<td>BME</td>
<td>Benefit Monitoring and Evaluation</td>
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<td>CB</td>
<td>Cost-Benefit</td>
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<td>DI</td>
<td>Distribution Impact</td>
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<td>DMC</td>
<td>Developing Member Country</td>
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<td>EA</td>
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<td>ES</td>
<td>Education System</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>IRC</td>
<td>Incremental Recurrent Costs</td>
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<td>LCF</td>
<td>Local Cost Finance</td>
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<td>ME</td>
<td>Ministry of Education</td>
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<td>MIS</td>
<td>Management Information System</td>
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<td>MP</td>
<td>Manpower</td>
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<td>PBME</td>
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<td>UCC</td>
<td>Unit Capital Cost</td>
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<td>URC</td>
<td>Unit Recurrent Cost</td>
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I. INTRODUCTION

A. Objectives

1. The general objectives of this study are to: (i) review Bank's policies and practices regarding the socioeconomic analysis of education sector projects, in particular those in the education sector; (ii) identify areas of improvement and update existing guidelines; and (iii) bring out areas where additional research would be warranted in an effort to refine the guidelines. In particular, the review was carried out against the benchmark information provided by the: (i) Guidelines;\(^1\) (ii) Sector Paper on Education Development in Bank's DMCs; and (iii) findings of a Feedback workshop\(^2\) on the Education sector.

2. The analysis and assessment of the review point to lessons from both the methodological and empirical viewpoints and help identify better techniques and criteria to improve the framework for justifying projects in the education sector. The study's findings contain useful background information from which inferences are drawn about what values/judgments/criteria the Bank does take into account in justifying education sector projects. The study also highlights the criteria on which the Bank ought to make judgments in social infrastructure projects when more orthodox financial and economic measurements, such as IRR analysis, are likely to be inadequate.

B. Scope

3. The study focuses on the social and economic justification of education projects and does not analyze policy issues at the (sub)sectoral level. The review was limited to projects in the education sector. In so far as the Guidelines include references to aspects of social analysis, the latter type of analysis has been included as a supplement to economic analysis. In view of the specific characteristics of education services (basic needs, merit goods), the emphasis put on social analysis is justified. Further, the study focuses on ex-ante project justification emerging from appraisal documents only. The study does not address more theoretical issues of relevance to evaluation of investments in the education sectors\(^3\) but is confined to a review of Bank's policies and

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\(^1\) The term "Guidelines" used throughout the study refers to the Guidelines for Economic Analysis of Projects, in particular, to Appendix II, "Guidelines for the Economic Analysis of Education Projects".


practices regarding the social and economic justification of education sector projects; it will, therefore, be more practical in nature.4

C. Review Methodology and Overview

4. The methodology followed in reviewing the project documents (ARs) is described in Appendix 1. An analytical checklist of issues (Appendix 2), stated in question form, was elaborated from various information sources. The different sections of Chapters II, III and IV are structured in accordance with the layout of the issues checklist. In view of the interrelationships between the various aspects of economic analysis, interfaces inevitably occur which explain some overlapping in the presentation of the review results. The structure within each section is identical. First, the general framework for economic analysis, as applied to Bank's education projects, is briefly indicated. Second, a description is given of the extent to which this framework was appropriately reflected in the appraisal documents and comments are presented. Third, findings which emerged from Feedback Workshop discussions, are presented. Finally, possible areas for improvement are identified and tentative recommendations are formulated.

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II. EDUCATIONAL POLICY FRAMEWORK.
THE EDUCATION SYSTEM AND ITS PERFORMANCE

A. Educational Policy Framework and Project Objectives

1. General Framework

5. The socioeconomic analysis of education projects should begin with a discussion of the (sub)sectoral objectives in relation to the overall development goals of the country. It is therefore important to present a concise overview of the socioeconomic development of the country concerned. Education projects usually have multiple objectives which should be clearly specified as the extent to which these objectives are achieved, constitute project benefits. It is further necessary to spell out, at sectoral as well as at subsectoral level, the relationship between means and ends in sector investment development. In this regard it is particularly important to state clearly goals, objectives and priorities in the education (sub)sector in order to better appraise the means (policies, programs, projects, activities, project components and inputs) to realize them. Clarification and assessment are a necessary process of appraisal.

2. Review and Comments

6. In the appraisal documents reviewed, appropriate attention was given to the review of the country's education sector plan and the (sub)sectoral objectives. These sectoral goals were usually discussed within the general context of the socio-economic development of the country. Human resources development was generally indicated as an overall priority of the Government as it is recognized to be an essential condition for economic development. The overall education objectives in all appraisal documents were clearly stated in qualitative terms. Project activities generally aimed at improving the quality of educational services, as reflected in better trained and more skilled project output. In a number of documents, increasing the quantity of educational services was a major project objective. Providing more and better quality educational opportunities in previously underserved areas, coinciding with the less accessible rural areas, was stated as an important objective in thirteen documents. In most of the appraisal documents a number of other, more specific, project objectives were also identified such as: (i) enhancing the efficiency and productivity of the overall education system (ES); (ii) increasing the effectiveness with which available resources are used; (iii) supporting decentralization; (iv) improving operational efficiency (linked with qualitative improvements); (v) increased and/or improved supply of teachers; etc.

3/ This relates only to those DMCs which received Bank assistance in the education sector.
7. The review suggests that the distinction between qualitative education improvement and quantitative expansion of education could be better articulated. It should be recognized, however, that education project activities focusing on improvement in the quality of education (increasing the level of internal efficiency) also generate a quantitative output increase as a result of lower dropout and repetition rates.

8. In a number of appraisal documents, no clear distinction was made between "general project objectives", usually stated in qualitative terms, and "specific project objectives or targets", often expressed in quantitative terms. Specific project objectives could be defined as operational, quantitative targets which are to be established in the context of an effective benefit monitoring and evaluation (BM&E) system. If a useful distinction is made between general and specific project objectives, it should be ascertained that both have the same coverage. This would not be the case if the general project objective only focuses on quality improvements while specific project objectives also included additionality of supply (increase in quantity of services). Further, in the documents reviewed, project objectives were formulated consistently in accordance with the scope of the project (and vice versa) and their consistency with the (sub)sectoral policy framework was generally ascertained. However, the latter exercise was often implied and it would be desirable to verify this consistency more explicitly.

9. Although all documents reviewed considered the implementation of project components as the general strategy to achieve the stated project objectives, a clear assessment of the latter would have been useful. It is desirable to bring out more clearly the feasibility of the project objectives and targets, as well as the relationship between means and (sub)sectoral and project specific ends. Checklist question 1.8 (Appendix 2) on the relationship between means and ends appears to have more relevance at subsectoral level as the relationship between project components and inputs and the anticipated achievement of project objectives was, by and large, systematically addressed. However, the relationship at higher than project level and the feasibility of policies/programs/projects to reach broader (sub)sectoral goals, were generally not assessed. The clarification of education goals is a necessary process of appraisal. It is not sufficient to state simply that project objectives are feasible; it should also be indicated why and the criteria for assessing the technical and financial feasibility should also be clearly specified. The reasons for not being feasible should be stated by observing, for example, that the targets set may not be realistic given the current low participation rate, shortage of female teachers or lack of appropriate facilities. Although project objectives may have been appraised to be worthwhile and feasible, it is probably less correct conceptually to state that project objectives have been appraised to be cost-effective, unless the major project components coincide with the specific objectives, but this was rarely observed in the project documents reviewed. On the other hand, it would be conceptually correct to state that cost-effective measures are built in the project design to implement strategies and achieve the project objectives. Finally, it is conceptually confusing to define project strategies in terms of project objectives. At
the project level, strategies should refer to operational measures and means, comprising inputs, to implement the project components and thereby achieve the project objectives.

10. Conflicting objectives were rarely identified in the project documents. The evaluation exercise should also identify and discuss conflicting objectives and indicate the need for and the extent of trade-off between the latter. For example, there may be a possible trade-off between quantitative expansion and quality improvement, given a limited amount of financial resources. To support quantitative expansion the Government may need to reduce unit recurrent costs for a given education level which may be possible only by reaching a higher level of internal efficiency. In this case quality improvement is supporting the objective of quantitative expansion.

11. The strategy for achieving the project objectives relates to the appropriate mix of measures and activities embodied in the project components and inputs. The strategy framework provides the logical linkage between stated project objectives and their anticipated level of achievement. In more recent project documents, a clear distinction was made between the major project components, or parts, and the inputs needed to implement them. These inputs coincided generally with the different cost, or expenditure, categories for which cost data were usually given in the cost estimate table and financing plan. Whenever feasible, major project components (e.g., educational program and facilities development) would have to be broken down into more detailed subcomponents. In some of the earlier documents, the concepts "components" and "input" were blurred; the project components identified (namely civil works, consultant services, provision of equipment and furniture) were in reality project inputs corresponding to different cost categories.

3. Feedback Workshop Findings

12. A fundamental step in project analysis is making the link between (sub)sectoral policies and project formulation. (Sub)sector analysis or diagnosis helps identify (sub)sectoral issues and should be available at loan fact-finding stage. Project formulation and project objectives emanate logically from this type of analysis. The consistency of the project objectives with (sub)sectoral objectives should be ascertained early in the project cycle. One should be cautious in doing this because of the following reasons: (i) a first issue relates to the question whether the stated government objectives can be relied upon. Indeed, there may be significant divergence between the objectives taken from documents such as (sub)sectoral development plans, and actual priorities and policies implemented. It is necessary to ascertain their mutual consistency. A concrete indicator for the actual priorities is reflected in the historical, present and planned budget allocations; and (ii) there is a need for an accurate, objective assessment of the extent to which (sub)sectoral objectives have been achieved over a certain period, e.g., during the last five years. This raises immediately two important issues: (i) the correct identification of what the Government's (sub)sectoral objectives were during the envisaged planning period and
(ii) a true assessment of the extent to which these objectives have been actually achieved. A systematic assessment of how achievable the stated objectives in the future are, against historical evidence, may give a general indication of the commitment of the Government and in some cases of the implementation capability of the executive agency (EA). If the EA, e.g., is constructing an average of ten schools every year and the project design increases this number to, say, forty schools annually, this large increase may be an indication of potential implementation problems. It can be concluded that good projects presuppose well-conceived planning at the (sub)sectional level, i.e., sector work should form the basis for formulating projects.

4. Recommendations

13. To achieve a closer harmony between the overall policy framework and project goals, it is necessary to clearly establish their interlinkages and bring out their consistency. From the outset, a concise but relevant picture of the economy should be provided, including socio-economic background data, an assessment of the general economic performance and a statement of the country’s broad development objectives. These should focus on aspects such as manpower shortages and budgetary constraints that are relevant to the education sector. It is especially important to clearly spell out the implications of the country’s economic conditions and development goals on the education sector.

14. It is necessary to clearly indicate the interlinkage between identified (sub)sectional issues and project implementation. Figure 1 provides a simplified conceptual framework and brings out the relationships between the concepts involved. The identification of (sub)sectional issues (such as low quality of education; high dropout and repetition rates, inequitable access, etc.) emerging from an independent issues analysis would contribute to a clear formulation of the project objectives. The latter should be consistent with the (sub)sectional objectives as indicated in the education development plan. It will be useful to relate project objectives explicitly to major subsectoral issues. For example, if sector studies have identified low quality of education and high dropout rates as major issues, this knowledge may guide educational planners in the formulation of (sub)sectional objectives (enhancement of internal efficiency and quality of education) and identification of suitable project components (e.g., curricula development, training of teachers, use of appropriate instructional methods and materials) the implementation of which will contribute to the educational objectives. If the proposed project constitutes the first phase of a Government investment program, this should be highlighted in the AR. As this program will be implemented as part of the Government strategy, it logically follows that the project should be consistent with the latter. If the project represents the first phase, it should address

\[\text{A checklist of 20 questions/items relating to overall, (sub)sectional and project objectives, priorities and strategies is given in Appendix II.}\]
FIG. 1 RELATIONSHIP BETWEEN SUBSECTORAL ISSUES AND PROJECT IMPLEMENTATION

- Sector Studies
  - Analysis of Issues
  - Problem Analysis

- Sectoral Issues
- Sectoral Policy Objectives
  - Consistent with

- Subsectoral Issues
- Subsectoral Policy Objectives
  - Consistent with

To solve
- Project Objectives/Targets

To reach
- Project Strategies

To implement
- Project Components/Inputs
the major issues of the concerned subsector. These considerations are more relevant if the project is financed through a sector or a program loan.

15. Lessons of experience from previous projects as emerging from Project Performance Audit Reports (PPARs) should be identified wherever relevant and the appraisal document should clearly indicate how such lessons will be incorporated in the project design. The framework in Fig. 2 establishes the linkages between general development strategies/goals and the range of outputs expected from project implementation. The output range, besides, the usual categories such as more and better skilled graduates, better trained teaching and managerial staff, etc., may also comprise the following intermediate output categories: relevant curricula, available placement services, use of laboratory equipment in teaching, a satisfactory grading system, better access to textbooks and teaching aids, etc. The final outcome (e.g., better qualified graduates) of the operational strategies (use of input packages) conceived at project level constitutes the major contribution of the project. As was done in a number of more recent project documents, it is beneficial to break down the project inputs into a hardware (buildings, furniture, equipment) and a software component. The latter comprises all other inputs/measures/activities and provisions to increase the internal and external efficiency and quality of education, such as staff training, curriculum development, student evaluation, etc.

16. It is useful to provide a project description which clearly specifies the relationship between project components/subcomponents and the inputs required to implement them. Project components in education projects refer to distinct, mutually exclusive parts (e.g., teaching staff development, construction of school buildings) which can be individually pursued. They can be considered as particular types of subprojects designed to implement specific project strategies and thus achieve (specific) project objectives. These major parts, components or subcomponents, should be presented in the projects' consolidated cost estimates and financing plan and related to cost or expenditure categories (civil works, furniture/equipment, staff development, specialist/training services, recurrent cost funding). A more ideal and innovative approach, which has been used more frequently in World Bank ARs, is to define major project components in terms of specific project objectives or targets. Within a given component, several subcomponents may be identified each of which may consist of a number of activities which will contribute to project output/benefits. In this conceptual framework, specific project objectives are identified in such a way that project components coincide with them. However, this approach would be less feasible if the project objectives are stated in general terms of either improved internal or external efficiency.

17. The analysis should include a critical assessment of the (sub)sectoral plan and underlying policy principles. Clarification of the major goals and priorities, if needed, should be given. This evaluation exercise should extend to the feasibility of project objectives and overall targets for educational development, e.g., by comparison with historic levels of education expenditures. The educational sector policy
Fig. 2: Project Focus, Design and Rationale Framework

Elements of Framework

- Development Strategy/Goal
  - To Address
  - Development Issues
  - Development Policies
    - Present
    - Future
  - Project Objectives
    - To Be Reached
    - Verifiable Indicators
      - Project Inputs
        - Description
          - Verifiable Indicators
            - Project Outputs
              - Description
                - Verifiable Indicators
                  - Examples
                    - Improvement of quality internal/external efficiency & relevance of study program
                    - Shortage of highly trained/skilled manpower; development of relevant study program
                    - Elimination of unproductive study programs;
                      - Development of a domestic postgraduate education system
                    - Increase internal/external efficiency;
                      - Average time required for means of verification;
                        - Graduates to be employed
                    - Consultancy services;
                      - Number of manmonths
                    - More relevant/better organized curriculum
                      - Quality of graduates
in most poor DMCs characterized by high illiteracy rates, is two-pronged: it should be responsive to the country’s economic requirements for technical manpower (MP) and also satisfy the social demand for literacy and basic education. In more advanced developing countries the emphasis will be on vocational, technical and specific types of higher education.

18. In case of a sector loan, it is necessary to give a thorough justification of the proposed sector approach and indicate its advantages and strengths. The need for sector assistance can be highlighted, for example, in terms of MP needs to sustain rapid economic growth. The criteria for a sector loan should be satisfied. The government educational sector policy will need to be carefully assessed. This should comprise a brief description of the Sector Development Plan and investment program as well as the necessary background information for their evaluation. The assessment should clearly bring out that (i) the sector policy is appropriate; (ii) both Plan and Investment Program are sound, well-conceived and feasible; and (iii) sector institutions are strong. It is necessary to ascertain the managerial capacity of the Executing Agency to implement a sector loan. Finally, it should be clearly indicated whether the proposed loan will finance an area or time slice of the Sector Development Plan. In a sector loan context, it would be preferable if a TA for policy improvement and institution building could be provided prior to, rather than piggybacked to, the sector loan.

19. When a program loan to support a sector development program, comprising policy reforms, institution-building and investment program, is advocated it is important to articulate the conceptual framework underpinning the sector development program to be financed by the loan and bring out clearly the interrelationships between program objectives, targets and the actions to be taken by the Government. From the major issues (shortcomings/weaknesses) discussed, key recommendations can be formulated from which the Program objectives are derived. A simplified framework for Program assessment is contained in Figure 3. It should be pointed out that the Government’s objectives and strategies are closely related and they should be directly linked to major sectoral issues such as quality of education, efficiency of education management and equitable access to quality education. In case mutually exclusive issues can be identified, each of them points to a corresponding major objective for which an appropriate strategy could be developed. The program subprojects (strategies) should be described in relation to how they would contribute best to the Government’s objectives.

20. The extent to which policy dialogue is taking place should be carefully analyzed and its contents briefly described. The need for such a discussion may be less obvious if a recent sector study has identified the critical issues and recommends action programs to improve quality, equity, resource mobilization and cost recovery. Policy dialogue would still be helpful in monitoring improvements in these parameters. The extent of policy dialogue depends on the circumstances of the DMC and the sector and whether a project, sector or program loan is processed.
FIG. 3: EDUCATION PROGRAM ASSESSMENT: CONCEPTUAL FRAMEWORK

PROBLEM ANALYSIS

ISSUES

GOVERNMENT OBJECTIVES

STRATEGIES

LONG-TERM DEVELOPMENT PROGRAM

TO ADDRESS

TO REACH

TO CARRY OUT
3. The Education System and Assessment of Its Performance

1. General Framework

21. Appendix 11 of the Guidelines provides a useful framework for the analysis and assessment of the Education System of the DMC. The Appraisal Report should include a brief review of the ES and indicate how efficient it is in fulfilling national educational goals. In particular, it should describe the existing public and private sector education institutions and assess their achieved level of performance. The review should cover the triple role of the Government, i.e., (i) direct administration of state-run schools and universities; (ii) formulation and supervision of education policies and standards for the entire sector; and (iii) incentives to private educational institutions. Educational performance is considered to be a function of the level of priority given to education as expressed by, e.g., the budgetary allocation to the sector. When reviewing the ES and preparing a proposed project, two important factors should be examined: (i) the past and current level of budgetary allocations and (ii) the planned changes in the near future.

2. Review and Comments

22. With rare exceptions, all project documents reviewed (i) provided general information on the education system, (ii) identified (sub)sectoral issues, weaknesses and shortcomings and (iii) assessed the level of internal efficiency in general qualitative terms. In about one fourth of the documents, the review of the ES in historical perspective was lacking and no data were provided to assess the relative importance of the public vs. private sectors in terms of education institutions and annual output. Furthermore, although absolute figures on student enrollment were consistently indicated, about half of the documents, wherever applicable, lacked more detailed information on gross participation, continuation and graduation rates. Most of the appraisal documents also specified criteria (e.g., dropout and repetition rates) to assess the level of internal efficiency of the system. In about one fourth of the documents, the performance (efficiency) of the existing ES was not explicitly assessed in relation to fulfilling national educational goals. Almost all the appraisal documents provided a general discussion of (i) the role of the Government; (ii) the administration and organization of the public sector system; (iii) the supervisory role of the Government regarding educational policies and standards; and (iv) government education finance. In about two thirds of the documents shortcomings were identified but these did not generally appear to emerge from a thorough evaluation of the Government's role. Financial support to private educational institutions, wherever applicable, was not discussed nor assessed in about half of the documents.

23. In a number of project documents it was found that the term education standards was not explicitly used, although such standards (e.g., those relating to curriculum design, student evaluation framework, instructional materials, pedagogical methods in teaching) were incorporated in the project design to improve the internal efficiency and
quality of education. The Guidelines suggest that the performance of the Education System be assessed in relation to national educational goals. Although both concepts (ES performance and national goals) are usually separately discussed and assessed in general qualitative terms, an explicit comparison is seldom made. The lack of attention given to this comparison may raise the issue of the feasibility of such a linkage. It appears to be less feasible to make a valid comparison between targeted national educational or sector operational goals and the actual education system performance, as assessed generally by both internal and external efficiency indicators which have more relevance if applied to individual education institutions.

24. In one project document it was stated that the educational institutions suffered from both external inefficiencies (low output and poor quality of graduates) and internal inefficiencies (poor resource allocation and utilization). However, low output or system productivity is conventionally regarded as an overall indicator of internal efficiency. Curriculum irrelevance produces poor quality graduates not suitably qualified to take up a specific job for which they should have been trained. It appears from this statement that internal efficiency and external efficiency do have an interface as employability is closely linked to qualified output. Poor resource allocation and utilization constitute only one aspect of internal efficiency, suggesting the use of more cost-effective inputs and increasing utilization of teachers/facilities which could lead to a reduction in unit costs. The project documents usually provided detailed information on internal efficiency determinants, such as training needs for teaching and administrative staff, use of appropriate instructional methods and materials or availability of facilities/equipment. These aspects, however, were not considered in the checklist in Appendix 2.

3. Feedback Workshop Findings

25. The strengths and weaknesses of the throughput diagram depicted in Figure 4, were examined. Such a diagram, describing succinctly the overall performance of the education system, would be useful as a diagnostic tool as it (i) provides basic numerical information allowing a quick and general assessment of the ES performance and (ii) pinpoints major (sub)sectoral issues in terms of enrollment, dropout and output. Its purpose would not be to present solutions to problems but highlight the latter. In this way, the diagram would be helpful in clearly bringing out the need for the project. Furthermore, the diagram could also show the linkage of the educational output with the labor market. Detailed data on unemployment and underemployment could effectively indicate the labor market's absorption level. Finally, it could present, in a more catching manner, the performance of the ES at a given point in time contrary to the usual practice of simply providing a descriptive and prosaic text on the subject.

26. It was pointed out, however, that the data required are often not readily available. Therefore, to construct such a diagram, assumptions regarding key parameters would be needed, reducing the practical value of
this diagnostic tool. An alternative, more straightforward diagram was suggested based on enrollment and output figures (vertical axis) for the main educational subsectors (horizontal axis) but without linkage to the labor market. In both cases the data required could be built into the TOR of a PPTA.

27. As it may not be feasible to repeat the exercise annually, such a diagram could be constructed periodically, e.g., in a sector study and could then be a useful reference for all education projects in a particular country. A sequence of these diagrams for a given country could show the evolution or development in certain key parameters and issues. As the data system is expected to improve over time, the relevance of the diagram as a diagnostic tool would increase. If data paucity is no longer a constraint, the diagram should be continuously updated based on an in-depth analysis of the most recent data. Once the diagnosis is made (analysis and assessment of issues based on or supported by detailed data), general strategies or approaches towards addressing key issues can then be formulated which form the starting point for project identification and formulation.

4. Recommendations

(a) Role of the Government

28. The role (functions) of the Government in the education sector should be carefully identified and assessed. This consists of allocating budgets, elaborating plans, formulating policies, implementing appropriate strategies, programs and projects to achieve the (sub)sectoral goals. The role of the Government is centrally implemented by the Ministry of Education which administers the public sector education institutions and supervises the private sector (e.g., through accreditation, core curricula to be adopted, educational standards to be respected, finance of training and/or other support). The central Government, although encouraging the private sector to enhance the quality of education, generally lacks sufficient resources to rationalize and assist private education institutions. Where education is mainly a provincial matter, the role of the central Government may be confined to (i) defining national educational objectives; (ii) providing a general framework for curricula; (iii) setting educational standards; and (iv) liaison with international agencies. The formulation and implementation of education standards is one of the means of the Government to fulfill its supervisory function, thus controlling to some extent the performance of the ES and the quality of the educational services.

(b) Education System Performance vs. Educational Goals

29. It would be useful to discuss this relationship first at the sectoral level. However, such a comparison would become more meaningful if it could be done at subsectoral level. At this level the relationship between targeted operational subsectoral goals (which may be expressed in quantitative terms) and system performance as measured by institution-specific efficiency indicators (which are more at the micro-level) should
be assessed. A suitably designed Management Information System (MIS) should provide the required data inputs. EME, as a component within this MIS, should be instituted at project level and used as a managerial tool to monitor the gradual improvement in the system efficiency indicators. Detailed data on both internal and external efficiency are necessary to assess the performance of the ES. There is generally a large gap between the actual level of system performance, on the one hand, and the targeted ES performance as reflected in the (sub)sectoral goals, on the other.

(c) Educational Efficiency, Productivity and Quality

30. It is necessary to operationally define these concepts in the country and project-specific context and clearly spell out the interrelationships involved. Productivity can be generally defined as the percentage of graduates out of total enrollment. Assuming no increase in enrollment, which is not a very plausible assumption, the theoretical optimum for a five year course would be 20 per cent. The main reasons for the often observed low level of productivity are: (i) lower level of system efficiency (as measured by dropout and repetition rates); and (ii) socio-economic reasons (e.g., students depending on a job to earn their living). Productivity (output vs. enrollment) provides an overall indicator of the internal efficiency. Other possible, mostly systemic-related reasons explaining a low output/enrollment ratio, are: (i) lack of motivation; (ii) poor selection of students; (iii) poor facilities; (iv) low quality of teaching; and (v) high costs of private courses.

31. System efficiency, often referred to as internal efficiency, relates to the flow of students through a given education level with a minimum of wastage (as measured by repetition and dropout rates). Quality of education is a product-related concept, embodied in highly qualified students and determined by (i) teacher qualifications (depending on adequate training) and supply; (ii) instructional programs, methodology and materials (textbook/teaching materials); (iii) curriculum relevance; (iv) appropriate facilities (school buildings and educational equipment); and (v) management/supervision by administrators. These determinants (educational resources) may be used as indicators to assess education quality which reflects both internal and external efficiency aspects.

(d) Private Sector Involvement in Education

32. Public sector involvement in the ES is the rule for basic primary and lower secondary education which may be compulsory and free. For higher level education, private sector involvement becomes more important and the analysis at appraisal should describe the relative importance of the private sector in terms of: (i) number of schools; (ii) absolute enrollment figures; (iii) annual output (number of graduates produced/year); and (iv) system performance.

(e) The Education System: Organization and Throughput

33. A simplified framework highlighting the organization and general structure of the educational system is illustrated in Figure 4. The data
FIG. 4: THE EDUCATIONAL AND TRAINING SYSTEM ORGANIZATION AND THROUGHPUT

Notes:

a/ Includes repeaters

b/ Definition of "pass" are inconsistent - but generally mean qualifying for next level

c/ Proportion of unemployed is estimated only; totals may not add due to data inconsistencies.
entered are purely illustrative. The diagram in Figure 4, adjusted in accordance with the salient features of the education system in the country concerned and incorporating real data on intake, dropout, etc., is very instructive as it visually summarizes the structure of the ES and also provides a picture of the internal efficiency in terms of dropouts. If feasible, such a diagram should be included in the AR.

C. Manpower Considerations and External Efficiency

1. Framework for Economic Analysis

34. The project needs, in terms of facilities, products or activities, should emerge from a review of the existing education system including an analysis of issues (problems, weaknesses, deficiencies) to be addressed by the project. Social demand and manpower (MP) requirements are the two conventional approaches used to assess the need for the project. Even when there is no clear-cut private demand for primary education, Bank assistance to the primary education sector may be justified on the basis of ethical, social or political considerations or by using the basic needs argument. Although it is recognized that the social demand approach has some weaknesses, the approach is adequate for primary and mass education (in the case of low participation and high illiteracy rates). There may also exist a high social and private demand for technical and higher level education; however, in this case the manpower requirements approach should be used to justify the need for the project. This approach is based on the functional relationship between manpower needs (dependent variable) and economic development objectives, either for the whole economy or for a given economic sector. To achieve the economic objectives (higher productivity and production), investments in both physical and human capital are necessary. The MP needs can be determined given the economic objectives and the MP coefficients. Lack of sufficient data is a main practical problem, in which case MP planning may be rudimentary and depend strongly on the experience and judgment of the analyst.

2. Review and Comments

35. Save for a few exceptions, where project output could not enter directly into the labor market, e.g., in the case of two primary education sector projects, all other documents used the MP requirements approach to justify the need for the project although with varying degrees of success. The need for better skilled manpower was explicitly mentioned in two thirds of the documents reviewed. The social demand approach for needs assessment, although usually much less elaborate, was used in about fifty per cent of the appraisal documents. Access to primary education was typically considered as a basic need and the Government policy to make it compulsory and free was intended to increase student enrollment and participation. To encourage social educational demand by target groups, no cost recovery measures were proposed. Valid indicators of the social demand for educational services which were mentioned in a number of documents, were: (i) the ratio of "applicants admitted/total applicants for enrollment" (student admission rate), given the capacity of the ES to
36. The number of foreign skilled workers was used in a number of documents as a quantitative indicator for skilled MP shortage. Where no foreign skilled workers were involved, the estimate of the shortage of skilled workers was simply the difference between the demand for skilled workers (by the different economic sectors and occupations) and the supply of skilled workers by the educational system (without project situation). About three fourths of the documents provided information on employment prospects for the future project output, indicating, at the same time, past and current labor market conditions. Linkages with industry and employment agencies were discussed in about two-thirds of the documents and career guidance and student services in about fifty per cent. In a number of project documents, these issues were not applicable. Although manpower projections were given in most documents, whenever applicable, data sources for the demand and supply forecasts as well as forecasting methodology, including manpower coefficients and assumptions, were not discussed in at least a third of the appraisal documents.

37. It should be pointed out that a relevant, appropriate curriculum design is a pedagogical criterion reflecting both internal efficiency (i.e., through quality of education) and external efficiency aspects (employability). In virtually all project documents, wherever applicable, the relevance of curriculum design was discussed. Another determinant of educational product quality, namely, appropriate skill testing standards, was discussed in about fifty per cent of the documents.

38. Although most project documents contained information on the project output, clear-cut definitions were often not provided. It is important to provide an output classification which clearly identifies and describes the major and less important project outputs and makes the distinction between intermediary and final outputs. One project document provided the following output classifications: (i) institutional development program; (ii) infrastructure development; and (iii) innovative activities. However, these are obviously only intermediary outputs (project components), the ultimate project output being a greater number of better trained students. An accurate description of project output helps identify the project beneficiaries and incremental benefits. This identification is essential to justify education projects. Educational output is usually described in terms of students/graduates or teachers/administrative staff. The following distinction should be consistently made: (i) a greater number of better trained, currently enrolled students resulting from increased efficiency, and (ii) quantitative expansion of educational services, by building more schools/classrooms, resulting in increased enrollment and project output. A new program of short upgrading courses, e.g. in vocational education, will result in an increase in the quantity of services. On the other hand, upgrading an existing three-year diploma course is expected to lead to an improvement of quality/relevance, but not to a direct increase in project output. However, even in the latter case, if the drop-out rate can be
lowered and given a constant enrollment level, there will be an indirect increase in the annual output of diploma graduates.

3. Feedback Workshop Findings

39. Recent experience has shown that the manpower (MP) requirements approach using long-term MP projections (10 to 20 years), leads to invalid, inaccurate and even misleading results mainly because of difficulties in predicting the changing labor requirements over the longer run. Manpower analysis and planning should start with the identification of existing shortages of specific skills and their likely development. This can serve as the basis for future action. The forecast period depends generally on the type of education (vocational/technical vs. higher education) and country-specific circumstances. Bank-assistance should aim to enhance the institutional capability of the Government to develop strategies/systems to continuously monitor responses of the labor market to changing economic requirements. Education projects, except for basic education, should consequently seek to add to the education output in rather small increments. A basic question is whether the Bank should focus on highly specialized skills, perhaps justifiable in large economies, or on basic, general education which might be more appropriate strategy for smaller DMCs. The Bank's focus in the educational sector is now generally more on the provision of good basic education which is the basis for all other types of education and has high social returns. Given this focus, the question arises whether technical education could not be considered more and more as a matter of private sector development.

4. Recommendations

(a) Project Output and Flow of Educational Services during and after Project Implementation

40. The appraisal document should make the following distinction and provide an adequate description of (i) project output during the implementation, if any, and (ii) the stream of educational services (output) after implementation. The following example illustrates the case where the output is not identical. Training of teaching and administrative staff is usually an important project component and this kind of project output (trained staff) will be generated during the project implementation period. As the training program is implemented, more and better qualified teachers become available, the quality of educational services is gradually improved, and the expanded quantity of services is anticipated to reach a targeted level. After the project implementation period, the flow of educational services will mainly consist of more and better educated/trained/skilled project output (workers, students, graduates).

(b) Boundary between Vocational and Technical Training and Education

41. As the definition of these terms may be country-specific, it is necessary, wherever applicable, to distinguish clearly between "vocational" and "technical" training and education. Generally, vocational
training comprises short-term training courses designed to develop job-specific skills (e.g., sewing, carpet weaving). On the other hand, vocational education is more formal in nature and focuses on middle level skilled workers. Agricultural technology training is clearly not vocational; however, short-term vocational training in agricultural technology may be provided to out-of-school youth, unemployed adults and farmers, whose skills may be enhanced as a result.

(c) Education-Employment Linkages

42. It is necessary, wherever applicable, to comprehensively discuss education-employment linkages, starting by bringing out the education-employment mismatch. The study of these linkages such as placement services for graduates should result in a series of recommendations for which an action plan could be prepared. The financial implications of the establishment of such linkages, i.e., how the latter will be financed, should be discussed as well. Through such linkages, it is anticipated that the curricula and qualification of graduates will conform more closely to the requirements of the economic sectors.

(d) Application of the MP requirements approach

43. The specific nature of technical and engineering education projects justifies (i) the use of the MP requirements approach to assess the need for the project and (ii) specific aspects of the macro-economic performance in relation to (i). In such projects a special focus on economic development, employment and demand for skilled labor is fully justified and could cover the following: (i) a review of factors influencing overall economic growth; (ii) major issues in economic development; (iii) development strategies and (iv) a discussion of sectors with direct implications on the demand for skilled labor.

44. It is important to determine at appraisal whether the project output defined, e.g., as the flow of better educated students from the secondary education system, will enter at higher educational levels or into technical/scientific fields of employment. As the proportion of the latter increases, the MP requirements approach becomes more meaningful. It is also necessary to assess whether the subsequent level of education has the facilities to accommodate the project output. The appraisal report should further identify the factors explaining the shortage of skilled MP, e.g., (i) inadequate supply (in quality and quantity) by the ES; (ii) emigration of the better skilled labor force; or (iii) absence of in-plant training programs. The existing imbalances (shortage/oversupply) emerging from the demand and supply forecast should be clearly spelled out.

(e) Manpower Projection Methodology

45. Whenever MP forecasts are given, it is necessary to describe the forecasting methodology and specify the underlying assumptions. Medium- or even long-term MP projections should be attempted for University or other higher level education projects which produce highly qualified
output in specialized areas of science and technology. Insofar as technical/vocational training and education are mainly directed at meeting short-term labor shortages, short-term forecasts will suffice for this kind of project. In the latter case longer term manpower projections may be justified if Bank's assistance is geared to longer term labor shortages. Generally, the estimation of additional needs for skilled (industrial) workers requires the following steps: (i) generate (short-term) projections of (sub)sectoral employment figures; (ii) for the primary, secondary and tertiary economic sectors, forecast occupational coefficients (MP coefficients) for both technicians and skilled workers; (iii) apply the coefficients in (ii) to the sectoral employment figures in (i); (iv) assume an annual average rate of attrition (to be applied to the estimated existing stock of MP); and (v) calculate the annual additional future needs for technicians and skilled workers as the ratio:

\[
\text{additional needs due to economic growth and attrition} \times \text{projection period}
\]

It is necessary to ascertain at appraisal stage if the country concerned has a comprehensive MP planning system and if data availability will not be a major problem. Short-term forecasts of incremental demand/supply (without project situation) are more meaningful if the mismatch between demand and supply is important and if the proposed project is designed to increase significantly the quantity of skilled workers. Projects aiming only at qualitative improvements are not anticipated to have a major quantitative impact on project output, although improved internal efficiency is expected to result in higher project throughput. In this case MP forecasts are less meaningful. Finally, manpower forecasts should be done as an exercise separate from appraisal, e.g., as part of the labor market analysis carried out during sector studies.
III. SOCIOECONOMIC AND FINANCIAL CONSIDERATIONS

A. Social Impact

1. Framework for Economic Analysis

46. The Guidelines provides a general framework for assessing the social impact of education projects. After the need for the project has been established, the next step consists in identifying the target groups and the number of direct beneficiaries. It is necessary to have information on the profile of the latter regarding location (urban vs. rural), income level (low, middle or high-income level) as well as social, cultural and educational stratification. These data will enable an assessment of the anticipated project impact which is useful for appraisal, the preparation of post-evaluation documents and the BME process. From the viewpoint of socioeconomic analysis, it is particularly important to assess the distribution impact (DI) of the project. A positive DI can be ascertained if students from low-income groups are comparatively more favored than students from high-income groups. Expensive tertiary education projects normally have a negative DI which may, however, be mitigated by increasing fees and introducing a suitable cross-subsidization scheme for students from low-income families. The positive DI of primary education projects can be reinforced by free distribution of textbooks and school lunch to poor students. It is necessary to assess the possible DI of an education project and the measures designed to mitigate or reinforce the impact at appraisal.

2. Review and Comments

47. All project documents reviewed provided data on the number of direct beneficiaries and described the general impact of the project in qualitative terms. Specific target groups were identified in about two thirds of the appraisal documents. Although a number of project documents did give some general indications regarding location, income-level and socio-educational stratification, no special social appraisal or design study was undertaken which would have provided hard data. The distribution impact as well as the equity issue, which comprises both distribution and gender-related issues, were discussed in about two thirds of the project documents. The identification of positive (negative) distribution impacts and measures taken to reinforce (mitigate) them were only given in a small number of documents.

48. Although project documents generally provided a qualitative assessment of the equity impact, such concepts as "target group" and "distribution impact" were, as a general rule, not explicitly used, especially in the earlier documents. A project focussing clearly on female teachers and pupils (e.g., primary education for girls) addressed the needs of these target groups but the term "gender-related equity" was not used. If pupils in backward rural areas or from poor sections of the community, are comparatively more favored, there is clearly an anticipated positive distribution impact, enhanced regional equity and a contribution
to the broader objective of poverty alleviation. As hard data, which could be provided by social appraisal or more indepth social design studies, were not available, the equity or social impact issue could only be assessed in general and qualitative terms.

3. Feedback Workshop Findings

49. If the project objectives are to be geared towards the disadvantaged strata (the rural, the women, the poor, the socially backward groups) the project analyst is immediately faced with two problems. First, will the focus on the disadvantaged strata be an explicit objective to be achieved through project inputs? If yes, how could this be operationalized, considering that children from richer families are usually more readily admitted to schools than children/girls from the culturally backward classes. In this case, if all children cannot be accommodated by the public school system, it would be desirable to introduce selection criteria for admission in the project's education institutions and the feasibility to do so should be assessed. Second, while information on gender and location of beneficiaries (urban vs. rural) is often readily available, it is more difficult to obtain detailed data on social backwardness or income-related equity. These two criteria are inherently difficult to measure partly because they are less tangible and partly because empirical data collection is more complicated and time consuming. It was pointed out that the income criterion is an elusive concept in project analysis, especially in tracing any distributive impact. Therefore, it might be more feasible to use occupational groups (small farmers, landless laborers, petty traders, etc.) or even social categories as a proxy for the income criterion.

50. In a number of education projects, the emphasis has been put on the supply or provision of educational facilities in recognition of the fact that basic education is considered as a human need. At the same time, less attention has been paid to the social demand for educational services and the socioeconomic, cultural and psychological profile of the beneficiaries. It will also be necessary in future education project analysis to analyze carefully the project beneficiaries (composition/profile/needs/constraints/attitudes/knowledge level, etc.) to come up with a better design of facilities and optimize their use. Such profile information will help define the equity situation of that particular project and improve overall project design. The next step will focus on the social preparation of the intended beneficiaries, i.e., the creation of social demand for the educational services which may be particularly important in a number of projects providing basic education.

51. Formal education as a means towards human resource development cannot always be isolated from the religious and social value education in the country. In Indonesia, e.g., besides private and Government education there is a religious education system which aims to inculcate Islamic principles/values together with formal education objectives. Religious as well as ethnic considerations should receive proper focus in Government educational policy and related programs and appropriate solutions should be found to deal with sensitive problem areas.
52. Education may ultimately contribute to a more regionally balanced economic development. However, to the extent that skilled people cannot be absorbed in their home region, they may have to migrate to other regions in which the regional demand for labor exceeds the local supply of the required skills. This leads to dislocation with possible disruptive effect on the social/cultural value system. Brain-drain to other countries signifies a loss of human resources, especially when the economy needs badly the more skilled persons who are migrating.

4. Recommendations

(a) Direct and Indirect Beneficiaries

53. It is usually possible to classify the direct beneficiaries (target groups) of education projects in three distinct groups: (i) students; (ii) teaching staff; and (iii) administrative staff. The indirect beneficiaries may include: (i) the families of the direct beneficiaries; (ii) the local community; and (iii) the society at large. The economic sectors employing the better skilled/educated graduates as well as the community at large (via community service programs) may be considered as indirect, more remote beneficiaries. In view of the social nature of education projects, it is particularly important to analyze and assess the magnitude of social benefits accruing as a result of the project. At appraisal, the equity issues as related to income, gender and location of project facilities should be discussed comprehensively. It is also important, within the MIS-PBME framework, to specify quantitative indicators and operational targets (apart from broader sectoral goals and more qualitative project objectives) which allow monitoring of implementation progress and anticipated benefit flows.

54. While it is generally possible to identify and quantify direct beneficiaries, it is usually more difficult to quantify the indirect beneficiaries although their identification should not be a major problem. It is also necessary to make a distinction between "project impact" and "distribution impact". Project impact is a general term which encompasses all economic, social and other benefits. In education economics, the specific term "distribution impact" refers to income-related equity and materializes if lower income groups are comparatively more favored by the project than the higher-income groups. The term "equity impact", which is broader than "distribution impact", includes three distinct categories of social benefits: income-related (positive distribution impact); gender-related (focus on girl's education or literacy programs for illiterate women); and location-specific (redressing regional imbalances, providing equitable education opportunities and focus on underdeveloped, backward rural areas). In some education projects, two or even the three groups of benefits may be simultaneously present and the appraisal should highlight this. If a project provides higher university education opportunities to the population living in the outer islands of Indonesia, a more equitable distribution of opportunities for participation in higher education will ultimately support a regionally more balanced industrial development. The three aspects of equity are simultaneously addressed by providing access to vocational education mainly in the rural, poor areas with a major focus
on female participation. Female education is expected to improve maternal and child health care and reduce fertility -- these are important social benefits which are difficult to express in monetary terms.

(b) Quantifiability and Valuation of Social or Equity-Related Benefits

55. While it is usually possible to identify social benefits and provide an estimate of the number of direct project beneficiaries, and although it may be ascertained that these beneficiaries belong to rural population groups which coincide with the poorest, most disadvantaged groups of the society, it is virtually impossible, in view of their largely intangible nature, to express these social benefits in monetary terms. This is also true for enhanced social mobility which is yet another category of social benefits which may or may not be specifically equity-related. On the other hand, provided sufficient empirical information is available, it is much more feasible to estimate the economic benefits of education if the higher earning potential (compared with the without project situation) and the reduced waiting time due to enhanced employability, can be accurately determined. Although equity-related impact is generally not expressed in quantitative, monetary terms, it normally goes hand in hand with greater employability due to enhanced skills of the poor(er) beneficiaries. Because of the expected increase in labor productivity, there is usually a higher earning potential. If time spent in looking for a job is reduced, the opportunity cost of unproductive waiting time can be avoided which is another second category of economic benefit.

(c) Terminology

56. To highlight important issues and provide a better focus, it is suggested to use such terms as "target group", "direct and indirect beneficiaries", "social impact" (or equity impact) and "positive and negative distribution impact". These terms convey precise meanings. In view of the enhanced awareness of the importance of the analysis and assessment of the equity issue, it would be useful to explicitly include a distribution impact or broader social equity objective amongst the general project objectives to provide a better focus on the social benefits expected to be generated by the project activities. This procedure would be in accordance with the general principle that benefits are defined in terms of achievement of project objectives.

(d) Relationship between Beneficiaries and Benefits

57. Such distinction should be made in view of its implication on the category of benefits expected to be generated from education projects. Direct beneficiaries (e.g., upgraded staff and graduates) are generally reaping individual and family-related benefits in the short and medium term. Indirect beneficiaries on the other hand mainly reap society-related benefits in the medium and long run. This group of beneficiaries may include linked industries (regional employers of graduates), small-
scale commercial establishments, workers and farmers who are benefiting
from better community services, etc.

(e) Maximizing Equity Impact as a Project Objective

58. It is usually feasible to include a social impact objective as
was done in a number of education projects reviewed. Maximizing equity
impact may be ascertained by, e.g., (i) determining specific locations for
vocational training schools to maximize impact on regional development or
(ii) maximizing benefits available to students from rural, poor regions.
Measures which may contribute to a maximization of the social impact
objective in a vocational or technical education project could include:
(i) provision of student hostels for promising students from rural areas;
(ii) establishment of schools at specific locations selected on a regional
basis, (iii) training of teachers in these schools, or (iv) provision of
equipment to selected schools in rural areas. In cases where adequate
educational demand of target groups is not forthcoming, special measures
and incentives to generate enrollment may be needed. In a primary
education sector project, the following incentives to increase
participation and retention were identified and implemented: (i) change
in the timing of the school-year; (ii) incorporating a nutrition program;
(iii) automatic promotion between grades 1-3; (iv) scholarships for
continuation; and (v) abolishment of the requirement for school uniforms.

B. Financial Considerations

1. Framework

59. Analysis of the financial costs, which may comprise expenditure
on facilities, equipment, services of instructors and teachers, is
important to (i) assess the funding arrangements (discussed under this
section); (ii) determine cost-effectiveness (section 3.4); and (iii)
appraise the distribution impact of the project (section 3.1). More
specifically, the budgetary allocation to education has to be analyzed and
assessed in view of the financial constraints frequently faced by
Governments. In most education projects, the Government is the primary
source of funds. A distinction is usually made between current budget
funds to finance recurrent expenditure and capital budget funds to finance
investment expenditure. At appraisal, it is necessary to assess the
adequacy of the budgetary allocations to meet the estimated project
expenditure, especially when a large and abrupt increase is expected. In
the latter case the appraisal should assess (i) the capability of the
Government to mobilize the needed resources; (ii) its funding
arrangements; and (iii) its commitment to implement the project. Funding
arrangements may involve a recovery of project cost. The extent of cost
recovery and the impact of such a recovery scheme should be identified at
appraisal. Although fees usually only constitute a fraction of the total
financial cost in Government education projects, the financial impact on
the beneficiaries may be significant in relation to the level of income
of the target group. This impact should be assessed taking into account
all significant costs, including purchase costs of books, transport
expenses and the opportunity cost of foregone earning. In this assessment exercise, two considerations are important: affordability and equity.

2. Review and Comments

60. In all project documents reviewed the current level of budgetary allocation to the education subsector concerned was examined. Planned changes in the near future were also generally reviewed although the adequacy of the budget allocations to meet the estimated project expenditure was not assessed in about one fourth of the documents. Most of the documents also: (i) assessed the commitment and financial capability of the Government to provide the necessary counterpart funds; (ii) provided information on the Government’s funding arrangements; and (iii) discussed the financing plan. Although all documents gave data on project implementation costs, sufficient allocation of funds to the current budget to finance the additional recurrent expenditure after project implementation was not ascertained in about one fourth of the documents. Therefore, the long-term viability (project sustainability) could not be assessed. Although information on unit capital and recurrent cost per student placed is useful, such data were provided in only about fifty per cent of the project documents.

61. Cost recovery may be an important means to achieve coverage of annual recurrent costs. This issue was not considered relevant in a number of project documents, e.g., in primary education projects. Some cost recovery measures were proposed in about sixty per cent of the documents but the financial impact of such recovery measures on Government’s budget was only assessed in about one fourth of the documents. Questions concerning equity and affordability in this regard were raised in about sixty per cent of the cases. The term ‘affordability’ was seldom used explicitly in the project documents but was assessed implicitly in a number of cases, e.g., stating that tuition fees from students of low-income families will not be levied probably implies that these students cannot afford paying them. In a number of project documents, especially the earlier ones, the cost category ‘project implementation and operational cost’ was not further broken down to isolate the incremental recurrent cost (IRC). While cost estimates are invariably given for the major expenditure categories (project inputs) the discussion of the basis of these estimates, i.e., the estimation methodology, could be strengthened in most cases.

3. Recommendations

(a) Review of Educational Expenditures

62. A review of educational expenditure should be undertaken to (i) assess the financial implications of the project on Government budgetary resources and (ii) assess the degree of probability of the project being completed without local currency financing problems. Past, current and future total education expenditure in absolute amounts and expressed by its share in GDP and total Government expenditure, should be indicated. This review should clearly bring out the increase (decline) in
(sub)sectoral expenditures and indicate, e.g., that actual expenditures are not reaching their plan targets, if applicable. In this particular context, the fiscal deficit and the financial resource constraints facing the Government should be stressed.

(b) Incremental Recurrent Costs (IRC) and Financial Capability of the Government to Cover IRC

63. All appraisal documents should give an estimate of the annual incremental recurrent costs to be financed by the Government after project implementation. Government assurances that the necessary budgetary provisions will be made to finance such costs should be ascertained. The Government's capability to finance IRC could be assessed by stating, e.g., that the level of IRC and the corresponding recurrent cost provisions are acceptable given the high priority of education and the small proportion of IRC in total subsectoral recurrent expenditures. Such a statement should be supported by figures.

64. When assessing the financial capability and commitment of the Government to assume recurrent costs, it is important to make a clear distinction between (i) recurrent costs to be financed during the project implementation period and (ii) incremental recurrent costs to be financed after this period, as they may imply a different funding arrangement. The latter must always be assumed by the Government while the former may be financed partly by the Bank, preferably on a declining basis. The estimated recurrent costs, expressed as a per cent of the total annual recurrent budget for the subsector concerned, is a useful quantitative indicator and should be mentioned. An accurate estimate of IRC provides a guideline on the anticipated annual recurrent budgetary requirements that must be borne by the Government. These IRC must be incorporated into the Government's normal budgetary process to sustain education quality and/or system expansion beyond the project implementation period. The next step is to assess the likely availability of the additional budgetary requirements by considering historical evidence showing the average annual growth rate of education expenditure during the last decade.

(c) Cost Recovery

65. Wherever applicable, cost recovery measures should be identified and their importance in financing recurrent costs carefully assessed. Possible sources for cost recovery are: (i) student fees; (ii) donations; (iii) revenues generated by production units of the schools; (iv) gradual reduction of stipends to students (especially those from higher income families); (v) running special, short courses for a fee; and (vi) charges for use of school and other equipment/facilities -- these charges represent additional income from services provided to the (private) economic sectors (industry, commerce). The cost recovery ratio or index is usually defined as student fees and other net revenue flows divided by total budget expenditures for recurrent costs.

66. In primary and lower secondary education projects, cost recovery may not be feasible because of equity reasons and taking into account the
prevailing low gross enrollment rates, high illiteracy rates and the 
education policy principles (provision of free and compulsory education) 
of the Government. It should also be pointed out that cost recovery in 
other education projects is not the only means to reduce the Government's 
recurrent cost burden -- in some cases privatization of the provision of 
educational services such as vocational/technical training programs, may 
be feasible. The discussion of cost recovery measures should include an 
assessment of their financial impact (alleviation of the Government's cost 
burden, affordability by the direct beneficiaries).

(d) Affordability

67. Wherever cost recovery measures, especially via student fees and 
other contributions by the student's family, are considered to be 
necessary, it is important to assess the affordability of such measures. 
If an adjustment (increase) in tuition fees is deemed necessary, this 
should be without prejudice to the objective of providing 
education/training to low-income members of the community. The possible 
negative distribution impact of such measures should be identified and 
countermeasures, e.g., scholarships to poorer students, to mitigate such 
influence should be considered. Discrimination in tuition according to 
income (more tuition to students from higher income families) may be a 
feasible means to address the equity issue in some instances.

(e) Bank Financing of Recurrent Cost during Project 
Implementation

68. The Bank usually finances a large part of the project 
implementation cost. This cost is different from the IRC as a result of 
the project. If the Bank is financing part of the latter cost category, 
this should be fully justified (usually with reference to the Government's 
budget constraint) and only be done on a declining basis as the Government 
should be able to finance IRC after project implementation from its normal 
budget allocations. It is also necessary to specify the categories of 
recurrent costs which are to be financed by the Bank, either partially or 
totally.

(f) Unit Recurrent Costs

69. Historical cost analysis at appraisal may help identify possible 
diminishing unit recurrent costs, resulting from a declining trend in the 
routine budgets. This will usually be one of the factors explaining a 
general lowering of educational quality. A project focusing on quality 
 improvement and rehabilitation of existing educational and infrastructure 
facilities will lower (incremental) recurrent costs. Internal efficiency 
 improvements can also be expected with an increase in the supply of 
skilled MP, which will reduce unit recurrent costs. It should be pointed 
out, however, that diminishing recurrent costs will not occur in all cases 
and could vary depending on specific project-related circumstances. 
Whenever such data are available, unit recurrent costs should be discussed 
and assessed for each level of education, for both public and private 
education. It could also be ascertained whether private institutions
demonstrate higher or lower unit costs than public institutions. Private expenditure on education by both students and private institutions whenever applicable, should be indicated.

(g) Project Cost Estimates

70. It has been earlier pointed out that education cost estimates are invariably given by category of expenditure, i.e., by inputs, including physical and price contingencies. It is also desirable to relate these costs to the major project (sub)components and group them accordingly. It is further necessary to discuss the basis of the project costs, i.e., the estimation methodology underlying the cost data. This discussion could highlight cost-effective measures leading to cost savings.

(h) Financing Plan and Bank Financing of Local Currency Costs

71. The financing plan usually indicates the funding by financial agencies, local vs. foreign cost and by category of expenditure (project inputs). A useful, supplementary project cost table should focus on project (sub)components instead of project inputs; this would be especially useful if the project components coincide with the project objectives. It should clearly emerge at appraisal which local cost categories would be Bank-financed and to what extent. A number of cost categories such as taxes and duties are not Bank financed. The Bank finances a part of total cost based on standard percentage limits for different groups of DMCs: 80 per cent for Group A DMCs, 60 per cent for Group B DMCs and 40 per cent for Group C DMCs. The actual financing percentage should be determined based on relevant country and project considerations. The standard percentage limits may be exceeded if justified. Local cost financing may be justified in education projects where the local cost component is relatively large. The extent of justification required for local cost financing depends on whether total Bank financing exceeds the standard percentage limit for the DMC concerned. In this context, Government’s efforts to mobilize domestic resources to support its development programs should also be assessed. The justification of the percentage of financing for the project should be done with reference to (i) the current financing constraints of the Government; (ii) Government priority to subsector and project; and (iii) budgetary allocations to the sector.
C. Cost-Benefit Analysis (CBA)

1. Framework for Economic Analysis

72. The economic analysis of education projects comprises essentially the following steps: (i) establishing the need for the project, including an assessment of the demand for the educational services; (ii) ascertaining the availability of resources and cost effectiveness; (iii) cost-benefit comparison; and (iv) assessment of affordability. In Government education projects emphasis is put on social costs and benefits but it is equally important to identify and quantify private education costs and benefits. Private education costs may comprise: (i) direct, out-of-pocket costs; (ii) foregone earnings; and (iii) less quantifiable costs such as separation from the family. These costs should be related to the income level of the target groups to assess their affordability, as well as to the perceived benefits, which include (i) monetary benefits (expected higher income being the most tangible benefit) and (ii) non-monetary benefits, which may be individual, family and/or society-related. The latter category of benefits which comprise e.g. enhanced social mobility and health benefits, should be identified and assessed in qualitative terms. Comparison of private costs and anticipated private benefits provides a basis to assess financial affordability from the viewpoint of the target groups.

73. Relating social costs of education to the associated social benefits provides a more comprehensive cost-benefit comparison. The social costs of education comprises (i) private costs or expenditures and (ii) the Government's capital and recurrent expenditures (public expenditure). Social benefits include: (i) quantifiable private benefits (greater earnings); (ii) less quantifiable indirect economic benefits which may be individual, family, and/or society-related; and (iii) non-quantifiable equity benefits. Comparison of social costs and social benefits provides a basis for assessing whether the project is worth undertaking from the viewpoint of society. The Guidelines further recommend a format for identification and assessment of costs and benefits in two broad groups (quantifiable and non-quantifiable costs and benefits) and a framework for a more formal rate of return analysis. The latter is only possible if the major costs and benefits can be expressed in monetary terms which has seldom been the case.

2. Review and Comments

74. The project documents reviewed generally contained a wealth of information on costs and project impact, assessed mainly in qualitative terms. It was often stated that the nature of the project precludes a quantitative assessment of benefits but these benefits were nonetheless identified and clearly stated in descriptive, qualitative terms.

\[2\] The comparison of costs and benefits is comprehensively discussed in Appendix II of the Guidelines. Only a summary of these guidelines is presented here.
(a) Private Costs and Benefits

75. The project documents reviewed generally did not provide detailed quantitative data on private education costs and benefits; therefore, a meaningful comparison could not be provided. However, private, monetary benefits (lifetime earnings) of target groups were identified frequently but not quantified. Non-monetary benefits, which are less quantifiable, were explicitly identified as project benefits in a number of documents. Although no attempt was made to estimate foregone earnings, it was noted in a number of documents that participation in education constituted an opportunity cost. In a primary education project for girls, it was noted that the lost labor at home or on the farm constituted a real opportunity cost. Tuition fees usually constitute an important component of the private, direct costs of education. When the target group belongs to the poorer sections of the community, it is especially important to assess the financial impact of any direct or indirect private costs of education on them.

(b) Cost-Benefit Analysis

76. A formal IRR analysis was not carried out in any of the project documents reviewed and the general format suggested in Appendix 11 of the Guidelines for identification and assessment of costs and benefits, was not presented. No meaningful quantitative comparison could be given of the social costs of education with the corresponding social benefits because of lack of data on quantifiable private costs and benefits. However, less quantifiable benefits were identified in virtually all project documents. The anticipated equity impact (social benefit) was also described in qualitative terms in about two thirds of the documents.9

3. Feedback Workshop Findings

77. The relationship between project inputs and output should be clearly brought out in the AR as this has an important implication on the definition of benefits. The initial (lower level) project inputs are easily identifiable as they coincide with the expenditure items. Let us consider a teacher training program. The output produced (e.g., trained teachers), embodies the direct benefit generated by the (training) project. This project output, gradually forthcoming during project implementation, constitutes a higher level or intermediary input which, if effectively used during the post-implementation period, will help produce better educated students/graduates, who constitute the project output forthcoming during the operation phase of the project. This project benefit is realized as and when the students receive better training. Better skilled graduates are the ultimate project beneficiaries; they constitute a second benefit category as a result of the (training) project. Both benefits (trained teachers, better skilled graduates) are internal to the education system and basically non-pecuniary in nature.

9 See Social Impact, p. 22.
Once the better trained students/graduates find a job and have an opportunity to use their enhanced skills in a productive manner, new benefits are generated which are economic and external to the system: enhanced earning potential because of better and more relevant skills as well as greater productivity in the economic sectors are the two main economic benefits generated ultimately as a result of the (teacher training) project. While a quantitative output increase, as a result of enhanced internal efficiency, is relatively easy to measure, the available tools (such as determination of students' achievement level) to measure qualitative improvements of education should be used.

4. Recommendations:

(a) Quantitative Expansion versus Qualitative Improvement of Educational Services

78. Education projects generally aim at higher internal efficiency and qualitative improvement of services resulting in less wastage and ultimately higher system productivity. Qualitative improvements may also entail a quantitative expansion of output although this may not constitute the major project objective. On the other hand, quantitative expansion of student participation and enrollment via construction of new school buildings, rehabilitation of existing facilities and increased teacher supply may be the principal objective in some education projects. At appraisal, it is necessary to make the distinction between quantitative expansion and qualitative improvement in view of the implications on the nature of the project scope and the generation of benefits. When quantitative expansion is the main project objective, the civil works component is usually important and benefits accruing as a result of the project will be generated mainly after the project implementation period. The full monetary benefits become apparent only after some time when the direct beneficiaries (students/graduates) are employed and get higher salaries as a result of their better education/training or when their productivity is increased as in the case of skills training. As the direct beneficiaries are employed and produce more at less cost, there is also a contribution to GDP and secondary economic benefits may be generated.

79. When qualitative improvement of educational services and enhanced internal/external efficiency constitute the main project objective, benefits can already be generated during the project implementation period. Improvement of short-term vocational and technical training courses may quickly generate economic benefits if the beneficiaries are already employed or will be employed as a result of the training program. In the case of more formal courses, quality of education may be enhanced as and when better trained teachers and instructional materials/methods are used. In this case, individual benefits in the form of higher qualifications are gradually built up during the project implementation period, but the full monetary benefits, as well as family and society-related benefits, are of a longer term nature and are expected to be realized mainly after project completion.
(b) Classification of Costs and Benefits

80. A useful framework (format) for identification, classification and assessment of costs and benefits from education projects is described in Appendix II of the Guidelines. A distinction is drawn between quantifiable and non-quantifiable costs/benefits and provision is also made to indicate the short or long-term impact of each cost and benefit category. The non-quantifiable or less quantifiable benefits identified in the project documents can be broadly classified into four major groups: (i) institutional, system-related and managerial benefits; (ii) social or equity impact benefits; (iii) financial and economic benefits; and (iv) miscellaneous, including environmental, political, health and population related benefits.

81. The first group in the paragraph above includes two major subgroups, namely (i) system-related benefits (e.g., improved quality/efficiency of training; improved participation rates) and (ii) managerial benefits (e.g., strengthened management and supervision capability). The equity benefits encompass three subgroups: (i) gender-related equity; (ii) income-related equity (positive distribution impact); and (iii) regional equity. Most of the benefits mentioned under these two categories are typically non-quantifiable in monetary terms while other types of benefits can be estimated by quantitative indicators, such as reduced dropout rate, higher completion rate and improved student-teacher ratio. A number of economic and financial benefit categories are potentially expressible in monetary terms but are usually described only in qualitative terms due to lack of empirical data. Cost savings, higher external efficiency, higher anticipated earning potential for graduates and productivity/efficiency gains for the employers, are the most important benefits grouped under this category.

82. The above classification of benefits generated by education projects only represents a broad categorization. The groups are not necessarily mutually exclusive as interfaces may occur. Some of the individual benefits identified under the groups are clearly overlapping to a lesser or greater extent. Benefits identified as such in the project documents which are more difficult to assign to any of the above benefit categories, could be grouped in the residual category ‘miscellaneous benefits’. Most of these benefits are less direct, more society-related and longer term in nature. Primary education projects, e.g., do not generate immediate, direct economic benefits but are the foundation for further education and training. Investments in female education have a multiplier benefit impact, enhancing the health status of the family, generating population-related benefits (reduced fertility) and an important source of intergenerational benefits as mothers pass on their knowledge to their children.

83. The review generally confirmed that project benefits are usually expressed in terms of positive, anticipated contribution to project objectives. Since this is a conceptually sound approach, the relationship ‘objectives—corresponding benefits’ should be clearly established at appraisal. In some cases it is possible to express the benefits in terms
of cost-savings (e.g., when local engineers replace expatriate ones or in the case of decreased unit training costs as a result of higher system efficiency). Benefits may also be broadly expressed in terms of improved performance (expanding enrollment) and even in terms of cost-effectiveness. Although education projects generally preclude a systematic quantitative evaluation of benefits, a qualitative analysis and assessment of the social and economic benefits should be attempted. A number of benefits generated by education projects may be quantified by indicating explicitly how many students/teachers/administrators will receive better training and how many schools/training centers will be served.

D. Cost-Effectiveness Approach (CEA)

1. Framework for Economic Analysis

The CEA can be considered as a limited application of the full CB approach. If project benefits cannot be accurately or fully expressed in monetary terms, the economic analysis should focus on the costing aspect. The project justification in this case will be based mainly on the contribution of the project to the sectoral objectives. Project needs and goals should be consistent with (sub)sectoral needs and goals and these have to be met in the most cost-effective manner. The least-cost method is one of the two major methods used in ensuring cost-effectiveness when the project objective is given; cost-effectiveness then simply means the least-cost method of achieving the objective. This method can be applied in engineering studies (e.g., for construction of school buildings) when the objective is easily defined in terms of capacity or output (e.g., classrooms of a given size). Once the objective is clearly defined, the cost may be minimized in terms of alternatives in technology, design, location and time phasing of the project.

The second method consists in maximization of end results, given resource constraints, and may be applied in analyzing social sector projects where resource constraints are binding. Identification at appraisal of at least two alternative options, within given resource constraints, is an essential aspect of the CEA; this ensures that unnecessary costs (waste) are avoided. The options may be defined in terms of standards, location, design, etc. In education projects, standards are well established with respect to such hardware components as classrooms and furniture and other recurrent expenditure items. Construction design standards must be compared with the existing ones and departures proposed should be adequately justified.

2. Review and Comments

The framework above, applied at global project level, was generally not reflected in the project documents reviewed. The requirement that at least two alternative options should be identified at appraisal, with indication of their respective costs and end results, is difficult to be met in education projects where a wide range of heterogeneous objectives and activities are usually defined. Therefore, it could also not be ascertained which of the two cost-effectiveness methods (least-
cost solution vs. maximization of end results) was applied in the documents reviewed.

87. Despite the fact that it was not feasible to apply the framework at the global project level, there was considerable evidence of cost-effectiveness awareness in about two thirds of the project documents. On the one hand, cost-effectiveness was considered in terms of construction design standards and unit costs for the anticipated project output, or major project components were compared with similar services provided by other projects in the country concerned and/or in other countries. At the same time, the majority of project documents reviewed indicated specific ways to achieve cost-effectiveness, generally related to specific project inputs or components. This suggests that cost-effectiveness and cost-effective, least-cost choices were considered for major homogeneous cost inputs/components but not at the global project level.

88. It is not sufficient to state that issues will be addressed in a cost-effective manner; it is also necessary to state explicitly how this will be done, e.g., by identifying technically and economically feasible ways to achieve cost-effectiveness. Similarly, the qualitative statement that the project’s unit capital and/or recurrent cost per student/graduate compares favorably with similar projects is not sufficient for ascertaining cost-effectiveness at the global project level. This should be supported by figures. When the comparative approach towards ascertaining cost-effectiveness is used, the project analyst should bear in mind that higher unit capital/recurrent cost may sometimes be justified; e.g. higher recurrent costs may be due to (i) high salaries for teachers, (ii) high boarding costs attributable to a deficient transportation system or (iii) a low student/teacher ratio. The use of the term “cost-efficiency measures” is sometimes used as an alternative to cost-effectiveness approach; however, both terms are not strictly synonymous as cost-efficiency does not incorporate the effects of project inputs on learning skills.

89. In one sector loan document, although no explicit reference was made to cost-efficient practices, the application of the cost-effectiveness approach was clearly visible in such statements as: “the investment program is economically and financially feasible”, “the sector approach would be the most efficient way to execute the development program” and “qualitative improvements were pursued via selective investments”. It should be noted that these statements are of a qualitative nature and it may be difficult to further quantify and verify them.

3. Feedback Workshop Findings

(a) Use of Unit Capital Costs (UCC) for Comparison of Projects

90. Comparisons based on unit capital costs are only valid when the project objective aims at a (substantial) quantitative capacity increase through new schools, classrooms, training institutions, etc., which also
involves finance of various inputs needed for the operation and maintenance of the added facilities. UGC comparisons were valid for earlier projects which focused on quantitative expansion of educational services. The emphasis is now generally more on upgrading existing institutions and UGC comparison are no longer valid as the current net value of existing assets and facilities cannot be precisely assessed. Such comparisons could even give a misleading picture and therefore be given less emphasis than comparisons based on unit recurrent cost (URC).

(b) Use of Unit Recurrent Costs (URC) as an Indicator of Quality versus Cost-Effectiveness

91. Generally speaking, higher URC for a specific project, including the Government budgetary allocation on educational recurrent expenditure, is an indicator of the quality of education. At the same time, a lower URC is often used as an indicator of cost-effectiveness. However, a lower URC (e.g., because of very low salaries for teachers) is not a desirable criterion in itself as it may point to lower quality educational services. In technical and vocational education projects, the URC may be on the high side to ensure adequate training and the project design may still be considered generally cost-effective.

4. Recommendations

92. As a consistent application of the framework for cost-effectiveness analysis, as described in the Guidelines, may be difficult at the global project level, it is suggested to focus this application on individual, homogeneous components and/or inputs. A logical framework where the major project components coincide with the principal project objectives would be most conducive to ascertaining cost-effectiveness as the group of multiple objectives in this case has been decomposed into its individual elements. For civil works, e.g., it is sufficient to apply standard designs to ascertain cost-effectiveness for that component. Cost-effectiveness for individual project components and/or inputs should be consistently ascertained without reducing the flow of anticipated project benefits. Although one should be aware of its limitations, CE could also be ascertained through a comparison of unit recurrent and unit capital project costs (per student) with similar projects. Such a comparison is conditional on the similarity of the two projects concerned. Two projects are seldom completely alike and the cost structure reflecting the input mix is likely to be different. Inter-country comparisons are even more difficult to carry out. Cost-effectiveness may also be pursued by taking into consideration lessons from previous projects, leading to more cost-effective choices.

93. In case an education development program implies the implementation of a range of similar projects (e.g., in a national universal education program), it should be ascertained that the project costs are consistent with those for the rest of the program in terms of unit costs of common components. However, comparisons based on unit costs do have their limitations and should be generally considered only as a first broad step in the application of the CEA. Cost-effective components
and strategies should be identified based on systematic cost comparison of alternative options for individual cost categories. If this has been ascertained, the overall project can be considered a cost-effective means of instituting the required improvements. It is further necessary to determine cost-effective solutions at project preparation stage (PPTA) and not only as a component within PBME during project implementation.

94. To illustrate the above approach, it would be useful to identify cost-effective choices for important project components such as educational facilities and staff development. Staff development is a major heterogeneous component and should be further broken down to ascertain cost-effectiveness. Estimated unit capital and recurrent costs of trained beneficiaries at project schools should be considered appropriate, taking into account the nature and level of training offered and the facilities provided. Some specific cost-effective strategies which may be generally applicable in most education projects are related to (i) optimal utilization of resources and (ii) the application of the selection principle. The latter may be important as it is usually not feasible to upgrade all current staff and/or existing facilities. With respect to the provision of new physical facilities, it should be ascertained that existing resources and their capacity to cope with additional demands have been considered in achieving economy and optimal utilization of facilities.\(^9\)

E. Risk analysis

1. Framework for Economic Analysis\(^9\)

95. Benefits from education projects are difficult to express in monetary terms and risks cannot therefore be measured by sensitivity analysis. Risk analysis will have to be carried out in qualitative terms, focusing on the relationship of major risks to the socio-economic objectives sought by the project. The risk assessment should clearly bring out major factors/eventualities which might impede realization of the objectives and their relation to project output and cost should be discussed. It is necessary at appraisal to identify major risk areas and discuss the proposed measures to minimize the risks involved.

96. Risks relating to both costs and benefits should be assessed. The risks on the cost side relate to factors which could delay project implementation such as timely provision of local currency funds, the implementation capacity of the project authority and the availability of

\(^9\) In marine sciences education projects, e.g., efforts should be made to minimize capital expenditure by provision of smaller vessels for near shore activities but chartering of large training/research vessels (instead of provision of such vessels) for deep sea activities.

\(^9\) This framework is given in the Guidelines, Appendix 8, Section II.
land. In education projects, however, risks are greater on the benefit side than on the cost side. The timely provision of project facilities (school buildings, furniture, equipment) is not necessarily sufficient to achieve the project objective (e.g., a prescribed annual output of graduates with a certain skill level). Achievement of objectives may depend more on such factors as (i) the motivation of the students; (ii) educational standards (curricula, admission, examination, instructional methods); (iii) availability of funds for the finance of operating expenditures; or (iv) the availability of trained teachers.

97. The real economic benefits of education projects relate to such broad long-term socio-economic goals as increased income levels for the trainees and a higher level of productivity in the economic sectors which will employ the trainees. The sustainability and performance of education projects depend on (i) the availability and maintenance of physical facilities; (ii) the appropriate mix of software components; and (iii) conditions and facilities which are external to the project. The latter should be identified together with the relevant assurances received from the Government. It is also necessary to explain the assumptions made with respect to the relationship between the facilities provided and the long-term socio-economic goals of the project.

2. Review and Comments

98. Project-related risk factors were identified in virtually all appraisal documents reviewed. However, their seriousness in terms of reduced benefit flows or enhanced project costs, as well as the probability of their occurrence, were not assessed. In all projects for which risk factors were identified, safeguard measures were suggested and incorporated in the project design but their effectiveness or feasibility were generally not assessed. All appraisal reports which indicated safeguard measures to reduce project risks also indicated specific assurances/commitments from the Government.

99. The discussion of project risks should not comprise unit cost comparisons which is more of a cost-effectiveness criterion. In one document "reasonable estimated capital/recurrent costs of training craftsmen" was considered to be an indication of a low risk situation. Further, in some documents risk factors were only identified in very general terms such as "potential problems during implementation" and "implementation of the project in dispersed locations throughout the country may pose problems", although the remedial measures to address risks were clearly spelled out. It remains to be assessed whether sectoral issues could be identified as risk areas and whether specific strategies to achieve project targets and objectives could be regarded as safeguard measures (as was done in one document reviewed). If that would be the case, all possible weaknesses of the relevant subsector could be identified as risks and all project activities designed to reach the project objectives could be considered as "safeguard measures".
3. Recommendations

100. In case a variety of risks have been identified, it is useful to classify them in two broad groupings (major and minor risks) depending on the extent to which anticipated project benefits may be affected and their likelihood of occurrence. As it may not be feasible to address all risks identified, safeguard measures should be designed principally to minimize the major risks. Risk analysis in education projects will usually be qualitative in nature. It is nonetheless useful to distinguish several steps: (i) identification of risk factors -- it should be indicated why these factors constitute a risk, especially when the risk factors do not emerge from an analysis of issues; (ii) classification into two broad groups--major and minor risks--based on their seriousness and likelihood of occurrence; (iii) design of safeguard measures to minimize the major risks; (iv) assessment of the effectiveness and feasibility of these measures; and e) ascertaining that the required Government commitments are given.

101. The financial risks should also be assessed. This relates to the affordability of the project for the Government. In this regard two aspects are important: (i) will the Government be capable of providing the counterpart funds from its development budget to carry out the investment component?; and (ii) is there a provision of recurrent cost budget at adequate levels to maintain project facilities after project implementation? Wherever relevant, it would be useful to distinguish and discuss the risks related to internal and external efficiency. These risks relate to the benefit side of the project. Low internal efficiency indicators constitute potential risk factors. The external efficiency risk may be reduced by more relevant curricula and higher internal efficiency resulting in better qualified output and better employment prospects for the trainees/graduates. Career guidance and placement services as well as the establishment of industry-education institution linkages also contribute to enhanced employability and reduced time spent looking for a suitable job opportunity. Better educated persons often show enhanced ability to adjust to changing career opportunities brought about by dynamic changes in the economy. The benefits of reduced external efficiency risk can be quantified if tracer studies can determine (i) the time saved spent in waiting for a job; and (ii) the higher earning potential as a result of the project.

102. In the case of a program loan, the complexity of policy and institutional changes usually constitutes a major risk factor. Safeguard measures in this case will focus on program monitoring with tools such as annual joint mid-term reviews. The risks could be reduced to acceptable levels through (i) Government's familiarity with the program's content; (ii) Government's commitment to the objectives; (iii) flexibility in the program design; and (iv) the borrower's capability in project implementation. In this context technical assistance program to help formulate policy reforms and provide institutional strengthening may be effective.
103. While a long list of risks may make the Project appear uncertain, this in itself should not discourage the project analyst to systematically identify all major risks. In so far as appropriate measures are built into the project design, the identified risks are minimized, if not eliminated altogether. The identification of risks is a first necessary step. The next step consists in assessing the importance and probability of occurrence of the major risk factors. Remedial measures can then be proposed. To avoid confusion, corrective measures should not be suggested in the same sentence which identifies the risk.
IV. THE FRAMEWORK FOR PROJECT JUSTIFICATION, BENEFIT MONITORING AND EVALUATION

A. The Need for the Project

104. All project documents reviewed assessed the need for the project and indicated reasons for project justification. The need for the project should clearly emerge from the analysis and assessment of subsectoral issues and identified weaknesses. The need for the project should preferably not be stated in terms of contribution to project objectives to avoid overlapping with project justification which is usually done in terms of benefits and other criteria. The need for the project provides the rationale for undertaking it and constitutes by itself a basic project justification criterion.

105. In the case of primary education projects the need for the project can usually be established with respect to the basic need or human rights argument and by highlighting the fact that it is the foundation for all other education and training. Moreover, empirical research points to high social and private rates of return to investments in primary education.\(^{11}\) The principal need in vocational, technical and engineering education projects may derive from an acute shortage of trained skilled workers and engineers, revealed by present shortages and MP projections. In science education projects there may be a need for high quality science education at the secondary level as this is a prerequisite for training at higher levels and entry into technical and scientific fields of employment. It is not conceptually appropriate, as could be inferred from several project documents, to describe the need for the project in terms of consistency of project objectives with Government policies and priorities. High or increased social demand for vocational courses, upper secondary and tertiary education was highlighted in a number of project documents. It was often indicated that existing manpower shortages justified quantitative expansion of educational opportunities and pointed to the need for the project. Generally speaking, education projects are designed to address major subsectoral issues, problems and shortcomings in the ES.

106. Figure 5 which is not confined only to education projects, shows the relationship between the need for the project and its social and economic justification. The need for the project is linked to the analysis of issues in the relevant subsector. Operational strategies are designed to address the issues and provide the framework for the formulation of the project objectives. The project impact encompasses the specific and broader socio-economic benefits which are related to the achievement of policies and project objectives. This impact may be described in terms of changes in income or employment opportunities of a target group or in terms of more general economic or social indicators of the region or economy.

\(^{11}\) Bucher, _op. cit._
(*) THIS SIMPLIFIED DIAGRAM ONLY CONSIDERS TWO PROJECT JUSTIFICATION CRITERIA. A MORE COMPREHENSIVE FRAMEWORK FOR SOCIAL AND ECONOMIC JUSTIFICATION OF EDUCATION PROJECTS IS GIVEN IN FIGURE 6.
107. The criteria or terms in which the need for the project was expressed in the project documents reviewed can be classified in a number of homogeneous groups. Although there is considerable overlapping between the groups, such classification has its usefulness. Manpower requirements and the need to address identified issues were the most important criteria in which the need for the project was expressed. Many project documents identified absolute shortage of qualified manpower or emphasized the need to upgrade their skills. A second group addressed major issues or weaknesses of the education system, such as low quality of education, internal inefficiencies, lack of equipment and facilities, weak management and supervision, irrelevant curricula, etc. A third group of criteria was related to the need to redress inequities in educational opportunities and to the corresponding anticipated social impact or benefits. A fourth group emphasized the consistency of the project with Government's sectoral plan objectives, strategies and priorities. The projects are viewed as being instrumental in reaching the Government sectoral objectives. Finally, the group 'miscellaneous' contains an interesting criterion stressing the need to complement previously-assisted or ongoing education projects.

108. The sections "need for the project", "benefits" and "project justification" in the project documents reviewed show considerable overlapping. It is suggested to focus the discussion of the need for the project on the perceived social demand and manpower requirements as well as on major weaknesses of the education system, as identified in the analysis and assessment of subsectoral issues. The other criteria (social benefits, consistency with policies and strategies, economic benefits, and contribution to project objectives) are conceptually much less linked with the need for the project and are best considered as separate criteria within the broader project justification framework.

B. Socioeconomic Justification of Education Projects

109. The appraisal documents reviewed considered several criteria to justify the project. The relative importance of a given criterion may differ from one project to another. These criteria are classified in several main groupings in Figure 6. Appropriate consideration given to the criteria helps justify the project in terms of benefits specific to each (sub)criterion. The need for the project, a first major project justification criterion, was discussed in the previous section. Overall viability and sustainability of education projects should be considered as the ultimate criterion for project justification -- in this respect adequate cost recovery and financing of IRC beyond the project implementation should be assured.

110. Predesign criteria are of a macro-nature and should be considered prior to project preparation. A (sub)sectoral project justification is frequently given by ascertaining that the project contributes to the country's broader (sub)sectoral objectives and is

\[\text{A tentative typology of benefits emerging from the appraisal documents is presented in Appendix 4.}\]
FIG. 6: FRAMEWORK OF CRITERIA FOR JUSTIFYING EDUCATION PROJECT LOANS

**PRE-DESIGN CRITERIA**

1. Consistency with government's policies/priorities
2. Consistency with bank's (sub)sectoral strategy
3. Consistency of bank's country strategy with DMC's priorities

**SPECIFIC DESIGN CRITERIA**

1. Incorporation of lessons of experience (PEO findings)
2. Cost-effectiveness
3. Risk minimization
4. Social & environmental assessment
5. Complementarity to previous/ongoing projects
6. Effective MIS/BME system
7. Donor coordination

**RATIONAL NEED FOR THE PROJECT**

**ECONOMIC IMPACT CRITERIA**

1. Cost savings
2. Consolidation of achieved benefits
3. Higher earning potential
4. Higher productivity in economic sectors
5. Health and population related benefits

**SOCIOECONOMIC JUSTIFICATION**

**OVERALL CRITERION: PROJECT VIABILITY/SUSTAINABILITY**

**SOCIAL IMPACT CRITERIA (EQUITY)**

1. Gender-related equity
2. Income-related equity (poverty alleviation)
3. Regional equity
4. Social stratification

**INSTITUTIONAL/ORGANIZATIONAL IMPACT CRITERIA**

1. Policy formulation and framework
2. Institutional strengthening
3. Collaboration/coordination between agencies/institutions
4. Sector/project management (MIS/BME)

**EDUCATION SYSTEM RELATED CRITERIA**

1. Quality of education (student achievement)
2. External efficiency (curriculum relevance, employability)
3. Internal efficiency and system productivity (educational output)

**ENVIRONMENTAL IMPACT CRITERIA**

1. Architectural design
2. Energy utilization
3. Community facilities (water supply & sewerage drainage, sanitation)
4. Environmental enhancement
consistent with Government's overall policies, strategies and priorities in the education (sub)sector. Furthermore, consistency of the project scope and objectives with the Bank's operational strategy in the subsector should also be ascertained. Aid coordination with World Bank, IMF and major bilateral is essential to ensure that the Bank's country strategy is consistent with DMC priorities and major donors' strategies.

111. While all broad groups of criteria for project justification should be considered during project preparation, a number of individual criteria are particularly important at project design stage. Lessons of experience identified during post-evaluation of earlier projects should be incorporated into the project design, reducing thereby project costs and/or enhancing anticipated benefits. Risk minimization measures have the same potential impact on project performance. Recommendations emerging from the social assessment exercise should equally be incorporated into the project design. Furthermore, different feasible alternatives for each major project component should be considered and compared, leading to cost-efficient input packages ensuring overall project cost-effectiveness. In the absence of a formal SIRR analysis, due to difficulties in estimating the value of educations benefits, demonstrating that the project input-mix constitutes a cost-effective means, provides an important criterion for economic project justification.

112. Economic impact criteria constitute an important group of criteria which may be easier to identify than to quantify. Empirical research has shown that there is a positive correlation between attainment of basic education and a number of socio-economic indicators such as increased agricultural output, enhanced labor productivity, reduced female fertility, reduced infant morbidity and mortality and health-related benefits. Basic education projects contribute to the long-term objectives of eradication of illiteracy, enhanced environmental consciousness, reduction in population growth and poverty alleviation. Investments in primary education are expected to yield high social and private rates of return and also contribute to equalization of resource allocation across subsectors. Technical, engineering and science related education projects contribute to macro-economic goals such as promotion of industrialization, technological advancement and export of industrial goods. Education projects which result in directly employable output generate economic benefits to project beneficiaries through higher employability, reduced opportunity costs of time spent in waiting for a job, higher earning potential and enhanced living standards. Most education projects generate individual economic benefits for students, graduates, teachers and administrators. Finally, cost saving as well as avoiding losses of previously achieved benefits through appropriate consolidation measures may be important in some projects.

113. Social impact criteria are being given an increasingly greater weight in justifying education projects. These criteria for project justification were often highlighted in the project documents reviewed. By increasing access to basic or vocational education in backward rural areas, regional imbalances may be redressed thus augmenting regional equity. By providing access to, e.g., secondary vocational education for
students from rural and poor areas, more regional as well as income-related equity may be achieved. Focus on female education contributes to gender-related equity and generates long-term social benefits through intergenerational effects while focus on minority and ethnic groups contributes to more culture-related equity.

114. Internal and external efficiency and system productivity are closely related criteria which are specific to education projects. Bank-assisted education projects are undertaken to address major weaknesses such as poor education quality, high drop-out and repetition rates, shortage of qualified teachers, outdated curricula, inadequate student evaluation system, lack of instructional materials and appropriate teaching methods, lack of equipment and facilities or poor planning and management. Qualitative improvement of education as a major project objective aims at increased system productivity and internal efficiency through strengthened planning and managerial capacity, including better supervision, improved monitoring and evaluation of performance standards for students, teachers and programs, higher retention and completion rates, higher achievement scores and well-trained teachers using appropriate instructional materials and methods. Higher system productivity and efficiency help reduce wastage of educational resources and contribute to lower unit costs due to the induced increase in system output. Low risk education projects aim, among others, at higher external efficiency through improved relevance of education and training at all levels, establishing linkages with industries, private sector and community, better career guidance and more efficient placement services for graduates. The ultimate aim is a better managed flexible ES providing relevant education and training responsive to the country's changing needs. Ascertaining external efficiency is an important criterion for project justification in education projects aiming at a quantitative increase of system output entering directly the labor market.

115. Institutional impact criteria lead to a broad category of institutional benefits through an improved policy framework, strengthening of the capability of project-related institutions (enhanced staff capabilities, better organization, sector and project management through MIS/BME) as well as efficient collaboration/coordination between agencies involved in project implementation and operation. The group of environmental impact criteria encompasses a number of considerations, such as (i) harmony of the architectural design of facilities with the physical environment; (ii) provision of community facilities (water supply and sewerage, drainage, sanitation) and (iii) energy utilization.
C. Project Justification And Social Analysis

The utility or desirability of investments in a given (sub)sector should be clearly established during project preparation. This implies (i) identifying the need for the project, in qualitative terms, or, preferably, by carrying out short-term demand and supply forecasts for both with and without project situations; (ii) ascertaining cost-effective use of resources; and (iii) financial and economic cost-benefit analysis. The social analysis, in particular the Social Design Study (SDS), can and should be used early in the project cycle to validate assumptions made in each of these forms of analysis. Demand for the project services and project viability and sustainability may be determined by accurate and relevant information on beneficiary perceptions, preferences and priorities and estimates of potential levels of beneficiary participation. It is believed that the SDS can also assist in the determination of the most cost-effective input-mix. High levels of beneficiary participation with widely distributed project benefits will result in reduced costs per beneficiary.

For education projects attempting to satisfy a high level of social demand or beneficiary participation, the optimum design developed as part of the SDS can be used as the basis for analyzing the likely distribution of incremental economic and social benefits among the major target groups. If benefits are distributed equitably across a large beneficiary population, it may be difficult to ascertain any equity impact. In education projects having the rural poor as their major target group, it is anticipated that a high proportion of incremental benefits will accrue to the poor. Such projects are expected to have a positive (income) distribution impact and may be justified in terms of their predicted performance in relation to beneficiary participation and contribution to equity objectives.

The results of the SDS can provide important information on the degree of cost recovery which might be expected from beneficiaries. The probability of cost recovery is expected to be greatest where the project accords well with the target population, development priorities and preferences. However, cost recovery may not be applicable in all education projects, e.g., if the Government is advocating and firmly committed to universal primary education, cost recovery should not be envisaged from the poorer strata of the society.

E. Benefit Monitoring and Evaluation (BME)

I. General Conceptual Framework

Projects have to be carefully designed and efficient management is needed to ensure timely implementation without unreasonable cost overrun. The project implementation or investment period is followed by the project operation period during which project benefits or outcomes are realized. In some cases project benefits may already emerge towards the end of the implementation phase. Proper maintenance and replacement of obsolete assets are needed to sustain the flow of benefits during the operation phase. Within this framework the management information system (MIS) and the monitoring and evaluation of project benefits play a crucial role. Both are important managerial tools to help the Executing Agency and the Bank identify and monitor intended benefits to targeted beneficiaries by activities performed at several phases during the project cycle. These activities comprise: (a) during the project design phase, collection of benchmark information on beneficiaries for project preparation and appraisal; (b) project benefit monitoring during and after project implementation; (c) impact evaluation studies to assess the benefits and identify the follow-up activities needed after physical project completion. BME, as an integral component within MIS, should be incorporated into project preparation, appraisal, implementation and follow-up activities to increase the effectiveness of projects in generating benefits.\textsuperscript{14}

It is particularly difficult in education projects to monitor benefits, as the latter (mainly improved student achievement) are largely intangible in nature and inherently difficult to measure. Effective and meaningful monitoring of education benefits and their evaluation at regular intervals are possible only when the following preconditions\textsuperscript{15} are fulfilled: (i) the education content is covered adequately by clearly stated project objectives; (ii) the right methods and instruments of evaluation are used for the envisaged educational services; and (iii) these methods and evaluation instruments allow an assessment of the objectives. This threefold homogeneity or consistency is shown in Figure 7. The homogeneity is reflected in the arrows with double direction. The general goal of optimizing benefits from education programs and projects cannot be achieved if: (i) inadequate evaluation methods are used to assess either the educational content or the extent to which the project objectives have been achieved; or (ii) the project objectives do not coincide with the set of delivery services to be delivered or are not congruent with the evaluation instruments (e.g., student achievement evaluation in the case of a teacher training project).

\textsuperscript{14} Asian Development Bank, Guidelines on Project Benefit Monitoring and Evaluation for Agriculture, Irrigation and Rural Development Projects, revised (Manila, April 1984).

\textsuperscript{15} Motilal Sharma, "PBME in Education", Preliminary Draft (November 1991).
121. The general goals of a benefit monitoring and evaluation system for a given education project comprise the following:

(i) to obtain on a continuous basis, information on education performance indicators and their progress over time — this information should allow us to identify the incremental benefits as a result of the project/program; (ii) to carry out, periodically, special surveys to assess project performance in terms of (a) acquired skills, (b) use of these skills, (c) changed attitudes and (d) changed consumption patterns and levels; (iii) to compile data useful for planning purposes, analyze these data and prepare recommendations and strategies for their implementation by teaching and administrative staff — it is also necessary to prepare reports aimed at other audiences such as students, specialists in evaluation, legislators and non-specialists; and (iv) do research on (a) how to improve methodologies and technologies for collecting/analyzing data at an overall level, (b) how to design improved methods to monitor project progress during the operation period, and (c) how to design improved methods/instruments to assess the benefits achieved.

122. A general BME model applicable to education projects comprises essentially four stages: (i) a pre-development stage at which education needs are assessed and ranked; (ii) identifying and assessing objectives — during this phase it is important to express the ranked needs in terms of program goals, to define specific objectives within goals, and to rank the objectives; (iii) data generation and analysis stage during which appropriate instruments are used; and, finally, (iv) the evaluation and monitoring stage. During the last stage actual data on performance indicators are compared to targeted efficiency criteria, the causes of any
differences carefully identified and appropriate courses of action are recommended. The evaluation model is summarized in Figure 8.

FIG. 8: SUCCESSIVE STEPS IN THE EDUCATION EVALUATION MODEL FRAMEWORK

STEP 1: PRE-DESIGN

1. NEEDS ASSESSMENT
2. RANKING OF NEEDS

STEP 2: DESIGN

3. SELECTION OF GOALS
4. DEFINITION OF OBJECTIVES
5. RANKING OF OBJECTIVES

STEP 3: DATA GENERATION AND ANALYSIS

6. DESIGN INSTRUMENTS
7. DATA COLLECTION
8. ANALYSIS OF DATA

STEP 4: EVALUATION

9. COMPARISON OF DATA WITH TARGET CRITERIA
10. DETERMINE ACTION

123. Throughout the evaluation process project inputs or means have to be distinguished from project outcomes or effects. Data internal to the education system are used to define and assess the means (inputs/resources) as well as their optimal mix for implementing the program or project. This implementation results in project/program effects, outcomes or benefits which have to be assessed mainly using a set of data external to the education system. This dual project structure is depicted in Fig. 9.

123 Ibid., p. 6.
During the project or program implementation period the internal resources mix required includes: (i) hardware components (buildings, equipment, furniture, facilities); (ii) curricula; (iii) teaching staff (number, qualifications, training received); (iv) instructional techniques/methods and associated materials; (v) instructional technology (audiovisual and other media); (vi) consulting services for one or more project components; and (vii) basic characteristics of the students, their family and the community. Two additional types of resources are needed to achieve their successful mobilization, namely: (i) financial resources and their efficient use; and (ii) administrative and managerial arrangements, including MIS/BME. Finance and management/supervision are key inputs in the implementation and operation phase. The effects of the educational program/project have to be assessed in terms of their contribution to the broad education project goals, namely: (i) quality (student achievement, grade level change); (ii) internal efficiency (retention rate); (iii) access to education (from disadvantaged groups); (iv) external efficiency (employability); and (v) values (changes in aspirations, attitudes, social mobility, social interaction of students and staff).

2. Review of BME and Comments

Virtually all project documents discussed BME as a managerial tool to monitor project impact and to ensure that project benefits are maximized. Generally, BME aims to (i) monitor project implementation progress and achievements, (ii) assess project effectiveness, and (iii) evaluate project success in achieving its objectives. More specifically, PBME in education projects is seen as an instrument to (i) ensure that
facilities are managed efficiently; (ii) address external efficiency issues; (iii) monitor and evaluate internal efficiency aspects; (iv) ascertain cost-effective use of inputs and implement cost-effective measures; (v) ascertain the satisfaction of social demand; and (vi) generate a variety of useful data. With respect to external efficiency, BME aims at satisfying manpower demand through better skilled employable graduates, by assessing continuously the course relevance, establishing mechanisms to trace the placement in employment of graduates and by carrying out tracer studies which should assess the (a) relevance of training programs; (b) success in placement of graduates; (c) on the job performance; and (d) their starting salaries viz. non-skilled labor. BME activities also comprise the generation of data to assess the performance of the education system, including effectiveness of training programs, student enrollment, dropouts/repeaters, employment status of graduates, retention of teachers, staff development programs and establishment of baseline indicators for appropriate educational, social and economic factors which may influence the project.

125. A review of monitoring and evaluation in education projects has been undertaken by Bank staff education specialists. The review documents provide historical evidence about how the BME concept has been gradually incorporated in the design of education projects. In the past, the Bank's project supervision has emphasized the timely implementation of hardware components (civil works, procurement of equipment), consulting services and fellowships. These have a direct bearing on the disbursement of loan proceeds. However, monitoring and evaluation has frequently escaped close scrutiny in the project design phase and has generally been a weak activity in the implementation phase of the project. Thus far, the implementation of a system to monitor and evaluate benefits and costs of education projects has not been very successful. Prior to 1980, no emphasis was given to monitoring and evaluation (M&E) as a distinct project related activity. For this reason, M & E activities were not reviewed by Bank supervision missions or in PPARs.

126. A review of ARs and Loan Agreements shows a lack of clarity of M&E objectives, inadequate methodology of data collection and analysis, lack of focus on social assessment of intended project beneficiaries, and a notable absence of a coherent conceptual framework for evaluation of benefits. The inability to translate M&E concepts into operational terms has compounded the problems of establishing an effective M&E system in most Bank-financed education projects. The issue of monitoring has been brought under focus in a number of PPARs, commenting on the lack of suitable mechanisms incorporated into the project design.

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3. Issues in Implementing an Effective BME

127. It is important to identify and assess the causes for the lack of success of BME in education projects. This will help design and implement strategies to remove the bottlenecks which have thus impeded its smooth implementation. A common cause for the want of success of BME lies in the fact that it is often perceived as an exercise external to the Government or EA and included in the project design only to comply with the Bank’s requirements.

128. Further, BME is often not well understood and borrowers thus far were thus seldom convinced of the need of benefit monitoring and its advantages. Governments have lacked commitment and motivation. There has also been inadequate, or even, absence of relevant benchmark information due to lack of guidance at appraisal regarding BME activities. If the required data were indeed collected, their practical usefulness remained in doubt as well-trained staff were lacking and no data analysis was done for evaluation, planning and decision-making purposes. In some instances the setting up of a monitoring system was not supported by adequate efforts to train staff in the review, processing and interpretation of raw data collected.

129. The BME component in the project design was usually not integrated into the existing MIS of EAs. The absence of an effective supporting structure (the MIS) resulted in the conduct of informal and isolated monitoring activities which were not sustained after closing of the loan. Moreover, the TOR for the consultants were frequently vague and inadequate and lacked guidance on how to assess the effectiveness of the existing MIS of EAs. BME has not been given the same importance and attention during the project preparation phase as other project aspects. Thus far, BME has not been considered a major project component and borrowers have been unwilling to use loan proceeds to finance the costs of developing, testing and implementing BME activities.

130. Other factors included the following: (i) the consultant’s input in setting up a BME system was sometimes in terms of model building and too sophisticated, making it difficult to be understood or accepted by the Government; (ii) the absence of impact evaluation studies of education projects after the graduation of a number of classes; and (iii) the largely intangible nature of the ultimate project benefits (improved student achievements and higher knowledge level).

4. Recommendations

131. Based on a review of causes impeding the smooth implementation of BME activities, it should be possible to formulate appropriate strategies to be simultaneously implemented in order to achieve more effectiveness. First, the establishment of an operational and effective

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19 Latini, op. cit., p. 9-12; and Chowdhury, op. cit., p. 5; and "Workshop on BME" (November 1991).
management information system (MIS) on education is a prerequisite to the successful implementation of BME. A suitable planning unit or division within the Ministry of Education (ME) should be identified and be entrusted with the task of monitoring and evaluating the whole education development program, including the envisaged project. However, if the education agency is ill-equipped and inadequately staffed, it may be desirable to involve another independent research institution.

The existence of an effective MIS to which BME should be linked will ensure that BME activities continue beyond the physical completion of the project and are institutionalized as an integral part of the planning, evaluation, budgeting and decision making process of the Government. In this way BME can be internalized into the ES which is necessary to ensure its adoption, feasibility and sustenance.

Second, the importance and usefulness of BME as a managerial planning tool should be emphasized to the borrowing DMCs as early as possible in the Bank's programming cycle. Ensuring the motivation and commitment of the EAs is a precondition to effective implementation of BME. In this regard, Bank staff can make a significant contribution by devoting some of their time to discuss the advantages of BME with staff from EAs and encourage the latter to implement it. The usefulness of BME in the evaluation process for decision making purposes should be demonstrated through learning by doing. If the EA is unfamiliar with or not receptive to the introduction of MIS/BME, Bank staff should take the lead in introducing an effective system. During successive Bank missions, gaps, deficiencies and shortcomings could be identified and appropriate ADTPAs should bridge these gaps through further institutional strengthening. Third, the TOR for the BME consultants should be clear, adequate and provide guidance on how to evaluate the effectiveness of the existing MIS. In particular, the TOR of the consultants to be recruited at PPTA stage should include the assessment of the Government's institutional capability to implement the BME. The consultants should be required to prepare a manual with formal BME guidelines on education projects, taking into consideration the unique and special features of the education institutions and their development programs, including their feasibility/applicability and cross-country comparability. Fourth, it is advisable to start in a modest way and focus on essential features and indicators easily to be monitored, taking care to integrate BME activities within the existing MIS. The design of BME should be such that it is simple, easily understandable by EAs, cost effective and sustainable. In this way, the relevance of BME in the planning framework will gradually become visible.

Fifth, in case no MIS exists yet, priority should be given to the establishment of a sustainable system-wide monitoring and evaluation system. EA staff should be involved as early as possible in setting up a workable MIS/BME system. Without the support of institutionalized monitoring and evaluation capabilities, any BME system designated for a specific project will remain ineffective and stands the risk to be discontinued after implementation.
Sixth, BME should be considered an important component in the project structure, specifically in large projects expected to have a significant impact. The project design should always include a MIS/BME component. The borrowers should be willing to (i) use a small part of the loan proceeds to finance the cost of establishing, developing and testing BME activities and (ii) allocate counterpart funds to finance the recurrent cost of operating and implementing BME on a continuous basis, in particular beyond the implementation or investment phase of the project. The incremental cost incurred in making the MIS/BME system function smoothly and effectively is expected to be offset by more savings through enhanced managerial efficiency. The establishment of a BME system in large projects as a condition of loan effectiveness could perhaps be given due consideration. It may therefore be necessary to covenant the provision of BME in the Loan Agreement. Bank supervision missions should regularly review the status of implementation of BME; in this regard the existing interaction between Bank and EA staff should be stepped up.

Seventh, as it will take time to design and introduce the MIS system, in case such a system does not yet exist or is found to be ineffective, it is advisable to do this prior to project appraisal preferably at PPTA stage. The methodology of data collection and analysis, institutional arrangements, training of staff and resources devoted to set up BME should be thrashed out at appraisal stage. The establishment of the BME system should start immediately after loan effectiveness and regular follow-up is advisable. Moreover, the Bank’s responsibility should not end when the loan is closed. To ascertain effective follow-up of the benefits generated by the project, supervision would be desirable well beyond the loan closing date and beyond PPAR stage. ACTA may constitute the appropriate means to provide support in this regard.

It will be useful, for purposes of conceptual understanding and operational use, to distinguish five steps in the implementation of the BME system:

(i) Step 1: Carry out a baseline indicator study to determine a set of realistic, controllable and measurable targets reflecting the anticipated project output and impact (benefits). This study could be undertaken, if needed, as part of a PPTA or ADTA and should help prepare and appraise the project;

(ii) Step 2: During project implementation, compare at regular intervals actual project progress and baseline target indicators;

(iii) Step 3: At the end of project implementation, rate the performance of the project in terms of the actual project benefits compared with the initial targets;

(iv) Step 4: Recommend corrective short, medium or long-term measures and actions to improve further the effectiveness of the project; and
(v) Step 5: Implement PBME beyond the project implementation period to monitor and evaluate the flow of project benefits to ascertain long-term project viability and sustainability.

The agency or institution in charge of operating the MIS/BME system should have (i) the required statistical background; (ii) expert research knowledge to process the data; and (iii) capability to ensure feedback of any useful findings. This requires staff training in the analysis and interpretation of relevant data -- research results should be used for monitoring, evaluation and decision-making purposes. Training of EA staff is an essential ingredient in the institutional building component. The training programs should discuss good as well as bad examples of MIS/BME.

A number of miscellaneous recommendations include the following: (i) BME should be appropriate to the project and sectoral context. While there are common principles/methods which govern its implementation, it is also (sub)sector specific and (sub)sector specialists within the Bank as well as in the BMC EAs are required; (ii) a uniform, standardized approach to BME is required when Governments are implementing educational programs which may actually comprise a number of individual projects financed by different multilateral agencies and/or by bilateral sources; (iii) BME should not only be extended beyond the project implementation period (for a given project) but also beyond the project context itself. In this regard, the MIS should focus on educational programs to which the envisaged project belongs; (iv) a sector-specific checklist of detailed criteria or indicators of the anticipated benefits should be prepared by the BME consultants, even when all parameters listed cannot be considered initially; and (v) in view of financial and time constraints, an efficient approach towards collection of benchmark information should tap NGOs and key informants as sources of information.

The conclusion is that BME should be considered as an integral part of the institution building component of a given project. BME can only be successful if the following conditions are fulfilled at the same time: (a) a good planning system is in place; (b) an effective MIS is existing; and (c) BME is considered an integral part of the MIS. BME would not be very effective if either (a), (b) or (c) is not met.
V. CONCLUSIONS

140. This study reviewed Bank’s policies and practices regarding the economic analysis of education projects. This review was done against benchmark information provided by the Guidelines, supplemented by a number of key issues identified in the (i) Sector Paper on Education Development in Asia and the Pacific and (ii) Discussion Notes prepared for the post-evaluation Feedback Workshop (Education Sector). On the basis of these three documents a detailed checklist of questions was prepared and used as a guiding tool for the review. The appraisal reports of forty-three externally financed education projects constituted the data set for the study. In line with recent post-evaluation findings, the study has revealed a number of areas where further improvements are possible. These are indicated hereafter.

141. Performance of the Education System. The documents reviewed generally described the performance of the education system, in particular the level of internal efficiency. The latter was assessed in qualitative terms but detailed quantitative data on internal efficiency indicators for the project education institutions were often lacking. Faculty data hampered effective application of project benefit monitoring and evaluation during and after project implementation.

142. Private Sector Participation in Educational Development. The project documents described adequately the public education system but lacked relevant information on the relative importance of private sector participation in educational development. Likewise, the performance of private education institutions and their increasing role in educational development in view of the rising social demand for education, were not assessed.

143. Demand Projections: Manpower Planning and External Efficiency. The manpower requirements approach used to forecast short and medium term education demand is particularly important in vocational, technical, technological and tertiary level education projects which produce output immediately entering the labor markets. Although manpower shortages were discussed, such shortages and, therefore, the need for the project, should emerge from the supply/demand forecasts in the with and without project situation. There is also scope for a more thorough discussion of the forecasting methodology, including a better focused assessment of the assumptions underlying the projections. To reduce the prediction errors involved, the latter should be limited to a maximum time-frame of three to five years, in particular for vocational/technical education projects. Longer term forecasts are more justified in tertiary education projects such as engineering. To increase the level of external efficiency, employment prospects for the project output have to be carefully assessed. Career guidance, student placement services and linkages with industry and employment agencies contribute to reduced external efficiency risk and thereby greater employability. These aspects will have to be given full attention in future education projects.
Social Impact Assessment and Social Analysis. The project documents reviewed generally included a qualitative assessment of the anticipated social impact—but lacked hard data to confirm the outcome of this exercise. A rapid social appraisal and social design study will be required in basic education projects in order to obtain relevant background information on targeted direct beneficiaries and their families. Such social studies should be carried out early in the project cycle, as part of the feasibility study, and could also provide valuable input for the BME exercise.

Private IRR Analysis. Data on private costs and benefits have been consistently overlooked in appraisal documents and this precludes the estimation of a private internal rate of return to education projects. At feasibility stage, especially in technical education projects, greater effort should be made to provide estimates of direct, out-of-pocket costs and foregone earnings, as well as an estimate of the increased earning potential (as a result of enhanced skills) and monetary benefits due to greater employability. If it is feasible to collect the empirical data, a private IRR could be estimated. Tracer studies carried out after project implementation should attempt to estimate the enhanced lifetime earnings and provide a basis for the estimation of monetary benefits in similar future projects.

Cost-Effectiveness Analysis (CEA). As education projects are usually not justified on the basis of either private or social IRRs, there is a reinforced need to demonstrate that a proposed education project is designed to achieve stated project goals in a cost-effective manner. Assuming stated objectives and given end results, this CEA should start with a clear identification of the best alternative options and help determine the least-cost method to achieve the objectives. For particular project components or specific programs, both costs and anticipated effects of different alternatives could be evaluated to determine the choice of project. Under certain conditions (identical or similar program goals; common measure of effectiveness), cost data can be combined with effectiveness data to provide a cost-effectiveness evaluation that would enable the selection of the alternative which would yield the maximum effectiveness per unit of cost, or which requires the least cost per level of effectiveness. Although project documents generally identify specific ways which result in more cost-effective choices or enhanced cost-efficiency, there is considerable scope for a more consistent application of CEA along the lines suggested.

Cost-Benefit Analysis. While data on recurrent and capital expenditures on the project were given in the financing plan, data on private costs were usually not presented. This precluded an overall estimate of the social cost of education projects. Further, as quantitative data on private and social benefits were equally lacking, no formal social IRR analysis was carried out. While this may also be the case for future education projects, there is nonetheless scope for improvement in two directions: (a) identification and assessment of quantifiable and non-quantifiable costs and benefits following the format
suggested in Appendix II of the Guidelines; and (b) quantification of direct project beneficiaries (students, teachers, administrative staff).

148. Framework for Project Justification. Based on the strengths identified in a number of appraisal documents, it is possible to suggest a more comprehensive framework (Figure 6) highlighting the principal criteria which can be used to justify education projects from the social and economic viewpoints. These criteria include: the need for the project, education system productivity, internal and external efficiency, consistency with (sub)sectoral Government goals/priorities and Bank’s operational strategy, equity and economic impact, cost-effective input mix, project sustainability, and institutional and environmental impact.

149. Areas for Further Research. The review also suggests a number of areas where additional empirical research would be warranted in an effort to update and refine existing methodological guidelines. These areas include: (i) short-term manpower demand projection methodology; (ii) social analysis of education projects and assessment of their social impact; (iii) performance analysis of education projects (assessment of the productivity and level of internal efficiency of education institutions); (iv) application and applicability of the cost-effectiveness analysis; (v) application and applicability of the formal private and social IRR analysis; (vi) monitoring and evaluation of benefits through MIS/EME; and (vii) further empirical research to elaborate a more comprehensive framework for socioeconomic justification of education projects.

150. The findings forthcoming from this study are the outcome of the review of Bank’s policies and practices in education projects on the basis of appraisal reports and existing guidelines. They do not include findings which may emerge from a survey of the literature on education economics. A review of this literature is expected to contribute further to a comprehensive and methodologically more refined framework for socioeconomic analysis and justification of education projects. Such a survey could be undertaken as a follow-up of this study.
REVIEW METHODOLOGY

1. An analytical checklist of issues stated in question form was elaborated from the "Guidelines for the Economic Analysis of Education Projects", in Guidelines for the Economic Analysis of Projects. (Manila: Asian Development Bank, 1987). This provides an extension of the general Guidelines to a sector specific context.

2. The review of 31 ADB appraisal reports (ARs) and 12 World Bank ARs was done against the benchmark information provided by the "Guidelines for Economic Analysis of Education Projects". To facilitate the review work and the assessment of the extent to which these guidelines were adhered to in the Bank's ARs, the Guidelines were reworked and formulated under the form of a series of user-friendly questions.

3. The checklist of issues also reflects (i) the Bank's policy principles and priorities as indicated in the Sector Paper on Education and Development in Asia and the Pacific; (ii) issues related to quality, internal and external efficiency, emerging from the Discussion Notes (Project Feedback Workshop: Education Sector) produced by PEO; (iii) specific issues related to the justification of education projects and which were not contained explicitly in the benchmark documents.

4. The Checklist of Issues (Appendix 2) is believed to provide a useful review instrument as it reflects, as completely as possible, Bank's existing policies, practices and guidelines emanating from the documents mentioned.

5. The review work actually consisted in finding the answer (yes/no/not applicable) to the questions stated in the Checklist and classified as much as possible under 11 homogeneous groupings. It was thus possible for ADB and WB ARs separately to generate simple frequency tables from which it could be assessed straightforwardly to which extent essential issues/guidelines were discussed/adhered to in the ARs.

6. Besides general frequency tables generated for all ADB ARs and for all WB ARs, irrespective of year, country group and classification, these tables (as far as ADB ARs are concerned) have also been reproduced for (i) classification 4 (technical and vocational education/training); (ii) country groups A and B separately; and (iii) two subperiods 1983-1990 and 1980-1982. All frequency tables have been compiled in Appendices 3 and 4 of the reference study available in EDEV.

7. Besides completing a detailed checklist of issues (questions), detailed comments were reproduced for each of the 31 ADB and 12 WB ARs. These comments cover: (i) a discussion of key concepts; (ii) identification of major strengths and weaknesses; (iii) elaboration of a conceptual framework for analysis; (iv) analysis of specific aspects useful in refining further the "Guidelines for the Economic Analysis of Education Projects". The comments on the 43 individual reports form an
essential part of the review work and constitute the bridge between the analytical phase (completion of the checklists, generation of frequency tables) and the more synthetic phase of the study (framework for project justification, recommendations and identification of areas of improvement).
ECONOMIC ANALYSIS OF EDUCATION PROJECTS
ANALYTICAL CHECKLIST OF ISSUES

I. HARMONY BETWEEN POLICY FRAMEWORK AND PROJECT GOALS

1. Was an overview given of the social development, implying also a specification of the overall development goals ( -- > policy framework at national level)?

2. Was a review done of the education sector plan from which the (sub)sectoral objectives should clearly emerge ( -- > policy framework at (sub)sectoral level)? Which sectoral objectives?

2.A Were operational, quantitative targets for the relevant subsector indicated or not?

2.B Was the educational strategy (at subsectoral level) indicated or not?

3. Are priorities (at overall, sectoral and subsectoral level) clearly brought out?

4. Are the overall (general) project objectives clearly stated?

In which terms - qualitative? (Quality Improvement)
- quantitative? (Increasing quantity of services)
Which other objectives are indicated?

5. Have project specific targets been identified in qualitative vs. quantitative terms? Which project-specific objectives?

6. Has the feasibility of project objectives/targets been assessed?

7. Has the consistency of project specific objectives with sectoral goals been discussed/assessed?

8. Has the relationship between means (policies/programs/projects/activities) and the ends (goals) been discussed?

9. Were conflicting objectives (e.g. expansion of tertiary education vs. promoting equity) identified/assessed and their trade-off discussed?

10. Were goals/objectives/priorities clarified? (Clarification is part of the appraisal)?

11. Was the strategy for achieving the project objectives clearly spelled out? Which strategy?

12. Were the project inputs explicitly indicated? Which inputs?

13. Were shortcomings/weaknesses identified/discussed/assessed? Which ones?

14. Have recent policy changes/developments been discussed (policy dialogue) or not?

15. Was Bank's strategy and/or assistance discussed or not?

16. Were (sub)sectoral/institutional issues identified?

17. Were project components and/or project inputs identified?

18. Was a sector approach used or not?

19. Indicators of importance of ES.

20. Literacy level given.

II. REVIEW OF THE EDUCATION SYSTEM (ES) AND ASSESSMENT OF ITS (PAST) PERFORMANCE

1. Was the ES (public vs. private institutions) generally reviewed?

2. Was a historical review of ES given in the AR?
3. Was the relative importance of public vs. private sector (in terms of annual output) clearly indicated?
4. Was the performance (level of efficiency) of the ES assessed in general qualitative terms?
5. Was the internal level of efficiency of the system assessed? Which criteria were considered?
6. Was the performance (efficiency) of the existing system assessed in relation to fulfilling national educational goals?
7. Does the AR provide quantitative data on:
   
   (i) student enrollment;
   (ii) gross participation rate;
   (iii) continuation rate;
   (iv) graduation rate;
   (v) other; which ones?

8. Were weaknesses/shortcomings identified/discussed/assessed? Which ones?

III. ROLE OF THE GOVERNMENT

1. Was the role of the Government discussed/assessed in general terms?
2. Was the supervisory role of the Government regarding education policies and standards discussed/assessed?
3. Was the direct administration of public sector schools discussed/assessed?
4. Was the formulation of educational standards (by the Government) discussed/assessed?
5. Was there any discussion/assessment of the financial support to private educational institutions?
6. Were weaknesses/shortcomings identified/discussed/assessed? Which ones?

IV. ASSESSMENT OF NEEDS/MANPOWER PLANNING (MP)/EXTERNAL EFFICIENCY ASPECTS

1. Was the approach for the assessment of needs discussed? Which approach? - social demand
   - manpower requirements
2. Were past and existing labor market conditions (supply/demand) given/discussed/assessed?
3. Are MP projections (future demand/supply) given/discussed/assessed?
4. Were the supply/demand projections given for the with/without project situations?
5. Were the data sources used for MP projections indicated/assessed? Which data sources were used?
6. Was the projection methodology/underlying assumptions given/assessed?
7. Were causes identified for poor MP projections? Which causes?
8. Was there a regional breakdown of national MP projections?
9. Were the MP data based on an industry/employment oriented analysis?
10. Was the relevance of curriculum design discussed/assessed?
11. Was the adequacy of skill testing standards assessed?
12. Were the employment prospects for the (future) project output discussed/assessed?
13. Was the intended project output (educational services) clearly defined?
14. Were the boundaries between secondary, vocational and technical education clearly articulated?
15. Were MP coefficients explicitly given and their underlying assumptions assessed?
16. Was the data sufficiency issue discussed?
17. Linkages with industry/employment agencies discussed or not?
18. Career guidance/student services discussed or not?
19. Indicator for skilled MP shortage: share of expatriate labor given or not?

V. SOCIAL IMPACT/TARGET GROUPS/BENEFICIARIES/DISTRIBUTION IMPACT

1. Were the direct beneficiaries identified?
2. Were specific target groups identified?
3. Were the direct beneficiaries identified by:
   A) number
   B) location (rural/urban)
   C) income
   D) social/educational stratification

4. Was the anticipated project impact assessed (at appraisal)?
5. Was the distribution impact (DI) issue explicitly raised/discussed (in general)?
6. Were positive/negative DIs identified/assessed?
7. Were low-income groups more favored relative to high income groups?
8. Were measures designed/taken to mitigate negative DI and/or to reinforce the positive DI?
9. Was the issue of equity raised/assessed?
10. Were gender-related issues explicitly addressed?

VI. FINANCIAL CONSIDERATIONS/ANALYSIS

A. Budget Allocation

1. Was the current level of budgetary allocations (BA) examined?
2. Were the planned changes in the near future examined? Were these changes substantial?
3. Was the adequacy of the budgetary allocations (to meet the estimated project expenditure) assessed?
4. Capability/commitment of the Government to mobilize resources assessed (provision of counterpart funds)?
5. Were Government's funding arrangements assessed?
6. Will sufficient funds be allocated to the current budget to finance the additional recurrent expenditures after project implementation?
7. Was an estimate given of this increase in current budget funds?
   7.A Financing arrangements/financing plan discussed?
   7.B Civil works in percentage total project cost given or not?
   7.C Unit capital cost/unit recurrent cost indicated?

B. Cost Recovery
1. Was cost recovery applied as a means to recover part of the project cost (via student fees)?
2. Was the financial impact of such a recovery scheme assessed?
3. Were questions of equity/affordability raised in this regard?

C. Private Costs and Benefits
1. Were direct, out-of-pocket costs and their components identified/estimated?
2. Were foregone earnings estimated?
3. Was affordability assessed (private education costs vs. income target groups)?
4. Was the demand for education by the target group assessed?
5. Were private benefits to the target group assessed?
6. Were monetary benefits (lifetime earnings) identified/estimated?
7. Were non-monetary benefits identified/assessed?
8. Was a comparison given of private costs and benefits?

VII. COST BENEFIT ANALYSIS
(Note: Private costs/benefits are discussed in VI)
1. Were (social) cost data broken down into capital and current expenditures?
2. Were benefits identified in terms of cost savings (of individuals and institutions)?
3. Were less quantifiable social benefits identified and/or qualitatively assessed?
4. Was the impact of the education project on equity assessed? (social benefit)
5. Was a comparison given of social costs and social benefits?
6. Were reasons explicitly indicated for project justification which reasons?
7. Was the format (see Appendix 11) for identification/assessment of costs/benefits followed?
8. Was a formal (private and/or social) IRR analysis carried out?
VIII. COST EFFECTIVENESS APPROACH

1. Were at least two (or three) of the best alternative options identified and their respective costs/end results indicated?
2. In which terms were alternative options described?
3. Was the unit cost for the project education output estimated?
4. Was the unit cost/output compared with similar services supplied elsewhere by the education system?
5. Was cost-effectiveness considered in terms of construction design standards?
6. Which cost-effectiveness method was used?
   - least-cost method (to achieve a given objective);
   - maximization of end results (given the cost).
7. In the absence of (1) in which specific ways was cost-effectiveness expected to be achieved?

IX. QUALITATIVE RISK ANALYSIS (*)

1. Were project-related risk factors identified? Which factors?
2. Was their gravity/seriousness assessed in terms of reductions in the expected benefit flow?
3. Was their likelihood (probability of occurrence) assessed?
4. Were safeguard measures suggested and incorporated in the project design? Which ones?
5. Was the effectiveness of the measures described/assessed?
6. Specific assurances/commitments from the Government (related to No. 4) indicated or not?

(*) Also relates to timely implementation

X. IMPORTANT SECTIONS TREATED EXPLICITLY IN THE AR

1. Sectoral objectives
2. Project objectives
3. Performance ES
4. Role of Government
5. Assessment of needs
6. Social impact
7. Distribution Impact
8. Budgetary allocations
9. Cost recovery
10. Cost-benefit analysis
11. Project benefits
12. Cost-effectiveness approach
13. Project risks
14. Project justification
15. Project sustainability
16. Environmental considerations
17. Beneficiaries
18. Economic/employment considerations in the background Chapter
20. Project focus/scope
21. Need for the project
22. WID issue
23. Poverty alleviation

XI. MISCELLANEOUS ISSUES

1. Environmental considerations considered? Which ones?
2. Were BME activities undertaken? Which ones?
3. Does the AP identify specific measures to be taken by the Government and which will contribute to the success of the project in terms of attaining the desired objectives and outputs? Which ones?
### Summary of ADB Education Loan Projects by Year of Approval (As of December 1990)

<table>
<thead>
<tr>
<th>Loan No./Country</th>
<th>Project Title</th>
<th>Year Approved</th>
<th>Loan Amount ($ Mn)</th>
<th>Country Group</th>
<th>Classification</th>
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<td>SOLOMON IS: PRIMARY EDUCATION</td>
<td>1982</td>
<td>10</td>
<td>B</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>MALAYSIA: INDUSTRIAL TRAINING</td>
<td>1982</td>
<td>41</td>
<td>B</td>
<td>5</td>
</tr>
</tbody>
</table>
## TYPOLOGY OF BENEFITS FOR EDUCATION PROJECTS

<table>
<thead>
<tr>
<th>BROAD</th>
<th>INTERMEDIATE</th>
<th>SPECIFIC (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Economic Impact</td>
<td>1. Savings in costs</td>
<td>- Reduction in private and social health related costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Reduced transport costs and other school related expenditures</td>
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<tr>
<td></td>
<td></td>
<td>- Centralized printing of textbooks</td>
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<tr>
<td></td>
<td></td>
<td>- Selection of cost-effective alternatives</td>
</tr>
<tr>
<td></td>
<td>2. Consolidation of achieved benefits</td>
<td>- Avoiding loss of benefits achieved under previous projects</td>
</tr>
<tr>
<td></td>
<td>3. Higher anticipated earnings for graduates</td>
<td>- Lifetime earning differentials</td>
</tr>
<tr>
<td></td>
<td>4. Higher productivity of economic sectors</td>
<td>- Increased employment prospects in economic sectors</td>
</tr>
<tr>
<td></td>
<td>5. Enhancement of health and population related benefits</td>
<td>- Higher standard of living</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Efficiency gains for the employers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Stimulation of industrial development and economic growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Reduction in fertility, morbidity, and mortality rates particularly infants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Awareness of family planning methods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Improvement in hygienic practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Improvement in quality of life</td>
</tr>
<tr>
<td>BROAD</td>
<td>INTERMEDIATE</td>
<td>SPECIFIC (Examples)</td>
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<tr>
<td>II. Social or Equity Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Increased gender-related equity (focus on women and girls)</td>
<td></td>
<td>- Better educational opportunities for girls and women</td>
</tr>
<tr>
<td>2. Increased Income for low-income beneficiaries</td>
<td></td>
<td>- Multiplier effect of investment in female education, e.g., impact on improved family health</td>
</tr>
<tr>
<td>3. Improvement in location specific benefits</td>
<td></td>
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<tr>
<td>4. Minimize wide divergence in social stratification</td>
<td></td>
<td>- Equitable distribution of economic benefits</td>
</tr>
<tr>
<td>III. Education System Related Benefits</td>
<td></td>
<td>- Geographically more balanced access to education</td>
</tr>
<tr>
<td>1. Quantitative increase in educational services</td>
<td></td>
<td>- Priority in providing school facilities to rural and other disadvantaged areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Enhancement of basic education in rural areas</td>
</tr>
<tr>
<td>2. Higher internal efficiency</td>
<td></td>
<td>- Augmentation of regional equity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Enhanced access to the same quality of education</td>
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<tr>
<td></td>
<td></td>
<td>- Enhanced social mobility</td>
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<td></td>
<td></td>
<td>- Alleviation of high social demand for education</td>
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<tr>
<td></td>
<td></td>
<td>- Increase in the number of people with access to education</td>
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<td></td>
<td></td>
<td>- Reduction of illiteracy</td>
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<td></td>
<td></td>
<td>- Improvement in the quality of teaching materials used</td>
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<tr>
<td></td>
<td></td>
<td>- Application of relevant curricula</td>
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<td></td>
<td></td>
<td>- Provision of modern laboratory equipment in teaching</td>
</tr>
<tr>
<td>BROAD</td>
<td>INTERMEDIATE</td>
<td>SPECIFIC (Examples)</td>
</tr>
<tr>
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<tr>
<td>IV. Institutional Impact</td>
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</tbody>
</table>
| 1. Improved policy and planning framework |  | - Development of domestic research capability  
- Setting up a special unit in the executing agency to implement PBME  
- Application of MIS  |
| 2. Improvement in institutional strength |  | - Better supervision and coordination of programs  
- Better trained education administrators  |
| 3. Improvement in organizational strength |  | - Enhanced managerial efficiency  
- Improvement in delineation of functions among units and staff  |
| 4. Efficient collaboration/coordination between agencies |  |  |
| 3. Higher external efficiency |  | - Satisfactory grading system  
- Better access to textbooks and teaching aids  
- Higher student participation in school activities  
- Reduction in drop-out rates  
- Improvement in teacher's performance  |
| 4. Increased system productivity |  | - Increased employment prospects for graduates  
- Increased productivity in specialized fields  
- Efficiency gains for the employers  
- Facility in job placements for graduates  |
<p>|  |  | - Higher system output (increase in the number of graduates)  |</p>
<table>
<thead>
<tr>
<th>BROAD</th>
<th>INTERMEDIATE</th>
<th>SPECIFIC (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. Environmental Impact</td>
<td>1. Harmony of facilities' design with physical environment</td>
<td>- Enhanced environment consciousness of the general population</td>
</tr>
<tr>
<td></td>
<td>2. Improvement in other community facilities, e.g., water supply, drainage, and sewerage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Contribution to efficiency in energy utilization</td>
<td>- Use of solar energy source</td>
</tr>
</tbody>
</table>
References


"A Review of the Economic Analysis of Education Projects in Asia and Identification of Areas of Improvement", Project Economic Evaluation Division, Asian Development Bank, June 1991. This study, which also incorporates post-evaluation findings and detailed background information in Appendixes, is described as the "reference study" throughout the text of the paper.

Comments prepared by Bank Staff as a result of the review of appraisal documents in the education sector.

Discussion notes pertaining to and findings emerging from the Project Feedback Workshop on the Education Sector. PEO, ADB, December 1990.

Discussions with Bank Staff from IFEE, IFEW and EDRC.

Feedback workshop on the Education Sector organized by IFEE, IFEW and EDRC on 6 and 13 August 1991, ADB.