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**INDONESIA  
EDUCATION AND HUMAN RESOURCES  
SECTOR REVIEW  
April 1986**

**CHAPTER ONE  
EXECUTIVE SUMMARY**

**IEES**

**IMPROVING THE  
EFFICIENCY OF  
EDUCATIONAL  
SYSTEMS**

Coordinated for the Government of Indonesia by the  
Ministry of Education and Culture with USAID

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# INDONESIA EDUCATION AND HUMAN RESOURCES SECTOR REVIEW

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## 1.0 EXECUTIVE SUMMARY

### 1.1 Introduction

This review of the Education and Human Resources (EHR) sector in Indonesia assessed the country's education and training system in terms of the national goals and current five-year plan (Repelita IV), the status of current educational activities, the identified needs, the constraints on meeting these needs, as well as the opportunities and policy options for overcoming these constraints.

The review has been a fully collaborative effort between the Ministry of Education and Culture and USAID. Specifically, The office of Education and Culture Research and Development (Balitbang Dikbud) coordinated the efforts for the Indonesian Government, and the Improving the Efficiency of Educational Systems (IEES) Consortium supported by USAID/S&T provided a team of technical specialists. The work of the Sector Review team has been guided and reviewed by a Steering Committee chaired by Dr. Harsya Bachtiar, Director of Balitbang Dikbud, and comprised of the principal policy makers in the Ministry of Education and Culture. On a day-to-day basis the Sector Review team was comprised of the IEES technical specialists as well as the Indonesian MOEC counterparts for each subsector of the report.

The overriding purpose of the EHR Sector Review is to provide a comprehensive and systematic look at the entire, complex Indonesian education system. The focus throughout has been on questions concerning the attainment of national development goals through optimum resource allocation.

The more specific objectives of this assessment are:

- (a) To promote, demonstrate, and provide the bases for data-based decision making in the EHR sector;
- (b) To prepare a useful, practical report, identifying the most pressing needs, as well as the constraints and opportunities for improving the performance of the various EHR subsectors. Consistent with Indonesian development priorities as articulated in Repelita IV, the principal areas of concern have been the quality of instruction, and access and equity;
- (c) To initiate a dynamic and evolving process that can provide input into medium and long-term planning, implementation, and evaluation. In this regard, the MOEC Steering Committee indicated at an early stage its desire for the Sector Review team to serve three critical functions:
  - 1. To provide immediate policy input for the preparation of the forthcoming Repelita V;
  - 2. To assist in defining and designing a policy planning and analysis capacity within Balitbang Dikbud; and
  - 3. To provide guidance to the USAID-funded Education Policy Planning (EPP) Project which is now in the early stages of implementation.
- (d) To help identify areas requiring further research and development.

The overall structure of the Sector Review is first to discuss the status and constraints of the EHR sector as a whole in terms of cost and financing, manpower demand and supply, and management capacity, and then

to proceed to a detailed analysis of the individual subsectors of the educational system. The subsectors include preprimary and primary education, lower and upper secondary education, vocational/technical education, teacher education and training, higher education, and nonformal education. There is also a chapter which discusses external assistance and donor coordination, and another, included for the first time in this Sector Review at the specific request of the Ministry of Education, on policy analysis and educational data systems. Within each subsector chapter, the historical setting, national goals and strategies, and organizational structure of that specific subsector are discussed. Each subsector also include the discussion of such programmatic issues as enrollment, instructional staff, curriculum, evaluation, facilities and equipment, and costs and finance.

In an attempt to provide a model for data-based decision making, each subsector chapter moves from a quantitative descriptive status section through an analysis of the current activities within the subsector to a grounded set of policy and research recommendations. In order to allow useful comparisons both between subsectors in the Indonesian EHR system as well as between Indonesia and other third world EHR systems, the analysis section of each chapter is organized around five conceptual themes: external efficiency, internal efficiency, access and equity, administration and supervision, and costs and financing.

This Executive Summary chapter is intended to serve dual functions. First, it is designed as an overview of the full Sector Review and a summary of the status and policy options for each individual subsector.

In addition, the final section of this chapter is an attempt to identify those overarching issues and cross-cutting recommendations that transcend the specific concerns of any single subsector of the EHR system and which, therefore, necessitate a search for solutions at a broader level of policy analysis. This commitment to synthesizing the issues and recommendations at a higher level of abstraction emerged from the close collaboration between the IEES and Indonesian team members and from the intense interaction between those technical specialists responsible for the various subsector chapters. For a more detailed analysis, as well as for a review of those recommendations specific to a particular subsector, the reader is encouraged to turn to the main body of the Sector Review.

## 1.2 National Goals, Plans, and Priorities

Human resource skills, created by primary and secondary education and by training in science, technology, and efficient production organization techniques, are a key resource for Indonesia in achieving faster growth in per capita income. Human resources are relatively plentiful, even though some need to be upgraded; compared to capital, which is scarce and expensive, human resource development offers a particularly promising route to sustained development. However, major attention to efficiency in human resource development and utilization, with simultaneous consideration of equity, is vital. Without it, resources that could be used to produce a larger amount of growth are partially wasted, too few in the population benefit from the fruits of growth, and growth of both per capita income and the extension of equity are slowed.

Indonesia has a very clear and appropriate statement of its major national goals and priorities in its current five-year plan. It is these goals that this Sector Review seeks to serve.

The overriding goal of Indonesia's current five-year plan, Repelita IV, is "to raise the standards of living, intellectual abilities, and general welfare of the people and to lay strong foundations for the subsequent stages of the nation's development" (Repelita IV, p. 6). More specifically" the plan seeks to ensure a minimum growth rate that provides a growing per capita income and assures an equitable distribution of that income." (page 8) The Plan further recognizes efficiency in human resource development as a major means to that end, since it stresses that "greater emphasis will be given to human resource development via education... while simultaneously stressing improved efficiency in the development and use of human resources." (page 8)

Other government departments involved in human resource development and utilization have objectives that are consistent with this goal of efficiency and equity in economic development. The employment and manpower objectives, define the mission of the Ministry of Manpower and the mission of the Ministry of Research and Technology. They stress "policies and investment projects in all sectors that are consciously and vigorously directed toward maximum employment (p. 48).... Investment policies are to be geared to the . . . uses of technology that ensure the attainment of the employment objective" (p. 49). This implies seeking higher labor absorption rates. With respect to science and technology specifically, which have the biggest stake in human resource development, Presidential Decree No. 28 stresses its main

mission as managing "the research and technology issues and problems so that their development and application will be more effective and directly supportive of development needs."

Repelita IV clearly recognizes the important role of human resource development in meeting the objectives of increased economic growth and equitable distribution of that incremental income. As this is a time of limited growth in the resources available for human resource development, it is important that strategies be formulated to use these resources in the most efficient manner.

### 1.3 The Role of the Sector Review.

Within the specific context of the education sector, Repelita IV has identified three additional goals:

- (a) to improve the quality of primary education, while continuing a policy of equitable expansion to meet the goal of compulsory basic education;
- (b) to expand various levels and types of education, especially vocational/technical and polytechnical programs, to meet the economy's growing need for professional and skilled manpower; and
- (c) to improve higher education to enhance the universities' role in developing indigenous capability in scientific and technical fields.

The Sector Review process attempts to advance Indonesia's overall national goal for the efficient development of education and human resources in two ways. It first seeks to identify cost-neutral

strategies for advancing the current goals of Repelita IV. Second, the Sector Review uses a methodology for data collection and analysis that will provide the basis for formulating education sector development strategies for the next five-year plan as well as for ongoing adjustments in the use of education resources. Because this methodology provides for the comparison of data across education subsectors, education planners should be able to use the data to examine the trade-offs in making different levels of resource allocations to various education programs. In short, the Sector Review process allows for the consideration of allocative efficiency questions within the general framework of the Indonesian economy as well as the more specific context of manpower planning and other policies within the education and human resources sector.

From a macro-economic point of view, the efficient allocation of resources is of paramount importance in achieving faster economic growth, a major goal of Repelita IV. The Sector Review attempts to advance this goal of sustained economic growth by:

- (a) identifying the education subsectors where an investment of resources is likely to have the highest payoff;
- (b) providing recommendations for reducing existing inefficiencies within subsectors.

The main analytical tools used to identify public investments in education subsectors or programs that yield the highest growth payoffs are cycle cost and rate of return analyses. Manpower planning can play an important role in helping to ensure that there will be at least a minimal number of persons needed for specific skill areas, including a

few areas where a strategic thrust is to be made. The rate of return analysis allows for a continuous fine tuning of the human resource development plan for the purpose of ensuring efficiency and reducing work.

The cycle cost and rate of return analyses detailed in Chapter Two indicate that public investment in education overall is still a profitable use of Indonesia's resources. Primary education yields the highest rate of return at 33%; graduates of general junior and senior secondary programs working in industry have a higher rate of return than graduates of vocational technical secondary programs. This analysis provides a general frame-work for viewing the education system as a whole and for making macro policy decisions about the level of public resources that should ideally be allocated to various subsectors from the perspective of economic efficiency.

There is also a need to conduct a micro-analysis of low cost strategies for improving the efficiency with which resources are used within each subsector or educational program. The Sector Review envisions education subsectors as having five dimensions within which allocative inefficiencies can be examined. Within the Indonesian context these five dimensions can be summarized as follows:

1. Internal Efficiency. Internal efficiency refers to the efficiency with which the education process is carried out within schools or within a learning situation. For Indonesia, reducing wasted effort and improving the quality of education is an important strategy for improving internal efficiencies within each educational subsector. Lowering repetition and

drop-out rates are important steps for reducing existing inefficiencies that would also help Indonesia meet the goal of compulsory primary education.

2. External Efficiency. External efficiency attempts to measure the efficiency with which the education system produces graduates for the next higher level of education or for the workplace. An important goal of the Indonesians is that the education system produce a pool of manpower with the professional and technical skills needed for the country to attain sustained economic growth.

3. Administration and Supervision. The Sector Review examines ways in which allocative efficiencies within the education system can be enhanced through improved administrative and supervisory practices. One major consideration for Indonesia is the potential efficiencies to be gained through a greater deconcentration of supervisory and administrative responsibilities. A second possibility involves the efficiencies to be achieved by viewing education and manpower policies as a continuing adaptive process closely attuned to the emerging needs of the economy rather than an exercise conducted once every five years.

4. Cost and Financing. The Sector Review considers ways in which cost and financing schemes within the education system can be improved to increase the efficient use of resources. Several have emerged as key issues for the Indonesian education system: (1) greater cost recovery by higher education, (2) the appropriate level of parental or community support at the

primary and secondary levels, and (3) tax measures that encourage training by the private sector leading to greater labor absorption rather than expensive capital intensity in production.

5. Access and Equity. Improvements in educational efficiency can contribute to increased access and equity since they free up resources that then can be used to expand access and equity. Also, if the return for a particular investment is high so that it is efficient, and equity is also served by that same investment, both goals can be served simultaneously. It is doubly advantageous to choose investments of this type.

These five organizing themes will be used later in this chapter to classify the major recommendations for subsector improvements in efficiency and equity.

#### 1.4 The Social and Political Setting

Indonesia is the largest archipelago in the world, stretching more than 3,500 miles, with over 14,000 islands whose connecting water surface area is greater than its land surface area. Living on 6,000 inhabited islands are peoples from more than 300 ethnic groups speaking over 250 languages and dialects. Bahasa Indonesia is the official national language and from third grade is the language of instruction in both private and public schools throughout Indonesia. English is considered to be the second official language that is taught in the schools. All laws must be published in English as well as Bahasa Indonesian and many Indonesian policy makers speak English.

In this fifth most populous country in the world, 70% of the people

live on the densely populated islands of Java, Bali, and Madura. Half the total population is under 20 years of age and 85% still live in the rural areas. Wet-rice agriculture, which was developed over 2,000 years ago and gave Indonesian society the economic capacity to support the great kingdoms of Central Java, is the mainstay of Indonesian society. For many years, as the population increased, rice had to be imported; but in recent years Indonesia has again become self-sufficient. This status has been accomplished through the use of modern agricultural techniques, the development of healthier and more productive plants, the introduction of fertilizer, the promotion of better irrigation methods. The phrase 'Unity Through Diversity' evokes a persistent theme in the history of Indonesia. Coined in the fifteenth century in the Majapahit Empire of Java, which blended Javanese mysticism with Hindu, Buddhist, and Islamic elements, it is perhaps even more appropriate for contemporary Indonesia than it was nearly 500 years ago.

Under Dutch Colonial rule since 1600, Indonesia proclaimed its independence on August 17, 1945. The Republic of Indonesia, comprised of 27 provinces and the special district of Jakarta, is a unitary republic led by an indirectly elected president. Indonesia is now governed under the Constitution of 1945 which gives broad powers to the President. The constitution also provides for a 460 member parliament (DPR), and for a 920 member higher legislative body, the Peoples' Consultative Congress (MPR), which includes the DPR and additional members who are partly appointed and partly chosen on the basis of election results. The DPR is charged with making laws; the MPR is to

set the main line of state policy and also to elect the President who is chosen for a five-year term and whose powers, in fact, far outweigh those of the legislative branch. In Indonesia the emphasis is on political consensus, unity, and guided political development.

Competitive politics based on parochial interests are discouraged. The state ideology, Pancasila, is the central theme guiding political activity. Its principles are belief in one god, a just and civilized humanity, unity of Indonesia, sovereignty of the people, and social justice.

Indonesia has held three national elections since the establishment of President Soeharto's "new order" regime in 1967. Since its creation in 1971, the government-supported political party, GOLKAR, has won decisive national election victories with more than 60% of the vote. Besides GOLKAR, Indonesia has two officially sanctioned political parties: the Unity Development Party (PPP), formed from four Islamic parties, and the Indonesian Democratic Party (PDI), composed of former nationalists and Christian parties. President Soeharto has won the endorsement of the People's Consultative Congress (MPR) four times. Enormous national resources and a growing, predominantly agrarian, population form the setting for Indonesia's economic development-- a process characterized by the complex interplay of traditional and modern forces and energized by the Government's commitment to industrialization. Substantial resources of petroleum, natural gas, tin, copper, coal, timber, and fish, complimented by a tradition of irrigated rice farming, have supported a diversity of economic activities. Because nearly 80% of the population is still employed in

small-holder agriculture or in small family-run enterprises, the per capita gross domestic product has remained low--around \$500 US during the early 1980s.

Stimulated by public investment made possible with revenues from oil imports, per capita production has expanded by over 5% per year since 1970. The Government has also made impressive strides in improving the institutional framework for development, preferring the "top down" approach. The Government gradually extended the power of the bureaucracy to the lowest level of the economy where it introduced marketing cooperatives and other schemes for assisting the operations of private traders and farmers. It has supplemented this effort with the activities of state enterprises located strategically in almost every realm of economic endeavor, especially in industry. The state-controlled banking system provides subsidized credit to priority public and private enterprises. The Government invites foreign participation in selected industries and continues to solicit foreign aid through loans and grants. The influential planning apparatus, BAPPENAS, coordinates and manages these multi-faceted efforts. However, despite the enormous achievements of the 1970s and early 1980s, when technological change penetrated to the most remote areas in the archipelago and improved the average standard of living, the prospects for the 1980s and beyond are clouded by the unavoidable reality that unemployment, rural and urban, is bound to worsen as the pace of technological change quickens and more labor is freed from traditional agriculture. Most recently, as world oil prices have dropped, government revenues, and therefore development budgets, have been

strained. Thus, the major task of the late 1980s will be the construction of an industrial base that can absorb the rapidly-growing labor force, and an educational system that can effectively and efficiently prepare its citizens for productive participation in the development process.

### 1.5 The Economic and Financial Setting

There are seven major economic conditions that characterize the Indonesian economy. These conditions constitute a set of opportunities and constraints to the Government as it attempts to meet the Repelita IV goals of raising the per capita income of Indonesia's population while assuring an equitable distribution of that income.

1. Dependence on Oil Revenues. Because oil remains the single largest earner of foreign exchange and other revenues, the continuity of Indonesia's public spending and investment in development projects is threatened by the slackening of foreign demand and world prices.
2. Falling labor absorption rates. It is difficult at this point to determine the exact extent to which the sluggish creation of new employment opportunities represents the short-term result of the recent world recession. Falling absorption does, however, appear to signal an even more serious, longer-term trend. The trend toward capital intensive modes of production in the oil industry, as well as in other industries seeking to compete in capital intensive export markets, is a contributing factor that must be addressed.

3. Increased labor productivity in the agricultural sector. In recent years, Indonesia has reached self-sufficiency in food production, largely through increases in per farmer productivity. Still the main employer of Indonesian labor, the agriculture sector will be able to provide fewer and fewer jobs in the future and will thus contribute to the decline in employment opportunities.
4. High expectations for the relatively fragile manufacturing sector. Although considered by many to be the sector potentially contributing most to economic growth, the manufacturing sector has not yet been able to diversify sufficiently to tap Indonesia's large domestic market successfully. As a result, the manufacturing sector also remains dependent on external markets, especially for textiles. The manufacturing sector's path to development is made more difficult by planners' conflicting objectives; on the one hand, manufacturing and industry are expected to be the main engine of economic growth, which to some non-economists has implied investment in overly capital intensive equipment. On the other hand, the manufacturing sector has been given the responsibility of new job creation, a task that is inconsistent with the overly capital intensive approach stressed earlier.
5. Recent decentralization of financial markets. The highly centralized banking system of Indonesia's past has only recently been liberalized. To the extent to which competition is increased, credit may become available on somewhat more competitive terms
6. Recent reforms in excise and income taxes. Recent and

extensive reforms in the tax system have improved tax collection procedures and broadened the tax base. The success of these reforms will help ease the Government's current dependence on oil for public revenue for economic development.

7. Institutional rigidities. Institutional rigidities, such as the relatively distinct processes for formulating the five-year development plan, the annual routine budget, and the annual development budget, make it difficult for the Indonesian Government to deliberately develop an adaptive process that responds with flexibility to cost-effective opportunities and cost inefficiencies, and to provide evidence of shortages and surpluses that reflect the growth bottlenecks in the economic environment.

### Fiscal Capacity

The fiscal capacity of the Government has been limited during the last five years because of slower growth in routine budget revenues relative to expenditures. This phenomenon is due largely to the world recession and its negative impact on receipts from corporate taxes on oil, the major source of government revenue. Development budget revenues, on the other hand, grew faster than expenditures during the same period reflecting large contributions from foreign sources and the Government's difficulty in disbursing these funds. Relatively high debt service ratios, which must be financed out of the routine budget, limit the resources available for expenditures on public sector programs. In 1985/86 the routine budget was increased to a level that exceeds the development budget. This growth represents a trend aimed at providing a

fiscal stimulus to the economy while at the same time tightening public investment in order to meet resulting recurrent costs.

It is very difficult to determine the exact proportion of total public sector expenditure that is spent on education. In part, this is because departments other than the MOEC have education functions. In recent years, it was estimated that the MOEC was directly responsible for only 44% of the public resources spent on education. The Ministry of Home Affairs, the Office of the President, and the Ministry of Religious Affairs contribute a large portion of their resources to their own education undertakings. The picture is further complicated by a large and very active private sector. Given the large number of actors providing education in both the public and private sectors, it is difficult to judge what portion of total Indonesian education the MOEC should be responsible for in the future.

Labor Market Conditions Although measured unemployment on the whole is very low in Indonesia (approximately 2%), underemployment is a widespread phenomenon. In recent years, approximately 37% of Indonesia's work force has been identified as underemployed. In rural areas, where underemployment is most prevalent, it is associated with poverty and the lack of land. In cities, underemployment reflects the informal markets and labor flexibility. Under conditions of falling labor absorption rates, underemployment, which is defined as 10 to 35 hours a week, provides a marginal income for those who do not have the skills or training to find jobs in the modern industrial sector.

The general education level of Indonesia's labor force remains

quite low. In 1982, approximately 13% of the work force had more than a primary education. As is the trend in most developing countries, Indonesia's agricultural sector still employs 80% of the work force. The public sector, on the other hand, attracts the largest proportion of educated labor. Approximately 80% of all postsecondary graduates work in public services, while industry is staffed with relatively poorly educated labor. The high concentration of high school graduates in the public sector can be linked to the wage rate for civil servants at this education level which is higher than the market wage rate. Indeed, unemployment rates among senior secondary school graduates are evidence of distortions in the wage rate. A recent tracer study shows that many unemployed secondary school graduates are only temporarily unemployed. Because public sector wage rates are so favorable at this skill level, many high school graduates will remain unemployed for up to two years while waiting for a job opening in the public sector.

Repelita IV suggests that the greatest need for manpower will be in the industrial sector. This is evidenced by the 200% growth in polytechnical enrollments envisioned for the five-year period of Repelita IV. Yet, previous manpower analysis suggests that Indonesian labor has not thus far reached the level of skill required for industrial expansion. A more labor-intensive economic strategy and a progressive shift toward a more complex economy that emphasizes the role of manufacturing and services will call for a general upgrading of skills. A pool of well-trained secondary school graduates will be a vital factor in the expansion of the industrial sector. It is too costly for industry to produce the basic reading, writing, mathematical,

and analytical skills that modern manufacturing requires. The expansion of a general secondary education system that produces graduates with these basic skills will be a priority measure for reducing the manpower shortages projected for Indonesia's industrial sector.

### Educational Finance

The issues of educational finance in this Sector Review include considerations of public and private sources of funding by type of schooling or training as well as the unit cost per student and cycle cost per graduate by level or type of education.

The Indonesian education system is characterized by a large and active private sector at the postprimary levels. Although the private sector receives a variety of government subsidies, the coordination of private and public sector efforts at the senior secondary and university levels of education offers the Indonesian Government important opportunities for reducing public expenditures on education. The diverse sources of funding for education, which include resources from the the MOEC budget, from a large number of other government departments, from private institutions, and from private individuals, present certain constraints. The wide variety of financing sources make more difficult the task of coordinating education spending to achieve the most efficient allocation of resources. This dilemma is particularly noteworthy in the primary education subsector where departments other than MOEC are responsible for the teachers' wage bill and for major school construction and rehabilitation efforts. At the secondary and higher levels of education a key concern is the appropriate mix of public and individual contributions to education.

The analysis of per student costs and cycle costs per graduate which are presented in this Sector Review sheds some light on these concerns.

There appears to be considerable regional variation in the cycle cost per graduate at the primary level. The cost per graduate in Java outside Jakarta and in the rest of the islands was found to be 1.5 times higher than in Jakarta. The higher cycle costs found outside Jakarta can be linked to higher unit costs, due largely to lower student/teacher ratios and smaller schools, and by considerably higher repetition rates. The noteworthy variation in repetition rates that has emerged among regions supports earlier evidence that regional disparity in the quality of primary education persists.

Private costs to families and students are quite high for public secondary school. On the average, secondary school students provide more than 38% of their own annual instructional costs. Past rate of return studies of secondary education suggest that high private costs may deter students from remaining in secondary programs. These studies have shown the social rate of return to be higher than the private rate of return for secondary education in Indonesia, a finding which is contrary to trends in other countries. Relatively high drop-out rates compared to repetition rates suggest that high private costs may force students who are doing poorly to leave school rather than repeat a grade. Redistributing some of the secondary school costs back to the public sector or introducing a progressive fee system may have the positive impact of keeping students in school.

The annual per student costs for public vocational/technical

secondary schools were found to be 1.4 times higher than for general secondary programs. In addition, the vocational/technical secondary programs were found to have the highest drop-out rates, and hence the highest costs per graduate, of all public secondary programs. Rate of return analysis completed for the Sector Review shows that the incremental earnings of STM graduates working in industry are considerably lower than those of SMA graduates. The implication of these findings is that planners should proceed cautiously with future investments in technical secondary programs as they are currently implemented.

In public universities, the average operating budget per student declined in real terms during the 1980/81 - 1984/85 period. This is due in part to the slow growth in operating expenditures compared to growth in enrollments. The continuing growth in social demand for higher education suggests that the situation will only deteriorate if innovative measures are not taken. In this regard, greater cost recovery of higher education in the public sector and greater responsibility to private institutions of higher education are two potential approaches to the problem of constrained resources in higher education.

#### 1.6 Overview of Economic and Financial Analysis: Allocative Efficiency

The means for achieving increased allocative efficiency that are suggested below present an array of policy options. In this section they are not prioritized, beyond the fact that some of the more important tend to be listed first in each of three subsectors that follow. It is

in section 1.7 that these options are extracted and placed in priority order as candidates for the Fifth Five-Year Plan, Repelita V. Others are appropriate for USAID support, for future years beyond Repelita V.

The means of increasing allocative efficiency that follow are classified into internal efficiency within the educational system, and external efficiency with which the educational system relates to the needs of the economy and this society. Administration, supervision, and financing issues also involve efficiency and will be considered under the general heading of "allocative efficiency". Finally, there are the means of improving equity and access, focusing upon those which do not inhibit efficiency and growth.

This review emphasizes those recommendations that not only increase equity and access, but that simultaneously do the most to advance growth. This combination of achieving efficient growth and equity may be considered one way of achieving "humane growth," an objective fully consistent with the major goals of the Repelita IV and likely a major goal of the forthcoming Repelita V.

In listing the recommendations that follow, the number in parentheses indicates the chapter and in some cases the section in which the basis for each is developed in more detail.

#### 1.6.1 Internal Efficiency

##### 1. Increased Investment in Improving of the Quality of Education.

Education has a high rate of return or growth payoff, particularly at the primary level where specific means of improving quality are suggested. Other places include upgrading secondary school English teachers, reducing

primary/secondary school dropouts, and improving the quality of science, social science, and mathematics instruction as the basis for more advanced higher education in science, more efficient production, organization, and the transfer of technology. Quality is also an important issue in vocational and technical education where the number of years required to complete the program reflects considerable waste and results in high costs, in teacher preparation, in higher education where a program has been defined to improve quality while at the same time seeking efficiency, and in the management of the educational enterprise.

2. Reducing Dropouts By Gradually Phasing out Junior and Senior Secondary School Fees. Costs to the parents are relatively high at this level as they must pay school fees and must also bear the foregone earnings costs of the students; however, the social rates of return are also relatively high, justifying increased investment. The drop-out rate is high and needs to be reduced through improved quality and lower costs to the parents, especially in rural areas.
3. Underutilized Potential for Resource Recovery. Greater incentives are needed for students in higher education to complete their studies expeditiously, since most take more than four years to complete a Sarjana degree, resulting in lower internal efficiency. Greater use of student loans and a greater expected parental contribution to higher tuitions (coupled with waivers based on simple needs analysis for able

students from poor families would provide the incentive for students to complete their degrees faster. These measures would also help to finance the continuing expansion required to meet enrollment pressures in higher education that have arisen as a result of the past expansion of primary and secondary education. They would also help to reverse the recent decline in real expenditure per student expressed in constant dollar terms by making the continuing expansion self-financed to a greater degree than at present. Elimination of the undergraduate thesis (Skripsi) would also serve to increase internal efficiency in higher education. The Director General of Higher Education has recently identified a number of additional policies that will help to contribute to internal and external efficiency, while advancing equity.

4. Increased Involvement of the Private sector. Parents need to be involved more in supportive roles, as do industrial firms. Human capital investment or training tax credits (in place of physical capital investment tax credits) should be implemented. Industrial firms would help more if there were incentives to assist with the vocational training of general secondary school (SMA) graduates. This action would simultaneously help reduce some of the high cost of vocational and technical school (STM) expansion and to increase nationwide the low labor absorption rates in industry. In a period where there are serious financial pressures on the national budget, this recommendation may warrant serious consideration as a way to save some of the

high vocational/technical expansion costs while at the same time increasing labor absorption rates and external efficiency.

5. Simplification of the Curriculum through Consolidation.

Streamlining the curriculum should reduce costs and increase the effectiveness with which the more important verbal, quantitative, and analytical skills are developed.

6. Administrative Reforms to Reduce Institutionalized

Inefficiencies. These reforms include greater decentralization of teacher promotion decisions through more input from and authority for principals and supervisors. Of high priority should be the greater decentralization of budgeting responsibility to allow more adaptable responses to local job market shortages, particularly in higher education where students gravitate to fields of better job opportunities if not prevented from doing so by budget rigidities. Decentralization would also reduce the need for overly detailed manpower planning for science, engineering, business administration, and technical personnel.

Consideration needs to be given to the causes of multi-jobbing by teachers and other civil service staff at all levels. Some multi-jobbing can be efficient, but too much may result in serious inefficiencies and reduction in the quality of education.

1.6.2 External Efficiency

1. Better Responsiveness is Acutely Needed to Evidences of Human

Resource Shortages and Surpluses. Such evidence might include earnings data provide from BPS, earnings data collected by college job placement offices, data on the costs of particular programs (in relation to their returns), tracer studies, and Department of Manpower information about underemployment. In general, greater focus is needed on the outputs of education as distinguished from almost exclusive emphasis on the inputs. The overall rate of return to education is high, but evidence also exists of an overall underinvestment in education and shortage of educated labor in relation to what is needed for growth. Additionally, resources are being wasted by too much spending on high-cost, low-growth payoff types of education (e.g., vocational/technical) and too little on other types (e.g., secondary general). Consideration should also be given to expanding two-year postsecondary associate degree programs closely related to local job market needs for intermediate level technical personnel, such as nurses, veterinarians, crop specialists, X-ray technicians, accountants and agribusiness middle level technicians and managers.

2. Increased Investment in Junior and Senior Secondary Education, Perhaps by Phasing Out Secondary Fees During Repelita V. The social rates of return are relatively high for junior secondary general (30%) and senior secondary general education (22%) (Chap. 2) Reduction of fees would help to reduce the drop-out rate which is high, and thereby would also serve internal efficiency (see above). Equity could be served if the phasing

out of fees occurred first for the junior secondary level to help relieve the burden for parents in the lower income rural areas.

3. General Education vs. Too Much Specialization. Training in highly specialized fields rather than general education can result in an oversupply of specialized types of labor that cannot be used later and must remain idle or emigrate
4. Reversal of the Decline in Labor Absorption Rates is a goal of the highest priority. The soaring foreign exchange balance requires policies that encourage local production of goods. The foreign exchange required for imported manufactured goods harms Indonesia's ability to serve a potentially large domestic market. These goods can be produced through less capital intensive means which utilize Indonesia's comparative advantage in labor. This emphasis would be more effective than trying to earn foreign exchange by competing with exports from other countries. With a majority of the labor force still without a primary education, nonformal education and industry assistance with technical training have a continuing role.
5. Greater Emphasis Should be Placed on the Outputs of Education, how they are improved, and how they can be better related to the labor market. This emphasis, rather than attention only to the quality of the inputs is needed to increase external efficiency. Possible measures include greater attention to returns (earnings) as indicators of shortages and growth

bottlenecks, to more tracer studies and the results of the annual EBANAS examinations.

6. Unemployment and Underemployment need to be reduced to increase efficiency in general. Some unemployment may be caused by government pay scales, some of which should not be increased.
7. Greater Decentralization of Budgeting and Personnel Promotion Decisions should be explored and possibly combined with incentives to respond to demands for outputs of education, to student enrollment pressures, and to local employment needs.

#### 1.6.3 Equity and Access

1. Equity and access could also be served by several of the efficiency-increasing measures suggested above---by emphasis on quality in primary education, revision of secondary education fees in priority areas, and encouraging higher education to become self-sufficient to a larger extent.
2. Financial Need Analysis Procedures are Recommended for more extensive use in awarding student loans, tuition waivers, and gift aid. This recommendation is consistent with efficiency as well as with greater equity, in that it reduces the extent to which the poor subsidize the sons and daughters from high income families.

### 1.7 Subsector Specific Overviews

The following sections of the Executive Summary present brief abstracts of each of the major subsector chapters covered in this review of Indonesia's education and human resource system. The subsectors

reviewed are preprimary and primary education, lower and upper secondary education, vocational and technical education, teacher training, higher education, and nonformal education. These brief subsector summaries are not intended to address in detail the status, programmatic concerns, and analysis which are fully presented in the individual chapters. The discussion here attempts only to summarize the most critical issues and policy options within each subsector in terms of its current status, identified plans, constraints, and opportunities for future research and policy.

#### 1.7.1 Preprimary and Primary Education

Since 1954, six years of primary education have been mandated by law for all Indonesian children who have reached eight years of age. The first five-year plan (1969/70-1973/74) targeted 80% enrollment in primary school for all children aged 7 to 12, but this target was not realized. The enrollment target was more modest for the second five-year plan --55%. As rapidly increasing oil revenues became available for expansion of education, this target was revised upward. By 1978/79, nearly 80% of the 7 to 12 year -olds were enrolled. Universal primary education became a basic goal of the fifth five-year plan (1984/85-1988/89). Current estimates indicate that between 95 and 98% of the targeted age cohort are currently enrolled in primary school.

Primary education is now at a crossroads. A comparatively large proportion of funding is still allocated for primary education expansion, but debate has begun as to whether this funding could be redirected to other educational sectors with greater need, for example, for secondary education expansion or for activities that better fulfill

the other major objectives of the current five-year plan--improving educational quality and providing students with the skill training required by the job market. Recent announcements of government budget restrictions make such debate even more relevant.

Primary education programs in Indonesia are generally efficient in comparison to those of most other developing countries. Although there are serious regional disparities among the country's 27 provinces and 242 districts, the national figures for a variety of educational efficiency indicators compare very favorably with indicators from other countries. Student to teacher ratios in 1984/85 were 27 to 1, and the student to classroom ratio was 30 to 1. Of the 2,656,688 students enrolled in primary schools, 48% were girls. Among the 986,638 primary school teachers, however, only 33% were women. This disparity should diminish in the future as 64% of the 246,623 graduates of the teacher training schools in 1984/85 were women.

The drop-out rate has been decreasing over the last 15 years and now stands at approximately 3%. The repetition rate is still high--nearly 11% for public schools and 8% for private schools; but it is also dropping each year. (However, both drop-out and repeater rates are notably higher in rural areas, suggesting that these areas are in special need of internal efficiency improvement efforts.) The cost per graduate for primary education in 1984 was Rp.78,900 or approximately US\$80; the rate of return to primary education is 33% per year for males in industry and 39% for females. The cycle cost of primary education is Rp.633,567, or approximately \$640. Each of these figures indicates that primary education in Indonesia is relatively cost efficient.

Despite these figures, the primary education system is inefficient in a number of respects. Already there are indications of an overproduction of primary school teachers. Given current projections, there could be serious overproduction in the next five years, even if there is a decrease in the number of teacher training graduates. The current Presidential Decree (Inpres) funding for primary school expansion and upgrading is another area in which external and internal efficiency could be improved if resources were redirected to quality enhancement activities (such as more effective inservice training, better supervision, and improved data gathering and evaluation of programs) which improve the performance of primary school graduates, allow them to continue on to higher levels of education, or obtain the skills needed for better performance in their jobs. At the same time, the serious variation among regions in academic performance, student to teacher ratio, student to classroom ratio, drop-out and repeater rates, and other measures of quality and equity indicate that more equitable distribution of resources among regions must also remain a priority.

Additional resources must be directed to other areas as well if the development targets for the Repelita IV are to be met. Targets call for 30% of all handicapped children in the primary school-age cohort to be enrolled in special education programs. At present, only 7% are enrolled and resources for these programs are severally limited. Of the approximately 350 schools for handicapped children, 79% are in Java.

The last 3 to 5% of the 7 to 12 year-olds not enrolled in primary school are from groups of children who are traditionally hard to reach

from semi-nomadic farming, hunting, or logging families in remote areas. Programs have been developed that have proven to be quite effective in reaching these groups, but are in need of further testing, evaluation, and expansion.

Preprimary programs have not been addressed in the above discussion and do not receive as much attention as primary education in Chapter Five of The Sector Review. This is because the Ministry of Education and Culture has not emphasized preprimary education. In 1984/85, there were 25,284 preschools throughout Indonesia, but only 52 of them were government schools. The MOEC does provide a small subsidy to some schools, but in general preprimary education has been left to the private sector. This is quite likely a practical approach. Little research has been done in Indonesia on the value of preprimary education, and research conducted in other countries on the effectiveness of such programs has yielded very mixed results. At this stage, more study is required before any large-scale expansion is planned, especially in view of the current budget restrictions and more serious needs in other sectors, such as secondary school expansion. A number of troublesome trends are evident, however, which make early research in this area critical. Java has 74% of all pre-schools, with only 28% of the three to six year-old age cohort. It is also estimated that 75% of the pre-schools are in cities. If pre-school education does improve a child's performance in primary school (and this has yet to be determined conclusively), children from poorer, more rural families may be denied this early learning opportunity.

The policy options of highest priority in the preprimary and

primary education subsector center on improving the quality of education programs. An underlying theme in each of the recommendations is the importance of conducting research and evaluation (both formative and summative) in support of any program implementation. These research and evaluation activities should be designed through close, continuing and systematic coordination between Balitbang Dikbud and the Directorate General responsible so the critical questions of concern to both offices can be addressed.

Because of the current low profile of the MOEC with regard to pre-primary education and the recent restrictions on the MOEC budget, increased support to preprimary education is not recommended at this time. Instead, emphasis should be on further research into the effectiveness of preprimary education programs and their long-term impact on achievement of children in primary and secondary school, on socialization and on attainment of cognitive, affective, and motor skills. For the near future, subsidy programs could be maintained, but expansion of pre primary education should be left to the private sector. This policy should be reviewed periodically, however, since control of pre-schools by the private sector, could exclude large portions of the more rural and poorer population. The Government may have an important future role in ensuring better access and equity in preprimary programs.

The policy options for primary education with regard to quality improvements include the following:

1. Defining the criteria for judging attainment of "quality" education.
2. Stressing refinement of the EBTANAS.

3. Preparing a carefully designed and evaluated dissemination strategy for new teaching methodology.
4. Developing diagnostic materials for primary school students.
5. Streamlining the administration of primary education by placing full authority for supervision and promotion of teachers and principals under the authority of Depdikbud.

A second set of policy and research options relates to fulfillment of the goal of universal compulsory education:

1. Expanding special education, small schools, Kejar and PAMONG patjar programs through the reallocation of existing funds, primarily SD Inpres funds.
2. Making special efforts to work with Kanwil offices in pinpointing areas of educational need and planning interventions.
3. Improving data gathering systems for better identification of children who are still not attending school.
4. Study of the problems of assignment and retention of primary school teachers in remote areas.

### 1.7.2 Secondary Education

Looking back over the past 40 years of the development of Indonesian education, it is gratifying to observe what has been accomplished in only two generations. Free and compulsory universal primary education is nearly a reality. There are discussions within the Government as to whether or not lower secondary education should now be made compulsory over the next several Repelitas. The appreciation of

what education means for improving the quality of life has produced a demand for lower secondary education that the public and private sectors together find hard to meet. Upper secondary enrollments have grown steadily and are now increasing at a rate which should lead to their doubling and then almost doubling again from the new base over the next 10-year period.

The structure of secondary education in Indonesia is modeled after an American rather than a British pattern, and over the years a commitment to a comprehensive junior high school has replaced earlier vocational alternatives. Moreover, a vigorous private sector has developed to meet the need for school capacity which has exceeded the government's ability to provide.

In the broadest sense the goal of Indonesian secondary education in the next decade is to deliver to the nation skilled manpower with the knowledge and competence to create a substantial new industrial base for the Indonesian economy. The nation views education as a tool of nation building and places heavy emphasis upon the Pancasila, which seeks to provide a universal value framework for the society with which to achieve these goals.

The Government is committed to meeting the popular goal for expansion of secondary education, even if this requires lowering the standards of quality (in the short-run) in order to reach the quantitative goals that reflect the will of the people. Its major strategy is to expand the capacity of education at all levels and find ways to provide the staff for the institutions thus created. The new Minister of Education and Culture has established a milieu for the

development of educational programs in his three-point program calling for stabilization of curriculum, a higher level of administration efficiency, and the involvement of a broader cross-section of lay persons to advise on the development of education policy.

Junior secondary education rather than completion of primary education has become more nearly the dividing point between the traditional and modern sectors. The popular perception that the completion of general lower secondary school will allow students to compete for advanced secondary education and ultimately higher education has created the popular demand which has virtually eliminated the junior secondary technical schools.

At the lower secondary level, the Sekolah Menengah Pertama (SMP) is the general institution currently enrolling over 45% of its cohort and still expanding. At present, the general public and private secondary schools together enroll 98% of the total population of lower secondary students with only small enrollments in the home economics junior secondary school and the technical junior secondary school. There are almost twice as many private schools--more than 9,000 compared to the 5,000 public schools. Lower secondary school enrollment is approximately 5 million students, with the public sectors enrolling about 55% or 2,850,000. Female students are slightly under 45% of the total enrollment. There are approximately 150,000 full-time teachers of whom two-thirds are in the public sector. There are approximately 115,000 part-time teachers of whom only about 6,000 are in the public sector. The lower secondary system is now producing about 1,200,000

graduates a year who are candidates for admission to the upper secondary school system.

The upper secondary school sector consists of the general secondary school (SMA), economics (SMEA), home economics (SMKK), technical (STM), primary teacher training (SPG), and sports teacher (SGO) schools. The total SMA enrollment is approaching 2 million, about 60% of which is in the private sector. The number of graduates from the private and public sectors are about even, at 200,000 each. Starting in the second year, the students are divided into science, social science, and language streams. The science and social science streams are approximately equal; the language stream is a very small proportion. Of the total 130,000 upper secondary school teachers, only 30% are in the public sector, but the majority of full-time teachers are in the public sectors. Of the 20,000 full-time senior secondary teachers in the private sector, only 3,000 are supported by the Government.

In addition, there is a completely separate religious education system, financed by the Government through the Ministry of Religion with its own counterpart in the private sector. At the lower secondary level it enrolls about 10% of all students in Indonesia.

The Government's plans for an expanded capacity for secondary education appears realistic. The nation has long since accommodated to emergency staffing patterns to achieve such expansion targets. A historical perspective on this emergency strategy shows that on the whole it has been effective. There is no doubt that quality has been depressed, at least for a time, and alternative strategies might be developed to lessen the compromise of quality at times of rapid

expansion. (What is lacking in the current plan is any systematic strategy for rationalizing the relationship between public and private sectors of secondary education and the development of strategies to use Government support to private education in order to shape the delivery system to meet national objectives). Also, there are plans to improve the logistics of the administration of the national secondary examination (EBTANAS). It is important that a careful evaluation of EBTANAS alternatives accompany the development and expansion of this important national tool. Additionally, plans are underway to stabilize the curriculum in secondary education. It is important in a resource constrained environment to stabilize all aspects of the delivery system as much as possible and to make the curriculum more accessible and more understandable to the ever-increasing number of teachers with minimum qualifications to deliver the curriculum.

It is simplistic to say that resources are a constraint to the planned expansion of secondary education. The important point is that there are many ways in which the educational system in Indonesia can be improved within the present resource constraints. Nevertheless, these constraints are serious and need to be understood: the rapid expansion of secondary education has made it impossible for teacher training institutions to meet the demand for teachers. The teacher education bottleneck is perhaps the most serious resource constraint in the secondary education sector. This constraint particularly applies to the shortage of science, math, and English teachers. Secondary education will have to rely in the foreseeable future on inservice training programs which give priority to the inservice/onservice model.

Secondary education expansion and improvement is also constrained by a shortage of well-trained school principals. A variety of models for the training of school principals need to be developed since it is not clear what combination of training approaches will be most effective within the context of Indonesia. In addition, the review of this subsector indicates that secondary education expansion is constrained by poor supervision, inadequate coordination, particularly at the local level, and overcomplexity of the budget processes.

The following options are proposed for this subsector:

1. Systematic experimentation should be continued in order to find ways to upgrade various parts of the secondary delivery system. Such experimentation should focus on the reallocation of existing resources rather than on the infusion of substantial new resources.
2. The Government should consider consolidating both the junior and senior secondary school curriculum so that fewer subjects are studied each semester. The current format appears unnecessarily complex.
3. The Government should consider placing major emphasis on inservice/onservice education for upgrading secondary teachers' skills. (One possible model for such a program is outlined in Appendix A of the Teacher Education Chapter.)
4. The Government should also seriously consider the restructuring and simplification of secondary school fees. The complexity and discrepancy of school finance can and should be greatly simplified and at the same time made more equitable.

5. Local correction of EBTANAS examinations should be retained, even with centralized data handling capability, and sampling techniques for central data analysis should be developed.
6. The number of parallel forms of the EBTANAS should be reduced to perhaps as few as six, and concentration should be placed on preparation of higher quality items. A simpler system of rotation of fewer forms may allow for required security and increased exam quality.
7. Several of the items from each examination --25% to 33%--school be released for school use and instruction. This practice would become a part of the quality control effort of the EBTANAS examination. A small percentage, perhaps 10% of next year's items could be taken from this pool. This practice would be announced so as to encourage the focus of attention on the item pool and the associated instructional topics.
8. A continuing effort should be made to reduce the distinction between public and private education at the secondary level. Government policy should encourage private schools to use public school facilities in off hours. Sharing of resources and materials--and in some cases, expenses--should also be encouraged.
9. The development of an Open Senior Secondary School Program of studies should be given high priority if the junior high open curriculum program can be institutionalized.

There are several priority research agenda items:

1. Evidence is needed on the relative economic efficiency of the public and private sectors in secondary education.
2. Studies should be conducted to learn the influence of class size on instructional outcomes. (The conventional wisdom that smaller classes are better may not be correct for Indonesia, where the issue might very well be to choose between larger classes with a relatively higher level of trained teachers as compared to smaller classes with greater variation in educational competence.)
3. Research is also needed to develop profiles for a range of typical schools in systematically varying settings. For example, profiles of vocational/technical schools and their students could be important to decision makers seeking an appropriate balance between general secondary and vocational secondary investment.

### 1.7.3 Vocational/Technical Education

The vocational/technical education subsector in Indonesia is extraordinarily complex. Indonesia's present and anticipated national industrial development requires far more skilled technicians and craftsmen as the country moves into an era of industrial expansion. In addition to the labor force already in place, by 1970 Indonesia will need nearly 20,000 individuals in the professions, 63,000 more technicians, 300,000 more skilled craftsmen, and almost 2 million semi-skilled and unskilled workers. The policy of the Government is to stimulate development of business and industry in preparation for this industrial growth in the 1990s. In recognition of this expansion the

Government has placed a high priority on building a labor force adequate to meet the demand of the burgeoning economy. It is within this context of growing demand for skilled manpower that the need for vocational/technical education must be viewed.

The major stated needs are to expand capacity of the system 100% within five to six years in order to provide for doubling of the student population, to provide an effective method to link the training of skilled workers to the actual requirement of the job market, and to improve the quality of the skill development program. Over the next five years (1984-85 to 1988-89) the Government's goal is to double the number of students enrolled in vocational schools--from 556,000 to 1.1 million. The enrollment in the technical high schools is to rise from 246,000 in 1983/84 to 493,000 in 1988/89, a 50% increase. The public STM enrollment is to move from 93,000 to 186,000, and the private STM from 153,000 to 307,000.

If the MOEC is to respond successfully to this Government mandate, it forecasts a need for 42,000 new teachers between 1985 and 1989. Public institutions will require 28,000 new teachers, and the private institutions 14,000.

Both public and private vocational/technical institutions in Indonesia suffer from an inadequacy of facilities and equipment which hinders the preparation of graduates for entry-level positions. Secondary technical schools suffer the most with a lack of adequate space and electrical power for their buildings. Many have no workshop facilities and few tools, supplies, and equipment. What they do have is often in poor repair and outdated when compared with the tools students

will actually be required to use when they enter the industrial sector.

(The reader is referred to Chapter II for a full discussion of the comparative cost of vocational/technical education and general secondary education.)

The factors constraining the Government's plan for dramatically expanding skills training are:

- the severe gap between the vocational/technical training students receive in school and the skills they are expected to perform on the job;
- the lack of adequate facilities and equipment;
- the shortage of adequacy trained instructors with experience in the trade which they teach;
- absence of any occupational certification and job standards;
- great variation from one institution to another in the quality of the skills training received;
- poor articulation between the vocational/technical institutions and business and industry; there is no effective formalized placement system for graduates and no consistent follow-up of graduates.

Expansion strategies for vocational/technical education have yet to be detailed. Translation of the expansion objective into planning strategies is still in progress, providing opportunities for consideration of newly identified alternatives. Indonesia is currently at a critical juncture in vocational/technical education. There is an opportunity to redefine structures to take advantage of findings in other countries which have come to challenge traditional patterns and

assumptions for manpower development. This is particularly true with regard to the examination of relationships between vocational/technical and general secondary education.

There is insufficient coordination between vocational/technical training strategies and other Government policies relating to investment, manpower, taxation, and international trade. There is also evidence of a gap between performance of vocational/technical graduates and employers' expectations in many specializations. In fact, vocational/technical schools appear to be isolated from the employers and industries served, with little systematic feedback or analysis of success of graduates, career patterns, or employer satisfaction.

There is poor articulation between the vocational/technical schools and business and industry. There is no formalized requirement for the local schools to involve business and industry in program formulation, implementation, or assessment. Some schools have informal advisory groups, but this important link between the school and the world of work is absent for the most part.

In addition, there are very few data on the cost of vocational/technical training. Such cost data are essential to identify the most cost-effective means for providing skilled manpower. Cost data are also needed in order to calculate total cost for graduates of various types of programs--a better indicator than annual training cost.

The policy options for the vocational/technical education subsector may be summarized as follows:

1. The external efficiency of vocational/technical education should be improved by establishing effecting linkages between

training programs and employment needs. The business and industrial community must be brought into greater contact with the schools.

2. Business and industry should have systematic involvement in advisory councils for individual crafts and trades. At the local level a general advisory council for the entire school should suffice.
3. The Government should consider giving additional support for alternative forms of vocational technical education (for example, apprenticeships, internships, cooperative education, and arrangements where theoretical training is offered in the school setting while practical experience is provided in the job setting);
4. The Government should also consider reducing the number of vocational technical education streams from 160 at present to 75 or fewer. The experience in most countries is that vocational/technical education provides the basic skills which are most often non-job-specific. Where job-specific training is desirable, it might be better accomplished in one-year postgraduate programs;
5. Consistent with this recommendation for reducing complexity, consideration should be given to consolidating the different types of vocational/technical schools into fewer, more standardized patterns and to sampling course offerings. At present, vocational/technical education appears to suffer from overspecialization.

6. Job certification and proficiency standards should be established for trade and technical programs. These standards should be set in cooperation with the National Vocational Training Board in the Ministry of Manpower.
7. National standards should be developed for diplomas or certification in various trades and crafts. These standards should include both academic and performance criteria.
8. Locus of responsibility should be clarified between the Ministry of Education and Culture and the Ministry of Manpower for various aspects of vocational/technical training. A higher level of coordination might make possible the sharing of some facilities and staff.

In addition, a number of important research priorities have been identified:

1. The costs for the relatively low completion rates in both technical and vocational schools need to be examined if the internal efficiency of the program is to be improved. Improved completion rates produce immediate dramatic results in per-trainee cost.
2. Currently there is a lack of information on which to judge individual training programs, school by school, to determine adequacy of staff, facilities, and equipment. This information is needed to determine whether or not actual training environments meet government standards. The standard itself is sometimes unclear, making it difficult to plan effective

upgrading programs and establish priorities for budgeting resources.

3. Substantial attention also needs to be directed to increased data collection and analysis. Three goals should be considered in this regard: generating and using data to improve standards and accountability improving feedback on the effectiveness of programs and courses to make them more relevant to employers' needs and providing policy makers with more accurate information on which to base decisions.

#### 1.7.4 Teacher Education And Training

Teacher training programs have experienced remarkable success since Indonesia became an independent since. This success has been in the ability of the system to respond to emergency needs and to adapt programs to new priorities as they emerge. This same ability is in evidence today. As universal compulsory education programs expanded over the last two decades, the critical need for primary teachers has generally been met (on a national scale) and exceeded. The 261 public and 457 private teacher training institutes throughout the country (1984/85) enroll roughly 275,000 students and graduate approximately 62,000 teachers each year. Nationally there is an oversupply of primary school teachers; this oversupply is projected through the end of Repelita IV and beyond. A clear opportunity exists in this area for improvements in efficiency, and already the Directorate General of Primary and Secondary Education has begun to explore ways in which resources can be shifted to new areas of need.

In spite of this national oversupply of primary teachers, a serious

need still exists in the placement and retention of teachers in remote areas. To resolve this problem, a mix of upgrading courses and incentive packages is likely required rather than expansion of capacity. For the junior and senior secondary level, on the other hand, significant quantity and quality improvements are necessary if teacher training systems are to keep pace with the needs in this subsector.

Teacher training for the secondary level takes place at 12 institutes of teacher training and pedagogy or IKIPs (10 public and two private) and 28 teacher training faculties in universities, or FKIPs (20 public and eight private). There are two diploma programs designed to prepare teachers at the secondary level. The Diploma 2 program for junior secondary teachers and Diploma 3 programs for senior secondary teachers graduate nearly 13,000 teachers a year, but the projected need for 1986/87, for example, is almost four times this number. The shortages are especially severe in the basic specializations of mathematics, science, language (Indonesian and English), and social studies.

The need is not only for improvements in output; quality of teacher training programs must be addressed at all levels. Teacher training is seldom the first choice of graduates from junior and senior secondary school. Teacher training programs are seen as terminal, and qualified candidates tend to move instead into general academic streams where later job opportunities are better. A variety of inservice training programs have been implemented as well as efforts to improve the preservice training curriculum and make it more relevant and practical. These efforts should continue, but they need to be supported by more

careful evaluation and research into which activities are successful and under what conditions.

The training of teachers for vocational/technical education suffers from a lack of instructional staff who have practical experience in the skills they are teaching, and for the facilities necessary for trainees to obtain real hands-on experience in their skill area.

At the tertiary level, over 80% of the faculty in the IKIPs and FKIPs have less than a master's degree (Pasca Sarjana or S2). Degree training programs are, thus, a primary need at this level. Training that emphasizes specialization rather than more general training in pedagogy or methodology are the areas of greatest need.

Teacher training programs in IKIPs and FKIPs are administered by the Directorate General of Higher Education rather than the Directorate General of Primary and Secondary Education which has administrative authority over the secondary schools and teacher training for the primary level. Although this dualistic structure may have quality control benefits, it creates difficulties in establishing the type of dialogue and joint planning required to ensure relevancy and continuity in programs. Administrative improvement to coordinate strategies, enhance planning, and identify potential areas for efficiency improvement should be explored.

The policy options presented within the teacher education subsector revolve around two themes: (1) improving the quality of teacher training at all levels, and (2) increasing the number of trained teachers at the secondary and tertiary levels. Each of these options should be judged on the basis of information as to their cost

effectiveness. This is impossible without continuously available evaluative information on program implementation costs and overall program impacts. An underlying principle, therefore, in each of the policy options considered is the inclusion of a strong evaluative component, both formative and summative.

Following are several policy options to be considered in improving the quality of teacher training:

1. Developing competency-based teacher examinations for each level of teacher training.
2. Reducing the complexity of teacher education programs. This option may prove highly cost efficient if implemented properly.
3. Consolidating all levels of teacher education under the same authority.
4. Consolidating the primary education teacher training curriculum and limiting the proportion of pedagogical training for all teacher training, particularly at the secondary level.
5. Adopting research guidelines for experimentation in teacher education.

Also developed were policy options for increasing the supply of teachers:

1. Providing resource support for the private teacher education sector and transferring SPG resources to training of teachers for the secondary level.
2. Developing special AKTA programs at levels I, II and III.

### 1.7.5 Higher Education

Indonesian higher education, since its founding in 1949, has mushroomed from two to 45 public institutions and 533 private institutions. The student enrollment has soared from 10,000 in 1950 to more than 800,000 in both public and private institutions in 1985. Slightly more than half the enrollment is in the private sector. The pressure for admission is mounting at an average of 12% per year. By 1990, it is expected that 1,200,000 students will be enrolled in higher education. The number of teaching faculty in the public sector is 24,000 and is expected to double by 1990 to keep pace with enrollment growth.

The higher education system is managed by the Director General of Higher Education and his staff in the MOEC in Jakarta; they control both public and private institutions, consistent with MOEC policy to deal with public and private higher education as a single enterprise.

Higher education in Indonesia is increasingly oriented to human resource development needs. Ten of the 45 public institutions are IKIPs, or teacher education colleges, and within 20 universities there are colleges of teacher education to train secondary school teachers. Recently, MOEC created polytechnic schools within 17 universities to prepare middle and upper level manpower. This number should double by 1990. There are also technical institutes offering advanced degrees in science, technology and engineering.

The routine budget for public higher education is approximately \$466,190,700 per year, with an annual cost per student of \$330. In addition, the Director General of Higher Education during the past five

years has managed a portfolio of some \$600,000,000 in external funds, mostly from loans, for development purposes such as constructing and equipping new universities and polytechnics, as well as for training the teaching staff for these schools.

In a tertiary system of this size and with its accelerated growth rate, there are still many problems and needs, despite the considerable efforts expended to improve higher education in recent years. The Directorate General of Higher Education has identified a number of problem areas, particularly in quantity, quality, internal external efficiency relevance. In order to help meet enrollment pressures, the Directorate General has established an Open University. The Directorate General has also embarked on an in-country and overseas training program to improve faculty quality. It has focused program improvement efforts on math, science, and technology, and has established new schools to meet needs in agriculture and industry. It has initiated a tracer study to determine what happens in the job market to students who graduate. It has instituted a student credit system to help improve internal efficiency. Despite these efforts at improvement, there are still many unmet needs.

The analysis of this subsector leads to the conclusion that major problems in higher education are: (1) the need to continue controlling enrollment pressures, (2) the need to maintain and control finances and the cost of higher education, (3) the need to boost internal efficiency, and (4) the need to administer the growth of the system, especially the growth of polytechnic education.

Government plans in higher education are expressed at three levels:

at the national level through the Repelita, at the administrative and functional level through the Directorate General's 10-year plan for higher education, and at the institutional level for each university, institute, or IKIP. The current national plan, Repelita IV, will end in 1988/89. The higher education plan for 1985 to 1995 is now underway. Each university develops its own master plans for staff development, curriculum, and facilities improvement within the general plans for higher education and the Repelita.

In the draft of the 10-year plan for higher education developed by the Director General of Higher Education in October 1985, the following policy issues were identified to guide the planning: quantity, quality, productivity, relevance, equity, future outlook, and system dynamics. Quantity means addressing enrollment growth. Quality means a concern for improvement in teaching/learning. Productivity means gaining greater efficiency in the system. Relevance means achieving external efficiency and greater practicality in programs. Equity means evening out educational opportunity, particularly in regions outside Java. Future outlook means anticipating problems and opportunities that are not now apparent. System dynamics means being responsive and flexible toward change.

In addition to the foregoing, planning continues for the expansion of the polytechnic system. Under a loan from the Asian Development Bank, the MOEC plans to build six new polytechnics for specialization in agriculture and one polytechnic teacher education training center in agriculture to provide instructional personnel for the six new agricultural schools.

A third phase of the World Bank loan program is planned for the construction of 10 more polytechnics (in addition to the existing 17 ones) in 10 provincial capitals. This phase, planned for 1987, is presently (October 1985) on hold. Under World Bank Loan XIX in the amount of \$93,000,000, plans have been made to train abroad staffs for six major research centers in Science and Technology.

The four most important constraints in Indonesian higher education are (1) the limits to absorptive capacity of the higher education system, (2) the financial limits in meeting simultaneously both growth and upgrading, (3) the low educational levels of instructional personnel, and (4) the existing managerial system and skill levels of administrators.

With a population growth rate of 2.3 and a primary and secondary education system that are absorbing and graduating more young people, the universities are under pressure to meet the enrollment demand. However, the higher education system is approaching the limits of its absorptive capacity unless drastic and/or innovative measures are taken.

The budget resources allocated to higher education have not kept pace with enrollments. World recession and oil glut have affected Indonesia and cut back on anticipated national earnings, resulting in more austerity in the budget at a particularly crucial time for higher education.

A third constraint lies in the inadequate preparation of instructional personnel with only about 15% holding postgraduate degrees. This constraint is especially serious in higher education as knowledge and advanced learning, for which there are no substitutes, are

essential components of instruction at this level.

The structure and functioning of the management system is another constraint because of the size of the system, its accelerated growth, and the emergence of new functions and emphasis, such as polytechnic education, that have not yet been addressed from an overall management point of view.

The policy options for the higher education subsector may be summarized as follows:

1. To begin to slow the expansion of higher education and concentrate resources on improving the quality of instruction and research. To help ease the enrollment pressure by continuing to expand and improve the Open University;
2. To consider introducing cost recovery policies involving greater use of student loans and greater contribution through tuition by more affluent parents;
3. To improve administration of the rapid expansion of polytechnic institutes by creating a new Sub-Directorate of Polytechnical Education within the Directorate General of Higher Education;
4. To design specific interventions to attack internal inefficiency problems;
5. To consider low cost innovations for reducing regional inequalities;
6. To continue to work toward the integrated system (pola tinggi) of public and private higher education.

In addition to these policy options, several research options were identified.

1. To continue and refine the baseline studies research program as part of the long-range endeavor to gather trend data on specific critical areas, such as access and equity, internal efficiency, program quality, and others;
2. To study the budget process in higher education. At present the budget allocation process within higher education and between higher education and other EHR sub-sectors is not clearly understood. Of great importance here is the issue of SIAP, or surplus, in the development budget.

#### 1.7.6 Nonformal Education

In Indonesia, the commitment to nonformal education, as expressed in the growth of participation, allocation of resources, and development of program capacity, has been longstanding and significant. The Directorate General of Nonformal Education, Youth, and Sports (Dikmas) is the largest and arguably the most effective large-scale national nonformal education program in the world. The rapid growth in capacity and staff over the past six years has been phenomenal.

The nonformal education subsector is characterized by the size and diversity of the clientele it serves and the varied settings in which it operates. Over two million people from all of Indonesia's 27 provinces are currently enrolled in the Government's major program of nonformal education. The largest proportion of these take part in community learning groups organized for purposes of improving literacy and income.

In Indonesia, nonformal education is defined in the Broad Outline of State Policy as any learning activity undertaken outside the structure of the school system that is designed in a deliberate and

orderly manner, aimed at actualizing human potential in terms of attitude, action, and achievement, and leading toward the development of the complete personality of the individual and the improvement in community standard of living and quality of life. Nonformal education includes basic education (including literacy), as well as short-term vocational and business-related skills training, taking place outside of school and aimed at immediate employment, self-employment, or improvement of income. Under Repelita IV, the Government's primary goals in this subsector are to expand access to basic education and income-generating training for those who have not attended school or who have dropped out prior to completing secondary school. Priority attention is to be given to providing basic education to illiterates aged 7 to 44, and to providing income-generating skills training for school dropouts aged 13 to 29. The Government's goal is to reach 17 million people, including 12.3 million illiterates, and 4.7 million school dropouts.

The Government's strategy for expanding access to nonformal education includes the production and distribution of 89 million booklets for basic education and a variety of supplemental materials, Repelita IV also mentioned making greater use of mass communication, especially radio, for nonformal education. Accomplishment of the government's strategy for expanded access to nonformal education is being assisted by the World Bank through the Second Nonformal Education Project. Emphasis will be placed on improving Dikmas planning and programming capabilities, increasing staff and facilities at provincial, kabupaten, and kecamatan levels, improving the technical support

capabilities of Dikmas there, and extending the outreach of Dikmas programs.

A review of the current status of nonformal education in Indonesia points to a number of principal needs in the subsector:

- o Effective ways must be found to respond to pressure for increased access to employment-oriented skills training.
- o As training possibilities expand in the private sector, equitable participation must be ensured for those who cannot now afford these opportunities;
- o With the rapid expansion of Kejar Paket A learning groups, increased attention must be given to the quality of learning that takes place in these groups.

There are three major constraints to the Government in its attempt to eradicate illiteracy and extend opportunities through basic education and income generation-skills training for those who dropped out of school:

- o The low level of motivation of illiterates to join basic education learning groups and sustain a commitment to learning activities until literacy and other skills are acquired to a level of functional utility;
- o The large number of persons still not able to speak Bahasa Indonesia and the difficulties this presents in following a standardized national curriculum;
- o The continued willingness of qualified persons to serve without pay as tutors and monitors for learning groups as economic development extends the cash economy in Indonesia.

The analysis of nonformal education for this sector review reveals the following:

During Repelita V the number of illiterates who have not been served in Kejar Paket A learning groups will decline dramatically. This will permit a refocusing of the Kejar Paket A program and will make possible a shift in resources for employment-oriented skills training for the 13 to 29 aged group. The analysis also indicated that better information is needed with respect to the external efficiency of existing skills-training programs. It is not yet known what capacity the informal sector has to provide employment and improve income for larger numbers of persons with similar skills.

Although the information needs to be improved with respect to what learning groups actually accomplish, the analysis indicated a need for more attention to the quality of learning that takes place in Kejar Paket A groups. As in the formal system, qualitative inefficiencies are reflected in the low attainment of participants, poor preparation and effectiveness of instructors, inadequate or inappropriate methods of instruction, and unavailability of ineffectiveness of learning materials. Quantitative inefficiencies are found in high drop-out rates and excessively high or low participant-to-instructor ratios.

The analysis of this subsector also showed that private nonformal education may offer a promising avenue for future development. Clear policy and good management will be required to ensure that public interest is being served in the assistance given to private organizations. Furthermore, steps must be taken to ensure the equitable participation of those unable to pay fees. Finally, although noting the

substantial progress of nonformal education on a national scale, the analysis found the need for better mechanisms for administering nonformal education at the local level.

The major policy options for the nonformal education subsector are the following:

1. To develop clear and realistic policies for the expansion of employment-oriented and income-generating skills training;
2. To give major consideration to policy revision concerning the emphasis of Dikmas programs. This emphasis should reflect the changing composition of the target population, and allow a shift in resources in the direction of employment-oriented training for the 13 to 29 aged group;
3. To improve the quality of instruction in the Kejar Paket A program. Also, in anticipation of the reorganization of basic education under one Directorate General, the policy regarding equivalency of primary school and nonformal education should be clarified.

The nonformal education subsector review identified the following research priorities:

1. In conjunction with the Second Nonformal Education Project, tracer studies should be undertaken immediately to examine the consequences of nonformal education participation for not only the Kejar Usaha participants but those from the Diklusemas courses as well;
2. Nationally used instruments should be developed to assess literacy abilities of participants before and after completing

Paket A, and to measure skill acquisition of participants in employment-oriented training to occur during the Second Nonformal Education Project.

3. A study of successful learning groups should be done to determine the characteristics of participants and tutors, the characteristics of the instruction offered, the frequency with which the groups meet, the length of time they stay in existence, the relationship of literacy training to income-generation activities, and the kind of supervision groups received. Results of these studies should be used to improve program planning.

## 1.8 Priority Recommendations of the Sector Review

### 1.8.1 Introduction

In the final section of this chapter, an effort has been made to prioritize the major recommendations arising from the 10 subsector chapters of the Sector Review. The recommendations identified below are categorized into five overarching themes which have emerged from the analysis of each subsector chapter and cut across specific subsector concerns. The priority recommendations within each theme were specified from criteria intended to reflect the needs of MOEC and the Sector Review methodology of the IEEs Project.

The criteria used in prioritizing the recommendations are a product of discussions with out Indonesian counterparts, feedback from the Indonesian Steering Committee, and extensive discussions among IEES Sector Review Team members. These criteria are in the form of questions

which were asked about each recommendation: (1) Is it cost-effective while still achieving the goal of equity? (2) Is it feasible given current political and fiscal realities? (3) Is it timely within the context of the Indonesian planning cycle and does it seem particularly likely to capture the attention and imagination of Indonesian policy makers at the moment? (4) Does it help to fulfill Repelita IV targets?

These recommendations approximate, but do not precisely duplicate, the five thematic topics around which the Sector Review has been organized. The format results from our attempts to be responsive to issues which our Indonesian counterparts have consistently identified as crucially important, and also to reflect the emergence of several major issues which reach across all the subsectors. Specifically, these issues are (1) efficiency, (2) quality of education, (3) access and equity, (4) information and policy analysis, and (5) coordination of public and private education. Quality of education, although it may seem redundant with internal efficiency, is of special concern to Indonesian policy makers. Here we have presented those quality-related recommendations which are not purely cost issues. The fourth topic, information and policy analysis, reflects one of the major charges to the Sector Review Team and has required that a special Chapter be added. Here again the recommendations will affect, directly or indirectly, all the other subsectors. Finally, coordination of public and private education emerged as a persistent issue among Indonesian policy makers and was an underlying theme throughout the recommendations of the various operational subsectors. The efficiency and access and equity categories are self-explanatory.

### 1.8.2 Recommendations for Improving Educational Efficiency

1. Given the fact of slow industrial expansion, and low and falling labor absorption rates, fewer tax breaks should be provided for private businesses that encourage capital-intensive production, to be replaced by grants and investment tax credits to businesses for human capital formation and employment of junior high and high school graduates trained in specific skills. This action would lower the cost of expansion by the more skill-intensive industries, thereby increasing employment; it would permit reductions in the importation of manufactured goods to serve the large domestic market; it would encourage more human capital intensive production with lower physical capital intensity. This policy could reverse the worrisome decline in labor absorption rates. (See Recommendation 1, Chapter Two.)
2. There are opportunities to provide for the necessary expansion of higher education and improve in its quality without interfering with enrollment and without reducing equity. To accomplish this, more resource recovery should be implemented by use of higher tuition and fees to replace education budget cuts, continuing until students and their families are paying about one-third of the institutional costs and a still higher percentage of room and board costs. This recommendation would require, and therefore we also recommend, a much-expanded financial need analysis system which clearly could be adapted

to the different conditions in Indonesia. (See Recommendation 12, Chapter Two.)

3. In the last years of Repelita IV and in Repelita V, a higher priority should be set on the expansion of enrollments in general secondary education (SMP and SMA Programs.) In the short-term, as budget cuts are necessary, the least damage to efficiency would be sustained by slowing the rate of expansion of vocational/technical secondary schools. High quality general (academic) secondary education is not just a preparation for higher education, but is also useful as a preparation for the workplace. If workers possess basic skills learned in general secondary education, studies have shown that they are more "trainable" than graduates of vocational/technical programs and more capable of adapting skills needed on the job. Rate of return studies also show that the social rate of return to SMA graduates is higher than for STM graduates, largely because cost and internal inefficiency are higher in the STMs. (See Recommendation 4, Chapter Two.)
4. The needless overcomplexity of many aspects of the educational system is a major source of inefficiency. One specific area which could benefit from judicious simplification is the lower and junior secondary school curriculum. Therefore, a consolidation of both the junior and senior secondary school curricula should be carried out so that fewer subjects are studied during the semester. This should lead to higher levels of productivity for both teachers and students. Curricula

should be blocked--taught in more standardized units which can be used in a variety of programs and specializations.

Moreover, if curriculum consolidation is coupled with Year I and II examinations, examination complexities of the EBTANAS can also be reduced.

The teacher training curriculum (SPG) is also overly complex and fragmented and can easily be consolidated without changing the overall curriculum balance or the required competency of the staff. In fact, there is great potential for improving performance with limited resources if complexity is reduced. For example, training programs already relatively short and less than ideal are likely to achieve a better result if teacher preparation is focused at the secondary level on only one subject area, such as science, with no requirement for a teaching minor. Minimum competence in other subject areas which must be taught on an emergency basis will come from the current requirements in general education. There is a multiplier effect: when teachers become more competent, less instruction can produce a higher level of student achievement which will allow students to learn more effectively. Hence the system achieves a higher level of efficiency for the time and resources invested as both teacher and students become more competent. (See Recommendation 2 and 17, Chapter Six, and Recommendation 5, Chapter Eight).

5. In order to improve the external efficiency of vocational/technical education effective linkages should be established

between training programs and employment needs. The business and industrial community must to be brought into greater contact with the schools. In line with this, a policy should be pursued of systematic involvement of business and industry in advisory councils for individual crafts and trades. Care needs to be taken, however, not to create an overly complex network of committees and councils at the national and provincial levels. At the local level a general advisory council for the entire school, comprised of local people in the various trades, would help assess what is being taught and its relevance to the local job requirements. The council could also assist in the placement of graduates. (See Chapter Seven.)

6. Mastery learning systems and other mass-oriented programs, such as those practiced at the interuniversity centers and the Open University should be adopted as a means of improving cost efficiency in higher education. This would require the allocation of special development funds to the Open University and to the interuniversity centers for the design and development of self-instructional, mastery learning types of materials suitable for reaching large numbers of students at the undergraduate level. Utilization of mastery learning instructional materials would permit much higher teacher-student ratios with no loss in instructional productivity, thus representing a valuable cost reduction feature for undergraduate education. (See Recommendation 2, Chapter Nine.)

7. In order to improve the external efficiency of Indonesia's nonformal education effort, clear and realistic policies should be developed for the expansion of employment oriented and income generating skills training. The role which nonformal education is expected to play in income generation cannot be adequately defined without better information on improvements in the employment and income of the nonformal education clientele which have resulted from this training. The tracer studies foreseen under the Second Nonformal Education Project should be implemented as soon as possible. (See Recommendation 1, Chapter Ten.)

#### 1.8.3 Recommendations for Improving the Quality of Education

From the analysis of costs and internal efficiency and from a comparison of the social and private rates of return, the following recommendations are made regarding both the improvement of quality and the expansion of primary, secondary, and higher education:

1. The greatest expansion of public funds should go to improving the quality of primary education and to expanding secondary education, especially junior secondary. The SPP fees should be dropped as soon as possible, at least in Repelita V, and especially in the rural areas. Since the growth payoff is highest in secondary education, the goals of achieving faster growth as well as an equitable distribution are both served. This policy is calculated to serve both efficiency and equity simultaneously as well as to expand the broad base of educated

workers that the growth of industry requires. (See Recommendation 3, Chapter Two.)

2. To increase the extent to which higher education relates to local economic development needs, especially in agriculture, a new emphasis should be made on the very successful "land grant model". This recommendation is consistent with the stress throughout this Sector Review for education to focus more on the relevance of education, and research and development outputs to address the needs of "humane" economic development. (See Recommendation 7, Chapter Two.)
3. A first priority in improving quality of education is to define specific criteria for judging attainment of quality. One of the reasons that Indonesia has been so successful in its progress toward attaining universal compulsory primary education is that realistic and clearly defined policy objectives were established. Such objectives for educational quality, including specific targets and benchmarks for judging its attainment, should be provided for Repelita V. The targets should be specific, realistic, and broadly subscribed to by both the public and the policy makers. Consensus on the values of the objectives and commitment to their attainment are critical. (See Recommendation 1, Chapter Five.)
4. From a management perspective, a broad strategy for improving the quality of education should be implemented which would encompass elements of leadership, organization, work systems, incentives, and resource allocations. These elements should be

focused on national quality objectives and be integrated and supported centrally by the top management of the MOEC. The focus of the quality improvement recommendations, however, is to maximize initiative and innovation at the operating levels and the levels providing immediate administrative support to the schools. Strategies to improve quality include development programs and projects, but should emphasize the work which individuals and units do routinely, e.g., teach classes, provide logistical support, and supervise operations. (See recommendation 2, Chapter Three.)

5. One important vehicle for improving the quality of an educational system is through a national examination system. A high priority should be placed on the refinement and extension of the EBTANAS. No matter what criteria are ultimately chosen to judge success in providing quality education, the EBTANAS will serve as a primary measure of student achievement. Substantial effort has gone into its development. Given the time allotted production of the initial test was a notable achievement. Yet the EBTANAS is still seriously flawed. To be accepted as a true measure of educational quality, the achievement test must be viewed as valid by the educational community, the student and their parents. Thus, the refinement and legitimation of this national examination is critical. (See Recommendation 13 and 17, Chapter Six; and Recommendation 2, Chapter Five.)
6. In order to improve the quality of instruction it is important

not only to design effective interventions, but to follow these interventions with evaluation research. Balitbang Dikbud should give serious consideration to reorganizing its research priorities to provide impact evaluation and feedback for the major interventions implemented by the directorates general. If educational quality is to be improved in a cost-efficient manner, benchmarks must be established, and specific, accurate, and timely information must be provided to policy makers and project manager about the short- and long-term success of these efforts and about their expense in terms of human and fiscal resources. (See Recommendation 4, Chapter Five.)

7. As a means of improving the quality of vocational/technical education, additional support should be provided for alternative forms of vocational/technical education. Given the relatively high cost and low rate of return to formal vocational/technical education, out-of-school alternatives should be explored. Examples are apprenticeships, internships, and cooperative education arrangements where theoretical training is offered in a school setting but practical experience is obtained in real job settings, with or without compensation. Consistent with this, the establishment of job certification and proficiency standards for trade and technical programs is recommended. These standards should be set in cooperation with the National Vocational Training Board in the Ministry of Manpower. (See Chapter Seven.)
8. Inservice/onservice training should be relied upon to improve

the quality of teacher education within the framework of cost efficiency. Teacher schedules might be redesigned to limit instructional duties to five of the six days, thereby allowing systematic opportunities for teachers to be released for one day a month, or one day every two weeks, for inservice training activities. One possible model for such a program is outlined as Appendix 1 of the Teacher Education Chapter. (See Recommendation 6, Chapter Eight.)

9. Given the current emphasis on improving the quality of technical education at the upper level, a new subdirectorate for polytechnic education within the Directorate General of Higher Education should be created as a vehicle for achieving this target. The function of this sub-directorate would be to coordinate and supervise the new and expanding polytechnic system. Particular emphasis should be placed on planning for external efficiency through industry cooperation with polytechnics, with attention to maintaining up-to-date curricula in accordance with the needs of industrialization. (See Recommendation 1, Chapter Nine.)

#### Section 1.8.4 Recommendations for Improving Access and Equity

Since we have tried to ensure that all the recommendations of this sector study are consistent with the GOI's goal of achieving humane growth, suggestions related to access and equity are embedded within the categories of improving the quality and efficiency of the educational system. There are several recommendations, however, that relate specifically to access and equity.

1. The MOEC should revise its policy with respect to the relative emphasis of nonformal education programs to reflect the changing composition of target populations. The successful expansion of access to basic education through Kejar Packet A during Repelita IV means that most of the illiterate population aged 7 to 44 who have not been served and who are likely to be recruited into learning groups will be greatly reduced in the coming decade. This reduction should be reflected in a shift of emphasis in Dikmas programs and in program targets for Repelita V. Kejar Packet A should increasingly address the needs and ability of primary school dropouts. Resources should also shift in the direction of employment oriented training for the 13 to 29 age group and be used to finance the expansion of these opportunities. (See Recommendation 2, Chapter Ten.)
2. The MOEC should clarify the policy for equivalency of primary education through nonformal education. In anticipation of the reorganization of basic education under one Directorate General, there should be a clearly stated policy concerning primary school equivalency through nonformal education. Currently it is not known how many primary school dropouts progress through Kejar Packet A to the point of taking primary school equivalency exams, what difficulties they encounter, how the exam is administered in various districts, whether the exams are comparable, how many students succeed, and how many progress into secondary school. If nonformal education is to serve as an alternative route for upward mobility for lower

income children, this issue needs greater clarity and specification. (See Recommendation 5, Chapter Ten.)

3. Also in the interest of improving access and equity, the special schools programs for handicapped children should be expanded. Repelita IV has a specified target of making special schools available to 30% of the 300,000 handicapped children estimated to be in Indonesia. At present only 7% of this group is enrolled. The Repelita IV target will not be reached without additional support for special school programs. This support must include funding for training teachers, preparing facilities, developing learning materials, gathering data, and supervising at the field level. (See Recommendation 9, Chapter Five.)
4. The Directorate of Teacher Training has placed a priority on developing programs to remedy the problem in assigning teachers to remote areas and keeping them there once they have been assigned. Many teacher training graduates simply do not accept assignments to remote areas opting instead to find non-teaching jobs. The current emphasis of the MOEC on finding a solution to the problem is appropriate, but other innovative approaches need to be explored. Given the current and projected oversupply of primary school teachers nationwide, now may be an appropriate time to experiment with incentives and disincentives that would normally not be implemented in a period of teacher shortage. Any such programs must be accompanied by monitoring and evaluation systems to effectively judge the success of the

program and to provide appropriate information to decision makers in a timely fashion. (See Recommendation 1, Chapter Eight; and Recommendation 12, Chapter Five.)

#### 1.8.5 Recommendations Related to Management Information and Policy Analysis

Recommendations for improving management and policy analysis capabilities are wide ranging, with potential impact which cuts across the entire educational system. These recommendations are drawn, therefore, from nearly all the subsectors of this review.

1. As a means to ensure that the administrative and technical supervision of schools is effected in a unified way, authority to exercise administrative supervision at the sub-district (Kecamatan) level should be delegated from Dinas to the MOEC supervisor (Penilik) on an experimental basis. The supervisor would report to Dinas on administrative matters while continuing to be responsible to and employed by MOEC. This recommendation, in conjunction with the proposed linkage of performance appraisals with pay increases, should expand the capability of the MOEC and Dinas to improve the quality of primary education. (See Recommendation 2, Chapter Three, and Recommendation 13, Chapter Five.)
2. Related to the above, routine budget impact analysis should be introduced into the annual development budgeting process. Each MOEC development project budget request should be accompanied by an estimate of additional routine budget funds which the proposed project would require during the ensuing three to five

years. This recommendation would probably result in a net reduction in both the number and size of development projects approved. However, the projects which were approved would have more adequate financial support on a continuing basis. This action would ultimately increase the effectiveness of MOEC development efforts. (See Recommendation 2, Chapter Three.)

3. To align compensation and advancement rewards with results expected for functional personnel, a promotion policy and career ladder should be established. This would create several levels of functional pay supplements and functional titles for teachers, school supervisors, and headmasters based upon mastery of their work and their performance contributions. The intention of this recommendation is to tie the reward structure for these personnel to the work which they are expected to do routinely, not only on those activities for which honoraria are paid. (See Recommendation 2, Chapter Three.)
4. The MOEC should continue and coordinate efforts to develop administrative and management training which prepares personnel for new responsibilities. Examples of such projects are the second MOEC/IBRD teacher training project, the forthcoming secondary education and management training project, and the regular training programs for personnel at education and training centers and teacher training institutes. Further, these efforts should be supplemented by establishing a policy that all supervisors bear direct responsibility for training new subordinates to perform their jobs, and that all new

personnel receive orientation and skills training.

Supplementary management training should be provided to managers who have recently been promoted. This training should emphasize the application of previously learned concepts and methods to their new managerial responsibilities. (See Recommendation 3, Chapter Three.)

5. As a means of achieving the MOEC's goal of a management information system to support policy analysis and task planning, the multiple information systems currently supporting the MOEC operations should be coordinated, but not yet fully integrated. At this stage in the development of the MOEC's information capacity, attempts to integrate all information functions under one system would probably have adverse effects. However, their individual development should be guided by a common vision of a long-term development strategy and goal. A number of actions to improve the capability of the various information systems are already underway but in different stages of implementation. These efforts should be prioritized, coordinated, and pursued. Just one example is the current reorganization of the Inspectorate General which is being done to improve its management oversight function. They recognize the need for electronic data processing assistance in that function, but lack the expertise to determine and implement the most effective application strategy. Small levels of assistance here may yield high returns, as this office is a major source of personnel and resources for the routine

collection of first-hand data on school processes. (See Recommendation 1, Chapter Four.)

6. The Ministry of Education should use the Education Policy and Planning (EPP) project working group as an information systems coordinating body. This project working group and the associated steering committee is representative of all the major MOEC units with information system activities. The group has been in operation for at least a year and has established an effective working relationship. The goals of the EPP project are consistent with the idea of coordinating system development. This group can specify a timeline for achieving ongoing activities within each action area developed, identify the staff and other necessary supporting resources, and oversee its implementation. There are several specific activities such a coordinating body could pursue that would result in a de facto integration of information systems without the necessity of physical integration and the management burden and limits that would impose. It could, for example, coordinate information system development across dimensions of: (1) data element definition, (2) unique identification of subjects, (3) systems compatibility, and (4) data collection. (See Recommendation 3, Chapter Four.)
7. The output of this Sector Review together with the procedures identified in Chapter Four should be used to determine source, output, and outcome data to support policy analysis in preparation of Repelita V and beyond. The range of data that

are routinely available at this time is not expected to be adequate for the policy analysis need facing the MOEC. The recommendations for research and policy issues identified by the sector assessment provide a starting point for specifying the policy analysis agenda to support preparation for the next Repelita. The EPP project working group should synthesize those reviews and determine from them what data are needed to support effective policy and analysis. Following this, a simple cost-effective research strategy should be determined. Policy analysis is better served by simple, practical designs than by elegant long-term and complex strategies that cannot be completed in a manner consistent with the policy development schedule. (See Recommendation 6, Chapter Four.)

8. In order to improve the coordination and administration of donor assistance, a system should be developed to prioritize external assistance requirements. Such a system will become even more important to the MOEC as GOI budget cutbacks materialize. Identifying the appropriate criteria for prioritization will be a long-term effort of trial and error, but the efforts should begin as soon as possible. Such criteria would likely involve methods of feasibility and impact assessment. A clear understanding of how each activity supports Repelita planning objectives would be essential. Also, information on the capacity of the various units of the MOEC to absorb the external assistance would be crucial. (See Recommendation 1, Chapter Eleven.)

9. Consistent with the above, a study of the organizational capacity of the MOEC and BAPPENAS should be conducted with the objective of streamlining the review and authorization process for external assistance. A view which has been widely expressed is that the procedures followed for approval of external assistance activities are cumbersome and result in unnecessary delays. As part of the Educational Policy Planning (EPP) Project such an organizational review might appropriately take place within the framework of improvement in the management information system in Balitbang Dikbud. Furthermore, revision of the planning targets for Repelita IV, in light of the GOI budget reductions, provides an opportunity for assessment of the external assistance priorities over the next several years. This situation could present an appropriate setting for organizational review to take place. (See Recommendation 3, Chapter Eleven.)
10. Informal, but regular, exchanges in information sharing among donor agencies should be encouraged. Current coordination between donor agencies in the GOI is conducted on a formal basis under the auspices of BAPPENAS, the CCICT, and the IGGI. These organizations may be effective in overseeing the external assistance approval process, but their meetings are infrequent and there is little opportunity for the type of informal information sharing that would be of value to donor agencies in their long-term planning efforts. The GOI must clearly maintain control of authority in decision making over

activities conducted with the help of outside agencies. However, both formal and informal coordination and information sharing could be of great benefit in improving the longevity (likelihood of institutionalization) of development projects and avoiding duplication of effort. (See Recommendation 2, Chapter Eleven.)

#### 1.8.6 Recommendations for Better Coordination of Public and Private Education

1. Efforts should be made to improve the linkages between education and manpower planning as well as between the educational sector and private industry. The education sector needs to be increasingly responsible for its outputs, and relate these to industry's need for graduates by using the data and the analytical capacities that exist. Manpower planning targets are no substitute for collecting and using data on outputs including earnings, costs, and tracer studies of vocational technical school and college graduates. There needs to be a continuing study on how job markets work for each type of graduate. (See Recommendation 8, Chapter Two.)
2. A comparative public/private sector study should be undertaken to examine levels of expenditure and use of resources in both sectors. The IIEP/Balitbang Dikbud study on unit cost shows private schools spend relatively less on teacher salaries than public secondary schools do. Yet relatively little is known about how resources allocated to nonteaching expenditures are used. (See Recommendation 15, Chapter Two.)

3. The public and private sectors in secondary education should be better integrated. Continuing efforts should be made to reduce the distinction between public and private education at the secondary level. Government policy should encourage private schools to use public school facilities in off hours. Sharing of resources, materials, and in some cases expenses, should also be encouraged. We also recommend that the development of an open senior secondary school program be given high priority if the junior high open curriculum program can be institutionalized. The economy of the delivery of such open education programs at the junior and secondary levels are important currently, but in Repelita V and VI when the country moves rapidly toward universal secondary education the cost-efficient delivery systems of mediated instruction will become more important, even vital, in reaching especially the remote population. (See Recommendation 20, Chapter Six.)
5. Efforts toward creating an integrated system of public and private higher education should be intensified. Since the MOEC controls the permission to start and the licensing of private education, this authority could be used to determine the establishment of new institutions or programs within existing institutions, based on a set of national priorities. (See Recommendation 7, Chapter Nine.)
6. Consistent with the goal to achieve greater coordination between public and private education, closer collaboration should be encouraged between the government's educational

system, private voluntary organizations (PVOs), and especially the private foundations (Yayasan) working in Indonesia. In certain priority activities of the MOEC, such as the expansion of vocational/technical education it may be advantageous to establish linkages with the private sector. Private voluntary organizations, and Yayasan with their local networks, established contacts with the private sector, and programmatic flexibility may be important vehicles for linking programs of the MOEC with resources of the private sector. Important innovative approaches to vocational skills training at the village level, for example, might benefit from the assistance of local Yayasan. Additional donor assistance to PVOs and Yayasan might lead to very cost-efficient ways to fulfill MOEC objectives. (See Recommendation 4, Chapter Eleven.)

#### 1.8.7 Priorities for Research

In addition to the policy recommendations, a number of recommendations for future research were suggested within each of the chapters of the Sector Review. In early 1986, Balitbang Dikbud, with the assistance of two consultants from UNESCO conducted an exercise designed to identify and prioritize the critical research questions to be addressed by Balitbang Dikbud over the next several years. The research recommendations of the Sector Review were drawn upon extensively in this work. Rather than duplicate this effort in this summary, we refer the reader to the report of Neville Postlethwaite and Kenneth Ross prepared for Balitbang Dikbud (March, 1986).

ANNEX A  
LIST OF INTERVIEWEES

Chapter Two: Economic and Financial Analysis

Bell, Malcolm, Secretary to the Director  
Hawthorn Institute of Education, Australia  
Boediono, Head Pusinfot, Balitbang Dikbud, MOEC  
Bonner, Ron, USAID/EHR  
Farida, Evy, Staff Pusinfot, Balitbang Dikbud, MOEC  
Gunadi, Thamrin, Head, Planning Division, MOEC, Bandung  
Harunata, Ministry of Home Affairs  
Ibrahim, Vice Principal, SMP 56, Jakarta  
Jogo, Mrs., Language Teacher, SMA VI, Jakarta  
Jumlah, SU Inpres, Ministry of Home Affairs  
Lucy, Staff Dikdasmen, MOEC  
Mannawi, Head, Finance Bureau, MOEC  
Moegiadi, Secretary, Balitbang Dikbud, MOEC  
Morfit, Michael, USAID/EHR, Project Officer  
Nudjeman, Progo, Head, Regional Finance, Ministry of Home Affairs  
Paauw, Douglas, Chief Technical Adviser, Department of Manpower  
Panjaitan, Edison, Staff Pusinfot, Balitbang Dikbud, MOEC  
Pongtuluran, Aris, Head, Bureau Planning, MOEC  
Pramutadi, Director, Student Development & Student Affairs,  
D.G. of Higher Education  
Ridwan, Muliadi, Computer Center, Universitas Indonesia  
Rooskandar, Operation Assistant Education, World Bank, Jakarta  
Rucker, Bob, USAID/Economist  
Setijadi, Rector, Open University  
Siagian, Tunggul, Executive Director PSKD, Christian Schools, Jakarta  
Smyth, John, UNESCO  
Soekisno, Director, Private Higher Education, D.G. of Higher Education  
Soepardi, Staff Puslit, Balitbang Dikbud, MOEC  
Sofiah, Siti, Staff Pusinfot, Balitbang Dikbud, MOEC  
Stavenhuter, Stan, ILO Expert in Employment Planning  
Department of Manpower  
Subardjo, Vice Principal of Students, SMA VI, Jakarta  
Sudarti, Bureau of Statistics  
Supardjo, Anton, Vice Principal, Administration and Equipment  
SMA VI, Jakarta  
Sunardi, Staff Pusinfot, Balitbang Dikbud, MOEC  
Suryabrata, Sumadi, Head, Special Study on Internal Efficiency  
D.G. of Higher Education  
Suwandi, Indro, Computer Center, Universitas Indonesia  
Swasono, Yudo, Manpower Department  
Tampubolon, M.B., Staff, Private Higher Education, D.G. of Higher  
Education  
Tjptosasmito, Waskito, Director, Bureau of Personnel, MOEC  
Validivieso, Cecelia, East Asia Education Project, World Bank/Washington  
Widodo, Martini, Staff Puslit, Balitbang Dikbud, MOEC  
Winardi, Vice Principal, SMA Cendrawasih, Jakarta  
Wiradinata, Rachmat, Head, Provincial Office (Kanwil), Bandung  
Zenick, Manuel, Resident Representative Office, World Bank

### Chapter Three: Management of Education

Adi, Suwoyo, Project Director, Management Training Project (WB XVI),  
MOEC  
Amirrudin, Head of Regional Office (Kanwil), South Sulawesi Province  
Amwiran, Ali, Administrative Coordinator, Kanwil South Sulawesi Province  
Dharma, Agus, Staff Personnel Education and Training Center, MOEC  
Hadisuwarno, Sularto, Head, BAPPEDA South Sulawesi  
Hardja Kusumah, Giwangan, Staff Inspectorate General, MOEC  
Hutahuruk, Director, National Institute of Administration  
Mannawi, Head of Finance Bureau, MOEC  
Moegiadi, Secretary, Balitbang Dikbud, MOEC  
Plenary Meeting with Division Heads of Regional Office  
(Kanwil - South Sulawesi Province)  
Plenary Meeting with Inspectorate General and Unit Heads Inspectorate  
General, MOEC  
Plenary Meeting with 200 School Teachers, Headmasters and Supervisors  
or Kindergarten, Primary and Secondary Schools in Kotamadya  
Ujung Pandang  
Plenary Meeting with 40 Penilik/Supervisors and Heads of Kancam Offices  
in Gowa Regency, South Sulawesi Province  
Rosadi, Otto, Staff Pusinfot, Balitbang Dikbud, MOEC  
Rumondor, Alex, Staff Inspectorate General, MOEC  
Soeharta, Head of Personnel Division, Balitbang Dikbud, MOEC  
Suradjiman, Head of Procurement Bureau, MOEC  
Suarso, H.S., Secretary, Inspector General, Inspectorate General, MOEC  
Tang, Syamsuddin, Head of Organization Bureau, MOEC  
Tjipto Sasmito, Waskito, Head of Personnel Bureau, MOEC  
Tjokroatmodjo, Sukotjo, Inspector General, Inspectorate General,  
MOEC  
Wuryo, Kasmiran, Head of Personnel Education and Training Center, MOEC

### Chapter Four: Policy Analysis and Educational Data Systems

Akbar, Yunus, Head, Planning Division, Nonformal Education Department,  
MOEC  
Bachtiar, Harsya, Head, Balitbang Dikbud, MOEC  
Boediono, Head, Pusinfot, Balitbang Dikbud, MOEC  
Djazuli, Achmad, Dikdasmen, MOEC  
Guyub, Heriyanto, Staff, Planning Division, Dikdasmen, MOEC  
Hardja Kusumah, Giwangan, Staff, Inspectorate General, MOEC  
Hutahuruk, Director, National Institute of Administration  
Moegiadi, Secretary, Balitbang Dikbud, MOEC  
Moelyadi Ety, Head of Puslit, Balitbang Dikbud, MOEC  
Pongtuluran, Aris, Head, Planning Bureau, MOEC  
Rumondor, Alex, Staff Inspectorate General, MOEC  
Syihab, Abdullah, Head, Planning Division, Higher Education, MOEC  
Tjiptosasmito, Waskito, Head, Personnel, MOEC

## Chapter Five: Preprimary and Primary Education

Ali, Achmad, Director Primary Education Division, Dikdasmen, MOEC  
Bachtiar, Harsya, Chairman of Balitbang Dikbud, MOEC  
Boediono, Head, Pusinfot, Balitbang Dikbud, MOEC  
Bonner, Cameron, Education Human Resources Development Officer, USAID  
Calvano, Mike, Consultant Pustikom, Balitbang Dikbud, MOEC  
Djazuli, Achmad, Head, Planning Division, Dikdasmen, MOEC  
Easton, Staff Pusiasjian, Balitbang Dikbud, MOEC  
Ely, Don, Consultant Pustikom, Balitbang Dikbud, MOEC  
Fauzi, KaKandep P & K, Cianjur, MOEC  
Fernandez, Hermano, Consultant, Pusiasjian, Balitbang Dikbud, MOEC  
Guyub, Haryanto, Staff, Dikdasmen, MOEC  
Harahap, Hasrun, KaSeksi Kurikulum, Madrasah Ibtidaiyah, Ministry of Religion  
Hardjakusumah, Giwangan, Kepala Bagian Perencanaan, Inspectorate General, MOEC  
Hawid, Abdul, Staff Kurikulum, Departemen Agama  
Jiyono, Staff, Pusat Penelitian, Balitbang Dikbud, MOEC  
Johara, Kasubdit Taman Kanak-Kanak, Dikdasmen, MOEC  
Marsadji, G.L., KaSeksi P2SD/PPD, Dikdasmen, MOEC  
Masri, Staff Perlengkapan, Balitbang Dikbud, MOEC  
Moegiadi, Sekretaris, Balitbang Dikbud, MOEC  
Morfit, Michael, Education Officer, USAID/EHR  
Mudjiman, Haris, Deputy Director, Puslitbang Jari, UNS, Surakarta  
Mudjito, Staff P2SD/PPD, Dikdasmen, MOEC  
Napitupulu, Washington, Director General, Nonformal Education, Sport and Youth, MOEC  
Rahardjo, Staff Pustikom, Balitbang Dikbud, MOEC  
Ranuwihardjo, Sukadji, Director General, Higher Education, MOEC  
Ridwan, M.Y., KaSubdit, P.U. Wajar, MOEC  
Paimuri, H., Kasubdik Pembinaan Madrasah Ibtidaiyah, Departemen Agama  
Pongtuluran, Aris, Head, Planning Bureau, MOEC  
Sahib, Sutopo, KaSeksi Pegawai, Dikdasmen, MOEC  
Setijadi, Rector, Open University, MOEC  
Simandjuntak, W., Staff, Puslit, Balitbang Dikbud, MOEC  
Soenardi, Staff, Pusinfot, Balitbang Dikbud, MOEC  
Sukarna, Kasi Dikdas, Cianjur, MOEC  
Sutisna, Kepala SD Cimanohayu, MOEC  
Suarso, H.S. Sekretaris, Inspektorate Jendral, MOEC  
Tjokroatmodjo, Sukotjo, Inspektor General, Inspectorate General, MOEC  
Thoyar, Husni, Kasubdik Pembinaan Madrasah Isanawiyah, Dept. Agama  
Tyoyib, I.M., Kasubdik, Pembinaan Madrasah Atiyah, Dept. Agama  
Udaya, Kep. Proyek Buku Terpadu, Dikdasmen, MOEC  
Walino, Hasan, Director General, Primary and Secondary Education, MOEC  
Widodo, Martini, Senior Staff, Puslit, Balitbang Dikbud, MOEC  
Yasin, Anwar, Sekretaris Dikdasmen, MOEC  
Zenick, Manuel, World Bank Representative

## Chapter Six: Secondary Education

Abdullah, Asaiif, boy, Sudaimi Wadi, girl, Class III Students, SMP 2, Sintang  
Abdullah Syihab, Planning Office, Higher Education  
Admajaya, Hadni, Principal, SMP Negeri, Risau Jaya  
Akhmad, Ibrahim, Driver  
Bachtiar, Adib, Teacher and Vice Principal for Student Affairs  
SMA - N 7, Pontianak  
Bachtiar, Harsya, Director Balitbang Dikbud, Research Office of MOEC  
Dali Naga, Director of Research Institute, IKIP Jakarta  
Dewani, Lucy, Meirini, Anthony Rompas, Students, SMA 6, Jakarta  
Djazuli, Achmad, Head Planning Office Dikdasmen  
Gasar, Fendy, District Education Officer, Sintang.  
Guyub, Science Field Studies, Planning office, Dikdasmen, MOEC  
Ibrahim, Vice Principal, SMP 56, Jakarta  
Idris, Nasai, Supervisor, Provincial Office, Pontianak  
Jasin, Anwar, Sekretaris General, Primary and Secondary Education,  
Ministry of Education and Culture  
Kusumijati, SPG 1, Primary Teacher Training School, Jakarta  
Mahmud, Yahya, Data Collection Officer, Planning Office Provincial  
Office, Pontianak  
Mansoer, Vice Principal, SMA N-7, Pontianak  
Masina, Librarian, SMP N-3, Pontianak .  
Moegiadi, Secretary, Balitbang, MOEC  
Mulia, Testi, Principal SMP N-3, Pontianak  
Naibaho, B. Vice Principal, SMA Negeri I, Sintang.  
Nawawi, Hadari, Rector, University of Tanjung Pura  
Noor, Nursinah, Dean Faculty of Education (FKIP), University of  
Tanjung Pura  
Sabrin, Assistant Director for Monitoring and Information, PPPG - K  
(Vocational), Jakarta  
Sani, Abdullah, Principal, SMA Negeri I, Sintang.  
Sayuti, Principal MTSN - 2, Religious Public Lower Secondary School  
Semiawan, Connie, Rector IKIP Jakarta  
Soeprapto, Beny, Director of Secondary Education, MOEC  
Soeprapto, Director of the Examination Center, EBANAS  
Soedarto, Head of the Planning Unit Provincial Education Office,  
Kalimantan Barat in Pontianak  
Soenardi, Statistical Officer, Primary Education, Balitbang, MOEC  
Soenardi, Principal, SMP N-4, Sintang  
Soestrino, Provincial Education Officer, Kalimantan Barat  
Students, SMA Cendrawasih, Jakarta: Diti, Yeni, Monik, Denny, Jamie  
Suartini, Tien, Vice Principal, SMA-SMP Santo Petrus, Pontianak  
Sukardi, T., Principal, SMP Pontia Setia, Sintang.  
Supardjo, Anton, Vice Principal, Administration and Equipment  
SMA 6, Jakarta  
Supratne, Vice Principal, SMP - PGRI  
Susiharto, Sub Director for Programming and Evaluation, PPPG - Bahasa  
(Language), Jakarta  
Suwarno, Endang, Head of Sub Directorate of Teacher Training School  
(SPG) and Teacher Training Schools for Handicapped  
Tamar, Akim, Science Teacher, SMP-3 Pontianak

Tjakradijaya, Lucy, Field Studies  
Udaya, Director of the School Textbook Program sponsored by the  
World Bank.  
Wahwahjawidodo, Marsandi, Head of the Task Force for Experimental  
Schools in the Development School, Project (known as PPSP)  
Wahyan, Section Chief of Division of Religion Education,  
Deputy to Prov. Chief of the Madrasah System.  
Waluyo, Principal, SMP N-2, Sintang  
Winarti, Vice Principal, SMA Cendrawasih (Private), Jakarta  
Yor, Dimotios, Vice Principal, SMP 2, Sintang

### Chapter Seven: Vocational/Technical Education

Bakri, Assistant Director of Vocational/Technical Education  
Bell, Malcolm, Secretary to the Director, Hawthorn Institute of  
Education, Australia  
Dernot, Cranny, International Labor Organization  
Djazal, Abdul, Head Planning Bureau, Dikdasmen, MOEC  
Hadisoebrata, Soemardi, Staff Puslit, Balitbang Dikbud, MOEC  
Hopkins, David, Consultant on Vocational Technical Education, UNESCO  
Karzadi, Benny, Coordinator of Curriculum, Balitbang, MOEC  
McKenzie, G. Iain, International Labor Organization  
Nuh, Aida, Vocational/Technical Education, MOEC  
Situmorang, Benny, Director, Vocational Education Division, Dikdasmen,  
MOEC  
Soemardi, Staff Puslit, Balitbang, MOEC  
Suprpto, Benny, Director General, High Schools Division, Dikdasmen,  
MOEC  
Suwandono Tony, Director of Polytechnic Development, MOEC  
Swasono, Yudo, Staff Manpower Department, Ministry of Manpower  
Zenick, Manuel, Education Officer, World Bank, Jakarta

### Chapter Eight: Teacher Education and Training

Boesono, Vice Rector, University of Gajah Mada, Yogyakarta  
Dali Naga, Director of Research Institute, IKIP Jakarta  
Djazuli, Achmad, Head of Planning Division  
Dikdasmen, MOEC  
Joni, Raka, Project Director, World Bank Education Project XI  
Karwapi, Retired, MOEC  
Lucy, Staff of Planning Division, Dikdasmen, MOEC  
Mansoer, Hamdan, Head, Sub Directorate of Culture and  
and Educational Facilities  
Purnomo Abdulkadir, Head, Sub-Directorate of Instructor and Higher  
Skill Development  
Ramelan, Head, Research Center, IKIP Semarang  
Retmono, Dean of Language Education and Art, IKIP Semarang  
Reverend James Spillane, Faculty IKIP Sanata Dharma, Yogyakarta  
Sarjono H.S., Vice Rector II, IKIP Semarang

Sembing, R., Head, Sub Directorate for Academic Manpower Development  
 Department of Manpower  
 Semiawan, Conny, Rector IKIP Jakarta  
 Setijadi, Rector, Open University  
 Soeharto, Vice Rector I, IKIP Yogyakarta  
 Soeprapto, Benny, Director, General Secondary Education,  
 Dikdasmen, MOEC  
 Subijati, M., Vice Rector II, IKIP Yogyakarta  
 Sudradjat, Harry, Director Vocational Technical Division  
 Department of Manpower  
 Suparno, Anna, Faculty, IKIP Jakarta  
 Suwarno, Endang, Head Sub Directorate of Teacher Training  
 Dikdasmen, MOEC  
 Tjipto Sasmito, Waskito, Head of Personnel, MOEC  
 Umar, Vice Rector I, IKIP Semarang  
 Usodo, Head, Sub-Directorate for Monitoring and Implementation of  
 Teacher and Staff Training, D.G. of Higher Education

#### Chapter Nine: Higher Education

Abdulah Syihab, Director Planning, Directorate General Higher Education,  
 MOEC  
 Bachtiar, Harsya, Chairman Balitbang Dikbud, MOEC  
 Boediono, Head, Center for Information, Balitbang Dikbud, MOEC  
 Bonner, Cameron, Acting Chief, USAID/EHR, Jakarta  
 Foster-Gross, Donald, Head USAID/Training, Jakarta  
 George Waldrum, George, Consultant CIDA, Financial Managemenr  
 Harbison, Ralph, World Bank  
 Hartanto, Director Student Affairs, Higher Education Department, MOEC  
 Hartanto, Djoko, Director of Student Affairs, D>G> of Higher Education,  
 MOEC  
 Indro Suwandi, Indro, Pusat Komputer, Universitas Indonesia  
 Ing. K.T. Sirait, Ing., K.T., Institute Teknologi Bandung  
 Departement Head  
 Moegiadi, Secretary Balitbang Dikbud, MOEC  
 Morfit, Michael, USAID/EHR, Project Officer, Jakarta  
 Muliadi Ridwan, Muliadi, Computer Science Centre, University of  
 Indonesia  
 Noto dihardjo, Hardjono, Senior Researcher, Balitbang Dikbud, MOEC  
 Pramoetadi, Director of Academic Affairs, Directorate General of  
 Higher Education  
 Ranumihardja, Sukadji, Director General of Higher Education  
 Sembing, R., Head Sub Directorate for Academic Manpower Development  
 Directorate General of Higher Education, MOEC  
 Semiawan, Conny, Rector IKIP Jakarta  
 Setijadi, Rector Open University  
 Simanjuntak, Wesley, Staff Puslit, Balitbang Dikbud, MOEC  
 Simbolon, O., World Bank Education IX Project, MOEC  
 Soekisno, Director of Private Higher Education  
 Sunarto, MOEC  
 Suparman, Romli, Staff Puslit, Balitbang Dikbud, MOEC

Suryabrata, Sumadi, Faculty of Psychology, Universitas Gajah Mada  
and Senior Researcher, D.G. Higher Educ.  
Valdivieso, Cecilia, World Bank, Jakarta  
W.A.F.J. Tumbelaka, W.A.F.J., Rector Universitas Indonesia  
Yohara, See, Director of Research and Affair, Directorate General of  
Higher Education, MOEC

#### Chapter Ten: Nonformal Education

Dharma Pertiwi, National Organization of Wives of Army Officers  
Dharma Wanita, National Organization of Wives of Civil Servants  
Iskandar, Anwas, Director, Directorate of Community Education, MOEC  
Jiyono, Staff Puslit, Balitbang Dikbud, MOEC  
Napitupulu, W.P., Director General of Nonformal Education, MOEC  
Sudradjat, Pepep, Staff, Directorate of Community Education, MOEC

#### Chapter Eleven: External Assistance

Bonner, Cameron, Education Human Resources Development Organization,  
USAID  
Bonner, Margaret, Program Officer, USAID, Jakarta  
Fernandez, Hermano, Consultant, Pusat Pengujian, Balitbang Dikbud, MOEC  
Foster-Gross, Donald, Head, Office of Training, USAID, Jakarta  
Fuller, William, Mission Director, USAID, Jakarta  
Harbison, Ralph, Jr., World Bank, Washington  
Kissinger, Tom, Ford Foundation Representative, Jakarta  
Moegiadi, Sekretaris, Balitbang Dikbud, MOEC  
Patten, Anthony, Deputy Resident Representative, UNDP, Jakarta  
Pooley, Robert, Public Voluntarily Organization Officer, USAID, Jakarta  
Wessels, W.G., Counselor for Development Cooperation, Royal Netherlands  
Embassy  
Wesseling, H. C., Education Officer, Royal Netherlands Embassy, Jakarta  
Zenick, Manuel, Education Officer, World Bank, Jakarta

ANNEX B  
TERMS AND ACRONYMS

	<u>ENGLISH</u>	<u>INDONESIAN</u>
ADB	Asian Development Bank	Bank Pembangunan Asia
AKTA I	Tertiary Level Teacher Training Certification: Primary	Program AKTA I
AKTA II	" " Jr. Sec.	Program AKTA II
AKTA III	" " Sr. Sec.	" AKTA III
AKTA IV	" " University	" AKTA IV
AKTA V	" " University	" AKTA V
APBN	Gov.t Expenditure & Revenue Budget	Anggaran Belanja Negara
APDB I & II	Local Gov.'t Budgets	Anggaran Pembangunan Daerah I & II
BAKN	National Personnel Office	Badan Administrasi Kepegawaian Negeri
Balitbang Dikbud	Office of Education and Culture Research and Development	Badan Penelitian dan Pengembangan Pendidikan & Kebudayaan
Bappeda	Regional Planning Office	Badan Perencanaan Pembangunan Daerah
Bappenas	National Development Planning Board	Badan Perencanaan Pembangunan Nasional
Biro Perencanaan	Bureau of Planning	Biro Perencanaan
PLKI	Vocational Training Center	Pusat Latihan Kejuruan Indonesia
BP3	Parent Teacher Assoc. Fee	Beaya Pungutan Persatuan Orang Tua dan Guru
BPM	Regional Training and Material Center	Badan Pembangunan Masyarakat

BPG	Teacher Education Center	Badan Pendidikan Guru
BPKB	National Training and Activity Center	Badan Pusat Kegiatan Belajar
BPS	Office of Statistics	Biro Pusat Statistik
Bupati	Head of District	Kepala Kabupaten
BUTSI	Indonesian Volunteer Service Corporation	Badan Tenaga Sukarela Indonesia
Camat	Head of Sub-District	Kepala Kecamatan
Dalam Negeri	Ministry of Home Affairs	Departemen Dalam Negeri
Dati I and II	Local Gov.'t levels	Daerah Tingkat I & II
DepKeu	Ministry of Finance	Departemen Keuangan
Dept. Agama	Ministry of Religion	Departemen Agama
DGB	Directorate General of the Budget	Direktorat General Anggaran
Dharma Pertiwi	National Org. of Wives of Army Officers	Persatuan Istri ABRI
Dharma Wanita	National Org. of Wives of Civil Servants	Persatuan Istri Pegawai Negeri
DIK	Budget Document	Daftar Isian Kegiatan
Dikdas	Direktorate of Primary Educ.	Kantor Pendidikan Dasar
Dinas	Regional Office	Dinas
DIP	Project Document	Daftar Isian Proyek
Ditjen PDM (Dikdasmen)	Dir. Gen. of Primary & Secondary Educ.	Direktorat Jendral Pendidikan Dasar & Menengah
Ditjen PT (Dikti)	Dir. Gen. of Higher Education	Dir. Jendral Pendidikan Tinggi

Ditjen PLSPO	Dir. Gen. of Out-of-School Education Youth & Sport	Dir. Jen. Pendidikan Luar Sekolah, Pemuda, dan Olah Raga
Ditjen Kebudayaan	Dir. Gen. of Culture	Dir. Jen. Kebudayaan
Dosen	Lecturer	Pengajar
DUP	Project Proposal Document	Daftar Usulan Proyek
D1	Teacher training Certificate: Primary	Program Diploma 1
D2	" " Jun. Sec.	" " 2
D3	" " Sen. Sec.	" " 3
EBTANAS	Primary School Finishing Examination	Evaluasi Belajar Tingkat Nasional
FKIP	Faculty of Education in University	Fakultas Keguruan Ilmu Pendidikan
GBHN	Guidelines for State Policy	Garis-Garis Besar Haluan Negara
GDP	Gross Domestic Product	Pendapatan Dalam Negeri
GOI	Government of Indonesia	Pemerintah Indonesia
IAIN	State Institute of Islamic Religions	Institut Agama Islam Negeri
IBM	International Business Machines	International Business Machines
IBRD	International Bank for Reconstruction and Development	Bank International Pembangunan & Rekonstruksi
IGGI	Inter-Governmental Group on Indonesia	Group Antar Negara untuk Indonesia
IIEP	International Institute for Education Planning	International Inst.' for Educ. Planning
IKIP's	Teacher Training Colleges	Institut Keguruan Ilmu Pendidikan

Inpres SD	Primary School built under Presidential Decree Funds	Sekolah Dasar Inpres
Inspector Jendral	Inspectorate General	Inspektur Jendral
IPA	Science	Ilmu Pengetahuan Alam
IPB	Institute of Agriculture at Bogor	Institut Pertanian Bogor
IPS	Social Studies	Ilmu Pengetahuan Sosial
ITB	Institute of Technology at Bandung	Institut Teknologi Bandung
Kandam	MOEC Sub-District Office	Kantor Kecamatan P & K
Kandep	MOEC District Office	Kantor Departemen P & K
Kanwil	MOEC Provincial Office	Kantor Perwakilan P & K
Kas Negara	MOF Regional Office	Kas Negara
Kasi Dikmas	Head of Community Education Section	Kepala Seksi Pendidikan Masyarakat
Kasi SD	Head of Prim. School Section	Kepala Seksi SD
KBKM	Vocational Skills Training	Kursus Belajar Kejuruan Masyarakat
Kejar Paket A	Basic Education	Kelompok Belajar Paket A
Kejar PD	Community Education Out-of-School Learning Group	Kelompok Belajar Pendidikan Dasar
Kejar Usaha	Income Generating Learning Group	Kelompok Belajar Usaha
Kewajiban Belajar	Universal Compulsary	Kewajiban Belajar

Primary Education

KKG	Teacher Work Group	Kelompok Kerja Guru
LKMD	Village Development Program	Lembaga Ketahanan Masyarakat Desa
KPUA, B, C	Pre-Primary Teacher Training	Kursus Pendidikan Umum A, B, C
LIPI	Research Foundation of Indonesia	Lembaga Ilmu Pengetahuan Indonesia
LNG	Liquified Natural Gas	Gas Cair Natural
Madrasah Ibtidaiyah	Islamic School (Primary)	Madrasah (Tingkat SD)
MenPan	Ministry of Administrator Reform	Menteri Aparatur Negara
MOEC	Ministry of Education and Culture	Departemen Pendidikan dan Kebudayaan
NFE	Nonformal Education	Pendidikan Luar Sekolah
NTCC	National Technical Coordinating Committee	Koordinator Bantuan Tehnis Luar Negeri
ODA	Overseas Development Assistance	Lembaga Bantuan Luar Negeri
Patjar	SD PAMONG Out-of School site	Tempat Belajar
Pancasila	State Ideology	Pancasila
PEDC	Polytechnic Education Development Center	Pusat Pengembangan Pendidikan Politeknik
Pengawas	Supervisor	Pengawas
PENMAS/Dikmas	Community Education	Pendidikan Masyarakat
Penilik	Education Supervisor in Kancam	Penilik Tingkat Kancam
Penilik TK/SD	Supervisory for Pre-Primary and Primary	Penilik TK/SD
PGA	Religious Teacher Training	Pendidikan Guru Agama

Pimpro	Development Project Leader	Pimpinan Project
Pusinfot	Office of Information (Balitbang)	Pusat Informatik
Puslit	Office of Research (Balitbang)	Pusat Penelitian
Pusisjian	Office of Testing (Balitbang)	Pusat Pengujian
Puskur	Office of Curriculum (Balitbang)	Pusat Kurikulum
PTPG	Higher Education Institute for Teacher Training	Perguruan Tinggi Pendidikan Guru
P3D	Primary School Development Project	Proyek Pengembangan Pendidikan Dasar
P3GTK	Technical Teacher Training Unit Center	Pusat Pengembangan Pendidikan Guru Taman Kanak2
PKK	Family Life Education Program	Pendidikan Kesejahteraan Keluarga
PKG	In-Service/On Service Teacher Training Program	Pusat Kegiatan Guru
PKG	Teacher Activity Office	Pusat Kegiatan Guru
PMP	Civics	Pendidikan Moral Pancasila
Pola Tinggi	Integrated Public /Private Higher Education	Pendidikan Tinggi Terpadu
PPPG	Teacher Education Development Office	Pembinaan & Pengembangan Pendidikan Guru
PPSP	Development School Project	Sekolah Pembangunan

Pramuka	Scouts	Pramuka
Proyek Buku Terpadu	Integrated Textbook Project	Proyek Buku Terpadu
PSPB	Indonesian Political History	Pendidikan Sejarah Pengembangan Bangsa
PU Wajar	Office of Universal Compulsary Educ.	Pendidikan Umum Wajib Belajar
RADIN	Meeting of Provincial Officials for Budgeting	Rapat Dinas
RAKERNAS	National Working Meeting of Budget	Rapat Kerja Nasional
RARAS	MOEC Echelon I Officials Meeting	Rapat Teras
REPELITA	Five Year Plan	Rencana Pembangunan Lima Tahun
Raudhatul Athfal	Pre-primary Religious (Moslem)	Taman Kanak Kanak Islam
Sakernas	National Labor Force Survey	Survey Tenaga Kerja Nasional
Sanggar	World Bank In Service On Service Teacher Training Center	Sanggar
SBPP	Government Subsidy to Primary School	Subsidi Bantuan Pemerintah untuk Pendidikan
SDLB	Integrated Schools for Handicapped	Sekolah Dasar Luar Biasa
SD-Negeri	Public Primary School	Sekolah Dasar Negeri
SD PAMONG	Primary Education by Parents Teachers, and Community	Pendidikan Dasar oleh oleh Masyarakat, Orangtua dan Guru
SD-Swasta	Private Primary Schools	Sekolah Dasar Swasta
Sekjen	Secretariate General	Sekretaris Jendra

Sekneg	National Secretariat	Sekretariat Negara
SGA	Religion Teacher Training Secondary School	Sekolah Guru Agama
SGB	Teacher Training Primary School	Sekolah Guru Bantuan
SGTK	Pre-Prim Teaching Certificate	Sekolah Guru Taman Kanak Kanak
SGO	Sports Teacher Training Secondary School	Sekolah Guru Olah Raga
SIAP	Unexpended funds	Sisa Anggaran Pemerintah
SIPENMARU	University Selection Examination	Sistim Penyaringan Mahasiswa Baru
SKB	District Training & Material Center	Sanggar Kegiatan Belajar
SKKP	Home Economy Junior Secondary School	Sekolah Kejuruan Kepandaian Putri
Skripsi	Undergraduate thesis	Karangan Ilmiah Mahasiswa
SLB	Schools for the Handicapped	Sekolah Luar Biasa
SLB Terbuka	Open Schools for the Handicapped	Sekolah Luar Biasa Terbuka
SMA	General Senior Secondary School	Sekolah Menengah Atas
SMEA	Commercial Senior Secondary School	Sekolah Menengah Ekonomi Atas
SMKK	Home Economy Senior Secondary School	Sekolah Menengah Kesejahteraan Keluarga
SMP	General Junior Secondary School	Sekolah Menengah Pertama

SMP Terbuka	Open Junior Secondary School	SMP Terbuka
SPG	Teacher Training Senior Secondary School	Sekolah Pendidikan Guru
SPGLB	Teacher Training Senior Secondary School for Special Education	Sekolah Pendidikan Guru Luar Biasa
SPP	Gov.'t Subsidy to Secondary School	Sumbangan Pemerintah untuk Pendidikan
ST	Vocational Junior Secondary School	Sekolah Teknik
STM	Technical Senior Secondary School	Sekolah Teknik Menengah
STTB	Primary School Graduation Certificate	Surat Tanda Tamat Belajar
Subdit Monitor	Sub-directorate for Monitor	Sub-direktorat Monitor
S1	Bachelor's Degree	Sarjana Muda
S2	Master Degree	Sarjana Lengkap (Pasca Sarjana)
S3	Doctoral Degree	Program Doktor
SUPAS	Intercensal Population Survey	Survey Penduduk Antar Sensus
SUSENAS	Economic & Social Survey	Survey Ekonomi dan Sosial
TK (Taman Kanak Kanak)	Pre-Schools	Taman Kanak-kanak
TTUC	Technical Teacher Upgrading Center	Pusat Upgrading Guru Teknik
UDKP	Village Development Unit	Unit Kerja Pembangunan Desa
UGM	University of Gajah Mada	Universitas Gajah Mada

U.I.	University of Indonesia	Universitas Indonesia
Ujian Persamaan	Primary School Equivalence Examination	Ujian Persamaan
UNAIR	University Airlangga at Surabaya	Universitas Airlangga
UNDP	U.N. Development Program	U.N. Development Program
Universitas Terbuka	Open University	Universitas Terbuka
UNPAD	University of Pajajaran at Bandung	Universitas Pajajaran Bandung
USAID	U.S. Agency for International Development	U.S. Agency for International Development
WB	World Bank	Bank Dunia
Yayasan	Private Institutes	Yayasan