

Report No. 18651-IND

# Indonesia

## Education in Indonesia

### From Crisis to Recovery

December 9, 1998

Education Sector Unit  
East Asia and Pacific Region



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## CURRENCY EQUIVALENTS

Currency Unit = Rupiah (Rp)

Before November 15, 1978: \$1.00 = Rp 415

### Annual Average 1979-98

1979	\$1.00 = Rp 623
1980	\$1.00 = Rp 627
1981	\$1.00 = Rp 623
1982	\$1.00 = Rp 661
1983	\$1.00 = Rp 909 <sup>1</sup>
1984	\$1.00 = Rp 1,026
1985	\$1.00 = Rp 1,111
1986	\$1.00 = Rp 1,283 <sup>2</sup>
1987	\$1.00 = Rp 1,644
1988	\$1.00 = Rp 1,686
1989	\$1.00 = Rp 1,770
1990	\$1.00 = Rp 1,843
1991	\$1.00 = Rp 1,950
1992	\$1.00 = Rp 2,030
1993	\$1.00 = Rp 2,087
1994	\$1.00 = Rp 2,161
1995	\$1.00 = Rp 2,249
1996	\$1.00 = Rp 2,342
1997	\$1.00 = Rp 2,909
1998	\$1.00 = Rp 10,912 <sup>3</sup>

### FISCAL YEAR

Government: April 1 to March 31

Bank Indonesia: April 1 to March 31

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<sup>1</sup> On March 30, 1983, the Rupiah was devalued from \$1.00 = Rp 703 to Rp 970.

<sup>2</sup> On September 12, 1986, the Rupiah was devalued from \$1.00 = Rp 1,134 to Rp 1,644.

<sup>3</sup> Average for January-September.

## CONTENTS

Abbreviations, Acronyms and Definitions.....	v
Executive Summary .....	vii

<b>1. INVESTING IN EDUCATION: PROGRESS IN THE PAST AND A LOOK AT THE FUTURE .....</b>	<b>1</b>
A. Introduction .....	1
B. Pre-Crisis Progress in the Education Sector.....	2
C. A Look at the Future .....	9
D. The Challenges Ahead .....	11
<b>2. STRATEGIES FOR THE NEAR TERM: PROTECTING EDUCATION GAINS DURING THE CRISIS .....</b>	<b>12</b>
A. Introduction .....	12
B. Lessons from the Past.....	13
C. Effects of the Crisis on Education.....	15
D. Strategies for the Short Term.....	18
<b>3. ENHANCING THE QUALITY OF BASIC EDUCATION .....</b>	<b>23</b>
A. Introduction.....	23
B. Reasons Why Quality of Basic Education Is Unsatisfactory.....	25
C. Enhancing the Quality of Basic Education: Strategies for the Future.....	37
<b>4. ACHIEVING UNIVERSAL BASIC EDUCATION.....</b>	<b>46</b>
A. Introduction.....	46
B. The Case for Universal Basic Education.....	47
C. Constraints to Universal Basic Education.....	50
D. Strategies for Achieving Universal Basic Education.....	63

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The first version of this report (green cover) was completed in August 1997 just as the economic crisis began. The report has been modified and updated to reflect current knowledge of the crisis and includes a crisis-relief strategy as well as medium-term recommendations.

<b>5. INSTITUTIONAL ARRANGEMENTS AND DECENTRALIZATION IN BASIC EDUCATION.....</b>	<b>69</b>
A. Introduction.....	69
B. Institutional Weaknesses: Constraints to Quality Universal Basic Education ..	69
C. Lessons from International Experience.....	73
D. Overcoming Institutional Weaknesses: Recent Changes and Options for the Future.....	75
<b>6. ACHIEVING FLEXIBILITY AND EFFICIENCY IN POST-BASIC EDUCATION.....</b>	<b>84</b>
A. Introduction.....	84
B. Constraints in Post-Basic Education .....	87
C. Strategy for Achieving Flexibility and Efficiency .....	96
<b>7. THE BUDGETARY ENVELOPE .....</b>	<b>107</b>
A. Introduction.....	107
B. Pre-Crisis Patterns of Expenditure .....	107
C. Setting Priorities for a Tight Budget .....	111
Annex 1.1: Structure of the Education System.....	115
Annex 1.2: The Role of Education for Increasing Wages and Reducing Inequality .....	119
Annex 3.1: Explaining Achievement in Developing Countries: Effects of School Inputs, Teacher Attributes and Pedagogical Practices.....	121
Annex 4.1: Private Education in Indonesia .....	123
Annex 4.2: Efficiency of Teacher Allocations in Indonesian Junior Secondary Schools.....	129
Annex 5.1: Education Administration in Indonesia .....	136
Annex 5.2: Organizational Charts .....	138
Annex 7.1: Consolidated Government Education Expenditures .....	141
Annex 7.2: Pre-Crisis Investment Projections.....	149
Annex 7.3: 1998/99 Education Budget.....	161
Bibliography .....	163

## TABLES

Table 1.1: Wage differentials have declined.....	5
Table 1.2: Private schools play a major role at the post-primary level.....	6
Table 1.3: The gender gap in education has narrowed rapidly .....	7
Table 1.4: The gender gap is more pronounced among the poor 13-18 year olds.....	8
Table 2.1: GOI expects a sharp rise in dropouts and nonenrollments because of the crisis	16
Table 3.1: A majority of private school teachers and principals have a second job, 1994	27
Table 3.2: Indonesia's 525 hours of instruction per year in grade 1 are well below OECD countries .....	29

Table 3.3: Few primary teachers have more than a senior secondary education.....	31
Table 3.4: Matching grants could increase resources for poorer schools .....	40
Table 4.1: Indonesia is behind its neighbors in junior secondary enrollment.....	46
Table 4.2: Junior secondary enrollment is uneven among provinces, many of which lost ground during the previous period of adjustment .....	51
Table 4.3: The cost of post-primary education consumes much of a poor family's income in West Java .....	52
Table 4.4: Private education is often the cheapest option for the poor .....	54
Table 4.5: Primary school completion rates by province.....	56
Table 4.6: Two-thirds of the public subsidy to private junior secondary schools is for seconded teachers.....	60
Table 4.7: The number of entering students declined over a decade but not the number of schools.....	62
Table 5.1: Assignment of responsibilities for education in a decentralized structure .....	76
Table 5.2: Current and proposed responsibility for key education functions .....	79
Table 6.1: Unpredictable patterns of job reallocation make planning difficult .....	86
Table 6.2: The wage advantage of SMK graduates has largely disappeared.....	89
Table 6.3: Few vocational students have benefited from the pendidikan sistem ganda (dual system).....	90
Table 6.4: Public university students take a long time to graduate .....	92
Table 6.5: Urban unemployment among tertiary graduates has increased .....	94
Table 7.1: Consolidated government expenditure on education.....	108
Table 7.2: Private spending on education increased .....	109
Table 7.3: Indonesia was spending less on education in 1996 than its neighbors spent at a similar development stage.....	111
Table 7.4: Basic education allocations are protected in the 1998/99 budget.....	112

## BOXES

Box 1.1: Indonesian Parents Spend Similar Amounts on Educating Their Girls as Their Boys .....	7
Box 2.1: Crisis Impacts on Schooling: Some Preliminary Observations .....	17
Box 2.2: Preserving the Poor's Human Capital During Economic Crisis: Indonesia's "Stay in School" Campaign .....	19
Box 3.1: Evidence of Quality of Education in Indonesia .....	23
Box 3.2: Basic Number Skills in 12 Primary Schools in Indonesia .....	29
Box 3.3: The Primary Education Quality Improvement Project (PEQIP).....	33
Box 3.4: Policy-Based Research as a Tool to Improve the Quality of Primary Education in Thailand .....	38

Box 4.1: Effects of Education on Distribution of Labor Earnings .....	47
Box 4.2: The Benefits of Early Child Development.....	57
Box 4.3: Innovations in Private Schools: The Gender Bias Awareness Program at the Al Izhar Pondok Labu School.....	58
Box 4.4: Quality of Junior Secondary Private Schools in Indonesia: High or Low? .....	59
Box 5.1: Emphasizing School and Classroom Organization to Enhance Effectiveness ...	74
Box 5.2: International Experiences with Decentralization of Education.....	75
Box 5.3: Decentralizing Delivery of Basic Education: Taking a Step in West Java.....	78
Box 5.4: Promoting Local Autonomy in Brazil to Improve Quality of Education .....	81
Box 5.5: Community Participation in Planning and Managing Education Resources: The Indonesia COPLANER Project .....	83
Box 6.1: Future Educational Structure of the Labor Force in Indonesia.....	85
Box 6.2: Firms Weigh the Costs and Benefits of Participating in PSG .....	91
Box 6.3: Indonesia's Literacy Program.....	95
Box 6.4: Distance Education in Indonesia.....	95
Box 6.5: The Development of Education and Training Standards.....	100

## FIGURES

Figure 1.1: Enrollment rates have increased sharply since the 1970s.....	3
Figure 1.2: Now two-thirds of Indonesians have at least a primary education.....	4
Figure 2.1: Enrollment among the poor dropped following the 1980s' economic adjustment at the primary level . . . . .	13
. . . and at the junior secondary level.....	13
Figure 2.2: The late 1980s saw a decline in education expenditures as a percent of GDP . . . . .	14
. . . and as a share of total government spending.....	14
Figure 2.3: Real development expenditure on basic education also declined sharply in the late 1980s.....	15
Figure 3.1: Factors related to school effectiveness.....	25
Figure 4.1: The poor are much less likely than the rich to enroll in school.....	51
Figure 4.2: The poor are more likely to go to private schools than the nonpoor at the junior secondary level.....	55
Figure 4.3: Primary school completion rates have not increased substantially .....	55

## ABBREVIATIONS, ACRONYMS AND DEFINITIONS

APBD	Provincial Budget
APBN	National Budget
BAKN	National Civil Service Administration Agency
BAPPEDA	Regional Development Planning Board
BAPPENAS	National Development Planning Board
BLK	Ministry of Manpower Skills Training Center (Medium and Large)
BP3	Parent Association Fees
Bupati	Head of District
CFED	Community Forum for Educational Development
COPLANER	Community Participation in the Planning and Management of Educational Resources
D-I, D-II, D-III	Degree Plus 1–3 Years of Training
DGHE	Directorate General of Higher Education
DIK	Routine Budget
Dinas	Provincial Office with sectoral responsibility reporting to the Governor
DIP	Development Budget
DPUK	Dinas Public Works Department
DUE	Development of University Education Project
Ebtanas	School leaving examinations
ECD	Early Child Development
ECE	Early Child Education
FKIP	Teacher Training Faculties
GER	Gross Enrollment Rate
GOI	Government of Indonesia
IDT	Government Antipoverty Program
IEA	International Association for Evaluation of Educational Achievement
IFLS	Indonesia Family Life Survey
IKIP	Teacher Training Institutes
INPRES SD	Presidential Instruction Block Grant for Primary Schools
Kabupaten	District
Kancam	Head of Subdistrict
Kandep	District Office of Central Government Ministry
Kandep P&K	District Education Office
Kanwil	Provincial Office of Central Government Ministry
Kecamatan	Subdistrict
KLK	Ministry of Manpower Skills Training Center (Small)
LKMD	Local Development Council
MGMP	Teacher Support Program
MOEC	Ministry of Education and Culture

MOF	Ministry of Finance
MOHA	Ministry of Home Affairs
MOM	Ministry of Manpower
MORA	Ministry of Religious Affairs
NER	Net Enrollment Rate
NGO	Nongovernment Organization
NTB	West Nusa Tenggara
NTT	East Nusa Tenggara
OECD	Organization for Economic Cooperation and Development
Paket A, B	Nonformal Junior Secondary Education Program
PEQIP	Primary Education Quality Improvement
PIAIPL	Al Izhar Pondok Labu School
PKG	Inservice Teacher Training Program
PODES	Village Survey (Potensi Desa)
PSG	Pendidikan Sistem Ganda (Dual System)
Repelita	Five-Year Development Plan
S1	Four-Year Undergraduate Degree
SAKERNAS	National Labor Force Survey
SDO Guru SD	Primary School Teachers' Salaries
SMA	Senior Secondary General School
SMEA	Senior Secondary Commercial School
SMK	Senior Secondary School—Vocational and Technical
SMP	Junior Secondary School
SMP Terbuka	Open (Nonformal) Junior Secondary Education
SMU	Senior Secondary School—General
STM	Senior Secondary Technical School
SUPAS	Intercensus Survey
SUSENAS	National Social Economic Survey
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UT	Indonesia Open Learning University
VTE	Vocational and Technical Education
WAJAR	Universal Nine-Year Basic Education



## EXECUTIVE SUMMARY

Investing in education has been one of the cornerstones of Indonesia's development policy. As a result, the education level of the population has increased dramatically since the early 1970s. Before the economic crisis of 1997, the expansion of education enabled workers to increase their earnings by moving to higher-paid jobs across regions. Furthermore, there was a rapid narrowing of gender differentials, matched by few countries around the world. The Government of Indonesia's (GOI's) pro-poor focus on primary education and the decision to decentralize responsibility for it to local governments gave the poor greater access to education. At the same time, GOI's laissez-faire policy toward the private sector resulted in the rapid growth of private schools at the post-primary level, allowing the public sector to concentrate its funding at the primary level. These achievements compare favorably with those of high-performing East Asian neighbors such as Korea and Taiwan (China) at the time when they had the same gross domestic product (GDP) per capita that Indonesia had until recently.

Indonesia's goals for the coming years are to build on these accomplishments so it can move to the next stage of its development. The current crisis, however, is threatening these hard-earned gains, particularly in basic education, and putting the country's economic potential at risk. In the near term, GOI must try to keep the basic education system from losing ground. Looking beyond the crisis, Indonesia should expect that within the next 15 years its education system will be able to (a) provide every child with at least nine years of quality education, and (b) respond flexibly and efficiently to produce whatever types of skilled workers a rapidly modernizing economy will require. The recommendations of this report are presented with those goals in mind.

### **Main Messages of the Report**

This report is not an exhaustive sectoral review but rather a look at the key strategic issues, including tradeoffs and choices, that Indonesia will face in the future. The report distinguishes between short-term strategies for the next 2 to 3 years of economic hardship and medium- to long-term strategies for the next 10 to 15 years. The main messages emerging from the report for the crisis and post-crisis periods are as follows.

**The Short Term (Chapter 2).** The current economic crisis creates severe educational risks for Indonesia, particularly the possibility of sharply declining enrollment among the poor and the erosion of quality in schools. For the crisis period, the main recommendation of the report is to *sustain investments in basic education and*

*protect the poor from the damaging effects of the crisis.* This will require GOI to shift resources from other sectors to primary and junior secondary education.

**The Medium to Long Term (Chapters 3–6).** Beyond the crisis, Indonesia should turn its attention to the obstacles that prevent it from realizing its longer-term goals for the education sector and the economy. For the post-crisis period, the main messages of the report are:

- *The quality of education needs to be significantly enhanced.* Even before the crisis, graduates were leaving the basic education system inadequately prepared for post-basic education and a lifetime of learning and employment. The highest priority upon recovery of the economy should be to improve the quality of basic education, particularly at the primary level where most of the students are concentrated. Improvements at that level are the best way to reach the poor.
- The government's objective to provide *nine years of basic education for all children* in the next 10 to 15 years is justified on both efficiency and equity grounds. However, GOI should consider various options to ensure that the expansion is affordable, that it reaches the rural poor, and that it does not replicate existing inefficiencies. To achieve universal basic education, GOI must also reduce the dropout rate at the primary level.
- *Institutional arrangements for managing and financing education are impeding Indonesia's goals,* especially the achievement of high-quality universal basic education. Decentralization to lower levels of government and to schools should continue, but responsibilities need to be redefined and clearly assigned. New incentives and funding mechanisms should be introduced that balance autonomy with accountability to government and the community.
- GOI should continue its strategy of *restricting the expansion of public post-basic education* while relying on the private sector to respond to demand. It should contain costs in public vocational and technical schools, emphasize general secondary education over vocational education, and improve efficiency in public universities. In addition, the increased importance of the private sector at the higher education level calls for a *greater role of the government in ensuring higher quality through regulation and better information.*

### **During the Crisis: Protecting the Achievements of the Past**

Despite Indonesia's impressive achievements, its vision for the future is now at risk because of the country's economic crisis. The recent collapse of the currency, the reversal of economic growth and private capital flows, and the added effects of natural disasters have combined to create severe economic and social upheavals. The economic crisis is not only affecting current income; it is also threatening income-earning potential by making education an unaffordable luxury for many Indonesians, especially the poor.

In addition, many schools serving poor communities are no longer able to provide even a basic level of quality education as public funding and community contributions dwindle.

GOI is already taking steps to implement the following short-term strategies for dealing with the current crisis: (a) keeping children from poor families in school through a scholarship program at the junior secondary level and block grants at both primary and junior secondary levels; (b) preventing the deterioration of quality, in part by providing block grants to primary and junior secondary schools in poor areas; (c) increasing efficiency, particularly by intensifying recent steps toward decentralizing basic education; (d) monitoring student outcomes so policymakers can respond to rapid changes; (e) preserving funding for basic education in the 1998/99 budget; and (f) putting on hold any expansionary plans for the post-basic education level.

In addition, GOI may want to consider other programs, such as nonformal education, that can reach poor children affected by the crisis but not reached through regular institutions. Finally, the basic education budget needs to be maintained beyond 1998/99 as the crisis is expected to persist for several years.

### **Beyond the Crisis: Addressing Fundamental Weaknesses**

Even before the crisis, Indonesia's education system was facing significant obstacles. In time, Indonesia will have to attack these persistent weaknesses so it can move to the next stage in its economic development: (a) quality is still unsatisfactory throughout the educational system; (b) the poor will not be able to attain the basic nine years of education through their own means; (c) institutional arrangements and perverse incentives have created rigidities and fragmented responsibility, which slow progress toward reaching education objectives; and (d) the post-basic education system is not yet responsive to the rapidly changing demands of the labor market, nor are GOI resources used as effectively as they might be. These constraints and strategies to overcome them are discussed below.

**Enhancing Quality in Basic Education.** There are several reasons why the quality of basic education is still unsatisfactory in Indonesia. Many teachers are poorly trained, and the incentive structure does not promote effective teaching or the most equitable distribution of teachers. In addition, schools in poor communities have insufficient resources, a problem that is becoming increasingly visible as buildings begin to deteriorate. The supply of textbooks and materials is inadequate, and many of these materials need improvement in content and presentation. A related problem is that the curriculum is overloaded, especially considering that student learning time is already low, particularly in grades 1 and 2. The curriculum is not yet sufficiently integrated across subjects and grades or with textbook content, teacher training, and assessment. Insufficient monitoring and assessment of student achievement and evaluation of investment programs means that the above problems are often not brought to the attention of policymakers or public.

**Strategy.** The recommended strategy to address these issues combines a set of core interventions targeted to the main constraints (those related to teachers and resources) with mechanisms to allow local institutions to propose actions tailored to other specific problems they face (discussed below under institutional strategy). A key part of quality improvement is teachers—having them equitably distributed, giving them appropriate incentives, and ensuring they are adequately trained. Indonesia should move towards having a professional teaching force which works more intensively but at higher salaries. In the short run, incentives could be restructured to reward effective teaching practices and to attract contract teachers to rural areas. The teacher training strategy at the primary level should focus more on inservice than on preservice training. And the “across-the-board” policy of upgrading all basic education teachers should be reconsidered, in favor of a more targeted upgrading program based on need. In addition, GOI should lengthen the school day for grades 1 and 2 and train teachers on how to use classroom time more effectively.

Efficient mechanisms are needed to channel more public funds to poor schools, and some of these are discussed below (under institutional arrangements). More textbooks and materials are needed in the classroom, and more community involvement is needed to maintain the physical conditions of schools. Involving the private sector in the production and distribution of books and decentralizing selection and procurement to the district level will help. In addition, the 1994 curriculum should be systematically evaluated. The curriculum needs to be vertically and horizontally integrated, and it should be related not only to the content of textbooks but also to teacher training and assessment.

**Achieving Universal Basic Education.** To provide nine years of education to every child, GOI needs to address several constraints. Demand for junior secondary education among the poor is sluggish and primary completion rates are low. The reasons for weak demand include the high direct and indirect (opportunity) costs and the uncertain benefits and prospects for a child who remains in school. In addition, the costs of expanding junior secondary education are high for the nation. The public sector cannot do it alone, and it is ineffective in providing access to small, poor communities. Although private schools help fill this gap, their quality is uneven and the public subsidy to support them is inefficient. Other inefficiencies in the education system include too many schools at the primary level and excess teachers at the junior secondary level.

**Strategy.** The decision to accelerate the process of achieving universal access to grades 7 to 9 is appropriate, but GOI should carefully consider options that make the expansion cheaper and more effective. In particular, the Government should reduce the costs of junior secondary education to the poor and target public investments to underserved areas and poor households. GOI is already pursuing some of these options, which include providing school facilities in rural and remote areas; giving scholarships to poor students; providing matching or block grants directly to schools; and using alternative, nonformal methods of education delivery. At the same time, it is crucial for

Indonesia to maintain the role of the private sector. To do this, GOI will need to keep its laissez-faire policy toward private schools and not compete with them in locating schools. The public subsidy to private schools should be maintained, but restructured by shifting it away from the provision of seconded teachers. Released resources could be used to fund alternative schemes of supporting private schools that would more effectively and directly target the neediest schools.

Enhancing efficiency would also release resources needed for the expansion. Specifically, efficiency would be improved by consolidating excess primary schools, converting primary schools to junior secondary schools where feasible, and redeploying excess junior secondary teachers to staff new schools. To address the problem of primary school dropouts, school-feeding programs for poor villages and early childhood interventions can be effective.

**Institutional Arrangements and Decentralization.** A major constraint to achieving universal basic education of high quality is the current institutional arrangements. There are several dimensions to the institutional constraints. First, the organizational setup at the primary level is complex because responsibilities are split among various ministries. Second, at the junior secondary level, operations are overly centralized. Third, budgeting for basic education is rigid and fragmented. Finally, management is ineffective at the school level because public school principals have little autonomy in running the school or allocating resources and hence have little incentive to use resources efficiently.

**Strategy.** To improve the quality of education and achieve universal basic education, it is important for GOI to clearly define the roles of the many relevant agencies at central and local levels. The central government has a comparative advantage in three aspects of education: promoting national unity; promoting equal provision of education by gender and across income groups and regions; and setting standards and conducting evaluation and testing. Beyond these three aspects, however, most other functions can be decentralized to lower levels.

A long-term proposal for assigning responsibilities follows the general direction of GOI's Daerah Percontohan pilot program and has three main features. First, the assignment of responsibilities at the junior secondary level would be the same as at the primary level, so the institutional structure for basic education would be streamlined. Second, responsibility for the delivery of basic education would be consolidated and largely shifted from central and provincial ministry offices to the dinas (district government), the school, or the school cluster—groups that report either directly or indirectly to the Bupati (head of district). Third, the Ministry of Education and Culture (MOEC) would continue to oversee quality and maintain standards, particularly through curriculum development, assessment, and testing. As it decentralizes responsibilities, GOI will need to redeploy central staff and strengthen capacities at the lower levels of government.

At the school level, greater autonomy should be given to principals in deciding on resource use and developing school-based strategies in line with local conditions. This process has already begun with the block grants program put in place in response to the crisis. The program will have far-reaching effects on school management and autonomy beyond the crisis period, and it should be nurtured and enhanced as experience is gained.

In addition to clearly assigning responsibilities, GOI may want to consider the following three mechanisms to transfer funds to the kabupaten (district): (a) matching grants based on parental contributions; (b) performance-based grants based on funding proposals submitted by kabupaten (as currently being tried in West Java); and (c) unrestricted grants to the kabupaten based on the number of students enrolled. A prerequisite for preparing the kabupaten proposals is the preparation of consolidated budgets. Finally, to promote transparency and accountability, communities need a greater role in deciding how budgets are spent.

**Achieving Flexibility and Efficiency in Post-Basic Education.** The post-basic education system (senior secondary and above) needs to be flexible and responsive to economic signals because jobs change rapidly and future skills cannot be predicted with certainty. At the senior secondary level, the current vocational and technical stream (SMK) is considerably more expensive than the general education stream, but its labor market outcomes are typically no better. Recent reforms in the public SMK schools to make them more responsive to the labor market, however, may not be cost-effective. The higher education system faces problems related to quality, its relevance to the needs of the economy, and low internal efficiency. In addition, parents and students often do not have enough information about the quality of higher education programs to make informed choices. Finally, many workers already in the labor force lack appropriate skills and will need flexible out-of-school training to upgrade their skills.

**Strategy.** GOI's overall strategy at the post-basic level should be to continue relying on the private sector to meet most of the demand. This approach is justified because achieving universal basic education of adequate quality will require much of GOI's education budget, and because the private sector has already demonstrated success in providing post-basic education.

At the senior secondary level, Indonesia should concentrate its resources on general education and shift more technical training to the polytechnics and the private sector by providing them financial incentives. More general education should be allowed in SMKs and credits should be transferable between the vocational and general streams. In addition, the relationship between the SMK system and polytechnics needs to be assessed and a combined strategy developed. Carrying out this broad shift in strategy is difficult given the overlap in responsibilities between ministries involved in vocational education and training. An overarching council driven by the private sector is needed to take responsibility for setting policies.

In higher education, the increased importance of the private sector calls for a shift in GOI's priorities. A greater role for GOI is warranted in (a) providing regulation and accreditation; (b) ensuring that parents and students have enough information on the quality of programs to make informed decisions; (c) investing where the private sector is not yet investing and where social returns are sufficiently high to justify the investment; and (d) creating incentives for better management of public universities and more effective public assistance to private universities. GOI has already articulated a strategic plan or "new paradigm" in higher education management. A key aspect of this restructuring effort is that it forces public and private universities to compete for budget allocations or subsidies. A continued emphasis on cost recovery is also warranted since there are high private returns to higher education and most of the students come from families in the upper income decile.

As Indonesia achieves quality universal basic education, it may want to shift resources to continuous, out-of-school education to upgrade the skills of workers already in the labor market. However, it should continue to look to the private sector to meet much of this demand. There are exciting prospects for innovations in educational technology to be applied in higher education and out-of-school education and training. A starting point is for GOI, with private sector participation, to set a strategy for introducing new technologies.

### **The Budgetary Envelope**

Before the financial crisis, an analysis of projected costs and revenue indicated that, even under favorable assumptions about GDP growth, there would not have been enough funds to achieve both nine years of quality basic education and the type of expansion in post-basic education that GOI was contemplating at the time. Because of the crisis, that financing gap has mushroomed, so the need to set tighter priorities is much more urgent now. Until the threats to its past achievements have subsided, GOI should continue to focus on high-priority activities designed to protect basic education. In the latest 1998/99 budget, GOI has done that. But this achievement was reached only with great difficulty and after multiple delays, and it remains uncertain whether the entire budgeted amount for basic education will actually be spent. This tough budgeting process will have to be repeated in the coming years.

After the country's economy turns around, GOI will be able to turn its attention once again on the steady expansion and improvement of basic education and the gradual expansion of post-basic education. This strategy will protect the gains of recent decades for now, and gradually allow Indonesia to better prepare its young people for the next century.

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## SUMMARY OF RECOMMENDATIONS<sup>1</sup>

### *Crisis-Relief Recommendations (Chapter 2)*

*Overall Recommendation:* Sustain investments in basic education and protect the poor from the damaging effects of the crisis. Addressing these priorities will require a shift in resources from other sectors to primary and junior secondary education.

Policy changes recommended	Implementation steps recommended
<b><i>A. Keeping poor children in school</i></b>	
	<ul style="list-style-type: none"> <li>• Provide scholarships to children from poor households.</li> <li>• Provide block grants to the poorest primary and junior secondary schools.</li> <li>• Promote these programs with a national media campaign.</li> </ul>
<b><i>B. Preventing the deterioration of quality</i></b>	
	<ul style="list-style-type: none"> <li>• Provide block grants to poorest schools (see above).</li> <li>• Continue ongoing programs to provide schools with textbooks and learning materials.</li> <li>• Limit costly inservice training, but experiment with ways to improve the cost-effectiveness of teacher training (such as through cluster-based teacher training grants).</li> </ul>
<b><i>C. Increasing efficiency</i></b>	
<ul style="list-style-type: none"> <li>• Change teacher allocation formulas.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue with broad institutional reforms during the crisis, especially decentralization of planning and service delivery.</li> <li>• Implement school mapping to set the stage for primary school consolidation or conversion of primary schools to junior secondary schools where feasible.</li> <li>• Increase and improve use of contract teachers, and introduce better incentives to solve shortages in rural areas.</li> </ul>

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<sup>1</sup> This section presents a summary of the recommendations of the report. The recommendations are divided into those that require policy changes and those where the policy has already been adopted but further implementation is recommended.



Policy changes recommended	Implementation steps recommended
<p style="text-align: center;"><b><i>D. Monitoring student outcomes</i></b></p>	<ul style="list-style-type: none"> <li>• Use rapid surveys and rapid assessment techniques.</li> <li>• Make use of the help of NGOs and community organizations whenever possible.</li> <li>• Tie monitoring to decision making.</li> <li>• Use existing information databases for monitoring system when possible.</li> <li>• Pay particular attention to the effects of the crisis on the poor and vulnerable groups.</li> </ul>
<p style="text-align: center;"><b><i>E. Ensuring programs reach intended beneficiaries</i></b></p>	<ul style="list-style-type: none"> <li>• Ensure transparency of programs and minimize leakages of funds.</li> <li>• Ensure participatory implementation of interventions and seek the assistance of community groups and society at large for monitoring of programs.</li> </ul>
<p style="text-align: center;"><b><i>F. Putting on hold expansionary plans for higher education</i></b></p>	<ul style="list-style-type: none"> <li>• Limit public funding for higher education.</li> <li>• Implement efficiency and accountability reforms initiated before the crisis.</li> </ul>

### *Medium-term Recommendations*

#### Enhancing the Quality of Basic Education (Chapter 3)

Policy changes recommended	Implementation steps recommended
<i>A. Restructuring incentives</i>	
<ul style="list-style-type: none"> <li>• Move away from system of low salaries and official working hours, to a professional teaching force which works more intensively but at higher salaries.</li> <li>• Change teacher allocation formulas.</li> </ul>	<ul style="list-style-type: none"> <li>• Change incentives facing civil servants by: (a) modifying how points are awarded in functional credit system to reward activities likely to lead to effective teaching; (b) attracting more teachers to rural areas through contracting and local recruitment.</li> </ul>
<i>B. Increasing learning time in grades 1 and 2</i>	
<ul style="list-style-type: none"> <li>• Increase length of school day in grades 1 and 2.</li> </ul>	<ul style="list-style-type: none"> <li>• Train teachers how to use classroom time more effectively.</li> <li>• Give principals greater autonomy to manage schools effectively, and change incentive structure.</li> </ul>
<i>C. Increasing resources allocated to poor schools</i>	
<ul style="list-style-type: none"> <li>• As schools, communities, and administrators gain experience with the use of block grants, channel more funds to poor schools on a matching basis (matched to parental contributions on a sliding scale depending on wealth of community).</li> </ul>	
<i>D. Improving the quality of teachers</i>	
<ul style="list-style-type: none"> <li>• Give priority to inservice training at the primary level, and to both preservice and inservice at the secondary level.</li> <li>• Reconsider the policy of upgrading all teachers regardless of need.</li> </ul>	<ul style="list-style-type: none"> <li>• Employ PEQIP model of continuous training based on cluster model and managed at kabupaten level. Experiment with cluster-based teacher training grants.</li> <li>• Revitalize the content of all junior secondary inservice activities (emphasize development of effective questioning techniques, open-ended formative tests, etc.).</li> <li>• Decentralize inservice training activities for junior secondary teachers to the district level.</li> <li>• Prepare new teachers to teach more than one subject at junior secondary level (preservice training); and for those already pressed into teaching more than one subject, provide special teacher certification programs.</li> <li>• Carefully evaluate D-II and D-III upgrading programs, focusing on relevance of curriculum and training to teacher knowledge-development needs and the impact of the program on teacher and student classroom performance. Redesign the program as needed.</li> </ul>

## Enhancing Quality in Basic Education (continued)

Policy changes recommended	Implementation steps recommended
<p style="text-align: center;"><i>E. Providing more and better textbooks and materials</i></p>	<ul style="list-style-type: none"> <li>• Provide textbooks in sufficient quantities to all students (1:1 ratio).</li> <li>• Maintain a strict evaluation process, review consistency of the curriculum with material presented in textbooks, and revise texts as necessary.</li> <li>• Shift selection and procurement of textbooks, reading materials, and equipment to local levels.</li> <li>• Involve the private sector in the provision and distribution of new books.</li> </ul>
<p style="text-align: center;"><i>F. Making the curriculum more integrated and effective</i></p> <ul style="list-style-type: none"> <li>• Consider placing curriculum, textbooks, teacher training, and assessment under a single MOEC Directorate to support integration.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the effectiveness of the 1994 curriculum.</li> <li>• Integrate the curriculum with textbooks, teacher training, and assessment.</li> <li>• Improve and adjust the curriculum regularly through an iterative process, rather than through a major reform conducted every decade.</li> </ul>
<p style="text-align: center;"><i>G. Strengthening assessment and evaluation</i></p> <ul style="list-style-type: none"> <li>• Form an independent assessment agency.</li> <li>• Reduce the number of tests in each grade and use them to encourage more individual reasoning and expression.</li> <li>• Conduct high-priority evaluations, e.g.: <ul style="list-style-type: none"> <li>– new curriculum effectiveness (above);</li> <li>– teacher training programs, such as the upgrading investments being undertaken;</li> <li>– reasons why some schools with similar levels of resources do better than others.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Follow through with the initiative of a national assessment system.</li> <li>• Encourage teachers to use tests to diagnose students' learning problems.</li> </ul>

**Achieving Universal Basic Education (Chapter 4)**

Policy changes recommended	Implementation steps recommended
<p><b><i>A. Reducing the costs of junior secondary education to the poor</i></b></p>	<ul style="list-style-type: none"> <li>• Provide school facilities in rural and remote areas, but where private schools do not already operate.</li> <li>• Provide scholarships to poor students, particularly poor girls.</li> <li>• Use alternative, nonformal modes of delivery such as SMP Terbuka and Paket B as a short-to-medium approach, to be replaced with standard schools spaces once more funds are available.</li> </ul>
<p><b><i>B. Targeting public investment to underserved areas and poor households</i></b></p>	<ul style="list-style-type: none"> <li>• Continue to target funds using quantitative information combined with the local knowledge of NGOs and members of civil society. Evaluate and modify this mechanism as appropriate.</li> <li>• Provide funds the most direct way to students and schools, use media programs to inform parents about programs, use independent agencies to monitor the programs, and evaluate the impact of the programs.</li> </ul>
<p><b><i>C. Lowering primary school dropout rates</i></b></p>	<ul style="list-style-type: none"> <li>• Target underserved schools (with additional resources, school feeding programs, etc).</li> <li>• Implement early childhood interventions that lead to earlier entry into school and enhance a child's readiness for school.</li> <li>• Improve quality of primary education (Chapter 3).</li> </ul>
<p><b><i>D. Maintaining the role of the private sector</i></b></p>	<ul style="list-style-type: none"> <li>• Maintain laissez-faire policy toward private schools.</li> <li>• Build new public junior secondary schools and expand existing ones (using integrated school location planning) where there is no significant private sector.</li> </ul>
<p><b><i>E. Restructuring the public subsidy to private schools</i></b></p> <ul style="list-style-type: none"> <li>• Gradually phase out the program of public teacher secondments to private schools, and transfer resources directly to private schools in the form of money grants.</li> <li>• Condition support to private schools on quality improvements achieved within a specified time. Support should not be open-ended.</li> </ul>	<ul style="list-style-type: none"> <li>• Give priority for assistance to private schools in communities in the bottom two-thirds of the income distribution.</li> <li>• Improve the flow of information regarding regulations and eligibility of private schools for government assistance.</li> </ul>

Policy changes recommended	Implementation steps recommended
<i>F. Reaping efficiency gains during the expansion</i>	
<ul style="list-style-type: none"> <li>• Redeploy excess junior secondary teachers to staff new schools.</li> <li>• Modify incentives at the district or school level so that savings in teacher costs can be used for other educational expenditure by the district or school.</li> <li>• Condition salary or funds of district officer or school level administrator on efficiency in the allocation of teachers or efficiency of using teachers.</li> <li>• Monitor costs associated with inefficient allocations of teachers at district level.</li> </ul>	<ul style="list-style-type: none"> <li>• Convert primary schools to junior secondary schools where feasible and where it does not raise the costs of primary schooling to parents.</li> </ul>

**Institutional Arrangements and Decentralization in Basic Education (Chapter 5)**

Policy changes recommended	Implementation steps recommended
<b><i>A. Redefining responsibilities over the long term</i></b>	
<ul style="list-style-type: none"> <li>• Reassign functions so that responsibilities at the junior secondary level would be the same as at the primary level, so the structure of basic education would be streamlined.</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidate and shift responsibility for basic education to local government. Virtually all functions would be carried out by the dinas, school, or school cluster—all reporting to the Bupati.</li> <li>• MOEC to continue its responsibility for curriculum, testing, and assessment and evaluation.</li> </ul>
<b><i>B. Building institutional capacity</i></b>	
	<ul style="list-style-type: none"> <li>• Facilitate the secondment of qualified MOEC staff to fill key roles in local agencies. Develop detailed arrangements and incentives to encourage such secondment, and clarify career paths and re-entry/promotion criteria.</li> <li>• Strengthen capacity of line ministries (MOEC and MORA) to carry out quality control and monitoring and evaluation of programs implemented by local government.</li> </ul>
<b><i>C. Fostering greater autonomy with accountability in school management</i></b>	
<ul style="list-style-type: none"> <li>• Institute improved mechanisms for selecting principals and for rewarding good ones and replacing weak ones.</li> <li>• Develop modular training programs for principals where specific deficiencies in management skills exist in light of their new responsibilities and increased autonomy in a decentralized structure.</li> </ul>	<ul style="list-style-type: none"> <li>• Grant greater autonomy to school principals in deciding on resource use and developing school-based strategies in line with local conditions.</li> </ul>
<b><i>D. Introducing funding mechanisms that promote equity and efficiency</i></b>	
<ul style="list-style-type: none"> <li>• Develop funding mechanisms that promote efficiency and equity, and that balance autonomy and accountability.</li> <li>• Over time, as local administrators gain experience working with performance-based grants, introduce funding mechanism of unrestricted grants to kabupaten based on number of students enrolled.</li> <li>• Over time, as schools, communities and administrators gain experience with use of block grants, channel more funds directly to schools on a matching basis.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement performance-based grants to districts and/or schools.</li> <li>• Increase the role of the community and parents in diagnosing education problems, following models already developed in Indonesia such as COPLANER.</li> </ul>

## Achieving Flexibility and Efficiency in Post-Basic Education (Chapter 6)

Policy changes recommended	Implementation steps recommended
<i>A. Senior secondary education</i>	
<ul style="list-style-type: none"> <li>• Until improvements in the vocational system are made and the effects felt in the labor market, reconsider the objective of having the number of vocational students (and therefore that budget) grow relative to that of general students.</li> <li>• Consider alternative ways of implementing the PSG work experience to raise firms' perceptions about the value of participating.</li> <li>• Estimate the cost implications of the Pendidikan Sistem Ganda (PSG) to assess better the relative merits of expanding PSG compared to alternatives for creating skills in the economy.</li> <li>• Structure the expansion of PSG to provide feedback on the benefits, and introduce a lottery system for allocating PSG spaces.</li> <li>• Introduce measures to improve cost-effectiveness for the overall SMK system, including linking budgets to student outcomes and charging higher user fees for SMK places.</li> <li>• Experiment with alternative policies for the SMK system such as increased school autonomy in all budgetary matters, setting of fees, and teacher salaries.</li> <li>• Revise curricula and qualification system to allow introduction of more basic education within SMKs and the transferability of credits between streams.</li> <li>• Define the relationship of VTE to the polytechnics as investments in the systems are planned.</li> </ul>	<ul style="list-style-type: none"> <li>• Slowly modify the accreditation procedures towards competency-based training, taking into account demand from employers and students.</li> <li>• Revitalize and empower interministerial Council, driven by the private sector, to take responsibility for vocational and technical education and training (VTE).</li> </ul>

**Achieving Flexibility and Efficiency in Post-Basic Education (continued)**

Policy changes recommended	Implementation steps recommended
<b><i>B. Higher education</i></b>	
<ul style="list-style-type: none"> <li>• Require all entering university students (not just public students) to take a national entrance exam, and require private universities to report the average score of each year's entering class.</li> <li>• Make public a ranking of the top 10 preferred programs within each discipline.</li> <li>• To address the graduate unemployment problem, enhance the quality of universities and correct for information failures about the quality of universities, rather than relying on training programs for unemployed graduates.</li> <li>• Encourage more flows of private funds to universities to build up endowments.</li> <li>• Formulate a strategy for facilitating the introduction of educational technology into higher education, and phase in the introduction of such technologies.</li> </ul>	<ul style="list-style-type: none"> <li>• Introduce a more extensive system of accreditation of public and private universities.</li> <li>• Allow private universities to compete for competitively awarded grants supporting quality improvements.</li> <li>• Invest public funds where the private sector is not investing such as in science education, research, and universities in the outer islands.</li> <li>• Continue emphasizing cost-recovery.</li> <li>• Provide scholarships to poor students who qualify but cannot self-finance their university degree.</li> <li>• Improve the management efficiency of higher education through competitive and performance-based budget allocation.</li> </ul>
<b><i>C. Out-of-school education</i></b>	
	<ul style="list-style-type: none"> <li>• Modify literacy program to reflect changing client base (less pure illiterates, more school dropouts), and decentralize program delivery to communities.</li> <li>• Encourage greater flexibility in course offerings to cater for the diverse demands of workers out of the formal education system.</li> <li>• Expand distance education to promote more equitable access to education and training.</li> </ul>



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**The Budgetary Envelope (Chapter 7)**

Policy changes recommended	Implementation steps recommended
<ul style="list-style-type: none"> <li>• In the medium term as the economy improves, phase in expansionary initiatives and increase the education budget relative to GDP.</li> </ul> <p>Medium-term priorities are:</p> <ul style="list-style-type: none"> <li>– improve the quality of basic education;</li> <li>– expand junior secondary (along with the private sector);</li> <li>– limit the growth rates of senior secondary, and expand public vocational taking into consideration students' and employers' demand;</li> <li>– phase in expansion of universities;</li> <li>– phase in expansion of polytechnics, and even more slowly for new polytechnics;</li> </ul>	<ul style="list-style-type: none"> <li>• In the short term, sustain investments in basic education and protect the poor from the damaging effects of the crisis (see Crisis-Relief recommendations).</li> <li>• Regularly prepare consolidated budgets.</li> </ul>

# 1. INVESTING IN EDUCATION: PROGRESS IN THE PAST AND A LOOK AT THE FUTURE

## A. INTRODUCTION

The 30 years before the current crisis were a period of remarkable growth for the Indonesian economy. The growth rate faltered in the mid-1980s; but due to a series of market-oriented reforms, the economy subsequently recovered, and both production and employment growth reverted to their previous levels. The structural change that followed stabilization was massive. Manufacturing replaced oil and gas as the leading sector, while banking and finance increased in importance. Nonoil exports grew particularly fast and by 1993 accounted for more than 70 percent of the total. The export success was not confined to manufacturing. Export earnings from agriculture, a sector that is still characterized by a relatively abundant supply of labor, tripled in 10 years.

The pattern of growth in Indonesia and the reforms of the last decade allowed Indonesia to make productive use of labor. Before 1997, a fast-growing labor force (3 percent per year over the last two decades) was absorbed with ease. Sound macroeconomic and trade policies were essential in sustaining the established record of growth. And the beneficial effects of the reforms would have been limited had appropriate policies for human resources development not been in place.

The events of the past year, however, have suddenly interrupted this story. Indonesia is now threatened by a sharp, unprecedented reversal in economic activity. The number of poor people in the country is expected to increase by between 8 million and 14 million over the 1996-2000 period, depending on how poverty is measured (World Bank, 1998). Worsening labor market outcomes (unemployment, underemployment, and falling wages) and rising inflation (including food prices) will severely affect the country's poor. Past achievements in the development of human resources are threatened, which if not attended to today, will adversely affect efficiency, productivity and equity for generations ahead.

This report discusses the urgent issues that Indonesia faces now and the main strategic issues it will face in the years to come. While most of the report focuses on the medium to long term—the next 10 to 15 years, we begin in Chapter 2 by assessing the likely risks of the current crisis on the education of Indonesia's children, especially the poor. The chapter proposes steps to prevent the deterioration of the sector in the near future.

Chapters 3 to 6 expand the horizon beyond crisis management. These chapters analyze the four fundamental problems listed above and present approaches to overcome them over the next 10 to 15 years. Chapter 3 discusses the reasons why the quality of basic education is low in Indonesia and presents a medium-term strategy for improving it. Chapter 4 assesses the challenges facing the government of Indonesia (GOI) in meeting its objective of universal basic education and provides options for achieving that goal in a cost-effective and equitable manner. In Chapter 5, the major institutional impediments to achieving nine years of quality education are discussed. The paper turns to the creation of skills in the economy in Chapter 6. It assesses the choices GOI faces in allocating resources between general versus vocational education and training at the senior secondary level, and the difficulties of maintaining quality and inefficiencies low as the higher education system expands. Chapter 6 also assesses the role that education technology can play in the coming decade in Indonesia at both the higher education level, as well as for workers already in the labor market who would like to upgrade their skills. Finally, Chapter 7 assesses the 1998/99 budgetary situation within the historical context of education spending in Indonesia. It considers the budget priorities needed for interventions during the crisis and beyond to sustain and further build Indonesia's human capital.

To set the context, this chapter begins with a summary of Indonesia's major successes in education over the past 20 years (Section B). It also outlines the broad goals the country should aim to meet during the next 10 to 15 years (Section C). Finally, Section D briefly presents the main obstacles that Indonesia will have to overcome to achieve these goals.

## **B. PRE-CRISIS PROGRESS IN THE EDUCATION SECTOR<sup>1</sup>**

The current crisis should not obscure the scope of Indonesia's achievements in recent decades. As summarized below, Indonesia has (a) rapidly expanded enrollments, (b) upgraded the labor force and reduced wage differentials, (c) relied on the private sector and focused public expenditure on basic education, (d) narrowed the gender gap, and (e) decentralized major delivery functions of primary education. Such achievements are the key to Indonesia's eventual return to economic growth and the foundation for its future social and political development. The country's overall aim should be to guard these achievements during this short-term period of turmoil and to build on them over the longer term.

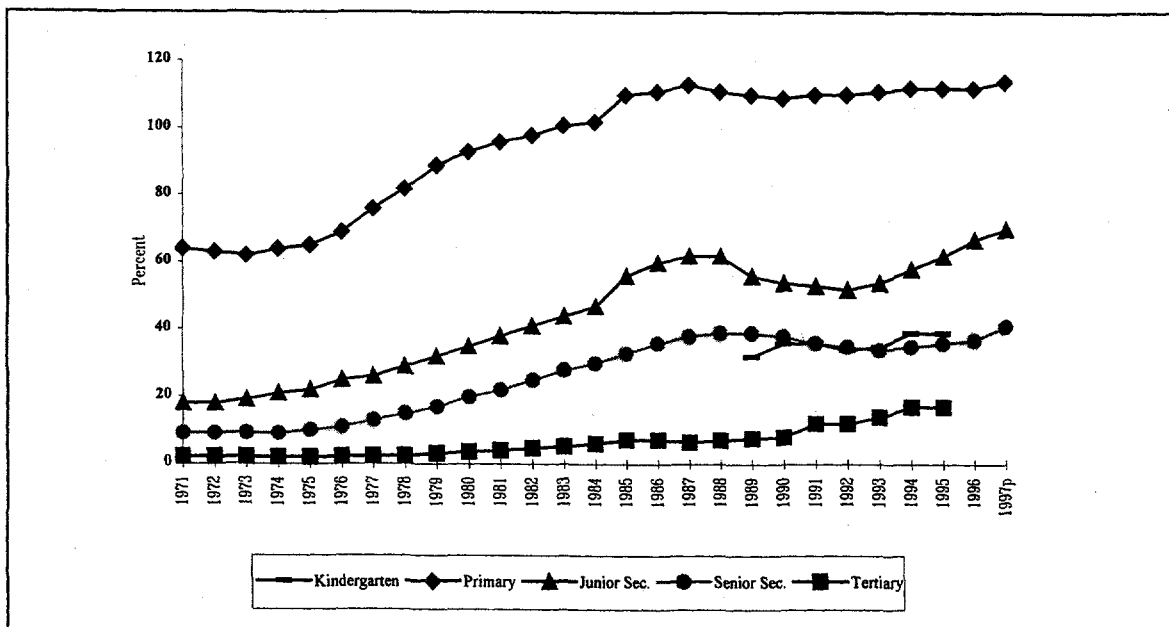
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<sup>1</sup> An overview of the structure of the education system is provided in Annex 1.1.

## Rapid Expansion of Enrollment

In 1973, Indonesia's primary school gross enrollment rate (GER) was only 62 percent (13 million students). Using revenue from the 1973 oil windfall, GOI initiated a large primary school construction program, channeled through the Presidential Instruction block grant for primary schools, the INPRES SD. This infusion of financing, together with the abolition of school fees in 1984 and large numbers of teachers trained through a crash program, resulted in universal primary coverage by 1983 (GER 101) (Figure 1.1). Today there are approximately 30 million students in primary school, the majority in small public schools.

**Figure 1.1: Enrollment rates have increased sharply since the 1970s**  
(Gross Enrollment Rates, 1971-97)



*Note:* Includes Ministry of Religious Affairs schools starting 1985 for primary and junior secondary, and starting 1980 for senior secondary.

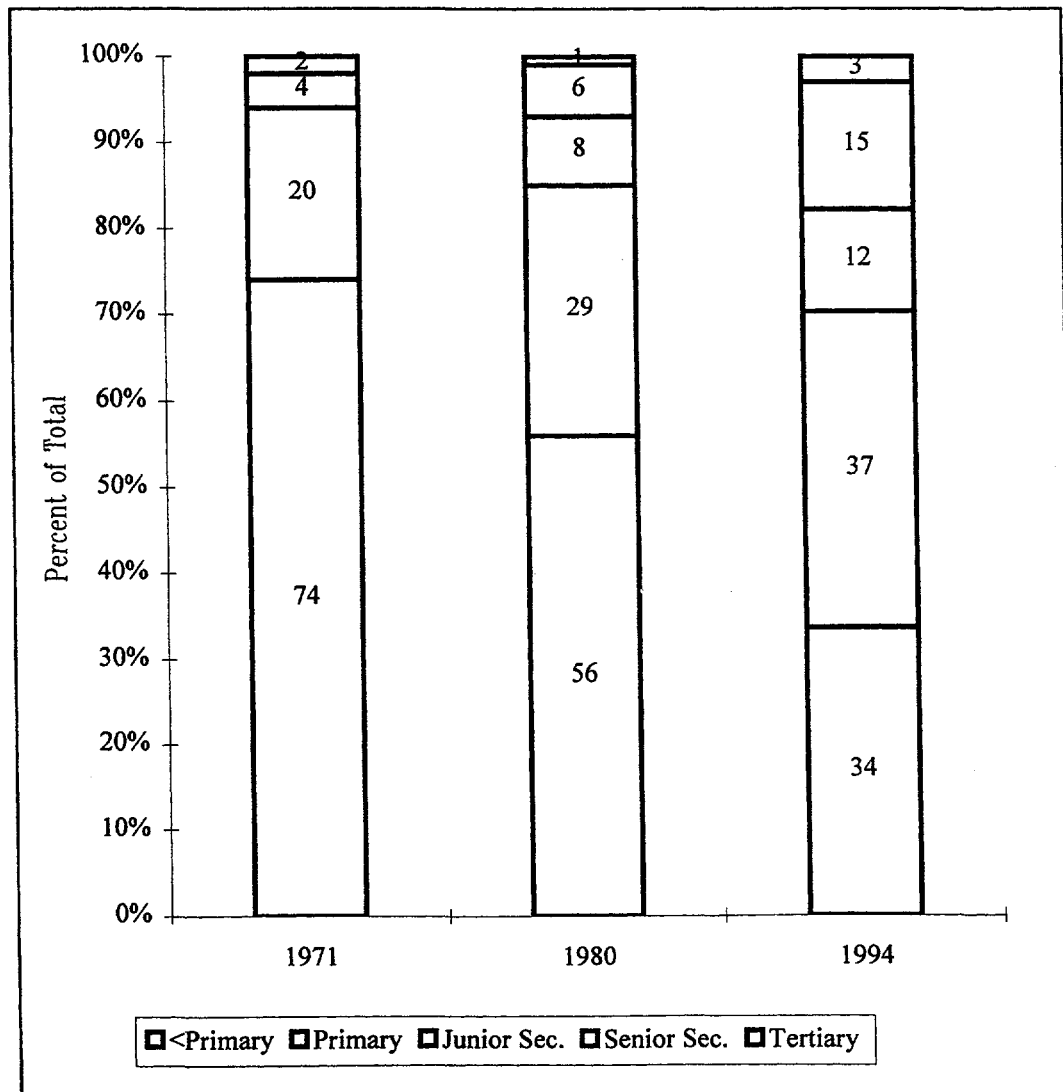
*Sources:* Statistik Persekolahan, Informatics Center, MOEC; MOEC Home Page ([www.pdk.go.id](http://www.pdk.go.id))

Junior secondary enrollments also rose, from 18 percent in the early 1970s (1.5 million students) to 70 percent in 1997 (7.8 million students). Senior secondary and tertiary enrollment rates witnessed similar increases. In 1994, they reached 35 and 17 percent, respectively, comparable to countries with twice Indonesia's per capita income. Growth in the tertiary sector was particularly impressive, with actual enrollment rising sixfold in the last decade and reaching 2.2 million students in 1993. In the two years before the crisis, the growth rates of certificate (one year), diploma (two to three years), and degree graduates increased by 9 percent, 14 percent, and 16 percent respectively.

### Upgrading of the Labor Force and Reduction in Wage Differentials

The rapid expansion of education resulted in an increasing educational attainment of the population (Figure 1.2). The proportion of the population with less than a primary school education fell from 74 percent in 1971 to under 56 percent in 1980. By 1994, this figure had come down further, to one-third. The rise in educational qualifications of the labor force facilitated occupational, industrial, and geographic mobility, thereby integrating the national labor market (Manning, 1996). Until recently, the result was a steady increase in wage employment and earnings and a reduction of poverty (Figure 1.2).

**Figure 1.2: Now two-thirds of Indonesians have at least a primary education**  
(Percentage of population by education level)



Source: Central Bureau of Statistics, Indonesia.

Another effect of improved educational attainment and the higher mobility of workers was the reduction of wage differentials. In 1977, males with vocational secondary education earned more than two times the average wage of males with primary education, while the corresponding ratio for women was more than three to one. These two ratios had fallen to 1.5:1 and 2:1 by 1994 (Table 1.1). Urban labor markets no longer differentiated between new entrants who had completed primary schooling and those who had not, and extended only a small premium to lower secondary school leavers. University graduates were recently earning about three to four times the salary of a new labor market entrant without schooling, compared to a differential in the order of seven to ten in the late 1970s.

**Table 1.1: Wage differentials have declined**  
(Index of urban wage differentials by schooling and gender, 1977-94)

	Male			Female		
	1977	1987	1994	1977	1987	1994
Primary	100	100	100	100	100	100
Junior Secondary	182	133	116	266	176	140
General Secondary	162	166	153	255	238	227
Vocational Secondary	217	167	155	324	272	235
Tertiary	684	291	311	958	430	400

Source: Staff calculations from Labor Force Survey (SAKERNAS), various years.

### **Relying on the Private Sector and Focusing Public Spending on Primary Education**

The rapid expansion of education was not brought about by actions of GOI alone, for particularly in the post-basic education areas, the private sector has been heavily involved in providing education and training. Indeed, the main characteristic of the supply of skills is that it has been dominated by private institutions (Table 1.2). By the early 1990s, the number of senior secondary level graduates from private schools drew equal to that of graduates from public schools. The number of graduates from private post-secondary institutions and universities was more than double those from public institutions. With respect to training, publicly provided training was only a fraction of the private sector. Enrollment in private training centers reached approximately 4.5 million.<sup>2</sup>

<sup>2</sup> For a discussion of training issues in Indonesia, see World Bank, *Training and the Labor Market in Indonesia: Productivity Gains and Employment Growth*, 1997.

**Table 1.2: Private schools play a major role at the post-primary level**

Education Level	Total Output (‘000)	Of whom private (‘000)	Percent private (%)
Primary /a	3,840	256	7
Junior Secondary /a	1,905	522	27
Senior Secondary	1,226	592	48
General /a	863	366	42
Vocational /b	210	129	61
Technical /c	153	97	63
Diploma	59	39	66
Degree	155	110	71
Training Centers /d	4,600	4,500	98

/a Includes religious schools.

/b Includes commercial (SMEA) and home economics (SMKK).

/c Includes three- and four-year technical schools (STM, STMP).

/d Enrollment at civil service tertiary institutions, Ministry of Manpower training centers, and private training centers.

Source: World Bank, *Training and the Labor Market in Indonesia: Productivity Gains and Employment Growth* (1997).

In allowing the private sector to participate in the provision of education almost unabated, GOI was able to focus its spending priorities on the lower levels of education. During the decade before the crisis, expenditure on primary education averaged 50 percent of public expenditure on education, and secondary (junior and senior) and tertiary averaged 29 and 13 percent, respectively. This spending was effective in reaching the poor, augmenting their overall consumption by 10 percent (World Bank, 1993).

### **Narrowing of the Gender Gap**

Another of Indonesia's achievements was the narrowing of the gender gap in access to education. Across all education levels, the gender gap in enrollment declined sharply from 1976 to 1996 (Table 1.3). At the primary level, the gender ratio (f/m) was already high in the mid-1970s, at 86 percent, and it rose to 93 percent by the mid-1990s. At the junior secondary level, the gender ratio rose by more than 30 points, from 65 to 95 percent. The change at the senior secondary level was the most striking: while in the mid-1970s there were only about half as many girls as boys attending senior secondary schools, by 1996 the ratio had risen to 88 percent. At the tertiary level (public and private universities), the ratio was a very impressive 70 percent in 1993. Another indicator of the gender balance in Indonesia was the similar amounts parents spent on their sons' and daughters' education (Box 1.1).

**Table 1.3: The gender gap in education has narrowed rapidly**  
(Gender ratio = F/100 M)

Year	Primary	Junior Secondary	Senior Secondary	Tertiary
1976	85.9	65.1	56.7	
1987	92.3	80.8	75.8	
1996	92.8	95.0	88.2	70.0/a

/a 1993.

Note: Ministry of Education and Culture only.

Sources: Oey-Gardiner (1996); MOEC data.

**BOX 1.1: INDONESIAN PARENTS SPEND SIMILAR AMOUNTS ON EDUCATING THEIR GIRLS AS THEIR BOYS**

Parents do not appear to discriminate in spending by gender for their children's education. When they were asked about spending patterns for their sons and daughters in West Java, parents reported spending similar amounts at the basic education (primary and junior secondary) level (Box Table). Interestingly, they reported spending 25 percent more on girls at the tertiary level than on boys. This pattern was also reported in some of the outer islands, including South Sulawesi and Maluku.

**Box Table: Average annual household expenditures per student (relative to per capita expenditure) in West Java by gender, 1995**

	Male	Female	Total
Primary	14	14	14
Junior secondary	34	34	34
Senior secondary	52	46	49
Tertiary	75	97	85
<b>Total</b>	<b>25</b>	<b>24</b>	<b>24</b>

Source: SUSENAS 1995.

<sup>1</sup> These expenditures are not corrected for quality, however.

Although the gender gap has narrowed, it has not disappeared altogether. Especially at the post-primary level, gender variations appear according to income group and across regions. By 1994 there was no significant gender difference at the primary level either at the national level (93 percent for boys and 92 percent for girls; Table 1.4) or across the expenditure quintiles, even among the very poor. The next level of



education had only a small gender gap overall, but a greater one among the poorest families. Gender differences were apparent among 16-18 year olds, whose enrollment rates differed by almost 30 percent in 1994, even though they had been narrowing rapidly. Gender differences in enrollment rates existed across regions, but again, primarily beyond the primary level.<sup>3</sup> A significant gap appeared in seven provinces at the junior secondary level, most of them located in the outer islands, even though in many of these provinces the gap had also been declining over time.<sup>4</sup>

**Table 1.4: The gender gap is more pronounced among the poor 13-18 year olds**  
[Age-specific enrollment rates by gender and per capita expenditure quintile, 1994 (%)]

	Poorest	2	3	4	Wealthiest	Total
<b>7-12 years old</b>						
Male	85	93	95	97	98	93
Female	83	93	94	96	96	92
<b>Total</b>	<b>84</b>	<b>93</b>	<b>94</b>	<b>97</b>	<b>97</b>	<b>92</b>
<b>13-15 years old</b>						
Male	56	58	67	76	94	69
Female	42	56	68	79	80	65
<b>Total</b>	<b>49</b>	<b>57</b>	<b>68</b>	<b>76</b>	<b>86</b>	<b>67</b>
<b>16-18 years old</b>						
Male	25	27	42	60	76	47
Female	10	22	35	50	63	36
<b>Total</b>	<b>17</b>	<b>24</b>	<b>38</b>	<b>55</b>	<b>69</b>	<b>41</b>

Source: Indonesia Family Life Survey (IFLS), 1993.

### Decentralization of Basic Education

There is little doubt that Indonesia's decision to decentralize the delivery of primary education in the mid-1970s enabled the rapid expansion of access to education for the poor. The rapid and vast growth of the administrative apparatus of primary education at the provincial and district/municipality levels reflected the major priority at that time of universal primary schooling. More recently, GOI moved to build upon this success by placing the responsibility for implementing the nine-year universal basic

<sup>3</sup> There are three provinces where enrollment rates for girls are significantly lower than boys at the primary level and warrant special attention. These are East Timor, Irian Jaya and Southeast Sulawesi.

<sup>4</sup> Central Kalimantan, Maluku, West Nusa Tenggara, East Nusa Tenggara, East Timor, Irian Jaya, and Bali.

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education program (*wajib belajar sembilan tahun*) directly with the Bupatis (heads of districts).

### C. A LOOK AT THE FUTURE

The above achievements compare favorably with those of high-performing East Asian countries such as Korea and Taiwan (China) when they had the same gross domestic product (GDP) per capita that Indonesia had before the economic crisis. But even in better times, Indonesia had a long way to go in developing its human resources. If it is to compete in the world economy and move to the next stage in its development, Indonesia should expect within the next 10 to 15 years to: (a) provide every child with at least nine years of quality basic education; and (b) develop a more flexible and efficient post-basic education system that meets the needs of a rapidly modernizing economy.

#### **Providing Every Child with Nine Years of Quality Education**

Although its primary education achievements in recent decades are remarkable, Indonesia lags regional competitors such as Malaysia, the Philippines, and Thailand in junior secondary enrollments. In 1994, GOI began implementing its policy of achieving nine years of basic education for all by the year 2010. Despite the current budget pressure, achieving the target remains GOI's main education priority for the medium term. GOI's emphasis on universal basic education is justified for several reasons. First, international research finds positive externalities associated with expanding secondary education, including reduced fertility and child mortality rates and better nutrition. Second, unlike higher levels of education, expansion of junior secondary helps in equalizing labor incomes. Finally, without government support, traditionally disadvantaged groups, including many of the rural poor, will not attend school and will be left behind when the economy gathers strength (see Chapter 4).

Implicit in the commitment of basic education for all is a commitment to ensure basic education of an acceptable quality (Chapter 3). The quality of students, defined by competencies in numeracy, reading, and reasoning skills, varies considerably in Indonesia but on average is low. While it is difficult to measure quality in absolute terms, there are indications that high quality is valued in Indonesia: parents strive to send their children to schools with the highest school-leaving (Ebtanas) exam scores (and pay high sums of money to do so). Under a primary education project, parental contributions to primary schools increased after quality improvements were made. And with respect to the job market, wage premiums for workers perceived to have a quality education are large, and

largest for graduates from overseas universities and the top Indonesian universities.<sup>5</sup> The highest priority, however, should go to improving quality at the basic education level because that is where most of the students are concentrated (86 percent of those in the public and private system) and because problems of low quality at the basic level are transmitted through the system.

### **Providing Flexible Post-Basic Education that Meets the Economy's Needs**

Responding to changes in the economy is not about numbers of skilled workers but about developing a flexible education system that can respond to unexpected developments. Flexibility in the post-basic education system (beyond junior secondary) is required because jobs change rapidly and future skills cannot be predicted with certainty (see Chapter 6). Workers are likely to change jobs many times throughout their lifetime, and many jobs will look very different in ten or even five years. The growth in most occupations is generally unpredictable and can often be met through substitution of one kind of worker by another (with some wage adjustment). In Indonesia, the possibilities of substitution and rapid adjustments are even stronger because of the large informal sector's flexible wages and workers' mobility across economic sectors and regions. Even before the crisis, the public post-basic education and training system was not efficient nor flexible enough to meet the challenges of the global economy.

In addition, Indonesia will need to eventually begin to develop a strategy for the role of educational technologies in its education system. Future economic competitiveness worldwide is envisaged to be based on information, technology, and knowledge. Indonesia's commitment to adopt new telecommunications and information technologies, coupled with new initiatives to liberalize and modernize the post and telecommunications sectors, provides opportunities for the use of new technologies in the education sector in the future.

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<sup>5</sup> Three separate studies of university graduates suggest that graduates of public universities are paid a premium over graduates in the same field coming from private universities. Except for a very few elite private universities, public universities are generally regarded as being of higher quality than private universities. Dhanani and Sweeting (1995), reporting on the results of a 1994 Tracer Study of Technical Graduates, report a 68 percent premium for 1989-93 male engineering graduates from public universities relative to those from private universities. A tracer study of 1989-91 graduates from 10 universities indicated that the waiting time for a job was shorter and the average salaries roughly 80 percent higher for graduates of universities considered to be among the top five in Indonesia. Finally, a survey hiring and training practices of 350 private sector firms revealed that while graduates of public and private universities earned only around 8 percent more than graduates of private universities, the premium for graduates trained in overseas universities was on the order of 80 percent.

#### **D. THE CHALLENGES AHEAD**

To realize the above vision in the next 10 to 15 years, Indonesia will have to confront the following long-standing weaknesses of the education system: (a) quality is unsatisfactory throughout the education system, and was even before the economic downturn; (b) the poor will not be able to attain nine years of basic education through their own means, even after the economy rebounds; (c) past institutional arrangements and perverse incentives have created rigidities that impede an efficient and equitable implementation of education objectives; and (d) the post-basic education system is not yet responsive to rapidly changing demands nor are GOI resources used as effectively as they might be.

The economic crisis has made it difficult for Indonesia to address all of these weaknesses aggressively and at once. Instead, the country has been forced into damage control to protect its past achievements. Indonesia's overall aim in the near term should be to sustain investments in basic education and shield the poor from the adverse consequences of the economic decline. As the crisis subsides, the nation can gradually move back on track and head toward its longer term goals.

## **2. STRATEGIES FOR THE NEAR TERM: PROTECTING EDUCATION GAINS DURING THE CRISIS**

### **A. INTRODUCTION**

Without losing sight of its medium- to long-term goals, Indonesia has no choice but to confront urgent short-term needs. The recent collapse of the currency, the reversal of economic growth and private capital flows, and the added effects of natural disasters have combined to create severe economic and social upheavals throughout Indonesia. After enjoying 30 years of uninterrupted rapid growth, the economy is expected to contract by 12 percent in 1998/99 and remain stagnant the following year. The crisis threatens to reverse many of the gains made in reducing poverty, which declined from over 50 percent to 11 percent between 1970 and 1996. The number of poor could well double in coming years, and even this may be an underestimate. Unemployment is projected to increase from about 5 percent in 1996 to 15 percent by the end of fiscal year (FY) 1989/99. Rising underemployment is perhaps even more important because it will reduce the income of many people who are already poor. Real wage rates, particularly among agricultural laborers and workers in the informal sector, have declined, while prices for rice and other food have climbed faster than the overall rate of inflation (World Bank, 1998a, 1998b).

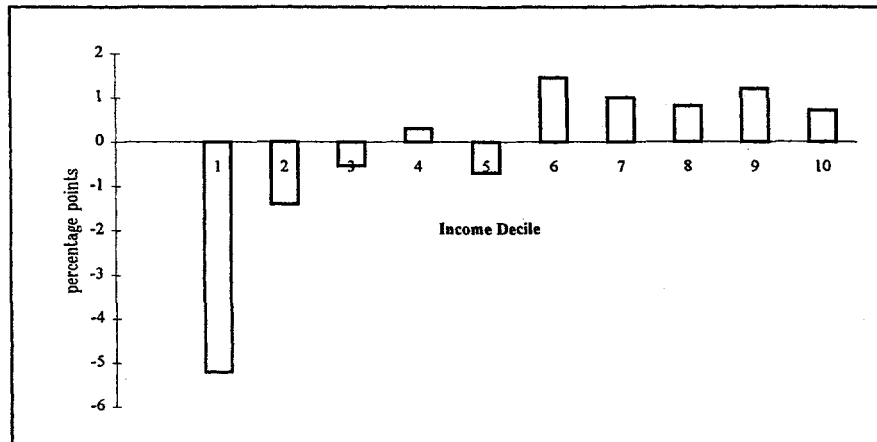
This economic deterioration will impair the poor's ability to invest in human capital as parents face higher prices of schooling and lower incomes to pay for schooling. Hence, the crisis is threatening future income earning capacity by making education an unaffordable luxury for many Indonesians, especially the poor. In the next two to three years, Indonesia will need to focus on sustaining investments in basic education and shielding the poor from the adverse consequences of the economic crisis. Experience from Latin American countries during the 1980s and 1990s shows that not moving quickly to maintain support for core education services can result in irreversible losses in human capital in the long run. As the economic situation improves and additional resources are available, the pre-crisis education agenda, discussed in Chapters 3 to 6, should be resumed. This chapter presents strategies for the short term (Section D). These strategies are derived from lesson from the past experience of Indonesia in the mid to late 1980s (Section B), and from potential effects of the current crisis on education (Section C).

## B. LESSONS FROM THE PAST

In times of crisis, the education of children is one of the first areas to suffer. This is happening now in Indonesia, and it has happened before. Coming out of structural adjustment in the mid-1980s, enrollment rates declined especially for the poor, despite this being a time of overall reductions in poverty rates. Gross enrollment rates at the junior secondary level fell for four years from 62 to 52 percent between 1988 and 1992 (see Figure 1.1), and it took until 1995 for enrollment to regain its previous level. Primary enrollment rates also saw some decline even though much smaller. What is most important is that for both primary and junior secondary the drop in enrollment rates was concentrated among the poor (Figure 2.1).

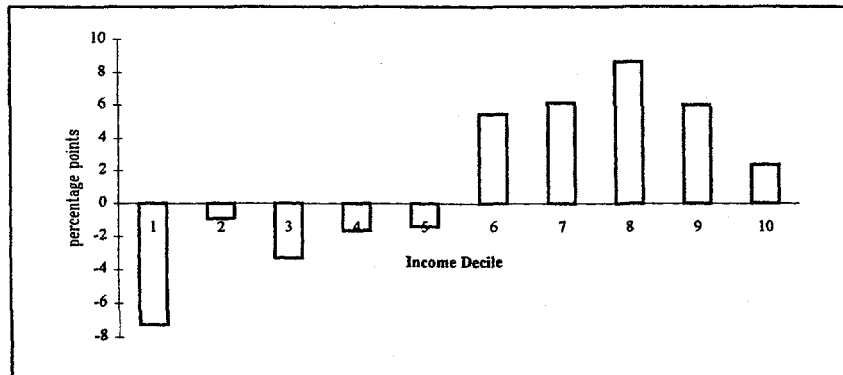
**Figure 2.1: Enrollment among the poor dropped following the 1980s' economic adjustment at the primary level . . .**

(Changes in net primary enrollment rates by income decile between 1987 and 1992)



**. . . and at the junior secondary level**

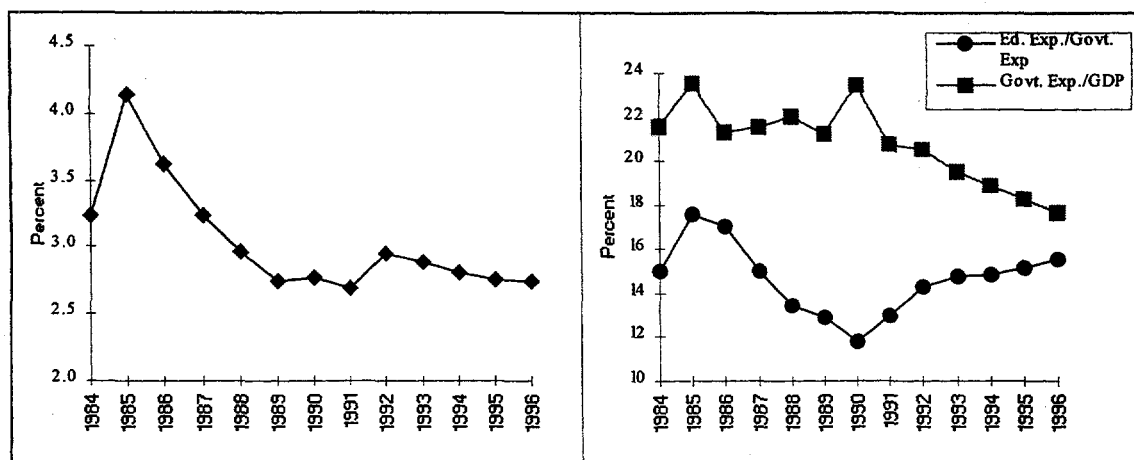
(Changes in net junior secondary enrollment rates by income decile between 1987 and 1989)



Source: Staff calculations from SUSENAS 1987, 1989, and 1992.

The decline in enrollment can be explained by the combination of reductions in public expenditure on education, increases in the price of schooling, and a drop in income. Despite government intentions to protect social sector spending during the 1985/86 period of adjustment, expenditure actually fell. Education expenditures as a percent of GDP declined from 4.13 to 2.74, while the share of education in total government expenditure fell from 17.6 percent to 13 percent (Figure 2.2).

**Figure 2.2: The late 1980s saw a decline in education expenditures as a percent of GDP ... and as a share of total government spending**



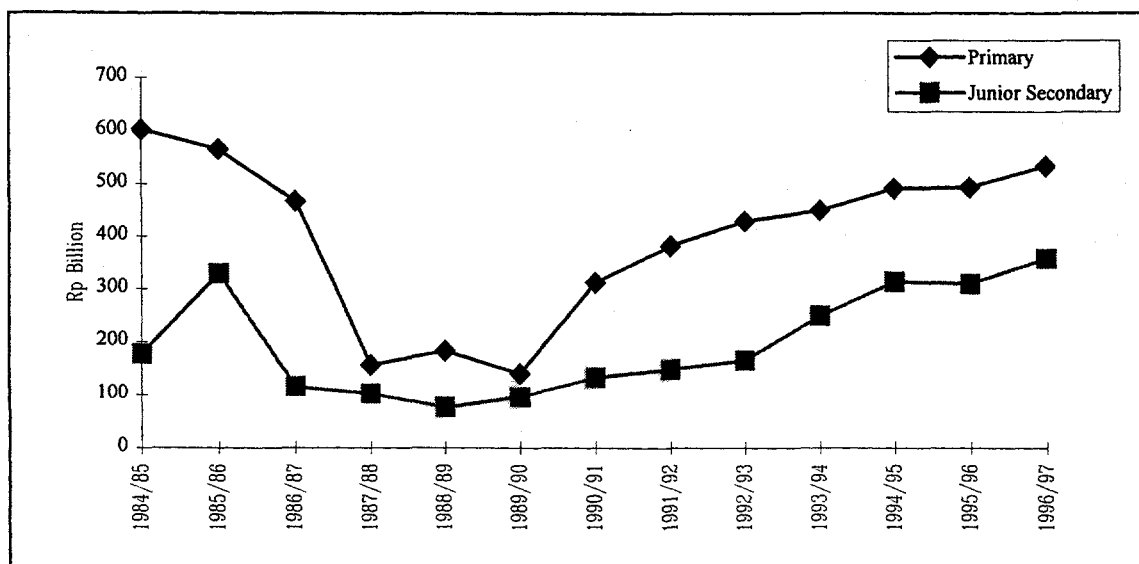
Source: Consolidated government budget (Annex 7.1: Tables 1-7).

On a per student basis, real development expenditure fell from Rp 23,000 to Rp 6,000, and from Rp 103,000 to Rp 27,000 between 1985/86 and 1989/90 at the primary and junior secondary levels respectively (Figure 2.3). Hence schools in poor areas (which cannot draw upon resources from the surrounding community) were operating with a barebones budget.

The second reason which contributed to the enrollment decline is the increase in the price of schooling. As schools saw their public subsidy decline, they reacted by asking parents to pay higher fees. Evidence from research in rural Java shows that between 1987 and 1989 school fees in junior secondary increased by 50 percent in real terms (Mason, 1992). For households in the lowest quintile, total expenditure per junior secondary student increased to about 80 percent of per capita household expenditures (IFLS).

Finally, the worsening of some household incomes between 1989 and 1993 made it difficult for the poor to finance their children's education. Research shows that families who experienced crop loss in the 1989-93 period reacted by reducing education expenditure (Cameron and Warwick, 1997).

**Figure 2.3: Real development expenditure on basic education also declined sharply in the late 1980s**



Source: Consolidated government budget (Annex 7.1: Tables 1-7).

### C. EFFECTS OF THE CRISIS ON EDUCATION

To avoid education setbacks like those of the late 1980s, Indonesia needs to address key risks that threaten the gains of recent years. There are three main risks in the immediate run: (a) enrollment in basic education may decline as the poor keep their children out of school; (b) the lack of funds may erode quality in primary and junior secondary schools even below the already low level at which it was prior to the crisis (see Chapter 3 for discussion of quality); and (c) government inefficiencies may further waste scarce resources. The crisis is also expected to affect higher education but the urgency of public action is less clear. All these risks are compounded by the difficulty of getting timely representative information on what is happening on the ground.

#### Decline in Enrollment for the Poor

The first risk is that low-income households will once again withdraw their children from school. If they do, their children's earning potential will suffer, and gaps between the rich and poor will widen even further after the crisis is long past. Parents may withdraw older children from school so they can work and contribute to shrinking family income. They may also withdraw older or younger children to save the money spent on school fees and other education costs. Girls may be particularly at risk: evidence from other countries suggests that parents' decisions to send girls to school are more price-sensitive than their decisions about sending boys (Gertler and Glewwe, 1992; Lavy, 1992; Mason and Khandker, 1996).



Estimating the impact of the economic crisis on enrollment is a complex matter as the crisis is unprecedented in terms of magnitude and depth. Different methodologies have been used to estimate the likely changes in school enrollments as a result of a fall in income. Results vary considerably. Econometric techniques have yielded relatively low impact effects ranging from an additional 115,000 to 260,000 7-12 year olds, and 173,000 to 270,000 13-15 year old children dropping out over time as a result of a 10 percent fall in per capita income.<sup>1</sup> Estimates from GOI (Table 2.1) point to much larger effects of an additional 890,000 and 640,000 children dropping out of primary and junior secondary schools, respectively in just one year.

**Table 2.1: GOI expects a sharp rise in dropouts and nonenrollments because of the crisis**

	1996/97	1997/98	1998/99	Change 1997/98 to 1998/99
<b>Primary</b>				
Enrollment (millions)	29.24	29.27	28.99	-0.28
Dropouts (millions)	0.88	0.76	1.65	0.89
Dropout rate	3.0%	2.6%	5.7%	3.1
<b>Junior Secondary</b>				
Enrollment (millions)	9.28	9.69	8.33	-1.36
Dropouts (millions)	0.30	0.47	1.11	0.64
Dropout rate	3.6%	5.1%	11.5%	6.4

Source: DIKMENUM, MOEC, 1998.

While it may not be possible to arrive at precise figures, policymakers, donors, teachers, principals, parents, nongovernment organizations (NGOs) and other stakeholders agree that the impact of the crisis on poor children will be severe. The strongest evidence available comes from the well documented experience of the past discussed in Section B. In addition, focus group discussions and school visits conducted in April 1998 (when the crisis was in its sixth month approximately) indicate that already poor schools and children were feeling the impact of the crisis (Box 2.1).

<sup>1</sup> The models estimate the elasticity of enrollment with respect to per capita income (or its proxy, per capita consumption) using 1996 SUSENAS.

### **BOX 2.1: CRISIS IMPACTS ON SCHOOLING: SOME PRELIMINARY OBSERVATIONS**

Focus group meetings with school principals in Maluku and South Sulawesi indicate that the effects of the economic crisis is already being felt in many schools, particularly in poorer communities. A majority of principals reported, for example, that the number of families that are having difficulty paying parent association fees (BP3) on time or at all is higher than a year ago. Moreover, a number of principals reported that absences were higher this year as children spent more time helping parents with economic activities. Some principals reported that more students have dropped out this year than last—although the absolute numbers still appear low. In addition, some principals indicated they thought that children were eating less in the morning before coming to school and that this was affecting students' concentration. Similarly, children appear to be buying less from local food vendors. Students were also reported to be having more problems buying school supplies due to economic hardship.

Schools are also beginning to feel a pinch from the crisis. Declines in BP3 revenues, coupled with fixed nominal levels of public funding and rising prices, are leaving schools financially squeezed. Several principals indicated that the costs of printing exam materials was becoming prohibitive. There were also reports of increased tardiness among teachers. In attempts to save money, some teachers have switched to less expensive, but slower and less reliable, forms of transportation to work.

Source: D. Filmer, *Framework for an Assessment of the Impact of the Economic Crisis on Demand for Basic Education*.

### **Even Further Deterioration of School Quality**

A second risk is that the quality of education and the condition of schools will suffer as the Government, schools, and parents struggle to minimize education costs during this period of hardship. To keep up their enrollment numbers while controlling costs, private schools in particular will be under pressure to let quality slip even further. Poorer communities will not have enough funds for the operation and maintenance of primary schools or for basic supplies and teaching materials. Even before the crisis, many schools needed books, supplies, and substantial maintenance. With government grants to primary schools amounting to less than 40 cents per pupil per year, the rising costs of supplies and maintenance materials are likely to cause many schools to raise parental contributions (BP3) and other "fees," even as households are finding it harder to make ends meet.

### **Compounding Resource Wastage due to Existing Inefficiencies**

A third risk is that resources desperately needed for school places and quality inputs will instead be channeled to uphold inefficient government structures and school systems. This is a concern particularly in three areas: (a) the centralization of education management and budgets; (b) the maldistribution of teachers and inadequate incentive structures for public servants; and (c) the inefficient siting of primary schools. All these are discussed more fully in Chapters 3, 4 and 5. Suffice it to say here that the extremely tight fiscal situation which Indonesia is in today puts a premium on any efficiency gains that can be achieved. To the extent that the above three issues are wasting resources, this is a timely moment to address them.

### **Changes at the Higher Education Level**

Declining public subsidies and lower family incomes will strain higher education as they are straining the lower levels of education even though the magnitude of the changes are less clear than those at the basic education level. Enrollments may decline as higher graduate unemployment is likely to cause potential students to weigh the declining benefits of a university degree against rising expenses, although opportunity costs may also drop as alternative opportunities in the job market fade in a crisis economy. As private universities become less affordable for many, there may be increasing pressures on public universities. The shift away from private universities may lead to a rationalization of private providers.

### **Inadequate Timely Information**

Despite the availability of large numbers of data sets (e.g. SUSENAS, PODES, SAKERNAS, administrative data, etc.) most of this information is not available quickly enough to provide timely feedback to policymakers on what is happening on the ground. By the time much of the data is compiled, analyzed and published, it is at least one to two years out of date. Many of the traditional research and data gathering agencies are now seeing their budgets reduced while the costs of their work rise (paper, transport for survey work, etc.), making it even harder to obtain quick reliable information. The challenge for the Government is to anticipate changes or spot them quickly as they occur, to assess their likely impact, and to devise appropriate responses. Monitoring and evaluation systems designed for periods of evolutionary change and steady progress may not give the Government the information it needs to act quickly to prevent serious decline.

## **D. STRATEGIES FOR THE SHORT TERM**

The Government is already taking steps to control these risks and avoid consequences similar to those of the previous period of adjustment. In dealing with the crisis, Indonesia will have to respond to immediate needs in all sectors and subsectors. But it is important not to compromise the substantial progress of the past or lose sight of longer term goals for the future of education. In broad terms, this means *sustaining investments in basic education and protecting the poor from the damaging effects of the crisis*. Despite enormous pressures on the budget, it is critical that recently increased allocations for public spending on basic education be preserved. In the short term, this may involve reallocating resources from other parts of the education system. In particular, resumption of many of the post-basic education programs may have to be phased in later as the economy recovers.

The Government has already moved to preserve funding for basic education in the 1998/99 budget (see Chapter 7). GOI has also rapidly launched a five-year \$382 million “Stay in School” campaign (Box 2.2) to support poor children and schools in poor areas spearheaded by a massive social mobilization effort. This program and a full government budget for basic education will be needed to implement the following recommended

short-term strategies for dealing with the current crisis: (a) keeping poor children in school; (b) preventing the deterioration of quality even further; (c) increasing efficiency; (d) monitoring education outcomes; (e) ensuring programs reach the intended beneficiaries; (f) preserving funding for basic education beyond 1998/99 until the crisis subsides (see Chapter 7); and (g) putting on hold any expansionary plans for higher education.

**BOX 2.2: PRESERVING THE POOR'S HUMAN CAPITAL DURING ECONOMIC CRISIS:  
INDONESIA'S "STAY IN SCHOOL" CAMPAIGN**

In order not to jeopardize its long-term investment in human capital, GOI rapidly launched a five-year national program to provide scholarships for poor children in junior secondary school, to provide block grants to schools serving poor communities, and to mobilize the community to support education of their children. A coalition of Ministers, consisting of the Ministers for Education and Culture, Religious Affairs, Population, Home Affairs and The National Development Planning Agency (BAPPENAS), and led by the Coordinating Minister for Social Welfare, has been formed to support the program. The World Bank is leading the multidonor effort, including the Asian Development Bank (ADB), UNICEF and bilateral agencies—AusAID, and Asia Europe Meeting (ASEM)—to support the Program. Total cost of the five-year program is approximately \$382 million, with an ADB contribution of \$86 million, and the remainder from the World Bank.

Seventeen percent of the poorest junior secondary students will receive a scholarship of Rp 240,000 (\$30 equivalent) in voucher form at the beginning of the school year. This is intended to cover school costs such as notebooks, uniforms, transportation costs, and school fees. Nationally, 2.6 million junior secondary students will receive scholarships (about 17 percent of enrollment).

Forty percent of primary and junior secondary schools serving the poorest communities will receive grants of Rp 2 million (\$250 equivalent) and Rp 4 million (\$500), respectively. In total, 82,000 primary and junior secondary schools will benefit from block grants per year.

Supporting the scholarship and block grants program is a nationwide TV, radio, and print media campaign to ensure that parents and communities are aware of the program, to emphasize the importance of remaining in school, and to facilitate transparency in the use of funds and selection of recipients. A large social and governmental mobilization effort is also under way.

### **Keeping Poor Children in School**

To maintain enrollment and transition rates in primary and junior secondary education, targeted subsidies to lower schooling costs for the poor can be especially effective. GOI has already launched a three-part program under the Stay-in-School campaign. The first part is a scholarship program aimed at the poorest 17 percent of junior secondary students.<sup>2</sup> As noted above, past experience shows that families experiencing even a temporary income shock often react by reducing spending on education and withdrawing their children from school. Other countries have used such

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<sup>2</sup> GOI is also providing a limited number of scholarships to students in grades 4-6 of primary school as senior secondary schools.

programs with success to enable disadvantaged groups to attend school (World Bank, 1997). Scholarships would help to compensate the families of students for the expected decline in incomes. The scholarships will be given directly to students in public or private schools to offset the costs of education, such as books, tuition, transport, fees, and uniforms. At least half the recipients will be girls. A district committee will decide the number of scholarships to be awarded to each school based on socioeconomic and school data, and local committees made up of school staff and community members will select the individual students.<sup>3</sup>

The second part of the Stay-in-School program is to provide block grants to primary and junior secondary schools in poor communities where schools can use part of these grants for fee relief for new entrants or other children at risk of dropping out.<sup>4</sup> In addition to supporting enrollments, block grants will also help schools maintain quality, as discussed further in the next section.

The third part of the program is a large social mobilization effort involving the media and the mobilization of social and governmental organizations at all levels. Both the block grant and scholarship programs will be supported by a national media campaign to ensure parents are aware of the programs and do not withdraw their children from school.

### **Preventing the Deterioration of Quality**

One of the main impacts of the crisis is the reduced ability of schools, especially those in poor areas, to function effectively as a result of reduced government budgets and parental contributions. Substantially improving quality during a time of financing shortages will not be feasible for most schools, but they should at least aim not to lose ground in their efforts to provide a basic quality education. Block grants will help keep these primary and junior secondary schools running during this period of high costs and counter the tendency of schools to cut back on quality inputs and maintenance. In addition to defraying the costs of education for poor children (see previous paragraph), block grants will allow schools in poor communities to (a) maintain their physical facilities, (b) cover operational costs and the cost of consumables, and (c) buy instructional materials such as textbooks, library books, and teachers guides. A district committee will select the junior secondary schools to receive grants, and a subdistrict

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<sup>3</sup> For details about selection and targeting mechanisms and other aspects of the scholarship and block grants programs, see "Project Implementation Plan for Scholarship and Block Grants Program," MOEC, 1998.

<sup>4</sup> Simulations reveal that declines in income impose a strain particularly at two crucial points of a child's education in Indonesia: entry into grade 1 and the transition from primary to junior secondary school after grade 6 (SUSENAS, 1996).

committee will identify the primary schools to receive grants. Block and matching grants will be transferred directly to the school.

In addition to the expanded initiative of grants to schools, the Government should maintain its support for ongoing activities that strengthen the quality of education without embarking on new, large-scale interventions. One key activity is the provision of textbooks and learning materials for children, particularly where there are shortages at the primary level. Implementation of the Primary Education Quality Improvement Project (PEQIP, see Chapter 3) and the Book and Reading Development Project is providing valuable experience in controlling the costs and improving the quality of textbooks in Indonesia. But because of its cost and uneven impact, only limited inservice training for teachers should continue during the crisis or less costly alternatives should be sought, such as cluster-based grants for teacher training.

### **Increasing Efficiency**

Times of upheaval provide opportunities for broad restructuring of existing systems and the introduction of measures that can save costs and enhance effectiveness. To increase the efficiency of the education system, three main steps are recommended. First, broad institutional reforms (see Chapter 5) should continue to be implemented during the crisis. There is no need to delay these initiatives until the economy improves because the costs of institutional reform are relatively small while the savings generated can be substantial. Indonesia should continue decentralizing responsibility for service planning and delivery closer to the school. This will require the Government to define the responsibilities of various parties, from the central level to the school level, and rationalize the flow of funds. The block grants will be particularly effective in increasing school participation and autonomy.

Second, the Government should begin eliminating inefficiencies in the distribution of teachers. Rural schools with teaching staff shortages would benefit from contract teachers and better incentives for teachers (see Chapter 4). Changes in teacher allocation formulas would support the redeployment of teachers.

Third, school mapping should set the stage for the consolidation of primary schools in areas where there are several schools near each other. Analysis has shown that consolidation will save money over the long run because it reduces the number of buildings that need to be rehabilitated and maintained.

### **Monitoring Student Outcomes**

Monitoring the effect of the crisis on student outcomes is needed to allow the Government to respond to the crisis in a timely manner. The monitoring should feed into the design of new interventions aimed at responding to the crisis (such as the scholarship and block grant programs) and to restructure and adjust existing programs. The main characteristics of the monitoring should be:

- monitoring should be tied to decision-making;
- where possible, the monitoring system should use existing information systems and databases;
- particular attention should be directed to monitor the effect on vulnerable groups and the poor;
- short-term monitoring in the form of rapid surveys should be of quick turnaround (possibly less than 8 weeks);
- rapid assessment techniques should be used as needed;
- monitoring should make use of the help of nongovernmental organizations (NGOs) and community-level organizations whenever possible.

### **Ensuring Programs Reach Intended Beneficiaries**

Whether the above strategies help sustain investments in basic education and protect the poor's human capital will depend in large part on whether the crisis interventions reach the intended beneficiaries and leakages are minimized. There are many complex issues related to the implementation of the interventions including targeting, selection, and the flow of funds to students and schools. It is important that all efforts be made to ensure a transparent and participatory implementation of the interventions. Member of civil society and community groups should be mobilized to assist in implementing and monitoring the programs.

### **Putting on Hold Expansionary Plans for Higher Education**

Allocating greater public funds to higher education will be difficult to justify during the economic crisis considering the priorities in both the basic education sector, as well as other social safety net programs (food, labor-intensive workfare, etc.). The crisis may provide an opportunity, however, for the higher education sector to deepen reforms it had initiated before the crisis (see Chapter 6), which aim to increase efficiency and accountability. These reforms will help the sector weather the current crisis and strengthen its grounding for the future.

As the country stabilizes, Indonesia should aim for progress toward broader goals, including quality improvements that prepare students for the gradual return to economic expansion (Chapter 3); the achievement of universal basic education (Chapter 4); further institutional reform and decentralization (Chapter 5); and greater flexibility and responsiveness in post-basic education (Chapter 6). The report now turns to these key issues and medium-term strategies.

### 3. ENHANCING THE QUALITY OF BASIC EDUCATION<sup>1</sup>

#### A. INTRODUCTION

The basic education system prepares students to go on to post-basic education and to enter the labor market. Given the likely changes in the labor market, those who enter the labor market today can expect to have to upgrade their skills later. How easy this will be for them and future employers will depend to a large extent on the quality of the basic education they receive. The available evidence (summarized in Box 3.1) suggests that graduates are leaving the basic education system with low levels of competencies in numeracy, reading, and reasoning skills. This means that they would be inadequately prepared for tackling the curriculum expected of post-basic students and for a lifetime of learning and employment. Enhancing the quality of basic education would be expected to have the largest effect on the overall quality of the system because it is at the basic level where the vast majority of students are located (over 80 percent) and because problems of quality at the basic level are transmitted through the system.

#### BOX 3.1: EVIDENCE OF QUALITY OF EDUCATION IN INDONESIA

There have been three major studies of achievement and the determinants of achievement in basic education in Indonesia. Two of these studies (Moegiadi 1976 and Suryadi 1989) tested students at the primary level in science, mathematics, and Bahasa Indonesia. The third study was a reading competency study conducted in conjunction with other countries and included students in primary and junior secondary grades (IEA, 1994).

The studies by Moegiadi and Suryadi suggest that achievement levels were low in 1976 and in 1989 (Box Table A). There was, on average, less than 50 percent mastery in science, mathematics, and Bahasa Indonesia. Furthermore, the same low level of academic achievement was found in both studies, conducted thirteen years apart. In the 1989 study, achievement did improve somewhat in Bahasa Indonesia and science, but it declined in math. A possible positive interpretation of these results is that since there was a major expansion in the intervening years, one might have expected overall achievement levels to fall. The fact that they did not fall dramatically may suggest that the quality of schools improved or at least did not deteriorate. On the negative side, it is notable that the absolute level of achievement in both years remained unsatisfactory.

The IEA study (1992) was an international study of literacy. A sample of students included was from grades 4 and 8 in Java, Riau, and East Nusa Tenggara (NTT). The results for primary students were low: students correctly answered an average 36 percent of the questions. There were wide regional differences as well: the lowest marks were recorded for those who attended rural schools. The highest literacy achievement scores came from Yogyakarta, followed by Jakarta, East Java, Riau, Central Java, NTT, and West Java. Boys and girls had similar scores and private schools did better than public schools. At the junior secondary level, approximately 52 percent of the test questions were answered correctly. The rankings of provinces and gender were similar to those of the primary level. However, public junior secondary schools did better than private ones.

<sup>1</sup> This chapter incorporates the following contribution from MOEC: *Basic Education Quality Interventions: Lessons of Implementation, March 1998*.



## BOX 3.1: (CONT'D)

**BOX TABLE A: STUDENT ACHIEVEMENT STUDIES SUGGEST SUBJECT MASTERY HAS NOT IMPROVED**  
(Results from quality studies in Indonesia)

Statistics	Bahasa Indonesia (n=5533)	Math (n=5757)	Science (n=5790)
<b>Suryadi Study (1989)</b>			
Mean	27.7	21.6	24.2
Standard deviation	7.9	8.7	6.8
Number of items	47	49	47
% correct answer	59%	44%	53%
<b>Moegiadi Study (1976)</b>			
Mean	35	33	27
Standard deviation	12	9	8
Number of items	60	60	60
% Correct answer	49%	55%	45%

More recent informal surveys have been carried out on small samples of schools in Indonesia using classroom observations and testing of students' cognitive abilities in basic number skills and reading in the lower grades. One study found that students in grades 5 and 6 had not mastered many basic number skills (Somerset, 1994). Furthermore, many teachers also lacked these skills. A continuation of this survey into grades 7 and 8 found that errors found at the primary level were still prevalent in later years (Somerset, 1996). These results suggest that poor performance begins in primary school and is perpetuated through secondary school.

Evidence comparing Indonesia to other countries with respect to achievement is limited to the IEA reading competency study mentioned above. In that study, Indonesia's primary and junior secondary school students lagged behind their regional counterparts in reading competency (Box Table B): about 2 percent below those in the Philippines, 20 percent below Thailand, and 30 percent below Singapore.

**BOX TABLE B: INDONESIA IS BEHIND ITS NEIGHBORS IN READING ACHIEVEMENT**  
(Reading achievement test scores for Grade 4 pupils in East Asian Countries, 1992)

Country	Mean Score (%)
Indonesia	51.7
Philippines	52.6
Thailand	65.1
Singapore	74.0
Hong Kong	75.5

Source: Vincent Greaney, *Literacy Standards in Indonesia*, 1992.

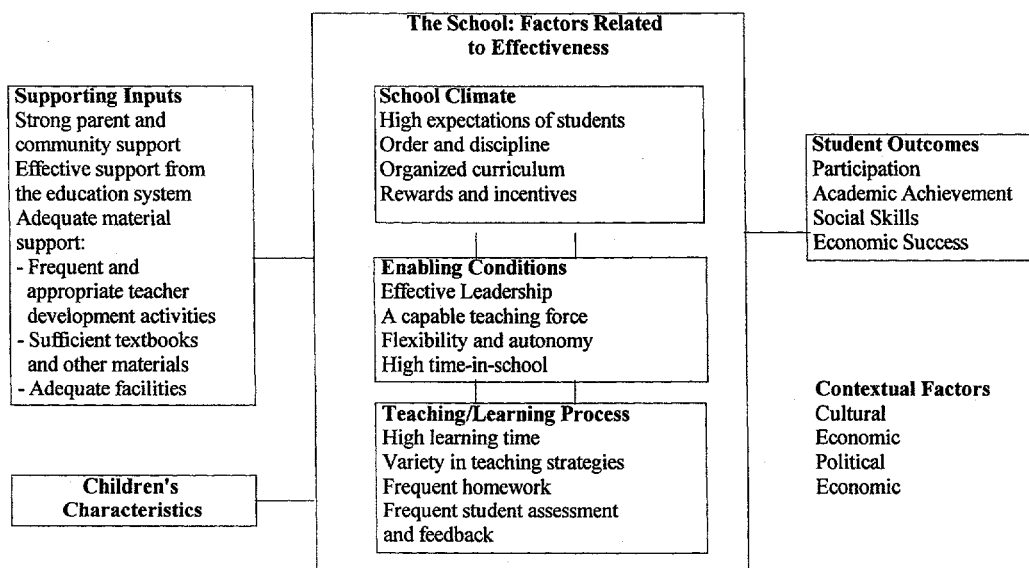
The need to improve the quality of basic education has been a recurring theme in past reviews of the education system (Boediono et al., 1992; World Bank, 1989) dating from 1985, when the expansion of physical infrastructure in primary education was largely completed. Although there has been some progress in addressing the main problems, they remain essentially the same as they were at the end of the 1980s. The

recommended strategy for enhancing the quality of basic education combines (a) a set of core interventions targeted to the main constraints (Section C), with (b) modifications to the institutional arrangements and funding mechanisms that improve the ability of local levels to propose and carry out actions tailored to their specific problems. The recommended changes in institutional arrangements and funding mechanisms are discussed in Chapter 5.

### B. REASONS WHY QUALITY OF BASIC EDUCATION IS UNSATISFACTORY

To discuss the issue of quality of education, we make use of the conceptual framework developed by Heneveld (1994), which is based upon a review of a large number of research studies on school effectiveness.<sup>2</sup> Figure 3.1 presents the factors associated with effective schools and quality education. It is evident that many factors can affect quality, and the interactions among the factors can be complex. In addition, there may well be limits to the extent of substitutability among the factors. For example, more resources may not generate the desired effect if the teaching force is not capable or teaching strategies are not varied. Thus, an adequate balance among the different factors is desirable. At any given time a particular country, district, or school may need to strengthen one factor more than another, giving rise to different priorities.

**Figure 3.1: Factors related to school effectiveness**



Source: Heneveld (1994).

<sup>2</sup> Annex 3.1 summarizes the results from some of the research on school effectiveness around the world. Craig (1996) summarizes the findings on school effectiveness for Asian countries.

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The evidence from Indonesia (Moegiadi, Suryadi, Somerset, Malo et al., World Bank 1989, and others) points to the following nine factors as the most important reasons why student outcomes are generally unsatisfactory:

- incentive structures that do not adequately reward good teaching practices;
- low learning time in grades 1 and 2;
- insufficient resources, particularly for schools in poor communities;
- a large stock of teachers who are poorly trained in both subject matter and teaching processes;
- low levels and quality of textbooks and materials;
- an overloaded and unintegrated curriculum;
- insufficient assessment and evaluation of quality;
- current institutional arrangements in Indonesia (addressed in Chapter 5); and
- ineffective school management, particularly as it relates to the role of the principal (Chapter 5).

### **Incentive Structures that do not Adequately Reward Good Teaching**

There are two dimensions to the incentive structure—the overall salary/hours package and the civil service functional credit system. GOI's implicit policy on teachers' (and all civil servants') salaries has been to keep official salaries low, keep working hours to a minimum, and allow teachers to hold second and third jobs and seek other ways of supplementing their income. Indeed, the practice of holding multiple jobs is widespread. In junior secondary schools, an average of 33 percent of principals and 40 percent of Bahasa and math teachers indicated that they had one or more additional jobs (Table 3.1). The average number of hours spent at the second job was 18 hours per week, compared to about 21 hours per week spent at the first job, amounting to roughly a 40 hour per week total. At the primary level as well, a similarly large proportion of teachers and principals work other jobs (32 percent), even though they spend relatively more time at their primary job compared to junior secondary teachers (32 and 15 hours per week on first and second jobs for primary teachers, compared to 21 and 18 hours for junior secondary).

The data also show large differences between private and public schools: private school principals and teachers are two to three times more likely to have second jobs and work fewer hours per week at school than their public school counterparts, partly reflecting the fact that many private school teachers and principals work at public schools as their primary jobs.

The policy of keeping salaries and official working hours low has both benefits and risks. On the benefit side, GOI is able to maintain tight fiscal control of its recurrent budget (teachers make up 50 percent of the civil service), even though the long-term dynamics of the system—such as the cost of the pension scheme—may not be as inexpensive. On the downside, there are indications that teachers' and principals' outside

jobs are affecting their performance in the classroom, both in terms of time spent in the classroom (high absenteeism), and in terms of outside time needed for preparation, inservice training, or other professional development activities (Kemmerer, Nielsen, and Lynch, 1990). Furthermore, the present incentive structure aggravates the already existing bias towards urban schools. Not only are urban areas typically richer and able to provide their teachers with higher salary supplements from the parental BP3 contribution, but there are more opportunities for second jobs.

**Table 3.1: A majority of private school teachers and principals have a second job, 1994**

	Public Schools	Private Schools	Total
<b>PRIMARY SCHOOL</b>			
<b>School Principal</b>			
% with other job	28.8%	51.7%	31.7%
# hours/week spent at other job	14.8	18.4	15.5
<b>Teacher</b>			
% with other job	30.0%	52.8%	32.2%
# hours/week spent at school	31.9	32.5	31.8
# hours/week spent at other job	14.6	18.0	15.0
<b>JUNIOR SECONDARY SCHOOL</b>			
<b>School Principal</b>			
% with other job	18.1%	56.0%	33.1%
# hours/week spent at other job	13.0	19.4	17.4
<b>Bahasa Indonesia Teacher</b>			
% with other job	20.8%	62.2%	37.5%
# hours/week spent at school	22.4	17.9	20.9
# hours/week spent at other job	12.9	19.5	17.6
<b>Mathematics Teacher</b>			
% with other job	29.8%	62.1%	42.0%
# hours/week spent at school	24.0	19.2	22.3
# hours/week spent at other job	15.7	20.2	17.8

Source: Serrato and Melnick (1995).

A second important instrument influencing teaching incentives is the functional credit system, introduced as a modification to civil service laws in 1988. In principle, a primary or junior secondary teacher can now rise through the system to a level comparable to that of a professor while still remaining a school teacher. This is done through attaining a higher level of certification, working long hours, teaching in remote

areas, participating in inservice training activities, contributing to curriculum development, writing articles, or performing community service. Upon accumulating a certain number of credit points, one can receive a promotion in two years, rather than the conventional four, and there are no caps on the level to which one can rise.<sup>3</sup>

While the overall idea of the credit point system may be a step in the right direction, it has not been effective in enhancing teacher quality for several reasons (Nielsen, 1996). First, there is a bias toward university teachers' in that primary and junior secondary teachers, particularly those working in rural areas, are rarely in the position to publish papers, develop curricula, or even attend training. Second, the review process does not work very well for those far from metropolitan areas. Third, the system rewards teachers for being busy more than it does for being in the classroom and teaching effectively. Indeed, by giving teachers credit points for teaching in more than one school, the system is encouraging teachers to hold second jobs (Kemmerer, Nielsen, and Lynch, 1990).

### **Low Learning Time in Grades 1 and 2**

Previous studies (Suryadi, 1989; World Bank, 1989) identified the low level of instructional time as a key problem. The low instructional time is a result of relatively few hours of class time in the lower grades and unproductive use of time in the classroom by the teacher. In first and second grade, only 15 hours of teaching are required per week. The World Bank study suggested that because of teacher absences, teacher contact time can be up to 30 percent less than the required working hours. The instructional time is further reduced by spending classroom time on administrative tasks.

The majority of international evidence (summarized in Craig, 1995; Fuller and Clarke) also suggests that the amount of instructional time is closely related to student achievement. While instructional time depends not only on the total time available but how that time is used, it would appear that there is simply not enough time available in grades 1 and 2 to deliver the curriculum effectively. In having only 2.5 hours a day of instruction in first and second grade (525 hours per year), Indonesia deviates from international norms (e.g., an average of approximately 840 hours per year for a sample of OECD countries; see Table 3.2). Repetition rates are high in first and second grades, suggesting that many students are not able to absorb the curriculum. Tests of learning processes at later grades (Box 3.2) indicate that students are making errors in basic concepts. The basic concepts are not being reinforced in early years. While simply increasing the amount of hours of instruction is not a sufficient condition to increase quality, it would appear to be a necessary condition.

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<sup>3</sup> D. Nielsen (1996). "Reforms to Teacher Education in Indonesia: Does More Mean Better?" (paper presented at the Western Regional Conference of the Comparative and International Education Society), January 3-5, 1996.

**Table 3.2: Indonesia's 525 hours of instruction per year in grade 1 are well below OECD countries**  
(Statistics for 6 year olds in selected OECD countries, 1993)

Country	Number of hours of lessons annually	Number of compulsory school days
Netherlands	860	200
Belgium	1,000	182
Germany	564	208
Greece	840	175
France	936	180
Luxembourg	849	216
Great Britain	840	190

### BOX 3.2: BASIC NUMBER SKILLS IN 12 PRIMARY SCHOOLS IN INDONESIA

Basic number skills at 12 primary schools in four locations (West Java, Central Kalimantan, East Nusa Tenggara, and DI Yogyakarta) were evaluated recently. In addition to students at grades 5 and 6, teachers and teacher trainees were also tested. The test was made up of three parts: (a) basic number values (whole numbers, decimals and mixed numbers); (b) simple number operations (addition, subtraction); and (c) applied number problems.

Students had few difficulties in arranging two- or three-digit whole numbers correctly. The evaluation of decimal numbers, however, caused major difficulties—e.g., only 12 percent of the pupils arranged the three decimal numbers 0.55, 0.8 and 0.14 correctly in order of size (from smallest to largest). A small but significant minority (7-12 percent) of teachers and teacher trainees consistently made errors. In simple number operations (add or subtract two or three digit numbers, with and without decimals), the average mean score was 44 percent. There were also enormous variations among schools. The three highest achieving schools had mean correct scores of 53 to 89 percent; the five lowest achieving schools had mean scores of 9 to 26 percent. Calculation errors were more common in high achieving schools, but in low achieving schools basic errors (i.e., did not understand process of addition or subtraction) accounted for one-fourth of responses, while systematic errors (e.g., larger minus smaller errors) were also common. Again, a small minority (9 to 14 percent) of teacher trainees made repeated errors.

Students had most difficulties with applied number problems. The mean score was only 32 percent, and ranged from 10 to 47 percent. Most of the errors involved early or middle stages of the cognitive sequence, i.e., understanding the problem, and deciding which number operations needed to be carried out, rather than the calculations stage. During classroom observations, it was evident that teachers tended to pay little attention to the process of problem solving, and focused more to the mechanical process of calculations. Formulas (e.g., calculating the area of a rectangle) were stressed, rather than the principles. Teachers scored 82 percent in applied number problems, but teacher trainees scored only 65 percent. In a calculation of perimeter, they scored worse than students.

Students were used to answering multiple-choice questions—as is the format of the Ebtanas school-leaving exams—and reluctant to show their workings. Teachers therefore cannot identify the sources of common student errors. After the test sessions, feedback was provided to teachers, and they delivered remedial lessons to the grade 5 and 6 classes. Pupil test scores jumped.

The D-II upgrading courses for primary teachers contain a number of mathematics courses, including trigonometry, calculus, vectors, matrices and non-Euclidean geometry. Given the test results above, questions must be raised about whether the courses give too much attention to advanced topics, rather than basic concepts and pedagogy (i.e., teaching methods). There is scope for improving within-school teaching meetings. In textbooks, where teachers have them, there is a tendency to stress formulas rather than ideas and concepts.

*Source:* Somerset, Anthony, "Some Basic Number Skills in Twelve Primary Schools: An Exploratory Study," December 1994.

### **Insufficient Resources, Particularly for the Poorest Schools**

Resources for schools are insufficient and are often distributed inequitably. Several studies have pointed to the problem of insufficient provision of educational resources as a factor affecting quality.<sup>4</sup> Between 1985/86 and 1989/90, nonsalary spending per pupil on primary education declined in real terms from Rp 23,000 to Rp 6,000. Shortly before the crisis, there was a real increase as the government brought this figure up to Rp 34,000 (about \$15). But Indonesia's inconsistent support for primary education is in contrast to Korea's experience, for example. For more than 20 years after achieving universal primary enrollment, Korea increased nonsalary primary per pupil spending by 6.5 percent per year in real terms.

Resources are also distributed unevenly among schools. The government divides available public funds among schools according to a rigid formula rather than basing grants on an objective assessment of individual schools' needs. There is also a significant difference between what poor and rich schools can raise in fees to supplement official transfers. Schools rely on various parental fees to fund a significant portion of nonsalary costs, and wealthier communities are better able to afford these costs. For example, data from the 1995 SUSENAS for West Java suggest that the average out-of-pocket costs that would be expected to be paid to the school (i.e., including fees and materials, but not transportation and tutor costs) ranged from a low of Rp 16,700 in one kabupaten to a high of Rp 66,500 in another. These figures are substantial compared to per student public expenditure on nonsalary costs. Not surprisingly, the correlation is very high (-0.81) between the per student contribution and the percentage of the households in the kabupaten that are in the lowest third of the income distribution.

### **A large Stock of Poorly Trained Teachers**

Suryadi's 1989 study on student achievement and the 1989 World Bank study identified the low quality of teachers as one of the most important contributing factors to the low achievement of students. Analysis based on more recent IFLS data undertaken for this study confirmed the importance of teacher quality and instructional time.

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<sup>4</sup> The insufficient allocation and the variation across schools has also been noted in junior and senior secondary schools (Jiyono et al, 1993). Suryadi (1989) identifies this, along with teacher quality and school management practices, as one of the three main problems confronting the basic education sector. Analysis of the Indonesia Family Life Survey (IFLS) done for this report indicated that student achievement was 12 percent lower if the school was in the lowest quintile of per capita funding, even after controlling for other factors affecting schools. James et. al. (1995) also found that the availability of resources made a difference. They estimated that a 10 percent increase in per pupil expenditures would be associated with a 10 percent increase in the pass rate.

The problem of upgrading the quality of teachers is complicated by the sheer size of the teaching stock and the initial low level of teacher qualifications. Data from MOEC indicate that approximately 80 percent of primary teachers are qualified at the senior secondary level (Table 3.3) (the standard for new recruits at this level is now D-II, a diploma granted for two years of training beyond secondary school).<sup>5</sup> At the junior secondary level the situation is significantly better, with 55 percent qualified at the Diploma level (the standard for new recruits at the junior secondary level is now S1, a four-year undergraduate degree). As would be expected, however, there are large variations by provinces. For example, the proportion of junior secondary teachers with less than a D-III qualification is 55 percent in West Sumatra compared to 95 percent in Jambi.

**Table 3.3: Few primary teachers have more than a senior secondary education**  
(Number and percent of teachers by qualification, 1996-97)

Qualification	Primary	Jr. Secondary
< Sr. Secondary	774,544 (6.4%)	-
Sr. Secondary / Teacher Training for Jr. Secondary	930,382 (80%)	-
Diploma	40,503 (3.5%)	237,343 (55.1%)
Bachelor	75,197 (6.5%)	100,903 (23.4%)
Graduate	45,160 (3.9%)	92,523 (21.5%)
Master	-	212 (0.1%)
<b>Total</b>	<b>1,165,786</b>	<b>430,981</b>

Source: *Indonesia Education Statistics in Brief, 1996-97*, MOEC.

With generally low levels of qualification, it is perhaps not surprising that teacher performance is weak in two main respects. First, teachers have inadequate mastery of the subject material.<sup>6</sup> Second, teachers lack the basic skills for effective teaching. They do not prepare good lesson plans, devote enough class time to learning, or carefully analyze

<sup>5</sup> These data, however, do not reflect the numbers of graduates from the newly established preservice and inservice upgrading programs (D-II PGSD programs).

<sup>6</sup> A 1985-86 study by Jiyono (*Research on Teachers' Aptitudes and Instructional Materials in Physical Science at the Primary School Level*, MOEC) found that only 45 percent of a random sample of teachers trained in the SPG program (equivalent to senior secondary) could pass the science test given to primary school completers. The Suryadi (1992) study found that the average score on the mathematics test for primary school teachers was 34.3 out of 58 test items.



students' homework. Classroom practices include continuous lecture-style instruction, not providing attention to individual students, rigid reliance on textbooks, and an inability to make effective use of teaching aids (MOEC, 1998). In addition, studies by Somerset (1994 and 1996, see Box 3.2) suggest that teachers provide inadequate feedback to their students. The teachers are often not aware of the nature of the errors their students make. However, when the teachers are made aware of the errors, they are able to take remedial action.

**Progress in Teacher Training.** Although the level of teacher skills in Indonesia is low, studies have shown that teacher training can make a difference. Analysis of IFLS data showed that short-term teacher training, particularly in mathematics, had a strong positive effect on student achievement. An evaluation of PEQIP (DHV, 1997) showed that students' scores on standardized achievement tests in two provinces were positively affected by innovative teaching (particularly in science), the quality of classroom management, and the overall quality of teaching (Box 3.3).

*Primary Level.* In an effort to improve the quality of teachers, MOEC has launched several preservice, upgrading, and inservice and onservice programs for teachers over the last 10 years. At the primary level, the Government assigned responsibility for preservice teacher education to the Directorate-General of Higher Education, closed nearly 700 public and private preservice teacher training institutes (which in the past overproduced poorly trained primary teachers), placed the remaining 62 training centers under the responsibility of public teacher training institutes (IKIPs) or universities with education faculties (FKIPs), and developed a two-year postsecondary preservice program (at the D-II level).

In addition to the efforts to improve preservice training, GOI launched a massive program in 1990 designed to upgrade the qualifications of primary school teachers to a D-II level. The teacher upgrading program consists of preservice and inservice activities. The inservice upgrading program is under the responsibility of the Indonesia Open Learning University (UT), in collaboration with DG of Primary and Secondary Education, and is expected to reach 800,000 teachers, with an annual intake of almost 40,000 per year. Following this upgrading the teachers will qualify for higher civil service salaries. Because of this, there is a strong incentive for teachers to participate in this upgrading program, but this upgrading will not necessarily lead to an improvement in the quality of teaching. A preliminary evaluation concluded that: (a) the speed of program development has been very rapid, resulting in curricula being developed without the benefit of a needs assessment and learning materials created without proper try-outs and revisions; (b) program content has generally been found to be out of step with the knowledge needs of teachers; (c) the upgrading is taking longer than expected, only 47 percent of self-financed D-II candidates graduating after 4 years (the program is designed for 3 years); and (d) examination passing levels have generally been set too low.

### BOX 3.3: THE PRIMARY EDUCATION QUALITY IMPROVEMENT PROJECT (PEQIP)

The PEQIP project provides inservice teacher training and basic inputs including books and other materials. It also promotes better management and community involvement in an effort to improve student achievement, completion rates, and overall quality. The project was introduced in about 850 schools in a variety of areas of six provinces (DI Aceh, West Sumatra, DI Yogyakarta, Bali, NTT and North Sulawesi).

A 1997 evaluation of the project was designed to assess the effects of PEQIP as reflected in student achievement and student flow, to determine which variables may explain these effects, and to analyze the cost-effectiveness of PEQIP. The evaluation related student achievements to activities that fall within the following PEQIP components: Teacher Professional Development, Educational Management, Evaluation and Monitoring, Books and Learning Materials, and Community Participation.

The study found that PEQIP had positively affected student achievement and had therefore accomplished its main objective. The project's effects on student flow (dropout, repetition, and enrollment into secondary school) were less clear. The results were clearer for *inti* schools than *imbas* schools. Inti schools are the core schools in a school cluster scheme that is designed to encourage work groups and professional development among teachers, principals, and supervisors. The core school in the cluster generally received greater attention than the satellite *imbas* schools it was to support. Activities related to the Teacher Professional Development and Community Participation components had the strongest positive effect on standardized student achievement scores in the two provinces studied in depth (DI Aceh and North Sulawesi). The greatest contributions were related to the following activities (grouped by PEQIP component):

- Teacher Professional Development—homework, percentage of lesson time spent on presentation and student work, quality of classroom management, quality of teaching, innovative teaching in science
- Community Participation—BP3 contributions, agreements with parents about homework
- Books and Learning Materials—use of library books
- Management—principal-supervisor meetings (about educational content) and school meetings (about school-community relations)
- Evaluation and Monitoring—supervisor observation of teachers

PEQIP inputs with the strongest effects were not always the most cost-effective. This was especially true for activities in the Teacher Professional Development component. The report recommended increasing relatively inexpensive and cost-effective inputs in the Community Development component, increasing the supply of books, reducing purchases of expensive educational equipment, and sharply lowering the costs of teacher training.

Source: DHV, *The Effects of PEQIP Indonesia: Report of the Impact and Cost-Analysis Studies*, 1997.

In addition to the upgrading program for primary school teachers, the government has experimented with various approaches to the continual training of teachers (Nielsen, 1996, Somerset 1997). The experience with two pilot projects that deliver recurrent inservice training and continuous onservice support in active teaching-learning methods has been positive (Box 3.3), but the approach has yet to be operated on a large scale. International experience with continual training programs suggests that it is a challenge to sustain interest in meetings and training after the initial injection of money. In addition, PEQIP's experience shows that the costs of training are high and that satellite schools in a cluster need special attention in teacher training to keep their performance from lagging that of core schools (Box 3.3).

*Junior Secondary Level.* The Government has also invested in improving the quality of teachers at the junior secondary level through preservice and inservice programs.<sup>7</sup> To improve training at the 12 IKIPs and 19 FKIPs, the Government began in 1996 rewarding through fellowships and grants those teacher training institutions which prepare proposals that would upgrade instructional quality (in curriculum, teaching and research), establish effective linkages with secondary schools, and improve the qualification of their teaching staff.

In recent years, GOI has acted to improve SMP (junior secondary) teacher qualifications, implementing inservice upgrading programs. For those teachers already in the service, a blanket upgrading program to D-III for SMP teachers was begun. The programs are either through distance education offered by the Open University (UT), or face-to-face (*tatap muka*) based at one of the Indonesian Faculties or Institutes of Teacher Education. First priority was given to the core subjects areas of science, mathematics and English. Almost all underqualified teachers in these fields have completed or are currently completing the D-III upgrading. Upgrading in Bahasa Indonesia got under way last year, and is expected to continue for another year or two. Upgrading in social studies has not started yet and is facing shortages of funds. Despite the large numbers of teachers having gone through the upgrading, there is no systematic effort to determine how successful the effort has been and little evaluation data exist. What impressions there are extrapolated from the (generally negative) reviews of the ongoing D-II upgrading program for primary teachers discussed above.

After attempting traditional inservice training at central training centers in the 1970s, and faced with unsatisfactory results, GOI (with the support of UNDP/UNESCO) formulated an inservice/onservice program for teacher quality improvement where learning at the training center (inservice) would be reinforced and extended by on-the-job learning in the school (onservice). This PKG (Pemantapan Kerja Guru) program, which includes the supportive visiting program called MGMP (Musyawara Guru Mata Pelajaran), has gone through several models since its development in the 1980s. A large number of secondary school teachers have been trained over the past 20 years to become teacher trainers at the provincial and district levels. At the provincial level, instructors have been trained to plan school-based teacher education efforts, to train the local tutors

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<sup>7</sup> In the 1970s and 1980s, when access to secondary education was expanding rapidly, there were chronic shortages of secondary school teachers. Various diploma programs were created to provide postsecondary preservice teacher education opportunities for new teachers. For many years, the government operated a special one-year training program (PGSMTP) for junior secondary (SMP) teachers, which provided D-I certification. Gradually this responsibility shifted to the IKIPs and FKIPs, which offered two-year D-II programs. By the late 1980s, all PGSMTP programs had been closed and D-II programs were being phased out. By the early 1990s, all general senior secondary (SMA) and SMP teachers were expected to earn an S1 university degree. Many SMP teachers are still working toward D-III certification.

for those programs (guru inti), and to manage special PKG programs (Model C) for teachers from remote area schools. Guru inti have been trained and commissioned to provide inservice activities at the district and sometimes school cluster level.

In summary, even though the various training programs have provided invaluable human resources for school-based quality improvement activities, in recent years they have become routinized and less effective. Evidence of improved pedagogy is hard to find outside the most favored schools in large urban centers (MOEC, 1998). Teachers do not pay enough attention to what and how pupils are learning. More importantly, the cascade model of the training began to falter when implementation moved from the pilot stage to a national-level program. Funding was spread too thin, enthusiasm faltered, and the introduction of intermediate trainers (between the core group of trainers and end-users, the teachers) blocked the flow of new ideas.

### **Low Levels and Quality of Textbooks and Materials**

Most primary schools in Indonesia do not have sufficient materials, and the quality of existing textbooks and materials is low. According to household data (IFLS, 1993), 41 and 45 percent of all primary school children did not have Bahasa Indonesia and mathematics textbooks, respectively, in 1993. These figures represent hardly any improvement at all between 1989 and 1993, during a period of relative financial health. The shortage of books in primary schools is primarily a problem of implementation. Although it has been policy since the mid-1990s to provide a textbook in each core subject for every student, in practice MOEC-published textbooks are generally distributed to schools according to a 1-to-4 book/pupil ratio. Timely and adequate distribution to schools has been a persistent problem, especially in rural and remote areas, and sometimes the government's records of book distribution do not match the reality in schools. In general, primary schools have few, if any, reading books and no reference or learning materials, except in the few cases where they have been made by the teachers themselves.

The quality of primary school books also needs improvement. As noted in MOEC's "Basic Education Quality Interventions" (1998), the level of language in many primary school textbooks is too difficult for students and inconsistent across subjects. Textbooks are also not integrated with the 1994 curriculum (see below), and teachers do not have good, practical guides to support them in bringing the curriculum reforms to the classroom. In addition, the physical quality and visual presentation of books are often poor.

For junior secondary schools, the Book and Reading Development Project is now increasing the supply of textbooks and library books in junior secondary schools, but the situation still needs improvement. The school building allows for a library and laboratory. But in many schools, the library has traditionally had no books except for old and

outdated textbooks, and the laboratory was not used, even where there was some equipment. Centralized ordering, budgeting, procurement, and distribution have often delayed delivery of books and teaching materials to schools. More important, when schools did receive teaching tools through a top-down system, what they received was often unneeded, unused, or inappropriate, particularly in the case of science equipment. Lessons from earlier projects are now being incorporated into project designs to bring decisions closer to local levels. The government's planned decentralization (Chapter 5) can encourage a more responsive and flexible planning and procurement system.

### **An Overloaded and Unintegrated Curriculum**

The school curriculum was revised in 1994, and implementation was completed in 1997. At the primary level, the 1994 curriculum covers 10 subjects, including newly introduced "local content" subject slots that account for 20 percent of curriculum time.<sup>8</sup> Only religion and sports are taught by specialist teachers. Although it introduced some positive changes, the curriculum's impact on student learning is unclear. The new curriculum is not yet sufficiently integrated across subjects and grades, nor is it fully integrated with textbook content, teacher training, and assessment. The changes have not been effectively disseminated to all schools, and teachers have not been adequately supported with detailed guides. In addition, the number of subjects and their level of difficulty are often more than teachers and students can handle effectively. Preliminary evaluation by the Curriculum Center in 1997 suggests that the curriculum content may be more difficult than that of the Association of Southeast Asian Nations (ASEAN) and other countries (MOEC, 1998). And although the local content subjects allow for a certain amount of flexibility in different regions, the addition of these subjects has added to an already overloaded curriculum in some schools.

At the junior secondary level, the lack of use and integration of science and other learning materials into the teaching-learning program reflect the overall problems of the teaching of science and technology in the curriculum, with emphasis on chalk-and-talk teaching rather than on participatory techniques.

### **Insufficient Assessment and Evaluation**

Indonesia needs better ways to evaluate the achievements of the education system as a whole and individual students, as well as the impact of major investments in the education sector. Since standardized achievement tests are not systematically used in Indonesia, there is little hard evidence on achievement levels and trends for the education system. Furthermore, the lack of comparability across provinces or over time is a serious

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<sup>8</sup> For a fuller discussion, see MOEC's "Basic Education Quality Interventions: Lessons of Implementation" (1998).

handicap to tracking and monitoring the effects of different policy interventions on student achievement. The recent international comparative study on math and science education (TIMSS) illustrates the power that comparative studies have in capturing the attention of senior policymakers, the public at large, and potential international investors. The experience of other countries shows that negative results especially can be a powerful spur to improvement.

The education system does not effectively assess the progress of individual students. As noted by MOEC (1998), the government has no law on the frequency or format of student evaluation. The backwash effect of the Ebtanas examination (national school-leaving test) means that all tests are used as preparation for this exam and are therefore summative rather than formative. Teachers and curriculum developers look ahead to the Ebtanas exam in designing end-of-term or end-of-year tests, rather than focusing on the diagnosis of individual students' learning weaknesses. In addition, the near-exclusive use of the multiple-choice format does not encourage individual reasoning and the clear written expression of ideas. Finally, the testing system does not support changes in the curriculum, so teachers have little incentive to ensure the curriculum material is covered.

There is also insufficient evaluation of the impact of major investments. For example, in response to the findings that teachers did not master subject matter adequately, a major upgrading program was initiated. However, this has not been accompanied by a test of subject mastery to determine whether teachers actually learned the material, nor has there been much effort to link the nature of the upgrading program to student achievement. Since this upgrading program is expected to be implemented over many years, such information would provide useful feedback to the nature of the investment program.

While there have been quite a few large and smaller research activities, the results from this research have not always made their way into policy decisions. The example of Thailand (Box 3.4) is an illustration of how timely research was used to enact major reforms.

### **C. ENHANCING THE QUALITY OF BASIC EDUCATION: STRATEGIES FOR THE FUTURE**

The recommended strategy for enhancing the quality of basic education combines (a) a set of core interventions targeted to the main constraints with (b) modifications to the institutional arrangements and funding mechanisms that improve the ability of local levels to propose and carry out actions tailored to their specific problems. Below, we present the set of core interventions to improve the quality of basic education. The proposed institutional arrangements and funding mechanisms are presented in Chapter 5.

**BOX 3.4: POLICY-BASED RESEARCH AS A TOOL TO IMPROVE THE QUALITY OF  
PRIMARY EDUCATION IN THAILAND**

“Throughout the mid to late 1970s numerous reforms had been made in the structure and curriculum of primary education, but change was still unsatisfactory, largely on account of three management problems: (a) dual management of primary education by the Ministry of Education and the Ministry of Interior; (b) overcentralization; and (c) undercompensation of rural teachers.

In order to solve these problems the government constituted a ‘Select Committee’ under the leadership of the Deputy Prime Minister. This committee was able to compile numerous studies which had already been completed, which demonstrated weaknesses in primary school management and recommended improvements. The availability of these studies was fortunate, since teacher activism in 1979 was pressing the government for rapid and decisive action, and this provided no time for the commissioning of new studies. The compilation of research was accompanied by a public relations effort: progress and tentative recommendations were made public through the press and conveyed to teachers for feedback through members of the public relations subcommittee. When the Committee made its final report, the recommendations were research-based, they had been reviewed and commented upon by stakeholders in the field, and they were packaged in an attractive ‘user-friendly’ format.

The report was presented in April of 1980 by October the Cabinet enacted a series of new laws, which among other things, transferred the management of primary schools from the Ministry of Interior to the Ministry of Education, decentralized primary school administration, improved the incentives and benefits available to rural primary school teachers, and established the National Primary Education Commission.”

*Source: Educational Research Capacity Building in Thailand, Dean Nielsen (June 1991).*

### **Restructuring Incentives**

In the short run, to improve incentives facing teachers, the Government could: (a) modify how points are awarded in the functional credit system to reward activities that are likely to lead to effective teaching; (b) provide incentives to attract teachers to rural areas; and (c) alter the mix of civil servant versus contract teachers, by recruiting more contract teachers and recruiting them locally. Altering the mix is most relevant in deciding how the additional teaching positions for public junior secondary schools are to be filled, but would have only short-term effects if contract teachers were promised civil servant positions at the end of the contract period.

Over the next 10 years, in order to develop a high-quality professional teaching workforce, Indonesia should move away from its policy of keeping salaries and official working hours low. This would imply having fewer teachers who are working more intensively but at higher salaries. It would be advantageous to use the opportunity presented by the major expansion of the junior secondary system to redeploy teachers to meet some of the demand and thereby eliminate some of the excess teachers.

### **Increasing Learning Time in Grades 1 and 2**

There is a need to increase learning time for students in grades 1 and 2. This would require lengthening the school day and training teachers on how to use classroom time more effectively.<sup>9</sup> With this change, grades 1 and 2 teachers would be asked to teach the same number of hours as upper primary teachers. Thus, the increase in learning time could be achieved without increasing the total number of teachers. In addition, some changes in incentives are required. Principals need to be provided with the tools and autonomy to manage their schools effectively, including ensuring that teachers are present.

The introduction of a school feeding program provides an opportunity to expand instructional time. If one of the reasons why children in first and second grade did not go to school longer was because their attention wavered from short-term nutritional problems, the school feeding program should improve the situation. Indeed, if the number of hours of school time in first and second grade is not increased, the introduction of the school-feeding program could run the danger of cutting into an already limited instructional time.

### **Increasing Resources Allocated to Poor Schools**

Before the economic crisis, the Government made efforts to support schools in remote and poor communities in the form of textbooks, operational funds, and other teaching materials. However, this additional funding was not sufficient nor was it targeted to reduce the disparity in funding available between schools in poor and rich communities.<sup>10</sup> One way to compensate for the fact that richer communities can raise more funds is to channel more government funds to poor schools. This can be done in several ways, with transfers made at the kabupaten level or at the school level. The transfers could be made independently of parental contributions or as a matching grant to parental BP3 contributions. Making the transfer independent of the parents' contribution is easier administratively, but would reduce the incentive for parents to contribute to the schools. Transferring funds as matching grants to parental contributions (on a sliding scale depending on the wealth of the community) may provide an incentive for parents to maintain their contributions and may even stimulate additional contributions. Matching grants can be phased in as schools, communities, and administrators develop experience with the use of block grants currently being implemented as a crisis-relief measure.

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<sup>9</sup> Recently (March 19, 1997), the kakanwil (head of the provincial MOEC office) of West Java issued an instruction to increase teaching hours of grades 1 and 2 to 4 hours per day.

<sup>10</sup> The recent GOI program of allocating block grants to the poorest 40 percent of primary and junior secondary schools in response to the economic crisis is discussed in detail in Chapter 2.



Table 3.4 provides some idea of how the matching funds could increase the amount of resources available to poorer schools and reduce the correlation between poverty and per student resources. This analysis is done for primary schools at the kabupaten level for one province (West Java), but similar analyses could be done for junior secondary schools, for other provinces or for data on parental school level expenditures, were they available.<sup>11</sup> The data on the average per student parental contribution to schools in West Java in different kabupaten is taken from the 1995 SUSENAS. The expenditures include only those that would be expected to be received by schools and, therefore excludes the amount spent by parents on such items as transportation and meals. In all options considered, the rate at which grants are matched depends upon a measure of the percentage of poor families in the kabupaten (not on levels of contribution for that creates a moral hazard problem). A matching rate of 1 means that for every Rp 1,000 of parental contributions the government contributes Rp 1,000. A matching rate of 0.5 means that for every Rp 1,000 of parental contributions, the government contributes Rp 500.

**Table 3.4: Matching grants could increase resources for poorer schools**  
(Simulated effects of alternative matching grant programs for West Java.)

	Status Quo	Option A	Option B	Option C
Matching rate				
Poorest Third	--	1.0	1.0	1.0
Middle Third	--	0.0	0.5	0.5
Richest Third	--	0.0	0.0	0.1
Correlation (poverty and per student contributions)	-0.81	-0.01	-0.06	-0.24
Average across all kabupaten of per student amount received by school (parental contribution and matching grant) (Rp'000 per year)	32.9	45.8	52.2	54.1
Coefficient of variation	2.24	3.31	4.23	4.15
Lowest per student amount received by school of all kabupaten (parental contribution and matching grant) (Rp'000 per year)	16.5	28.9	29.4	29.7
Cost of matching funds	--	Rp 59 bln	Rp 89 bln	Rp 97 bln

<sup>11</sup> Compared to other provinces, West Java has higher levels of parental contributions. In South Sulawesi and Maluku, for example, total per student expenditures in primary school are roughly half of those of West Java. For kabupaten in those provinces, different matching rates may be required to raise per student resources to an adequate level. However, it is unlikely that the total amount of resources required to operate a matching grant program at the national level would be much more than five times that of running the program in West Java (West Java has roughly one-fifth of all students in the public system).

Under the first two options, the matching grant program is able to drive the correlation between the poverty measure and per student expenditures to zero. Under the third option, there would still be a negative correlation, but it would be considerably lower. In all instances, the minimum amount of per student resources available would approach the mean of the distribution without the matching grant program. Since studies in Indonesia suggest that the effect of an additional rupiah is particularly important for those at the lowest per student expenditure level (as one would expect), it is important to improve the lot of those at the bottom part of the distribution.

### **Improving the Quality of Teachers**

**Primary Level.** Given the low turnover of teachers and improvements made in preservice teacher training, the strategy for improving the quality of teachers at the primary level must rely on what is done in inservice training. The Government has had sufficient experience running a program of continuous teacher training under the PEQIP project to begin to determine the more successful elements that should be continued and the elements that have not worked as well as expected. Thus, the strategy should now be to consider planning how a core training program could be operated on a more permanent basis with a cost-effective design, as recommended in the project's evaluation (DHV, 1997). In addition, cluster-based teacher training grants could be piloted in some kabupaten.

Perhaps more than the resources required to operate the training program, the key constraint to a rapid expansion is the number of qualified tutors needed. If the program were to be operated in all kabupaten in the country, 1,320 trainers and 26,400 tutors would be required. However, the Government does not have to introduce the training program nationally all at one time. The program can be expanded gradually, kabupaten by kabupaten. One positive feature of the continuous training based on the cluster model is that it is designed to be managed primarily at the kabupaten level. In fact, there appear to be limited economies of scale beyond the kabupaten level, although trainees might benefit from sharing experiences if training were held at the national or provincial level.

**Junior Secondary Level.** Because the number of junior secondary teachers is expected to grow over time, preservice as well as inservice training will be important. What is required to improve teachers' competence is a combination of revitalization of content and decentralization of the existing inservice teacher training program (PKG and MGMP) to the district level and the systematic involvement of regional MOEC staff including supervisors and principals in the training program.

For preservice training, new teachers are being prepared to teach more than one subject. For teachers who are already pressed into teaching more than one subject, special teacher certification programs are needed. Teachers are expected to do 18 to 20 credit hours in about a one-year long program in a field related to that of their original

certification: science majors certify in math and vice versa, history teachers in geography, and so forth.

For both the D-II and D-III upgrading programs, the first order of priority is a careful evaluation of past upgrading activities, focusing on the relevance of the curriculum and training to teacher knowledge-development needs and the impact of the programs on teacher and student classroom performance. Secondly, redesigning of the program is needed, including curriculum, delivery systems, and evaluation methods. Thirdly, a reconsideration of the policy of upgrading all teachers, regardless of need, may be warranted.

For both primary and junior secondary inservice training, to improve teachers' classroom effectiveness, changes in school-based teacher development activities are recommended in the areas of curriculum content and delivery mechanisms:<sup>12</sup>

- (a) **Program Content.** The content of all inservice training needs to be revitalized. In particular, future programs should pay much more attention to promoting student learning than they do at present. Emphasis should be given to the development of effective questioning techniques, so that teachers become skilled in identifying students' learning difficulties. Teachers should learn to construct open-ended formative tests for use in the classroom and to use the results to improve learning.
- (b) **Program Delivery.** Except for the small-scale program for schools in isolated areas, teacher inservice training activities should be decentralized to the cluster (sub-kabupaten) level). In place of the onservice program, a regular system of school visits, aimed at providing professional guidance to the teachers but also monitoring their performance, should be set up.

### **Providing More and Better Textbooks and Materials**

It is also important that textbooks be provided in sufficient quantities to all students (1-to-1 ratio) since they are essential inputs into the learning process and represent a fairly small portion of the overall education budget (about 5 percent). The quality, not just the quantity, of books needs attention. Textbook content needs to be more integrated with the curriculum. As part of a thorough evaluation of the 1994 curriculum (see below), the consistency of new textbooks with the curriculum should be reviewed. Any recommendations arising from that review should be reflected in future textbook production. As noted by MOEC (1998), textbooks pitched beyond the level of students should be revised, and the level of language across subjects should be made

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<sup>12</sup> Details have been developed under the World Bank supported Junior Secondary Education projects.

more uniform. Although expensive physical improvements may have to be weighed carefully while books are still in short supply at the primary level, the visual presentation of books should be given greater attention as textbook availability and the country's fiscal situation improve. As the PEQIP evaluation noted, books should be given priority over expensive teaching equipment, which is often underused and contributes little to learning achievement (DHV, 1997). Simple teaching aids, however, can make a positive impact in the school.

To ensure that more high-quality textbooks and reading materials reach the classroom, lessons learned from the Book and Reading Development Project and other efforts should be implemented. Among these is that the involvement of the private sector in provision of new books can make a marked impact on the quality of books in schools and provide greater choice and competition. Second, selection and procurement of these items is best handled at decentralized levels (this strategy has recently been implemented at the provincial level and eventually can be decentralized to the district level). Third, a strict evaluation process for textbooks is needed to maintain a high quality standard. A final consideration is book distribution. Making the private sector producer responsible for distribution (providing full payment only after books arrive at the school) works well and should become standard practice.

In providing teaching equipment, particularly for junior secondary science, lessons from the Second Secondary Education and Management Project should also be taken into consideration. As with textbooks, getting equipment into the classrooms is best handled at decentralized levels so that locally identified needs can be better met. One of the main broad lessons of the Second Secondary Project is that a one-size-fits-all approach to quality improvements is unlikely to be successful in large countries with diverse conditions, like Indonesia. And buying expensive equipment may not always be the most cost-effective intervention, particularly if it is not supported by training. The supply and maintenance of science equipment can consume large amounts of money, time, and management expertise.

### **Making the Curriculum More Integrated and Effective**

Four main steps are needed to ensure that the curriculum is appropriate, effective, and fully implemented. First, the 1994 curriculum should be systematically evaluated. The curriculum has some positive features, but its impact in the classroom is unclear. Whether students can learn the curriculum depends on an internal consistency among the demands of the curriculum; how the curriculum is being translated into textbooks; the quality of the teachers; the availability of resources; and the amounts of instructional time, among other factors. There has been no systematic evaluation of these factors to

date. Before a major, costly revision is undertaken, such an evaluation should be done as a matter of high priority.<sup>13</sup>

Second, the curriculum needs to be vertically and horizontally integrated, and it should be related to the content of textbooks, teacher training, and assessment (MOEC, 1998). The lack of vertical integration becomes evident in junior secondary science classes especially, which rely on math foundations that are not always developed in earlier grades. And literacy and numeracy skills need to be reinforced horizontally in all subjects of each grade so they are perceived to be useful tools for daily life, not simply abstract concepts for the classroom.

Third, MOEC's organizational structure should support this integration of the curriculum, textbooks, teacher training, and assessment. Split responsibility for these linked functions is impeding integration and creating inconsistencies that hinder learning. The Government should consider placing these related functions under a single Directorate.

Finally, the curriculum revision should be approached as an iterative and cumulative process rather than a 10-year event. A continuous cycle of improvement and evaluation would be less disruptive and more responsive than the introduction of sweeping changes once a decade.

### **Strengthening Assessment and Evaluation**

In recent years, there has been growing recognition in Indonesia of the benefits of a national assessment system and some advances have been made in setting up such a system. It is important to follow through with these initiatives, and this could be done on the basis of random samples of students.<sup>14</sup> It may also be advantageous if such assessments were to be carried out by an independent agency. As considerable expertise has been developed in this area in the Assessment Center in MOEC, this unit could form the basis of that agency.

To strengthen the assessment of student achievement, the number of tests in each grade should be reduced (MOEC, 1998). In addition, tests should be designed to encourage more individual reasoning and expression. Teachers should be encouraged to use formative tests to diagnose learning problems. Teaching guides should give teachers practical support in doing so. Multiple-choice tests in end-of-year tests should be

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<sup>13</sup> In July 1998, MOEC announced that within the coming year, the curriculum would be assessed for revision and amendment by the 2000-2001 year.

<sup>14</sup> Such initiatives have begun in Yogyakarta under the Central Indonesia Junior Secondary Education Project.

supplemented by open-ended questions that encourage pupils to develop their own ideas and express them in writing.

In addition to the monitoring of individual and overall student performance, there are some high priority sector issues for evaluation. The first is an evaluation of the effectiveness of the new curriculum, as described above. A second area of evaluation is the effectiveness of some of the teacher training programs, particularly the large upgrading investments being undertaken by GOI. Thirdly, it would be useful to analyze systematically the factors underlying why some schools with similar levels of resources do better than others. Examples of such analysis are the previously mentioned Moegiadi and Suryadi studies. These required special efforts to conduct separate surveys, however. With the establishment of national assessments, this type of analysis could be carried out more regularly and for virtually any geographic area.

The previous seven sets of recommendations relate to what interventions might be expected to improve quality. Each district, however, may want to attach different weights to each type of intervention depending upon its local needs and conditions. In addition, the central government may want to provide incentives to encourage better education outcomes. If funds are guaranteed, there is no incentive to depart from business as usual. The two objectives of providing autonomy to local levels while ensuring accountability to the national level could be achieved through the introduction of performance-based grants. These are discussed in the section on funding mechanisms in Chapter 5.

## 4. ACHIEVING UNIVERSAL BASIC EDUCATION

### A. INTRODUCTION

In 1989, GOI announced a policy of achieving nine years of basic education for all by the year 2010, that is, by the end of its eighth five-year development plan (Repelita VIII). Implementation of the policy began in 1994 and effectively means that enrollments need to double over the period. Despite the current budget pressure, achieving the target remains GOI's main education priority for the coming 10 to 15 years, as a means of reducing poverty and preparing for future economic growth.

With a 47 percent net enrollment rate in junior secondary (58 percent GER), Indonesia is behind some of its main competitors (Table 4.1) and has some way to go to achieve universal basic education, particularly in light of the current economic setback.<sup>1</sup> Even before the economic crisis, about 1 million children dropped out of primary schools each year and failed to become fully literate and numerate (most dropped out after grade 3). Another 1.5 million did not continue on to junior secondary. This implies that 2.5 million student left the education system each year without having completed a basic education, representing 35 percent of all students that graduate from the education system each year. These potential labor market entrants will restrain overall productivity for years to come.

**Table 4.1: Indonesia is behind its neighbors in junior secondary enrollment**

Country	Enrollment Rates
Malaysia	83 (NER, 1990)
Philippines	79 (GER junior and senior, 1993)
Thailand	63 (NER, 1994)
<b>Indonesia</b>	<b>47 (NER, 1995)</b>

Source: World Bank, Edstat, 1997.

The economic crisis will most likely slow the pace of the expansion of basic education since just maintaining current enrollments and preventing additional dropouts will be a challenge (see Chapter 2). As the economy begins to recover, the agenda of

<sup>1</sup> Until recently, Thailand was the only fast-growing East Asian country with lower junior secondary enrollment rates than Indonesia. However, as a result of an aggressive government secondary education improvement program, transition rates from primary to secondary increased from 52 percent in 1990 to 86 percent in 1994 (Thailand Secondary Education Quality Improvement Project, Staff Appraisal Report, World Bank, 1996).

expanding access to basic education for all children should be resumed. This agenda (now a post-crisis agenda) is the topic of this chapter. The chapter begins by providing a justification for making universal basic education a priority (Section B). Next, constraints and strategic choices facing GOI in expanding basic education are analyzed (Section C). Finally, the chapter provides options for achieving the goal in a cost-effective and equitable manner (Section D). The institutional arrangements related to the expansion of universal basic are addressed in Chapter 5.

## B. THE CASE FOR UNIVERSAL BASIC EDUCATION

Public investment to ensure nine years of quality basic education makes sense on both efficiency and equity grounds. First, research from other countries and from Indonesia reveals positive externalities associated with expanding secondary education (Subbarao and Raney, 1993; Serrato and Melnick, 1995; Frankenberg, Surisatini, and Thomas, 1996). These include reduced fertility and child mortality rates, and improved nutritional status, all of which correlate with female secondary education.<sup>2</sup> While quantifying externalities is a difficult task, there is little doubt that they are positive and probably substantial, implying that without subsidization, the provision of junior secondary schooling would be less than socially optimal.

Second, analysis of labor force data between 1976 and 1992 indicates that expansion of junior secondary education has had the largest effect on equalizing labor incomes, while higher levels of education have had significant unequalizing effects (Box 4.1). These results suggest that public support for an expansion of junior secondary education would continue to have an equalizing effect on the distribution of labor earnings. By implication, the use of scarce public funds for senior secondary and tertiary education needs to be carefully considered.

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<sup>2</sup> Subbarao and Raney (1993) examine the determinants of desired family size in 72 countries and find that after controlling for level of economic development and other factors, female secondary education is highly significant. Secondary education for females reduces fertility and mortality in several ways: (a) by enhancing the opportunity cost of a woman's time in economic activities relative to childbearing; (b) by promoting child health, which in turn affects desired family size; and (c) by promoting more effective contraceptive use and willingness to use modern contraceptive methods. For Indonesia, survey results indicate that a mother's education is an important determinant of whether she will use prenatal care: more than 90 percent of women with junior secondary education use prenatal care, in contrast to only 75 percent of women with some primary education (Serrato and Melnick, 1995). Maternal education also has a strong effect on children's nutritional status. For Indonesian women with between zero and five years of education, an additional year of education has no impact on the child's nutritional status; among women with six to twelve or more years of schooling, an additional year of education improves nutritional status significantly (Frankenberg, Surisatini, and Thomas, 1996).



**BOX 4.1: EFFECTS OF EDUCATION ON DISTRIBUTION OF LABOR EARNINGS**

While overall inequality of labor earnings in Indonesia is decreasing, changes in the educational composition of workers is exercising an unequalizing effect on labor earnings. The main contributors to increasing inequality are senior secondary and tertiary education. While this can be expected of an education system that has grown as rapidly as Indonesia's has in the past, it does imply that concern for inequality requires a careful consideration of the public financing of senior and tertiary education.

Analysis of labor force data between 1976 and 1992, which examines the effects of education and various other factors (age, rural/urban residence, public/private sector of employment, and sex of worker) on labor earnings (see Annex 1.2 for methodology), indicates that education is the single most important factor contributing to inequality of earnings and that it contributes more to inequality over time (Box Table A). The unequalizing effect of education is a reminder that equality is not achieved simply by compression of wage differentials (as has been the case), but also depends on how many workers possess that level/type of education. And while wage compression is a labor market issue outside of the purview of education policymakers, educational expansion through public funds is a clear policy issue.

**Box Table A: Education is the largest contributor to unequal earnings . . .**  
(Factors contributing to labor earnings inequality)

Percentage of the variance in log-wages explained by:	1976	1992
Education	15.3	20.8
Region	13.9	7.8
Gender wage differentials	11.2	5.9
Industrial wage differences	11.1	11.2
Age differences among workers	3.4	7.7
Differences in hours worked	2.5	3.6
Explained inequality (R-squared)	57.4	57.0
Unexplained	42.6	43.0

*Note:* Results are based on regression analysis performed on SAKERNAS data. Explained inequality refers to the regression's R-squared, and unexplained inequality to the percentage of the variance of log-weekly wages that cannot be accounted for by the listed variables. The full results are explained in Annex 1.2.

While the education effects have been unequalizing, changes in the gender wage gap and the regional wage differentials suggest that growth in Indonesia has filtered through the labor markets in a way that has decreased earnings inequality. The increase in female relative wages Indonesia is by now well-documented (Tzannatos, 1995). Regional labor markets have become more integrated, and the benefits of higher employment and earnings growth appear to be increasingly widespread among workers in different regions (Manning, 1996).<sup>1</sup>

<sup>1</sup> The extent to which regional and industrial effects are flattened out due to growth or minimum wage policies is an interesting and timely question, but one that would require additional research.

**BOX 4.1: (CONT'D)**

Turning to the effects of the different education subsectors on inequality (Box Table B), the analysis finds that for the period 1976-92, less-than-primary education has exercised an equalizing effect, as has primary education in the later period. Both variables contributed to a reduction in education-induced inequality by a significant 10.9 percent. Junior secondary education has become less unequalizing over time and has decreased inequality of earnings by another 10.4 percent. Junior secondary education has had the single largest equalizing effect in the last 20 years. Vocational education, on the other hand, has had an increasing effect on inequality, though not sizable in absolute terms; its contribution to inequality trebled between 1976 and 1992. The single most important education sector in terms of contributing to inequality of earnings has been senior secondary education. Its contribution increased by 50 percent (from 44 to 63 percent). University and diploma education also increased inequality: though they both accounted for only one-fifth of inequality in 1976, their share increased to 45 percent in 1992. The effect from university education has had the greatest increase over time, more than 150 percent.

**... and basic education helps reduce earnings inequality**

[The effect of education subsectors on earnings inequality (as a percent of education's total contribution to the variance of earnings)]

Sector	1976	1992
Less than primary	-7.7	-5.0
Primary	15.9	-14.1
Junior secondary general	26.3	5.9
Senior secondary general	44.3	63.4
Junior secondary vocational	-0.0	0.3
Senior secondary vocational	1.2	3.9
Diploma	10.6	21.8
University	9.4	23.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: See sources and notes to Box Table A.

Source: Z. Tzannatos, *The Role of Education for Increasing Wages and Reducing Inequality: Indonesia 1976-92*, November 1996 draft.

Third, if basic education is less than universal, the rural poor and other disadvantaged groups and regions will be the ones left behind—both in school and later in the labor market. As noted in Chapter 2, the poor are much more vulnerable than higher income groups when coverage is limited or there is a sudden economic shock. As discussed below, differentials between provinces and urban and rural areas are also wide.<sup>3</sup>

<sup>3</sup> Beyond the primary level, urban enrollments rates are significantly higher than rural rates and increase with the level of schooling. Urban enrollment rates for the 13-15 year olds, for example, are about 90 percent higher than for rural residents (62 percent for urban children compared to 33 percent for rural children (SUSENAS 1992).

### C. CONSTRAINTS TO UNIVERSAL BASIC EDUCATION

There are significant challenges in providing the basic nine years of education to all, and policymakers face constraints in expanding access in an equitable and efficient way. These constraints are (a) the sluggish demand for junior secondary education among the poor; (b) the ineffectiveness of public funds in reaching the poor; (c) low completion rates at the primary level; (d) the high costs of expansion through the public sector and the role of the private sector; (e) the ineffective structure of the public subsidy to private schools; and (f) inefficiencies within the education system.

#### **Sluggish Demand for Junior Secondary Education Among the Poor**

Enrollment at the junior secondary level expanded rapidly between the late 1960s and late 1980s, reaching 62 percent in gross terms (47 percent NER) in 1988 (Figure 1.1). For the next four years, however, enrollment fell, reaching 52 percent (41 percent NER) in 1992.<sup>4</sup> Much of the decline was among lower-income groups. Data indicate that there was a resurgence of demand before the economic crisis, with GER and NER rising to 70 percent and 55 percent respectively in 1997, restoring the predecline enrollment levels. Field observations suggest that the crisis is again pushing enrollments down, even though there is not yet accurate information on how much the downturn will hurt enrollment in the near term (Chapter 2).

Even before the crisis, there were significant differences in enrollment among income groups, urban-rural residents, and provinces. In 1994 the net enrollment rate in the top income quintile was 66 percent compared to 25 percent for the lowest quintile (Figure 4.1). Among urban residents, 62 percent of children aged 13-15 were in junior secondary compared to 33 percent of rural children. With respect to provinces, West Java and most of the outer islands had enrollment rates below the national average (Table 4.2), and some provinces never regained their predecline enrollment levels.

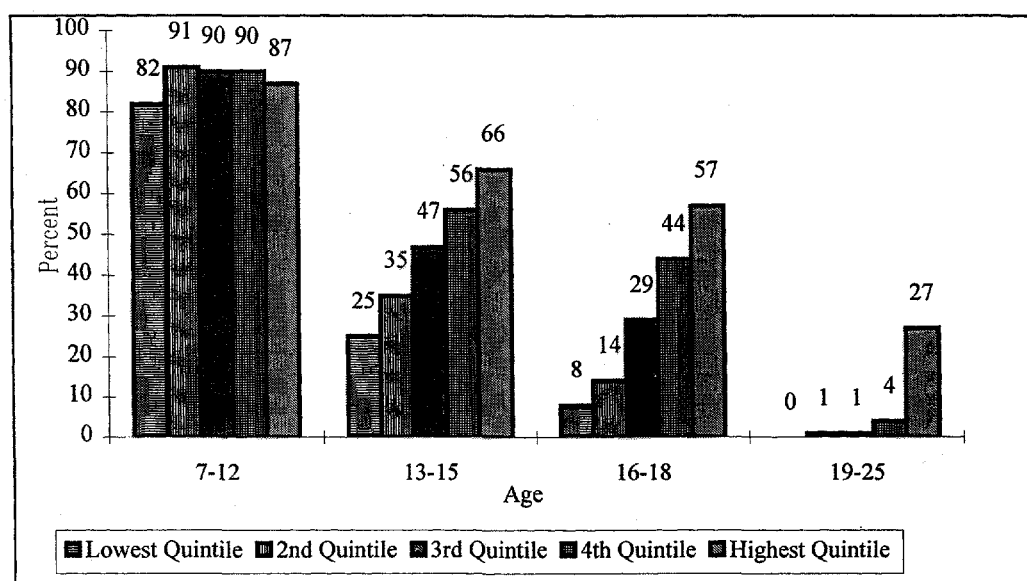
What have been the major factors behind the sluggish demand for junior secondary among the poor and near-poor?<sup>5</sup> The first and most important factor is the *high direct costs* of junior secondary education. Overall, the average cost to families of educating a child in junior secondary in 1995 was Rp 269,000 a year. This was almost

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<sup>4</sup> Primary and senior secondary saw small declines during this period, while tertiary continued to increase.

<sup>5</sup> Whether one enrolls or continues in school is influenced by a variety of economic and noneconomic factors which, taken together, can be called the "social demand" for education. The model typically underlying the economic determinants of demand is as follows: households (parents) decide to invest in a particular level of education for their children if anticipated future benefits are greater than estimated (direct and indirect) costs, subject to an income constraint. Benefits include higher earnings and economic mobility as a result of increased productivity.

**Figure 4.1: The poor are much less likely than the rich to enroll in school**  
(Net enrollment rates by income and age group, 1994)



Source: Indonesia Family Life Survey (IFLS).

**Table 4.2: Junior secondary enrollment is uneven among provinces, many of which lost ground during the previous period of adjustment**

	GER (1996/97)	Change (1987-92)		GER (1996/97)	Change (1987-92)		GER (1996/97)	Change (1987-92)
Jakarta	99	-2	East Java	69	-6	South Sumatra	59	-14
DI Yogyakarta	108	-2	Bengkulu	63	9	West Nusa Tenggara	56	-20
North Sumatra	78	0	North Sulawesi	66	-17	Central Kalimantan	57	3
Bali	82	-8	Riau	67	-2	SE Sulawesi	63	-20
West Sumatra	77	-8	Irian Jaya	53	6	Central Sulawesi	53	10
Maluku	74	-20	Jambi	61	-15	West Java	58	-5
East Kalimantan	73	-15	Lampung	66	-17	West Kalimantan	53	-24
Central Java	70	-6	South Kalimantan	61	-14	East Nusa Tenggara	54	-10
DI Aceh	68	-19	South Sulawesi	63	-15	East Timor	44	-13
						National Average	67	-10

Sources: Statistik Persekolahan, Informatics Center, MOEC for 1994 GER; and SUSENAS 1987, 1992 for change between 1987 and 1992.

three times the cost of primary education (an average Rp 92,000). For the lowest quintile in West Java, total direct costs of junior secondary schooling constituted 43 percent of per capita household expenditures (Table 4.3). Particularly significant are the upfront registration (entrance) fees that parents must pay: in 1993, the average entrance fee for junior secondary was Rp 47,500, which for those in the two lower quintiles was five

**Table 4.3: The cost of post-primary education consumes much of a poor family's income in West Java**

(Average household expenditures per student as a percent of per capita expenditure)

	Lowest Quartile	Middle Quartile	Highest Quartile	Total
Primary	14.2	14.5	12.2	14.0
Junior Secondary	42.8	35.5	27.2	33.6
Senior Secondary	71.9	56.2	39.0	49.1
Tertiary	151.5	134.4	79.1	84.6
<b>Total</b>	<b>18.9</b>	<b>23.2</b>	<b>29.8</b>	<b>24.0</b>

Source: Staff calculations from SUSENAS 95.

times more than the registration fee paid for primary education.<sup>6</sup> This cost burden on poor families will only worsen as a result of the crisis.

The second factor determining the demand for junior secondary education—one which exacerbates the effect of high direct costs—is the *indirect (opportunity) cost*, which is particularly significant in rural areas and for the poor. There are few junior secondary schools in rural areas, and they are widely scattered. The national average travel time to junior secondary schools in rural areas is 50 percent higher than in urban areas (Serrato and Melnick, 1995).<sup>7</sup> The longer the travel time, the higher the opportunity cost of schooling, and the more reluctant parents will be to send their children to school. Long travel times may also work against poor girls' enrollment since parents are more reluctant to send their daughters far away to school (Mayling, 1989). The IFLS (1993) indicates that the average travel times to junior secondary schools are longer for boys than for girls, particularly among the lowest percent of the expenditure distribution, indicating that boys are allowed to travel farther.

In addition, a parent's decision to send a child to junior secondary depends on:

<sup>6</sup> In February 1994, GOI abolished official fees (SPP) for junior secondary education. Even though data on the effect of this policy are not available, field visits reveal that schools reacted to the policy announcement by asking parents to pay the SPP in the form of higher parental contributions (BP3) since the school's loss of revenue was not fully compensated by additional public funds. Hence the costs to families may not have changed and continue to be a significant deterrent for the poor.

<sup>7</sup> Since travel times are reported for parents whose children are enrolled in school, they are likely to underestimate the travel time families face when making a decision regarding whether or not to enroll their child. The IFLS reports average travel time in rural areas of 30 minutes versus 19 minutes for urban areas.

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- (a) **Income Constraints and Credit Market Failure.** Poverty is one of the major reasons children are pushed out of schools and into the labor market at an early age. There are indications that the demand for child workers in certain types of industry, such as those found in the fast-growing urban areas around Jakarta and in West Java, has resulted in lower school enrollment rates in those areas. In West Java, a survey undertaken by the Indonesia Central Bureau of Statistics (BPS) found that the average starting age for work among child workers was 12.5 years (the starting age for junior secondary education).<sup>8</sup> This particularly affected girls: on average, 45 male child workers were found for every 100 female child workers (ILO, 1994). The poor not only have low income but also greater difficulty borrowing. Particularly in the area of human capital investments, the possibility of borrowing is practically nonexistent even for better-off families.
- (b) **The Benefits of Junior Secondary Education.** A tangible benefit associated with junior secondary education is the additional labor income accruing to the graduate compared to someone who left school after completing primary education. While still positive, the wage premium for urban junior secondary graduates relative to primary graduates has declined over the past decade from 80 to 30 percent for males, and from 166 to 60 percent for females. This is because formal-sector employment is growing relatively slowly compared to education output, compressing wage differentials (Table 1.1 in Chapter 1).<sup>9</sup> The wage compression gives the short-term signal to poor families that junior secondary education provides neither large direct wage rewards nor significant employment prospects outside agriculture or the informal sector. In addition, the labor market is increasingly recruiting senior secondary school graduates even for semiskilled assembly jobs in manufacturing and clerical jobs in the service sector. Such hiring patterns greatly reduce job opportunities for both primary and junior school graduates to basic or menial jobs in the modern sector and agriculture. Low school quality (Chapter 3) can also act to reduce the benefits of continuing on to junior secondary (or even staying in primary) and thus tends to constrain demand for schooling.
- (c) **The Prospects of Continuing to Senior Secondary.** If junior secondary education is seen as the stepping stone to senior secondary (and beyond),

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<sup>8</sup> *Child Labour in Indonesia*, International Labor Office, Geneva, 1994.

<sup>9</sup> *Training and the Labor Market in Indonesia: Productivity Gains and Employment Growth*, World Bank (1997) Chapter 1.

families will consider the costs and benefits of the child's completing senior secondary education. The cost of senior secondary, at Rp 460,000 a year, is more than double that of junior secondary. This may deter poor parents from investing in junior secondary, especially since the wage premium of senior secondary, like that of junior secondary, has also declined significantly over time.

### Ineffectiveness of Public Funds in Reaching the Poor

Recent allocations of public funds have not resolved the problem of low demand for junior secondary education among the poor. The better-off have greater access to the public subsidy than the poor at the junior secondary level (World Bank, 1993).<sup>10</sup> Among those enrolled in junior secondary, private school enrollment represents about 50 percent of the total net enrollment for the poorest quintile, higher than for any other quintile (Figure 4.2). This situation contrasts sharply with that at the primary level, where private schools primarily cater to higher income groups.<sup>11</sup> The reason a high percentage of the poor go to private junior secondary schools may be that they are not able to enter public schools (either because of low Ebtanas scores or the "hidden costs" of education), or because the cost of private schools, which cater to the poor, are cheaper than public schools (Table 4.4).

**Table 4.4: Private education is often the cheapest option for the poor**  
(Average annual household expenditure per student by type of school  
and level in West Java, Rp'000)

	Primary		Jr. Secondary		Sr. Secondary		Tertiary	
	Public	Private	Public	Private	Public	Private	Public	Private
All Quartiles	83	301	238	337	435	483	759	1,386
Lowest Quartile	48	35	171	162	269	288	-	-
Middle Quartiles	86	91	225	272	379	419	514	619
Highest Quartile	135	373	292	434	506	568	813	1,422

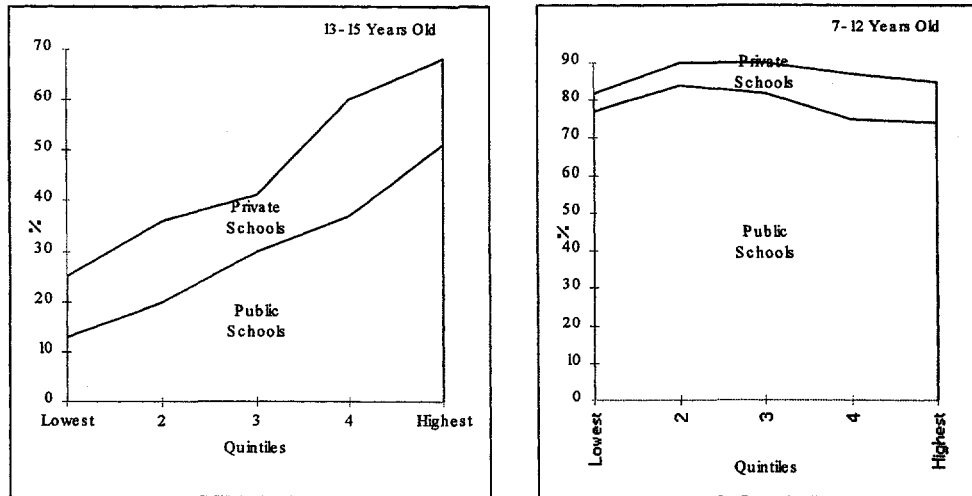
*Note:* Data are for public and private nonreligious schools only.

*Source:* Staff estimates from SUSENAS 95.

<sup>10</sup> This is also the case at the senior secondary and tertiary level. However, at the primary level, the public subsidy is pro-poor (World Bank, 1993).

<sup>11</sup> At the primary level, private schools represent 5 percent of total net enrollment for the poorest quintile compared to 16 percent for the highest quintile, and where all the increase in enrollment between the first two quintiles is in public schools (Serrato and Melnick, 1995).

**Figure 4.2: The poor are more likely to go to private schools than the nonpoor at the junior secondary level (13-15 years old) compared to primary level (7-12 years old) (Net enrollment rates by income group and school administration)**

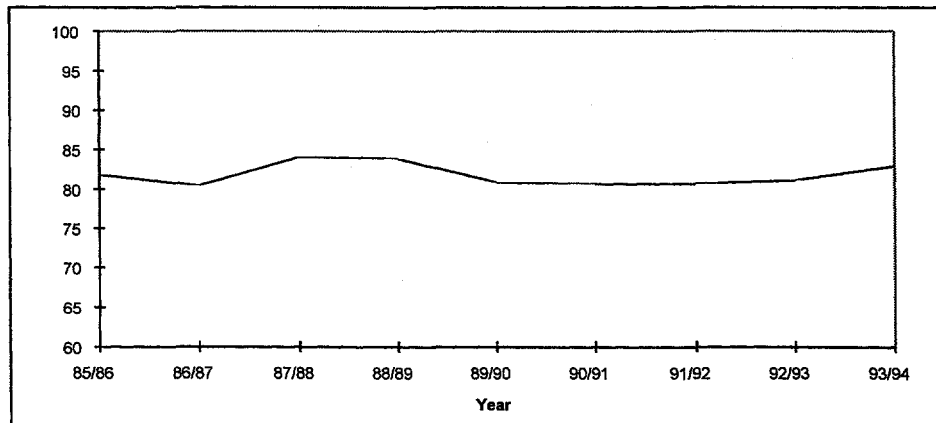


Source: Serrato and Melnick (1995).

### Low Primary School Completion Rates

A prerequisite for achieving the efficiency and equity objectives of universal basic education is students' completion of primary education. The primary school completion rate hovered around 80 percent in the past decade, even though there was an increase in the years before the crisis (Figure 4.3). More importantly, half of the provinces still have completion rates below 80 percent, all of which are off-Java (Table 4.5).

**Figure 4.3: Primary school completion rates have not increased substantially (1985/86 to 1993/94)**



Source: Statistik Persekolahan, Informatics Center, MOEC.



**Table 4.5: Primary school completion rates by province**  
(Percent, 1996/97)

High	Rate	Medium	Rate	Low	Rate
Central Java	92	North Sumatra	85	West Nusa Tenggara	77
Jakarta	89	West Sumatra	80	South Sumatra	76
East Java	91	West Kalimantan	68	Irian Jaya	67
Bali	91	Jambi	78	Lampung	77
West Java	88	South Kalimantan	77	East Nusa Tenggara	76
East Kalimantan	80	North Sulawesi	77	Bengkulu	76
Maluku	90	South Sulawesi	78	Central Kalimantan	54
Riau	86	DI Aceh	77	East Timor	48
				National Average	85

Source: DIKMENUM, MOEC.

Contributing factors to the low completion rates are late entry, which may be related to the child's lack of readiness for school (Box 4.2) and high repetition in the early years.<sup>12</sup> Analysis of household survey data (IFLS, 1993) indicates that those who start school late are much more likely to drop out.<sup>13</sup> Repetition in the early years heightens the tendency to drop out because children may get discouraged and the repeated costs of schooling may become too high for poor parents.

### High Costs of Public Expansion and the Role of the Private Sector

There are not enough spaces in public schools for all children who want to go, but there are also high resource costs of expanding access only through reliance on the public sector. The private sector is a significant provider of junior secondary education in Indonesia.<sup>14</sup> Costs of expanding access (before the crisis) have been estimated under alternative public/private scenarios (Annex 7.2). Results indicate that even if the current public/private ratio of 60/40 is preserved, achieving universal basic education implies that public enrollment would need to increase from 4.5 million to 8.1 million students; that expansion would cost approximately \$6 billion in 1996 terms. If GOI proceeds with a primarily public expansion (phasing out the private sector with the possible exception of the religious schools—*madrasahs*—which currently enroll about 1 million students), the costs almost double to \$11 billion.

<sup>12</sup> According to administrative records, at the national level 10 percent of the children go to school for the first time at the age of 8 or later.

<sup>13</sup> Dropout rates for those who start at less than 7 years olds are 3 percent, while those who start after 7 have dropout rates of 10 percent.

<sup>14</sup> See Annex 4.1 for a description of private education in Indonesia.

#### BOX 4.2: THE BENEFITS OF EARLY CHILD DEVELOPMENT

Early Child Development (ECD) is the process of physical, mental, emotional, and social growth of a child from birth to school entry age—normally birth to age 5. ECD is the synergy of health, nutrition, and education. Observable outcomes include increased physical size (height and weight); motor coordination; capacity to think, reason, and process information from the environment; and appropriate emotional and social responses.

Recent research in psychology, physiology, and nutrition supports the findings that 50 percent of cognitive development, which determines the capacity for lifelong intelligence, occurs between conception and age 4. An additional 30 percent of cognitive development takes place between ages 4 and 8. Only 20 percent of cognitive development takes place between ages 8 and 17. These findings emphasize the need for effective programs in ECD.

Indonesia has a large array of ECD interventions, particularly in health and nutrition. However, interventions and programs for Early Child Education (ECE)—cognitive stimulation and psychosocial development—have not received the same attention or assessment. International experience and research illustrate that problems at the primary school level such as nonenrollment, late entry, poor attendance, repetition and dropout, and poor schooling achievement can be improved with ECE programs. All these are problems in Indonesia primary schools (Chapters 3 and 4), but the precise relationship and linkage to ECE has not yet been studied. There are kindergartens, play groups, and daycare centers in the country, but no impact analysis of these institutions has been conducted. Recently, GOI has initiated a study to examine the impact of the Indonesian ECE programs and the linkages between ECE and primary school outcomes. The findings of this study will form the basis of policy recommendations to be integrated into Repelita VII and the development of future ECD programs in Indonesia.

Budgetary implications, however, are not the only reasons for maintaining a role for the private sector in the expansion of junior secondary education. Another reason is the equity dimension: a significant portion of private schools, particularly the madrasahs (which account for 20 percent of total junior secondary enrollment) offer access to junior secondary education to small, poor communities at a cost that is significantly lower than even MOEC-supervised private schools run by teachers' associations.<sup>15</sup> Indeed, as shown in Table 4.4, the cost of public junior secondary schools is higher than private schools for these in the poorest expenditure groups.

In addition to the budgetary and equity dimensions, in Indonesia as in other East Asian economies, the private sector has often served as a generator or testing ground for new approaches (Cummings, 1996). In Japan, for example, the idea of a six-year secondary school was first implemented in the private sector and later was imitated in the

<sup>15</sup> The main factor behind the madrasahs' low cost is that the majority of their teachers are graduates of Islamic teachers' schools who are willing to accept very low salaries (there are cases of teachers receiving Rp 20,000-30,000 per month, equivalent to \$10-15) either because of higher motivation and commitment or because of perceived lack of alternative opportunities or both. Another attractive feature of the madrasahs is that in addition to providing the same curriculum as MOEC schools, they provide a religious education appealing to families of certain values. Perhaps as a result, madrasahs enroll a higher proportion of girls than boys, thus helping to offset the (small) imbalance in favor of boys in other types of schools.

public system. In Singapore, the government has turned to the private sector to try out new initiatives in school-based management. In Indonesia, where the 1994 curriculum allows 20 percent local content, some private schools have developed innovative materials, but public schools have not capitalized on this opportunity (Malo et al., 1994). Local officials and principals said they were awaiting for instructions from the center. The real innovators have been the private and religious schools. In Jakarta, for example, one religious school has developed and implemented an innovative program to overcome gender bias in the curriculum (Box 4.3).

**BOX 4.3: INNOVATIONS IN PRIVATE SCHOOLS: THE GENDER BIAS AWARENESS PROGRAM AT THE AL IZHAR PONDOK LABU SCHOOL**

The Al Izhar Pondok Labu School (PIAIP) is a private Muslim school established by the Anakku Yayasan in 1987 in Jakarta with 1200 students from kindergarten to senior secondary. Due to the commitment and initiative of its director and teachers, the school established a program to enhance gender awareness among its students and their parents.

While confined to the MOEC curriculum as all schools in Indonesia, PIAIP's innovative approach has allowed it to work with and around the curriculum. This includes: (a) designing supplementary materials which point out gender bias in textbooks and counter it with more balanced information; (b) involving parents, particularly fathers, from the beginning of the school cycle; (c) incorporating gender awareness into the training of teachers; and (d) encouraging single-sex sports and games.

*Source:* Henny Supolo Sitepu, *Home Makers and Bread Winners: A Gender Bias Awareness Program*, November 1996.

### **Ineffective Structure of Public Subsidy to Private Schools**

Maintaining the role of the private sector, however, raises the issue of the quality of the majority of private schools and whether the current structure of public subsidy to private schools is conducive to improved quality.<sup>16</sup> With the exception of those at the top end, private junior secondary schools are generally regarded to be of lower quality than public schools. Lower quality is not surprising considering the lower costs of private schools. However, private schools appear to be more efficient in achieving certain educational outcomes (Box 4.4). Nevertheless, given the relatively large amounts of public subsidy that private schools get, are there improvements that can be made?

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<sup>16</sup> The public sector devotes significant amounts of resources, in-kind, as well as in the form of money grants, to support and improve the quality of private junior secondary schools, and it expects to continue this support. In-kind support includes secondment of public sector teachers, distribution of approved textbooks free of charge, provision of equipment, and training of private school teachers in publicly funded programs. Money grants are provided to about two-thirds of private schools at the lower end of the accreditation structure.

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**BOX 4.4: QUALITY OF JUNIOR SECONDARY PRIVATE SCHOOLS IN INDONESIA: HIGH OR LOW?**

With the exception of those at the top end, private schools are conventionally considered to be of lower quality than public schools. This view is based on the fact that private schools have fewer school inputs, more part-time teachers, and less qualified teachers in terms of certification. For example, there are more Bahasa Indonesia and mathematics textbooks available in public schools than in private schools, and the average education level of private school teachers and principals is lower (more than 90 percent of junior secondary teachers and principals in public schools have postsecondary teacher qualifications, compared to 60 to 70 percent in private schools; Serrato and Melnick, 1995).<sup>1</sup> As a result, and because private teachers are paid less than public teachers, private schools operate at a lower unit cost per pupil. Per pupil expenditures in public SMPs are nearly twice as high as in the private Islamic schools and about 50 percent higher than in the MOEC private schools (Malo et al., 1994).

While the conventional wisdom is that private schools are of lower quality than public schools, there are important caveats to this conclusion. It is likely that after controlling for school selection and student characteristics, private school outcomes (as measured by labor market outcomes or cognitive achievement scores) are better than those of public schools. Analysis of this question at the primary school level in Indonesia has pointed to these results (King, 1995; James et al., 1995). More recently, a study by Bedi and Garg (1998) found that after controlling for school selection and mean characteristics of students, graduates of private junior and senior secondary schools enjoy an earnings premium. Research from other countries (Jimenez et al., 1991) also finds a private school achievement advantage after controlling for observed and unobserved differences in student characteristics. And a recent study by Malo et al. (1994) for MOEC concluded that while the public sector had advantages in terms of resources, these did not translate into better performance compared to private schools. The study suggests that this result is due to the relative lack of discretion in the public schools in using resources or making management decisions, and to the heavy weight of bureaucratic regulations. Even though private schools operated with fewer resources, having more freedom from official regulations allowed them to use their resources more efficiently.

<sup>1</sup> Malo et al. (1994), however, find a higher proportion of higher education graduates on the teaching staff of private junior secondary schools compared to public schools.

In 1995-96, the overall level of public support to private junior secondary schools was estimated at \$60 million (see Table 4.6), or about 17 percent of total annual development public spending on junior secondary education.<sup>17</sup> Salaries of seconded teachers made up about two-thirds of the total cost, textbooks and teachers' guides 17 percent, and operational cost subsidies (in the form of money grants) 12 percent. Teacher training and distribution of equipment were less important cost items.

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<sup>17</sup> This is probably an underestimate since the fragmentation of the public budget makes it difficult to track all the sources of subsidy. Known sources are MOEC, MOF, MORA, local governments, and Presidential Aid (Banpres).

**Table 4.6: Two-thirds of the public subsidy to private junior secondary schools is for seconded teachers (1995-96)**

	Number	Cost to Public Budget (Rp Billion)	% of total
Seconded teachers	25,600	84.6	66
Textbooks	7,837,148	22.1	17
Teacher guides	203,080		
Teacher training	2,000	0.2	0
Equipment		5.3	4
Operational cost subsidy		16.1	13
<b>TOTAL</b>		<b>128.3</b>	<b>100</b>

*Notes:* Teacher costs based on average cost per teacher of Rp 3.3 million as reported in school questionnaires. Textbook costs based on average cost, including transportation as reported in World Bank Book and Reading Project. Calculations for teacher training assumes that 10,000 teachers (public and private) are trained annually at Rp 75,000 per teacher. Equipment estimates assume that equipment purchases (for public and private schools) make up 5 percent of MOEC's development budget.

*Source:* Apergis, 1996.

Indications are that a disproportionately large number of seconded teachers serve in private schools in the top accreditation categories (equivalent and recognized), while the poorest schools, which have the greatest need, receive very inadequate in-kind allocations if any.<sup>18</sup> In Yogyakarta, for example, 36 percent of teachers in private schools were seconded civil servants, even though 91 percent of the private schools are in the top two categories (Annex 4.1). But only 10 percent of teachers in private schools were seconded civil servants in the poorer areas such as East Kalimantan. (In all Indonesia, seconded teachers fill 16 percent of teaching posts in private schools; Annex 4.1).<sup>19</sup> This is hardly surprising, however, given the generally better connections of equivalent schools to public officials and, more important, the natural desire of seconded teachers to serve in prestigious schools and their reluctance to accept positions in isolated rural communities. Furthermore, field work carried out on private schools (MOEC, 1993) indicates that most of the training received by the private schools from GOI was directed to seconded staff. On the other hand, with regard to money grants, a larger proportion of

<sup>18</sup> Private schools are accredited according to four categories: listed (lowest), registered, recognized, and equivalent (highest) (Annex 3.1). About 9 percent of private schools at all levels (primary to senior secondary) are in the equivalent category, 56 percent are recognized, 25 percent are registered, and the remaining 10 percent are listed.

<sup>19</sup> "Research Report on Government Assistance to Private School," Balitbang, MOEC, 1993.

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that assistance was distributed to the Outer Islands such as East Timor, Irian Jaya, and West Nusa Tenggara (MOEC, 1993).

The conclusions that emerge from the above discussion are that: (a) the subsidy in the form of secondment of teachers (which amounts to two-thirds of the total public subsidy) is prone to abuse and leads to adverse effects, such as teachers being seconded to the better private schools in the wealthier provinces (this is also the case with other in-kind subsidies); while (b) money grants (which amount to about 12 percent of the total subsidy) are more successful in reaching the needier schools and provinces. It is interesting to note that in the study on strengthening local capacity in schools (Malo et al., 1994), private school principals said they would rather receive money grants so they can hire whomever they see fit rather than have seconded teachers assigned to their schools.<sup>20</sup>

### **Inefficiencies Within the Education System**

The cost of achieving universal basic education will be large relative to the budget even after the economy regains strength, so it is important for GOI to explore ways of expanding access at lower costs. Two main inefficiencies are an excess numbers of schools at the primary level and an excess number of teachers at the junior secondary level.

**Overabundance of Primary Schools.** Perhaps the most compelling evidence that there are too many schools in the system is that several provinces have witnessed significant declines in the number of students without a commensurate decline in the number of schools. The decline in new entrants is a result of demographic changes which resulted in the peaking of the primary school population age group in 1990 (Annex 7.2). Table 4.7 presents information on the relation between new entrants and schools in provinces which have witnessed a decline in new entrants. In no province has a decline in the number of new entrants been accompanied by a decline in the number of schools.

In addition, there is considerable anecdotal evidence that primary schools with relatively few students are operating in close proximity to one another. In the extreme, there are widely cited cases of several schools coexisting in the same physical space.

**Inefficiencies in Teacher Allocation at the Junior Secondary Level.** Since teacher salaries constitute by far the largest part of recurrent expenditure in the junior secondary budget, the main efficiency gains are likely to come from reducing the number of excess teachers in the system. It is possible to determine whether a school has excess teachers because it is possible to calculate precisely the minimum number of teachers

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<sup>20</sup> Malo, Manasses, Romli Suparman, Bambang Indriyanto, and William Cummings, *Strengthening Local Capacity: The Case of Basic Education in Indonesia*, Center for International Studies, Florida State University, June 1994.

**Table 4.7: The number of entering students declined over a decade  
but not the number of schools**  
(New entrants and number of schools, 1985-86 to 1994-95)

	Index of New Entrants to Grade I (1985-86 = 100)	Index of Number of Schools (1985-86 = 100)
DKI Jakarta	85	101
Central Java	92	101
DI Yogyakarta	73	102
East Java	85	103
Lampung	88	113
Central Kalimantan	76	103
North Sulawesi	73	103
South Sulawesi	87	108
Bali	90	101

needed to deliver the curriculum to schools of different sizes. The minimum number of teachers is a function of the demands of the curriculum (the number of subjects and the periods taught per week), the policy of having teachers teach only one subject, the number of classes taught (e.g., whether the school has 6, 9, 12, or more classes), and the restriction on the number of hours a teacher can teach (24 per week). While it is well known that the per student recurrent costs of operating a small school (with 3 or 6 classes) are higher than operating a larger school, it is perhaps not widely appreciated that the per student recurrent costs do not decrease smoothly and monotonically as the size of the school increases.<sup>21</sup>

Since the restrictions (on number of teaching hours and subjects) and the curriculum do not vary across the country, any variation in the number of teachers across schools should depend entirely on the number of classes. However, analysis of school-level administrative data from MOEC indicates that, in practice, the number of teachers varies dramatically even for schools that have the same number of classes. More to the point, many schools have more teachers than are required to deliver the curriculum. The analysis finds that the median wage bill is 30 percent higher in schools that have more teachers than required to deliver the curriculum (Annex 3.2).

<sup>21</sup> Operating a 9-class school involves much higher per student recurrent costs because it requires as many teachers to operate as does a 12-class school. In a 12-class school, all teachers are working the maximum number of hours. Operating a 15-class school involves considerably higher per student recurrent costs because 50 percent more teachers are required to deliver the curriculum than is required in a 12-class school. In effect, operating a 15-class school is equivalent to operating simultaneously a 12-class and a 3-class school.

One possible reason why this inefficiency continues to exist is that the incentives for efficient teacher allocation are not present. Local administrators, who control teacher allocation, do not pay the costs of allocating too many teachers to a school. Salaries are paid centrally and no part of the administrator's salary or budget is conditioned on how efficiently teachers are allocated. A second possible reason why the inefficiency persists is that it provides greater opportunities for teachers to earn income from other jobs.

#### **D. STRATEGIES FOR ACHIEVING UNIVERSAL BASIC EDUCATION**

Six main strategies are recommended to ensure that all children complete nine years of basic education by the year 2010: (a) reducing the costs of junior secondary education to the poor; (b) reducing primary school dropout rates; (c) targeting public investments to underserved areas and poor households; (d) maintaining the role of the private sector; (e) restructuring the public subsidy to private schools; and (f) enhancing efficiency during the expansion. These are discussed in turn below.

##### **Reducing the Costs of Junior Secondary Education to the Poor**

Given that low demand for basic education is poverty related, public policy needs to boost demand by alleviating the income and price constraints faced by the poor, even after the crisis is over. Interventions must operate on both the demand and supply side. A variety of strategies could be employed according to their appropriateness in each province or district. Public funds can be used either for direct provision of schooling or financing. Some of the options available include: (a) provision of school facilities in rural and remote areas (to reduce some of the costs of schooling), but where private schools do not already operate (see below); (b) continuing to give scholarships to poor students, particularly to poor girls; (c) continuing to provide matching or block grants directly to schools; and (d) using alternative modes of delivery such as SMP Terbuka, Paket B, and other nonformal models as a short- to medium-term approach (if proven effective and as appropriate in each province), to be replaced with more standard schools once more funds become available.

##### **Targeting Public Investment to Underserved Areas and Poor Households**

These four options for reducing the costs of junior secondary education, and therefore for increasing access, should be directed at underserved areas and poor households. Under the crisis-relief interventions being implemented by GOI (especially scholarships and block grants), mechanisms to target the funds and ensure that resources reach the intended beneficiaries have been developed. The approach underlying the targeting mechanism uses quantitative information (poverty incidence, enrollment rates, etc.) as well as local knowledge and the participation of NGOs and other members of



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civil society in the selection at the local levels (district, subdistrict, and schools).<sup>22</sup> The effectiveness of this mechanism should be evaluated and modified as the program proceeds.

To ensure that public funds such as the scholarships and grants reach intended beneficiaries, several principles should be followed: (a) funds should go in the most direct way to students and schools, with as few intermediaries as possible; (b) mass media campaigns down to the village level should be used to inform communities and parents about the programs and their procedures; (c) independent agencies, including NGOs and civil society members, should be used to monitor the programs; and (d) throughout the program, GOI and donors should evaluate the impact of the program on school enrollments and transition rates through focused surveys, the use of SUSENAS, or other methods.<sup>23</sup>

### **Lowering Primary School Dropout Rates**

GOI's targeted antipoverty program, launched in 1993 (IDT program) and directed at the poorest 30 percent of villages, could have a positive effect on reducing dropouts through the income effect. Another initiative that could have a significant effect on dropouts is the school feeding program, which was launched in 1996. This program could generate an effect by (a) providing an incentive for children to go to school; (b) raising incomes of parents in the community (given that all food is to be bought locally under the program); and (c) improving the health and nutrition of children, which will help learning and achievement. Policies that improve the quality of schools, as recommended in Chapters 3 and 5, can also affect the dropout rate. These include targeted interventions for underserved schools.

Furthermore, given the strong correlation between starting school late and dropping out, it is worth considering policies, including early childhood interventions, that could lead to earlier entry into school, particularly among poor rural children. It is

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<sup>22</sup> Two main sources of data are available in Indonesia for poverty targeting, both of which are useful for targeting the scholarship and school grants program but which cannot be relied on solely. The SUSENAS (socioeconomic household-level survey), which collects a large number of welfare indicators including education variables (enrollments, household expenditures, etc.), is not representative at the subdistrict level and therefore can be used to provide a ranking of districts only by poverty incidence. The PODES (village census) collects a range of data on the physical, environmental, social, and economic infrastructure of every village in Indonesia. The selection of poor villages (IDT villages) from the PODES is based on a score of variables which are biased toward infrastructure availability. IDT villages are selected from the poorest third villages in each district, with no harmonizing across districts. Hence, the lowest third in a rich district may be better off than the top third in a very poor district.

<sup>23</sup> These principles have been adopted in the crisis-relief scholarships and block grants programs.

unclear why children start late. One possible reason is the lack of readiness for school, particularly with respect to language abilities. In provinces where the mother tongue is different than Bahasa Indonesia, preschool programs which introduce the child to Bahasa at an early age may enhance a child's readiness for primary school and hence her or his probability of staying in school. As a first step, it is important to explore why children are sent to school late and then to see whether any policies might induce them to start earlier.<sup>24</sup>

### **Maintaining the Role of the Private Sector**

GOI should maintain its laissez-faire policy toward private schools. The following quote from a study on local capacity strengthening summarizes the spirit of the recommended strategy toward private schools: (Malo et al., 1994):

In the two provinces we visited, SMP swasta [private] and madrasahs were rapidly expanding in areas where government schools had yet to be established; they were as common in isolated rural as in central urban areas. And they were delivering services at a fraction of the cost of government schools. Government schools, while offering good service, were proving difficult to establish at a rate equal to growing private demand. GOI has pledged to realize universal basic education. Its most efficient route might be to set up incentives to encourage the private sector, rather than attempt the effort on its own.

In addition to subsidizing private schools (see below), GOI should be careful not to crowd out private schools when it expands or builds public schools. In order to carry out the above, GOI should build new public schools and expand existing ones on the basis of integrated school location planning—that is, taking into account the location, size, and catchment area of existing private schools. While this principle was announced as basic government policy in Repelita VI, it is generally not followed during school location planning at the province and district level. Hence, GOI should persist in ensuring that integrated school mapping is established as common practice.

### **Restructuring the Public Subsidy to Private Schools**

GOI should continue to subsidize private schools, but it needs to restructure the subsidy to enhance its effectiveness. In this respect, the program of public sector teacher secondment to private schools should be reconsidered and probably revised. Since it is

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<sup>24</sup> An ongoing study is assessing the absence of school readiness skills (language concepts and vocabulary, numeracy) in Indonesia with particular emphasis on early child education. The study also attempts to improve the understanding of the linkages between lack of early child education and poor primary school outcomes, particularly in grades 1 and 2.

unlikely that the systemic factors propelling seconded teachers toward the better private schools and away from the poorest schools that most need them can be easily reversed, it might be better to gradually phase out the program. Released resources could be used to fund alternative schemes of supporting private schools that would more effectively target the neediest schools.

One example of such an alternative scheme is already in operation: money grants to private schools in proportion to their number of classrooms. Money grants to private schools should continue to be distributed to the two-thirds of private schools that are in need. At the same time, the amount of the grant could be increased (utilizing resources currently tied up in the teacher secondment program) to allow needy schools to secure adequate levels of operational funds other than those for teachers' salaries.

The current policy directive of not extending support to "equalized" schools (which apparently is not enforced, at least in the case of seconded teachers) should be reaffirmed. Distribution of approved textbooks and teacher guides would be a justifiable exception to this rule. In other words, priority for assistance should be to schools in the bottom two-thirds of the distribution.

Continued support to private schools should not be open-ended. On the contrary, it should be conditional upon an improvement in quality within a specified period of time. For example, support would be discontinued if after, say, three years a review showed that the school had failed to improve substantially a set of preannounced indicators such as number of enrolled students, percentage of graduates over enrollments, average Ebtanas scores, teacher qualifications, the adequacy of school buildings, and so on.

There is a need to improve the flow of information regarding regulations and the eligibility of private schools for government assistance. There is also need to empower managers at the province and district levels. In principle, the decision about whether a school is eligible for assistance lies with the kanwil, and processing and assessment lies with the kandep; yet the authority of both offices is limited and still subject to higher approval.

### **Reaping Efficiency Gains During the Expansion**

**Consolidating/Converting Primary Schools.** One approach that would realize efficiency gains would be to consolidate primary schools or to convert some primary schools to junior secondary schools. But to achieve any significant cost savings, classes, not only schools, would have to be consolidated. Consolidating two schools into one while retaining the same number of classes only saves on the administrative overhead. If 20 percent of MOEC schools are consolidated, this would reduce the number of schools by roughly 14,000. If only the administrative overhead is saved (on average 1.5 people per school), that would amount to a savings of roughly 2 percent in the number of

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teachers overall. If classes were eliminated, however, the savings would be more consequential, closer to 10 percent of the number of teachers.

Greater savings are likely to be realized by converting a primary school to a junior secondary school than simply eliminating a primary school. This is because much of the land used for primary schools is not owned by MOEC, but leased from the village heads. Hence, MOEC would not be able to recover much of the investment in the building if the primary school were abandoned. However, if the village head could be convinced to continue to lease the land for a junior secondary school under the same conditions as for primary schools, then substantial savings could arise. In addition, converting existing primary schools to junior secondary would help relieve some of the land constraint in densely populated provinces such as Java and Bali.

**Redeploying Excess Teachers.** One way the expansion of public junior secondary schools could be accomplished at lower cost is to redeploy some of the excess teachers to new schools. This would require, however, some actions to reduce the excess over and above the minimum required to deliver the curriculum. Broadly speaking, there are three main approaches GOI can follow. In order of ascending difficulty of implementation, they are as follows:

- (a) Make sure that the implications for recurrent costs are taken into account when deciding what size school to build. The lowest per student recurrent costs are realized in schools with 12 and 24 classes. This does not mean that only schools with 12 and 24 classes should be built. There are other considerations that must be taken into account in determining school size: the marginal costs of building a slightly larger school and the cost of travel (and perceptions of quality) by students and their parents. The goal is to achieve universal basic education of an acceptable quality in the most efficient way possible. Building additional smaller schools may be efficient if that would enable students to be closer to schools and if distance were the factor that kept students from attending junior secondary. Nevertheless, it is important to be aware of the nature of the recurrent cost function in deciding upon an expansion strategy.
- (b) Modify the allocation formula itself by either training teachers to teach in two subjects (see also Chapter 3), increasing the number of teaching periods from four to five a day, or a combination of both.
- (c) Modify the incentives in the system to try to ensure that whatever allocation formula is used will be more consistently applied. Changing incentives that are well entrenched is difficult but is probably the most important of the three approaches. If the allocation of teachers continues to diverge from the allocation formula as much as it currently does, the type

of modifications proposed in the first two approaches would be largely irrelevant. One option is to modify incentives at the district level so that freeing up an excess teacher results in an increase in funds to be used for educational expenditure by the district or school. Some attempt could be made to condition the salary or the funds under the district officer on the efficiency in allocation of teachers. School administrators should be allowed to substitute part-time teachers for full-time teachers, so long as the total costs do not exceed acceptable limits. Operations and maintenance funds, for example, could be increased for those districts which make substantial improvements in their teacher allocations.

A second option is to modify incentives at the school level by introducing the same type of conditioning of funds on efficient allocations as at the district level. The money that a school receives for nonsalary expenditures could be conditioned on how efficient or inefficient the school is in using its teachers. Another possible change is a program of government matching funds to BP3, under which GOI could match at a higher rate for poor communities (Chapter 3). Such a program would also improve allocations indirectly by increasing the relative attractiveness of working in rural areas, but would not affect the allocations directly. By providing poorer communities with more funds that could be used to supplement teacher salaries (or to pay for other educational costs), GOI would increase the relative attractiveness of working in poorer areas.

In addition, it would be useful to monitor costs associated with inefficient allocations through intensive work at one or two districts on how the particular allocations are arrived at, with representatives from all stakeholders involved.

## **5. INSTITUTIONAL ARRANGEMENTS AND DECENTRALIZATION IN BASIC EDUCATION**

### **A. INTRODUCTION**

A major constraint to achieving universal basic education of high quality is the current institutional arrangement in Indonesia. There are several dimensions to the institutional constraints which include: organizational complexities at the primary level, overly centralized management at the junior secondary level, a fragmented and rigid budgetary process at both levels, and ineffective management at the school level. The importance of appropriate institutional arrangements on student achievement is affirmed in several studies (Suryadi, 1989; Malo et al., 1994; DHV, 1997) and accords with international experience.

This chapter begins by discussing dimensions of the institutional constraints (Section B). Section C presents lessons from international experience and a generic model for balancing education responsibilities between central ministries and local governments. The final part of the chapter (Section D) discusses Indonesia's recent steps toward decentralization and presents options for institutional reform in the country over the medium term. The underlying theme of the chapter is that many of the institutional impediments can be overcome by decentralization, with particular attention paid to redefining and clarifying responsibilities among different levels of government and schools. In addition, it is important to have funding mechanisms that promote equity and efficiency, and which balance autonomy with accountability to national policymakers and to parents and communities.

### **B. INSTITUTIONAL WEAKNESSES: CONSTRAINTS TO QUALITY UNIVERSAL BASIC EDUCATION**

#### **Organizational Complexities at the Primary Level**

At the primary level, the Ministry of Education and Culture (MOEC) is responsible for technical quality and educational content (curriculum, teacher qualification and certification, testing, textbook evaluation and provision of teaching materials) while the Ministry of Home Affairs (MOHA) at the local government level is responsible for manpower, materials and resources (often called the "3Ms"), including teacher recruitment and placement, school buildings and all physical aspects of the

school.<sup>1</sup> For religious schools, both public and private, the Ministry of Religious Affairs (MORA) is responsible.

Much has been written about the dual responsibility (between MOEC and MOHA) for primary education in Indonesia.<sup>2</sup> Many officials acknowledge that the present structure for implementing primary education results in ambiguity of managerial roles and responsibilities, delayed and fragmented planning and budgeting, and interagency competition for authority over teachers. They also acknowledge that separating the technical-educative functions and administrative (man-money-materials) functions is impractical and ultimately affects the quality of education in at least the following ways:

- (a) Spending to improve primary education quality is neglected because it is not within the scope of either MOEC or MOHA to seek the resources needed. Since MOHA is responsible for financing primary schooling, MOEC has not felt it appropriate to make the case for additional resources, even though it is aware of the need. At the same time, MOHA has not been motivated to claim additional resources because it is not responsible for educational quality.
- (b) Schools' needs for resources to improve quality are not being met because, first, goods provided by the dinas (local government offices), such as textbooks or teaching materials, are often not what the schools need or request; and second, parts of the central education subsidy (BOP) are often reallocated to cover the overhead costs of the dinas' offices. Field visits indicate that of the annual central government subsidy of Rp 700,000 per school, schools typically receive Rp 200,000–250,000.
- (c) Career development prospects for primary school teachers are further limited by this dual structure since promotion from primary to secondary schooling involves transferring control of staff from one ministry to another. In addition, even though MOEC is responsible for evaluating primary teachers' performance, regional governments often make promotion decisions for primary school teachers independently of MOEC's evaluation. Hence, while the supervision of the quality of teachers is considered to be a responsibility of MOEC, the ministry does not have the ability to affect personnel matters. Teachers and principals are often assigned, transferred, or promoted without any consultation with the

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<sup>1</sup> For a description of the administrative structure of the education system, see Annex 4.1.

<sup>2</sup> See, for example, King, 1996; World Bank, 1989.

kanwil (provincial MOEC office). Sometimes, principals are reassigned into the dinas office.

- (d) Finally, dual administration, as currently practiced, is not conducive to coordination needed in areas of policy, planning, and implementation to achieve the Government's objective of nine years of universal basic education. For example, the different institutional arrangements across primary and junior secondary have made it difficult to achieve efficiency gains by actions that cut across the two sectors—as in the case of converting a primary school, where there is an excess, to a junior secondary school, where there are shortages.

### **Overly Centralized Operations at the Junior Secondary Level**

The nature of the institutional problems are different at the junior secondary level than at the primary level. Responsibility for junior secondary education rests with MOEC, with implementation carried out at the provincial and district (kanwil and kandep) levels, and budget programming and investment planning carried out at the central level of MOEC.<sup>3</sup> It is unlikely that an expansion of the public junior secondary system, on the scale discussed in Chapter 4, could be managed effectively from the central level. The successful expansion of the primary system in Indonesia was managed in a decentralized fashion.

### **Fragmentation and Rigidity of the Budgetary Process**

In addition to the organizational complexity, the system suffers from rigidity and fragmentation of the budget. The development (DIP) and routine (DIK) budgets are prepared in isolation from each other. The Ministry of Finance (MOF), MOEC, and MOHA prepare the DIK. The DIP is prepared by BAPPENAS (the National Development Planning Board), MOEC and MOHA.<sup>4</sup> This means, for example, that any savings resulting from reduced expenditures on surplus teachers cannot be used to improve textbook supplies because teachers and textbooks are financed under entirely separate budget instruments and decisions about them are made independently. Thus planners and managers have little incentive to economize on the use of either. The lack of

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<sup>3</sup> Some changes in this arrangement are beginning to take place as discussed in the second half of this chapter.

<sup>4</sup> BAPPENAS must approve the development budget for all MOEC programs, including the presidential instruction block grant for primary schools (INPRES SD). The Ministry of Finance must approve all routine budget requests. Budget proposals with staffing implications are jointly reviewed and must be approved by the State Ministry for Utilization of Government Apparatus (MENPAN) and the State Civil Service Commission (BAKN), as well as MOF.



incentives to economize on the use of teachers has led to the current problems of inefficient allocations of teachers.

In addition, the budgetary preparation, review, and approval process takes up the whole year, interim budgets are very hard to get, and the transfer of budget authorizations from one category to another is an arduous task. As a consequence, education managers have no incentive to conserve budget allocations or corresponding inputs (such as staff) which they may not need, and they hoard resources to provide for possible future needs. For example, when a new school is instituted, it is provided with its full complement of teachers immediately, even though the initial needs are smaller.

Budget information is dispersed among five ministries (MOF, BAPPENAS, MOEC, MOHA, MORA) and at least four levels of administration: the center (MOEC and MOHA), province (kanwil and dinas I), district (kandep and dinas II), and sometimes subdistrict (kancam and dinas kecamatan). There are several negative effects of budgetary fragmentation. It discourages a clear sense of responsibility on the part of any level of government or agency. Planning and development of service provision are difficult. There is no regular assessment of the real level of funding needed, and funds for operation and maintenance and quality funding are typically sacrificed.<sup>5</sup> Moreover, it is difficult to ascertain and ensure that resources are distributed equitably among regions since each source of finance is allocated separately according to different criteria. Finally, the multiplicity of financial resources also facilitates abuse.

### **Ineffective Management at the School Level**

Perhaps even more than the various levels of government, the school as an institution plays a key role in determining the quality of basic education. And the central player in managing that role is the school principal. Several of the factors identified as crucial to effective schools (see Figure 3.1; Chapter 3) fall within the responsibility of the principal. Quality improvements require school principals who (a) see that resources are available to provide adequate support to teachers, sufficient learning materials, and well-maintained facilities; (b) devote much of their time to the coordination and management of the instructional process; and (c) communicate regularly with staff, parents, students, and others in the community.

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<sup>5</sup> An example is the case of textbooks: MOEC publishes textbooks and delivers them to warehouses in the regions, leaving it to regional governments to distribute the books to schools. The regional governments, on the other hand, contend that they lack sufficient funds for textbook distribution.

In Indonesia, on average, public school principals have little autonomy in the running of the school or resource allocation.<sup>6</sup> Malo et al.'s (1994) research on strengthening local capacity in basic education in Indonesia finds that more autonomy at the school level enables better education. After controlling for resources, urban location, and school type, the study finds that discretion over resources and decisions has an independent effect on school performance. Discretion is also strongly associated with school type—public versus private—with principals in private schools having high levels of discretion compared to those of public schools. Even though private schools operate with fewer resources, having more freedom from official regulations allows them to use their resources more efficiently. This is an indication that the autonomous behavior of principals is an important force for educational improvement in Indonesia.

Furthermore, school principals are not generally equipped to manage or lead a school well (see Box 5.1). Most principals were initially trained as classroom teachers and underwent a few days of training upon becoming principals in administrative theories and orientation to education laws and regulations. Recruitment of principals in public schools is strictly based on the rank of the candidate and has little bearing to the merit of the candidate.

Part of principals' leadership role is gathering the support of communities and parents. Among PEQIP schools, inputs related to community participation were found to be among the most cost-effective activities funded by the project (DHV, 1997). But schools with weak principals are unable to take full advantage of the community's support. Strong skills in building local involvement will become increasingly important as educational functions are decentralized.

### C. LESSONS FROM INTERNATIONAL EXPERIENCE

As other countries have learned, many of the constraints discussed above can be addressed by moving accountability for service delivery closer to the beneficiaries and by changing incentive systems. Other countries' experience with the decentralization of education provides some best-practice lessons. Different countries have decentralized their education systems for various political, educational, administrative, and financial reasons. The results have been encouraging at some levels and less so at others (Box 5.2). Clearly, decentralization is not an answer to all education problems, but experience shows that it is a necessary, while not a sufficient, condition for improving teaching and learning.

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<sup>6</sup> Since Repelita V, principals have had some autonomy in using school resources through planning and implementing RAPBS (Rencana Anggaran Pendapatan dan Belanja Sekolah). However, recent assessments indicate that the autonomy exists more in theory than in practice.

### **BOX 5.1: EMPHASIZING SCHOOL AND CLASSROOM ORGANIZATION TO ENHANCE EFFECTIVENESS**

Effective school management means organizing a school and community to pursue the common aim of improving student performance. Field visits to PEQIP (Primary Education Quality Improvement Project) schools in 1996-97 indicated that about 10 percent of the schools adopted a schoolwide approach to setting and reaching goals that resulted in impressive teaching and learning activities. Good schools were found to emphasize key organizational principles at the school and classroom levels. Elements of school-level organization include:

- *Agreed educational aims:* At effective schools, the head and teachers had decided on and followed certain educational objectives, including high expectations of student performance.
- *Timetable:* Teaching blocks were never too long. Reading periods were in the timetable.
- *Library organization and use:* A variety of well-organized books was available to students and the community.
- *Community support:* Parents were welcomed to the school at all times, encouraged to meet with teachers, and invited to help with minor maintenance of buildings and grounds.

Evidence of clear classroom-level organization included:

- *Class discipline:* Teachers had good rapport with their students, classes were quiet and cooperative, and the approach to discipline was firm but not oppressive.
- *Use of lesson time:* Teachers planned their lessons well and employed a variety of activities.
- *Grouping:* Lecture-style teaching was limited and students were active for most of the lesson.
- *Attention to individuals:* Teachers assisted slower students and gave faster students extra exercises.
- *Class monitors:* Students acted as class monitors and helped teachers with classroom tasks.
- *Classroom displays:* Imaginative displays of students' work instilled a sense of ownership and pride in the classroom and created a pleasant working atmosphere.

*Source:* MOEC, "Basic Education Quality Interventions: Lessons of Implementation," 1998.

Based on the experience of many countries, a generic model for assigning responsibilities for provision and finance of education between central ministries and local governments is presented in Table 5.1. The model has to be adapted for any particular country depending upon political, constitutional, administrative, and technical factors.

As reflected in the table, central governments typically have a comparative advantage in three areas: promoting national unity (through curriculum design, for example); bringing greater equality in the provision of education across income groups and regions and between males and females; and setting standards, evaluating, and testing. Beyond these three aspects, however, most other functions can be decentralized to lower levels, including hiring, paying and assigning teachers, deciding on school locations, and maintaining infrastructure.

**BOX 5.2: INTERNATIONAL EXPERIENCES WITH DECENTRALIZATION OF EDUCATION**

**Educational Improvement.** Proponents of decentralization have claimed that it will lead to improved quality of teaching and learning by putting decisions closer to the point at which they must be carried out and by mobilizing teachers, principals, and other school managers to do a better job. Results from New Zealand indicate that decentralization has had a positive impact on school learning. Similarly, in the state of Minas Gerais in Brazil, third grade students improved their scores in basic subjects. Chile is the one example, however, where scores on national standardized tests declined as a result of decentralization, a factor some attribute to heavy pressure to increase enrollment.

**Administrative Efficiency.** Decentralization can eliminate overlays of bureaucratic procedures and motivate education officials to be more productive. In Mexico, this indeed occurred when teachers began to be paid regularly; and in Minas Gerais in Brazil, school autonomy led to lower costs and better school maintenance, teacher training, and availability and quality of school meals. Similarly in Chile, decentralization produced significant reductions in administrative costs because of the reduced number of ministry employees.

**Effects on Spending on Education.** Experience shows that one risk with giving spending decisions to local politicians is that they are tempted to use available funds for more tangible projects such as roads or irrigation schemes. But this need not be the case. In Argentina, total spending on education increased with decentralization, but in Mexico it did not. The consensus is that the impact of decentralization on spending for education is very much a function of context and external economic and political conditions.

**Effects on Equity.** A possible negative consequence of decentralization is that it may widen the gap between students in wealthy and poor areas. Local areas with plentiful financial and human resources are in a better position to make use of decentralized power compared to poorer areas. This is not an argument against decentralization, but rather that income, regional, and gender gaps should be monitored closely during decentralization and actions taken to correct inequities. Central governments have policy tools, such as special grants to low-performing schools, to prevent inequity from increasing.

Finally, most researchers would agree that if decentralization is to be successful and have a positive impact on the quality of education, it must be based on a broad consensus among the various actors and interest groups affected by the change, including policymakers, regional and local government officials, Ministry of Education employees, teachers, parents, university professors, professional associations, and outside groups such as religious organizations and donors.

*Source:* Fiske, 1996.

#### **D. OVERCOMING INSTITUTIONAL WEAKNESSES: RECENT CHANGES AND OPTIONS FOR THE FUTURE**

##### **Recent Changes in Indonesia**

Although it is one of the most centralized ministries in Indonesia, MOEC is moving toward further decentralization of the education system to lower levels of

**Table 5.1: Assignment of responsibilities for education in a decentralized structure**

	Ministry of Education	Local Government
<b>Finance</b>		
Finance of Recurrent Expenditures	Ensures a specified minimum level of spending per pupil and financing to reduce inequalities in educational spending and to compensate for differences in need; designs and administers grants in aid.	Finances education on a cost-sharing basis and has the authority to finance expenditures beyond the specified minimum.
Finance of Capital Expenditures	Provides financing or backs local government borrowing, due to constraints on local government borrowing capacity; designs and administers grants in aid.	Shares in the financing of school construction and rehabilitation.
<b>Provision</b>		
Curriculum Design and Content	Specifies the content of the core curriculum to ensure common values and minimum learning. It also provides a basic curriculum design which local governments can use.	Implements the core curriculum and adapts the basic curriculum design to local requirements.
Textbooks and Teaching Materials	Prepares minimum text specifications reflecting the core curriculum; it may evaluate privately supplied textbooks and teaching materials; it may also mandate a minimum supply of textbooks	Selects textbooks from an approved list.
Teacher Training	Ensures and adequate supply of preservice teacher training, establishes teacher accreditation standards, and may offer inservice training.	Determines inservice training needs and contracts for its provision.
Teacher Recruitment and Pay	Establishes minimum conditions of employment for teachers.	Negotiates pay levels with teachers; and recruits, hires, and dismisses teachers.
Testing and Evaluation	Designs and approves testing instruments, ensures testing takes place and disseminates the results to the schools; it also evaluates educational programs for cost and effectiveness.	May contract for testing services (if not directly provided by the central Ministry of Education), and disseminates results to parents. It also maintains an information system to provide the data required for program evaluation.
Program Supervision	Supervises school performance and provides technical assistance to remedy problems.	May contract for specialized technical assistance.
School Construction and Maintenance	Sets minimum school construction and maintenance standards and monitors their compliance.	Contracts for and monitors school construction and maintenance.
Financial and Management Audit	Sets the accounting standards required for audit, determines audit content, either directly provides audit or monitors its performance, reviews the results, and determines corrective actions	Maintains accounts required for audit, may contract for audit by approved firms, and complies with any required corrective actions.
Planning and Budgeting	Does planning and budgeting for centrally financed expenditures, sets budgeting standards for local governments, and provides technical assistance to local governments.	Does planning and budgeting for locally financed expenditures and may contract for specialized technical assistance.

Source: Donald Winkler, *The Design and Administration of Intergovernmental Transfers: Fiscal Decentralization in Latin America*, World Bank Discussion Paper, 1994.

government.<sup>7</sup> (For a description of the administrative structure in education, see Annex 5.1) Starting in 1996, MOEC shifted the preparation and implementation of several junior secondary education programs to its provincial level offices. This was deconcentration rather than decentralization, but the Government has since gone further. In 1997, a new government policy assigned the responsibility for the success of the nine-year universal basic education program (WAJAR) to the district governments and the Bupatis (heads of districts). The Bupatis' performance in achieving increased enrollments will be evaluated and rewarded accordingly.

This decision represents a major step toward decentralization of basic education service delivery and establishes a new interim structure that may last 5 to 10 years. Although in principle the new plan applies to all provinces, in practice GOI has just begun implementation of this plan in a clearly defined and concerted way in West Java (Box 5.3). The Government is planning to expand this interim structure to other provinces, and functions will be decentralized gradually as capacity is developed at the lower levels.<sup>8</sup> While some of the difficult transition issues associated with decentralization have yet to be tackled, the policy has been established and now needs to be implemented. The process of implementation will no doubt take time and needs to be phased in judiciously.

### **Redefining Responsibilities over the Long Term**

Indonesia's long-term plan for decentralization is to fully develop the district government as the main implementation agency for basic education—specifically the dinas P&K II (district/municipality education office).<sup>9</sup> Table 5.2 indicates how some of

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<sup>7</sup> *Decentralization* can be defined as the transfer of some degree of authority and responsibility to other local government entities not part of the central ministry, or ultimately to the individual schools or network of schools. *Deconcentration* can be regarded as the center passing some functions to its regional (provincial or below) dependencies while retaining overall authority. Finally, the term *devolution* can be used to describe the process by which ownership—including responsibility for raising revenues and virtually all control of the educational process of the schools—is completely turned over to lower levels of government or to the private sector.

<sup>8</sup> Other provinces to follow suit are South Sulawesi, Maluku, Riau, Bengkulu, and North Sumatra.

<sup>9</sup> These actions within education follow in the spirit of recent trends towards greater decentralization within the Government. In 1995, the Government implemented a trial project (called Daerah Percontohan or DP) to decentralize some of central government functions to 26 districts/municipalities—one in each province, excluding DKI Jakarta. A total of 22 government functions were decentralized, including education. In 1997, an additional 67 kabupaten were included in the project. The DP policy is that all offices of line ministries in the 22 decentralized government affairs (kandep P&K in the case of education) are to be abolished and staff and resources transferred to the dinas. An exception was made for MOEC in that they can retain a district office in the form of the kanin (Inspection Office).

**BOX 5.3: DECENTRALIZING DELIVERY OF BASIC EDUCATION:  
TAKING A STEP IN WEST JAVA**

As the first step in the direction of local government responsibility and implementation of basic education, an interim organizational structure was agreed by all relevant agencies (BAPPENAS, MOEC, MOHA, and MORA) and reflected in a joint ministerial decree (SKB). Under the interim structure:

**Planning and budgeting** would be coordinated by BAPPEDA II at the district level. An integrated annual district plan, reflecting the priorities of the district and incorporating the planned activities of each of the agencies (MOEC, MORA, MOHA), would be developed and submitted to the province under the signature (responsibility and accountability) of the district head, the Bupati.

**Implementation** would be undertaken at the district by each agency. Funds would flow from national and local sources directly to the district agencies concerned. Funds for school rehabilitation and maintenance will be channeled directly to community groups such as the local development councils (LKMD) and parent-teacher organizations (BP3).

**Monitoring and reporting** will be coordinated by BAPPEDA II, and the integrated district report would be submitted to the Bupati. Performance would be assessed annually. And while the allocation of funds to the districts would not be competitive in nature in the beginning, funding would be performance-based: funding for further district activities will be based on the previous year's performance and the soundness of the plan for the coming year. As the accountable official, the Bupati reports the annual district performance to the provincial Governor, who in turn reports to the central level.

*Source:* World Bank, *West Java Basic Education Project*, Project Appraisal Document, March 10, 1998.

the key functions are currently assigned in most provinces of Indonesia, the interim structure being introduced partly in West Java, and a possible assignment of functions for the long-term future. The long-term proposal follows the general direction of the Government's Daerah Percontohan pilot program (see footnote 9) and the generic model presented in Table 5.1.

The proposed long-term plan has three main features. First, the assignment of responsibilities at the junior secondary level would be the same as at the primary level, so the institutional structure for basic education would be streamlined. Second, responsibility for the delivery of basic education would be consolidated and largely shifted from ministry representatives at the national and provincial levels to the local government at the district level. Nearly all of the functions at both the primary and junior secondary levels would be carried out by the dinas, the school, or the school cluster—groups that report either directly or indirectly to the Bupati. Third, MOEC would continue to be the main party responsible for overseeing quality and maintaining standards, particularly through curriculum development, assessment, and testing.

### **Building Institutional Capacity**

Many of these changes cannot be carried out overnight and will require considerable consensus building among the various players and capacity building at local levels. At the district/municipality level, qualified and competent personnel in sufficient numbers to perform these functions are not typically currently available in local

**Table 5.2: Current and proposed responsibility for key education functions**

Function	Current Responsibility	Proposed Responsibility	
		Long-term	Interim
System Planning and Programming:	(currently fragmented in each unit)	BAPPEDA-II led team to include all agencies	BAPPEDA-II led team to include all agencies
Primary			
Junior Secondary			
Curriculum Design and Content: /a			
Primary	MOEC	MOEC/Dinas I	MOEC/Dinas I
Junior Secondary	MOEC	MOEC/Dinas I	MOEC/Dinas I
Selection of Textbooks:			
Primary	MOEC & Dinas II	<i>School (from MOEC list)</i>	<i>School (from MOEC list)</i>
Junior Secondary	MOEC	<i>School (from MOEC list)</i>	<i>School (from MOEC list)</i>
Procurement of Textbooks:			
Primary	MOEC & Dinas II	<i>Dinas P&amp;K II</i>	<i>Dinas P&amp;K II</i>
Junior Secondary	MOEC	<i>Dinas P&amp;K II</i>	<i>Dinas P&amp;K II</i>
Content of Inservice Teacher Training:			
Primary	MOEC/Kanwil	MOEC/Kanwil/Dinas	MOEC/Kanwil/Dinas
Junior Secondary	MOEC/Kanwil	MOEC/Kanwil/Dinas	MOEC/Kanwil/Dinas
Delivery of Inservice Teacher Training:			
Primary	Kanwil/Kandep	<i>Dinas II</i>	<i>Kanin/Kandep</i>
Junior Secondary	Kanwil	<i>Dinas II</i>	<i>Kanin/Kandep</i>
Appointment and Promotion of Teachers:			
Primary	Governor	<i>Bupati/Walikota</i>	<i>Bupati/Walikota</i>
Junior Secondary	MOEC Kanwil	<i>Bupati/Walikota</i>	<i>Bupati/Walikota</i>
Supervision of Teachers:			
Primary	Kandep	<i>Dinas II</i>	<i>Kanin/Kandep</i>
Junior Secondary	Kandep	<i>Dinas II</i>	<i>Kanin/Kandep</i>
Evaluation and Assessment of Education Programs:			
Primary	MOEC	MOEC	MOEC
Junior Secondary	MOEC	MOEC	MOEC
School Construction/Major Rehab.:			
Primary	Dinas PUP	<i>Dinas PUK</i>	<i>Dinas PUK</i>
Junior Secondary	Kanwil MOEC	<i>Dinas PUK</i>	<i>Dinas PUK</i>
School Rehabilitation and Maintenance:			
Primary	Dinas PUP	<i>Community (LKMD/BP3)</i>	<i>Community (LKMD/BP3)</i>
Junior Secondary	Kanwil MOEC	<i>Community (LKMD/BP3)</i>	<i>Community (LKMD/BP3)</i>
School Equipment and Furniture:			
Primary	Dinas P&K	<i>Dinas P&amp;K II w/school</i>	<i>Dinas II P&amp;K w/school</i>
Junior Secondary	Kanwil	<i>Dinas P&amp;K II w/school</i>	<i>Dinas II P&amp;K w/school</i>

/a The current policy allows for 20 percent local content, which should be encouraged.

Note: Entries in italics indicate a proposed change from current practice.

government (the kabupaten/kotamadya agencies including dinas P&K II, dinas public works/DPUK, and kecamatan).

During the interim period, it will therefore be essential to facilitate the secondment of qualified MOEC staff to fill key roles in local agencies. Current GOI regulations allow such secondments, but the lack of detailed arrangements and incentives



often frustrate such efforts, as has happened so far in the Government's decentralization pilot program (Daerah Percontohan). MOEC must also clarify career path and reentry/promotion criteria for staff agreeing to participate in the secondment program (examples of such arrangements in the Ministries of Health and Public Works can be used to expedite MOEC development of such procedures.) The MOEC kanwil and kandep can then assist each local government to recruit appropriate staff members to participate in the secondment program, while the local government undertakes longer-term efforts to improve their staff capacities.

Although some central government responsibilities will be shifted to local governments and schools, institutions at the center also need support. As has happened in other countries undergoing decentralization, new functions and responsibilities for the central government will emerge over time, such as setting standards and providing technical assistance to other levels. This means it will be necessary to strengthen the capabilities of the line ministries—primarily MOEC but also MORA—to carry out quality control and to monitor and evaluate the programs implemented by local government.

### **Fostering Greater Autonomy with Accountability in School Management**

At the school level, greater autonomy should be given to principals in deciding on resource use and developing school-based strategies in line with local conditions. For example, schools could be offered the choice between receiving a certain number of centrally trained teachers, or grants to fund certain activities. The recently implemented block grants program for crisis relief will have far-reaching implications on school autonomy and should be fostered.

But greater autonomy would need to be accompanied by three things. First, there must be a process of selecting good principals based on skills and characteristics that are needed to operate effectively in an autonomous school environment. Principals could be selected by the community for fixed-term periods based upon their submission of a plan for management of the school (the candidates could be selected by the community from a shortlist submitted by the central government, for example). Such a scheme has worked well in other countries (Box 5.4). Second, a means of rewarding good principals and replacing poor ones should be instituted. This has already begun at the senior secondary vocational level and could be extended to the basic education level as well. Finally, where specific deficiencies in management skills exist, modular training programs would need to be developed. As the PEQIP evaluation notes, such training should encourage principals to look beyond their administrative role and to provide educational leadership (DHV, 1997).

**BOX 5.4: PROMOTING LOCAL AUTONOMY IN BRAZIL TO IMPROVE QUALITY OF EDUCATION**

Perhaps one of the relevant cases for Indonesia is that of Brazil. In the early 1990s, the state of Minas Gerais in northeastern Brazil had high primary school enrollment, but the quality of education was low. Inadequate funding, poorly trained teachers, overregulated management and rigid pedagogies contributed to low student test scores, and high repetition and dropout rates.

The new government decided that enhancing quality meant giving communities a larger say in running their schools. Measures were enacted to give financial, administrative, and pedagogical autonomy to elected school boards in each school. The board consisted of teachers, parents, and students over age 16. Schools received a grant based on enrollment and special needs from the central government and each board voted on how to spend its funds as well as other monies raised locally. The boards also set short- and long-term goals for the school and decided on matters such as curriculum, pedagogy, and the school calendar. The central government maintained the function of centralized bargaining with the teachers, union, and the government.

Principals were elected for three-year terms by the entire school community in order to overcome the tradition of patronage in appointments. The community voted through secret ballot for candidates who scored highest on examinations. The finalist had to present a three-year plan to the community.

Some early results of student performance are encouraging: between 1992 and 1994 achievement test scores given to all third grade students showed an increase of 7 percent in science, 20 percent in Portuguese and 41 percent in math. The twofold program of school autonomy and greater transparency in decision-making also resulted in increased operational efficiency. Favoritism in the selection of principals was reduced; communities now look for technical qualifications and professionalism in the management of their schools.

*Source:* Fiske, 1996.

**Introducing Funding Instruments that Promote Equity and Efficiency**

In addition to redefining responsibilities, building institutional capacity and promoting greater autonomy and accountability at the school level, it is important to develop funding mechanisms that promote efficiency and equity and that balance autonomy and accountability. It is difficult to achieve these multiple objectives with a single funding mechanism. However, by combining three different funding mechanisms it is possible to move closer to achieving these goals. The central government may want to consider employing the following three mechanisms to transfer funds to the kabupaten (districts):

- (a) matching grants based on parental BP3 contributions;
- (b) performance-based grants; and
- (c) unrestricted grants to the kabupaten based on the number of students enrolled.

In the short run, the government could introduce the matching grants and the performance-based grants without major disruptions to current institutional arrangements or to other funding mechanisms. As was shown in Chapter 3, a matching grant program

with differential matching rates based on the poverty level of the community would go a long way toward improving equity. Block grants to schools are already being adopted as part of the “Stay in School” campaign as described in Chapter 2 (even though the grant is not matched).

In performance-based funding (as has been adopted in higher education and is being adopted in the West Java Basic Education Project), kabupaten would make proposals to improve the quality of basic education and that would be reviewed by MOEC (or some evaluation committee). Upon approval, kabupaten would receive grants for a multiyear period (about five years) with disbursement in each year conditional upon satisfactory performance with respect to agreed-upon outcomes.

Just as in the higher education sector, the proposals should be based on a self-evaluation of the key constraints faced by the kabupaten (districts). To introduce this process, it may be desirable to choose first a few kabupaten with different characteristics and work intensively with them on their self-evaluation and proposals. Hence, substantial capacity building would be needed. In preparing these proposals, kabupaten may make use of the conceptual framework of effective schools (see Chapter 3), suitably adapted to their conditions. The proposals could be informed by survey data from SUSENAS, by information from school achievement tests, and by administrative data that could easily be made available at the kabupaten level. A greater role of the community and parents in the diagnosis of the problems (as well as implementation of programs) is desirable as it would increase transparency and accountability. There are many options and several good models to follow both in Indonesia, such as the COPLANER project (Box 5.5), as well as in other countries (Box 3.4; Chapter 3). The process of proposal preparation and subsequent evaluation would be expected to improve the extent of feedback in the system.

While performance-based grants create good incentives, it is neither necessary nor desirable to allocate the entire budget in this fashion. Possibly basing 10 to 15 percent of the DIP allocation on performance grants would be sufficient to modify behavior.

A prerequisite for preparing such proposals is having consolidated budgets.<sup>10</sup> Decisionmakers at different levels (schools, kecamatan, kabupaten, and province) cannot make good allocation decisions without better information on what their budgets are. Moreover, without consolidated budgets, it is difficult for policymakers to ascertain the distributional consequences of the choices they make.

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<sup>10</sup> A consolidated budget has been prepared for the national level as part of this paper as shown in Chapter 7 and Annex 7.1. However, this should be carried out on a regular basis by GOI.

**BOX 5.5: COMMUNITY PARTICIPATION IN PLANNING AND MANAGING EDUCATION  
RESOURCES: THE INDONESIA COPLANER PROJECT**

In 1991, GOI, with the help of UNESCO, initiated a pilot project (COPLANER) to stimulate community participation in the planning and management of educational resources with the goal to improve the quality of education in schools. It operated in 29 subdistricts in 4 provinces. The project cost about \$3 million and lasted for 36 months.

The project created an administrative framework to facilitate and manage bottom-up resource planning. At the subdistrict level, Community Forums for Educational Development (CFEDs) were established, which comprised 30 to 35 representatives from government, supervisors, head teachers (public and private), parents, tutors, the community, teachers, and students. The CFED is responsible for determining and prioritizing educational needs, stimulating community involvement in education, and coordinating and managing resource requests. Other structures (smaller) were created at the district, provincial, and national levels.

An evaluation conducted in April 1993 lists many activities that communities undertook to improve the quality of education, including raising funds for kindergartens and additional school rooms, tutoring for final examinations, arranging for extension of school day, attending to kids who dropped out, and repairing schools. There were also small grants from the district office to the CFEDs for quality improvements. The apparent strength of the COPLANER project was that decisions were taken at the local level on what is needed to address problems in the schools.

*Source:* COPLANER Project Documents and Joint Evaluation Mission Final Report.

The third mechanism, unrestricted grants to kabupaten based on number of students enrolled, could be used to transfer the largest part of the budget. This mechanism would help address the problem of having different inputs financed under separate budget instruments, an arrangement that offers little incentive to economize on the use of resources. Under this mechanism, for example, savings incurred from a more efficient allocation of teachers could be used for more textbooks.

The amount set for the per student transfer would be determined based on what the Ministry of Education considers would be needed to deliver education of adequate quality (with adjustments made for the higher costs of delivering services in some areas). By setting a fixed budget and granting some autonomy, the Government would give administrators at the kabupaten level the means to achieve the best possible outcome for their budget. However, these administrators would need the skills and training to know how to achieve good outcomes given their budget. They would also need incentive to focus on outcomes and not just on containing costs. For these reasons, a movement to this type of mechanism should be deferred until local level administrators gain experience working with the performance-based grants. Finally, the per student grants could still be accompanied by performance-based grants and the matching grants.

## 6. ACHIEVING FLEXIBILITY AND EFFICIENCY IN POST-BASIC EDUCATION

### A. INTRODUCTION

Over the past couple of decades, post-basic education in Indonesia has grown substantially. By 1995, there were some 4 million students in senior secondary school and 2.2 million in higher education. In addition, there has been enormous growth in out-of-school education, mainly because of GOI's attempts to improve the general level of literacy in the adult population and individuals' recognition of the value of education.

After the pressures of Indonesia's current economic problems subside, post-basic education is like to resume its substantial growth over the medium term. Simulations indicate that even with a continuation of current education policies, the rapid increase in the education level of the labor force in Indonesia will radically change the educational background of workers in the entire economy over 20 years (Box 6.1). Under conservative assumptions (universal basic education is not achieved by 2010), the percentage of the labor force with more than basic education will have increased from 9.5 percent in 1985 to roughly 26 percent by the year 2010. Under the assumption that universal basic education is achieved by 2010, the percentage of workers with more than basic education would increase to roughly 32 percent by 2010.<sup>1</sup>

As the post-basic system grows over the medium term, it will need to become more flexible. As noted in Chapter 1, flexibility in the post-basic education system is required because jobs change rapidly and future skills cannot be predicted with certainty. Only half of the projections of shortages/surpluses made at the beginning of Repelita V matched actual outcomes at the end of the plan. Random selection would have been just

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<sup>1</sup> The educational structures of workers in wage employment and in the manufacturing sector have the potential to change even more rapidly, since the current flows are a higher percentage of the current stock of workers. In 1995 the number of workers in wage employment was roughly 28.5 million and the number of workers in the manufacturing sector was roughly 10.1 million. Thus, the annual inflow into the labor market is equal to 16 percent of the stock of wage workers and 45 percent of the stock of workers in the manufacturing sector. For the higher educational levels within manufacturing, current flows out of the educational system represent even larger proportions of current stocks. For example, the annual flow of university graduates is 127 percent of the current stock of university graduates in the manufacturing sector.

**BOX 6.1: FUTURE EDUCATIONAL STRUCTURE OF THE LABOR FORCE IN INDONESIA**

Information on the educational structure of those likely to be leaving the labor market and those entering can be used to project what the future educational structure of the labor force will look like in 15 years. Those leaving employment in the next 15 years are going to be drawn mostly from the cohort that is currently aged 50 to 65.

The table below presents two scenarios. In both scenarios it is assumed that 2.7 million workers will leave employment. Scenario A assumes the same current pattern of educational profile for the 4.5 million that enter employment each year. Scenario B assumes universal basic education and expected growth in post-basic education.

**Box Table: The share of workers with a post-basic education will increase significantly by 2010**

[Projections of educational structure of labor force in 2010 (% of total)]

	Scenario A	Scenario B	1995 Structure
< Primary	19.3	10.9	36.6
Primary	39.0	26.9	33.4
JS General	15.6	29.5	10.4
JS Vocational	0.3	0.3	1.0
SS General	12.0	14.4	8.8
SS Vocational	8.7	11.0	6.5
Diploma	1.7	2.6	1.7
University	3.3	4.3	2.0

Sources: 1995 Supas; World Bank, *Training and Labor Market Study* (1997); and staff calculations.

The above scenarios suggest that the flows already coming out of post-basic education are large enough to radically change the educational structure of the stock of workers in the economy over a 15-year period.

as accurate. The plan also failed to anticipate significant changes in the labor market.<sup>2</sup> Until fairly recently, Indonesia was experiencing strong growth in its manufacturing and service sectors, and that growth was transforming the nature of its labor market. Although the immediate crisis has interrupted the growth of the economy, the manufacturing and service sectors themselves can expect to see further change in the medium-term future as economic growth is restored.

Table 6.1 shows the high rates of job reallocation that have occurred in many countries within a relatively short time, changes that most planning mechanisms will miss. With the exception of demographically driven occupations (such as teachers and health care personnel, for whom projections are rather arithmetical once policy objectives

<sup>2</sup> For detailed discussion, see *Training and Labor Market Study* (1997), Chapter 2.

have been determined), the growth in most occupations is generally unpredictable and can be often met by substituting certain types of workers with others.

**Table 6.1: Unpredictable patterns of job reallocation make planning difficult**  
(Annual averages as percentages of employment)

Country	Period	Coverage	Job Creation	Job Destruction	Net Employment Growth	Job Reallocation
United States	1973-88	Manufacturing	9.1	10.2	-1.1	19.4
United States	1976-85	Pennsylvania	13.3	12.5	0.8	25.8
Canada	1979-84	Manufacturing	10.6	10.0	0.6	20.5
Canada	1979-84	Tax-Paying Firms	11.1	9.6	1.5	20.7
France	1978-84	Private, Nonfarm	11.4	12.0	-0.6	23.3
Germany	1978-88	Private	8.3	7.7	0.6	16.0
Sweden	1982-84	All Employees	11.4	12.1	-0.8	23.5
Italy	1984-89	Social Security Employees	9.9	10.0	-0.1	19.9
Australia	1984-85	Manufacturing	16.1	13.2	3.9	29.3
New Zealand	1987-92	Private	15.7	19.8	-4.1	35.5
Denmark	1983-89	Private	16.0	13.8	2.2	29.8
Finland	1986-91	Private	10.4	12.0	-1.6	22.4
Norway	1976-86	Manufacturing	7.1	8.4	-1.2	15.5
Colombia	1977-89	Manufacturing	13.2	13.0	0.2	26.2
Chile	1976-86	Manufacturing	13.0	13.9	-1.0	26.8
Morocco	1984-89	Manufacturing	18.6	12.1	6.5	30.7

Source: Steven J. Davis et al. (1992).

Improvements in the post-basic education system to allow for greater flexibility have to be made while an increasing strain is being placed on the public budget to ease the effects of the crisis and to achieve the objective of providing nine years of quality education for all. To date, GOI has pursued a strategy of restricting expansion in the public senior secondary and university system while relying on the private sector to respond to demand for more education. This strategy should continue. It has been successful in bringing about a substantial upgrading of the educational attainment of the labor force in a short time. And the policy has allowed public funds to be concentrated at the basic level, where education is closer to being a public good. During the crisis, GOI will need to shift additional resources to basic education.

This chapter discusses ways in which greater flexibility and efficiency could be achieved in the various subsectors in post-basic education. Section B discusses constraints and options in senior secondary education (particularly the balance between general and vocational education), the tertiary sector, and out-of-school education. Section C provides some recommendations to improve the current post-basic system and to prepare for changes in educational technology. Given the need to devote additional public funds to provide quality basic education for all, particularly in the next two to

three years, the need to achieve greater efficiency is highlighted as an important objective that cuts across all levels.

## **B. CONSTRAINTS IN POST-BASIC EDUCATION**

### **Senior Secondary Education**

Repelita VI, the most recent five-year plan, calls for the annual output of public SMUs (general senior secondary) and SMKs (vocational and technical schools) to reach 848,000 and 530,000 respectively by the end of 1998/99. The plan also calls for a relatively greater increase in output of the SMKs, so that the ratio of SMK to SMU graduates would be expected to increase from 0.5 at the end of Repelita V to 0.65. The evidence discussed in this section shows that any relative advantage that SMK students may have had over SMU students in the labor market is being eroded, while the system is significantly more expensive. Reconsidering the directions and the policies for SMKs has therefore become a priority for GOI in recent years.<sup>3</sup> The most significant policy initiative in this area has been the introduction of Pendidikan System Ganda (PSG). Before discussing PSG specifically, though, it is worth setting out the constraints that led GOI to introduce PSG in the first place: (a) low responsiveness of vocational and technical training to demand by firms, (b) the closed nature of the vocational and technical education (VTE) system, and (c) the shrinking wage differential between vocational and general secondary school.

**Low Responsiveness of Vocational and Technical Training to Demand by Firms.** The main constraint (one that GOI is actively try to overcome) has been the low responsiveness of the VTE schools to demand by firms. The problem of producing outputs that are not attuned to the needs of the labor market is not an uncommon one in publicly funded VTE and training activities. It is manifest in graduates being produced in fields where demand is declining and in courses being offered which last either much longer or much shorter than what is needed by firms. Moreover, because publicly funded VTE schools and training programs depend on bureaucratically determined budgets to operate, it is difficult for administrators to expand their operations when there is more

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<sup>3</sup> Other Asian countries have also reconsidered vocational education strategy over time. Mingat (1995) points out that in high-performing Asian economies, the emphasis on vocational education is linked to the level/pattern of economic growth. These economies [Japan, Korea, Singapore and Taiwan (China)] invested relatively heavily in vocational education during early stages of economic development (below 1992 \$2,000 per capita income), but tended to move toward more general education at the secondary level as they attained higher levels of economic development. However, there is considerable variation in the strategy, with some countries de-emphasizing vocational and technical education while others (such as China) increasing their emphasis on vocational education.



demand, and they have no incentive to reduce their operations when there is less demand. These features have all been observed in Indonesia's VTE and training programs.<sup>4</sup>

**Closed Nature of the VTE System.** A second constraint to achieving greater flexibility and efficiency has been in the closed nature of the current vocational and technical education system. The ability of students to transfer either way between SMKs and SMUs (and even from the SMK stream to polytechnics) has been limited because the two streams have different curricula and a different set of qualifications. That is to say, the VTE stream has often been perceived, designed, and administered as an end in itself, leading to a smaller range of options for students and even, in some cases, to educational deadends.

**Recent Path of Relative Wage Differentials.** The current vocational and technical education system (SMK) is considerably more expensive than general senior secondary (on average 40 percent more). So the incremental benefit to vocational students must be higher than that of general students to generate the same social rate of return of investing in vocational as in general senior secondary. Over the last 10 years, about half as many SMK graduates have entered the labor market as SMU graduates.<sup>5</sup> Despite the relatively slower growth in supply, by 1994, just before the introduction of PSG, the wage advantage of SMK graduates over general graduates had eroded over time to the point where the labor market outcomes were roughly similar (Table 6.2). There was a significant decline for both men and women between 1977 and 1990. The decline continued for women in the 1990s, and seems to have stabilized for men. Today, graduates from both streams are on average paid the same.

Tracer studies suggest that graduates from vocational schools (both public and private) take longer to become employed than do graduates of general senior secondary schools. A study of school graduates in 1992,<sup>6</sup> for example, showed that approximately 1 in 3 graduates of vocational education schools were neither working nor studying almost two years after graduation, compared to less than 1 in 5 graduates from general schools. Twenty-four percent of SMEA (commercial schools) graduates and 21 percent of STM (technical schools) graduates were unemployed and seeking work after this period, compared to only 12 percent of SMU graduates. By the third year after graduating, this difference had disappeared.<sup>7</sup>

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<sup>4</sup> See *Training and the Labor Market in Indonesia: Productivity Gains and Employment Growth*, Chapters 3 and 4, World Bank (July 29, 1997) for a full discussion.

<sup>5</sup> MOEC, *Skills Towards 2020*, November 1995.

<sup>6</sup> IEES, *Senior Secondary Education in Indonesia: A Study of Outcomes*, November 1994.

<sup>7</sup> *Three Years after Their Graduation Day: A Tracer Study of Senior Secondary Schools Graduates in Indonesia*. Paper presented at the IEES Seminar, Jakarta, May 17-18, 1994.

**Table 6.2: The wage advantage of SMK graduates has largely disappeared**

Senior Secondary School	Males			Females		
	1977	1990	1994	1977	1990	1994
SMU (general)	100	100	100	100	100	100
SMK (vocational/technical)	134	98	101	127	111	103

Source: SAKERNAS 1977, 1990, 1994.

Other observations concerning the outcomes of vocational graduates are also noteworthy: (a) there was little difference in the outcomes for graduates of private and public vocational schools (whereas there are substantial differences in outcomes of private and public general schools); (b) the manufacturing sector made more use of general school graduates than of SMK graduates; and (c) more than 10 percent of all senior vocational graduates had joined the government sector (indeed the probability of joining the government was twice as high for STM graduates as for graduates of other schools).

The tracer study also showed that mean earnings for most graduates from the two streams were comparable, although the earnings of some STM graduates (especially from public schools) were significantly higher. Even for this group, though, the social rates of return were still lower than for general education graduates (assuming that external effects are the same for both groups) due to the higher unit costs of STM schools. Costs in STMs were 55 percent higher than those in general schools. While the costs of commercial schools (SMEAs) were only about 5 percent higher, the earnings outcomes for SMEA graduates were generally inferior to those of general secondary schools.

Ongoing reforms of the vocational education system. One possible response to the trend in social returns would be to invest relatively more where the returns have been higher—in general senior secondary. A second possible response would be to interpret the evidence as an indication that the past ways of operating the vocational system have been deficient. Substantial improvements would therefore be needed to raise the relative social returns to investing in senior secondary vocational closer to those of general education.

GOI is following the second approach and is actively seeking to reform the SMK system by making it demand-driven. To achieve this, it introduced a program called the Pendidikan Sistem Ganda in July 1994 that combines formal institutional training with on-the-job learning,<sup>8</sup> a combination which other countries call a dual system. In addition

<sup>8</sup> See *The Concept of Pendidikan Sistem Ganda in Vocational Secondary School in Indonesia*, by the National Council for Vocational Education, February 1996, for additional details.

to the key introduction of on-the-job learning, the other elements of the reform are: (a) to involve the business community more centrally in curriculum design; (b) to upgrade the management capability of secondary school principals by improving their selection, training, and performance evaluation (and replacing those considered inadequate); and (c) to gradually introduce a system of training based on the acquisition of specific competencies, defined primarily by private industry (see Box 6.5).

All public VTE schools in Indonesia are now operating under PSG, although in some cases the introduction is quite new and the percentage of vocational students who have received job experience is still low (see Table 6.3). In the PSG system, vocational students do not first become employees of a firm before engaging in the on-the-job experience. This is in contrast to other dual systems, such as those in Germany, where the participants in job training are employees of a firm. The different arrangements are appropriate for the Indonesian setting, where employees typically do not enter into long-term employment contracts with firms and where firms have not historically invested large sums in the training of their employees.

**Table 6.3: Few vocational students have benefited from the pendidikan sistem ganda (dual system)**

Year	Students in SMK	Students with Work Experience	Percent of Students with Work Experience
1994	1,573,177	12,000	0.7
1995	1,655,667	62,000	3.7
1996	1,848,740	125,000	6.7

Source: MOEC, 1997.

While noting the appropriateness of the design of PSG to the Indonesian setting, it is also worth noting that the incentives for firms to participate in the program are limited. The incentives to provide skill-enhancing training are not as strong for firms when they are providing on-the-job training for students who are not their own employees. Instead, they may simply take advantage of having a worker at lower cost.

It remains unclear why the number of students who have participated in work experience is still low and why there is substantial variation in the way the work experience is conducted with different industry partners. The reason may be the normal startup difficulties associated with introducing a major reform, or that many firms view the costs as outweighing the benefits (Box 6.2). Some SMKs have moved toward OECD models, with employers providing on-the-job training linked to the school-based curriculum. Such examples offer the best local models of dual systems but at significant cost to employers and SMKs. Other schools are operating what might more appropriately be called work-experience programs, under which employers provide far less training but give the students an opportunity to develop work skills through hands-on experience. In

some of these cases, employers may take advantage of the system by using trainees as a source of cheaper labor and giving little or no training in return. In other cases, schools operate their own “industry,” in which students are engaged in productive activities on behalf of the school instead of being placed with an outside employer.

**BOX 6.2: FIRMS WEIGH THE COSTS AND BENEFITS OF PARTICIPATING IN PSG**

Theoretically, by participating in PSG, firms receive two main benefits: (a) the value of the incremental output produced by the vocational student; and (b) the ability to observe the productivity of individual workers at low cost, which could possibly enable the firms to select better workers. The value of the first benefit depends on how rapidly the vocational student’s productivity increases with training and the length of time the student spends at the firm. The value of the second benefit depends upon (a) the variation in productivity among potential workers; (b) the costs of alternative screening devices (i.e., how costly it is to observe the productivity of prospective employees without this program); and (c) the costs of making a wrong decision.

Against the benefits of PSG, the firm must weigh the costs. Even if the firm does not pay the vocational student a wage, the firm must pay the costs of providing the training to workers (which involves a loss in productivity of permanent workers providing the training and the opportunity cost of using scarce equipment and materials with lower productivity workers).

**Higher Education**

The university system expanded significantly in the decade up to the mid-1990s, growing from 1.5 million students in 1985 to 2.3 million in 1994. Gross enrollment rates reached 10 percent. This expansion was led by the private sector, where enrollments grew at 9 percent per year. But the economic crisis is expected to halt and probably reverse this growth in the subsector. During the crisis, higher education will receive less attention from the public sector and limited budget resources will be redirected to basic education. To make shrinking resources go further in this period, GOI should concentrate on making the higher education system more efficient and accountable. Over the medium term and after the slowdown of the economic crisis, however, GOI expects the higher education sector to expand and to reach a gross enrollment rate of 25 percent by the year 2015, with most of the expansion fueled by the private sector. The tertiary sector faces two main constraints: (a) difficulties in maintaining and improving quality during expansion and (b) low efficiency in public universities.

**Difficulties in Maintaining and Improving Quality as the System Expands.**

Maintaining and improving quality is proving a challenge in both public and private universities. Outside of the elite public universities, the quality of programs in other public universities is varied and often poor. The academic atmosphere is unsatisfactory, average grade point averages are generally low, and the qualifications of teaching staff are inadequate, with only 30 percent of university staff holding graduate degrees (DGHE, 1996).

While the growth of private universities is certainly a positive development, again, aside from a small elite group, the quality is low. Except in a few institutions closely related with religious organizations, tuition and fees contribute more than 90 percent of private institutions' revenue. Very little money has been raised from private firms to establish endowments. As a result, private universities are inclined to accept a high percentage of applicants, and quality suffers. A second consequence of having low endowments is that private universities provide mainly social science courses where the fixed costs of providing courses are low. Although the salaries are higher and waiting times for employment are shorter for graduates of science-related fields, only 10 percent of the students in private universities are in science-related fields. To the extent that this is due to a reluctance or inability of private universities to make the more expensive investments required to deliver science education, it reflects an inability of the system to respond to demand.

The existing system of public support to private universities under the role of the Coordination Office for Private Institutions (KOPERTIS) has had limited effect on the quality of education in private universities. Typical types of assistance are assignment of civil servants to teach full time, fellowships for teaching staff to pursue advanced studies, and part-time assignment of teaching staff from public institutions to teach. Some concerns over the existing assistance scheme are that:

- (a) it is not linked to institutional quality, productivity, and relevance, so it fails to provide incentives for performers;
- (b) resources are allocated thinly over a large number of institutions, so the scheme has an insignificant impact on quality and productivity;
- (c) an evaluation has never been carried out to review the impact of previous assistance on quality and productivity;
- (d) the principle of partnership between public and private subsystems has never been adopted in designing and implementing the assistance scheme.

**Low Efficiency in Public Universities.** There are substantial inefficiencies within public universities. The student-teacher ratios are low (averaging 10:1 in engineering, 6:1 in other science, and 11:1 in social science disciplines) and students take an excessive length of time to graduate (Table 6.4).

**Table 6.4: Public university students take a long time to graduate**  
(Average duration of study in public institutions in year, 1994)

Discipline	Duration of Study	
	Diploma	S-1
Agriculture	2.9	5.8
Engineering	3.4	5.7
Mathematics and Natural Sciences	3.7	5.5
Social Sciences & Education	3.4	5.4
Health	2.6	4.3

Note: D-II is supposed to take 2 years to finish and 3 years for D-III; S-1 is supposed to take 4 to 4.5 years.

Past assessments of the higher education system (DGHE, 1995; Albrecht, 1993) have highlighted problems with the way funds are allocated to universities as one of the main reasons why such inefficiencies persist. The problems arise for two reasons: first, investment decisions tend to be taken at the center where there may be limited knowledge of local needs, and second, due to the lack of management training/expertise at the university level, requests are often made on the basis of unrealistic investment proposals. Further, a lack of autonomy and responsibility at the university level has led to a lack of accountability and transparency at the institutional level.

The interpretations of university autonomy in financial management are quite varied between MOEC, the Ministry of Finance (MOF), and the State Auditor. MOEC considers the PP 30/1990<sup>9</sup> to have granted public universities autonomy in financial management. But MOF, by referring to the Basic Budgetary Law, considers the revenue generated by public university as State revenue, which should therefore be under regulations governing GOI's budget. Revenue generated by public universities is subject to approval by MOEC and MOF and is treated as a line item, following a strict standardized procurement arrangement and billing rates, with no possibility for reallocation between the lines.

The limited autonomy in financial management drives public institutions not to report their self-generated revenue, except student tuition. The proportion of unreported revenue might be significantly high, particularly in the more established institutions. Due to a lack of incentive to report the revenue, it is very difficult to maintain a consolidated account that comprises the DIP (development budget), DIK (routine budget), and DRK; calculate accurate figure of student unit cost; develop an acceptable resource allocation mechanism; analyze the sustainability of an investment; or develop a good program plan.

<sup>9</sup> Government regulation on higher education institutions.

At the central level, as well as at the university level, it also becomes difficult to control activities being carried out by units and individuals.

In general, the existing funding mechanism encourages managers to think of inputs rather than outcomes, with a heavy focus on physical facilities. There is less concern with the sustainability of investments. The budgetary process also tends to create a project mentality, does not encourage ownership, and makes it impossible to develop a consolidated budget. It limits universities' ability to develop a budget plan in line with quality improvement because of stringent procurement arrangements, and does not encourage the efficient use of funds because of confusion about university autonomy in financial management.

**Graduate Unemployment.** In the five years before the economic crisis, there was considerable concern about the rise in graduate unemployment in Indonesia. Labor force data indicate that while tertiary graduates constituted 2 percent of the urban unemployed in 1976, by 1993 their share had increased to 13 percent, more than a sixfold increase (Table 6.5). Analysis of changes in unemployment over time, however, reveals that it is the rapid increase in the size of tertiary education output, and less the increase in the unemployment rate or the duration of a search, that has been responsible for the increasing share of graduates in the unemployment pool (World Bank, 1996). Indeed, much of the increase in the stock of unemployment overall has been due to changing demographic characteristics of the labor supply, namely, the increase in the working age population, changing residence from rural to urban, an increase in women's share in the labor force, and increasing education among job-seekers.

**Table 6.5: Urban unemployment among tertiary graduates has increased**

Education level	1976	1989	1993
Primary or below	54.0	17.0	18.0
Junior secondary	19.0	15.0	14.0
Senior secondary	25.0	61.0	55.0
Tertiary	2.0	7.0	13.0
All	100.0	100.0	100.0
Rate (%)	6.3	6.0	5.8
Number (millions)	0.5	1.2	1.3

Source: World Bank, *Training and the Labor Market in Indonesia* (1997); derived from SAKERNAS.

### **Education for Those Already in the Labor Force**

Despite the rapid increase in the educational attainment of the labor force, many workers entered the labor market before the rapid expansion of access to education. In

addition, until universal basic education is achieved, there will be significant flows of workers entering the labor force with low qualifications.

To date, Indonesia has provided a spectrum of out-of-school programs (nonformal education and training) to address the needs of workers already in the labor force (Annex 1.1). The largest of these programs cater to three broad groups of workers: (a) those who are illiterate and marginally literate; (b) primary and secondary school teachers who joined the profession at a time when the qualifications standards were lower than they are today; and (c) those who have completed a basic level of education but wish to enhance their skills. GOI has been the main provider for the first two population groups, through its illiteracy program (see Box 6.3) and the teacher upgrading program carried out by the Universitas Terbuka (Open University) (Box 6.4, Chapter 3).<sup>10</sup> The demands of the third group have been met by the large private training sector.<sup>11</sup>

#### **BOX 6.3: INDONESIA'S LITERACY PROGRAM**

Indonesia has an extensive adult literacy program, targeted at illiterates between the ages of 7 and 44. It enrolls approximately 1 million learners each year and consists of several segments, namely: Paket A, a bundle of 100 booklets of instructional material beginning with basic lessons in writing, reading, and arithmetic extending to more difficult topics such as "Taxes" and "National Heroes;" Paket A Setara, an out-of-school primary education equivalency program; and more recently an out-of-school junior secondary program (Paket B) and a distance learning junior secondary program (SMP Terbuka).

About 60 percent of program participants are women. Several elements of program design are conducive to enhanced female participation. These include flexible time schedules, integrated income-generating activities, and attention to basic community problems.

The program caters to women's heavy burden of work by incorporating flexible time schedules, where group meetings were scheduled around the female participants' workday. Classes were scheduled during the "chat" time that women enjoy after a long day of work.

Coupling literacy programs with income-generating activities has proven very appealing to Indonesian women. Many women previously faced time constraints that hindered their participation in the program. They wanted to spend their leisure time earning additional income for their families. Additional frustrations were the lack of opportunity to put into practice the skills that they learnt in Paket A. As a solution to these problems, the literacy program financed small loans to the group to help them acquire basic equipment and materials for income-generating activities.

*Source:* Wigg, 1994.

<sup>10</sup> The Universitas Terbuka enrolls about 150,000 students per year, making it one of the 10 largest open universities in the world.

<sup>11</sup> See World Bank (1996) for a description and analysis of private training centers.



#### **BOX 6.4: DISTANCE EDUCATION IN INDONESIA**

Distance education (DE) programs in Indonesia are already in place, with the Universitas Terbuka at the center. In addition, 13 other public and private institutions support a total of 69 distance education programs. The DE programs cover two general areas: diploma programs (SMP Diploma D-I, D-II, or D-III) for one to three years providing credit to complete a level for qualification purposes; and certification programs for primary teacher inservice training, agricultural extension, junior- and senior-level nursing, and other academic courses of the Universitas Terbuka. The main medium used has been print, with radio, slides, and video applied in some sectors. Radio is currently being used for inservice training for 130,000 teachers; enhancing instruction at primary schools in 16 pilot sites through a two-hour national broadcast and a one-hour local broadcasting program. Television programs for junior secondary instruction have been developed in TPI (Televisi Pendidikan Indonesia).

A challenge for the post-basic education system is how to meet the diverse needs over time of these population groups in a cost-effective way. While the literacy program has reached many people, it is not clear how long the program will be needed on the same scale if the universal basic education program is successful. With respect to the Universitas Terbuka program, despite the large demand on its services, it has failed to achieve an acceptable level of quality. The private training centers have been successful in meeting the shifting demand for skills in the labor market by offering a wide spectrum short-term courses to about 1.5 million to 4.5 million students every year.

### **C. STRATEGY FOR ACHIEVING FLEXIBILITY AND EFFICIENCY**

The overall strategy for enhancing post-basic education is to make it more flexible and responsive to the needs of the economy. To do this, the efficiency of the private and public systems need to be improved. This section outlines suggested strategies for (a) senior secondary schools, (b) higher education, and (c) out-of-school education.

#### **Senior Secondary Education**

**Reconsidering Relative Budgetary Allocations.** The plans proposed under Repelita VI (1993/4 to 1998/9) call for an increase in enrollments and output of the SMK system relative to that of general senior secondary schools. Until the improvements in the vocational system are made and the effects felt in the labor market, a reconsideration of the objective of having the number of vocational students grow relative to that of general students is warranted.

**Modifying PSG to Increase its Attractiveness to Firms.** The success of the PSG may be constrained by the willingness of private industry to participate in the program, so it may be necessary to consider alternative ways of implementing the work experience to raise firms' perception of the value of participating. There are several alternatives. One approach is simply to pay firms an additional fee for participating, but that can be costly. A second, more promising approach, and one that would involve less cost for GOI, would be to lengthen the training period relative to the level of training delivered.

For example, if one month of training is required before the student is productive as a worker, then having only a one-month period of training means that the firms would incur the costs of training but not receive the benefits of the incremental output produced by the vocational student. A longer association would provide an opportunity for the firm to recoup the costs of the training. The costs would be borne partly by the student, in that he or she would be receiving less than market rates of payment, and partly by GOI. However, if the work experience is carried out at the end of the vocational training period (as is currently the case), the vocational student would be unwilling to stay with the firm and be paid a stipend lower than what he or she could get in the market as a newly trained worker. To provide an incentive for the vocational student to stay with the firm long enough for the association to be worthwhile for the firm, it would be advisable to sandwich the work experience period in between formal schooling. The final period of schooling (and the awarding of diplomas) would be dependent upon the successful completion of the work experience.

Another feature of PSG that could affect its perceived value to the firms is the way the work experience is carried out—whether it is day release (the vocational student works one or more days per week), block release (the student works for an uninterrupted stretch of several weeks), or hour release (the student works a few hours each day). Considerable flexibility is built into the PSG to allow different modes of operation. And there could be different unit costs of training for firms and different monitoring costs to the schools depending on the mode employed. Ideally, the mode chosen would minimize the combined fixed costs and monitoring costs. However, if limited participation by the firms is affecting the success of PSG, then the firms should make the decisions about the mode in which to conduct the program, rather than the schools.

**Assessing the Cost-Effectiveness of PSG.** Estimating the cost implications of PSG is recommended. This would allow GOI to assess better the relative merits of expanding PSG compared to expanding polytechnics or pursuing other alternatives of skills creation in the economy.

It is not sufficient to analyze the costs associated with the way in which PSG is operating today. It is also extremely useful to have estimates of how the costs vary with alternative modes of delivery and how the cost burden would be shared among firms, the government, and students at different scales of operation. For example, the measures described above to increase the value of PSG to firms can not be achieved without shifting a greater proportion of the costs of operating PSG from the firms to vocational students and GOI. From a public policy standpoint, GOI would have to weigh the additional public costs against the benefits resulting from the expansion of PSG that these measures may permit.

**Structuring the Expansion of PSG to Provide Feedback on the Benefits.** Any decisions on the future of the PSG should be based not just on the costs, but on the

expected benefits. Conceptually, the benefits that the students receive should be measured as the difference between their actual labor market outcomes and what their labor market outcomes would have been if they had not participated in the PSG program. In most cases, it is extremely difficult to generate a reliable estimate of what the labor market outcomes of participants would be if they had not participated in the program. At first glance, it might appear that the labor market outcomes of those who do not participate could provide a useful estimate. But the individuals who participate in a government program are typically a select group who have different characteristics from those who do not participate in the program, and controlling for the differences can be difficult and not wholly satisfactory.

If the PSG program is phased in over time, the expansion can be structured both to guarantee fairness in deciding who gets to benefit from the work experience and to learn something about the benefits generated by the program. If there are more eligible students than there are available spots for work experience, entry will have to be limited in some way. Holding a lottery among equally eligible students is not only the fairest way to allocate the limited spots, but also provides an opportunity to measure the benefits of participating in the program. A good estimate of the benefits of PSG would be provided by the difference between the employment outcomes of those who won the lottery (and therefore participated in the program) and those who lost the lottery (and did not participate in the program).

The principle of using a lottery to determine which students will be assigned to the limited positions in the firms can still be used if additional standards are set to limit entry into the program. To provide an incentive for students to work hard in their courses, it may be desirable to set minimum standards for entry into the lottery. For example, only those with a grade point average above 3.5 could be allowed to enter the lottery. As long as there are more eligible individuals than there are places, the lottery could still be applied and used to provide information about the benefits.

In addition to the benefits to the students who participate in PSG, there are likely to be benefits of a more macro nature—that is, improvements to the vocational system's ability to respond to firms' demands. Relatively early on in the implementation of PSG, information on the expectations that firms have about the students and the level of skills they should reach should become apparent. This information should then feed back into the formal vocational courses. It is quite likely that the macro benefits could be generated without requiring that the work experience be extended to all students. Thus, one option in implementing PSG is to provide work experience only to a limited percentage of vocational students, with entry into the program determined by a lottery taken among those students who meet established standards. This option would not generate as many benefits, but it also would not generate as high costs. Achieving 70 percent of the objectives at 20 percent of the costs may be preferable to achieving 90 percent of the objectives at 100 percent of the costs.

**Improving the Cost-Effectiveness of SMK.** To make the SMK system more cost-effective, a further series of measures need to be introduced to contain costs in the vocational and technical education schools. The measures that could be considered include: (a) making ad hoc revisions to the budgets of individual schools based on an assessment of student outcomes, in effect ensuring the labor market relevance of the courses on offer; (b) increasing revenue for vocational schools by charging higher user fees for SMK places; a needs-based system of subsidizing places should also be put in place; and (c) reducing the number of schools engaged in small occupational or industry groupings, as well as the number of schools offering courses that are most readily and effectively offered by private schools.

**Experimenting with Alternative Policies.** A number of schools could be identified as demonstration schools experimenting with models of school autonomy. Demonstration schools would become vehicles for testing different innovations. This could involve experimenting with the following sorts of policy: (a) autonomy in handling school budgets, including setting fees and teacher salaries; (b) partnerships with local private schools, which would require the public school to withdraw from specific areas of tuition; (c) complete restructuring of the teaching workforce, including revisions to salaries, workloads, entry requirements, and career paths; and (d) curriculum innovations. In addition, demonstration schools would become the main beneficiaries of ad hoc investments in equipment and materials, either through government budgets or through donor support. Furthermore, a revised system of staffing and salary setting could be introduced under which incentives would be granted to teachers with industry experience. Consideration could also be given to performance-related pay, which would minimize the need of the most effective teachers to take additional jobs.

**Decentralizing School Finance and Provision.** Greater responsiveness to demand by firms is also more likely to happen if further responsibilities, including those for financial matters, are devolved to provinces. There is little doubt that the national authorities would need to take the preeminent role in initiating change and reform, but implementation could proceed more smoothly if the provinces have a significant role. The role of the national authorities will increasingly be to make selective interventions, for example, to foster innovation or change, either in individual provinces or in individual schools.

**Revising the Curricula and Qualification System.** The curricula and qualifications system for SMKs could be revised to allow the introduction of more basic education within SMKs and the transferability of credits between streams. This would leave more specialized training for polytechnics or job-specific training in firms. If this strategy were followed, there would appear to be a need for a gradual expansion of polytechnics. But consideration should be given to private involvement either in management or financing.

One option for modifying the curricula in vocational schools that would place greater emphasis on basic (education) skills early on in the schooling is as follows. During the first year, SMK students could be expected to achieve much the same as students in SMUs. A system of transferable “credits” would allow students to receive credit in the general stream for studies in the vocational stream and vice versa, thus facilitating the transfer of students either way. During the second year, wider choices could be available for vocational courses within SMKs, but the level of general education being provided could still allow students and employers to equate achievements in SMKs with those in SMUs. The third year could offer far more diversity. Training through PSG could be provided in the third year or the second if there are strong incentive reasons to sandwich the work experience in the firm between periods of formal training.

**Reconsidering Accreditation Procedures.** Whatever institutional changes are made will need to be accompanied by a reconsideration of the accreditation procedures being used. In fact, MOEC has spent a considerable time looking at this<sup>12</sup> and its general policy direction is toward competency-based training (Box 6.5). The development of competency-based standards is a most difficult and time-consuming business and can be extremely expensive. Accreditation also needs to encompass the role of private schools.<sup>13</sup> While insisting on more rigorous licensing standards would be counterproductive, it would be extremely useful for both employers and students to know whether or not the education and training being provided is accredited, and to be able to make decisions about individual schools with that knowledge.

#### **BOX 6.5: THE DEVELOPMENT OF EDUCATION AND TRAINING STANDARDS**

Education and training standards are already being developed both in MOEC and in the Ministry of Manpower (MOM). In the tourism industry, for example, competencies are being developed both at the national level through a subcommittee of the NCSMK, and in Surabaya through the work of an SMK and the hotel Natour Simpang, run by a government company. The hotel is not aware if other Natour hotels are doing similar work and has not considered the extent to which its work could be made portable.

Competencies in welding, designed to meet international shipbuilding standards, have been developed through the shipbuilding public enterprise Pt PAL and an SMK. The MOM requires further and expensive testing for trainees who wish to obtain boilermaker licenses. While Pt PAL, at its own expense, provides training to the level necessary to obtain the Pt PAL/MOEC agreed credential, it refuses to pay for trainees to even undergo the MOM testing unless they sign a contract to remain with the company for a few years. Trainees who do achieve the Pt PAL/MOEC credential invariably pass the MOM test. Other employers in the shipbuilding industry report they are constrained in their training because of the cost of the MOM requirement.

<sup>12</sup> MOEC, *Skills Towards 2020*, November 1995.

<sup>13</sup> Currently these schools are licensed to operate, licensing requirements being reasonably minimal (providers must have access to suitable premises, for example, and be able to employ suitable training staff).

**Establishing a Private-Sector-Led VTE Council.** Carrying out the necessary changes in policies to make the vocational system both more flexible and efficient is difficult given the overlap in responsibilities between ministries involved in vocational education and training. For example, the MOM, which runs its own large network of training centers (BLKs) has also introduced demand-driven systems which operate a dual training system similar to that of the PSG. It is not clear, however, why two separate systems are justified, particularly since it makes little sense from an employer's point of view. Furthermore, each ministry has its own council/body for training; even though other ministries are represented, the respective bodies are concerned only with the responsibilities of the particular ministry and have no power to implement larger initiatives. An overarching council driven by the private sector is needed to take responsibility for vocational and technical education and training. The council would need to be given an appropriate status in the government, enabling it to handle cross-ministerial issues. One of the initial functions of the new council could be to consider areas of overlap between various ministries and to propose divisions of responsibilities that would reduce duplication of provision. Consideration could be given, for example, to emphasizing the role of MOEC in providing pre-employment education and training and the role of MOM in providing post-employment training.

**Defining the Relationship of VTE to Polytechnics.** GOI has recently developed plans for a substantial increase in the number of polytechnics (DGHE, 1996). Approximately 155 new polytechnics are contemplated by the year 2020. This expansion would have implications for the VTE system, and investments in VTE schools and polytechnics should be considered jointly. The financial costs associated with the substantial expansion of the polytechnics is considered in Annex 7.2.

### **Higher Education**

The increased importance of the private sector calls for a shift in priorities for GOI. In particular, a greater role for GOI is warranted in (a) regulation, (b) ensuring that adequate information on private institutions is available to potential students, and (c) investing where the private sector is not yet investing and where social returns are sufficiently high to justify the investment. The private sector is not yet investing in universities in the outer islands, in research, in science education, and in quality-enhancing inputs. Possible strategies for strengthening higher education are discussed below.

**Expanding Regulation of Universities.** In higher education, GOI has already articulated a strategic plan that largely responds to this shift in priorities. The key improvement in regulation is the introduction of a more extensive system of accreditation of both the public and private universities. An independent agency, the National Accreditation Board, was established in 1995 with a mandate to evaluate and verify universities' performance. During the first year of operation in 1996/97, 1,500 study

programs were evaluated, and the plan is to cover all 11,500 programs within five years of its operation. Although the coverage of accreditation will not differentiate between private and public institutions, the majority of the programs covered are in private universities.

It is highly likely that there will be pressure to either lower standards or direct more public resources to support the failing programs. Such pressure would need to be resisted since it would keep GOI from following through on its plan to focus public subsidies on high priority fields and to promote geographical and social equity. It could also risk distorting the overall strategic plan for the entire education sector by diverting more funds to the higher education sector.

**Keeping Students Informed about Private Universities.** The work of the National Accreditation Board will help to improve the flow of information about public and private universities to parents and potential students. However, the accreditation program alone does not provide the information parents need to make informed decisions. The information conveyed will be whether the academic program meets minimum standards. It does not help parents and students choose among competing programs. One regulation that could help in this regard would be for GOI to require all entering university students to take a national entrance exam and for private universities to report the average score of each year's entering class. Currently, the UMPTN exam is used to control access into public universities, but is not used by private universities. A second suggestion to improve the flow of information through the system would be to make publicly available a ranking of the top 10 preferred public programs within each discipline.

**Promoting Quality in Private Universities.** GOI should modify the way in which it provides assistance to private universities to have a stronger effect on quality. Allowing private universities to compete for competitively awarded grants that support quality improvements (as is being done in the proposed Quality of Undergraduate Education project) is one instrument that could be used. Besides the direct financial assistance to private universities, GOI may be able to help encourage more flows of private funds to universities to build up endowments. One of the strengths of the US higher education system has been its ability to marshal private funds in support of both private and public universities. If the expansion of the Indonesian university system is to be led by the private sector (a desirable goal), more private money must be attracted. The government assistance could take the form of sponsoring workshops on higher education management or encouraging the participation of foreign universities either to spur competition (if established as separate branches) or to provide technical assistance in management (if established in partnership with existing universities).

**Putting Greater Emphasis on Science in Public Universities.** To ensure greater relevance within the university system, GOI is proposing to allocate a greater percentage

of spaces within the public system to high priority fields in science and engineering, where they believe the positive externalities are greater. This would leave a smaller percentage of spaces in public universities for social science, where the private universities have demonstrated an ability to produce graduates. Thus, GOI expects the percentage of social science students within public universities to fall from the current proportion of 67 percent down to 50 percent by the year 2005. This proportion is projected to fall still further to 33 percent by 2020.

**Promoting Equity in the Distribution of University Spaces.** The public sector has a role to play in promoting greater geographic and social equity. Investment by the public sector in Eastern and Western Indonesia has counterbalanced somewhat the tendency of the private sector to locate in Java. Currently, 57 percent of all universities but 70 percent of private university students are on Java. Within the public sector, 40 percent of the universities and 50 percent of the students are located in Java. A continued emphasis on the outer island universities, particularly in improving their quality, is warranted. The Development of University Education (DUE) Project provides one example of the efforts made to improve these universities.

**Increasing Cost Recovery While Protecting the Poor.** Given the budgetary demands for achieving nine years of quality education for all children, it is unlikely that a greater proportion of public funds could be allocated to higher education. Thus, a continued emphasis on cost recovery is one way to ensure adequate resources are available. This is also justified by the high private returns to higher education and the fact that most of the students come from families in the top income decile. There would also be some scope for scholarship programs to allow poor students to continue their studies, though limited. Even if only 5 percent of those finishing general senior secondary would like to continue their education but cannot because they come from poor families, this would amount to some 43,000 potential students a year.

**Improving Management Efficiency.** There is also a need to encourage greater efficiency in the management of higher education. MOEC has proposed some reforms to improve management efficiency and institutional relevance for the crisis period. Many of these proposed reforms are consistent with GOI's longer term reforms, so the tight budgets of the crisis period may hasten the transformation of the subsector.

As part of its longer term plan for higher education, GOI had already initiated a new approach to management before the crisis—a series of reforms known as the “new paradigm.” The reforms are built around the promotion of quality, autonomy, accountability, accreditation, and evaluation both in the operation of the system as a whole (public and private) and in the operation of individual universities. Different implementation schemes will be required for each level of management hierarchy, that is, the central authority (the Directorate General of Higher Education, DGHE), universities, academic units within each institution, and individuals. A key element in this



restructuring effort has been to introduce some competitive processes in the way funds are allocated to public universities and subsidies are provided to private universities. Currently only a small proportion of the DIP (7.3 percent) is allocated through a competitive scheme, and the rest, including the DIK, is directly allocated.

To cope with the challenge, the DGHE is planning for a gradual shift toward DIP allocation under the new paradigm with a decreasing proportion of the directly allocated budget. The implementation of new paradigm could be reflected in two different funding mechanisms: competitive and performance-based budget allocation. Although in both schemes proposals are solicited and reviewed by a panel of experts, in a competitive scheme, the number of available grants is less than the beneficiary population. Only the best proposals can be funded. The ratio between the available grants and the beneficiary population reflects the competitiveness of the funding mechanism. In the performance-based scheme, all proposals are guaranteed to be funded and the review process will only determine the level of funding granted.

The competitive scheme has been firstly introduced to award research funding under Hibah Bersaing in 1992, and expanded to award research units under the University Research and Graduate Education (URGE) Project (1994). Competitive awards for the improvement of less-developed universities were introduced under the DUE Project (1996). The DUE project featured a stratified competition limited to 27 less-developed universities, out of which 6 were chosen to receive funding. Competitive awards to high priority academic programs will be introduced under the Quality of Undergraduate Education (QUE) Project. The competition will not be stratified and, for the second batch of proposals, will be open to both public and private academic programs.

In all competitive award programs, the university, academic program, or individual making the proposal is free to propose the improvements they think are most needed. Guidelines for the proposals are prepared by the DGHE to encourage a self-evaluation of the nature of the problems to be overcome, based on the gathering, processing, and presentation of information about the research proposal, academic program, or university. However, the guidelines present only mild restrictions on what can be proposed. The mechanism used for implementation, a single budget envelope or a block grant between DGHE and the grantees, also allows for considerable discretion in what solutions can be attempted. Balanced against the greater autonomy are safeguards built in to ensure greater accountability. The grants are disbursed in tranches over several years, and the amount and timing of release is dependent upon satisfactory progress in meeting performance standards.

The performance-based funding will be implemented nationwide through the SP4 mechanism, and expected to be in its full-fledged stage after a three- to four-year introduction stage. It is projected that after 10 years of introduction of the new paradigm,

almost half of the entire government budget in higher education will be allocated either through competitive or performance-based funding mechanism.

**Introducing New Educational Technologies in Higher Education.** Recent developments in educational technology hold forth the promise of changing the way in which learning takes place in higher education (see Gates, 1996; the Higher Education Web Site for Apple, <http://hed.info.apple.com/technology.html>). For example, there are considerable resources being devoted by the US Library of Congress and others to develop virtual libraries which will greatly reduce the costs of searching for and acquiring information.<sup>14</sup> The growth of knowledge in some fields (particularly in science) is so fast that it is expected that courses will be increasingly based on information made available over the Internet.<sup>15</sup>

Indonesia's commitment to adopt new telecommunications and information technologies, coupled with the ongoing efforts to liberalize and modernize the post and telecommunications sectors, provides opportunities for the use of new technologies in the higher education sector. The limited resources of private universities suggest that GOI may have to take the lead to introduce changes in educational technology into the higher education sector. The first step for Government would be to formulate a strategy for facilitating the introduction. The introduction should be phased in by supporting and expanding systems that have already begun or are feasible—for example, Internet linkages, effective networking among universities, and an emphasis on science and information technology. More effective use and support for Indonesia's Open University, which has already developed courses to be sent via the Internet, could be part of this strategy. Pilot efforts to incorporate Internet material in high priority fields (as part of the support to Discipline Service Centers in selected universities) would also be part of the initial activities.

### **Out-of-School Education**

The need to have a flexible educational system is even more pronounced in out-of-school education than within the formal education system. The target populations are likely to change as Indonesia achieves success in meeting its objective of providing quality basic education for all. There will be fewer illiterates overall and fewer dropouts from primary education. There will undoubtedly be more demand for upgrading skills, and the nature of short training courses is likely to vary considerably as the economy continues to change rapidly.

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<sup>14</sup> See the web sites of the Worldwide Virtual Library (<http://www.w3.org/vl>), Argus Clearinghouse (<http://www.clearinghouse.net>), and the Internet Public Library (<http://ipl.sils.umich.edu>).

<sup>15</sup> For an extensive listing of academically oriented science resources on the Internet by discipline, see Thomas, 1996.

In the meantime, the need for out-of-school literacy programs (Paket A, Paket B) will continue for some time. These should be modified however to reflect the changing clientele. There are less and less pure illiterates and an increasing demand from those with a few years of education already. In addition, delivery of such programs should be decentralized to community groups.

As in the higher education field, the development of telecommunications service and the development of newer educational technologies widens the scope for using distance education as a substitute for formal education. The introduction of distance education on a larger scale would promote more equitable access to education and training for large portions of the population who are no longer participating in the formal system. With its strong record of economic growth, identified needs for human capital development, programs for expansion of educational opportunities, geographical dispersion, and availability of technological infrastructure, Indonesia presents the ideal conditions for the development of distance education on a larger scale.

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## 7. THE BUDGETARY ENVELOPE

### A. INTRODUCTION

This chapter reviews historical trends in Indonesia's educational expenditures, examines current budgetary pressures, and proposes financing priorities for this time of difficult choices. Because the country's economy, currency, and policy goals are still in flux, detailed projections of future investment costs and resources are still premature. However, as historical perspective and a guide for the post-crisis period, Annex 7.2 discusses cost estimates of the country's proposed investments—estimates that were prepared before the decline of the economy. The results of that 1997 adding-up exercise indicated that, even under favorable assumptions about GDP growth, GOI funding would have been insufficient to meet the country's ambitious goals. These include achieving both universal quality basic education and the type of expansion in post-basic education being contemplated at that time. So even before the economic troubles, tighter priorities needed to be set focusing on achieving quality basic education with a more gradual phasing in of post-basic public education.

Now, the need to do so is obviously much more urgent. Until the threats to its past achievements have subsided, GOI should continue to focus on high-priority activities designed to protect basic education. After the country's economy turns around, the Government will be able to turn its attention once again to the steady expansion and improvement of basic and post-basic education.

### B. PRE-CRISIS PATTERNS OF EXPENDITURE

#### Trends in Consolidated Government Expenditure

Table 7.1 presents trends in consolidated government expenditure for the period up to the crisis, 1984-97. The consolidated expenditure includes routine and development spending by central ministries (MOEC, MORA, MOHA) and provincial and local governments.<sup>1</sup> While public education expenditure had been rising in nominal terms in

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<sup>1</sup> Actual expenditure figures are presented for 1984/85-1992/93. For subsequent years, budget figures are shown (see Annex 7.1 for details). This information is not collected as a matter of course by any one agency in the government (as was pointed out in Chapter 4) and requires a considerable effort to gather and consolidate. The framework of consolidated expenditure in education builds upon earlier work by the World Bank in *Public Expenditures, Prices and the Poor* (1993).

**Table 7.1: Consolidated government expenditure on education /a /b**  
(Rp billion)

Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
<b>Primary</b>	1,696	2,113	2,079	1,943	2,198	2,138	3,015	3,374	4,178		5,730	6,607	7,625	
• Routine	1,037	1,469	1,525	1,733	1,933	1,914	2,470	2,655	3,325		4,611	5,371	6,153	
• Development	659	644	553	210	265	224	545	719	853		1,119	1,236	1,472	1,155
<b>Junior secondary</b>	420	695	493	515	544	654	778	933	1,131		1,796	2,156	2,591	
• Routine	226	320	356	378	434	500	545	654	801		1,079	1,379	1,602	
• Development	195	375	137	137	110	154	233	280	329		717	777	989	1,044
<b>Senior secondary</b>	339	519	419	640	706	841	761	932	1,093		1,501	1,621	1,873	
• Routine	215	296	328	346	392	460	507	596	714		777	889	991	
• Development	124	223	92	294	314	381	254	337	380		724	732	882	651
<b>University</b>	268	443	497	663	712	891	786	841	1,152		1,127	1,449	1,673	
• Routine	131	197	231	234	301	333	404	389	500		549	664	730	
• Development	137	246	266	428	411	558	382	452	652		578	785	943	1,093
<b>Other</b>	190	239	237	280	285	404	666	738	984		730	869	886	
• Routine	141	180	206	234	258	319	354	391	434		562	623	668	
• Development	49	59	31	46	27	86	152	258	337		168	246	218	332
of which:														
Community (rout+dev)	27	32	22	42	20	24	27	36	65		115	136	136	
<b>Total</b>	2,914	4,010	3,724	4,041	4,445	4,927	5,845	6,730	8,325	9,542	10,885	12,702	14,649	14,852
• Routine	1,750	2,462	2,646	2,926	3,317	3,525	4,280	4,684	5,774	6,351	7,579	8,926	10,144	10,577
• Development	1,164	1,547	1,078	1,116	1,128	1,402	1,565	2,046	2,551	3,191	3,306	3,776	4,505	4,275
<b>Memo Items:</b>														
INPRES SD	595	536	498	150	130	100	371	529	645	699	748	799	945	1,049
SDO Guru SD	759	1,273	1,318	1,528	1,700	1,680	2,204	2,469	3,103	3,174	4,075	4,768	5,480	

/a Consolidation of education expenditure of: central government development, central government routine, regional government routine and development, and Religious Affairs (see Annex 6.1, Tables 1-4 for details).

/b Actual expenditure figures up to 1992/93. For subsequent years, budget figures are shown.

Sources: Ministry of Finance, Economic Indicators and Budget Statistics (various years)  
BAPPENAS, APBN (various years)  
Ministry of Home Affairs, APBD  
Ministry of Religious Affairs, Basic Education Project (1995)  
World Bank, *Indonesia: Public Expenditures, Prices and the Poor (1993)*  
World Bank Country Economic Memorandum (1996, 1997) and World Bank Staff estimates.

the 12 to 13 years before the economic crisis, it had varied substantially in relation to GDP and total public expenditure. The variation can be divided into two distinct periods. The first period, from the mid-1980s to early 1990s, saw a decline in education expenditure from a high of 4 percent of GDP and 18 percent of public expenditure to a decade low of 2.7 and 12 percent in 1990-91 (see Figures 2.3 and 2.4 in Chapter 2; and Annex 7.1: Table 7). The decline was associated with the end of primary school expansion and Indonesia's fiscal adjustment following the collapse of world oil prices in 1986.

From 1991-92 until the economic crisis, public spending on education rose relative to total public spending, but it remained essentially stable relative to GDP (with a slight downward drift). This pattern reflects the overall decrease of total public spending as a proportion of GDP (Figure 2.4). Budget figures for 1996/97, the last year of high economic growth, showed education expenditure at 2.8 percent of GDP and 15.7 percent of public expenditure.

### Private Expenditure on Education

As noted in Chapter 2, private spending on education is likely to be hurt badly by the economic downturn. But it had reached a significant level by the mid-1990s, amounting to 1.7 percent of GDP, bringing total expenditure on education to approximately 4.6 percent (1994/95).<sup>2</sup> In addition, household data indicate that private spending increased between 1992 and 1995 from Rp 4.9 trillion to Rp 6.5 trillion (Table 7.2). While this is a positive trend, and it is important that public spending does not crowd out private spending, the poor cannot spend as much as other households and are particularly vulnerable in economic downturns. Chapter 2 describes such an outcome in the 1988-92 period, when enrollment at the junior secondary level declined; the majority of the decline occurred in private schools where the poor have traditionally been disproportionately enrolled.

**Table 7.2: Private spending on education increased**  
(Total household expenditure on education, Rp billion)

	1992	1995
Primary	1,605	2,022
Junior Secondary	969	1,419
Senior Secondary	1,072	1,394
Tertiary	1,237	1,682
<b>Total</b>	<b>4,883</b>	<b>6,518</b>

Source: Staff estimates from SUSENAS 1992, 1995.

<sup>2</sup> Total private spending on education is calculated from the education module in the 1995 SUSENAS. This is probably an underestimate of total private spending since higher income households are underrepresented in the survey.

### **Allocations of Education Expenditure**

Among the education subsectors, GOI has consistently allocated approximately 50 percent of the budget to primary education in the past decade, and 14 percent each to the junior secondary, senior secondary, and tertiary subsectors (Annex 7.1, Table 6). The high share for primary education went mainly to pay salaries. The primary education sector received a much smaller percentage of the development budget (less than 10 percent of total development expenditure over the last decade). On a per pupil basis, this amounted to roughly Rp 34,000 (about \$15 before the rupiah's drop). This amount was to finance materials, the rehabilitation of schools (some of which are still in a poor state of repair some twenty years after the major expansion), teacher training, and other costs.

With respect to the distribution of public education across income groups, the better-off have traditionally had more access to the public subsidy than the poor, with the important exception of primary education. Across income groups, the education subsidy became larger for the better-off income groups. In 1989 the monthly subsidy per capita for all education programs averaged Rp 1,520 per month, but was more than twice as large for the richest quintile than for the poorest (World Bank, 1993). Underlying this overall pattern were two different subsidy patterns: a pro-poor bias for primary education and a pro-rich bias at the secondary and tertiary levels. The former was a result of a combination of factors: variations in age composition across income groups, high enrollment rates of the poor in primary education, and the high public sector share in the provision of primary schooling. The pro-rich bias of secondary and tertiary education was driven by: enrollment rates which increase sharply with income, high public shares of enrollment among the rich, and age effects opposite those at the primary school level.

### **International Comparisons**

Table 7.3 presents information on educational expenditures as a percent of GDP for Indonesia and four other Asian countries at the time when their per capita GDP was similar to that of Indonesia before the crisis hit (roughly equal to \$1,000). With the exception of Taiwan, Indonesia spends considerably less than the other countries. And in the case of Taiwan, educational expenditures grew rapidly after 1960: they reached 3.0 percent of GDP by 1970, 5.0 percent by 1980, and 7.2 percent by 1992. As incomes and enrollments grew in the other countries, public educational expenditures as a percentage of GDP also grew substantially. In Korea, educational expenditures grew to 3.7 percent of GDP by 1980 and 4.4 percent by 1992. In Thailand, expenditures have also increased—up to 3.6 percent of GDP by 1992. The rise in expenditures is virtually inescapable if enrollments in public junior secondary increase. Not only are there in total more years of schooling to finance as the country moves toward universal junior secondary education, but the cost of providing secondary (and tertiary) education is considerably more expensive than providing primary education.

**Table 7.3: Indonesia was spending less on education in 1996 than its neighbors spent at a similar development stage**

Economy	Year when GDP per capita was about \$1,000	Expenditure on education as % of GDP	GER primary (%)	GER secondary (%)	GER tertiary (%)
Taiwan	1960	2.8	97	29	4
Korea	1970	3.5	100	41	8
Thailand	1980	3.4	99	29	13
Malaysia	1980	6.0			
Indonesia	1996	2.8	106		10

Source: Mingat (1995) based on data reported in UNESCO.

### C. SETTING PRIORITIES FOR A TIGHT BUDGET

Calculations made before the crisis show that prioritizing would have been necessary even if Indonesia's economy had continued to grow (see Annex 7.2 for details). GOI funds would have been short even under optimistic scenarios—strong growth and a stable share of GOI's investment going to education, allowing the real budget to at least double by 2010. GOI would still have faced a substantial budgetary shortfall in the initial years of its ambitious program for multiple education subsectors, implying the need to set stricter priorities. In that situation, the priorities would have been to expand and improve the quality of basic education, using lower cost options. At the post-basic level, GOI would have needed to scale back its planned growth rates and phase in expansion of public universities, polytechnics and other high cost institutions.

#### The 1998/99 Budget

Now the prospects are much less optimistic and the budgetary situation for 1998/99 and beyond looks extremely tight. The government will be severely constrained in attempting to mitigate the effects of the crisis on the most vulnerable while restoring equitable growth. All sectors including education will be constrained by the overall parameters of the 1998/99 budget. Current expenditures have increased in share to two-thirds of the total budget, and subsidies and debt service payments consume 71 percent of total expenditures (World Bank, 1998). Development spending will therefore be tight. The overall budget is also highly dependent on external financing: the share of foreign financing in development projects and programs has increased to half.

The most recently revised development budget (June 1998) provided the same level of budgetary allocations for education in real terms as pre-crisis levels (Rp 7 trillion which is approximately Rp 3 trillion in 1996/97 terms.) This is however a drop in the share of education in the total development budget from 10 to 8 percent (Table 7.4).



There has been a significant intersectoral reallocation however. The basic education budget has increased in real terms by over 55 percent, primarily due to the allocation of Rp 1.4 trillion for the crisis-relief programs providing scholarships and school block grants (Table 7.4). The rest of the basic education budget will simply go to maintain the status quo rather than support further expansion and development. To achieve the large increase for basic education, allocations for other education subsectors have been reduced (Table 7.4). Funds for secondary, higher, and nonformal education are budgeted to decline by 42 percent, 26 percent, and 35 percent, respectively, in real terms.

**Table 7.4: Basic education allocations are protected in the 1998/99 budget**

	1996/97 (realized)/a (Rp million)	% share of total	1998/99 (June budget) (Rp million)	% share of total	% increase in real terms (1996/97-1998/99)
Basic	1,033	33	3,635/b	52	56
Secondary	667	22	867	13	-42
Higher	999	32	1,661	24	-26
Nonformal	88	3	129	2	-35
Staff Development	145	5	169	2	-48
Operations and Maintenance	158	5	469	7	-32
<b>Total Education</b>	<b>3,090</b>	<b>100</b>	<b>6,930</b>	<b>100</b>	<b>0</b>
% of Total Development Budget	10%		8%		

/a Figures do not match Table 7.1 which are budget allocations.

/b Includes Rp 1.4 trillion for scholarships and school block grants (crisis-relief programs).

Note: (1) Development budget (Rp and foreign-financed). Includes INPRES SD and Dati II (rehabilitation of SD); and Ministry of Religious Affairs basic, secondary and tertiary education allocations. Excludes Culture, Youth and Sports.

(2) Total Development budget: 1996/97 realized budget = Rp 33.45 trillion; 1998/99 budget allocation (June budget) = Rp 92.7 trillion

Source: BAPPENAS (see Annex 7.3 for details).

While it is a significant step that basic education has been protected in the current budget, it is important to note that this may not necessarily translate into actual spending of this magnitude. GOI may find it difficult to spend the full budgeted amount this year. Political changes and the renegotiation of macroeconomic reforms may continue to slow the budget process and prevent money from reaching the beneficiaries on time. This needs careful watching and monitoring.

### **Guarding Past Gains and Preparing for the Future**

The intersectoral allocations favoring basic education in the 1998/99 budget are the first step for Indonesia to preserve its past gains in human development. Clearly, if the economic recession is to last beyond the current year, as is expected, basic education should continue to have high priority. In addition, GOI needs to consider how other programs such as nonformal education can help preserve the human capital of the poor segments of society during this time of crisis.

In the coming years, as the economy begins to recover GOI needs to expand its budgetary allocations to other education sectors in order to prepare for the future. Indonesia's economy will eventually recover and move on. The human resources developed over the past three decades will form the foundation of that recovery, and the foresight of investing heavily in education will be as apparent in the future as it has been up to now. The rebound will be stronger and more rapid if these investments in human capital are shielded from budget cuts and the current economic hazards, which threaten to erode the country's potential. Indonesia needs to keep its sights on the longer term future and, as resources permit, gradually move toward quality basic education for all children and a flexible post-basic system that is sensitive to the needs of a dynamic industrial economy.



## ANNEX 1.1: STRUCTURE OF THE EDUCATION SYSTEM

Education in Indonesia is provided and delivered by a complex array of institutions catering to approximately 45 million students at all levels. The largest player is the Ministry of Education and Culture (MOEC), which administers formal public and private schools and universities, as well as nonformal modes of education. The delivery of primary education, and increasingly that of junior secondary, is shared with the Ministry of Home Affairs (MOHA). MOEC is responsible for the content of education, while MOHA is responsible for manpower and materials.

Religious institutions, mostly Islamic but some Catholic, are the second largest providers of education. These schools (the largest group of which are called *madrasahs*), are primarily private and fall under the jurisdiction of the Ministry of Religious Affairs (MORA). Religious schools are allowed to devote up to 40 percent of their curriculum to religious teachings, and recently adopted MOEC's 1994 curriculum for their secular subjects.<sup>1</sup> In addition to MOEC, MOHA, and MORA, various other ministries provide education at the senior secondary and tertiary levels, both for the population at large and for civil servants.<sup>2</sup> The structure of the system and the relative contribution of each provider are shown in Table 1.

**Table 1: Numbers of students by level of education and ministry**

Ministry	SD	SLTP	SLTA	HE
Education and Culture	26,319,852	5,890,554	3,843,054	2,043,380
Religious Affairs	3,379,734	1,241,983	409,463	199,302
Others	0	3292	68446	0
<b>Total</b>	<b>29,699,586</b>	<b>7,135,829</b>	<b>4,320,963</b>	<b>2,242,682</b>

Children are required to start primary school by age 7, even though there is an increasing tendency to enroll at an earlier age. For children from higher income families, *preschool* attendance is high and many begin as early as age 4. Preschool is not compulsory and is primarily run by private voluntary organizations (enrollment rates).

<sup>1</sup> For additional information on Islamic education in Indonesia, see Z. Dhofier: *The Pesantren Tradition*, PhD thesis 1980.

<sup>2</sup> See *Training and Labor Market Study*, 1996 (Chapter 7).

Compulsory education, also called *basic education* is defined in the 1989 Education Law to begin with the six years of primary education and extends through the three years of junior secondary. The expected age of pupils in primary and junior secondary is 7-12 and 13-15, respectively. The average size of a public primary school is 174 students and the average class size is 22, which is small in comparison to other countries. The average school size of a junior secondary school. Private school represents a small but significant share at the primary level (17 percent of enrollment). In some provinces this share is larger (24 percent of total primary enrollment in Jakarta, 25 percent in North Sulawesi, 24 percent in Maluku, 44 percent in NTT and 43 percent in Irian Jaya). Private education increases significantly at the junior secondary level (40 percent). While in the 1970s, 30 percent of enrollment in public junior secondary schooling was in vocational schools, this has been phased out and education at this level is now in a single general academic stream.

*Senior secondary* schooling (SLTA) consists of a three-year cycle (grades 10-12) of 4.5 million students (1993/94).<sup>3</sup> The system separates into two major streams at this level: a general stream and a vocational/technical stream.<sup>4</sup> The general stream (SMU or Sekolah Menengah Umum, formerly called SMA or Sekolah Menengah Atas), enrolls nearly two-thirds of all students and remains the preferred choice of parents and students. The second stream, known as SMK, encompasses vocational and specialized fields such as agricultural, technical, and commercial schools. The SMK stream consists of 14 different types of schools but over 90 percent fall into two categories: commercial schools (SMEAs) and technical schools (STMs). The former accounts for 52 percent of total SMK enrollments and the latter for nearly 40 percent. About 80 percent of SMEAs and STMs are private; which is to say that some three quarters of all students in the SMK stream are enrolled in private commercial or technical schools.<sup>5</sup> Seventy-three percent of

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<sup>3</sup> More than 88 percent of these students are enrolled in schools under the jurisdiction of the Ministry of Education and Culture (MOEC). Other Ministries that operate senior secondary schools include Religious Affairs (2,700 schools with 400,000 students); Health (207 schools with 30,000 students); Agriculture (122 schools with 27,000 students); Industry (9 schools with 3,000 students); and others (24 schools with 4,400 students). The Ministry of Telecommunications and Tourism is a major supplier of education and training places for occupations in the tourism and hospitality industry. This report is mainly concerned with MOEC schools, which represent the largest group.

<sup>4</sup> More specifically, senior secondary has five streams: general, vocation/technical, religious, service-related, and special secondary. Enrollment in the last three, however, is very small and therefore is not discussed here.

<sup>5</sup> The remaining 12 types of schools (public and private) cover less than 10 percent of SMK enrollments or some 3 percent of all senior secondary enrollments. They cover fields like home economics (4 percent of SMK enrollment) and agricultural studies (2 percent); with other fields such as engineering, music, fine arts, crafts and traditional dance and graphics, aviation, shipbuilding and home technology having minuscule enrollments.

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all schools and 55 percent of enrollments in senior secondary education are in private schools.

*Higher education* is offered through a diversified system of 52 public institutions and more than over 1,200 private institutions. A variety of degrees offered at the tertiary level, ranging from one to four years of nondegree programs called either D (diploma) or S0 (non-sarjana) programs, to at least four years of S1 or undergraduate programs. These can be followed by S2 programs (masters) and S3 or doctorate programs. Other professional specialist programs are known as SP I and SP II.

In parallel to the formal system, Indonesia has long been operating a large and extensive *nonformal education* system consisting of an adult literacy program (Paket A), an out-of-school primary education equivalency program (Paket A Setara), and more recently an out-of-school junior secondary program (Paket B) and a distance learning junior secondary program (SMP Terbuka). At the tertiary level, the Universitas Terbuka (Open University) enrolls 150,000 students making it one of the 10 largest open universities in the world.

*Distance education* programs have begun to emerge in Indonesia. In 1993, 13 public and private institutions supported a total of 69 distance education programs. These programs covered two general areas, namely: diploma programs (SMP Diploma D, D2 or D3) for one to three years providing credit to complete a level for qualification purposes and certification programs for primary teacher inservice training, agricultural extension, junior- and senior-level nursing and other academic courses of the Universitas Terbuka. The main media used has been print, with radio, slides and video in some sector. Radio is currently being used for in-service training for 130,000 teachers; enhancing instruction at primary schools in 16 pilot sites through a 2-hour national broadcasting and a 1-hour local broadcasting program. Television programs for junior secondary instruction have been developed in TPI (Televisi Pendidikan Indonesia).

Progression from one cycle of education to the next is largely determined by the external examinations called the EBTANAS. EBTANAS SD and EBTANAS SMP are the decisive instruments for selecting students for admission to junior and senior secondary schools, but more importantly, they are used to allocate students among the more and less preferred schools and programs of study. There is also an EBTANAS SMU examination at the end of the senior secondary cycle but it is not as important in determining admissions to higher education as the national examination, which controls access to the public universities and IKIPs. In general, parents apply for their children to be admitted to the best programs they can afford and to which their children's performance gives them a good chance of being admitted. As academic specializations are generally preferred over vocational specializations and public schools over private schools, there is a hierarchy of examination scores required for admission to individual schools, with academic programs requiring higher scores than vocational programs and

public schools requiring higher scores than all but the best private schools. The most desired schools attract more applicants and can be more selective, demanding higher minimum scores and sizable parental “contributions.”

## ANNEX 1.2: THE ROLE OF EDUCATION FOR INCREASING WAGES AND REDUCING INEQUALITY<sup>1</sup>

### METHODOLOGY

The effects of various factors upon labor earnings inequality can be estimated with the use of conventional earnings functions. Such factors include education, age (a proxy for experience), rural/urban residence, public/private sector of employment and the sex of the worker and so on. As a measure of the distribution of labor earnings we use the variance of the logarithm of individual earnings, the latter being the conventional dependent variable in earnings functions (Mincer, 1974; Dougherty and Jimenez, 1991).

Statistically, this kind of regression analysis can be used to exactly decompose the variance of the logarithm of earnings. Thus, in a conventional earnings function, with the logarithm of wages ( $w$ ) on the left-hand side and education ( $E$ —measured as schooling in years), age ( $A$ ), age-squared ( $ASQ$ ) and other variables on the right-hand side

$$\ln(w) = a + bE + cA + dASQ + \dots + e$$

the log-variance of wages is exactly equal to the sum of the absolute contributions to inequality of the explanatory variables.<sup>2</sup> Each explanatory factor's percentage contribution to inequality thus measured can be expressed in terms of the regression coefficient of the variable in question, its standard deviation, its correlation with the dependent variable and the standard deviation of the dependent variable. For example, the percentage contribution(s) of education to inequality is equal to

$$\text{Equation 1} \quad s = b * SD_E * \text{CORR}_{E, \ln(w)} / SD_{\ln(w)}$$

which shows that the effect of education on earnings inequality will be greater the higher is

- the regression coefficient
- the standard deviation of education (the more unequal education is distributed) and
- the correlation between education and log-wages.

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<sup>1</sup> Z. Tzannatos (November 1996).

<sup>2</sup> Fields and Yoo (1995) show that this decomposition holds not only for the log variance but for any inequality index that is continuous and symmetric, including the Gini coefficient, the Atkinson index and the generalized entropy family.



By using this method, we can examine each explanatory variable's contribution to inequality and also trace changes over time. All data are from SAKERNAS tapes. Earnings are measured in monthly Rupiah, education in eight levels, regions in 27 provinces broken down in urban and rural areas, industry in 14 sectors. Additional variables include a dummy variable for sex (zero/one for male/female) and weekly hours (Table 1).

Regression analysis leaves some variation of the dependent variable unexplained. In our case the coefficient of variation (R-sq) was relatively high, approximately 60 percent, and we are therefore able to explicitly account for much of the inequality in labor earnings. The R-sq was relatively invariant over time, and this constancy makes comparisons over time easier. We concentrate on the 1976-89 and 1989-92 changes as the data for 1994 do not seem to have been sufficiently cleaned at the time of writing.

**Table 1: Standardized index of earnings**  
(Illiterates=100k, in percent)

Education Level	1976	1989	1992	1994
Illiterates	100	100	100	100
Below Primary	118	111	108	107
Primary	137	124	123	118
Junior	163	141	140	131
Senior	184	160	162	146
Junior vocational	162	152	149	130
Senior vocational	192	176	173	158
Diploma	224	191	196	204
University	244	202	203	201

*Note:* Based on earnings functions calculated from SAKERNAS tapes.

**Table 2: Summary of information: logarithm of monthly labor earnings**

Statistic	1976	1989	1992	1994
Mean	7.5976	9.5985	9.9133	9.9996
SD	0.8944	0.6753	0.718	0.7700
CV (%)	11.8	7.0	7.2	7.7

*Note:* The figures are calculated from male and female employees with positive earnings.

*Source:* SAKERNAS 1976, 1989, 1992, 1994.

## ANNEX 3.1: EXPLAINING ACHIEVEMENT IN DEVELOPING COUNTRIES: EFFECTS OF SCHOOL INPUTS, TEACHER ATTRIBUTES AND PEDAGOGICAL PRACTICES<sup>1</sup>

	Number of Significant Effects: Number of Analyses /a	
	(1) Primary Schools School/Teacher Factor /b	(2) Secondary Schools
<b>School Spending</b>		
Expenditures per pupil	3:6	3:5
Total school expenditures	2:5	-
<b>Specific School Inputs</b>		
Average class size	9:26	2:21
School size (enrollment)	7:8	1:5
<b>Teaching Tools</b>		
Textbooks	19:26	7:13
Supplementary readers	1:1	2:2
Exercise books	3:3	-
Teaching Guides	0:1	-
Desks	4:7	0:1
Instructional media /c	3:3	-
Quality of facilities	6:8	1:1
School library /d	16:18	3:4
Science laboratories	5:12	1:1
Child nutrition and feeding	7:8	1:1
<b>Teacher Attributes</b>		
Teacher's length of education		
Total years of schooling	9:18	5:8
Earlier measured achievement	1:1	-
Tertiary or teacher college	21:37	8:14
Inservice teacher training	8:13	3:4
Teacher gender (female) /e	1:2	2:4
Teacher subject knowledge or language proficiency	4:4	-
Teacher experience	13:23	1:12
Teacher salary level	4:1	2:11
Teacher social class	7:10	-

<sup>1</sup> Fuller and Clarke, 1994.

	Number of Significant Effects: Number of Analyses /a	
	(1)	(2)
	Primary Schools	Secondary Schools
	School/Teacher Factor /b	
<b>Classroom Pedagogy and Organization</b>		
Instructional time /f	15:17	11:15
Active, complex pedagogy	3:8	2:5
In-class written pedagogy	0:2	-
Frequent monitoring of pupil performance	3:4	0:1
Class preparation time	5:8	1:2
Frequency of homework	9:11	2:2
Teacher efficacy	1:1	0:1
Cooperative-learning task	-	2:2
<b>School Management</b>		
School cluster membership	2:2	-
Independence from central government	-	0:1
Principal's staff assessment	3:4	0:1
Principal's training level	3:4	1:2
School inspection visits	2:3	0:1
Tracking or pupil segregation	1:1	-

/a A criterion of  $p < .05$  is used for statistical significance. Only studies that controlled on students' family background within multivariate or experimental designs are included. Models differ in terms of how student background is specified and the number and type of school factors included in specific models.

/b All school and teacher factors are expected to have a positive association with pupil achievement levels, except average class size is hypothesized to hold a negative relationship.

/c Refers primarily to evaluations of radio-assisted instruction. For details, see Lockheed & Hanushek (1988).

/d These studies have looked at the simple presence of a school library (dichotomous variable), size of holdings, and reported frequency of use.

/e See text for details on the match between female teachers and students, particularly with regard to language achievement.

/f Instructional time includes school-level measures of the length of the academic year or length of the school day, as well as observational findings on time spent on instructional tasks within classrooms.

Sources: Fuller (1987), Lockheed & Hanushek (1988), Lockheed & Verspoor (1991), plus studies conducted since 1987, which are listed in Annex 1 of Fuller and Clarke, 1993.

## ANNEX 4.1: PRIVATE EDUCATION IN INDONESIA

Private education is relatively a small share of primary education (17 percent of enrollment), though in some provinces it is substantial.<sup>1</sup> Beyond the primary level, however, the private sector plays a large role in education (Table 1); at the junior secondary level it represents 40 percent of total enrollment, and at the post-basic level, private education is more than 50 percent of enrollment and has been growing over time.

**Table 1: Number and percentage of public and private students at different levels, 1993-94**

	Public	%	Private	%	Total
<b>Kindergarten</b>	<b>6,478</b>	<b>0.4</b>	<b>1,589,805</b>	<b>99.6</b>	<b>1,596,283</b>
Primary SD	24,391,342	92.7	1,928,510	7.3	26,319,852
Islamic Primary (MI)	176,610	5.2	3,203,124	94.8	3,379,734
<b>Total Primary</b>	<b>24,567,952</b>	<b>83.0</b>	<b>5,131,634</b>	<b>17.0</b>	<b>29,699,586</b>
Junior Secondary	3,959,794	66.7	1,980,454	33.3	5,940,248
Islamic JS (MT)	301,465	24.3	940,518	75.7	1,241,983
<b>Total JS</b>	<b>4,261,259</b>	<b>59.0</b>	<b>2,920,972</b>	<b>41.0</b>	<b>7,182,231</b>
Senior Secondary (Gen'l)	1,315,077	54.2	1,112,097	45.8	2,427,174
Senior Secondary (Voc'l)	280,019	29.6	666,044	70.4	946,063
Islamic SS (MA)	171,426	41.9	238,037	58.1	409,463
<b>Total SS</b>	<b>1,766,522</b>	<b>47.0</b>	<b>2,016,178</b>	<b>53.0</b>	<b>3,782,700</b>
<b>Tertiary</b>	<b>702,079</b>	<b>34.4</b>	<b>1,341,301</b>	<b>65.6</b>	<b>2,043,380</b>

Source: *Indonesian Educational Statistics in Brief*, MOEC (1993-94).

Private schools (primary to senior secondary) are established and operated mainly by (a) local communities, (b) teachers' associations called PGRI, and (c) Islamic groups. Other groups such as Catholic organizations and large enterprises have a smaller

<sup>1</sup> These are namely: Jakarta (24 percent of total primary enrollment), North Sulawesi (25 percent), Maluku (24 percent), NTT (44 percent) and Irian Jaya (43 percent).

participation in numerical terms. Islamic schools (*madrasahs* and *pesantrons*) fall under the jurisdiction of the Ministry of Religious Affairs (MORA), while all other private schools must be approved and accredited by MOEC.

Many private schools are not truly independent schools but survive as a second income source for public school teachers and principals who need teach in their first job only 18 hours per week (and get paid equivalently). Indeed, as mentioned earlier, a significant number of private schools are operated and administered by the teachers' association (PGRI). In one district in East Java (Bojonegoro), 40 percent of the so-called private schools were PGRI schools. Many of these private schools operate on the premises of public schools in the afternoons. Data on this are difficult to obtain, however.

### **Accreditation of Private Schools**

The process of establishing a private school begins by seeking a favorable ruling on the part of MOEC and local government officials at the subdistrict level. The ruling is generally favorable if these officials perceive that there is a large enough number of primary school graduates in the proposed catchment area with no access to a public school to satisfy operation of a new school. Once their approval is secured, the sponsoring group, through a non-profit association (*yayasan*) formed for this specific purpose, submits an application to the district office of MOEC which eventually must be approved by the head of MOEC office at province level (Kakanwil). Normally, it takes about 9 months for the process to be completed.

Schools are supervised and accredited by the MOEC Directorate of Private Schools, through local MOEC officials at the province and district levels. Accreditation classifies schools in one of four categories: listed (lowest), registered, recognized, and equivalent (higher). A newly established school is classified as listed, and a review for potential upgrading of its status takes place three years later, when the school has produced its first graduates. There are eight quality criteria applied during review (such as student performance in national exams, number of graduates, and adequacy of school facilities). Depending on the results, the school may retain the "listed" status or be promoted to a higher category. In principle (and also in a few actual cases), a school may be promoted immediately after the first review to the highest "equivalent" category. But normally there is a more gradual progression following successive reviews. The distribution by accreditation category and province is provided in Table 2. About 9 percent are in the "equivalent" category, 56 percent are "recognized," 25 percent are "registered" and the remaining 10 percent are "listed."

Although the Directorate of Private Schools of MOEC does not collect information on the association between school ownership and accreditation ranking, partial information from a small number of provinces indicates the following: "Equivalent" schools are in general owned and operated by religious organizations and

large enterprises, while a few of them are operated by PGRI. "Recognized" schools are in general owned and operated by teachers' associations and nonprofit organizations while a few of them are owned by religious organizations. "Registered" schools are generally owned and operated by PGRI and other nonprofit organizations, while a large number also belong to small town and village communities. Finally, "listed" schools are in general owned and operated by small rural communities that do not have a public school in the community itself or at a nearby location.

### **Public Subsidy for Junior Secondary Private Schools**

Table 3 shows the distribution by province of public sector teachers seconded to private schools in 1994/94. For all Indonesia, seconded teachers fill 16 percent of teaching posts in private schools, while this varies for provinces from 36 percent in Yogyakarta to 9 percent in East Java.

Available data also compares estimated numbers of textbooks by subject that need to be provided to students of public and private schools, to estimated number of textbooks actually distributed in 1993/94-1995/96, and computes the deficit still remaining. For private schools, estimated needs amount to 31 million textbooks for students and 1 million teacher guides. Actual distribution during 1993/93-1995/96 amounted to 15.5 million textbooks and 0.3 million teacher guides. Thus, although large gaps still remain, public sector contributions are very important in supply this critical input for raising school quality.

No tabulated information exists on the magnitude of public sector funding for training private school teachers and supplying teaching equipment to private schools. Officials in charge of these activities at MOEC estimate that the public sector allocates about 20 percent of its training activities to private teachers, and distributes also about 20 percent of purchased school equipment to private schools.

Table 4 provides information on public sector subsidization of the operational cost of private schools for the academic year 1995/96 by province. This subsidy is granted to both SMP and madrasah schools and is in the form of a flat amount per classroom (uniform for all provinces and subsidized schools). The amount granted per classroom was Rp 480,000 in 1994/95 and it covered 18,363 classrooms. The policy parameters changed in 1995/96 and 1996/97: the amount of the subsidy was reduced to Rp 300,000 per classroom while the number of subsidized classrooms tripled. At the same time, the total amount of the subsidy almost doubled (from Rp 8.8 billion in 1994/95 to Rp 16.1 billion in 1995/96).

Although data on the total number of private schools' classrooms are not available for 1995/96 and 1996/97, their numbers for 1993/94 and 1994/95 indicate that the operational cost support program covers between 50 percent and 55 percent of SMP classrooms, and between 90 percent and 95 percent of madrasah classrooms, for a

combined total of about 65 percent of all private school classrooms. As indicated earlier, the program targets schools at the lower end of financing capacity.

**Table 2: Number of private schools by level of accreditation and province—  
junior secondary level (SLTP), 1994/95**

No.	Province	Equiv.	%	Recogn.	%	Regist.	%	Listed	%	Total
1	DK Jakarta	118	14.29	481	58.23	132	15.98	95	11.50	826
2	W. Java	165	12.76	781	60.40	204	15.78	143	11.06	1,293
3	C. Java	210	15.09	921	66.16	186	13.36	75	5.39	1,392
4	DI Yogyakarta	58	20.71	199	71.07	23	8.21	0	0.00	280
5	E. Java	91	5.38	1,333	78.83	125	7.39	142	8.40	1,691
6	DI Aceh	13	10.48	37	29.84	60	48.39	14	11.29	124
7	N. Sumatra	90	7.96	688	60.83	271	23.96	82	7.25	1,131
8	W. Sumatra	10	12.66	41	51.90	21	26.58	7	8.86	79
9	Riau	6	3.97	61	40.40	57	37.75	27	17.88	151
10	Jambi	5	5.10	27	27.55	55	56.12	11	11.22	98
11	S. Sumatra	38	7.95	194	40.59	218	45.61	28	5.86	478
12	Lampung	22	3.54	259	41.71	277	44.61	63	10.14	621
13	W. Kalimantan	11	3.56	48	15.53	184	59.55	66	21.36	309
14	C. Kalimantan	12	11.43	27	25.71	53	50.48	13	12.38	105
15	S. Kalimantan	2	2.53	40	50.63	32	40.51	5	6.33	79
16	E. Kalimantan	11	6.96	31	19.62	99	62.66	17	10.76	158
17	N. Sulawesi	27	9.38	173	60.07	71	24.65	17	5.90	288
18	C. Sulawesi	0	0.00	27	23.89	74	65.49	12	10.62	113
19	S. Sulawesi	24	6.76	155	43.66	132	37.18	44	12.39	355
20	C. Sulawesi	2	4.00	10	20.00	27	54.00	11	22.00	50
21	Maluku	9	3.70	66	27.16	97	39.92	71	29.22	243
22	Bali	26	12.04	151	69.91	26	12.04	13	6.02	216
23	W.N. Tenggara	2	2.90	31	44.93	30	43.48	6	8.70	69
24	E.N. Tenggara	11	3.24	124	36.58	191	56.34	13	3.83	339
25	Irian Jaya	16	17.39	37	40.22	27	29.35	12	13.04	92
26	Bengkulu	3	4.84	14	22.58	42	67.74	3	4.84	62
27	E. Timor	5	15.63	13	40.63	11	34.38	3	9.38	32
	Indonesia	987	9.25	5,969	55.92	2,725	25.53	993	9.30	10,674

**Table 3: Number of private school teachers by personnel status, official rank and province—junior secondary level (SLTP), 1993/94**

No.	Province	Civil Servants			Subtotal	Not Civil Servants	Total
		Rank II	Rank III	Rank IV			
1	DKI Jakarta	692	288	13	993	12,129	13,122
2	W. Java	1,135	786	70	1,991	19,537	21,528
3	C. Java	3,486	1,033	24	4,543	18,720	23,263
4	DI Yogyakarta	1,381	605	12	1,988	3,592	5,590
5	E. Java	1,834	772	26	2,632	27,698	30,330
6	DI Aceh	219	34	2	255	1,207	1,462
7	N. Sumatra	1,641	639	12	2,292	12,840	15,132
8	W. Sumatra	194	82	2	278	847	1,125
9	Riau	389	99	2	490	1,392	1,882
10	Jambi	252	77	0	329	1,000	1,329
11	S. Sumatra	457	93	3	553	5,466	6,019
12	Lampung	460	114	9	583	4,190	4,773
13	W. Kalimantan	367	30	5	402	2,999	3,401
14	C. Kalimantan	188	47	2	237	790	1,027
15	S. Kalimantan	116	60	4	180	994	1,174
16	E. Kalimantan	219	18	0	237	2,163	2,400
17	N. Sulawesi	1,574	206	2	1,782	889	2,671
18	C. Sulawesi	110	30	0	140	802	942
19	S. Sulawesi	743	351	35	1,129	2,806	3,935
20	C. Sulawesi	103	23	3	129	236	365
21	Maluku	991	81	0	1,072	1,015	2,087
22	Bali	882	160	14	1,056	3,282	4,338
23	W. Nusa Tenggara	106	25	2	133	574	707
24	E. Nusa Tenggara	789	46	0	835	2,626	3,461
25	Irian Jaya	337	121	9	467	488	955
26	Bengkulu	78	20	0	98	653	751
27	E. Timor	138	3	0	141	237	378
	Indonesia	18,881	5,843	251	24,975	129,172	1,544,147



**Table 4: Classrooms and amount of support to private schools**  
**Project: Operations and facilities improvement, 1995/96**

No.	Province	SLTPs		Madrasahs		General Total	
		Class-rooms	Rp million	Class-rooms	Rp million	Class-rooms	Rp million
1	DKI Jakarta	2,800	840.0	1,320	396.0	4,120	1,236.0
2	W. Java	4,516	1,354.8	4,780	1,434.0	9,296	2,788.0
3	C. Java	5,972	1,791.6	3,311	993.3	9,283	2,784.9
4	DI Yogyakarta	1,696	508.8	300	90.0	1,996	598.8
5	E. Java	4,038	1,211.4	3,421	1,026.3	7,459	2,237.7
6	Dista Aceh	642	192.6	580	174.0	1,222	366.6
7	N. Sumatra	1,075	322.5	1,786	535.8	2,861	858.3
8	W. Sumatra	382	114.6	1,008	302.4	1,390	417.0
9	Riau	365	109.5	649	194.7	1,014	304.2
10	Jamb	296	88.8	238	71.4	534	160.2
11	S. Sumatra	832	249.6	676	202.8	1,508	452.4
12	Lampung	838	251.4	1,060	318.0	1,898	569.4
13	W. Kalimantan	709	212.7	381	114.3	1,090	327.0
14	C. Kalimantan	273	81.9	187	56.1	460	138.0
15	S. Kalimantan	141	42.3	666	199.8	807	242.1
16	E. Kalimantan	113	33.9	283	84.9	396	118.8
17	N. Sulawesi	721	216.3	150	45.0	871	261.3
18	C. Sulawesi	101	30.3	433	129.9	534	160.2
19	S. Sulawesi	662	198.6	1,203	360.9	1,865	559.5
20	C. Sulawesi	222	66.6	278	83.4	500	150.0
21	Maluku	288	86.4	241	72.3	529	158.7
22	Bali	779	233.7	77	23.1	856	256.8
23	W. Nusa Tenggara	507	152.1	727	218.1	1,234	370.2
24	E. Nusa Tenggara	1,051	315.3	81	24.3	1,132	339.6
25	Irian Jaya	273	81.9	23	6.9	296	88.8
26	Bengkulu	372	111.6	135	40.5	507	152.1
27	E. Timor	271	81.3	6.0	1.8	277	83.1
<b>Total</b>		<b>29,935</b>	<b>8,980.5</b>	<b>24,000</b>	<b>7,200.0</b>	<b>53,935</b>	<b>16,180.5</b>

## **ANNEX 4.2: EFFICIENCY OF TEACHER ALLOCATIONS IN INDONESIAN JUNIOR SECONDARY SCHOOLS**

Since teacher salaries constitute by far the largest part of recurrent expenditure in the junior secondary budget (90 percent of resources from the government and 84 percent of all resources from the government and parents, Jiyono et al, 1993), the main sources of efficiency gains are likely to come from improvements in the way in which teachers are allocated across schools.

This annex examines the formula governing teacher allocations and presents information from school-level administrative data for seven provinces (those covered in World Bank junior secondary projects) that reveals how the allocations work in practice. A wide divergence is revealed between how the allocations are supposed to work and how they do work. Schools with the same number of classes vary dramatically in the number of teachers they have. Many schools have far more teachers than are needed to deliver the curriculum. The school-level administrative data allow one to estimate what the magnitude of the efficiency losses are and they are not small. The evidence suggests that schools with excess teachers pay a total wage bill that is roughly 30 percent higher than schools without excess teachers.

### **Allocation Formula**

Teachers are allocated to schools by a formula that depends on the curriculum, the number of classes and the restrictions that no teacher should be required to teach in more than one subject or to work more than 24 periods a week. The school week is six days, with seven periods a day. The curriculum consists of 13 courses: math, Bahasa and local content courses taught six times a week, English taught four times a week, science taught six times a week (either physics or biology depending on the grade), social science taught six times a week (history, economics or geography depending on the grade), and Pancasila, religion, physical education and arts and crafts taught two times a week.

Column 2 in Table 1 presents the minimum number of teachers required to deliver the curriculum for different numbers of classes per school.

These requirements were obtained from a simple linear programming exercise that minimized the number of teachers subject to the aforementioned constraints. Since the restrictions and the curriculum do not vary across the country, any variation in the number of teachers across schools should depend entirely on the number of classes. For any given number of classes per school, the teacher allocation formula dictates that the

same number of teachers be assigned. Column 3 indicates the average periods taught per week. Note that only for schools with 12 classes and 24 classes does the average approach what is considered full-time work - which is 24 periods per week.

**Table 1: Minimum teachers needed to deliver the curriculum**

Classes per school	Min. teachers required to deliver the curriculum	Average periods that should be taught (according to the formula)	Number of teachers teaching less than 18 periods a week (according to the formula)	Number of teachers teaching 24 periods a week (according to the formula)
3	13	9.69	10	0
6	16	15.75	7	1
9	22	17.18	2	0
12	22	22.91	0	18
15	33	19.09	7	0
18	38	19.89	0	3
21	42	21.00	0	0
24	42	24.00	0	42
27	55	20.62	0	0
30	58	21.72	0	5

### Allocations of Teachers in Practice

In practice, the allocation of teachers diverges dramatically from what it would be if the allocation formula were consistently applied. Two key features stand out. First, there are many schools that have an odd number of classes (4,5,7,8 etc.) Second, for any given number of classes, there is considerable variation in the number of teachers across schools. Both features can be seen in Table 2.

Since there are three grades in junior secondary, one would expect most schools to be built to accommodate classes that are multiples of 3. Columns 2 and 3 indicate that there is some heaping of the distribution at a multiple of 3, but this is not very pronounced. In fact, 51 percent of the schools have numbers of classes that are not multiples of 3.

As noted above, if all teachers were allocated according to the stated policy, there would be no variation in the number of teachers given the number of classes. Columns 4, 5 and 6 illustrate that there is substantial variation in the number of teachers across schools with the same number of classes per school.

### Implications of Inconsistent Application of Allocation Formula

The school-level administrative data suggest that there are schools which employ more teachers than are required to deliver the curriculum. For this analysis, we focus only

on the schools with classes that are multiples of 3. Similar results would be obtained if the whole sample were used. Column 2 of Table 3 indicates the percentage of schools that employ more teachers than the minimum required by the teacher allocation formula, while column 3 presents the average number in excess of the minimum.

**Table 2: Allocation of teachers in practice**

Classes per school	Number of schools	Percent of all schools	Number of teachers		
			10% Percentile	50% Percentile	90% Percentile
3	90	3.2	4	8	14
4	73	2.6	6	10	18
5	101	3.5	7	11	19
6	250	8.7	8	14	22
7	180	6.2	10	15	22
8	167	5.6	11	16	23
9	364	11.9	14	21	28
10	228	7.2	16	21	28
11	184	5.4	18	23	30
12	396	11.6	21	27	34
13	206	5.8	22	27	36
14	179	4.2	25	31	38
15	297	7.5	27	34	41
16	174	4.2	28	36	45
17	106	2.6	30	38	46
18	214	4.7	30	41	49
19	68	1.5	36	41.5	53
20	49	0.8	34	43	53
21	63	1.2	38	47	56
22	29	0.3	34	49	58
23	32	0.2	46	54	61
24	53	0.4	42	54	62
25	18	0.1	46	57	66
26	18	0.1	40	54	68
27	16	0.1	49	61	68
28	11	0.2	50	68	78
29	5	0.0	54	66	68
30	15	0.1	57	72	78

Note that there are substantial differences depending on the number of classes per school. Only 9 percent of all schools with 3 classes have more than the 13 teachers required to deliver the curriculum. However, fully 80 percent of the schools with 12 classes have more than the 22 teachers required to deliver the curriculum.

If all the excess teachers were part-time teachers, having more teachers would not necessarily imply a higher total wage bill. However, columns 4, 5 and 6 indicate that, for a given number of classes per school, schools with more teachers pay a considerably

higher total wage bill. Averaging over the entire distribution (weighted by the proportion within a given category of classes per school) yields the result that the median wage bill is 45 percent higher in schools that have more teachers than required to deliver the curriculum.

**Table 3: Cost of inefficient allocations**

Classes per school	Percentage of schools within class category with teachers greater than minimum required by allocation formula	Average number of teachers in excess of minimum	Median Wage Bill		Percentage difference in median wage bills (Schools with > min. req.) relative to schools (min. or less)	Percentage increase in wage bill arising from extra teachers
			Schools with minimum or less teachers than required	Schools with more teachers than minimum required		
3	9	4.0	25,838	38,538	49	--
6	26	5.5	38,222	65,809	72	46
9	33	5.3	62,848	94,102	50	35
12	80	6.9	72,054	97,909	36	29
15	55	5.0	108,346	141,436	31	21
18	43	7.0	111,110	164,862	48	25
21	67	8.7	144,382	175,857	22	21
24	80	12.6	139,176	203,367	46	28
27	75	8.4	214,827	231,304	8	--
30	80	14.0	183,595	251,680	37	--

It is possible that those schools that have more teachers also have more qualified teachers who receive higher salaries. As an alternative to a simple comparison of the median wage bill, we used median regressions to estimate the effect on the wage bill of having an additional teacher over the minimum required, holding constant for the percentage of teachers in different salary scales (*golongan ruang*) and the number of pupils in the school. These regressions were done separately for each category of classes per school. Except for the schools with 3, 27 and 30 where there were not enough observations to estimate the effect of extra teachers, the estimated coefficient on extra teachers was always precisely estimated (significant at the 1 percent level). To arrive at the effect of extra teachers on the wage bill, this marginal effect was multiplied by the average number of extra teachers and expressed as a percentage of the median wage bill of those schools without excess teachers. These percentages are shown in column 7. Again averaging over the entire distribution in the same way, yields the result that the median wage bill is 29 percent higher in schools that have more teachers than required to deliver the curriculum.

It is also possible to infer from this data how many teachers would be expected to work part-time. Because each class can be taught for no more than seven periods a day six days a week, adding more teachers over and above the minimum is likely to force more teachers to work part-time. Based on the data available, one can only get a rough estimate of the percentage of part-time teachers. A conservative estimate would be that each teacher employed over and above the minimum required to deliver the curriculum

works part-time. This is conservative because one would expect two teachers to share courses, leading both to work under the minimum. Making the more conservative assumption implies that 18 percent of the teachers work part-time. To this percentage must be added the percent who would work part-time even if the allocation formula were religiously applied (11.9 percent). Thus, in total one would expect that no less than 30 percent of the teachers would be working less than the minimum number of hours required for full-time pay. However, the aggregate statistics from MOEC (Statistik Persekolahan SLTP 1994/1995 Table 29a, page 54) suggest that roughly 10 percent (25,778 out of 231,362 teachers) of public junior secondary school teachers are considered part-time. This suggests that there are a considerable number of part-time teachers who are paid as full-time teachers.<sup>1</sup>

### **Implications of Modifying the Allocation Formula**

Even if the allocation formula were consistently applied, teachers would not be used very intensively. The average teaching load would only be 19 (45-minute) periods per week. In this section we consider how the minimum number of teachers required would change if: (a) teachers were trained to teach in two subjects; and (b) the maximum number of periods a teacher can teach were raised from four to five a day. Calculating these effects does not mean that the Bank is necessarily recommending these changes. However, it is instructive to see what the consequences might be.

#### **Teaching Two Subjects**

Columns 2 and 3 in Table 4 replicate information reported previously. Columns 4 and 5 indicate the minimum number of teachers required and average periods taught if some teachers were trained to teach in more than one subject. The restriction that no teacher works more than 24 periods a week is maintained. The particular example considered was the case where one teacher could teach both economics and history, both English and geography, both biology and physical education, both local content and arts and crafts, and both Bahasa and Pancasila. Note that the biggest gains in the average periods taught occur in schools with fewer numbers of classes (as one would expect). Note also that there are no gains at all in schools with 24 classes because with 24 classes all one subject specialists are already teaching the full 24-period maximum.

In the particular example described above and given the relative proportions of classes in the population, relaxing the restriction that teachers teach only one subject would result in a reduction of 10 percent in the number of teachers required to deliver the

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<sup>1</sup> Several other studies suggest that the number of teachers working less than the minimum number of hours is high. A survey of junior secondary schools by Jiyono et al (1993) found the average of actual teaching hours to be 16.6 periods a week. This is less than the average expected from the allocation formula (19 periods) and less than the minimum required for full-time work (18 periods).

curriculum. Training teachers in other combinations of subject specialties would give rise to different savings.

**Table 4: Effects of modifying the allocation formula**

Classes per school	Minimum teachers required (teach 1 subject)	Average periods taught (teach 1 subject)	Minimum teachers required (teach 2 subjects)	Average periods taught (teach 2 subjects)	Minimum teachers required (5 periods a day)
3	13	9.69	8	15.75	13
6	16	15.75	13	19.38	16
9	22	17.18	19	19.89	17
12	22	22.91	22	22.91	22
15	33	19.09	29	21.00	22
18	38	19.89	34	22.24	33
21	42	21.00	40	22.05	38
24	42	24.00	42	24.00	39
27	55	20.62	50	22.24	42
30	58	21.72	55	22.91	42
Average over all schools		18.98		21.01	

Of course, this savings would have to be weighed against the initial costs of training and the difficulties of overcoming resistance from teachers. Teachers are likely to be opposed to the measure—partly because they do not like to teach two subjects and partly because such a system would require that some of them would work more hours.

#### **Increasing Periods per Day**

Column 6 in Table 4 indicates the minimum number of teachers required to deliver the curriculum if the maximum hours worked per week were raised from 24 to 30. Note that for schools with 3 and 6 classes, there is no change at all in the minimum number of teachers required. This is because there was no teacher that was working 24 periods a week. Raising a nonbinding constraint has no effect. The main effect of increasing the work requirements is roughly to shift the entire schedule of teachers required back by one classification. Whereas at 24 periods a week, schools with 15 classes required 33 teachers, at 30 periods per week it is schools with 18 classes that require 33 teachers.

Increasing the periods per day from 4 to 5 reduces the number of teachers required to deliver the curriculum by 15.4 percent. Thus, the relatively light teaching load can be seen to have a significant effect on costs.

### **Combined Effects**

Enacting two policies will not result in a combined effect that is a sum of the individual effects. To some extent, relaxing the requirement of teaching only four periods a day and eliminating schools with 15 classes are two different ways of lessening the effects of a large jump in the number of additional teachers required in going from 12 to 15 classes. To get the biggest combined effect, one would look for policy changes that operate on different parts of the distribution of classes. Simultaneously introducing the teaching of two subjects with the elimination of inefficient sized schools is one such combination. Introducing both policy changes would reduce the number of teachers required to deliver the curriculum by 14.6 percent over the base case.



## ANNEX 5.1: EDUCATION ADMINISTRATION IN INDONESIA

Education in Indonesia is provided and delivered by a complex array of institutions. One of the two key players is the Ministry of Education and Culture (MOEC), which provides formal and nonformal education, and sanctions the content and output of education provided by other government agencies and by private schools and teaching institutions. MOEC directly provides secondary and higher education, but shares responsibility for public primary education with the Ministry of Home Affairs (MOHA), making MOHA the second key player in the delivery of primary, and increasingly, junior secondary education. Finally, the Ministry of Religious Affairs (MORA) oversees the *madrasahs* (mostly private religious schools), which are particularly prevalent at the post-primary level.

Responsibility for the management of primary schools and out-of-school education was decentralized<sup>1</sup> in 1951 to the first level of regional government, the provinces, (Public Law Number 65). Since then, many provincial governments have in turn delegated the responsibility to the districts and municipalities. MOHA's responsibilities include the construction of schools, placement and transfer of teachers, and provision of recurrent budgets for materials—often referred to as the “3M,” for manpower, money, and materials. The decentralization of primary education is by far the most important of the sectoral functions delegated to regional governments. Out of a total of about 1.8 million sectoral staff seconded to regional governments, primary education staff constitute 62 percent.<sup>2</sup> Primary school teachers enter the civil service as employees of the central government and are immediately (and almost always permanently) seconded to the regional governments. Actual recruitment is carried out by the *dinas* offices.

MOEC retains responsibility for the technical and policymaking aspects of primary education, including teacher training, curriculum and textbook development,

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<sup>1</sup> *Decentralization* can be defined as the transfer of some degree of authority and responsibility to other local government entities not part of the central ministry, or ultimately to the individual schools or network of schools. *Deconcentration* can be regarded as the center passing some functions to its regional (provincial or below) dependencies while retaining overall authority. Finally, the term *devolution* can be used to describe the process by which ownership—including responsibility for raising revenues and virtually all control of the educational process of the schools—is completely turned over to lower levels of government or to the private sector.

<sup>2</sup> The total size of the civil service is approximately 4 million.

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evaluation of teacher performance, pedagogical supervision, and student assessment. It carries out these functions through its vast subnational network of field offices at three levels: 27 provincial offices (Kanwil P dan K), 302 district/municipality offices (Kandep P dan K), and in most of the 3,500 subdistrict offices (Kancam), making it the only ministry with representation in most of the subdistricts and with the most dispersed and penetrating administrative structure of any ministry (King, 1995-96).<sup>3</sup> This organizational structure is best called deconcentrated. At the same time, MOEC is still a centralized agency in that 40 percent of its 274,000 nonteaching personnel are based in Jakarta and it retains much central authority. The head of the Kandep (KaKandep), for example, has a rank on a par only with a junior secondary principal.

MOHA carries out its functions through a structure virtually parallel to that of MOEC. It has established educational services offices at both the provincial and district/municipality levels—the *dinas P&K Tk I* and *dinas P&K Tk II*, respectively (*dinas I and II* for short). In addition, over the past few years, an increasing number of subdistrict offices—*dinas kecamatan* or *cabang dinas*—have been established, even though these offices are not as well staffed as their MOEC counterparts (Kancam). The *dinas P&K* is typically the most important sectoral dinas in the provinces and districts in terms of staff. Often, it contains more staff than all other sectoral *dinas* combined, and more than the *Kanwil P&K* or *Kandep P&K*. The heads of the provincial and district governments (*Gubernur and Bupati*, respectively) have authority in administrative matters over the regional educational services (*dinas*), while MOEC officials retain authority in technical matters.

The implementation of the expansion of junior secondary is increasingly to be shared between MOHA and MOEC, even though discussions are still at an early stage with regard to how this would occur. Within the last year, the government has taken the decision to place the responsibility for implementing the program to achieve universal basic education directly with the Bupatis. At the senior secondary and higher education levels, MOEC implements all aspects of education, with the exception of construction of secondary general schools, which is managed in the provinces by the Ministry of Public Works. Higher education remains the most centrally controlled of the education levels through the Directorate General of Higher Education in Jakarta, even though MOEC is increasingly giving universities autonomy in managing their affairs.

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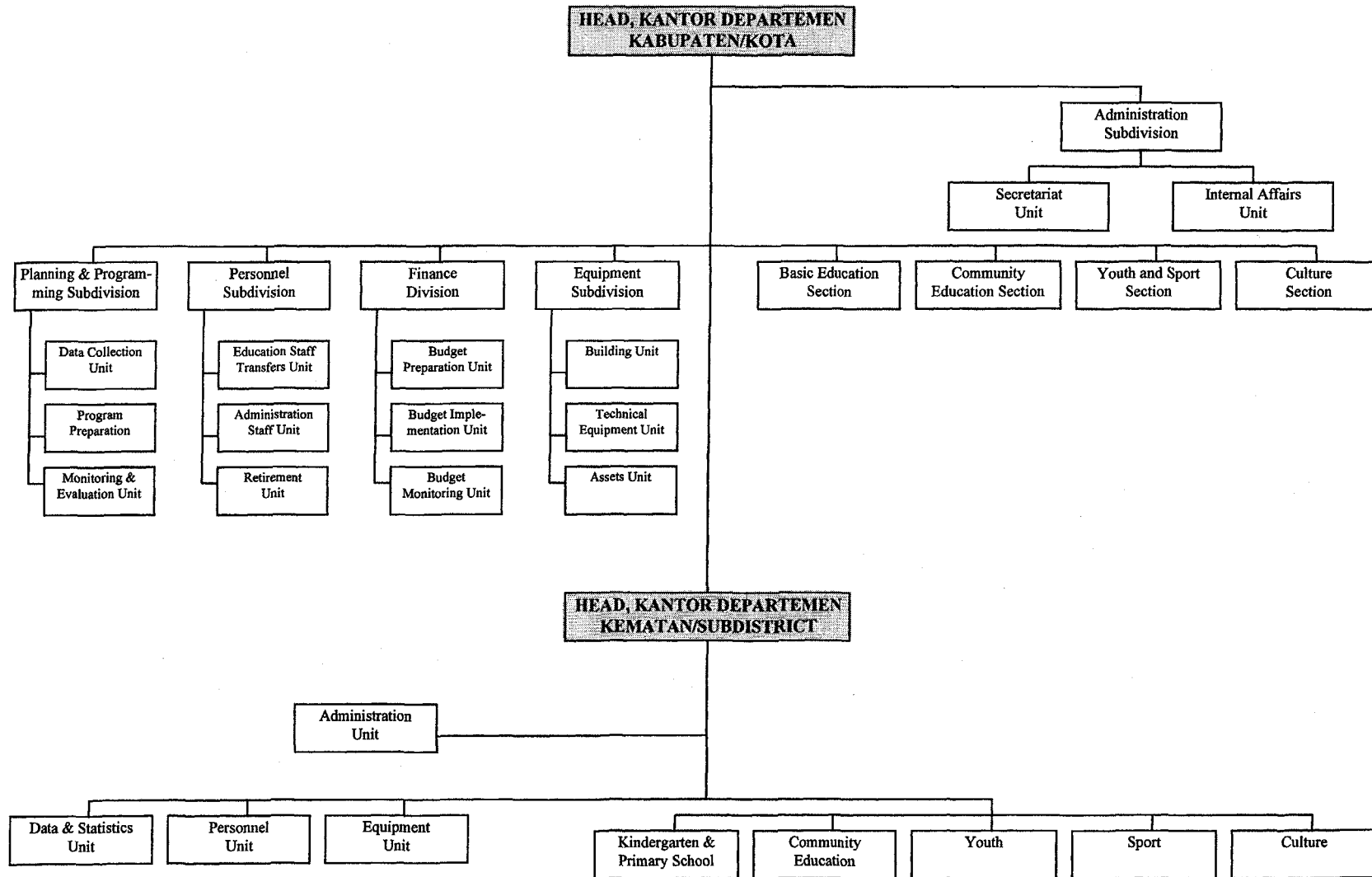
<sup>3</sup> For a detailed description of the structure of MOEC, see *Indonesia: Basic Education Study*, World Bank Report No. 7841-IND (1989).

## **ANNEX 5.2: ORGANIZATIONAL CHARTS**

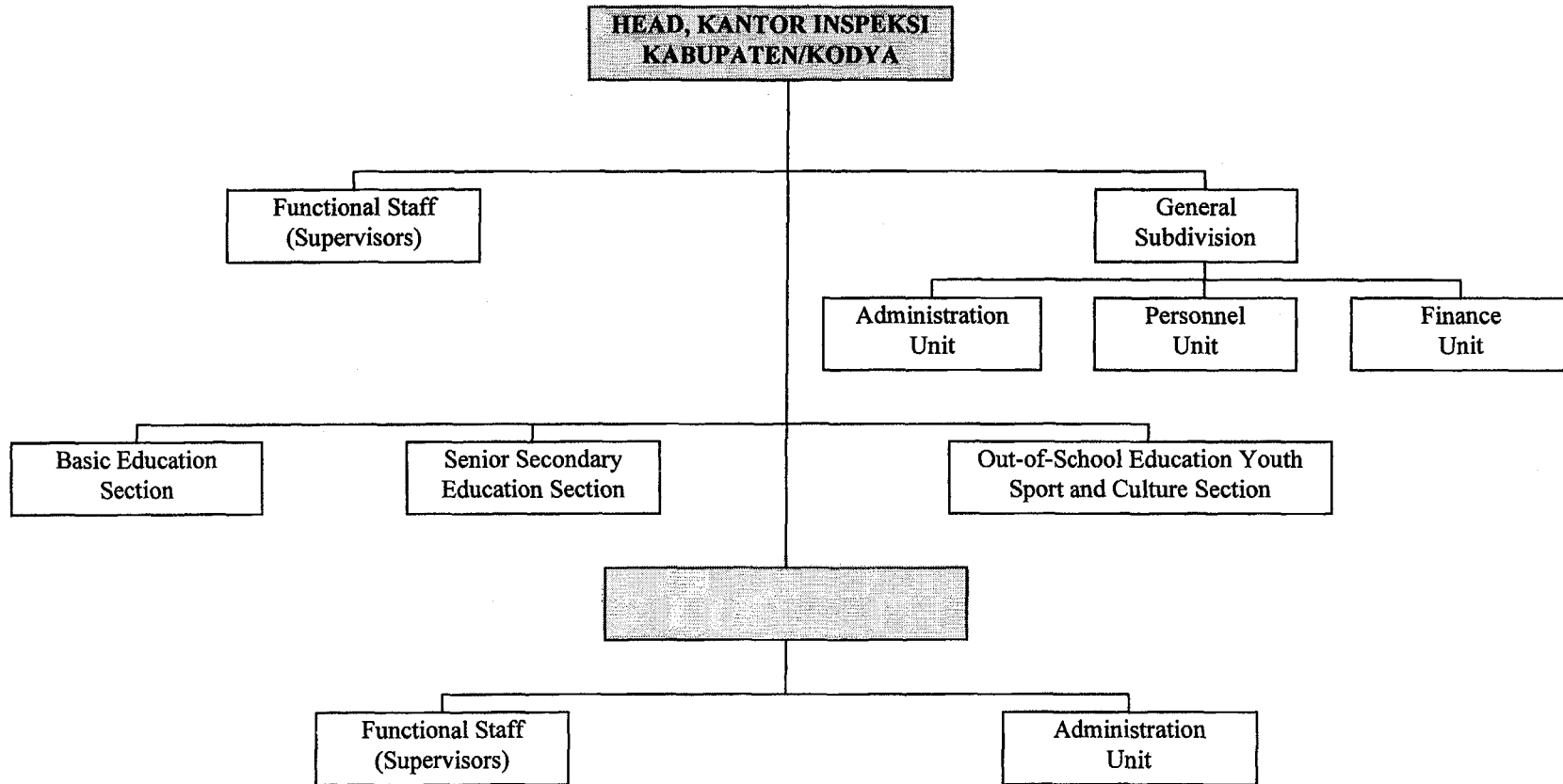
Chart 1: Organizational Structure: Kantor Departemen

Chart 2: Organizational Structure: Kantor Inspeksi

**CHART 1: ORGANIZATIONAL STRUCTURE: KANTOR DEPARTEMEN**



**CHART 2: ORGANIZATIONAL STRUCTURE: KANTOR INSPEKSI**



## **ANNEX 7.1: CONSOLIDATED GOVERNMENT EDUCATION EXPENDITURES**

Table 1: Central Government Development Expenditure on Education

Table 2: Central Government Routine Expenditure on Education

Table 3: Consolidated Central Government Expenditure on Education

Table 4: Consolidated Regional Government Expenditure on Education

Table 5: Consolidated Government Expenditure on Education

Table 6: Allocation of Government Expenditure on Education

Table 7: Education Expenditure as Proportion of GDP and Government Expenditure

**Table 1: Central government development expenditure on education**  
(Rp billion)

Sector Code /a	Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
9.1.01	Primary /b	633	609	518	177	138	109	417	591	725		842	922	1,084
9.1.02	Junior secondary	156	321	84	79	51	86	172	219	269		647	701	901
9.1.03	Senior secondary:	124	223	92	294	314	381	254	337	380		553	518	631
	General											403	329	419
	Vocational											150	189	212
9.1.04	University	137	246	266	428	411	558	382	452	652		578	785	943
	Others:	49	59	31	46	27	86	152	258	337		168	246	218
9.1.05	Talent & achievement	3	3	1	0	0	13	16	22	28				
9.1.06	Community	23	27	16	37	14	15	15	22	46		75	92	88
9.1.07	Youth	13	13	6	3	3	5	9	13	19				
9.1.08	Sports	7	12	3	1	1	1	2	3	4				
9.1.09	System development	3	5	4	5	8	15	24	21	33				
9.1.10	Operation & maintenance	0	0	0	0	0	36	86	177	208				
	Kindergarten											16	20	14
	Others											77	133	117
	<b>Religious Affairs</b>											121	149	230
	<b>Total Central Development Expend.</b>	<b>1,099</b>	<b>1,457</b>	<b>989</b>	<b>1,025</b>	<b>942</b>	<b>1,219</b>	<b>1,376</b>	<b>1,857</b>	<b>2,362</b>		<b>2,909</b>	<b>3,321</b>	<b>4,008</b>
	<b>Memo Items:</b>													
	<b>INPRES SD: /c</b>	595	536	498	150	130	100	371	529	645	699	748	799	945
	Construction of new schools/classes											142	128	135
	BOP (Rp 700,000 per school)											119	119	119
	Textbooks and Reading Books											78	113	174
	Teacher Training and Supply of											160	122	145
	Material and Equipment													
	Sports and Scouts											0	17	17
	Assistance for Planning and											0	0	4
	Supervision													
	Building Rehabilitation (INPRES											250	300	350
	DATI II)													

/a Sector codes were changed in 1994/95.

/b Includes INPRES SD.

/c Includes building rehabilitation which since 1994/95 appears under INPRES DATI II.

Sources: Economic Indicators and Budget Statistics, Ministry of Finance (various years); APBN, Bappenas (various years); APBD, Ministry of Home Affairs; Ministry of Religious Affairs, Basic Education Project (1995); Indonesia Public Expenditures, Prices and the Poor, World Bank (1993); World Bank Country Economic Memorandum (1996, 1997); and World Bank Staff estimates.

**Table 2: Central government routine expenditure on education**  
(Rp billion)

Sector Code /a	Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
9.1.01	Primary /b	1	1	1	1	1	2	3	3	4		10	11	12
9.1.02	Secondary:	350	495	557	594	680	800	882	1,052	1,279		1,515	1,873	2,157
9.1.02	Junior	164	238	271	291	336	392	431	521	642		835	1,097	1,290
	General senior	96	140	159	171	197	230	253	306	377		558	636	711
9.1.06	vocational senior	89	117	127	133	147	177	199	225	259		122	140	156
9.1.03	University	131	197	231	234	301	333	404	389	500		549	664	730
9.1.04	Community	4	5	5	5	6	9	12	15	19		40	44	48
9.1.05	Sports	1	1	1	1	1	2	2	4	5				
9.1.07	Handicapped Kindergarten	1	1	1	1	1	1	2	2	2				
16.1.02	Administration /c	136	173	199	226	250	307	337	371	408		32	41	27
9.1.08	Religious Affairs	175	232	242	250	281	307	328	379	454		490	539	593
	<b>Total Central Routine Exp.</b>	<b>798</b>	<b>1,105</b>	<b>1,238</b>	<b>1,313</b>	<b>1,521</b>	<b>1,760</b>	<b>1,971</b>	<b>2,215</b>	<b>2,671</b>		<b>3,208</b>	<b>3,835</b>	<b>4,296</b>

/a Sector codes were changed in 1994/95.

/b Excludes SDO for primary teachers which is included under regional expenditures (see Table 4).

/c Assigned to the Secretariat General, Department of Education & Culture. Data for 1990/91 -1992/93 are estimates.

Sources: Economic Indicators and Budget Statistics, Ministry of Finance (various years); APBN, Bappenas (various years); APBD, Ministry of Home Affairs; Ministry of Religious Affairs, Basic Education Project (1995); Indonesia Public Expenditures, Prices and the Poor, World Bank (1993); World Bank Country Economic Memorandum (1996, 1997); and World Bank Staff estimates.



**Table 3: Consolidated central government expenditure on education /a**  
(Rp billion)

Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
<b>Primary</b>	718	721	635	298	274	258	578	777	947		1,184	1,324	1,557
Routine	85	112	117	121	136	149	160	185	222		285	329	362
Development /b	633	609	518	177	138	109	417	591	725		900	994	1,194
<b>Junior secondary</b>	382	640	439	457	485	585	718	873	1,070		1,725	2,083	2,527
Routine	226	320	356	378	434	500	545	654	801		1,035	1,330	1,545
Development	156	321	84	79	51	86	172	219	269		690	753	982
<b>Senior secondary - general</b>	250	402	292	507	559	663	563	707	834		1,229	1,292	1,505
Routine	126	179	200	213	245	283	309	370	454		655	749	835
Development	124	223	92	294	314	381	254	337	380		573	543	458
<b>Senior secondary - vocational</b>	89	117	127	133	147	177	199	225	259		272	329	368
Routine	89	117	127	133	147	177	199	225	259		122	140	156
Development											150	189	212
<b>University</b>	268	443	497	663	712	891	786	841	1,151		1,127	1,449	1,673
Routine	131	197	231	234	301	333	404	389	500		549	664	730
Development	137	246	266	428	411	558	382	452	652		578	785	943
<b>Other</b>	190	239	237	280	285	404	505	649	772		730	869	886
Routine	141	180	206	234	258	319	354	391	434		562	623	668
Development	49	59	31	46	27	86	152	258	337		168	246	218
<b>Total Central Education Expenditure</b>	1,897	2,563	2,227	2,339	2,462	2,980	3,347	4,072	5,033		6,267	7,345	8,304
Routine	798	1,105	1,238	1,313	1,521	1,760	1,971	2,215	2,671		3,208	3,835	4,296
Development	1,099	1,457	989	1,025	942	1,219	1,376	1,857	2,362		3,059	3,510	4,008

/a Includes Religious Affairs expenditure which is divided between primary, junior and senior secondary (assuming 48%, 35% and 17% proportions).

/b Includes INPRES SD.

Sources: Economic Indicators and Budget Statistics, Ministry of Finance (various years); APBN, Bappenas (various years); APBD, Ministry of Home Affairs; Ministry of Religious Affairs, Basic Education Project (1995); Indonesia Public Expenditures, Prices and the Poor, World Bank (1993); World Bank Country Economic Memorandum (1996, 1997); and World Bank Staff estimates.

**Table 4: Consolidated regional government expenditure on education**  
(Rp billion)

Sector Code /a	Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
R29.005	<b>Provincial</b>	876	1,149	1,180	1,366	1,469	1,367	1,879	1,977	2,463	2,518			
	Routine	824	1,073	1,106	1,291	1,399	1,290	1,797	1,895	2,381	2,436			
	Development	52	76	74	75	70	77	82	82	82	82			
P209.010	Primary	22	32	32	29	28	28	42	42	42	42			
P209.020	Secondary	30	44	42	46	42	48	41	41	41	41			
R29.005	<b>Local /b</b>	141	298	317	337	514	581	619	681	829	845			
	Routine	128	284	303	321	398	474	513	575	722	739			
	Development	13	14	15	16	116	107	107	107	107	107			
P209.010	Primary	4	4	4	4	99	86	86	86	86	86			
P209.020	Secondary	9	10	11	12	17	20	20	20	20	20			
	<b>Total Provincial + Local</b>	1,016	1,447	1,497	1,703	1,983	1,948	2,498	2,658	3,292	3,363	4,660	5,409	6,213
	<b>Primary</b>	978	1,392	1,444	1,645	1,923	1,879	2,437	2,597	3,231	3,302	4,546	5,283	6,069
	<b>Routine /c</b>	952	1,357	1,408	1,612	1,797	1,765	2,309	2,469	3,103	3,174	4,327	5,042	5,791
	Development	26	35	35	33	127	115	128	128	128	128	220	242	278
	<b>Secondary</b>	39	55	53	58	59	68	61	61	61	61	114	126	144
	Routine	0	0	0	0	0	0	0	0	0	0	44	49	57
	Development	39	55	53	58	59	68	61	61	61	61	69	76	88
	<b>Memo Items:</b>													
	SDO Guru SD	759	1,273	1,318	1,528	1,700	1,680	2,204	2,469	3,103	3,174	4,075	4,768	5,480
	Provincial	633	992	1,019	1,210	1,305	1,208	1,691	1,895	2,381	2,436			
	Local	126	281	299	318	396	472	513	575	722	739			
	SBPP - SDN /d	82	84	86	88	91	76	77	86	108	110	111	118	131
	Provincial	67	69	70	72	74	76	76	85	107	109			
	Local	15	15	16	16	17	0	1	1	1	1			

/a Sector codes were changed in 1994/95.

/b Data for 1990/91-1993/94 are estimates.

/c Includes SDO Guru SD and SBPP-SDN.

/d Per pupil basis.

Sources: Economic Indicators and Budget Statistics, Ministry of Finance (various years); APBN, Bappenas (various years); APBD, Ministry of Home Affairs; Ministry of Religious Affairs, Basic Education Project (1995); Indonesia Public Expenditures, Prices and the Poor, World Bank (1993); World Bank Country Economic Memorandum (1996, 1997); and World Bank Staff estimates.

**Table 5: Consolidated government expenditure on education /a /b /c**  
(Rp billion)

Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
<b>Primary</b>	1,696	2,113	2,079	1,943	2,198	2,138	3,015	3,374	4,178		5,730	6,607	7,625	
Routine	1,037	1,469	1,525	1,733	1,933	1,914	2,470	2,655	3,325		4,611	5,371	6,153	
Development	659	644	553	210	265	224	545	719	853		1,119	1,236	1,472	1,155
<b>Junior secondary</b>	420	695	493	515	544	654	778	933	1,131		1,796	2,156	2,591	
Routine	226	320	356	378	434	500	545	654	801		1,079	1,379	1,602	
Development	195	375	137	137	110	154	233	280	329		717	777	989	1,044
<b>Senior secondary</b>	339	519	419	640	706	841	761	932	1,093		1,501	1,621	1,873	
Routine	215	296	328	346	392	460	507	596	714		777	889	991	
Development	124	223	92	294	314	381	254	337	380		724	732	670	651
<b>University</b>	268	443	497	663	712	891	786	841	1,152		1,127	1,449	1,673	
Routine	131	197	231	234	301	333	404	389	500		549	664	730	
Development	137	246	266	428	411	558	382	452	652		578	785	943	1,093
<b>Other</b>	190	239	237	280	285	404	666	738	984		730	869	886	
Routine	141	180	206	234	258	319	354	391	434		562	623	668	
Development	49	59	31	46	27	86	152	258	337		168	246	218	332
of which:														
Community (rout+dev)	27	32	22	42	20	24	27	36	65		115	136	136	
<b>Total Consolidated Education Exp.</b>	2,914	4,010	3,724	4,041	4,445	4,927	5,845	6,730	8,325	9,542	10,885	12,702	14,649	14,852
Routine	1,750	2,462	2,646	2,926	3,317	3,525	4,280	4,684	5,774	6,351	7,579	8,926	10,144	10,577
Development	1,164	1,547	1,078	1,116	1,128	1,402	1,565	2,046	2,551	3,191	3,306	3,776	4,505	4,275
<b>Memo Items:</b>														
INPRES SD	595	536	498	150	130	100	371	529	645	699	748	799	945	1,049
SDO Guru SD	759	1,273	1,318	1,528	1,700	1,680	2,204	2,469	3,103	3,174	4,075	4,768	5,480	

/a Consolidation of education expenditure of: central gov. development (Table 1) + central gov. routine (Table 2) + regional gov. routine and development (Table 4).

/b Actual expenditure figures up to 1992/93. For subsequent years budget figures.

/c Including Religious Affairs expenditure which is divided between primary, junior and senior secondary (assuming 48%, 35% and 17% proportions).

Sources: Economic Indicators and Budget Statistics, Ministry of Finance (various years); APBN, Bappenas (various years); APBD, Ministry of Home Affairs; Ministry of Religious Affairs, Basic Education Project (1995); Indonesia Public Expenditures, Prices and the Poor, World Bank (1993); World Bank Country Economic Memorandum (1996, 1997); and World Bank Staff estimates.

**Table 6: Allocation of government expenditure on education /a**  
(Percent)

Program	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	Average (1986/87-1996/97)
<b>Primary</b>	58	53	56	48	49	43	52	50	50		53	52	52	51
Routine	36	37	41	43	43	39	42	39	40		42	42	42	41
Development	23	16	15	5	6	5	9	11	10		10	10	10	9
<b>Junior secondary</b>	14	17	13	13	12	13	13	14	14		17	17	18	14
Routine	8	8	10	9	10	10	9	10	10		10	11	11	10
Development	7	9	4	3	2	3	4	4	4		7	6	7	4
<b>Senior secondary</b>	12	13	11	16	16	17	13	14	13		14	13	13	14
Routine	7	7	9	9	9	9	9	9	9		7	7	7	8
Development	4	6	2	7	7	8	4	5	5		7	6	6	6
<b>University</b>	9	11	13	16	16	18	13	12	14		10	11	11	14
Routine	5	5	6	6	7	7	7	6	6		5	5	5	6
Development	5	6	7	11	9	11	7	7	8		5	6	6	8
<b>Other</b>	7	6	6	7	6	8	11	11	12		7	7	6	8
Routine	5	4	6	6	6	6	6	6	5		5	5	5	6
Development	2	1	1	1	1	2	3	4	4		2	2	1	2
<b>Total Consolidated Ed. Exp.</b>	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Routine	60	61	71	72	75	72	73	70	69	67	70	70	69	71
Development	40	39	29	28	25	28	27	30	31	33	30	30	31	29

/a Consolidated government (see Table 5).

**Table 7: Education expenditure as proportion of GDP and government expenditure  
(Percent)**

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	Average (86/87-96/97)
Education Expenditure/GDP	3.24	4.13	3.63	3.24	2.97	2.74	2.77	2.69	2.95	2.89	2.85	2.81	2.77	2.87
Education Exp./Total Government Exp.	15.03	17.57	17.01	14.99	13.47	12.91	11.82	12.94	14.31	14.80	15.05	15.37	15.67	14.13
Education Development Exp./Total Development Exp.	11.69	14.23	12.94	11.77	9.21	10.14	8.05	9.40	10.57	12.43	12.07	12.67	13.47	10.98
Education Routine Exp./Total Routine Exp.	18.56	20.60	19.51	16.73	15.99	14.49	14.27	15.50	16.97	16.37	16.86	16.90	16.90	16.10
Memo Items (Rp billion):														
GDP	89,885	96,997	102,683	124,817	149,669	179,582	210,866	249,969	282,395	329,776	382,220	452,381	528,954	
Total Government Routine Exp.	9,429	11,952	13,559	17,482	20,739	24,331	29,998	30,228	34,031	38,799	44,945	52,824	60,006	
Total Government Development Exp.	9,952	10,873	8,332	9,477	12,251	13,834	19,453	21,764	24,135	25,661	27,398	29,812	33,460	
Total Government Expenditure	19,381	22,825	21,891	26,959	32,990	38,165	49,451	51,992	58,166	64,460	72,343	82,636	93,466	
Government Expenditure/GDP (%)	22	24	21	22	22	21	23	21	21	20	19	18	18	

Sources for GDP and budget data: State Budget (Ministry of Finance) and World Bank Country Economic Memorandum (1996 and 1997).

## **ANNEX 7.2: PRE-CRISIS INVESTMENT PROJECTIONS**

1. In 1997, before the economic crisis hit Indonesia, the World Bank conducted the feasibility analysis presented in this annex. The purpose of the analysis was to assess whether the medium-term initiatives that were either recommended in this paper or identified by GOI could be financed out of the resources projected to be available in the future. The assumptions on which that analysis was based have changed as a result of the economic decline, and the rupiah amounts in the cost projections below are no longer valid. Nevertheless, the estimates provide a historical snapshot of the country's fiscal situation immediately before the crisis and the steps that may be required to advance to the next stage in educational development. The estimates can also serve as a foundation for calculating the costs of a renewed expansion plan in the future, once the economy gains ground.

2. This analysis also emphasizes the critical need for Indonesia to prioritize its current investments in education. This need is much more important now than when this analysis was performed. The results of the exercise in this annex indicate that, even under favorable assumptions about GDP growth, there would not have been enough funds to achieve both nine years of quality basic education and the type of expansion in post-basic education that GOI was originally contemplating. Tighter priorities would have been needed even if the crisis had not occurred. The analysis concluded by proposing a strategy of focusing on high-priority activities designed to achieve quality basic education with a more gradual phasing in of post-basic expansion. Essentially this medium-term strategy remains the same today, just delayed. But in the immediate future, the government will have to prevent reversals rather than promoting expansion.

3. Below is the analysis conducted before the economic crisis.

### **A. PROJECTED COSTS**

4. Table 1 presents estimates of the costs of specific investments. These include costs of recommendations made in this paper as well as the costs of expansion in the post-basic sector that GOI would like to see take place. In this table we focus on those activities that have significant budgetary implications (some of the recommendations do not require more money). While certainly not comprehensive, most of the major initiatives are included in this table. The notable exception is the System Ganda (for which we were not able to obtain cost estimates). The assumptions underlying the projected costs are discussed below.

**Table 1: Estimated costs of specific investments**  
Rp billion (1996 prices)

	1997	1998	2000	2002	2004	2006	2008	2010
<b>Basic Level</b>								
Continuous teacher training	0	139	556	1,112	1,390	1,390	1,390	1,390
Matching grant	0	46	184	369	461	461	461	461
Performance-based grants at basic level	70	70	140	176	176	176	176	176
Increase in nonsalary expenditure for existing junior secondary schools	17	36	77	124	177	239	307	384
Expansion of junior secondary (with declining private share)	1,057	1,171	1,399	1,626	1,854	2,081	2,309	2,536
<b>Subtotal Basic</b>	<b>1,144</b>	<b>1,462</b>	<b>2,355</b>	<b>3,406</b>	<b>4,057</b>	<b>4,346</b>	<b>4,643</b>	<b>4,947</b>
<b>Post-Basic Level</b>								
Expansion of Senior Secondary	368	438	593	767	963	1,185	1,435	1,718
Expansion of Existing Universities	747	779	842	904	967	1,030	1,093	1,156
Expansion of Existing Polytechnics	182	186	192	198	204	210	216	223
Expansion of existing IKIPs & Art Institutes	10	11	13	15	17	18	20	22
Establishment of New Universities	0	0	16	16	297	32	313	113
Establishment of New Polytechnics	326	331	507	1,020	1,051	1,245	1,281	1,317
Performance Grants at Tertiary Level	70	84	98	112	112	112	112	112
<b>Subtotal Post-Basic</b>	<b>1,704</b>	<b>1,829</b>	<b>2,261</b>	<b>3,032</b>	<b>3,612</b>	<b>3,833</b>	<b>4,471</b>	<b>4,661</b>
Increase in wage bill (both levels)	316	656	1,417	2,280	3,255	4,371	5,617	7,013
<b>Total</b>	<b>3,165</b>	<b>3,947</b>	<b>6,033</b>	<b>8,719</b>	<b>10,924</b>	<b>12,550</b>	<b>14,730</b>	<b>16,621</b>

### Costs at the Basic Level

5. **Demographic Changes.** The cost of achieving nine years of quality education for all depends on the number of children who will be entering the system. Between the late 1960s and late 1980s, the Indonesian birthrate dropped from 43 to 28 per thousand, bringing a change in the age composition of the population. There are now proportionally far fewer people in the youngest age groups than there were 20 or even 10 years ago. After a peak in the number of 7-12 year olds in the population in 1991 at 27 million, the size of this age group dropped to 25 million in 1994 and is estimated to remain stable at this level until 2005, after which further declines are projected (Table 2).

6. The number of 7 year olds in the population has been steadily decreasing, by 7 percent between 1985 and 1990 and by 5 percent since then. This decline has begun to

affect the relevant age cohort for junior secondary (13-15 year olds) which is growing at 8 percent (1994) compared to 8.6 percent a few years earlier (1990). This age group peaked at approximately 13 million in 1995 and it is expected to stabilize at around 12 million (Table 2). The age groups for senior secondary and tertiary are projected to peak five years after that of junior secondary, that is, in the year 2000.

**Table 2: Indonesia school-age population projections, 1990-2015**  
(Million)

Year	Total Population	Primary (7-12)	Junior Secondary (13-15)	Senior Secondary (16-18)	Tertiary (19-24)	Total
1990	180.3	26.1	12.8	10.5	20.7	70.0
1995	195.7	25.4	12.9	12.1	23.9	74.3
2000	210.1	25.4	12.6	12.8	25.7	76.5
2005	222.9	25.4	12.7	12.6	25.1	75.8
2010	233.6	24.5	12.7	12.5	25.0	74.7
2015	241.9	23.6	12.1	12.6	25.2	73.5

Source: Census Data, Lembaga Demografi projections, FEUI (1990) from MOEC Web page ([www.PDK.GO.ID](http://www.PDK.GO.ID)).

7. **Continuous Teacher Training Program.** One of the recommendations of Chapter 3 is to expand the continuous teacher training program at the primary level (taking the most effective interventions of the PEQIP project). Table 3 illustrates roughly what the staff and costs would be for extending the cluster-based continuous training model pilot tested in the PEQIP project in a representative kabupaten with 50 schools per kecamatan and 20 kecamatan. Note that these costs would not include the required instructional materials, but these would be expected to be financed out of the recommended additional operating funds discussed below.

8. Assuming an administrative overhead of 10 percent, the cost of the continuous training program for a representative kabupaten would be roughly Rp 4.2 billion. The projected costs reported in Table 1 assume this program would be phased in over time, starting with 33 kabupaten in 1998 and extended to 66 in 1999, 132 in 2000, 198 in 2001, 264 in 2002 and 330 from 2003 until 2010.

9. **Matching Grant Program.** It would be possible to operate a matching grant program at virtually any scale and at both the primary and junior secondary levels. However, the projected costs reported in Table 1 are only for a program at the primary level. The projected costs reported in Table 1 assume that the average cost per kabupaten is Rp 1.4 billion per year, equivalent to the middle option of the three cases discussed in Chapter 3. Again, the assumption is that the program would be phased in over time, starting in 1998 and following the same pattern as for the continuous teacher training



program (although the kabupaten to be selected at each stage in the phased expansion need not be the same).

**Table 3: Resources required for a program of continuous teacher training (PEQIP model)**

Level	Staff required	Activities	Type and Amount of Cost	Number required at kabupaten level
School	All teachers (8 per school)	1. Teachers would attend weekly or biweekly meetings at inti school.	Transportation and meeting allowance (Rp 234,000 per teacher)	8,000 teachers
Cluster (8 schools per cluster)	8 pemandu (selected so there are 2 pemandus for each one of the four specialties)	1. Provide assistance to teachers in their own school in applying active teaching learning methods. 2. Assist tutors in training teachers as part of weekly or biweekly meetings at the inti school. 3. Some selected pemandu to participate in short provincial and/or national meetings to share experiences	Duty allowance, transportation and meeting allowance (Rp 1,170,000 per Pemandu)	1,000 Pemandus
Kecamatan (50 schools per kecamatan)	4 tutors, one in each of four specialties	1. Direct training of teachers during regularly scheduled weekly or biweekly meetings at inti schools. 2. Visit schools and conduct on-the-job training with teachers in their own schools. 3. Some tutors to participate in provincial and/or national meetings to share experiences.	Full salary, travel and meeting allowance. (Rp 4,680,000 per tutor)	80 tutors
Kabupaten (20 kecamatan per kabupaten)	4 trainers	1. Train tutors and pemandus from each kecamatan. Training to be conducted separately for each kecamatan and last for approximately 12 days 2. Accompany tutors during some of their visits to schools to conduct on-the-job training. 3. Participate in provincial or national meetings to share experiences.	Full salary and travel and meeting allowance. (Rp 117,000,000 per trainer)	4 required at kabupaten level

Source: Sweeting, 1997.

10. **Performance-Based Award Program at the Basic Level.** As with the matching grant program, it would be possible to operate a performance-based award program at different scales. Chapter 5 argued that the first two years of the program should be devoted to providing technical assistance to kabupaten to strengthen their ability to diagnose what their problems are and to devise solutions. For 1997 and 1998 an amount of Rp 70 billion is allocated for this purpose. By the third year, the program could begin to allocate performance-based awards. It was argued that the amount of funds at risk should be large enough to provide a strong incentive for the planners at the kabupaten level. Given that kabupaten currently receive an average of Rp 2.5 billion for nonsalary

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expenditures, if this were roughly doubled by adding a performance-based grant of Rp 2.3 billion per kabupaten this should be sufficient to change behavior. The projected costs in Table 1 assume that starting in 1999, awards of this amount would be made to 30 kabupaten. The projections assume this would rise to 40 kabupaten by 2000 and would equal 50 for 2001 through 2010.

11. **Increase in Nonsalary Costs at Junior Secondary Level.** In addition to the performance-based awards to kabupaten, Table 1 assumes that the amount of nonsalary expenditures that are directly allocated would increase at the same rate of growth as GDP.<sup>1</sup>

12. **Expansion of Junior Secondary.** As discussed in Chapter 4, the total cost of the expansion depends considerably on whether the private sector will continue to be an important provider. Table 4 presents the cost implications of three alternative scenarios, that is, universal junior secondary enrollment is achieved in year 2010 and:

- (a) the public/private share stays at its current 60/40 ratio (called the “constant ratio public/private” scenario);
- (b) private enrollment stays at its current 3.5 million/year (called the “constant number of private students” scenario);
- (c) private enrollment declines to the point where the public/private ratio in junior secondary reaches the level prevailing at the primary level today, 83 percent public (called the “declining private” scenario).

13. The constant public/private scenario implies an average annual increase of 240,000 students in the public school system (Table 4). Under the other two scenarios the annual increase would be 363,000 and 448,000 students. Development costs (building new schools) are estimated to be around Rp 2.1 million per additional student. In all scenarios it is assumed that the level of nonsalary expenditure would grow at a real rate of 6.5 percent a year (this is in addition to the expenditure on nonsalary items that might be financed out of the matching or competitive grants). This implies that the level of recurrent funding would increase steadily from its present level of Rp 257,000 per student/year to reach Rp 330,000 per student/per year by 2010. To be consistent, the level of recurrent funding for all existing junior secondary schools is assumed to follow the same pattern in all three scenarios.

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<sup>1</sup> In this example and in all subsequent references to predicted growth rates, we use the base case growth rate from the 1997 World Bank Country Economic Memorandum. For the 1997-2010 period the predicted average growth rate is 7 percent.

**Table 4: Path of public student enrollment ('000s)  
and costs of junior secondary expansion (Rp billion)**

	1997	1998	2000	2002	2004	2006	2008	2010
<b>Constant ratio public/private</b>								
Annual increase in students in public system	240	240	240	240	240	240	240	240
Cumulative increase in students	240	480	960	1,440	1,920	2,400	2,880	3,360
Total Cost	586.1	668.3	838.7	1,018.1	1,208.4	1,411.5	1,630.1	1,867.0
<b>Constant number of private students</b>								
Annual increase in students in public system	363	363	363	363	363	363	363	363
Cumulative increase in students	363	726	1,452	2,178	2,904	3,630	4,356	5,082
Total Cost	865.6	966.6	1,168.8	1,371.0	1,573.1	1,775.3	1,977.5	2,179.6
<b>Declining private</b>								
Annual increase in students in public system	448	448	448	448	448	448	448	448
Cumulative increase in students	448	896	1,792	2,688	3,584	4,480	5,376	6,272
Total Cost	1,057.3	1,171.0	1,398.6	1,626.1	1,853.6	2,081.2	2,308.7	2,536.2

14. To address credit market failures and enable expansion among the poor, it is assumed that the poorest 10 percent of additional students in excess of the current 7.5 million will receive a scholarship of Rp 211,000. Private schools are assumed to require an average annual subsidy of Rp 93,600 per student to help raise their quality and keep them sustainable. It is reasonable to plan for such public expenditure because alleviating supply constraints (e.g., building schools in rural areas) will not alone remove demand constraints (that is, other costs, including opportunity costs, of attending education).

#### **Post-Basic Level**

15. **Expansion of Senior Secondary.** In 1995 there were 1.43 million students enrolled in public senior secondary schools and 500,000 students enrolled in public senior vocational schools. The projected costs in Table 1 represent the costs associated with a growth of 7.5 percent per year for vocational enrollments and 5 percent per year for general enrollments. These are the targets set in Repelita VI and they are assumed to hold until 2010. Based on current spending patterns, the per student recurrent and development costs for general schools are estimated to be Rp 0.39 million and Rp 2.57 million. The

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recurrent and development costs are assumed to be 40 percent greater than they are in general schools.<sup>2</sup>

16. **Expansion of Universities.** The projected costs are based on plans discussed in DGHE (1996). By 2020, the existing 33 public universities are expected to grow by an additional 386,000 students. The total investment costs for this amount to an estimated \$6.6 billion (Rp 15,415.9 billion). We assume that 65 percent of the expansion would occur by the year 2010 and the expansion would occur at a steady rate of roughly 18,000 per year. The per student investment costs of Rp 39.9 million and per student public recurrent costs of Rp 1.75 million were taken from the aforementioned DGHE document.

17. In addition, DGHE expects there to be five new universities established by 2020, at a total investment cost of \$601 million (Rp 1,406.3 billion). Three universities are expected to be established by 2010. The average size of the universities is 9,000 students. The expected per student investment costs used in Table 1 are Rp 31.2 million. The same per student public recurrent cost of Rp 1.75 million is used.

18. **Expansion of Polytechnics.** As discussed in Chapter 6, DGHE is proposing a major increase in enrollments in polytechnics. In the 26 existing polytechnics, enrollments are expected to grow by an additional 38,000 students by 2020 at an investment cost of \$1,651 million (Rp 3,863.3 billion). As above, we assume 65 percent of the expansion will occur by 2010 and that the expansion would take place by adding a constant number of students (roughly 1,800) per year. The per student investment costs employed in Table 1 are Rp 101.7 million with the same per student public recurrent cost.

19. In addition, a total of 155 new polytechnics with enrollments of 220,000 students are expected to be established by 2020. The total investment cost for these polytechnics is estimated by DGHE at \$10,290 million (Rp 24,078.6 billion). Seventy-five of the polytechnics are expected to be established by 2010, yielding an increase of 110,025 students. The per student investment costs used for the projections are Rp 109.5 million, again with the same per student public recurrent cost.<sup>3</sup>

20. **Expansion of IKIPs and Art Institutes.** Finally, the DGHE estimates the IKIPs and Art Institutes to grow by 11,000 students by the year 2020 at a total investment cost of \$88 million (Rp 205.9 billion). The projected costs reported in Table 1 assume 65 percent of the growth would take place by 2010 and would proceed at a pace of roughly 500 students per year.

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<sup>2</sup> This assumption is based on the findings of Boediono et al (1994).

<sup>3</sup> The per unit investment costs are based on estimates from DGHE (1996). The relatively small differential between the investment costs of existing and new polytechnics may need to be reconsidered.

21. **Increase in Wage Bill.** There are several reasons why it is reasonable to project an increase in the real wage bill. First, the teaching force is aging and with greater seniority comes higher wages. Second, the various teacher upgrading programs taking place at all levels would be expected to lead to higher wages. Finally, if Indonesia is successful in maintaining high growth rates for fifteen years, it is likely that real wages would rise as well. If that occurs, it is highly unlikely that real wages for teachers would stay at their 1996 levels. For all of these reasons, the projections in Table 1 assume that the real wage bill would rise by half the rate of predicted GDP growth.

22. Without detailed knowledge about the age of the existing work force, it was necessary to make some assumptions to arrive at a base to be used for the projections. We used 1996 data from Table 7.1 (Chapter 7) on the SDO Guru SD expenditures as the estimate of the wage bill at the primary level, 80 percent of recurrent expenditures as an estimate of the wage bill at the junior secondary level and 70 percent of recurrent expenditures as an estimate of the wage bill at the senior secondary and tertiary levels. Wage increases were estimated for both existing teachers and those who would be hired with the expansion taking place at all but the primary level.

#### **B. PROJECTED AVAILABILITY OF RESOURCES**

23. The estimated costs of the specific investments should be compared with the likely path of the growth of the education budget. The key determinants of the path are the initial levels and trends of GDP, government expenditure and education expenditure. Our base figures of Rp 528,954 billion for GDP and Rp 93,466 billion for total government expenditure for 1996 are drawn from the 1997 World Bank Country Economic Memorandum (CEM). Our base figure of Rp 14,649 billion for public expenditure in education is taken from Table 7.1.

24. We consider three scenarios for the evolution of the total education budget. In all three the share of government expenditure as a percent of GDP is assumed to be the same and is fixed at 17.7 percent, the level predicted by the CEM.<sup>4</sup> The three scenarios are distinguished by the assumptions made about the rate of growth of GDP and the share of public educational expenditure in total government expenditure. Table 5 presents the evolution of real educational expenditure under the three assumptions, as well as the differences in assumptions. The base case uses the base case projections for GDP growth from the 1997 CEM and assumes that the share of educational expenditures stays at its current level of 15.7 percent. The low GDP scenario combines the CEM's low case scenario for GDP growth (an average of 5 percent) with the same assumption of constancy in the share of education expenditure relative to total public expenditure.

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<sup>4</sup> The 1997 CEM predicts that the share of government expenditure as a percent of GDP will remain constant up until 2005. We assume that the share remains constant for a further five years, up to 2010.

Finally, the third scenario combines the low case scenario for GDP growth with an increasing share of public education expenditure in total government expenditure. Note that increasing the share to 20 percent just about makes up for the difference in GDP growth between the base case and low GDP growth scenarios.

**Table 5: Projected evolution of public education expenditures**

	1997	1998	2000	2002	2004	2006	2008	2010
<b>Level of Public Educational Expenditure (Rp billion)</b>								
Base Case	15,792	17,023	19,783	22,925	26,493	30,587	35,183	40,319
Low GDP Case	15,601	16,459	18,094	19,712	21,568	23,778	26,216	28,903
Low GDP+Increasing Share of Education/ Public Expenditures Case	15,909	17,108	19,522	22,045	24,970	28,467	32,419	36,882
<b>Assumptions (Percentage)</b>								
Base Case:								
GDP Growth Rate	7.8	7.8	7.8	7.6	7.5	7.4	7.2	7.0
Education/Public Expenditures	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Education/GDP	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Low Case:								
GDP Growth Rate	6.5	5.5	4.7	4.25	4.7	5.0	5.0	5.0
Education/Public Expenditures	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Education/GDP	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Low GDP Plus Increasing Share of Education/Public Expenditures Case:								
GDP Growth Rate	6.5	5.5	4.7	4.25	4.7	5.0	5.0	5.0
Education/Public Expenditures	16.0	16.3	16.9	17.5	18.1	18.8	19.4	20.0
Education/GDP /a	2.82	2.88	2.99	3.10	3.21	3.32	3.43	3.53

/a The ratio of Education/GDP follows directly from assumptions made regarding education as a share of public expenditures and public expenditures as a share of GDP. In the other two scenarios the ratio of education expenditures to GDP would stay constant.

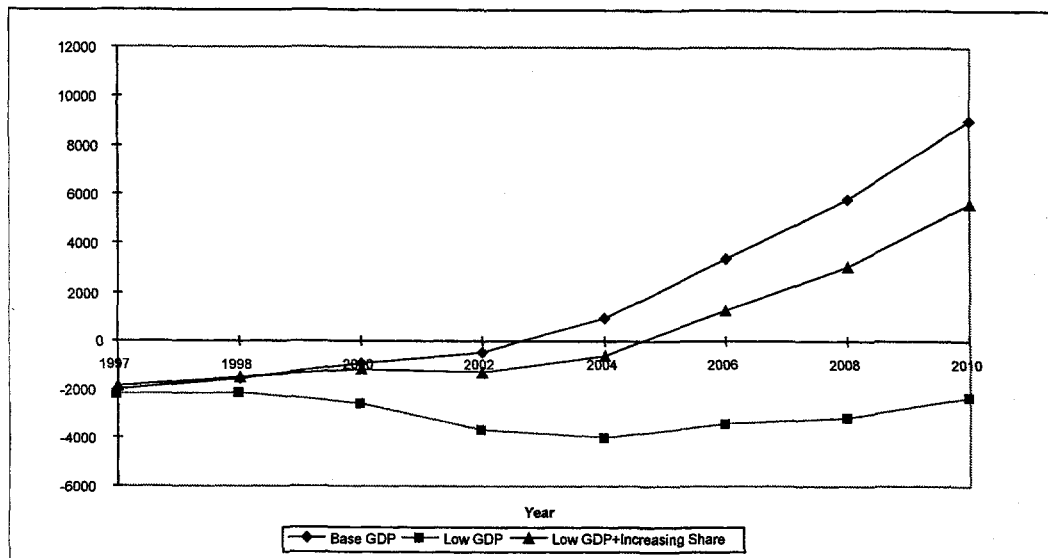
25. Under all three scenarios, the real education budget grows significantly. Even in the low case, the real educational budget would double in 15 years. In the high case, the real budget in 2010 would be 2.75 times what it was in 1995.

### C. PROJECTED SHORTFALL OF BUDGETARY RESOURCES

26. Figure 1 presents the projected shortfall of budgetary resources obtained by comparing the costs of the specific investments from Table 1 to the incremental education budget that is likely to be available. The increments are expressed relative to the 1996 total education budget. It is evident that, under all three scenarios of the growth of the

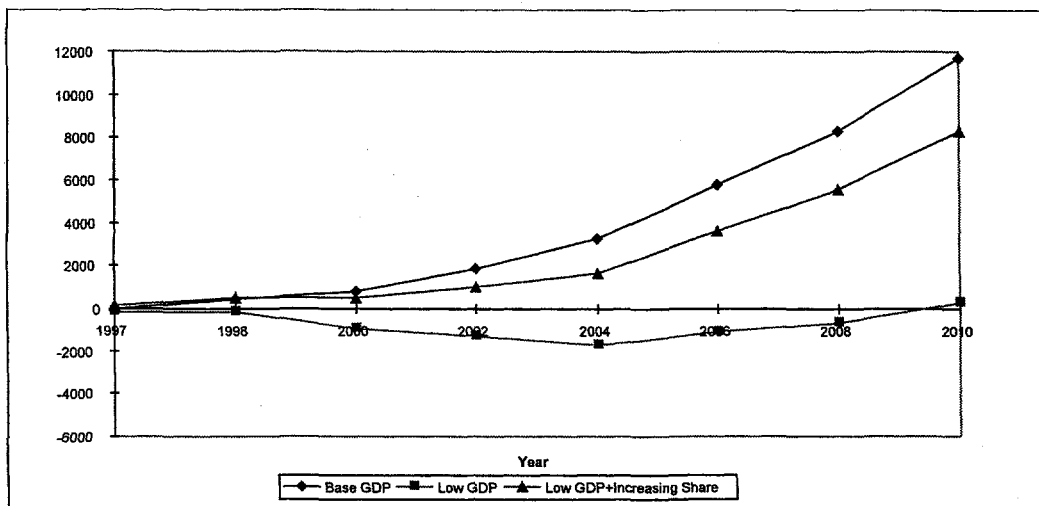
available budget, there would be a substantial budgetary shortfall in the initial years. This implies that it will be necessary to set tighter priorities.

**Figure 1: Budgetary imbalance for education investments before setting priorities**



Note: See Table 5 for assumptions related to three scenarios.

**Figure 2: Budgetary imbalance for education investments after setting priorities**



Note: See Table 5 for assumptions related to three scenarios.

27. Figure 2 presents the budgetary shortfalls after setting priorities. The investments related to expanding junior secondary schooling (but with encouragement for greater private participation) and improving quality of basic education (through continuous teacher training, matching grants, increases in nonsalary spending and performance

grants) would be retained. The major modifications to the investments described in Table 1 are:

- Limit growth rates in senior secondary for both general and vocational to 3 percent for three years. Thereafter, have public vocational grow at the same 5 percent rate as senior general;
- Phase-in expansion of existing universities to 20 percent of original target annual rate of for 1997-99, 50 percent of original target rate for 2000-02, 75 percent of original target rate for 2003-05 and 100 percent of the original target rate for 2006-10;
- Phase in expansion of existing polytechnics following the same pattern as for universities;
- Phase in the new polytechnics more slowly and reduce the total number constructed, with one polytechnic for 1998 and 1999 and three new polytechnics a year between 2000 and 2010; and
- Delay the wage increase by one year.

The reduction in costs that could be obtained from these modifications is presented in Table 6.

**Table 6: Savings from setting priorities**  
(Rp billion)

	1997	1998	2000	2002	2004	2006	2008	2010
<b>Costs before Setting Priorities</b>	3,165	3,947	6,033	8,719	10,924	12,550	14,730	16,621
<b>Savings from Setting Priorities</b>								
Keep same proportion private in JS	-471	-502	-557	-600	-630	-644	-638	-611
Reduce growth rate in senior secondary for a few years	-178	-218	-171	-217	-271	-337	-415	-508
Phase in expansion of existing univ	-598	-623	-449	-481	-317	-146	-146	-146
Phase in expansion of existing poly	-146	-149	-99	-102	-58	-14	-14	-14
Phase in new poly and reduce number	-326	-168	-13	-510	-525	-704	-725	-745
Delay wage increase by one year	-316	-335	-375	-419	-469	-524	-585	-653
<b>Total reductions</b>	<b>-2,035</b>	<b>-1,995</b>	<b>-1,662</b>	<b>-2,329</b>	<b>-2,270</b>	<b>-2,369</b>	<b>-2,523</b>	<b>-2,677</b>
<b>Costs After Setting Suggested Priorities</b>	<b>1,130</b>	<b>1,952</b>	<b>4,371</b>	<b>6,390</b>	<b>8,654</b>	<b>10,181</b>	<b>12,207</b>	<b>13,944</b>

28. Figure 2 illustrates that by making these modifications it would be possible to finance all of the high priority activities if GDP growth remains high. Provided the Government were to increase the share of education in total public expenditure, the high priority activities could still be financed if GDP turns out to grow at the low case scenario. In addition, realizing the potential efficiency gains identified in the previous chapters would also contribute to financing these high priority activities.



29. In conclusion, while the high priority investments are substantial compared to the current budget, they are feasible provided: (a) the initiatives are phased in over time; (b) the Government adopts some of the lower-cost options in expanding universal basic education; and (c) there is strong growth in the education budget. This strategy should enable Indonesia to achieve substantial improvement in its educational system and better prepare the country and its young people for the next century.

**ANNEX 7.3: 1998/99 EDUCATION BUDGET****(June Program)****(Rp million)**

	Rp	Loan	Total
Education, Culture, Youth and Sports			
Basic	1,278	770	2,048
Secondary	294	438	732
Higher	933	644	1,577
E & C Staff Development	93	76	169
Operations and Maintenance	469	---	469
Nonformal	114	15	129
Culture and Belief	54	---	54
Youth and Sport	41	---	41
<b>Total Sector II</b>	<b>3,276</b>	<b>1,943/a</b>	<b>5,219</b>
Memo item (included in above total)			
Scholarships/grant (SD, SLTP, SMA, Tertiary)	840	584	1424
INPRES			
Inpres SD	575	---	575
Inpres Dati II (rehabilitation of SD)	852	---	852
<b>Total Inpres</b>	<b>1,427</b>	<b>---</b>	<b>1,427</b>
Ministry of Religious Affairs			
Basic Education	94	66	160
Secondary	40	95	135
Tertiary	79	5	84
<b>Total</b>	<b>213</b>	<b>166</b>	<b>379</b>

/a Includes committed bilateral projects planned to be implemented in fiscal year 1998/99.

Source: BAPPENAS.



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