"kabupaten courses", which are exactly the same as the BIC course, at the four remaining desas in the kabupaten. After the course, actual rehabilitation work and on-the-job training take place, being supervised by the two STM graduates, the two carpenters, and the desa head for about six months depending on projects and the desa situation. Also, two BIC staff members come to the desa every other month and stay for five days per one visit for inspection.

10.055 In a typical desa, which has a population of 2,700 persons on the average, there are usually one or two carpenters and about five brick layers. However, according to housing officials of the Province, some desas have many of them and others have none of them. In the latter case, introduction of carpentry and brick laying skills is the first task for the improvement of rural housing. Thus, the benefits obtained appears to be greater when BIC activities are directed to those desas which have no carpenter or brick layer.

10.056 BIC is in a good position in developing such skills as low cost construction methods and methods of utilizing local construction materials. There have been some efforts in this direction by BIC. For example, in Kecamatan Sigalu, Banjarnegara, Tres Soil Cement (local name) was utilized for the program. Tres Soil without being burnt can be mixed with limestone powder and become a kind of cement for construction, and can also be used as wall brick by being cast in a form with pressure and being sun-dried. This is utilized for housing rehabilitation. This avenue of BIC activities is promising and, therefore, should be given greater attention.

10.2.4 Housing Finance

10.057 Since public housing programs are still at an early stage of development, and since the public housing programs have to compete with such productive sectors as industrial development for the scarce financial resources, massive provision of housing units through public housing programs can not be expected for some time. In addition, the present public housing programs are not capable of solving most of urban housing problems as seen in Section 10.3.2. Therefore, most of housing needs in urban areas must be satisfied by private construction activities of individual persons or developers. To facilitate these private initiatives, the governmental should look into the possibility of assisting in housing finance.

10.058 Housing finance institutions in Indonesia are not well developed. The shortage of mortgage funds for housing construction is a major constraint. There are two aspects of this shortage of mortgage funds: (1) the underdevelopment of mortgage institutions, and (2) the shortage of mortgage funds itself. Among them, the lack of the financial institutions providing housing mortgages is a more fundamental constraint than the shortage of mortgage funds. National banks do not offer loans for real estate development, private banks offer loans only to real

estate developers, and private money lenders offer housing loans at very high interest rates. Consequently, the supply of housing is limited to the high income group, and this could mean that housing units provided for low income households are taken by higher income families. But there seems to be a large demand for housing loans by the middle income group at reasonable interest rates.

10.059 In 1975, the Government established the Housing Mortgage Bank (HMB) for providing mortgages to middle income families. But it seems that the HMB has never been made operative and the Governmental policy has been shifted from dependence on HMB to the utilization of the existing National Savings Bank (NSB) for the purpose of housing finance. However, NSB has not started operations in the field of housing finance. It is strongly recommended that the institutional jurisdiction for housing finance be promptly settled so that early operation may be attained.

10.060 With respect to the mortgage fund shortage, development of financial intermediaries such as life insurance companies or savings and loan banks would be helpful but can hardly be expected at this moment. Another useful instrument to facilitate increasing lending for housing is a mortgage insurance institution. This is a required institution for channeling funds from private bankds in a large scale. For the moment, however, public funds should be utilized for housing finance and the real choice is to use funds through PERUMNAS for direct construction, through HMB or NSB for lending or in some mixture of these.

10.061 As for the terms of lending, the Central Government plans to offer loans for housing both to private developers and individuals at 12 percent interest rate per year and 15 years repayment period. Since the market rate of national banks' lending is at least 2 percent per month and the market rate of private banks' lending is about 2.5 percent per month, this Governmental plan means a substantial interest subsidy by the Government to loan recipients. If this program attracts middle income families, this would be a serious challenge to the low cost housing program by PERUMNAS, as both are involved in the same degree of interest subsidy but the Government can avoid in the case of the lending program a number of serious problems such as construction and marketing.

10.2.5 Recommendations

(a) Housing Finance

10.062 Despite great expectation by some, most housing needs in urban areas must be met by private initiatives. Due to social significance of promoting housing ownership, private housing construction and ownership should be assisted by the Government through the development of housing finance. At the moment, the Housing Mortgage Bank and the National Savings Bank are considered to be candidates to start

providing mortgage finance at a subsidized interest rate. An early decision is strongly recommended so that operations can be started.

10.063 Another useful instrument to facilitate increasing housing lending is a mortgage insurance institution. Establishment of this institution deserves serious consideration among housing policy makers.

(b) Kampung Improvement Program

10.064 Since there are communities which need environmental upgrading and KIP is a feasible, cheap program for upgrading existing low quality residential areas, it is recommended to apply this program to the needy cities in Central Java. With respect to cities for KIP projects, Semarang and Surakarta are considered to be the first cities which should receive a program.

10.065 Despite general feasibility of this program, no specific study for KIP has been completed for Semarang or Surakarta. Although six other cities in the Province have been surveyed for possible KIP projects by an expatriate consulting firm, i.e., Cilacap, Pekalongan, Purwokerto, Kebumen, Jepara, and Kudus, no specific project has been developed as yet.

10.066 Probably the required first step is to assist a city in undertaking a project development study to select and develop plans for several kampungs for early implementation. For example, the city of Semarang is already committed to the upgrading of Kampung Karangkidul, and this can be one of the first projects which should receive technical as well as financial assistance from the Central Government. Early actions are warranted in this field. Also, in order to recover the development cost, reassessment of land value should be undertaken soon after completion of projects. This is also needed for maintaining fairness in tax collection.

10.067 The utilization of Gotong Royong will certainly reduce the cost of the project and should be done to the fullest extent possible.

(c) Site and Services Program

10.068 Since the target income group of this program comprises most of the population in need of housing, and this program is the cheapest program among the alternatives for providing new housing, it should become the principal component of the public housing program in Central Java.

10.069 This program is much less expensive than the low cost housing program but is still too expensive to the low income families. Therefore, it is recommended that cheaper versions of the site and services program should be devised for implementation in the Province. Every effort to reduce the development cost should be taken, for example, sites without core house, communal water and toilet, a site smaller than 80 sq. meters, gravel road, and reduced land area for public spaces such as road or playgrounds. Among these measures,

reduction of the unit site area would be the most effective measure to reduce the charge to a family. For all other aspects except the site area it may be possible to reduce the development cost as much as 25 percent, and the site area can be reduced down to 60 sq. meters which means 25 percent reduction. Thus the cost charged to a family served can be reduced by as much as 44 percent. Based on this, the monthly installment for a family will be Rp.2,813 per month, and the minimum income required to pay the installment will be Rp.14,063 per month. Also, the development cost in Semarang or Tegal will be cheaper than the cost in Jakarta by at least 10 percent. Then the minimum income required will be Rp.12,656 per month. This is fairly close to the bottom income of the target population having income from Rp.10,000 to Rp.30,000 per month. Based on those assumptions, the development cost per unit becomes 49.4 percent less than the case in Jakarta which is Rp.339,020 at 1976 prices.

10.070 As compared with the average population growth rate of Central Java estimated by the Study team, which is roughly 1.7 percent per year from 1976 to 1983, the growth rates of Semarang and Tegal are fairly high. To meet this rapid urban population growth, the first priority in site and services projects should be given to Semarang and Tegal. Also, Surakarta has already been allocated a site and service project. Although we need to develop sites and services projects in these cities, high price of urban land is a crucial problem. In this connection, early procurement of land for projects in well advance should be considered within the capacity of executing agencies.

10.071 For large cities such as Semarang, in order to cope with the expected rapid urban growth, housing sites should be developed in concurrence with actual inflow of people. As for Semarang, assuming that about 70 percent of the necessary units is provided by individual efforts, that about the half of needs are of the families having the income making them eligible for a site and services program, the site and services lots requried are about 820 units per year. Thus Semarang alone needs more than 800 site and services lots per year.

10.072 Such site development should be undertaken by taking into consideration other related land uses such as industry, commerce and transportation.

(d) Low Cost Housing Program

10.073 The current low cost housing program of PERUMNAS is too expensive for most low income groups and even for moderate income groups in the Province. Of course other factors such as environmental well being of a city should be taken into account in evaluating a housing program, but still income is the most important one. Therefore, no low cost housing project is recommended in the Province. To meet urban housing needs, the kampung improvement program and the revised site and services program are recommended instead.

(e) Rural Housing Program

10.074 The rural housing program, although the budget is small, seems working well. For example, in Kecamatan Sigalu in Banjarnegara,

several desas have started their own rural housing program by utilizing a "yayasan" system after examining a desa which already experienced the rural housing project. It is having a demonstration effect, and further expansion of this program would be warranted.

10.075 In order to spread the demonstration effect of the rural housing projects in Central Java, at least one project per kecamatan is required since most villagers do not frequently go beyond their kecamatan boundary . This target should be achieved by the end of Repelita III, that is 1983.

10.076 As to program components, the unit cost of the model duplex housing is 16 times the cost of housing rehabilitation, but the completed units by these two programs do not show any large difference between them. Therefore, the housing rehabilitation rather than the model housing should be expanded in the rural housing program.

10.077 As well as the housing rehabilitation, improvements of environmental sanitation such as by the provision of public toilets and storm drainage, separation of animals from human quarters, and improvement of kitchens should be given priority within the rural housing program. As for water supply the INPRES/Health program also has water supply components. It has a larger fund and a greater variety of water supply projects than the rural housing program. Therefore, functional specialization should be established between them. It is recommended that the INPRES/Health program should cover water supply projects and the rural housing program should be confined to sanitation projects including water supply for communal toilets and bathing places (unit MCK) as well as individual toilets. The first step which should be taken in this respect is a survey on the water and toilet situation of all desas in Central Java, in order to identify the type, quantity and locations of toilets which should be provided on the priority basis.

10.078 Although the prevalence of non-permanent houses may not be the only criterion for measuring the need for housing improvement, and other factors should also be used for allocating the projects, there is little indication that the allocation was made on the basis of systematic criteria. At least, three criteria should be considered for allocation: (1) low quality of the present housing stock, (2) the prospect for improvement and (3) achievement of the area in some development fields not necessarily in housing. The last criterion is to use RHP as a reward for general development efforts by geographic unit. As far as the housing condition is used as a criterion the following areas should receive priority in receiving Swakarya and Swadaya projects: KBs Sragen, Pekalongan, Jepara, Kudus, Demak, and Pati.

10.079 Some desas have many carpenters and brick layers but others have none of them. In the latter case, introduction of carpentry and brick laying skills is the first task for the improvement of rural

housing. Thus, the benefits obtained appear to be greater when BIC activities are directed to those desas which have no carpenters or brick layers.

10.080 BIC is in a good position in developing such skills as low cost construction methods and methods of utilizing local construction materials. This avenue of BIC activities is promising and therefore should be given greater attention. In addition, improvement of interinsular transportation for easier importation of timber from outer islands should be promoted.

(f) Budget for Revised Site & Services Projects

10.081 Table 10.16 presents the estimated annual development expenditure for the revised site and services projects in Central Java. Eligible families are defined as households having income from Rp.12,600 to Rp.50,000 per month in 1976 based on the calculation in the previous paragraph. Also, households designated for LCH projects are included in the eligible families, since LCH is not recommended. Figure 10.2 presents the estimated distribution of incremental households by monthly income in Semarang and estimation of share of the eligible households within total incremental households, which is 54 percent.[12/] Thus about 54 percent of incremental households will be eligible for revised site and services projects. It is assumed that about 70 percent of eligible families will obtain their house by their own efforts. As a result, every year from 1976 to 1983, about 1,053 lots have to be developed by the revised site and services projects, and it requires about Rp.393 million per year at the 1976 constant prices.

10.3 Health Facilities

10.3.1 General

10.082 Health conditions in Central Java have been substantially upgraded principally by the development of Public Health Centers (Puskesmas or PKM) financed by the INPRES/Health program. But there are still many patients who cannot obtain health services, and infectious diseases are still rampant. Also, family planning extension services need Public Health Centers as their base for operation.

12/ In constructing Figure 10.2, the average household's income in Semarang is assumed to be about 70 percent of the one in Jakarta. Reasons are: (1) the per capita GDP of Central Java is about 55 percent of the national per capita GDP; (2) the per capita GDP of Semarang is about 42 percent of that of Jakarta in 1973 as based on a financial expert's estimation of the Study team; but (3) since most major industries in Indonesia are concentrated in DKI Jakarta, the difference in household income between Semarang and Jakarta will not be so wide as the difference in GDP.

Table 10.16 Estimated Annual Development Expenditure of Revised Site and Services Projects in Central Java at the 1976 Constant Price

Central Java, 1976-1983

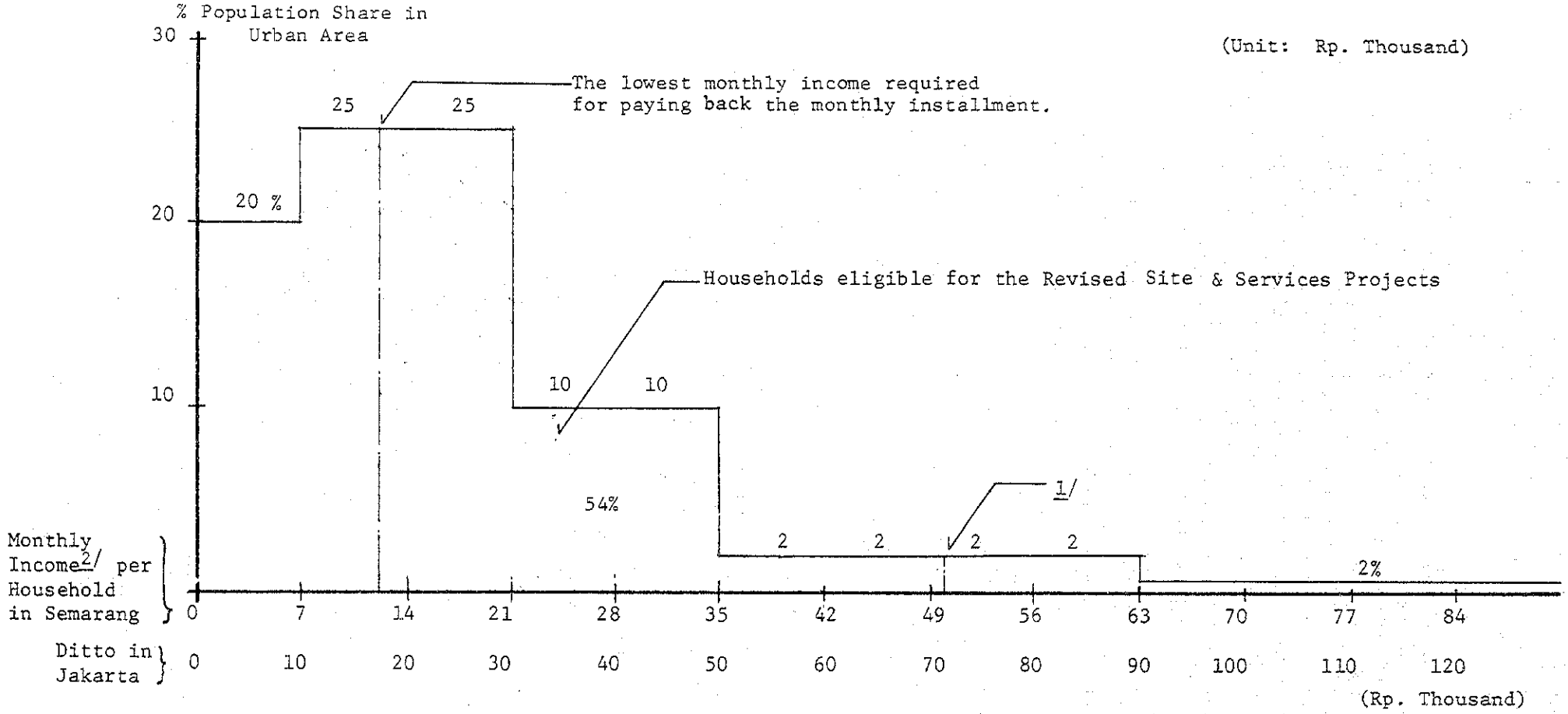
	Estimated Population in 1976	Estimated Population in 1983	Annual Population Growth 1976-1983	Persons per House-hold	Annual Household Increase 1976-1983	Share of Eligible Households (Income: Rp.12,656 -Rp.50,000) [1/]	Number of Eligible Households	Construction by Private Efforts [2/]	Units by Revised Sites & Services Projects	Unit Cost $Rp.10^3$	Total Annual Cost $Rp.10^6$
KDY Semarang	746,467	923,706	25,320	5	5,064	54%	2,735	70%	821	373	306
KDY Surakarta	430,756	457,633	3,840	5	768	54%	415	70%	125	373	47
KDY Tegal	119,567	142,695	3,304	5	661	54%	357	70%	107	373	40
Total	-	-	-	-	-	-	-	-	1,053	-	393

Notes: 1/ Source: Figure 10.2.
Since LCH is not recommended, the households designated for L.C.H. are also included in the target households.

2/ The Study team's assumption.

Source: Estimation by the Study team. Population estimation is from Table B.16 in Appendix B.

Figure 10.2 Estimated Distribution of Households by Monthly Income in Semarang, 1976



Note: 1/ Since LCH is not recommended, the households designated for LCH are also included in the target households of the Revised S & S projects.
2/ Income scale in Semarang is estimated based on the assumption that average HH income in Semarang is about the 70% of the one in Jakarta.

Source: Table 10.1.

10.083 According to health officials in Central Java and Jakarta, infectious diseases which are prevalent in Central Java are cholera, tuberculosis, malaria, and dengue fever, and parasitic diseases. Also in some kabupatens, there are typhoid, dysentery, hepatitis, diphteria, and leprosy.[13/] Major causes of this situation are considered to be low levels of environmental sanitation, delays in treatment, insufficient preventive measures and insufficient health facilities. Therefore, improvements in environmental sanitation, health extension services, and health facilities are necessary. The environmental sanitation is discussed in Section 9.3 Water and Sanitation of this chapter. Below, our attention will be given mainly to physical facilities for the delivery of health care.

10.084 Health facilities in Indonesia basically consists of two levels: hospitals in kabupaten centers or large cities and Public Health Centers in kecamatan centers. Also, under the authority of PKM, there are several types of clinics, which will eventually be transformed into PKM or sub-PKM.

10.085 Table 10.17 presents the average numbers of health facilities and health care personnel per million persons in Central Java relative to those in the nation. From the table it is observable that Central Java is generally lagging behind the national average in the level of health services. Particularly, the number of doctors and of hospitals are low, at about half of the national average. However, in comparing these indicators, the high density of Central Java should be taken into account.

10.086 If the number of doctors per one million persons in Central Java is compared with those of East Java and West Java, they are 22, 36, and 27 doctors respectively. This suggests that, even compared to the provinces in Java and Madura which are supposed to have almost the same population density, Central Java is lagging.

10.3.2 Hospitals

10.087 According to national policy, hospitals are to be allocated one per kabupaten, and their major functions are to become the base-camps for health service distribution and to provide specialized services to Public Health Centers (PKMs) and kabupaten populations, while the PKMs' major functions are to become front line units giving primary care to patients and providing general services to kecamatan populations.

10.088 There are three kinds of public hospitals from the administrative point of view: national, provincial, and kabupaten hospitals. In Central Java, national hospitals are in Semarang and Klaten, provincial hospitals are in Surakarta and Purwokerto, and kabupaten hospitals are in kabupatens. There were 48 kabupaten hospitals in 35 KB/KDYs and 492 PKMs in 492 kecamatans in 1976.

13/ Source: BAPPEDA, Jawa Tengah Dalam Angka, 1973-1975, 1976.

Table 10.17 Basic Indicators of Health Service

Central Java, Indonesia, 1972 and 1973

(Unit: One per Million Persons)

	Hospital					Center	Clinics		Health Personnel		
	Central Hospital (RSUP)	Public H. (RSU)	Other H.	Total H. (RS)	Hospital Beds Available	Public Helath Center (Puskesmas)	General Clinic (BP Umum)	Mother & Children Health Clinic (BKIA)	Physicians 1/	Nurses 1/	Midwives 1/
Central Java (Per Million Persons)	0.09	2.0	1.2	3.3	461	17	48	43	22	90	57
Indonesia (Per Million Persons)	0.07	4.8	2.5	7.4	635	19	57	53	42	142	76

Note: 1/ Source: Ministry of Health, Accomplishment of Health Development Programs During the First Five Year Development Plan, 1969/70-1973/74, Jakarta, 1976, Table 3.2.2.

Source: BPS, Statistical Pocketbook Indonesia, 1974/75, Data is in 1973/74. Data were calculated by dividing members by populations 22,574,509 (CJ) and 126,088,000 (TI).

10.089 Table 10.18.a presents geographic distribution of hospitals, hospital beds, PKMs, and health care personnel in 1976. One thing clear from the entire table is that there are wide disparities between the urban area and the rural area. About 35 percent of hospitals and 49 percent of available beds are in kotamadyas which account for only 6.7 percent of the total population in Central Java in 1976. With respect to kabupatens, basically there is one or two public hospitals in each kabupaten, and there is a fairly even distribution, which exactly follows the national policy.

10.090 Public hospitals in Indonesia are classified into four grades according to the levels of their facility as follows:

Four Grades of Public Hospitals

A. First Level	More than 1,000 beds	With well-experienced specialists in each medical section
B. Second Level	800 to 1,000 beds	With one specialist in each medical section
C. Third Level	200 to 400 beds	With four specialists one in each section of surgery, obstetrics and gynecology, pediatrics, and internal medicine
D. Fourth Level	Less than 200 beds	

Source: Kanwil Health, Central Java, 1977.

In Central Java in 1976, there was no grade A hospital, one grade B hospital which is the national hospital in Semarang, three grade C hospitals which are the national hospital in Klaten and the two provincial hospitals, and many grade D hospitals. Figure 10.3 presents the location of those existing hospitals and the grade D hospitals planned by Kanwil Health to be upgraded to level C by the end of Repelita II.

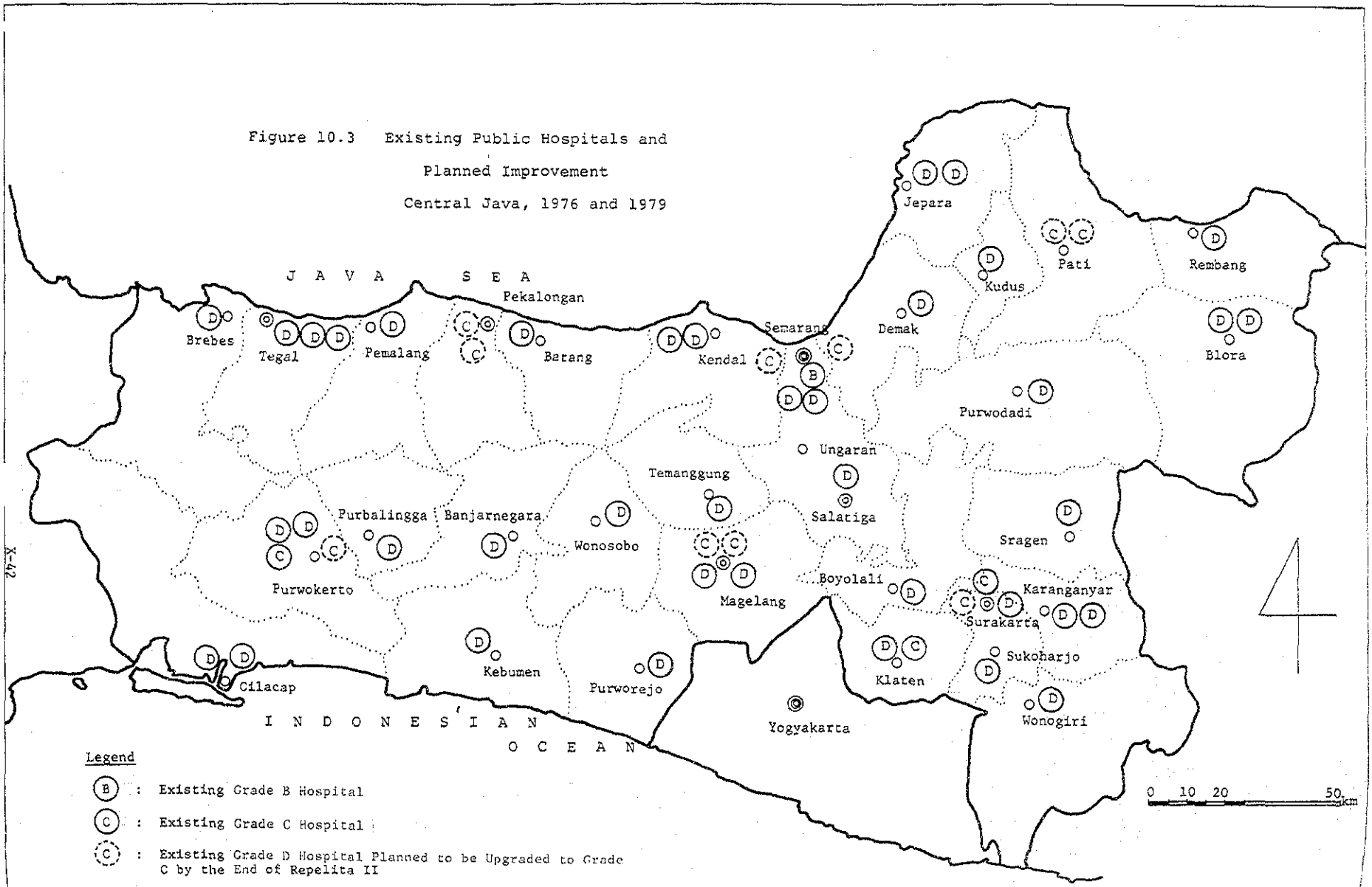
Table 10.15.c Number of General Clinics, Public Health Centers, Hospitals, Hospital Beds, and Medical Personnels by KB/KDY
Central Java, 1976

		Number of Kecamatan	General[1] Clinic	Public Health Center	Hospital[2]			Hospital Bed	Physicians	Nurse	Ass. Nurse	Midwife	Ass. Midwife	Dentist
					Public	Private	Total							
1.	KDY Magelang	2	6	2	3	-	3	833	23	3	-	10	1	2
2.	KDY Surakarta	5	70	5	3	3	6	1,284	67	48	29	33	5	9
3.	KDY Selatiga	1	5	1	2	-	2	218	6	25	27	7	1	2
4.	KDY Semarang	5	111	5	3	11	14	2,010	239	841	359	314	28	27
5.	KDY Pekalongan	2	11	2	-	1	1	nd	10	14	32	20	12	3
6.	KDY Tegal	2	12	2	1	1	2	169	16	33	43	32	3	6
7.	KB Cilacap	17	26	17	2	-	2	256	12	30	12	37	2	2
8.	KB Banyumas	24	41	24	4	1	5	542	22	70	37	94	1	5
9.	KB Purbalingga	13	-	13	1	-	1	150	7	20	28	28	6	1
10.	KB Banjarnegara	18	84	18	1	-	1	56	8	24	22	39	2	2
11.	KB Kebumen	22	30	22	1	3	4	193	12	40	35	40	2	1
12.	KB Purworejo	16	48	16	1	2	3	217	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
13.	KB Wonosobo	13	27	13	1	-	1	110	6	28	8	35	2	1
14.	KB Magelang	21	34	21	1	-	1	60	8	54	7	28	2	2
15.	KB Boyolali	19	34	19	1	-	1	70	11	24	17	35	23	2
16.	KB Klaten	23	50	23	2	-	2	415	20	50	23	103	7	3
17.	KB Sukoharjo	12	34	12	1	-	1	54	8	16	3	30	3	2
18.	KB Wonogiri	22	39	22	1	-	1	61	7	23	10	37	10	1
19.	KB Karanganyar	17	31	17	2	-	2	80	8	14	3	35	11	1
20.	KB Sragen	20	32	20	1	-	1	73	11	41	5	39	13	2
21.	KB Grobogan	18	32	18	1	-	1	106	9	35	19	34	4	1
22.	KB Blora	14	27	14	2	1	3	285	8	40	59	33	17	2
23.	KB Rembang	14	27	14	1	-	1	100	5	29	23	30	10	3
24.	KB Pati	20	55	20	1	1	2	150	15	43	48	37	6	2
25.	KB Kudus	9	37	9	1	1	2	225	10	29	49	23	3	2
26.	KB Jepara	10	27	10	2	-	2	440	9	28	21	26	3	1
27.	KB Demak	14	30	14	1	-	1	43	7	20	9	24	7	1
28.	KB Semarang	15	45	15	2	-	2	150	10	34	36	33	4	2
29.	KB Temanggung	12	26	12	1	2	3	176	3	30	11	28	4	2
30.	KB Kendal	17	16	17	2	-	2	137	8	34	9	33	3	2
31.	KB Batang	12	23	18	1	-	1	43	4	17	-	27	13	1
32.	KB Pekalongan	16	36	16	1	1	2	143	12	20	10	38	23	-
33.	KB Pemalang	13	27	13	1	-	1	80	7	27	26	37	14	2
34.	KB Tegal	18	44	12	2	1	3	287	13	40	37	31	8	3
35.	KB Brebes	16	34	16	1	-	1	46	8	29	5	32	10	3
	Total	492	1,211	492	52	29	81	9,226	629	1,853	1,062	1,462	263	101
									← (Excluding KB Purworejo) →					

Notes: n.a. stands for no data.
1/ BAPPEDA, Jawa Tengah Dalam Anggka 1973-75, 1976
2/ Hospitals include general and special.

Source: Social Section, BAPPEDA, Jateng.

Figure 10.3 Existing Public Hospitals and Planned Improvement Central Java, 1976 and 1979



Legend

(B) : Existing Grade B Hospital

(C) : Existing Grade C Hospital

(C) : Existing Grade D Hospital Planned to be Upgraded to Grade C by the End of Repelita II

(D) : Existing Grade D Hospital

Source: Kanwil Kesehatan, Table 10.18.a.

10.091 All kabupaten hospitals are in grade D, and most of them are suffering from shortages of doctors, equipments, and medicines. In most cases, a kabupaten hospital has only one or two general doctors, and has no specialists. A hospital which is supposed to be a base camp of medical services for about 686,000 population, that is the average kabupaten population, should have specialists at least in its major medical sections: internal medicine, surgery, obstetrics and gynecology, and pediatrics. It means that a kabupaten hospital should be a grade C hospital, but 200 to 400 beds for four doctors seems to be too many. For example, there were about 15 beds per one doctor in Central Java in 1976 and also 15 beds per doctor in Indonesia in 1972. So, the number of beds required for a grade C hospital might be better reduced if the situation permits. Thus it is recommended to upgrade at least one kabupaten hospital per kabupaten up to grade C and to reduce the number of beds required for a grade C hospital by the end of Repelita III.

10.092 Kanwil Health has a plan to improve 10 grade D hospitals to grade C by the end of Repelita II. Its objective is to provide two grade C hospitals for one karesidenan center (that is district center of which there are 6 in the Province). This plan seems to be reasonable except for the idea of two hospitals. It is better to increase grade C hospitals by constructing them in many parts of the Province rather than to concentrate them in a limited number of cities. Thus, it is recommended that four grade D hospitals in Pekalongan, Magelang, Pati, and Semarang be upgraded to grade C by the end of Repelita II as the first step in the upgrading of kabupaten hospitals in all kabupatens by the end of Repelita III.

10.093 Utilization of karesidenans as geographic units to deliver public service seems to be useful. In terms of health service hierarchy, karesidenans can be an intermediate service level between Semarang as the Provincial center and kabupatens as local health centers, and can be appropriate points for delivery of higher quality medical services. Semarang is too far from some remote kabupatens. So, it is recommended to upgrade existing two provincial hospitals in Surakarta and Purwokerto to grade B by the end of Repelita III in order that people in remote kabupatens can have higher quality health services.

10.094 At the same time, the shortage of medical equipment, especially operation and laboratory equipment, and of medicines, should be eased. The main point is that upgrading of existing hospitals by increasing the supply of doctors, equipment, and medicines is necessary, rather than establishing new hospitals.

10.3.3 Public Health Centers

10.095 As mentioned in previous section, the major functions of Public Health Centers (PKMs) are to become front line units giving primary care to patients in kecamatans and to give out-patient rather

than in-patient treatment. A Public Health Center is a mother unit under which there are polyclinics and mother and child health clinics (MCH clinics including family planning activities). The activities of the unit including polyclinics extend to curative treatment, preventive measures such as communicable disease control and sanitation, school health service, public health education, and simple laboratory examinations.

10.096 Establishment of health centers started before Repelita I, and efforts were intensified by INPRES/Health which started in 1974/75. In Repelita II, health center is called Public Health Center (PKM). The polyclinic is the smallest health unit in the front line to provide primary and simple treatment. During Repelita II there will be no new additions in terms of numbers, and the existing ones will be integrated into PKMs. The target population of MCH clinics is pregnant and nursing mothers, infants, and preschool children.

10.097 Table 10.18 presents geographic distribution of Public Health Centers and general polyclinics in Central Java in 1976. Public Health Centers show a quite different distribution from hospitals and doctors. The number of PKMs is exactly the same as the number of kecamatans in a kabupaten, which means that there is one PKM per each kecamatan. In terms of the number of PKM per kecamatan, it is a perfectly equal distribution, but in terms of population and areas covered PKMs are not equally distributed. For example, the average population of a kecamatan in KDY Semarang was 140 thousands and the one in KB Karanganyar is 31 thousands in 1974. As for the area covered, the coverage difference is more wide. For example, the average area of a kecamatan in KB Blora is 130 sq. km and the one in KDY Tegal is only 6 sq. km (the average area per kecamatan in Central Java is 70 sq. km).

10.098 In order to estimate the needs for Public Health Centers (PKMs) the area coverage is a crucial factor as well as the population coverage. According to Kanwil Health, the maximum distance which rural people will travel to a PKM is 5 km. Based on the 5 km assumption, the maximum coverage area of one PKM will be about 78 sq. km. Since the average size of a kecamatan is about 70 sq. km, the required number of PKMs is less than one PKM per average kecamatan. This will be the minimum target. However, 5 km seems to be a little high as an estimation, for 5 km is the distance people travel to hospitals instead of PKMs according to other data.[14/]

14/ There is other data on distance for people to come to health facilities. It is an utilization study of three kabupaten level hospitals in East Java (2 hospitals) and South Sulawesi (1 hospital) in 1970. The result showed that 71 to 75 percent of patients comes from a radius of 5 km from the hospitals. However, it has to be remembered that this is a datum on hospitals and in 1970. The source of data is: Soetopo, Hospital Utilization Study in Indonesia, National Institute of Public Health, Surabaya, 1973.

10.099 There is another target based on population coverage. Since the national target of Repelita II for PKM, which is one PKM per kecamatan, has been already achieved, health officials at the Central Government are considering the next target, based on population, that is one PKM or any kind of health service post per 30,000 population. Since the average population of a kecamatan in Central Java in 1976 is about 50,000, the required number of PKM per average kecamatan is 1.7 PKMs. This 30,000 population target was originally prepared for the Repelita II, but it is not likely that this target will be achieved by the end of Repelita II. Bearing these two targets in mind, it is recommended that at least one PKM per 30,000 persons be achieved by the end of Repelita III instead of Repelita II. In achieving this target, several ways can be utilized such as upgrading existing polyclinics, rehabilitating old health centers, and new construciton.

10.100 In allocation, new PKMs should go first to the rural area, because the urban area is served by hospitals. Also, kecamatans with a large area should receive more PKMs than the others so that services can be within the reach of people living in remote desas.

10.101 According to health officials in Central Java, low coverage of rural population by health service from PKMs still exists because of (1) inadequacy of technology used, (2) high price, (3) poor access, and (4) low awareness of importance of health among rural people. To solve this low coverage and to meet the health demand of rural population, Central Java has launched a new health program called Rural Community Health Care Activities (PKMD: Pembangunan Kesehatan Masyarakat Desa) from 1974 as an experiment. Objectives and major characteristics of PKMD are:

(1) being based on selfhelp operation of a rural community, i.e., some health service can be and will be done by community members themselves;

(2) aiming at meeting basic primary demand of rural population;

(3) service which is simple, acceptable to, accessible easily by, and affordable for the community members;

(4) utilization of modern medical technology and traditional methods which are proven to be effective; and

(5) information and education for the community members to find ways to lead to a healthy life.

PKMD complements and extends the services provided by PKMs. Most of the component activities are served by PKM workers, but some components are served by Village Health Promotor (Promokesa), who is one of villagers and is appointed by the villagers for the village PKMD services, with cooperations of community members but without any salary for his activity. The component activities and PKMD's relation to PKMs are shown in the following table.

Components	Activities	Mainly Handled by
(1) Health Delivery		
1) Treatment to Disease	- Simple curative treatment	Promokesa (Village Health Promotor: PKMD personnel from a desa)
2) Health Maintenance	- Mother and child health care (MCH)	PKM nurse and Promoksa
	- Family planning	PLKB (Family planning field worker and PKM nurse
	- School health	PKM doctor and nurse
3) Communicable Disease Control	- Vaccination	PKM doctors and nurse
	- Surveillance and report to PKM	
(2) Hygiene and Sanitation		
1) Drinking Water	- See Section 9.3.3	Assistant sanitarian of PKM
2) Family Toilet	- See Section 9.3.4	Ditto
3) Individual Hygiene	- Education and promotion of washing hands and teeth	Promokesa
4) Physical Environment Improvement	- Rehabilitation and community development	Assistant sanitarian of PKM
(3) Improvement of Nutritional Status	- Education and provision of information	PKM
(4) Health Education	- Information and advises	Promokesa and PKM nurse

(to continue)

(continued)

Components	Activities	Mainly Handled by
(5) Health Insurance		
1) Village Health Insurance	- Collection of insurance fee of Rp.10 to Rp.30 per household per month - Purchase of drugs and supplies for medical service - Free usage of drugs and supplies to patients	Promokesa
2) School Health Insurance		School

PKMD was experimented in 115 desas from 1974 up to March 1977 out of 8,466 desas in Central Java as shown in Table 10.18.b and have shown promissing results according to health officials at Kanwil Health and Ministry of Health. Based on this result, the Central Government formulated PKMD program officially in July, 1977. Generally, there is one Promokesa per desa on average. Since PKMD seems to incur very small cost to governments and since it has shown promissing results, its promotion will be warranted.

10.102 One PKM is supposed to be staffed with one doctor, one nurse, one midwife, one assistant nurse, one assistant midwife, one administrative person, and one man who both cleans and is a watchman. But actually only 35 percent of PKMs in Central Java is headed by doctors in 1977, as follows:

Numbers of PKMs and PKM-Doctors

	PKM	PKM-Doctors	%
Banyumas	24	10	42
Kendal	15	6	40
Batang	12	4	33
Pemarang	13	5	38
Tegal	18	5	28
Brebes	16	7	44
Purbalingga	13	3	23
Banjarnegara	18	5	28
Total	129	45	35

Source: Study team's hearing from kabupaten officials, 1977.

Table 10.18-b Number of Areas Involved in PKMD, Central Java, 1974 to 1977

Kabupaten/Kotamadya	Number of Areas Involved: Kecamatan	Number of Areas Involved: Desa	Activity Components
1. KDY Magelang	0	0	
2. KDY Surakarta	3	5	- Village health insurance - Sanitation - Infant and child health
3. KDY Salatiga	0	0	
4. KDY Semarang	3	4	- Sanitation - Village health insurance - Promotion of MCH
5. KDY Pekalongan	0	0	
6. KDY Tegal	0	0	
7. KB Cilacap	3	3	- Sanitation - Rural housing by community
8. KB Banyumas	2	3	- Sanitation - Rural housing
9. KB Purbalingga	1	1	- Sanitation
10. KB Banjarnegara	7	15	- Village health insurance - Nutrition education - Child and infant health - Communicable disease control - Sanitation - Rural housing - School health insurance
11. KB Kebumen	1	1	- Sanitation
12. KB Purworejo	2	2	- Sanitation
13. KB Wonosobo	2	2	- Nutrition - Sanitation - School health insurance
14. KB Magelang	1	2	- Village health insurance - Sanitation
15. KB Boyolali	1	1	- Sanitation
16. KB Klaten	2	2	- Sanitation - School health insurance
17. KB Sukoharjo	1	1	- Sanitation
18. KB Wonogiri	1	1	- Sanitation - Village health insurance
19. KB Karanganyar	6	19	- Village health insurance - Village health promotor - Sanitation - School health insurance
20. KB Sragen	1	1	- Sanitation
21. KB Grobogan	1	1	- Sanitation
22. KB Blora	1	2	- Village health promotor
23. KB Rembang	17	21	- Sanitation - Village health insurance
24. KB Pati	1	1	- Sanitation - Infant and child health
25. KB Kudus	3	4	- Sanitation - Village health promotor
26. KB Jepara	2	2	- Sanitation
27. KB Demak	1	2	- Sanitation - Nutrition
28. KB Semarang	7	7	- Sanitation - Rural housing - Nutrition - Traditional drugs
29. KB Temanggung	1	1	- Sanitation - Traditional drugs
30. KB Kendal	1	1	- Sanitation
31. KB Batang	3	3	- Village health insurance - Sanitation - Nutrition
32. KB Pekalongan	2	2	- Sanitation - Rural housing
33. KB Pemalang	3	3	- Sanitation - Village health insurance
34. KB Tegal	2	2	- Sanitation - Nutrition
35. KB Brebes	17	-	- School health insurance
Total	99	115	

Source: Kanwil Health, Inventarization of Rural Community Health Care up to March 1977, 1977

The rest of PKMs are headed by male nurses. Although it is not so critical as the shortage of doctors, there is a nurse shortage too. For example, kabupatens of Cilacap, Kudus, Klaten, and Brebes needs nurses with the first priority according to health officials of each kabupaten, while Banyumas has enough PKM nurses. This does not mean that those kabupatens such as Cilacap do not need doctors, but means that they need doctors more than nurses but they think the feasible plan is to hire nurses first. According to health officials in the Province, the supply of nurses in Central Java is enough but the financial resources for hiring more nurses for PKMs is limited.

10.3.4 Doctors

10.103 One thing peculiar in the Indonesian medical system is that almost all doctors are voluntarily government employees. One of the principal reasons for this is that they want to keep their position for social status, since even if they are public employees they can work privately after two o'clock every day. Also, the doctor supply system influences the decision of doctors to become civil servants. To be a doctor takes 7 years in an university comprising 5 years for lecture and 2 years of hospital internship. After passing the graduation examination, a new doctor is required to work at PKM as a general practitioner for 5 years if it is in Java Madura or for 3 years in the outer islands. After this, he can start a private practice if he wants. If he wants to be a specialist, he has to work under a specialist in a hospital for 3 to 5 years, and then he can receive a certificate as a specialist from that doctor.

10.104 There are only 5,217 doctors in the entire Indonesia, and 501 doctors in Central Java in 1972; that is 42 doctors per one million population in Indonesia and 22 doctors per one million population in Central Java.[15/] According to the Ministry of Health, the situation was recently improved as follows:

Number of Medical Personnel per One Million Population in Indonesia, 1976

Doctors	Nurses	Midwives	Assistant Nurses
70	90	90	230

15/ Ministry of Health, Accomplishment of Health Development Programs During the First Five Year Development Plan, Pelita I, Jakarta, 1976.

Supply of doctors is stagnant and was around 600 to 700 annually in the entire nation during the period from 1966 to 1973. The recent supply of doctors in Indonesia is at the level of about 1,000 per year.

10.105 For Central Java, Table 10.18 presents the geographic distribution of doctors. According to the data, there were only 629 doctors in Central Java in 1976. Dividing them by the total 1976 population (23,784,581) we get 26 doctors per one million persons, which has been improved slightly as compared with 22 in 1973. Out of this scarce manpower, 356 doctors or 57 percent of all doctors are located in kotamadyas, which account for only 6.7 percent of the total population. Almost all doctors in rural area are the PKM doctors and one doctor takes care three or four PKMs (i.e. 3.5 PKMs). Therefore the doctors working in rural areas are about 141 that is 492 (PKM)/3.5. Only 141 out of 629, that is 22.4 percent, are working in the rural area, based on the previous two assumptions. In contrast to this, about 70 percent of population is living in the rural areas, and as a consequence the availability of doctors in rural areas is far below that in the urban areas.

10.3.5 INPRES/Health

10.106 One major instrument for rendering health services is INPRES/Health. It started in 1974/75 and it provides special funds for four kinds of programs to kabupatens. For curative treatment purposes, there are PKM development and Medicine programs. The former is the fund for constructing and rehabilitating PKMs, doctors' houses, and nurses' and midwives' houses. The latter is for providing medicine free of charge to hospitals and PKMs. For preventive purpose, there are Drinking Water and Family Toilet programs. These two are discussed in the Water and Sanitation section of this report.

10.107 Before INPRES/Health, PKMs were constructed by kabupaten budgets but after 1974 PKMs were constructed and rehabilitated solely by INPRES/Health. Table 10.19 presents the number of PKMs and doctors' houses provided by INPRES/Health. At the end of fiscal 1975/76, there were 336 INPRES-PKMs. The rest of PKMs in Central Java, which are 156 in number, are non-INPRES PKMs.

10.3.6 Recommendations

(a) Public Health Center (PKM)

10.108 The Public Health Centers are a major instument for health services especially in the rural areas. Based on arguments in the previous section on PKM, it is recommended that at least one PKM per 30,000 persons be achieved by the end of Repelita III instead of Repelita II.

Table 10.19 Number of PKMs and Doctor's Houses Planned to Be Development by INPRES/Health Central Java, 1974-1976

	New PKM Construciton					PKM Rehabilitation					Doctor's Housing[2] Construction	
	1974/75	75/76	76/77	77/78	Total	1974/75[1]	75/76	76/77	77/78	Total	76/77	77/78
1. KDY Magelang	1	1	-	0	2	-	1	-	1	2	-	-
2. KDY Surakarta	2	1	-	0	3	-	2	1	-	3	1	-
3. KDY Salatiga	1	1	-	0	2	-	1	-	-	1	-	-
4. KDY Semarang	1	1	-	0	2	-	3	1	4	8	3	-
5. KDY Pekalongan	1	1	-	0	2	-	1	-	2	3	-	-
6. KDY Tegal	1	1	-	0	2	-	1	-	1	2	-	-
7. KB Cilacap	1	1	-	0	2	-	9	2	2	13	8	-
8. KB Banyumas	2	1	1	0	4	-	12	3	10	25	9	6
9. KB Purbalingga	1	1	-	0	2	-	7	2	-	9	4	5
10. KB Banjarnegara	2	1	-	0	3	-	9	4	16	29	4	6
11. KB Kebumen	2	3	-	0	5	-	9	3	18	30	6	3
12. KB Purworejo	2	1	-	0	3	-	8	3	16	27	5	3
13. KB Wonosobo	2	1	1	0	4	-	6	2	13	21	3	3
14. KB Magelang	1	1	1	0	3	-	1	4	7	12	7	8
15. KB Boyolali	2	1	1	0	4	-	8	4	5	17	7	2
16. KB Klaten	2	2	-	0	4	-	12	7	21	40	7	-
17. KB Sukoharjo	2	1	1	0	4	-	7	3	9	19	3	4
18. KB Wonogiri	2	3	1	0	6	-	6	7	13	26	4	4
19. KB Karanganyar	2	2	-	0	4	-	7	3	15	25	6	-
20. KB Sragen	2	2	1	0	5	-	8	7	8	23	5	-
21. KB Grobogan	2	1	1	0	4	-	8	2	16	26	5	-
22. KB Blora	2	1	-	0	3	-	7	2	4	13	4	3
23. KB Rembang	2	1	1	0	4	-	6	3	14	23	3	3
24. KB Pati	2	2	-	0	4	-	9	3	12	24	6	10
25. KB Kudus	2	1	-	0	3	-	4	2	1	7	2	1
26. KB Jepara	1	1	-	0	2	-	5	1	5	11	5	1
27. KB Demak	2	1	1	0	4	-	6	2	4	12	3	2
28. KB Semarang	1	2	-	0	3	-	8	2	7	17	5	1
29. KB Temanggung	1	1	-	0	2	-	6	2	11	19	4	-
30. KB Kendal	2	1	1	0	4	-	8	4	5	14	5	8
31. KB Batang	1	1	-	0	2	-	7	1	3	11	3	4
32. KB Pekalongan	2	2	1	0	5	-	9	2	9	20	6	5
33. KB Pemalang	1	1	-	0	2	-	7	4	11	22	4	3
34. KB Tegal	2	1	1	0	4	-	9	2	10	21	5	5
35. KB Brebes	2	1	1	0	4	-	8	1	11	20	4	6
Total	56	45	14	0	115	-	235	89	284	613	146	98

Notes: 1/ Included in the number of new construction.

2/ Source: BAPPEDA, Perincian Jumlah Bantuan Puskesmas, Perbaikan Puskesmas, 1977.

Source: BAPPEDA, Laporan Bulanan Pelaksanaan Program Bantuan Pembangunan Sarana Kesehatan Tahun 1974/75, Ibid 1975/76, Ibid 1976/77, 1977.

10.109 Since the population in 1983 is estimated to be 26,851,000, the number of PKMs required in 1983 will be 896. The number of existing PKMs in 1976 is 492 (see Table 10.18), and thus additional 404 PKMs should be developed. On the other hand, the family planning requires 576 new additional family planning clinics (Klinik KB) based on the Study team's analysis (see Section 11.3 of this report). Since the Central Govenrment intends not to increase clinics but to promote PKMs, these 576 clinics should be provided by new PKMs instead of single-function family planning clinics. Thus in total, 576 PKMs are required by 1983. According to Kanwil Health, the flat payment from the INPRES/Health program for developing one PKM is Rp.10 million in 1976. It is supposed to cover the cost for one PKM building and three houses for a doctor, a nurse, and a midwife. Based on this unit development cost of a new PKM, the investment required for the 404 new PKMs is Rp.4,040 million. If the population is 30,000, total number of visits to a PKM is estimated to be 17,353 per year at the end of Repelita II.[16/] Assuming the PKM is open 6 days a week, that is 313 days a year, the number of visits is estimated to be 55 per day. This is a relatively high number of visits for one doctor but seems to be reasonable at this stage of development.

10.110 To achieve this target, several ways can be utilized such as upgrading existing polyclinics, rehabilitating old health centers, and new construction.

16/ See Ministry of Health, Program Pelayanan Kesehatan Melalui Puskesmas Untuk Tahun Ke 3, 4 Dan 5 Repelita II, Indonesia, 1976. The calculation process is as follows:

a. Based on a household survey described in the above report, patient prevalence per 1,000 population per day is 50 (or 5%), and the average duration of sideness is 7 days. So the patient incidence per 1,000 population per day is 50/7 ≒ 7.1 (or 0.71%).

b. Medical demand at the end of Repelita II will be 62 percent of patients.

c. So, the number of people seeking health services will be 30,000 x (7.1/1,000) x 365 x (62/100) = 48,202 per year.

d. Number of patients using public services instead of private services is 50 percent of total patients and number of patients using the PKM system is 30 percent of total patients.

e. So the number of patients using PKM is 48,202 x (30/100) = 14,461.

f. Average number of visits is 1.2/patients; and

g. Thus, total number of visits will be 14,461 x 1.2 = 17,353 per year.

10.111 New PKMs should first be allocated to the rural area, because the urban area is served by hospitals. Also, kecamatans with large area should receive more PKMs than those with small areas so that services can be within the reach of people living in remote desas. If funds for developing one PKM per 30,000 population are not available, the next alternative is to provide sub-PKMs which will provide both simple medical treatment and family planning services, and which are staffed by nurses and midwives but not by doctors. Also, this sub-PKM can be an antecedent to the full PKM, and after several years of operation the sub-PKM could be elevated or could evolve into a full PKM.

10.112 At the same time, skills and attitude of PKM workers should be upgraded and reoriented toward the service to desa people. In addition, referral systems within units in PKMs and between PKMs and kabupaten hospitals should be strengthened to achieve better services to kecamatan population.

(b) Coverage Area of Public Health Center

10.113 Even if the target of one PKM per 30,000 population has been achieved there will still be unreached areas. For those areas and for the areas which have only poor access to the health services at this moment, such existing programs as the provision of motorcycles to doctors and the use of mobile units should be promoted further. In some area which have flat land and good access, provision of jeeps should also be considered within the financial ability, since jeep can carry patients to PKM.

10.114 In order to reach the remote areas, road improvement or a telecommunication system such as short wave telephones must receive serious consideratic

(c) Hospital

10.115 All kabupaten hospitals are in grade D, and most of them are suffering from shortages of doctors, equipment, and medicine. A hospital which is supposed to be a base camp of medical services for about 686,000 population, that is a kabupaten hospital, should have specialized doctors at least in its major medical sections: internal medicine, surgery, obstetrics and gynecology, and pediatrics. This means that a kabupaten hospital should be a grade C hospital. However, the number of beds required for a grade C hospital seems to be too many as is mentioned in Section 10.3.2. Thus it is recommended to upgrade at least one kabupaten hospital per one kabupaten to grade C with a reduced number of beds, by the end of Repelita III.

10.116 As the first step of the upgrading of kabupaten hospitals, it is recommended that four grade D hospitals in Pekalongan, Magelang, Pati and Semarang be upgraded to grade C by the end of Repelita II. And it is recommended to upgrade existing two provincial hospitals in Surakarta and Purwokerto to grade B by the end of Repelita III in order that people in remote kabupatens can be given higher quality health services.

10.117 At the same time, the shortage of medical equipment, especially operation and laboratory equipment, and medicine should be eased. The point is that upgrading of existing hospitals by increasing the supply of doctors, equipment, and medicine is necessary rather than establishing new hospitals.

(d) Manpower Supply

10.118 The shortage of doctors is critical, and this is a national problem which requires serious departmental attention of the Central. Although it is not so crucial as the shortage of doctors, there is a shortage of hired nurses in Central Java because of financial insufficiency. Since there is adequate supply of potential nurses in Central Java, allocation of financial resources to hire more nurses for PKMs is necessary.

(e) Water Supply and Public-Toilets

10.119 The water supply and public toilet provision program should be encouraged as a preventive medical service. However, there are very similar programs such as a rural housing program which also offer water supply and toilet provision projects to desas, or desa development projects under INPRES/Desa, and there should be articulated coordination between those programs.

(f) Information Services for Health Education

10.120 One of the basic tasks of public health services is to inform the people about preventive measures against diseases. For this purpose, such programs as the health and family planning education in SDs, and health and family education by mass media and especially TV, will be effective and should be further promoted. Also, the existing health extension service by nurses and doctors in PKM should be promoted. For this purposes, visual aids and pamphlets should be supplied by either the Provincial or the Central Government.

10.4 Educational Facilities

10.4.1 General

10.121 The Indonesian education system comprises six years of primary school (SD: Sekolah Dasar), three years of junior secondary school (SLTP), three years of senior secondary school (SLTA), and three or five years higher education (PT). In addition to this, there is a two-years kindergarten (TKK: Taman Kanak Kanak). Various types of school are delineated in Figure F.1 in Appendix F.

10.122 Besides those delineated in Figure F.1, there are many other types of schools. The salient characteristics of the structure of educational institutions are existence of many types of vocational-type schools starting from the junior secondary level and existence of religious schools with a significant share of students in terms of number, for example, roughly 16 percent of total primary school students were enrolled in Islamic religious schools (Madrasah) in Indonesia in 1971. Table F.1 in Appendix F presents the share of Islamic religious schools in Indonesia and other data. Basic indicators of Islamic religious schools in Central Java are presented in Table F.2.b.

10.4.2 Primary School (SD)

(a) Present Situation

10.123 Table 10.20 presents the numbers of schools, students, and teachers of SD, SLTP, SLTA, and TKK in Central Java. There were 13,241 SDs in 1975. Dividing the number by the 1975 registered population, that is 23,184 thousands, there is 5.7 SDs per 10,000 population. This is quite high, so the average size of schools is small. On the average there are 5.73 classes per SD or 180 students per SD. The number of schools increased by 5.5 percent or by 691 during the two years from 1973 to 1975. There are about 27 students per teacher, and about 8.5 percent of all teachers teach part-time. There are 31 students in a class on average, which is originally designed for 40 students. The utilization rate of schools is 77.5 percent (31/40).

10.124 Table F.5 in Appendix F presents the geographic distribution of SD, SLTP, and SLTA in Central Java. According to these data, the number of SDs increased by 16 percent or by 2,013 during 1973 and to 1975. A major increase in SD numbers has occured in Cilacap, Demak, Brebes, Banjarnegara, Jepara, and Blora.

(b) Service Population and Walking Distance

(i) Service Population

10.125 Table F.6 in Appendix F presents basic indicators of SD by KB/KDY in Central Java in 1974. Service population and walking distance are the important indicators. The average number of people served by one SD (service population) in Central Java was about 1,810 in 1974. As for geographic distribution, the service population of one SD ranges from 1,380 persons in KB Purworejo to 2,660 persons in KB Brebes, but it does not differ so much by KB/KDY as it can be seen from the eighth column of the table. It means that SDs are fairly evenly distributed among KB/KDYs in terms of service population. There is no big difference between urban and rural areas.

10.126 1,810 persons per one SD on average is small enough, and so it will not be necessary to establish new SDs in terms of service population alone.

(ii) Walking Distance

10.127 It is a commonly accepted understanding among school facility planners that the maximum walking distance for primary school pupils to walk to their schools is one kilometer. So, if the coverage area of one SD exceeds 3.14 sq. km, it means that there is certainly some area where students would have to walk more than one kilometer to school. The ninth column of Table F.6 presents average coverage area per SD in each kabupaten. Generally, it can be said that most kabupatens except Blora and Rembang have already satisfied the maximum walking distance

Table 10.20 Number of Schools, Students, and Teachers by Educational Level Central Java, 1974-1975

	1973	1974	1975
SD			
Schools	12,550[1/]	12,645[1/]	13,241[2/]
Students	2,340,974[1/]	2,324,425[1/]	2,385,102[2/]
Teachers	nd	79,741[1/]	87,480[2/]
(Part-Time Teachers)			(7,651[2/])
Classes	nd	75,828[1/]	75,902[2/]
SLTP			
Schools	nd	1,647	1,672
Students	nd	353,529	363,117
Teachers	nd	25,031	25,068
SLTA			
Schools	nd	631	643
Students	nd	146,782	151,158
Teachers	nd	13,563	13,716
Kindergarten			
Schools	5,256	5,386	5,757
Students	180,272	184,662	188,605
Teachers	8,078	8,271	8,759

Notes: 1/ Source: BP3K, Statistik Persekolahan Departemen P&K 1974.
2/ Kanwil Education, Situasi Pendidikan, 1975.
3/ nd stands for "no data".

Source: BAPPEDA, Jawa Tengah Dalam Angka, 1973-1975, 1976.

requirement. Blora and Rembang (which have the lowest population density in Central Java) exceed significantly, and Banyumas, Pati, Demak, Jepara, and Grobogan exceed 3.14 sq. km slightly. Therefore, based on these data, it is necessary to provide more schools to Rembang and Blora, and provision of schools to Banyumas, Pati, Demak, Jepara, and Grobogan deserves consideration for the purpose of decreasing pupils' walking distance.

10.128 Obviously, the service area of one school in urban areas is small enough for all pupils to walk to school. It implies that the SD school development policy for urban areas should be directed toward expansion of existing SDs rather than establishing new SDs. To make sure this observation is correct, further studies are required.

10.129 So far, this argument is based on average data and not based on coverage areas of individual schools. Even in the kabupatens which have average coverage areas less than 3.14 sq. km, it is likely that there are some SDs having a wider coverage area than 3.14 sq. km or having students who have to walk more than one kilometer because of topographic conditions. A survey is necessary to determine the walking distance to individual schools. Each KB/KDY government will be able to undertake its survey.

(iii) Number of Schools per Desa

10.130 In many countries schools are functioning and expected to function as a community center. Column 10 of Table F.6 presents the average number of SDs per desa in Central Java. All kabupatens except Purworedjo and Rembang have 1.5 SDs per desa on the average, and at least one school per desa. Namely, each desa has at least one school which can be used as its community center. The number of schools of less than one per desa in KB Purworejo and KB Rembang is caused by the very small size of desas which averages a little more than 1,000 persons in these two kabupatens. It is not economically efficient to establish one SD for 1,000 population, and therefore it is not recommended to establish new schools in these two kabupatens even though they do not have one school per desa on the average. But again it should be noted that the major criterion in deciding whether a new school is needed or not is walking distance to the school, and the scale of the population served by one school.

(iv) Geographic Distribution of School Size

10.131 School sizes measured by number of students per school by KB/KDY are presented in column 11 of Table F.6. The average SD school size in Central Java in 1974 is 163 students per school, and it does not differ significantly by KB/KDYs. The largest average size is 203 students per school in Kabupaten Kebumen and the smallest average size is 105 in Kabupaten Pekalongan.

(v) Geographic Distribution of Educational Quality Measured by Student-Teacher Ratio

10.132 Student-teacher ratios by KB/KDY are presented in column 12 of Table F.6. The average ratio for the whole Central Java is 23 students per teacher. Since the official class size is 40 and standard school size is 6 classes, if we assume 6 general teachers and one special teacher for one standard school, the required student-teacher ratio is 34. Almost all KB/KDYs except KDY Tegal have ratios lower than 34 and the ratios are low enough. These low student-teacher ratios are attained partly by a high dropout ratio in the primary school education, not by abundance of teachers. But, based on the 1974 data, the number of teachers in SDs is not a crucial problem. One exception is KDY Tegal, which might need more teachers according to the 1974 data.

(c) Gross Enrollment Ratio

(i) Enrollment Ratio

10.133 One of the major targets of primary education is to attain 100 percent enrollment ratio in its original sense and zero percent dropout ratio, if financial capacity allows. This is the generally accepted target of almost all countries, since:

(1) education especially primary education has many important functions beyond the mere preparation for economic life, and

(2) equal opportunity to everybody is an almost universally accepted slogan and the strength of the demand for equal opportunity is undeniable.

The present situation of enrollment ratios and dropout ratios in Central Java is discussed in this and following sections.

10.134 There are two kinds of enrollment ratios, gross and net enrollment ratios, but there are no statistics on enrollment ratios of school age children at any level of education in Central Java.17/

17/ "Gross enrollment ratio (GER)" is "total number of students in schools" divided by "total number of school age children". Total number of students includes overaged students, so GER does not mean enrollment ratio in its original sense, but GER is useful in estimating school needs. As for net enrollment ratio, there are many kinds and their definition will appear later in this chapter.

One of the major causes of this lack of enrollment statistics seems to be unavailability of population data of school age children. Since the enrollment ratio is one of the major indicators of future school demand, obtaining of this population data at the Provincial level is recommended.

(ii) Gross Enrollment Ratio

10.135 Table 10.21 presents the result of the Study team's estimate of gross enrollment ratios in Central Java in 1974 and 1975. The gross enrollment ratio at the primary level in Central Java is roughly 60 percent in 1975, i.e. the number of students in primary schools is about 60 percent of the number of primary school age (7 to 12) children. The ratios are 20 percent at the junior secondary level and 10 percent at the senior secondary level. These seem to be a little low as compared with the result of the IBRD mission's estimate which is presented in Table 10.22. The gross enrollment ratio at primary schools in Central Java in 1971 is estimated by IBRD to be 75 percent. Most of the 15 percent difference between our estimate and the IBRD estimate is explained by Islamic religious school students. Although the source the Study team obtained the data from does not specify the types of schools counted, it seems that the data just counted students in non-religious schools. IBRD used student data including Islamic religious schools students. When the effect of Islamic religious school students is deleted (multiplying the IBRD gross enrollment ratio by 0.842, which is the non-religious school student ratio), the gross enrollment ratio at non-religious schools estimated by IBRD is 63.2 percent. This latter percentage is close enough to 60 percent if the time differences is ignored. Following the same procedure, the ratio for junior secondary schools is 20.4 percent, and the ratio for the senior secondary schools is 13.9 percent, based on the IBRD data. The IBRD definition of gross and net enrollment ratios appear at the bottom of Table 10.22 and a further discussion on net enrollment ratio appears in a later section.

10.136 Another more detailed estimation of the gross enrollment ratio by KB/KDY in Central Java was done by the Study team. The result is shown on Table F.3 in Appendix F. For the primary schools in Central Java excluding Islamic religious schools, the gross enrollment ratio has increased slightly from 72 percent in 1974 to about 77 percent in 1975 and to about 74 percent in 1976. This increase is not large enough when it is compared with the rapid expansion of SD establishment by INPRES/SD starting from 1973, which is presented in Table 10.23 as follows.

Table 10.21 Gross Enrollment Ratio by Educational Level

Central Java, 1974 to 1976

Level of Education	Age of Students	1974			1975			1976		
		Population[1/] of School Age Children	Number of Students[2/] in the School	Gross[3/] Enrollment Ratio (%)	Population[1/] of School Age Children	Number of Students[4/] in the School	Gross[3/] Enrollment Ratio (%)	Population[1/] of School Age Children	Number of Students[5/] in the School	Gross[3/] Enrollment Ratio (%)
SD	(7 to 12)	3,865,172	2,324,425	60.1	4,028,926	2,385,102	59.2	4,152,935	2,328,233	56.1
SLTP	(13 to 15)	1,523,958	298,157	19.6	1,601,082	310,314	19.4	1,686,416	478,593	28.4
SLTA	(16 to 18)	1,288,087	125,465	9.7	1,369,711	133,971	9.8	1,446,834	154,421	10.7
Academy	(19 to 21)	1,020,708	nd	nd	1,111,335	nd	nd	1,201,962	nd	nd
University	(19 to 23)	1,586,416	nd	nd	1,701,181	nd	nd	1,852,225	nd	nd

Notes and Sources:
1/ The Study team's estimate based on the 5 ages cohort data of the Central Java population registration 1974 compiled in Jawa Tengah Selayang Pandang 1975, by BAPPEDA, 1975.
2/ Source: BP3K, Statistik Persekolahan, Departemen P & K, 1974, Jakarta, 1976.
3/ For the definition, see the note in Table 10.22.
4/ SLTP comprises SMP, ST, SMEP and SKKP. SLTA excludes agricultural and Islamic schools. Source: Kanwil Education/Province, Situasi Pendidikan (Dalam Angka), 1975, 1975.
5/ Sources: Dinas Education (Dinas PD & K) for SD.
Kanwil Education (Kanwil PD & K) for SLTP & SLTA. (SLTP comprises SMP, ST, SMEP and SKKP. SLTA comprises SMA, STM, SMEA, SKKA, SPG and SGO).

Table 10.22 Gross and Net Enrollment Ratios by Educational Level Central Java, Indonesia, 1971

Educational Level	School Age (7-12) Population (in Thousands)	Enrollment Ratio Gross[1/] (%)	Enrollment Ratio Net[2/] (%)
SD			
Central Java	3,615	75	62
Java and Madura	12,231	78	63
Indonesia	19,501	80	68
SLTP			
Central Java	1,497	23	14
Java and Madura	5,007	21	13
Indonesia	7,969	22	14
SLTA			
Central Java	1,227	13	9
Java and Madura	4,156	13	8
Indonesia	6,605	13	9

Notes: 1/ Gross enrollment ratio is defined as enrollment as a percent of population in the age group by educational level. This ratio includes overaged students.

2/ Net enrollment ratio is defined as percentage of eligible students enrolled in the appropriate level. This ratio excludes overaged students.

Source: IBRD, Indonesian Education Sector Survey Report, 1975, Annex 4.

Table 10.23 Number of SD Constructed and Rehabilitated by INPRES/SD Central Java, 1973 - 1976

(Unit: Schools)

	1973/74	1974/75	1975/76	1976/77 1/
New SD Construction	nd	1,063	1,845	1,845
Old SD Rehabilitation	0	0	1,900	2,877

Note: 1/ Source: BAPPEDA, "Pembangunan Gedung SD Baru Perbaikan Gedung SD Negeri/Swasta Serta Madrasah Ibtidaiyah Swasta Tahun 1976/1977", 1977. These data exclude Islamic religious schools.

Source: BAPPEDA, Konsultasi Nasional BAPPEDA I, "IV the Reinvestigation of the Repelita II Book", 1976.

(iii) Geographic Distribution of SD Gross Enrollment Ratio

10.137 An analysis of geographic distribution of SD gross enrollment ratio shows wide differences among Kabupaten/Kotamadyas (the analysis is based on Table F.3 in Appendix F). Figure 10.4 presents the result, which clearly suggests that KB/KDYs can be classified into three groups:

(1) group A: the educationally well advanced group which has the ratio over 85 percent, comprising Jepara, Purworejo, Kudus, Wonogiri, Rembang, and Banyumas;

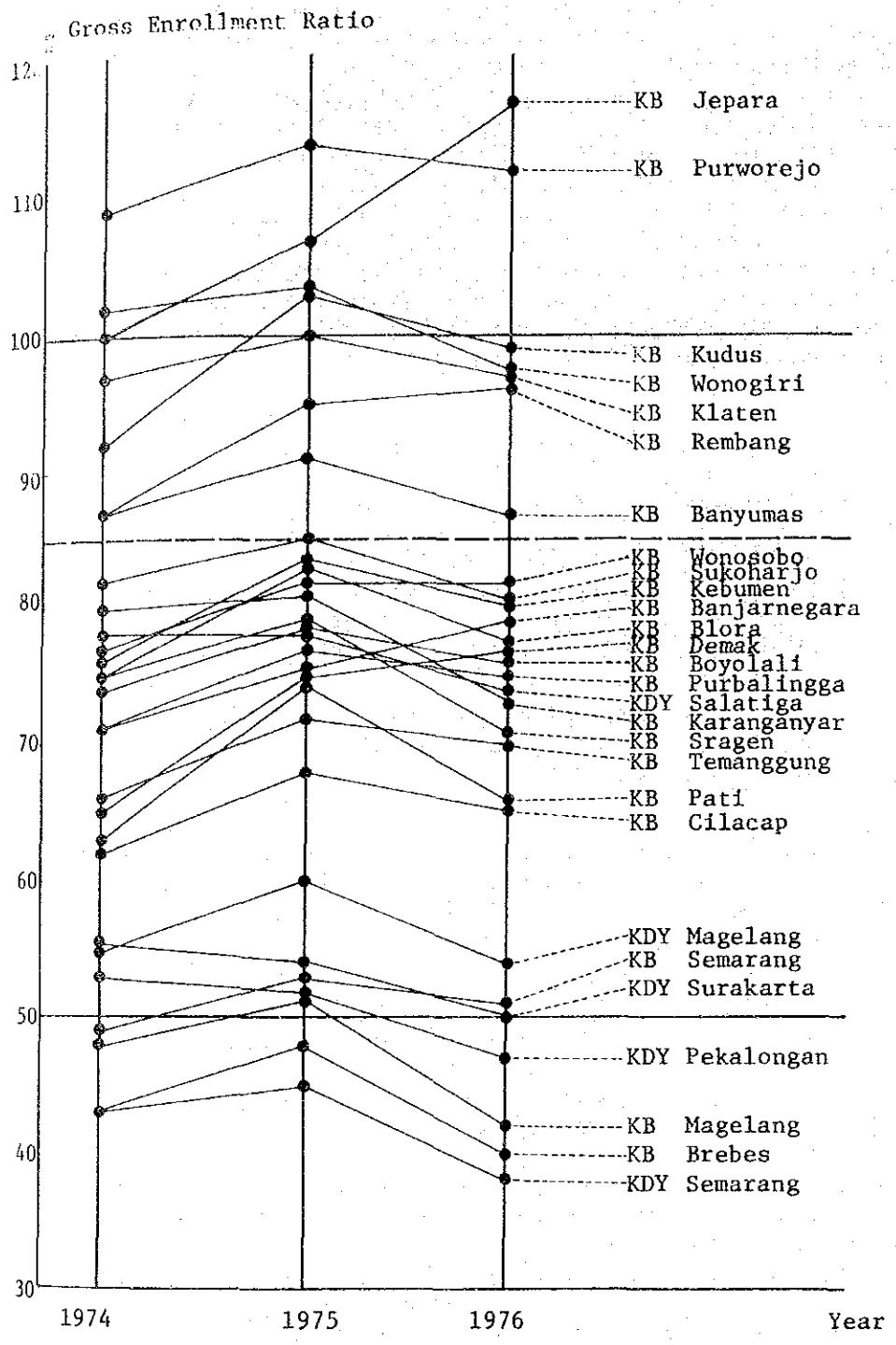
(2) group B: the educationally average group whose ratios are around 75 percent, comprising all KB/KDYs except those in A and C; and

(3) group C: the educationally lagging group which has the ratios below 60 percent comprising KDY Magelang, Semarang, KDY Surakarta, KDY Pekalongan, Magelang, Brebes, and KDY Semarang.

The differences between the ratios of these three groups are roughly 25 percent between C and B, and 25 percent B and A.

Figure 10.4 SD Gross Enrollment Ratio by KB/KDY

Central Java, 1974 - 1976



Source: Table F.3 in Appendix F.

10.138 One thing which is salient in the graph is that all KDYs which have the enrollment ratio data except Salatiga have fallen into C. Also, examination of the ratio of SD school age children against KB/KDY population in Table F.3 shows that all KB/KDYs in the group C are those which have the highest children population ratios. Namely the high children population ratio is one of the causes of the low enrollment ratios in the group C, and high children population ratios tend to occur in urban areas. It implies that relatively more educational funds for SD should be directed toward those KB/KDYs which have high children to population ratios, and these tend to be urbanized areas such as KDY Magelang, KB Semarang, KDY Surakarta, KDY Pekalongan, KB Brebes, and KD Semarang. To this list Cilacap and Pati can be added. In order to increase gross enrollment ratios in those KB/KDYs which showed low gross enrollment ratios, it is generally recommended to expand existing SDs rather than establish new SDs as mentioned in the section on walking distance of this chapter. It is especially recommended in urban areas.

(d) Net Enrollment Ratio

10.139 There are several definitions of net enrollment ratios, as follows:

(1) the "pure enrollment ratio" which is defined as "all children at a certain age who have ever entered the primary schools" divided by "all children at that age";

(2) the "net enrollment ratio at proper age" which is defined as "all children who have entered the first grade at their proper age" divided by "all children at that age";

(3) the "net student ratio of school age children" which is defined as "all students in the school whose ages are official school age" divided by "all children at those ages" and

(4) the "net student ratio at proper ages" which is defined as "all students who are associated with their proper grades" divided by "all children at those ages".

Table 10.24 presents the calculation of the new entry ratio which is a rough proxy for the pure enrollment ratio and whose definition is self-explanatory. According to the table, the SD new entry ratio in 1974 is 67.3 percent. Table F.7 presents the calculation of the net enrollment ratio at proper age and the net student ratio at proper age for SD in Central Java. Table 10.25 presents the calculation of the net student ratio of school age children. The results for SDs suggest that, in Central Java in 1974, about 67 percent of one age group entered the SDs but only 45 percent entered the SDs at the proper age, i.e. 6 or 7 years of age. Namely 22 percent entered the SDs at ages older than 7.

Table 10.24 SD New Entry Ratio, Central Java, 1974

Grade at SD	Age	Population of School Age Children	Number of Students	Repeaters[1/]	New Entries	New Entry Ratio
(1)	(2)	(3)	(4)	(5)	(6)=(4)-(5)	(7)=(6)/(3) (%)
I (First Grade)	7	728,988	566,651	76,141	490,510	67.3

Note: 1/ Source: BP3K, Statistik Persukolahan Departmen P & K, 1974.

Source: Table F.7 in Appendix F.

Table 10.25 Net Student Ratio of School Age Children by Educational Level, Central Java, 1974

		Total School[1/] Age Population (1)	Total Students[2/] at School Ages (2)	(3)	Net Student Ratio of School Age Children (4)=(3)/(1) (%)
SD		3,865,177	na	1,941,207	50.2
SLTP	SMP	1,523,958	143,312	180,583	11.8
	SMEP		13,430		
	ST		17,135		
	SKKP		6,706		
SLTA	SMA	1,288,087	33,391	83,643	6.5
	SMEA		19,104		
	STM		21,376		
	SKKA		2,817		
	SPG		6,955		

Sources: 1/ The Study team's estimate based on Jawa Tengah Selayang Pandang, 1975, Hardback, BAPPEDA, 1975.

2/ BP3K, Statistik Persekalahan Departmen, P & K, 1974.

About 50 percent of the SD school age children was actually in the SDs, but only 28 percent was in the proper grades. In other words, 22 per percent was repeating their grades in their schools or had enrolled at the ages over 7. Nonetheless, 67 percent pure enrollment ratio is a low ratio, and far from the universal diffusion of the primary education, which is the ultimate target of primary education.

(e) Dropout Ratio, Graduate Ratio, and Repeater Ratio

10.140 Net dropout ratio (or net survival ratio) at each level of school is necessary to evaluate the efficiency of education, but neither Dinas nor Kanwil Education have such data.[18/] Only the number of total dropouts from SDs in 1974 is available. Table F.8 in Appendix F presents the results of the Study team's estimates of the gross and net dropout ratio by karesidenan based on the available data. For the whole Central Java, the gross dropout ratio in 1974 is about 10 percent and the net dropout ratio is about 45 percent. This result is consistent with the results of the new entry ratio in the preceding paragraph and the graduate ratio in Table 10.26. The graduate ratio of an age cohort in 1974, which is calculated from the new entry ratio and the net survival ratio in 1974, is almost the same as the graduate ratio of the same age cohort estimated in Table F.8, which is 38.6 percent. The calculation is as follows:

SD, Central Java, 1974

(Unit: Percent)

	New Entry Ratio (1) %	Net Survival Ratio (2) %	Graduate Ratio (3)=(1)x(2) %
SD	67.3	54.6	36.7

18/ Dropout ratios are defined as follows:

a. Gross dropout ratio is "total number of dropouts in a year at the end of a year" divided by "total number of students at the beginning of the year"; and

b. Net dropout ratio is "total number of dropouts from schools during more than 12 years from an age cohort" divided by "total number of students enrolled at schools for more than 12 years from the same one age cohort", or it can be defined as the just opposite number of net survival ratio which is defined by "total number of students from an age cohort and who graduated from schools" divided by "total number of students from the same age cohort and who had ever enrolled at the schools".

Table 10.26 Graduate Ratio[3/] by Educational Level

Central Java, 1972-1974

		1972	1973	1974
SD	Graduates[1/] (1)	187,056	196,077	206,168
	Children at Age 13[2/] (2)	482,278	507,986	533,694
	Graduate Ratio (3)=(1)/(2) %	38.8	38.6	38.6
SLTP (SMP, SMEP, SKKP, ST)	Graduates[1/] (4)	59,734	63,400	59,920
	Children at Age 16[2/] (5)	400,654	430,863	456,570
	Graduate Ratio (6)=(4)/(5)	14.9	14.7	13.1
SLTA	Graduates[1/] (7)	33,399	40,137	34,864
	Children at Age 19[2/] (8)	310,027	340,236	370,445
	Graduate Ratio (9)=(7)/(8)	10.8	11.8	9.4

Notes and Sources: 1/ Source: BAPPEDA, Jawa Tengah Dalam Angka 1973-75, 1976.

2/ Source: Mission's estimate based on Jawa Tengah Selayang Pandang 1975, Hardback.

3/ Graduate Ratio is defined as the share of graduates within the graduate-age population.

10.141 According to Table F.8, geographic distribution of the dropout ratios shows only slightly significant differences among karesidenans (RES). RES Banyumas and RES Surakarta show higher dropout ratios, and RES Semarang, Pati, Kedu, and Pekalongan show lower dropout ratios than the average. The highest is the 52 percent of RES Surakarta, and the lowest is the 35 percent of RES Semarang. No reason for these differences is specified.

10.142 For the purpose of comparison, the net survival ratio at the national level in 1974 is estimated. Table 10.27 presents the results. At the national level, the net survival ratios of students in SD, SLTP, and SLTA are 50.2 percent, between 51.3 percent and 75.4 percent, and between 60.0 percent and 77.2 percent respectively. As for SDs, Central Java has a slightly higher survival ratio than Indonesia as a whole has. But they are almost same, and the main problem here is that both of them are quite low.

Table 10.27 Gross Dropout Ratio and Net Survival Ratio by Educational Level, Indonesia, 1974

Educational Level		Grade	Gross Dropout Ratio %	Promotion Ratio %	Repeater Ratio %	Net Survival Ratio for 6 Years %
SD		Grade I	4.6	78.6	16.8	
		II	8.2	78.9	12.9	
		III	13.2	75.7	11.1	50.2
		IV	15.5	75.3	9.2	
		V	14.8	78.1	7.1	
		VI	8.2	79.6	2.2	
		Average Ratio	10.1	78.5	11.2	
SLTP	SMP	Grade I	9.1	86.9	4.0	
		II	8.8	88.3	2.9	75.4
		III	9.0	88.1	2.9	
		Average Ratio	9.0	87.7	3.3	
	SKKP	Grade I	20.4	75.1	4.4	51.3
		II	19.7	76.9	3.4	
		III	19.7	78.2	2.1	
		Average Ratio	20.1	76.3	3.6	
	SMEP	Average Ratio	14.3			63.6
	ST	Average Ratio	12.5			68.0
SLTA	SMA	Grade I	10.0	85.3	4.7	77.2
		II	6.5	90.2	3.3	
		III	8.2	87.7		
		Average Ratio	8.3	87.6	4.1	
	SKKA	Grade I	18.2	79.1	2.7	
		II	11.3	86.1	2.6	60.0
		III	17.3	80.8	2.0	
		Average Ratio	16.5	81.1	2.5	
	SMEA	Average Ratio	12.2			68.1
	STM	Average Ratio	8.9			67.0
	SPG	Average Ratio	10.0			73.0

Source: The Study team's estimate based on the data from BP3K, Statistik Persekolahan Departemen P & K, 1974, Buku 1 through Buku 10, BP3K, JKT, 1976.

10.143 Table 10.28 presents the net survival ratios of students in SD, SLTP, and SLTA in Central Java, which are 58.7 percent, 61.7 percent, and 75.8 percent, respectively. As compared with the national ratios, these Central Java ratios are higher at the primary level, and almost same at the secondary level of education.

10.144 High incidence of repeaters is another problem. In Central Java in 1974, the average repeater ratios a year are 9.1 percent, 3.7 percent, and 4.4 percent for SD, SLTP, SLTA, respectively (see Table F.4 in Appendix F for the data source and the calculation process). Also, according to national data for 1974, the peak age among the first grade students of SD is 7, while the peak age among the sixth grade students of SD is 13 instead of 12.[19/] This suggests that many of students in SD in 1974 have repeated at least one year during their study in SD. As a consequence, the peak ages among the first grade students of SLTP and SLTA are delayed by one year from the proper enrollment ages.

(f) Governmental Policy on SD and Its Assessment

10.145 Table 10.29 shows the Repelita II target for primary school development. The Repelita II target of SD enrollment ratio is defined by the net student ratio of school age children, that is the number of pupils at 7 to 12 years of age devided by the number of school age (7 to 12) children. The target at the end of 1978 is 85.2 percent and the attainment in 1974 as the result of the Study team's estimate was 50.2 percent. In order to achieve the target of 85.2 percent, the net student ratio of SD school age children has to grow at the average annual rate of 14.2 percent from 1974 through 1978. It seems very unlikely that this 14.2 percent growth of the net student ratio of SD school age children will be realized.

10.146 Trends in enrollment ratio: to examine whether 14.2 percent growth of the enrollment is likely or unlikely in Central Java, the past performance of the enrollment growth must be studied. Table 10.21 presents the past trend of the gross enrollment ratio and Table 10.26 presents the trend of graduate ratio, both of which can be indicators for the net student ratio of school age children.

10.147 With respect to SD, although the absolute number of graduates and students in schools have been growing except for 1976, the gross enrollment ratio has remained the same, at the level of about 60 percent. This means, even though there was a strong governmental effort to expand the primary school by INPRES/SD (see Table 10.23), the enrollment growth could not catch up with the rapid expansion of the school age children. Since the gross enrollment ratio has remained the same, the net student ratio of SD school age children can also be assumed to be the same, i.e. 50.2 percent in 1976. Taking account of the students in Madrasa Ibtidaiyah, which accounts for 15.8 percent of all students in Indonesia in 1971 (see Table F.1 in Appendix F), the estimated net student ratio is still 60.0 percent in 1976. So it is

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19/ Peak age means "the age at which the majority of children enroll at schools".

Table 10.28 New Entry Ratio, Graduate Ratio, and Net Survival Ratio by Level

Central Java, 1974

	Newly[1/] Entering Student at the 1st Grade (1)	Children[2/] at the Age of 1st Grade (2)	New Entry Ratio (3)=(1)/(2) (%)	Graduates[3/] (4)	Children[2/] at the Age of Graduation (5)	Graduate Ratio (6)=(4)/(5) (%)	New Survival Ratio (7)=(6)/(3) (%)
SD	490,510	728,988	67.3	210,870	533,694	39.5	58.7
SLTP (SMP, SMEP, ST and SKKP)	118,635	533,694	22.2	62,573	456,570	13.7	61.7
SLTA (SMA, SMEA, STM, SKKA and SPG)	47,899	456,570	10.5	29,477	370,445	8.0	75.8

Notes: 1/ Calculated by deducting "repeater at the first grade" from "students at the first grade".
Source: BP3K, Statistik Persekolahan, Departement P & K, 1974.

2/ The Study team's estimate based on the 5 ages cohort data from Jawa Tengah Selayang Pandang 1975, Hardback, by BAPPEDA.

3/ Source: BP3K, op. cit.

Table 10.29 Growth Rate and Gross Enrollment Ratios of the Primary Students as Defined by Repelita II, Indonesia, 1973-1978

		1973	1974	1975	1976	1977	1978
Total Students (Million Pupils)	(1)	13.6	14.7	15.9	17.3	19.0	20.9
Growth Rate (%)	(2)	8.1	8.1	8.8	9.8	10.0	-
School Age Population (Million Children)	(3)	20.7	21.2	21.8	22.3	22.7	23.0
School Age Students (Million Pupils)	(4)	11.8	13.3	14.9	16.6	18.1	19.6
Gross Enrollment Ratio (5)=(1)/(3) (%)		65.7	69.3	72.9	77.6	83.7	90.9
School Age Student Ratio (6)=(4)/(3) (%)		57.0	62.7	68.3	74.4	79.7	85.2

Source: Nihon Indonesia Kyokai, Repelita II (Japanese Translation), Tokyo, 1974.

unlikely that the Repelita II target of 85.2 percent will be achieved. In order to come closer to reaching the target, the Central Government and the Provincial Government have to allocate more financial resources to primary education than they did in previous years. This compaign can be strengthened by spreading information about the importance of education to the population.

10.148 As for the growth rate of the number of students, the growth rate realized between 1973 and 1974 is 3.6 percent at the highest, and the growth rates realized in 1974/75 and 1975/76 are 6.4 percent at the highest. All of these realized figures are lower than the planned figures, that is 8.1 percent at the lowest. So, the planned target is unlikely to be achieved and was too ambitious with respect to Central Java.

10.149 The gross enrollment ratio realized in 1974 to 1975 in Central Java is about 60 percent or 58 percent based on the Table 10.32. If it is assumed that Madrasa (Islamic school) students account for 15.8 percent of total students, the real gross enrollment ratio is 58÷.842 that is 68.9 percent, which is almost the same as the planned target. The ratio realized in 1975 is exactly the same as the one in 1974, which is lower than the planned target in 1975. Also Table 10.21 shows almost the same or a slightly declining gross enrollment ratio at the 60 percent level (if Madrasa students are counted, 60÷.842 that is 71 percent level) during 1974 and 1976. These are lower than the planned targets. Therefore it is also unlikely that the targets will be realized.

10.150 The national educational plan also shows the number of teachers required. But this number was calculated based on 40 students per teacher, which means more students per teacher than the students per teacher in 1974, i.e., 23 students per teacher based on Table F.6. So the number of required teachers calculated in the national plan is an underestimate.

10.151 Also, the national plan has no consideration for urban areas which tend to have low gross enrollment ratios.

(g) How Much Should the Schools Be Expanded

(i) Some Evidence on the Present Shortage of SD Facilities

10.152 It is said that in urban areas a portion of SD applicants of the age of 7 have to wait for one year before they can enroll, and in rural areas as well to a certain extent enrollment is delayed, because SD school facilities are not enough. Two pieces of evidence which may support this are: (1) the average class size for the first grade was 40 in Central Java in 1974, which means 100 percent utilization ratio; and (2) there are many over-age students in the first grade. These suggest that, even though they might drop out later, entry-age children and, especially their parents want the children to have SD education, and that their demand exceeds the supply in terms of vacancies in the first grade of SD. If this is so, SD facilities must be expanded until they can accommodate all those who want to enter, since a primary education should not be a system which limits, by

screening and selection, the number of children who can go up the educational ladder but should be a system which accepts all children registered by their parents even if it is certain that some of them will fail to complete primary school.

(ii) Projection of the School Age Population

10.153 To gauge future demand for the educational service, projection of the school age population is necessary. Table 10.30 presents the estimated number of school age children in 1976 and 1983 by educational level. Surprisingly, the estimate for SD school age children in 1983 is slightly lower than that in 1974, i.e., the annual growth rate of the SD age children is -0.1 percent from 1974 to 1983. This is mainly caused by the results of the baby boom, which created a large population of the ages between 5 and 15 in 1974. These children will be 14 to 24 in 1983, and the following age cohorts do not have a large population. There are three significant consequences of this movement of this baby boom children. The first is no population growth of the SD school age children from 1974 to 1983 (namely, the -0.1 percent annual growth rate). The second is rapid growth of the university-age population (6.8 percent per annum) and the relatively high growth rate of the SLTA-age population (4.4 percent per annum) from 1974 to 1983. The third is the expected rapid growth of the SD-age children in the 1990s because of the second generation of baby boom children i.e., in the 1980s women in the baby boom generation will reach the baby-productive ages and will bear their babies, creating massive SD-age children in the 1990s.

10.154 One implication relevant to the SDs which can be drawn from these three points is that the expansion of SD educational service in terms of gross enrollment ratio can not be expected during the 1990s. In the 1990s, even if the absolute number of SDs is increased by the efforts of Governments, the resulting extra capacity of SDs will be absorbed by the second generation of the baby boom children. Thus, the expansion of SD educational service and the upgrading of the quality of education have to be accomplished during 1976 to 1983, since the population of SD-age children will not grow in this period.

(iii) Student Growth Rate in the Past

10.155 Table 10.31 extends the annual growth rates of total students in Central Java by educational levels. This is done in order to estimate the proper rate of student growth for the next 7 years. Depending on data sources and statistical years, the growth rates vary widely.

10.156 As for the primary schools, the three kinds of data in Table 10.31 seem to imply an accelerated growth of SD student population from 0.5 percent per annum in 1971 to 6.4 percent per annum in 1975. This growth can be ascribable to the baby boom and the governmental effort to increase SDs. However it is not likely that

Table 10.30 Estimated School Age Population by Educational Level
Central Java, 1974, 1976, and 1983

Educational Level	Age	1974[1] Population of One Age Cohort	1974[1] Population of School Age Children	1976[2] Population of One Age Cohort	1976[2] Population of School Age Children	1983[2] Population of One Age Cohort	1983[2] Population of School Age Children	Annual Growth Rate 1974 to 1983 (%)	Annual Growth Rate 1976 to 1983 (%)
TKK	5	717,329		652,398		708,829			
	6	723,156	1,440,485	640,832	1,293,230	685,412	1,394,241	-.4	1.1
SD	7	728,988		629,266		661,994			
	8	695,073		629,257		652,815			
	9	661,155		648,168		643,636			
	10	627,238		657,619		634,457			
	11	593,320		667,070		625,278			
	12	559,403	3,865,177	676,521	3,907,901	616,101	3,834,281	-.1	.3
SLTP	13	533,694		646,020		612,038			
	14	507,986		615,519		624,227			
	15	482,278	1,523,958	585,018	1,846,557	628,290	1,864,555	2.3	.1
SLTA	16	456,570		554,517		632,353			
	17	430,863		524,017		636,417			
	18	400,654	1,288,087	499,109	1,577,642	621,627	1,890,397	4.4	2.6
University	19	370,445		474,201		606,837			
	20	340,236	(19-21)	449,293	(19-21)	592,047	(19-21)		
	21	310,027	1,020,708	424,385	1,347,879	577,257	1,776,141	6.3	4.0
	22	279,819	(19-23)	399,477	(19-23)	562,465	(19-23)		
	23	285,889	1,586,416	367,168	2,114,524	531,968	2,870,574	6.8	4.5
Total Pop. in C.J.		22,859,327		23,784,581		26,879,298		1.8	1.8

Notes and Sources: 1/ Source: Calculated based on data from BAPPEDA, *Jawa Tengah Selayang Pandang, 1975*, Hardback, 1975.

Notes and Sources: 1/ Source: [illegible] Handback. 1975.

Table 10.31 Actual Student Growth Rate and Number of Students by Educational Level, Central Java, 1971-1976

	Number of Students			Annual Student Growth Rate (%)	Number of Students	Annual Student Growth Rate (%)	Number of Students	Annual Student Growth Rate (%)	Number of Students	Average Annual Student Growth Rate (%)
	1971	1972	1973		1974		1975		1976	
SD										
Total[1] Students	2,287,870	2,318,690	2,340,974		2,324,425					0.5
Total[2] Students			2,173,662	3.1	2,240,041		2,334,781			3.6
Total[3] Students					2,056,436	9.5	2,252,261	3.4	2,328,233	6.4
Total[1] Indonesia	12,896,147	13,030,548	13,069,456		13,314,246					1.1
SLTP										
Total[1] Students	235,979	251,233	268,781		298,173					8.1
Total[2] Students					353,529		363,117			2.7
Total[4] Students							313,125		(478,593)	(52.8)
Total[1] Indonesia	1,400,873	1,441,486	1,535,701		1,691,078					6.5
SLTA										
Total[1] Students	121,725	118,234	120,841		125,466					1.0
Total[2] Students					146,782		151,158			3.0
Total[4] Students							130,314		154,421	18.5
Total[1] Indonesia	651,671	664,212	683,477		720,673					3.4

Notes and Sources:
1/ Source: BP3K, Statistik Persekolahan Departemen P & K, 1974. Excluding Madrasah.
2/ Source: BAPPEDA, Jawa Tengah Dalam Angka 1973-75, 1976.
3/ Source: Dinas Education (Dinas PD & K). Excluding Madrasah.
4/ Source: Kanwil Education.

the number of SD students will maintain the 6.4 percent growth rate during the period from 1974 to 1983. The likely rate will be around 3.6 percent.

(iv) Student Growth Rate for the Future

10.157 The basic criteria in determining future capacity of the primary education system are: (1) there should be capacity to accomodate all children who want to have the primary education; and (2) even those children who are not so desirous or children whose parents are not convinced of the importance of school education should be encouraged to obtain the primary school education, which is the idea of compulsory education. In Indonesia, however, implementation of compulsory education has been postponed indefinitely even though it was established quite a while ago. So the first criterion is the only one which must be satisfied.

10.158 To determine the required capacity, the future number of students wanting to have a primary education must be estimated. It is assumed that almost all children, i.e., 95 percent, will want to enroll at primary schools in 1983, and that the share of Islamic primary schools will decline to 10 percent of all students. Based on these two assumptions, the new entry ratio of non-religious schools as a substitute for the pure enrollment ratio must be 85.5 percent in 1983. This means a 1.0 percent annual increase of newly entering students from 1974 through 1983.

10.159 The next factor we have to examine in order to determine the future capacity is the dropout ratio. The net dropout ratio in 1974 is 45.4 percent. 10 percent in 1983 seems to be conservative and 20 percent seems to be high. So, 15 percent is taken as the net dropout ratio in 1983. Based on this, the graduate ratio will be 72.7 percent. This is high as a graduate ratio, and in order to achieve it such measures as easy examinations, more free education, and scholarship policies have to be adopted. The gross enrollment ratio excluding repeater students will be about the middle of the new entry ratio and the graduate ratio, i.e. 79 percent. So, taking repeaters into account, the gross enrollment ratio will be roughly 80 percent in 1983. If Madrasa is included, the figure is 89 percent in 1983. Since the estimated SD age population is 3,834,000 (see Table 10.30), the number of SD students will be 3,067,200 in 1983. To attain this number of students in 1983, the annual growth rate of students in SD excluding Madrasa is 3.6 percent from 1974 through 1983. Thus, 3.6 percent will be the reasonable student growth rate for the coming 7 years. Table 10.32 presents the estimated number of students in 1978, 1983, 1988, and 1993 based on the assumption of 3.6 percent annual student growth rate. 3.6 percent growth rate means about 80,600 to 110,900 new students every year or 433 to 500 schools every year from 1975 through 1983, assuming the school size of 240 students per school and the utilization ratio of 77.5 percent in 1975 and 92.5 percent in 1983.

Table 10.32 SD Student Number Estimated Based on Assumed Growth Rates[1/], Central Java, 1974-1983

	Year	School Age Population (1)	Number of[6/] Students (2)	Growth Rate of Students (3) (%)	Gross Enrollment Ratio (4)=(2)/(1) (%)
Actual Number					
	1971	-	-	.5	-
	1972	-	-	.5	-
	1973	-	2,173,662[4/]	3.1	-
	1974 (Base Year)	3,865,172[3/]	2,240,041[4/]	4.2	58.0
	1975	4,028,926[2/]	2,334,781[4/]	-.3	58.0
	1976	3,907,901[3/]	2,328,233[5/]		59.0
Estimated Number					
	1978		2,580,447		
	1983	3,834,281	3,079,596	3.6	80.3
	1988		3,675,298		
	1993		4,386,229		

Notes and Sources:
1/ Excluding Islamic religious school students.
2/ Source: Table F.3 in Appendix F.
3/ Source: Table 10.30.
4/ Source: BAPPEDA, Jawa Tengah Dalam Angka 1973-75, 1976.
5/ Source: Dinas Education.
6/ Numbers of students after 1976 are estimated based on the assumpetion of 3.6% student growth rate.

10.4.3 Junior Secondary School (SLTP)

(a) Present Situation

10.160 Table 10.20 presents basic statistics of SLTA. In 1975, there were 1,672 SLTPs in Central Java, which means about 0.72 SLTPs per 10,000 population or one SLTP per about 8 SDs. There are about 363 thousand students in Central Java, and the average size of schools is about 217 students per school, which is very small. There are about 15 teachers per school and the average number of students per teacher is 14.5. Table F.9 in Appendix F presents the geographic distribution of SLTP by type. There are many kinds of SLTP and these four (SMP, SMEP, ST, and SKKP) are the major ones.

(b) Gross Enrollment Ratio

10.161 According to Table 10.21, the gross enrollment ratio is about 20 percent for SLTP, while it is about 10 percent for SLTA in 1975. If Islamic religious schools are included, the gross enrollment ratio is 23 percent, according to Table 10.25. SLTP gross enrollment ratio seems to be stable over time, because of the rapid growth of the SLTP school age children. This rapid growth will stop soon and the gross enrollment ratio will start to increase after 1976.

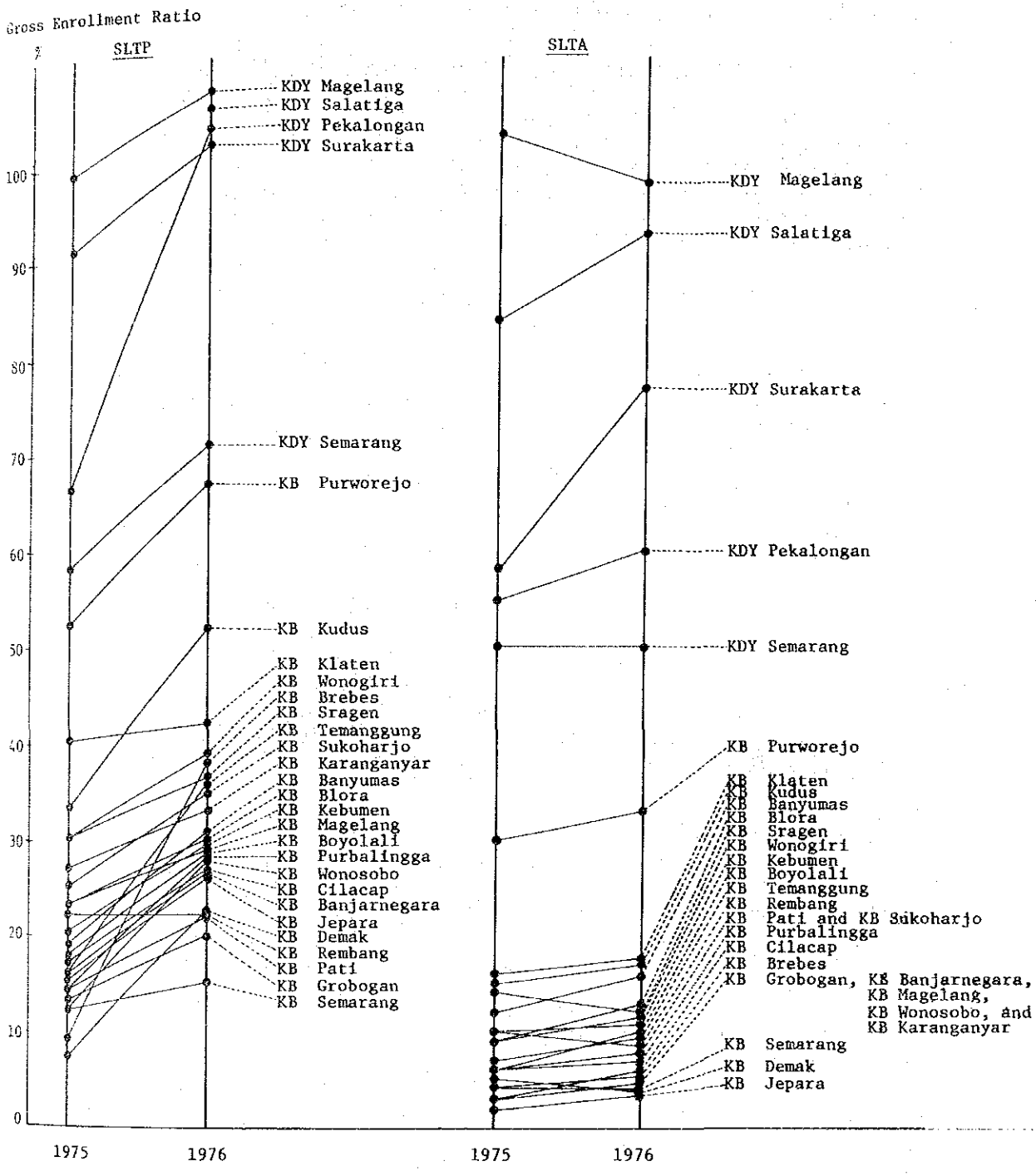
10.162 According to Table F.10, the gross enrollment ratio has increased from 25 percent in 1975 to 37 percent in 1976. However this 37 percent seems to be too high and thus is doubtful. This 37 percent growth a year is mainly caused by the growth of the SMEP, one of the SLTPs. The number of students in SMEP has increased by 5 times in one year from 1975 to 1976, which is unrealistic. Thus the data on SMEP-student number is unreliable. Therefore 25 percent will be a more reasonable ratio than 37 percent at this moment for SLTP.

10.163 It is said that in the developing countries, only 25 percent of the labor force in a given age group can work at white-collar and professional jobs (see page 33 of "Economic Survey of Asia and the Far East 1973", United Nations, New York, 1974), which are taken by SLTA or university graduates. There are two alternatives that the educational decision maker can take for Central Java related to this argument. The first is to maintain 25 percent SLTP gross enrollment ratio in order to restrict the number of students entering SLTA schools, assuming all students will advance to senior secondary schools. The second is to increase this gross enrollment ratio to a certain extent, assuming some students will leave the educational system at the end of junior secondary and roughly 25 percent of an age group will get a senior secondary diploma.

10.164 As for the geographic distribution of the SLTP gross enrollment ratio, Figure 10.5 presents the result based on Table F.10. There are big differences among KB/KDYs. Quite opposite to the result of SD ratios, all KDYs have shown the highest gross enrollment ratios among KB/KDYs, which means many SLTPs are concentrated in urban areas.

Figure 10.5 Gross Enrollment Ratio for SLTP and SLTA by KP/KDY

Central Java, 1975 and 1976



Source: Table F.10 and Table F.12.

Among KBs, Purworejo, Kudus, and Klaten have shown high ratios exceeding 30 percent, and they have also shown high ratios for the SD enrollment ratio. For the rest of the KBs, 17 to 18 percent seems to appear most frequently in 1975.

(c) New Entry Ratio, Graduate Ratio, and Net Dropout Ratio

10.165 While the gross enrollment ratio is around 20 percent, the new entry ratio as a substitute for the pure enrollment ratio is also about 20 percent in 1974 (see Table 10.28). This means the number of dropouts roughly equals the number of over-age students in SLTPs. This 20 percent new entry ratio is rather low and it is reasonable to increase this ratio to a certain extent higher.

10.166 Table 10.26 presents the graduate ratio of SLTPs, which is about 13 percent in 1974. This means that in 1974 about 20 percent of an age cohort actually enrolled at SLTPs but only 13 percent graduated from the SLTPs in Central Java. In other words, about 65 percent (13 devided by 20) of all those enrolled completed studies at the SLTPs. Table 10.28 presents the net survival ratio in Central Java in 1974, which is 62 percent and is close enough to the 65 percent which is estimated above. For the purpose of comparison, the net survival ratio in entire Indonesia is estimated in Table 10.27. They are 51 percent for SKKP students and 77 percent for SMP students in 1974. There is no significant difference between the ratios of Central Java and Indonesia.

10.167 62 percent net survival ratio indicates 38 percent net dropout ratio. This high dropout ratio is one of the problems of the SLTPs. However, it is lower than the one of SDs. It is high among the special schools especially at SKKAs. This high dropout should be prevented, because the average annual cost per student of SLTP is very high and actually higher than the one of SD as can be seen on the following table:

Average Routine Cost per Student at SLTP and SLTA Level

Central Java, 1975

Kanwil Ed. Routine Budget (Rp. Million) for SLTP and SLTA[1/]	20,047
Number of Students in SLTP and SLTA[2/]	514,275
Average Routine Cost per SLTP & SLTA Student (Rp.)	38,981
Average Routine Cost per SD Student (Rp.)[3/]	10,460

Notes and Sources: 1/ Source: Table 10.36.
2/ Source: Table 10.20.
3/ Source: Table 10.37.

10.168 One major cause of the high dropout incidence is the students' opportunity cost of going to school. To solve the dropout problem and also to attain the equal opportunity goal, a sufficient scholarship system combined with the high school fee policy should receive serious consideration from policy makers.

(d) How Much Should the Schools Be Expanded

10.169 There are very strong needs for SLTPs especially for national SLTPs and for SMPs. At most kabupatens, when officials were asked about their most critical problems in education, they stated that the shortage of SLTPs, especially the shortage of national SMPs, is the greatest problem. For example, according to KB Magelang officials, two sessions of school, one in the morning and the other in the afternoon, can be commonly observed in their kabupaten, and there are many SD graduates who wait one year to enroll at the SLTPs. Also, KBs Pekalongan and Demak want to establish one national SMP per 4 or 5 SDs.

10.170 The past growth rates of SLTP students are in Table 10.31. The ratio ranges from 3 to 8 percent and is 2·7 percent in 1974/75. Table 10.33 shows SLTP gross enrollment ratio is about 23 percent. To maintain this ratio up to 1983, the minimum student growth rate is 2 percent per year. The planned SLTP student growth rate in Repelita II is 6 percent, and if this ratio is maintained up to 1983, the gross enrollment ratio will be 32.0 percent in 1983. It seems reasonable to have a gross enrollment ratio of about 30 percent, but the annual student growth rate for 1974 and 1975 suggests that it might be difficult to achieve this 6 percent growth. A 5 percent student growth rate seems to be more feasible. If 5 percent, the gross enrollment ratio will be 29.4 percent (see Table 10.33) in 1983.

10.171 Table 10.33 presents the estimated number of students in 1978, 1983, and 1993 based on the 5 percent growth rate for the years after 1974.

10.172 If 5 percent policy is taken, there will be 548,439 students in 1983. Since there were 363,117 students in 1975, the difference which have to be filled during the period from 1976 to 1983 is 185,322, namely 23,165 students per year. Dividing 23,165 by 17 which is the average number of SMP students per teachers in 1974 (source: BP3K) gives us the minimum number of teachers required, i.e. 1,363. Dividing 23,165 by 41 which is the number of SMP students per class in 1974 gives the minimum number of classrooms to be built in a year, i.e., 565 rooms. And, dividing 23,165 by 235 which is the number of students per school in 1974 (source Table 10.20) gives us about 99 SLTP school which are required per year.

10.173 In achieving this 5 percent student growth rate during the coming 7 years, the primary effort should be concentrated on reducing dropouts rather than increasing enrollments. In allocation, major efforts should go to increasing SLTP students in kabupatens rather than in kotamadyas as it is suggested in the previous section based on Figure 10.5.

Table 10.33 SLTP Student Number Estimated Based on Assumed Growth Rates Central Java, 1974 - 1983

Year	School Age Population (1)	Number of Students[4] (2)	Growth Rate of Students (3) (%)	Gross Enrollment Ratio (4)=(2)/(1) (%)
Actual Number				
1974 (Base Year)	1,523,958[2]	353,529[3]	2.7	23.2
1975	1,601,083[1]	363,117[3]		22.7
1976	1,846,557[2]			
Estimated Number				
1978	1,851,699	429,717		23.2
1983	1,864,555	548,439	5.0	29.4
1993		893,350		

Notes and Sources:

1/ Source: Table F.10 in Appendix F.

2/ Source: Table 10.30.

3/ Source: BAPPEDA, Jawa Tengah Dalam Angka 1973-1975, 1976.

4/ Number of students after 1976 are estimated based on the assumption of 5.0% student growth rate.

(e) Some Problems Which Deserve Attention

10.174 One problem about SLTPs is the afternoon session. About 25.6 percent of the total number of SMPs in Central Java in 1974, which is 315 schools, is either an afternoon school or an evening school or a morning-plus-afternoon school (source: BP3K, Statistik Persekolahan Departemen P & K, 1974, 1976). For example, all national SMPs in KDY Semarang adopt double sessions, which comprise one in the morning and one in the afternoon. Schooling starts at 7:00 in the morning and lasts to 12:00 with 7 school hours of 40-minute classes for the morning students, after which 12:30 through 5:30 is for the afternoon students. However an afternoon or evening session is not recommendable, because:

(1) it is hot in the afternoon and the heat is not conducive for study;

(2) pupils are tired in the afternoon and evening because they work or play at home or in the fields, and they need to take rest in the afternoon and evening; and

(3) as a consequence of (1) and (2), the performance of afternoon and evening students is lower than that of morning students as a fact.

So, afternoon schools and evening schools should be reformed into morning schools except for vocational and special schools where there is specific intention to teach in the afternoon or evening. Although the elimination of double sessions would have no effect on SLTP student growth, it certainly would effect new school construction. It will increase the needs for new SLTPs, especially national SLTPs. SLTPs should be expanded beyond the number which is needed to meet the new demand created by 5 percent annual growth of students.

10.175 Another problem is that there are too many kinds of special schools at the SLTP level. The Central Government has a plan to convert all special schools into general junior secondary schools, that is SMP. This policy should be supported and major reasons for supporting this policy are:

(1) students at the SLTP level are too young to be specialized into specific skills and to become skilled workers;

(2) what SLTPs can best offer is to give students who want the basic preparatory knowledge for broadly-defined fields of specialization such as technical or commercial;

(3) SLTPs are not suitable for vocational training, and vocational training should be done by schools within factories or by on-the-job training or specialized short-term training centers;

(4) existing vocational-type schools can not offer adequate special vocational training because of the poor quality of the schools' manpower and equipment and in fact the education in the schools does not differ from SMPs significantly;

(5) many students in vocational-type schools chose them as the second choice after SMPs; and finally

(6) as a consequence, employers prefer to hire general school (SMP) graduates or, if they need semi-skilled laborers, prefer to hire SLTA vocational-type school graduates rather than SLTP vocational-type school graduates, according to some employers and school officials.

10.176 The private SLTPs is also a problem. In Central Java in 1975, about 50 percent of students at SLTPs are in private SLTPs including subsidized and aided ones (see Table F.2). As was discussed above, their quality is lower. For example, KB Pekalongan officials stated that 90 percent of private SLTPs are unqualified and some do not have even a school building. An educational inspection system should be facilitated and improved.

10.4.4 Senior Secondary School (SLTA)

(a) Present Situation

10.177 Table 10.20 presents basic statistics of SLTAs. In 1975, there were 643 SLTAs in Central Java, which is 0.28 schools per 10,000 population or one SLTA per 2.6 SLTPs or 20.6 SDs. There are about 151 thousand students. The average size of a SLTA is 235 students per school, which is very small. There are about 21 teachers in a SLTA, and the average number of students per teacher is about 11. Table F.11 in Appendix F presents the geographic distribution of SLTAs by KB/KDY.

(b) Vocational-Type Schools

10.178 There are 13 types of SLTA, among which five schools absorb most of the SLTA students. They are general school (SMA), technical schools (STM), commercial schools (SMEA), home economics schools for girls (SKKA), and primary teacher training schools (SPG).

10.179 At this level of education, specialization is well advanced in terms of quantity. Table F.5 presents the distribution of students among vocational-type schools and the general schools. As compared with SLTPs, students are distributed relatively evenly among SMA (35 percent), STM (30 percent), and SMEA (20 percent) types. In contrast to SLTPs, educational specialization at the SLTA level is recommended and each speciality should be developed further, since the employment markets

require semi-skilled workers of the age of the SLTA graduate or older, while the markets require skilled workers at the age of the academy graduates or older.

(c) Gross Enrollment Ratio

10.180 According to Table 10.21 gross enrollment ratio for SLTAs was 10 percent in Central Java in 1975. If students in Islamic religious schools are included, the gross enrollment ratio is 13 percent in 1971 according to Table 10.22. The gross enrollment ratio grew slightly from 9.7 percent in 1974 to 10.7 percent in 1976. According to another data in Table F.12 in Appendix F, it grew from 11.7 percent in 1975 to 13.3 percent in 1976. These ratios are not so high, and it can be recommended that SLTA students be increased.

10.181 Table F.12 presents the geographic distribution of gross enrollment ratio by KB/KDY, and Figure 2 shows in graphic form the information contained in Table F.12. Similar to the SLTP ratios, all KDYs have shown the higher ratios from 50 to 103 percent, which also means many SLTAs are located in urban areas. Among KBs, only Purworejo has shown the outstandingly high ratio of around 30 percent, and the rest of KBs are located in the range between 4 and 17 percent.

(d) New Entry Ratio, Graduate Ratio, and Net Dropout Ratio

10.182 Table 10.28 presents the new entry ratio as a substitute for the pure enrollment ratio. The new entry ratio was only 11 percent in 1974, which is not very high. The net dropout ratio was 24 percent in 1974, which is low as compared with 38 percent at the SLTP level. It means a relatively small portion of an age cohort enrolls at SLTA but not many drop out. Table 10.26 presents the graduate ratio, which was 9 percent for SLTAs in Central Java in 1974. The average repeater ratio per year was 4.4 percent for SLTAs and was higher than 3.7 percent for SLTPs in 1974 (see Table F.4).

(e) How Much Should the Schools Be Expanded

10.183 The change of the growth rate of SLTA students is rather drastic (see Table 10.31). It was just one percent during 1970 and 1973, then 3 percent in 1974, and has reached 18.5 percent in 1975. 18.5 percent seems to be too high to take it as representing the past trend of student growth, and 3 percent seems to be the better indicator of the past trend. If the number of SLTA students grows at the annual rate of 3 percent, the gross enrollment ratio in 1983 will be lower than the ratio in 1974 (11 percent) because of rapid increase of the population of the SLTA school-age children. In order to maintain the 11 percent gross enrollment ratio in 1983, the annual student growth rate must be 4 percent. The student growth rate set by Repelita II is 5 percent on average. If this rate is also applied to the Repelita III period, the gross enrollment ratio in 1983 will be 12 percent. Since 12 percent is not so high and seems to be reasonable, a 5 percent annual

student growth rate is recommended for SLTA until 1983. Table 10.34 shows the result of the student number projection based on the 5 percent student growth rate.

10.184 If 5 percent policy is taken, there will be 227,707 students in 1983. Since there were 154,421 students in 1976, the difference which must be filled during the period from 1977 to 1983 is 73,286, namely 10,470 students per year. Dividing 10,470 by 35, which is the average number of SMA students per class, gives us the average number of classrooms to be built in a year, i.e., 299 rooms. Dividing 10,470 by 13, which is the average number of SMA students per teacher in 1974 (source: BP3K, op. cit. 1976), gives the average number of teachers required per year, i.e., 806. The number of schools required per year is estimated to be 45 based on 235 students per school which is the average size of the SLTAs in 1974.

10.4.5 Finance

10.185 In this section, two subjects are discussed: (1) the financial sources for educational development; and (2) required costs of educational development, especially the development of primary schools whose growth rate is recommended to be 3.6 percent annually in terms of the student number.

(a) Financial Sources for the Educational Development

10.186 Financial sources usable for national school expenses are the Central Government budget, Provincial and Local budget, and school fees (SPP). Sources for private schools are governmental subsidies, SPP and donations. The scale of those three kinds of sources, and their shares in total educational finance in Indonesia in 1970 are as follows:

Sources of Educational Finance
Indonesia, 1970

(Unit: Rp. Billion)

	Routine Budget		Development Budget		Total
	Rp.Bil.	(%)	Rp.Bil.	(%)	Rp.Bil.
Central Government Direct Expenditures	27.1	(41.2)	8.5	(45.5)	-
Provincial & Local Gov't					
a. Central Gov't Subsidy	21.0	(31.9)		(0)	-
b. Local Gov't Own Source	6.8	(10.3)	3.7	(19.8)	-
School Fees	16.3	(24.8)	6.5	(34.7)	-
Total	65.8	(108.2)	18.7	(100.0)	84.5
	(77.9)		(22.1)		(100.0)

Source: IBRD, Indonesia, Education Sector Survey Report, 1975, Appendix A.

Table 10.34 SLTA Student Number Estimated Based on Assumed Growth Rates Central Java, 1974 - 1983

Year	School Age Population (1)	Number of Students[5] (2)	Growth Rate of Students (3) (%)	Gross Enrollment Ratio (4)=(2)/(1) (%)
Actual Number				
1974 (Base Year)	1,288,087[2]	146,782[3]	3.0	11.4
1975	1,369,711[1]	151,158[3]	2.2	11.0
1976	1,577,642[2]	154,421[4]		9.8
Estimated Number				
1978		178,414		
1983	1,890,397[2]	227,707	5.0	12.0
1993		370,911		

Notes and Sources:
1/ Source: Table F.12 in Appecdix F.
2/ Source: Table 10.30.
3/ Source: BAPPEDA, Jawa Tengah Dalam Angka 1973-1975, 1976.
4/ Source: Kanwil Education and Table F.12.
5/ Number of students after 1976 are estimated based on the assumption of 5.0% student growth rate.

10.187 Central Government expenditure accounts for 73 percent of the educational routine budget in 1970, and 46 percent in the development budget. Since its share is high and since the sources of Provincial and local governments and parents' school fees are weak as sources of finance, the Central Government's educational expenditure schould be examined.

10.188 Central Government's expenditure on education as a percentage of GNP and a percentage of total Central Government expenditure were 1.7 percent and 9.7 percent, respectively (see Table 10.35) in 1973. These are relatively small as compared with the other Asian countries. For example, the Malaysian expenditure in 1972 was 6.4 percent and 20.9 percent, and the Papua New Guinean expenditure in 1971 was 5.1 percent and 16.6 percent, respectively (source: Annex 1 of IBRD, Indonesia Education Sector Survey Report, 1975). Among the total expenditures in 1973, about 73 percent are routine expenditures. This also is low among Asian countries, and suggests that Indonesia is using more funds in school construction than in personnel.

10.189 When the time series data are examined (see Table 10.35), the educational expenditure is seen to be increasing, and the share in GNP is also increasing. Namely, the Central Government's educational expenditure in 1970 was 1.4 percent; in 1973 it was 1.7 percent; and in 1975 it was 2.8 percent. Based on the Study team's projection, it will increase to 4.8 percent against the GNP in 1983.[20/] In terms of the share in the total national expenditure, educational expenditure is very stable, i.e., it was 13.2 percent in 1970, 9.7 percent in 1973, 12.3 percent in 1975. and will be 13.0 percent in 1983 based on our projection.

20/ The projection was done based on Table 10.35, assuming the followings:

a) 3.7 percent of the national total expenditure in 1983 will go to the educational routine expenditure by the Ministry of Education;

b) 4.5 percent of it to the SD subsidy by the Ministry of Home Affairs;

c) 2.3 percent of it to APBN educational development expenditure; and

d) 2.5 percent of it to INPRES/SD expenditure.

As a consequence, the percentage share of educational expenditure in the national total expenditure will be 13.0 percent in 1983. The national total expenditure was assumed to grow by 9.8 percent from 1977 to 1983, and the GNP was assumed to grow by 6.2 percent from 1977 to 1983. As a consequence, the percentage share of the national total expenditure in GNP is estimated to be 36.8 percent in 1983. So the percentage share of total educational expenditure in GNP is 0.130 times 0.368, that is 4.8 percent, in 1983.

Table 10.35 Educational Expenditures and Other INPRES Expenditures, Indonesia, 1960-1977

(Unit: Rp. Million at Current Prices)

		1969	1970	1971	1972	1973	1974	1975	1976	1977	Annual Growth Rate 1977 to 1983 (%)
Routine Exp.	Min. Education[1]	12,673	16,819 (3.7)	20,905 (3.8)	27,800 (3.8)	32,1234 (2.8)	86,006 (4.3)	100,239 (3.7)	nd[5]		9.8[3]
	Min. Home Affairs[2] (SD Subsidy)		21,000 (4.6)			49,600 (4.3)		122,863[3] (4.5)	nd		9.8[3]
Total Routine Expr.		216,500[1]	288,177	349,095	438,100	713,302	1,016,112	1,332,572	nd	2,079,400	9.2
APBN (Departmental & Defense Development Budget)	Edu. Sector	8,515[1]	8,538[1] (1.9)	8,973[1] (1.6)	12,218[1] (1.7)	13,472[1] (1.2)	27,500[3] (1.4)	63,800[3] (2.3)	88,523[3]		
	Total		82,969	102,560	150,043	167,294	221,659 (11.12)	384,896 (14.1)	nd	800,200 (18.8)	11.3
INPRES (District Dev.)	Desa	4,600[4]	5,590 (1.2)	5,250 (1.0)	5,700 (0.8)	5,700 (0.5)	11,400 (0.6)	15,929 (0.6)	19,794[4]	23,200 (0.6)	9.9
	SD	na[6]	na	na	na	17,186 (1.5)	19,703 (1.0)	49,900 (1.8)	53,877[4]	85,000 (2.0)	13.6
	Health	na	na	na	na	na	5,291 (0.3)	15,122 (0.6)	17,141[4]	26,300 (0.6)	12.3
	Total	nd	32,681	37,247 (6.8)	57,800 (7.9)	85,687 (7.4)	158,279 (8.0)	234,245 (8.6)	nd	326,600 (7.7)	11.4
Total Dev. Exp.		118,200[1]	169,752 (37.1)	195,900 (35.9)	298,224 (40.5)	450,956 (38.7)	961,817 (48.6)	1,397,727 (51.2)	1,920,300[4]	2,167,900 (51.0)	10.3
National Total Exp.			457,929 (100.0)	544,995 (100.0)	736,324 (100.0)	1.164,258 (100.0)	1,977,929 (100.0)	2,730,299 (100.0)	nd (30.2)	4,247,300 (100.0)	9.8
GNP (Rp. Million)			3,340,000	3,672,000	4,564,000	6,753,400	10,768,000	12,190,000	13,104,000	14,087,000	6.2

Notes: 1/ Source: Ministry of Education, Jakarta.

2/ IBRD, Indonesia Education Sector Survey Report, 1975.

3/ The Study team's estimate.

4/ Source: Directorate for INPRES, BAPPENAS.

5/ nd stands for "no data".

6/ na stands for "not applicable".

Source: Chapter XIII of this Report.

10.190 The table below shows the allocation of the national educational budget in 1973 to each level of education.

Allocation of Central Government's Educationl

Budget by Educational Level, Indonesia, 1973

Educational Level	Source of Budget	Routine Budget Rp. Million	%	Development Budget Rp. Million	%
For SD	Min. Home Affairs	49,600	(60.7)	17,186	(57.7)
"	Min. Education	-		500	
For SLTP	"	13,700	(16.8)	4,400	(14.4)
For SLTA	"	6.400	(7.8)	3.100	(10.1)
For Others	"	12,023	(14.7)	5.472	(17.8)
Total		81,723	(100.0)	30,658	(100.0)

Source: IBRD, Indonesia Education Sector Survey Report, 1975, Table 20 and Appendix A.

Roughly 60 percent of the budget is allocated to SDs, 15 percent to SLTPs, 10 percent to SLTA, and 15 percent to the other purposes. The SD routine budget is distributed by the Ministry of Home Affairs to each province, listed in the provincial routine budget, passed to Bupatis, listed in the kabupaten routine budgets, and is handed over to SDs. The SD development budget comes from two sources: the Ministry of Home Affairs and the Ministry of Education. The one from Home Affairs is INPRES/SD, and the one from Education seems to be used by the Ministry itself. INPRES/SD goes directly to kabupatens, but sometimes is listed on the separate part of the provincial budget report as a reference. The SLTP routine and development budgets go to Kanwils, and are used by Kanwil. Also, the SLTA routine and development budgets go the same way. Others are used by the Ministries themselves.

10.191 At the provincial level, there are five kinds of budgets: (1) APBN routine under the budget of Kanwils; (2) APBN development under the budget of Kanwils; (3) APBD routine under the Provincial Government and Dinases; (4) APBD development under the Provincial Government and Dinases; and (5) INPRES which are under separate autonomous bodies, i.e. INPRES/SD goes to kabupaten development budgets, INPRES/Health goes to kabupaten development budgets, and INPRES/Desa goes directly to desa budgets (if such exist).

Table 10-6 All Educational Expenditure Excluding Pure Kabupaten Budget, Central Java, 1969 - 1977

(Unit: Rp. Million)

Exp.	Agency	For	1969	1970	1971	1972	1973	Total 1969-73	1974	1975	1976	1977	Estimated Budget in 1983 at the 1977 Constant Price
APBD Routine	Dinas Ed.[1]	SD						nd	nd	24,413	26,124	(27,955)[3]	(56,238)[9]
		(%)								(53,9)	(56.9)		(55.4)
	Total[2]							nd	nd	45,262	45,933	nd	(102,250)[5]
													(55,037)[6]
APBN Routine in C.J.	Kanwil Ed.	SLTP, SLTA						nd	nd	(20,047)[4]			
		(%)											
	Total							nd	nd	nd	nd	nd	nd
APBD Dev.	Welfare & Ed.	All	48	57	184	170	366	825	663	673	697	760	(1,534)
		(%)										(7.5)	(7.5)
	Total		862	684	1,340	2,004	1,628	6,517	6,270	8,422	9,338	10,002	(20,450)[7]
APBN Dev.	Kanwil Ed.	SLTP, SLTA						3,764	1,345	2,666	3,427	5,330	(12,101)
		(%)									(8.6)		(8.6)
	Total							nd	nd	nd	39,633	nd	(141,200)[8]
INPRES/ SD	Kab.	SD	-	-	-	-	2,632	2,632	2,665	8,449	9,763	(15,403)	(33,104)[10]
		(%)											
	Total							nd	16,616	28,384	30,895	nd	nd
APBN Dev. and INPRES	Total							55,710	20,092	40,161	56,724	74,515	nd

Notes: ( ) denotes estimated figures or percentages.
1/ Source: Directorate of Finance, Jateng, Anggaran Pendapatan dan Belanja "Rutin", 1976/77, 1976.
2/ Source: Directorate of Finance, Jateng, Ikhtisar, Realisasi Anggaran Pendapatan dan Belanja "Rutin", 1968-1976, 1976.
3/ Calculated as 7 % increase of the figure in 1976.
4/ Calculated as 20 % of the national total APBN routine budget which is under the contro of the Ministry of Education, the budget which is listed in Table 10.35.
5/ Calculated as APBD Development budget times 5.
6/ Calculated as 20% of the national total APBN routine budget.
7/ Calculated as "total INPRES budget in Jateng divided by 0.7".
8/ Calculated as 9.6% of total APBN departmental budget in Indonesia.
9/ The budget in 1983 suggests that the annual growth rate of this budget from 1977 to 1983 is 12.4% on average.
10/ The budget in 1983 suggests that the annual growth rate of this budget from 1977 to 1983 is 13.6% on average.

Sources: 1. Jateng, Rencana Penbangnan Daerah/Modernisasi Desa Tahap II, 1974/75-1978/79, 1974.
2. Chapter XIII of this Report.

10.192 Table 10.36 presents the educational expenditures in those five budgets. For SD development and maintenance, the APBD routine budget is used for SD teachers' salary, and the INPRES/SD is used for SD development. The revenue source of these two budgets is the Central Government. About 90 percent of the revenue for the APBD routine budget comes from the Central Government, and almost 100 percent of the revenue of the provincial Dinas Education (Dinas PD dan K) comes from the Ministry of Home Affairs as the primary education subsidy. Similarly, INPRES/SD is a hundred percent subsidy from the Central Government. So, the finance of the primary education at the provincial level is completely dependent upon the Central Government.

10.193 The same can be said regarding the SLTP and SLTA finances. The operation and maintenance costs including teachers' salaries for SLTP and SLTA are met by APBN routine, and the development costs of such schools are met by APBN development, both of which are totally financed by the Central. So, these four budgets are beyond the control of the Provincial Government. All that is left under provincial control in terms of financial allocation is the Education and Welfare section of APBD development budget. The Provincial Government can allocate financial resources as it wants, although 70 percent of its revenue comes from the Central Government as INPRES/D.T. I and there are some loose restrictions on its usage. One problem for the Provincial Government is that the size of the APBD development is small: almost one-tenth of any one of other four budgets.

10.194 For SD level education in Central Java in 1975, Rp.32,862 million was allocated, of which 74 percent is for the routine expenditure and the rest for the development. Dividing the routine expenditure by the numbers of students and teachers in 1975, we can obtain the average routine cost per students and per teachers. Table 10.37 shows the result as follows:

Table 10.37 Average Routine Cost per Student and per Teacher
Central Java, 1974 - 1975

		1974	1975
Dinas Ed. Routine Budget[1/]	(Rp. Million)	nd	24,413
SD Teachers' Salary[2/]	(Rp. Million)	17,468	(23,738)
Number of Students[3/]		2,240,041	2,334,781
Average Routine Cost per Student	(Rp.)	7,800	10,460
Number of Teachers[3/]		67,981	75,344
Average Routine Cost per Teacher	(Rp.)	256,954	324,020

Sources: 1/ Table 10.36.
2/ Central Java Government, Anggaran Pendapatan dan Belanja "Rutin" 1976/1977, 1976.
3/ BAPPEDA, Jawa Tengah Dalam Angka 1973-75, 1976.

The average routine cost per SD students in 1974 was about Rp.8,000, and in 1975 was Rp.10,000. With respect to SLTP and SLTA, the average routine cost per students in 1975 was Rp.38,980, which is considerably higher than the cost of a SD student.

10.195 The amounts of these five kinds of budgets in 1983 are projected based on our financial sector's projection of GNP and the national budget in 1983. The results are presented on the right side of Table 10.36. For almost all budgets a high rate of growth is shown, and they roughly double in amount as compared with the budgets in 1976. Thus, if the educational share in those budgets remain the same until 1983, there are enough financial resources for education.

(b) Required Cost for the SD School Expansion

10.196 The recommended growth of the size of the SD student body from 1974 to 1983 is 3.6 percent annually. According to this rate, there should be 3,079,596 students in 1983. Since there were 2,328,233 students in 1976, the difference between 1976 and 1983 which have to be met by the SD expansion during the period from 1977 to 1983 is 751,363 or in other words 107,338 students per year. Dividing 107,338 by 40 gives the required minimum number of classrooms, i.e., 2,683, and dividing it by 31, which is the average number of students per class in 1974 (source: BP3K, Statistik Persekolahan Departemen P & K 1974, 1976), gives us the average required number of classrooms to be built in a year, i.e., 3,463. Since 40 students per class on average is the unrealistic assumption, 3,463 is a better estimation than 2,683. 3,463 classrooms is equivalent to 578 new primary schools, although it is recommended to expand existing schools rather than establishing new schools.

10.197 As for the number of teachers, dividing 107,338 by 29.1, which is students to teacher ratio in 1974 (source: same as in preceding paragraph), gives us the minimum requirements, i.e., 3,689 teachers, and dividing it by 23 (source: Table F.6) gives us the modest number of required teachers, i.e., 4,667. To make the target realistic, the conservative estimate of 3,689 teachers per year will be a better indicator than the other. As the result of the previous calculation, the Province needs 578 SDs equivalent classrooms and 3,689 teachers every year, from 1977 through 1983.

10.198 As for the cost for this supply, the construction cost of a new SD is met by the INPRES/SD, whose flat unit payment regardless of the local conditions is Rp.4,000,000 for one unit comprising 3 classrooms and one teacher's room. One exception to this cost is the cost in KDY Semarang, which is Rp.4,500,000. For one SD which generally comprises two units, the payment is Rp.8,000,000 in 1976, by which the cost of standard building and equipments can be covered. Many kabupatens add extra funds to improve the quality of new SDs. So, the required direct cost for school supply in a year is Rp.4,624 million at 1976 constant prices. Adding 10 percent contingency reserve

to this, the total cost per year will be Rp.5,086 million. Also, since major SD expansion will have to take place in the urban area, the construction cost will be higher than the standard cost of Rp.8 million. In 1976, the cost in Semarang was estimated to be 12.5 percent higher than the standard cost. Based on this, the required cost for additional schools should be increased, say, by 5 percent. Thus, the total cost will be about Rp.5,340 million just for new construction alone. This is a very small amount when compared with the INPRES/SD in 1977/78. So, the construction cost itself can be financed without any problem. Even after taking into consideration rehabilitation cost of old SDs, there still will be a residual from INPRES/SD. It is recommended to use this residual for upgrading the quality of educational equipment such as readers, library books, and visual aids, since existing SDs have almost no educational equipment except desks, chairs, blackboard, and textbooks.

10.199 The routine cost per SD teacher is Rp.324,020 (see Table 10.37 in the previous section) in 1975 and is estimated to be Rp.388,824 in 1974 which is a 20 percent increase of the cost in 1975. Multiplying the number of additionally required teachers, that is 3,689 teachers per year, by Rp.388,824 will produce the additionally required cost for the additional teachers at the 1976 price, that is Rp.1,435 million. Adding 10 percent contingency to this, the additionally required cost for teachers will be Rp.1,579 million. This amount is about 6.0 percent of the total routine budget for SD in 1976. This 6.0 percent is significantly lower than the assumed annual growth rate of the total routine budget at 1977 constant prices during the period from 1977 to 1983, that is 12.4 percent (see Table 10.36). So the cost of additionally required SD teachers every year can be financed without any problem providing that the budget can grow by 12.4 percent at 1977 constant prices during the rest of Repelita II and all of Repelita III.

10.200 Thus, the 3.6 percent growth rate of SD students can be financed without any problem. However one condition remains: the upgrading of the teachers' base salary. So far, the cost calculation ignored the salary increases, i.e., it assumed that the average salary measured at 1977 constant prices remains the same, but is unlikely to be the case. If this annual upgrading exceeds 6.4 percent, the student growth of 3.6 percent can not be financed by the APBD routine budget for SD. As a conclusion, 3.6 percent annual student growth alone requires the annual expansion of educational routine expenditure by 6.0 percent plus a certain percent which is necessary for upgrading the base of SD teachers' salary. In addition, salaries for additionally employed school guards and gardeners should be taken into account.

10.3.6 Teacher Supply

(a) SD Teacher Supply

10.201 The primary teacher training school is almost the only source of SD teacher supply. The teacher school for sports (SGO) is the another source but its supply is very limited. Table 10.38 presents the total number of SD teachers supplied in 1976 by sources. Table 10.39 presents the past trend of SPG development.

Table 10.38 All SD Teachers Supplied in 1976

Central Java, 1976

	Number of School	Graduates in 1976
SPG National (Negeri)	26	1,300
Private (Swasta)	20	250
Total	46	1,550
SGO National (Negeri)	7	(350) (7 x 50)
Private	1	(12) (1 x 12)
Total	8	(362)
Grand Total	56	1,912

Note: Figures in parentheses are estimated by the Study team.

Source: Kanwil Education.

Table 10.39 Number of SPG Students by Year

Central Java, 1971 - 1974

	1971	1972	1973	1974
Central Java	15,146	11,436	10,331	9,358
Whole Indonesia	95,053	86,459	78,500	76,097

Source: BP3K, op. cit.

10.202 The total supply of teachers is too small as compared with the average annually required number of teachers calculated upon the basis of 3.6 percent annual growth rate of SD students (see Section 10.4.5, Finance). Every year Central Java needs an additional 3,700 SD teachers, provided that existing teachers will not decrease and that no substitutions of unqualified teachers by new teachers will not happen. In contrast to this, all SPGs and SGOs can supply only about 2,000 in 1976 and this level of output is not likely to grow. As a consequence, the supply of teachers in the future will still be 2,000, if Kanwil or the Central Government does not take any action. If only the general teachers from SPG are taken, the supply is only 1,600 annually, which is too little. The gap between supply and demand seems to be met by the downward substitution of labor force (which means people with higher education take positions for those with lower education), since graduates from any institutions higher than SPG can become SD teachers without meeting any additional requirements. The future demand can be fulfilled by the same way, but it is recommended to expand SPG education, since graduates from non-teacher training institutions higher than SPG have no specialized training in general education and teaching methods. But the numbers of SPG schools and students are declining, and the reason for this so far can not be specified. As for the substitution, institutions higher than SPG should provide those who want to be teachers with a half-year course of teaching skills training and should require them to obtain general knowledge of all SD subjects either by means of qualification tests or by requesting students to take the same subjects in the institutions as a prerequisit to becoming a teacher.

(b) SLTP and SLTA Teacher Supply

10.203 There are three kinds of SLTP teacher-supplying institutions;

(1) IKIP 3-year course;

(2) PGSLP which is a one-year crash program by IKIP to create SLTP teachers; graduates of this program are obligated to become teachers; and

(3) universities whose graduates can become SLTP teachers but in most cases they do not want to be the teachers.

Table 10.40 presents the all graduates from IKIP and PGSLP in 1976.

10.204 Annually required additional teachers for SLTP and SLTA are 1,363 and 806, respectively during the period from 1977 to 1983. In contrast to this the teacher supply from IKIP and PGSLP are only 627 and 87, respectively in 1976 as you see in Table 10.40. Immediate expansion of them by 100 percent at least is recommended, provided that there are no constraints for their expansion.

Table 10.40 Number of Graduates From IKIP

Central Java, 1976

Name of IKIP	Place	3-Year Program Graduates	5-Year Program Graduates
IKIP Negeri	Semarang	(45)	(84)
IKIP Veteran	Semarang	3	0
IKIP Kristen Satya Wacana	Salatiga	40	3
IKIP Muhammadiyah	Purwokerto	3	0
IKIP Muhammadiyah Negeri	Surakarta	136	0
Sub-Total		227	87
PGSLP by Two National IKIPs		400 (1 Year Program)	-
Grand Total		627	87

Note: Figures in parentheses are the Study team's estimates based on the number of students in the last grade of the institutions in 1975.

Sources: 1. Kopertis, Data Perguruan Tinggi, 1975.

2. Kanwil Education.

10.4.7 Recommendations

(a) Primary School (SD)

(i) SD Facilities and Teachers

10.205 Although it is not so serious as in the case of SLTP, there are still some children who are obliged to wait for enrollment at SDs for one year because of the shortage in school facilities. SD facilities and teachers numerically are not enough to meet demand and it is recommended to increase SD facilities and teachers at the annual rate of 3.6 percent in terms of the number of pupils until the end of Repelita III. This growth rate will enable attainment of an 80.3 percent gross enrollment ratio in 1983. This growth rate is based on the assumed objectives: (1) to attain 95 percent new entry ratio; (2) to decrease the net dropout ratio from 45.4 percent to 15 percent; and (3) consequently to attain 72.7 percent as the graduate ratio.

10.206 However, there is great variation in SD needs among KB/KDYs, namely there is uneven distribution of schools relative to demand. For example, the kabupaten officials of Purworejo think that SD facilities are enough and what they need is teaching equipment for SDs, whereas the kabupaten officials of Blora think SD buildings is the first priority item above all other educational issues. Therefore, in distributing new SDs among KB/KDYs, the areal differences in SD school needs should be taken into accounts as is discussed in Section 10.4.2 (b) and (c).

10.207 To measure the areal differences, gross enrollment ratio, new entry ratio, and school zone maps should be utilized. For this purpose, at least KB/KDY population data by cohorts of 5 ages, if possible the data by cohorts of one age, should be collected by one agency in the Province--either Kanwil or Dinas or the Educational Coordination Board.

10.208 The allocation criteria of new SDs are: (1) to the areas where some children have to walk more than one kilometer to school; (2) to the areas where some children have to wait to enroll; (3) to the areas where double sessions exist; and (4) to the areas where the gross enrollment ratio or the new entry ratio is low.

10.209 In terms of gross enrollment ratio, more educational funds for SDs should be directed toward urbanized areas such as KDY Magelang, KDY Surakarta, KDY Pekalongan, KB Brebes, and KDY Semarang, since they have low (below 60 percent) gross enrollment ratios because of their high children to population ratios. To this list, Cilacap and Pati can be added.

10.210 If the first criterion of allocation criteria is satisfied, it is recommended to expand existing SDs rather than establish new SDs, because the size of SDs existing at present is too small to be economically and educationally effective. Of course, depending on situation such as location or topography, new establishment will be necessary in various areas. For this purpose school zone maps should be compiled and utilized.

10.211 In achieving 3.6 percent growth of SD students, major efforts should be directed first to reduction of dropouts instead of increasing enrollment.

(ii) SD Teachers' Quality

10.212 The SD teachers' educational quality seems to be low. The teacher retraining program should be intensified. For example, some government officials think 50 to 70 percent of SD teachers needs upgrading of their skills in mathematics and teaching methods.

(iii) SD Teacher Supply

10.213 The existing SPG and STO systems can not supply necessary teachers for the 3.6 percent student growth. They should be expanded by 100 percent, provided that there are no constraints for its expansion.

In addition, attention should also be given to upgrading SPG's educational quality so that SPG will not create substandard teachers.

(b) Junior Secondary School (SLTP)

(i) SLTP Facilities and Teachers

10.214 There are many SD graduates who want to proceed to an SLTP but can not enroll at SLTPs, and it is also the strong desire of the most KB/KDYs to increase the national SMPs in their territories. It is recommended to increase SLTP students by 5 percent per year, and then the ratio will achieve the gross enrollment ratio of 30 percent at the end of Repelita III. However it is recommended that the gross enrollment ratio should not exceed 30 percent, since it may create a large number of educated unemployed. Economic and labor market conditions must be closely examined before the gross enrollment ratio going beyond 30 percent.

(ii) Teacher Supply

10.215 In order to facilitate this 5 percent student growth, an immediate expansion of IKIP and the PGSLP of IKIP is recommended as the supply of teachers may be a constraint.

(c) Administrative Organization

10.216 As far as SD and SLTA are concerned, the dual systems of Dinas Education and Kanwil Education are complicated and inefficient in terms of consistency in the education system, and they must be confined into one organization which will be under the control of the Provincial Government instead of the Central Government.

(d) SLTA Facilities and Teachers

10.217 Just to maintain the present gross enrollment ratio and to increase slightly the gross enrollment ratio by 1983, an annual SLTA student growth rate of about 5 percent is recommended.

10.218 In order to facilitate this growth, an immediate expansion of IKIP is also recommended, provided that there are no constraints for its expansion.

10.5 Human Settlements Planning

10.219a Human settlements in Central Java have been disturbed by socio-economic changes which are taking place within the Province as well as in the nation. One is the process of urbanization, which in Central Java implies that Semarang and other few cities have been gaining population relatively rapidly. As for the present situation of urbanization, Table 10.41 shows the share of urban population in Indonesia and in Central Java. In 1971, about 2,356 thousands or 10.8 percent of

Table 10.41 Per Capita GDP and Share of Urban Population, Indonesia and Central Java, 1971, 1975, 1983 and 2000

	Per Capita GDP in 1971		Population in 1971[3/]			Per Capita GDP in 1975		Per Capita[5/] GDP in 1983	Per Capita[6/] GDP in 2000
	(Rp. at[1/] Current Prices)	(US$ at[2/] 1974 Prices)	Urban (in Thousands)	Total	Share of Urban Pop. (%)	(Rp. at[1/] Current Prices)	(US$ at[4/] 1974 Prices)	(US$ at 1974 Prices)	(US$ at 1974 Prices)
Indonesia	30,562	167.0	20,765	119,232	17.4	92,279	206.7	309.6	709.6
65% of Indonesia								201.2	461.2
Central Java	22,064	92.9	2,356	21,877	10.8	50,665	104.6	156.7	359.2

Notes and Sources: 1/ Source: Tables 1.10 and 13.16.

2/ This column was calculated by (1) multiplying the first column by a deflator derived from Table 1.10 and then (2) dividing the result by Rp.415/US$1.

3/ Source: BPS, Sensus Penduduk 1971, Serie B No. 1, 1972.

4/ This column was calculated by (1) dividing the per capita income at current prices by a deflator derived from Table 1.10 and then (2) dividing the result by Rp.415/US$1.

5/ Assuming the annual growth rate of per capita income being 5.5% during Repelita II and 5.0% during Repelita III.

6/ Assuming the annual growth rate of per capita income being 5.0% after Repelita III until 2000.

its population were living in urban areas in Central Java, whereas 17.4 percent of the total population were in urban areas in Indonesia. Out of 2,356 persons in urban areas in Central Java, 1,459 or about 62% of it were living in kotamadyas. Although Central Java had fairly low urbanization rate as compared to that of the nation as a whole, the degree of urbanization is not particularly low but is considered consistent with the per capita income of Central Java.

10.219b As for the relationship between per capita income and urbanization rate, Chenery and Syrquin[20/] identified that these two are well related each other. Figure 10.6 shows their finding which is designated as "C-S" in the figure, along with observations for Indonesia and Central Java in 1971 as well as the other ESCAP countries in 1974. As shown in the figure, Central Java does not deviate much from the C-S curve. Thus it seems to be reasonable to assume that Central Java will follow the C-S curve in respect to urbanization. Based on this assumption, urbanization rates in Central Java in 1983 and in 2000 were estimated by utilizing the two kinds of income projections presented in Table 10.41.

10.219c The result is presented in Figure 10.6, according to which, in 1983, 21 percent of Central Java population will live in urban areas if its per capita income will grow at the same rate as that of the nation, or 25 percent if its per capita income will grow up to the level of 65 percent of the national per capita income in 1983. Assuming 21 percent urbanization rate in 1983, the annual growth rate of urban population from 1971 to 1983 is estimated to be 7.5 percent, which is too high as compared to the average annual population growth rate from 1971 to 1983 that is 1.72 percent. Reasonable estimate of the urbanization rate might be 5 to 6 percent per annum, achieving 15.8 to 17.7 percent of urbanization in 1983.

10.219d Even if 21 to 25 percent urbanization rate is taken, on the other hand, the absolute number of rural population will also grow during the period from 1971 to 1983, which means massive social movement from rural to urban areas which has been observed in developed countries' experience will not yet occur in Central Java by 1983. So, it seems that urbanization in Central Java will follow and expand the existing pattern of urbanized areas. This can also be confirmed by past trend of population growth by KB/KDYs which is shown in Table 2.3. According to the table, kotamadyas grew rapidly: KDYs Semarang and Tegal showed high growth rates and with respect to KDYs Magelang, Surakarta, and Pekalongan the kabupatens surrounding them showed high growth rates. So, the existing kotamadya areas will keep growing if they still maintain their trend. The rest of urbanized population is likely to be located on the Development Belt and the Kabupaten Center Cilacap area, since these areas have development potential and the governmental efforts will be concentrated on these areas. In the year 2000, according to Figure 10.6,

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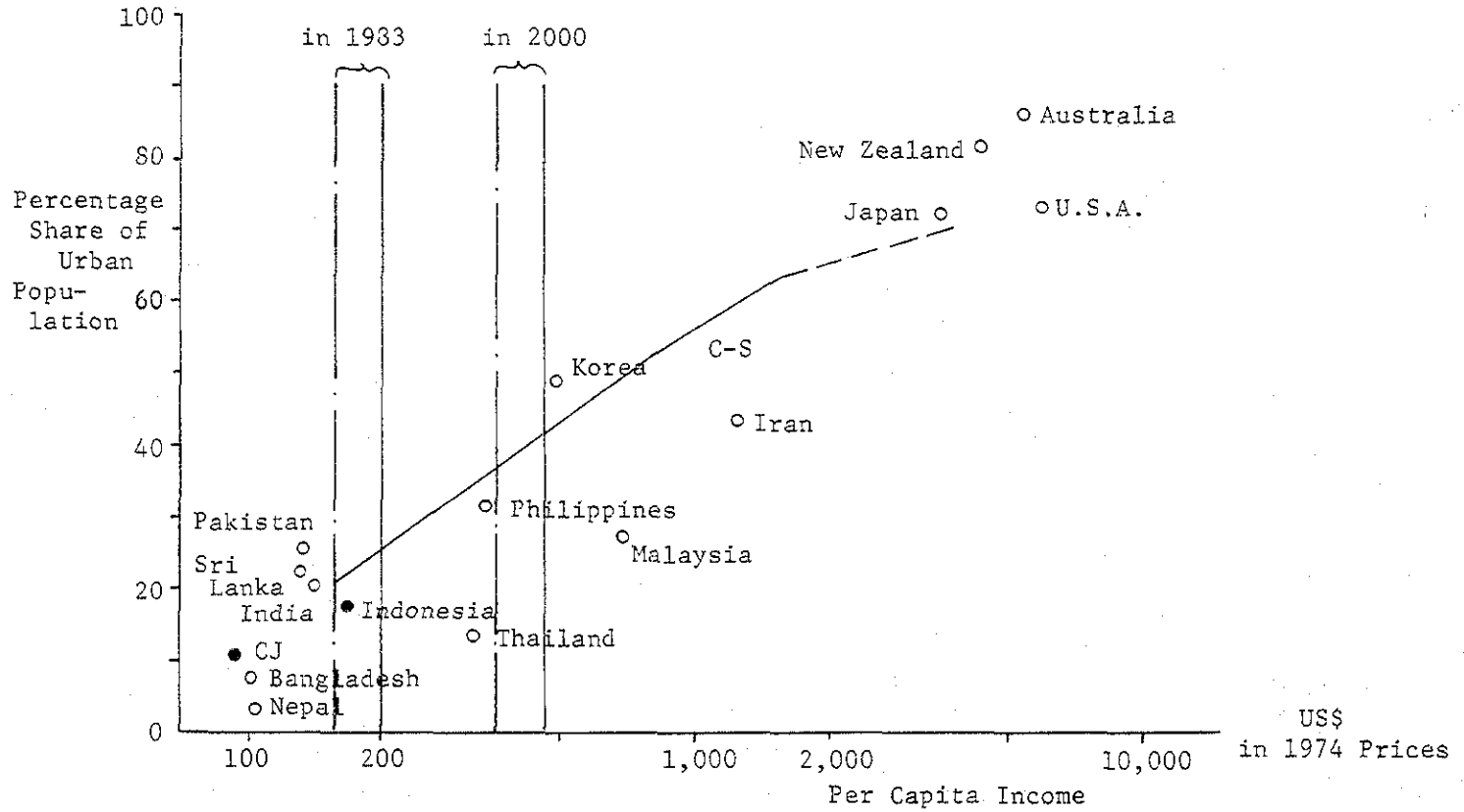
20/ Chenery, H. and Moises Syrquin, Patterns of Development 1950-1970, Oxford Univ. Press, UK, 1975.

Figure 10.6 Share of Urban Population



Legend

- ● Percentage Share of Urban Population in 1971
- ——— Income at 65% of National Per Capita Income
- — - — Income Based on the Share in 1975, i.e., 51%
- C-S The Curve Extracted from Figure 8 in Chenery and Syrquin, Patterns of Development 1950-1970, Oxford Univ. Press, UK, 1975.
- CJ General Java

Sources: 1. Table 10.41.
2. Figure 6 of Mera and Ueno, Population Factors in Planning of Sub-National Areas: Their Roles and Implications in the Long-Run, Paper Submitted to ESCAP, 1977.

the urbanization rate will be around 36 to 41 percent, which is fairly high and Central Java has to be prepared for it.

10.219e The development and decent maintenance of human settlements can hardly proceed given the rate of population expansion in those cities, largely due to insufficient investable resources and managerial capability of the organizations concerned. Even in rural areas, human settlements are inadequate not because their physical conditions have deteriorated but because of the growth of population and, in some case, because people started to demand better human settlements than they had before.

10.220 The above argument does not necessarily imply that there is no need of improving human settlements. Rather, it implies that the issue is not a simple one, and requires a careful approach. Much of the elements in human settlements are provided by the private sector, such as houses and buildings themselves. Although the governments can help people to upgrade those elements by providing assistance in various forms such as subsidized loans and information about building materials and techniques, the quality of what is built is largely determined by the amount of resources expended. This means several avenues for improvement: first, the income level of the people should be raised so that they can spend more resources for improvement of the private parts of the human settlements, and, second, an institution needs to be developed so that as much unutilized resources are used as possible.

10.221 For the parts which are the responsibility of the Governments, a long list of tasks can be enumerated, such as city planning, land use control, the provision of street, water supply, power and sewerage and so forth, building regulations, the provision of market places, community centers, hospitals and schools, and the provision of police protection and protection from fires. All these need to be undertaken, but on the other hand, the resources to do so are limited. Therefore, the essential problem is one of choice. Ideally, every one of these should be undertaken at the optimal amount at optimal locations and at the right time. This implies that the planning function of the relevant government organizations is a critical determinant for improving the quality of human settlements.

10.222 Viewed in this way and on the basis of field observations, we recommend the following two items:

(1) the general planning capability of local governments including BAPPEDA and others should be improved (refer also to Chapter XII), and

(2) in particular, urban planning capability should be strengthened within local governments.

For providing training in urban planning, particular attention should be paid to give practical techniques suited to the conditions prevailing in Indonesia, not to mention Central Java, as much of such training appears to be a carbon copy of the training being undertaken in advanced countries.

CHAPTER XI

SOCIAL DEVELOPMENT

CHAPTER XI

SOCIAL DEVELOPMENT

11.1 Sociological Aspects

11.1.1 Outline of the Present Situation

(a) Value-Orientation

11.001 Although many anthropological studies exist on the social structure of the Javanese village, systematic investigations on the value system of the society are almost lacking. However, the existing studies show at least the following characteristics of the value orientation of Javanese in Central Java: first, on an ascription-achievement axis, there is a strong inclination toward the ascription end, the typical example being the traditional image of "prijaji" which is similar to the Chinese image of mandarings; second, the structure of identification with the social group is unique and hard to depict clearly (Many scholars point out the weakness of the basis of individual way of thinking and the emphasis on mutual interest on the one hand, but also the relative looseness of the social solidarity and indefinite social framework on the other.); third, religious belief is not evenly distributed among peasants. Further, special attention should be paid to the cultural prestige given to specific professions: Among rural Javanese, prestige is accorded in proportion to the possessinon of lands -- prijaji being the only exception -- which results in the very low prestige given to trade as a profession and relatively low social position given to craftsmen.

(b) Class Structure

11.002

11.003 Apart from these three categories, economic classes in the rural community naturally accords with the size of land-holding. The highest

class encompasses the people who have so much land that they hire laborers to work it. It is the people of this class who are often given official titles in the village. On the other end of strata, there are landless agricultural laborers; and between the two poles there are strata ranked according to the area of land owned. Although social mobility in the peasant community is reportedly high and there do not appear to be many absentee landlord, economic class differentiation appears to be reinforced by the development of agriculture. But this is not necessarily perceived by peasants, and the quasi-familial relationships between the rich and the poor also have been hindering the formation of social class as a reference group with which to identify.

(c) Socio-Cultural Structure

11.004 Socio-cultural structure of Javanese society is described in Section 1.1.4 (b), "Socio-Cultural Background of Central Java," of which the major points can be summarized as follows:

(1) Among families in Java the nuclear family with a bilateral kinship system predominates. But the concept of family as an independent and lasting entity is weak.

(2) Action for mutual solidarity in a society is emphasized and practiced through "Gotong Royong". But the group which carries out activities according to Gotong Royong is in fact loose in terms of membership, and the lack of a definite frame for social solidarity is undeniable.

(3) The low literacy rate is an all but unsurmountable obstacle for diffusing new cultural influences.

(4) Recently, however, society is beginning to indicate changes in many aspects: first, the population expansion in the face of limited land is creating a huge group of landless workers; second, the introduction of money economy and many other social changes are proceeding with considerable momentum; and third, social and economic interactions in the area are increasing in number and importance.

11.1.2 Problems for Development

11.005 From the observations summarized above, it is evident that there are two levels of problems to be considered in this section of analysis. First, there are sociological and cultural factors that are

not necessarily favorable for economic development, including the lack of entrepreneurship. Second, whether the existing social structure can prevent the emergence of social anomie in the context of rapid economic development is moot.

11.006 Value-orientation that is inclined toward favoring ascription, and the low prestige given to traders and craftsmen, together with the absence of distinct concept of individual family and its property, seem to form the major part of the cultural background for the relative lack of entrepreneurship in the indigenous community. A simple indoctrination of value-orientation that substitutes for these will not necessarily yield much results; but rather, a social education program that conveys the objective knowledge concerning modern trade, business and crafts, administered by a propriate teaching personnel, will be promising. The forms and possible potential of these programs are discussed elsewhere in this chapter.

11.007 Whether the existing characteristics of the community are favorable or unfavorable for the development fo cooperative schemes is open to question. Consequently, the assessment of the policy measures for eliciting active participation in cooperative organizations and the formation of voluntary movements to support these is the second subject of this chapter.

11.008 Lastly, as stated in Section 1.1.4 (b), whether the existing social structure is strong enough to withstand the critical social change that is inevitable in the developmental process is to be questioned. In consequence, to strengthen the solidarity of the communities, several alternatives including subsidized cultural and social movements and welfare policies, should be evaluated.

11.1.3 Evaluation of the Ongoing Policies and Recommendations

(a) General Goal

11.009 There are two basic objectives to be sought for by social policies: one is the creation of entrepreneurship which should propel the development of the society and economy as a whole; and another is the maintenance of social stability and general welfare levels in the face of growing unemployment and underemployment and in the wake of social and economic change. The two objectives are not necessarily compatible and contradict each other in reality. Typically, the introduction of merit system that is often called for in pursuit of the creation of entrepreneurship has often given grounds for resentments against the inequality that the merit system brought about, thus

causing the rise of social instability. The ultimate goal of social policies, therefore, is to harmonize the efforts to create dynamism in the society and the efforts to impede the rise of social anomie, while promoting the policies in the two directions for their own merit. This delicate balance will be obtained through careful designation of specific social policies, and, more fundamentally, through the democratic process of decision-making at every level of community.

11.010 In the following discussion, policy measures for each of the basic objectives shall be presented. Firstly, the policy alternatives for the creation of entrepreneurship are examined, and secondly, those for the preservation of social stability and welfare level are examined. The maintenance of balance between the two just stressed above is to be paid attention to in reviewing each specific alternative. The promotion of the democratic decision-making process is decisively important and fundamental, but is beyond the mission of this report because of its very fundamentality.

(b) Creation of Entrepreneurship in General

11.011 The creation of entrepreneurship in Central Java as a whole can be made possible through various activities at strategic loci of the society. The types of activities has a wide spectrum, ranging from a pure self-help movement organized entirely voluntarily to a genuine indoctrination of "entrepreneurship" by the governments. Although the voluntary movements are crucially important as evidently exemplified by the histories of developed nations, the focus of the present analysis is limited to the innovations that the public policy is able to control directly. The alternatives to be given consideration in the following discussions include: the introduction of the merit and the incentive systems into governmental and public organizations at various levels; the reorientation of public organizations to the efficiency principle; a provision of modest credits to small-scale manufacturers; a rigorous specification of activities of public servants and public organizations; a reorientation of formal education towards the preparation for the self-employed; and a radical innovation in vocational education and training.

(i) Introduction of Merit and Incentive Systems

11.012 Introduction of the merit system and the incentive system should be enhanced throughout Indonesian society's organizations, including various levels of government, cooperatives and schools. Merit and incentive systems are difficult to introduce to bureaucratic systems, but are direly needed there. Since the various levels of governments are the major reservoir of human capital in Indonesian society, it is recommended that the government organizations and officials be imbued with entrepreneurial attitudes before any other organizations in the society. The means for the government at every level to enhance the introduction of merit systems include: (1) Recruitment examinations for

the government employees should be introduced and be open to the public, and the examination problems should be publicized after execution with the minimum points to be acquired for entrance. Required qualification to take examination should be lessened to make wide range of people eligible for it including junior-secondary-school graduates. The examination should emphasize practical knowledge and basicabilities and not the formalized knowledges. Every effort should be paid to avoid favoritism and nepotism in recruiting new employees. (2) The promotion system be reformed so as to take greater account of achievement rather than of ascriptive qualification. Officials who have passed the same level of examination category should be treated completely equally whichever educational career they have. (3) In every sphere of the governments' activity, economic concerns, including cost-benefit or cost-effectiveness considerations, should be stressed and put through a suitable process of evaluation. It should be widely recognized that the government officials are not people who are giving out money for the public's sale, but employees of the society who are in charge of fostering social improvement in economically efficient ways. (4) A considerable part of the government businesses are to be given out to the private sector, and some of the government services are to be entrusted to contractors. This arrangement implies that a substantial part of the government officials should be moved to the private sector, which will provide higher wages while demanding more work in terms of both time and intensity. The present practice of holding a second job which is widespread among government officials is considered to be hindering the process of emergence of modern entrepreneurship, diffusing each person's cencern without creating a real division of labor among high-level manpowers.

(ii) Local Governments

11.013 Every lower level government and unit of cooperatives should be reoriented to the principle that they are not the representatives of the upper level government or higher-ranked bodies to local communities, but individual corporative organizations who are acting on their own risks and benefits. Every effort should be taken to give financial independency to each of the lower level units with valid auditing systems, and schemes should be prepared to provide rewards to those efforts that are beneficial or effective for cost reduction.

(iii) Entrepreneurship

11.014 For nurturing the prospective entrepreneurs in the private sector, it is strongly recommended to provide a modest credit to small-scale manufacturers who have good records in steadily running a business but lack the capital for expansion. The present policy tends to spread out subsidies for small-scale businesses rather widely and thinly. If the welfare considerations are set apart, the provision of credit to potential the self-employed and the owners of small-scale businesses who are proving themselves already in their management, will prove to be workable for the sake of formation of prospective entrepreneurial leaders.

Large subsidy portion is not necessarily important in this case. Certainly a well worked out system of selection to avoid favoratism should be devised. It is duly repeated here that what is important and crucial is the warranted equality in opportunity for those who qualify themselves, not the benevolent give-away of subsidies to all that is meant to create equality itself directly. Considerations of the weak and the poor should be paid from different aspects.

(iv) Specification of the Activities of an Organization

11.015 Rigorous specification of activity in society for both individuals and organizations is often neglected but decidedly a crucial factor for development in the future. The second-job practice of government officials is one example of the diffuseness of the individual role in society. At the organization level, it is often observed that various new public organizations are established in the rural community -- various kinds of cooperatives and societies -- and they gradually assume a wider range of social activities, eventually resulting in a virtual standstill in the very field for which they are originally designated. In rural Java one can see hordes of remainders of those multi-functional, and in fact non-functional public bodies, which had been born one after another. Admittedly for an individual too much emphasis on the value of insisting on a specific role sometimes leads to a narrow expertism without broad views, and for an organization to rigid sectionalism. But these aberrations are not possibly prevented in the entire lack of specification of functions, but rather are to be corrected in the very pursuit of the achievement of the roles specified to individuals and organizations with deliberate concern for the entire society on the other. Needed policy measures include (1) the elimination of second-job practice with necessary establishment of sanctions and compensations, (2) the specification of individual roles and advocation of the virture of being an expert with possible merits to be gained by one's expertise, and (3) rigorous evaluations of achievements of organizations in their specified field.

(v) Formal Education

11.016 Formal education should be utilized in fostering entrepreneurship among a wide range of the population. While educational systems incorporate a kind of merit system that is purely confined to academic achievement, they often do not relate to the appreciation of the virtue of individual achievement in the real world and the value of training for it. Moreover the traditional idea of formal education as a necessary step for acquiring governmental white-collar jobs is still prevailing in the society. But this can neither continue to fit the reality in the face of ever-growing number of school graduates in the labor force as was seen in Chapter II Human Resources, nor be suitable to the goal of a more productive society. The school system, throughout its steps of schooling, should pertain to the student's transformation of the structure of society and the way to cope with it actively.