

THE REPUBLIC OF INDONESIA

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JAVA REGIONAL STUDY-PHASE I, PART B

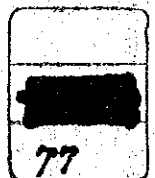
CENTRAL JAVA

FINAL REPORT

Volume I

November, 1977

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JAVA REGIONAL STUDY - PHASE I, PART B

CENTRAL JAVA

FINAL REPORT

VOLUME I

SUMMARY AND RECOMMENDATIONS

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PREFACE

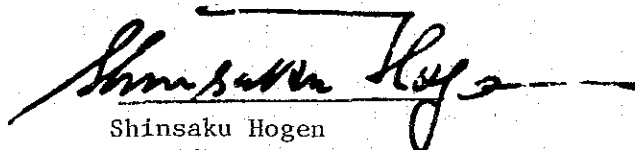
In response to the request by the Government of the Republic of Indonesia, the Government of Japan decided to conduct a survey for the Java Regional Study---Phase I, Part B, Central Java Province through the Japan International Cooperation Agency (JICA). The Agency, after consultation with the ministries concerned, organized a survey team which comprised of nine (9) experts in various fields and headed by Dr. Koichi Mera, Professor of Tsukuba University, in cooperation with the International Development Center of Japan (IDCJ).

The objective of the survey was to find out development potentials in various sectors, such as agriculture, mining, agro-industry, industry, social infrastructure, etc. and to work out the basic strategy of the regional development plan in the Central Java Province. The survey team carried out an intensive field survey from January to March, 1977, in collaboration with the Indonesian Government's officials concerned, following the preliminary survey made in October, 1976. After the survey, detailed analysis was made in Japan by both the Japanese survey team members and the Indonesian Government counterpart officials for the preparation of this final report, taking into account the comments made by the Indonesian Government.

It is my sincere hope that this report will prove helpful to the development of the Central Java Province of the Republic of Indonesia in the future.

Finally, I wish to take this opportunity to express my gratitude to the officials of the Government of the Republic of Indonesia for their whole-hearted cooperation and supports extended to the team in the execution of the survey.

November, 1977



Shinsaku Hogen
President
Japan International Cooperation
Agency

LETTER OF TRANSMITTAL

Mr. Shinsaku Hogen
President
Japan International Cooperation Agency
Shinjuku Mitsui Bldg., Nishi-Shinjuku 2-1
Shinjuku-ku, Tokyo
Japan

Dear Mr. Hogen:

I am pleased to submit to you the final report entitled "Republic of Indonesia, Java Regional Study - Phase I, Part B: Central Java." This report has been prepared according to the contract signed on December 20, 1976 by the Japan International Cooperation Agency and the International Development Center of Japan.

The International Development Center of Japan undertook this study by a team of experts headed by Dr. Koichi Mera, three missions were sent to Indonesia. The height of the study was the period of intensive field survey which extended from January 9 to March 26, 1977. The members of the intensive field survey mission were:

- | | |
|------------------------|---|
| 1. Dr. Koichi Mera | Mission Leader, Regional Economist |
| 2. Mr. Kazuo Hosoda | Water Resources and Power Engineer |
| 3. Mr. Motonaga Ohto | Agricultural Economist |
| 4. Mr. Ichirou Inukai | Industrial Economist |
| 5. Mr. Yuji Morioka | Transportation and Tourism Planner |
| 6. Mr. Yoshifusa Naito | Marketing and Rural Organizations
Expert |
| 7. Mr. Motohisa Kaneko | Human Resources and Social Planner |
| 8. Dr. Susumu Hondai | General and Financial Economist |
| 9. Mr. Hiroshi Ueno | Community Facilities Planner |

The team was assisted in the field and at the study headquarters at Semarang during the course of the Study by a counterpart team comprising:

- | | |
|-------------------------|---|
| 1. Drs. Soesiladi | Coordinator of Counterpart Team,
Chairman of BAPPEDA, Central Java |
| 2. Ir. M.P. Simatupang | Coordinator with the Central
Government, Directorate of City
and Regional Planning, DPUTL |
| 3. Drs. Soewito Laksono | Directorate of City and Regional
Planning, DPUTL |
| 4. Drs. M. Soeprapto | BAPPEDA, Jawa Tengah (Central Java) |
| 5. Ir. Mulyono Barun | BAPPEDA, Jawa Tengah |
| 6. Ir. Suwandi | Dinas Pekerjaan Umum, Jawa Tengah |
| 7. Ir. Soewardi | Dinas Perindustrian, Jawa Tengah |
| 8. Mr. Mulyoto B.Sc. | Dinas Pertanian, Jawa Tengah |

In addition, many individuals have contributed to the study at Tokyo at various stages in various forms.

We are thankful to a number of individuals in Indonesia who assisted our mission in various ways. Particular thanks are due to the member of the Steering Committee for Regional Studies which is headed by Mr. Rachmat Wiriadisuria, Director-General of Cipta Karya, DPUTL, and Professor Madjid Ibrahim, Deputy for Regional and Area Development Planning, BAPPENAS. We are also thankful to Mr. Salmon Kodijat, Director of City and Regional Planning, DPUTL, who made the arrangement for the entire study and mission's field study including that of the counterpart team. Sincere thanks are due to the individuals in Central Java who assisted our operations there. First and foremost in this list is Governor Soepardjo; Mr. Soesiladi, Chairman of BAPPEDA, Central Java.

We are also indebted to a number of persons in various ministries of the Government of Indonesia, the Embassy of Japan in Jakarta, and the Ministry of Foreign Affairs of Japan in Tokyo. Lastly but not the least, we acknowledge the tremendous efforts and hearty cooperation given to us from Japan International Cooperation Agency.

November, 1977



Saburo Kawai
President
International Development Center
of Japan

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Full Spelling</u> (English)
A.	
ADC	(Agricultural Development Center)
AKM	(poor assistance project)
APBD	(the Provincial Budget)
APBN	(the National Budget)
B.	
BAPINDO	(Development Bank of Indonesia)
BAPPEDA	(the Provincial Development Planning Board)
BAPPENAS	(Ministry of State for National Development Planning)
BAPPIKRA	(Guidance and Development Committee of People's Handicraft Industry)
BD	(Village Banks)
BIC	(the Building Information Center)
BIMAS	(Mass Guidance) Bimbingan Masal
the BIPIK	(Industrial Extension Service)
BKD	(Village Credit Bodies)
BKK	(Sub-District Credit Body)
BKKBN	(National Family Planning Coordination Board) Badan Keluarga Berencana Nasional
BKKBN Tingkat I	(Provincial Family Planning Coordination Board)
BKKBN Tingkat II	(Regency Family Planning Coordination Board)
BKPM	Badan Koordinasi Penanaman Modal
BKPM-D	(Investment Coordination Board of the Province)
BKPM-Pusat	(Central Investment Coordination Board)
BKPM-S	(National Investment Coordination Board)

<u>Abbreviation</u>	<u>Full Spelling</u>
B. (continued)	
BKPN	(the National Housing Policy Board)
BNI	(the Bank Negara Indonesia, 1946)
BPD	(the Regional Development Bank) Bank Pembangunan Daerah
BPD-BKK-BKD	(village credit body)
BPS	(the Central Bureau of Statistics)
BRD	(Village Credit Body)
BRI	(People's Bank) Bank Rakyat Indonesia
BULOG	(Agency for State Logistics Affairs)
BUUD	(Village Unit Executive Body) Badan Usaha Unit Desa
BUUD/KUD	(a farmers' cooperative)
C.	
Cipta Karya	(the Directorate General of Housing, Building, Planning and Urban Development)
D.	
DGFCA	(Directorate General for Food Crops Agriculture)
the dharmatirta	(the local irrigation association)
DIP	(Project Contents)
DOLOG	(Regional Logistics Affairs Board)
DPRD	(the People's Representatives of the Province of the House of People's Representatives of the Province)
DPUTL	(the Ministry of Public Works and Electric Power)
DVP	(Project Proposals)
G.	
GER	(Gross enrollment ratio)

<u>Abbreviation</u>	<u>Full Spelling</u>
H.	
HYV	(high yielding variety)
I.	
IKIP	(secondary teacher training institutes)
Improved BIMAS	BIMAS Yang Disempurnakan
INMAS	(Group Intensification) Intensifikasi Masal
INPRES	(Instruction of the President, name of the subsidy programs by the Central Government)
IPEDA	(Regional Development Contribution)
IPID	(Investigation of Provincial Industrial Development)
IRDA	(Provincial Inspectorate)
K.	
KIK	(small-investment credit)
KIP	(the kampung improvement program)
Klinik KB	(family planning clinics)
KMKP	(credit for permanent working capital)
KUD	(Village Unit Cooperative) Kooperasi Unit Desa
L.	
LCH	(the low cost housing program)
LJKK	(Guarantee Body for Credit to Cooperatives)
M.	
Madrasa	(Islamic religious school)
MW	(megawatts)
Modernisasi Desa	(the Rural Modernization Plan)
MPR	(the People's Assembly)

Abbreviation

Full Spelling

N.

NSB (National Savings Bank)

P.

Pancasila (the Philosophical Basis of the State)

Panca Usaha (the Five Efforts)

PCI (Pacific Consultants International)

PERHUTANI (State-owned forestry enterprise)

PERUMNAS (the National Housing Development Corporation)

PERUMTEL Perum Telekomunikasi

PKK (Women's Association)

PKM(s) (Public Health Center(s))
Puskesmas

PLKB (Field Workers Program)

PLKI (technical training center)

PLKM (management training center)

PLKP (agricultural training center)

PLN (National Electricity Board)

PMD (Rural Community Development)

PMU (Project Management Unit)

PPC (field extension worker)

PPS (subject matter specialist)

PSK (District Social Workers)

PSM (Community Social Workers)

PUSDIKOP (the Center for Cooperative Education)

PUSKUD (provincial level association of KUDs)

<u>Abbreviation</u>	<u>Full Spelling</u>
R.	
RDB	(Regional Development Bank)
REC	(Rural Extension Center)
Repelita II	(the Second Five Year Plan)
RES	karesidenan
RH	(the rural housing program)
S.	
S&S	(the site and services program)
SD	(primary school(s)) Sekolah Dasar
SGO	(teacher school for sports)
SKD	(dasa family planning clinics)
SKKA	(home economics schools)
SKKP	(home economics secondary schools)
SLDD	(Subscriber Long Distance Dialling)
SLTA	(senior secondary schools, higher institutions)
SLTP	(junior secondary schools)
SMEA	(commercial senior secondary schools)
SMA	(general senior secondary schools)
SMEP	(commercial senior secondary schools)
SMP	(general junior secondary schools)
SMTP	(agricultural technology senior secondary school)
SPG	(primary teacher training schools)
SPP	(school fees)
SPP-ADO	Sumbangan Pemerintah Pengganti Allokasi Devisa Otomatis

<u>Abbreviation</u>	<u>Full Spelling</u>
S. (continued)	
ST	(technical senior secondary schools)
STM	(technical senior secondary schools)
STP	(agricultural technology school)
SWIU	(industrial establishments)
T.	
TABANAS	(the National Development Saving Scheme)
TASKA	(the Insurance Saving Scheme)
TATA KOTA	(the Directorate of City and Regional Planning)
TKK	(two-years kindergartens) Taman Kanak-Kanak
TMK	(mobil units)
TVRI	(Television Republic Indonesia)

SUMMARY AND RECOMMENDATIONS

S.1 Overview

S.1.1 The Present Situation

(a) General

S.001 Located in the middle of the Java Island, the Province of Central Java can be characterized as having an enormous population, being dominated by agriculture and, sadly to say, having low income. In addition, the economy of Central Java appears, from all indications, to be relatively stagnant.

S.002 The population of the Province is currently estimated to be nearly 24 millions, or about a third of the population of the Java Island (Madura included) and a fifth of the population of the nation as a whole. Since the Java Island is a relatively homogeneous region, Central Java can be compared with the other parts of Java.

S.003 Central Java lags behind East and West Java on a number of accounts. The per capita income of Central Java in 1971 was about 70 percent of the national average but it declined to 55 percent by 1975 (refer to Section 14.3.3).

S.004 The above information implies that the Province is behind the nation not only in the level of income but also in the growth of the economy. The national economy has been growing at the rate of more than 7 percent per year since Repelita I, but the Provincial growth rate appears to be a little above 4 percent (see Table 1.10, p. I-22). Also this growth rate is substantially less than those of East and West Java.

S.005 A number of factors must have contributed to shaping Central Java into this unfavorable situation. Among them, some of the factors should be found in historical, natural and external factors which are beyond control of the people in Central Java.

(b) Geographic Conditions

S.006 The island of Java stretches from east to west throughout which it is more or less homogeneous in terms of natural endowment. Large portions of northern coastal areas are flat plains mainly used for paddy production, whereas large portions of southern coastal areas are mountainous. Between the coastlines, there is a chain of volcanic

mountains in the center and a number of hilly areas around it. Hilly areas are less fertile than the plains.

S.007 The modern development of the Java Island, or the nation for that matter, has been led by urban activities which range from administration and distribution to manufacturing. Two notable urban centers--Jakarta and Surabaya--developed as a result. They grew as administrative and trading centers in the beginning and, later on manufacturing activities have been added thereto. They grew largely on the basis of external trade which was made possible by good port facilities. The Province of Central Java did not have such a port until the port of Cilacap was developed few years ago, and the Province is not close to either trading city.

(c) Economic Conditions

S.008 Central Java used to be a cultural center of Java, similar to Yogyakarta. The Province has been noted for its excellent traditional skills in batik dyeing which has been maintained in Pekalongan, Surakarta and elsewhere. In addition, the Province abounds with handicraft skills as well. Even at present, the number of small and cottage industrial establishments in Central Java far exceeds those of East and West Java.

S.009 Those traditional industrial establishments, however, have increasingly encountered severe competition with modern plants. The textile industry is a good example. However beautiful and delicate the traditional batik products may be, they can not compete well in the market with cheap mass-produced prints. In addition, the people's preference has been shifting toward products in the Western style which can more readily be produced in Jakarta or Surabaya if domestically produced.

S.010 The traditional industries in the Province, as a result, have been forced into a stagnant situation at best or have been reduced in number or production scale.

(d) Demographic Conditions

S.011 The population of the Province used to maintain a certain equilibrium with the productivity of land. This equilibrium has been lost since around Independence due to the introduction of modern medical technology and the improvement of nutritional conditions. As a result, the population started to show a definite sign of increasing. As the available land was already put into use before the demographic revolution, this change started to aggravate population pressure. The arable area per farming family started to decline rapidly. Being predominantly an agricultural economy, this shift meant worsening economic conditions for a large part of the population in the Province. The average farming land per farming family is now 0.5 ha based on Agricultural Census 1973, and if only paddy farmers are counted, it is much less.

(e) Development Efforts in the Past

S.012 The development efforts of the Government since Repelita I have made profound impact on the structure of the economy for the nation as well as for the Province. During Repelita I substantial emphasis was placed on modernization of the economy through import substitution and improvement of major elements of infrastructure.

S.013 Above all, agricultural development was given a high priority as demonstrated by rehabilitation of irrigation systems and the introduction of BIMAS/INMAS programs. Paddy production grew in the Province as a result. However, the growth in paddy production could hardly be an engine for dynamic growth.

S.014 One major factor which had an unfavorable impact on Central Java was the general notion of the people, held until the early 1970's, that Java was relatively developed relative to other parts of the country. In terms of the history of development, it is true that Java has a long history of cultural development. However, outside of the major cities in Java, the island was suffering from severe population pressure, as noted above. The relative poverty of rural Java was confirmed by the publication of provincial income estimates made in the early 1970's. In other words, the allocation of development resources during the early years of Repelita I was made without clear recognition of alarming poverty which existed in the rural Java.

S.015 One indicator of this insufficient recognition of the poverty was per capita receipts of development resources from the Central Government within the Province. During Repelita I, Central Java received much less than the national average on the per capita basis and considerably less than West Java. During the first four years of Repelita I, Central Java received only Rp.1,790 on a per capita basis, while the national average was Rp.3,330, a mere 54 percent. Corresponding figures for East and West Java were Rp.1,720 and Rp.2,615, respectively (calculated from figures in Table 1.14, p. I-32).

S.016 As the allocation should be based on development potentiality, the growth of population and other factors as well, it can not immediately be concluded that Central Java did not receive its fair share. But it would be certainly true if the Province had received a greater amount, its economy would have grown in a greater degree. In addition, our trial calculation of the incremental capital output ratio in the Province has revealed a smaller value for the Province than for the nation as a whole (see Chapter XIII), indicating that the productivity of investment in Central Java is not necessarily below the national average and perhaps even higher. Therefore, the less-than-average allocation of development resources to Central Java from the Central Government can hardly be justified.

(f) Recent Development

S.017 Since the beginning of Repelita II, development emphasis has been shifted toward the redistribution objective, i.e., to reduce the

gap in development among regions and to distribute more evenly the fruits of development. According to this policy orientation, rural development has been made to be a central concern of the Government. A number of INPRES programs have been introduced or expanded and a number of other new programs have been initiated for assisting weaker strata of population.

S.018 Certainly, Central Java should be one of the major beneficiaries of this current policy. To what extent these programs have improved the position of Central Java is not clear, however. Available statistics indicate that some of the hitherto less-developed rural kabupatens in the Province increased paddy production substantially. In addition, improvements in management of irrigation systems are being made in major paddy producing areas.

S.019 In the field of manufacturing, a number of plants of substantial scale have been completed and started operation in and around Semarang. New developments are taking place at such locations as Tegal, Klaten, Surakarta and Kudus.

S.020 Above all, Cilacap has been steadily increasing in importance since it was designated as a national growth center. Because Cilacap is expected to serve the entire Province and eastern parts of West Java as the sole point of entry to Java from the Indonesian Ocean, its port has been improved. An industrial estate has been built and attempts are being made to attract industrial establishments.

S.021 At the same time, obstacles to the development of Central Java are still strong. The population pressure is still there. There are not any lucrative natural resources such as crude oil, or natural gas. Cilacap is still far from the stage of take-off. Semarang is still suffering from the poor conditions of its port (refer to Sections 6.3.9 (a) and (b)).

S.022 Various economic indicators show that the economy of Central Java is tending toward an equilibrium. In terms of the growth of GRDP by sector, there is no rapidly growing sector among directly productive sectors. Only the service sectors are growing relatively rapidly (see Table 1.18, p. I-41). In terms of spatial distribution of activities, there is a clear indication that geographical variations of prices are diminishing (see Chapter V, p. V-12). These observations would imply that different parts of the Province are coming to interact more freely than before through improvement in transportation and trading activities. However, they would also imply that the Province lacks engines for dynamic growth. Among various sectors, only air-transport-oriented tourism appears to be growing rapidly.

S.023 There has been a constant net outflow of population, to outside provinces. From Central Java, many people used to go outer islands as transmigrants, but recently, accommodating areas in outer islands, are diminishing as a result of relative saturation of the areas. Instead, therefore, a greater proportion of emigrants have started to move to Jakarta, the number of those being estimated to be more than 35 thousands per year for 1971 (refer to Paragraph A.020). But the capacity of Jakarta for

accommodating immigrants is not unlimited. There is an increasing need of finding a solution within the Province. One way is obviously family planning.

(g) Geographic Distribution of Activities

S.024 Through an examination of the geographic pattern of activity distribution within the Province the following geographic areas have been identified:

(i) Semarang: The Development Center

S.025 Although the Province might lack in coherence when compared with East Java, there is a definite administrative, commercial and industrial center, which is Semarang, the capital of the Province. Although its population is below 800,000, the city dominates all other centers in the Province and is growing steadily. No other kotamadya can compete with Semarang even in the growth rate. In terms of the number of approved private investment projects, 44 percent of foreign and 49 percent of domestic investment projects from 1969 to 1974 are located in Semarang (see Table 6.12, p. VI-28).^{1/} In terms of trading activities, 70 percent of large-size traders are based in Semarang (see Chapter V, p. V-5).

(ii) Development Belt

S.026 Another dominant geographic feature is the existence of the development belt roughly along the national highway from Brebes, Tegal, Pekalongan through Semarang, Salatiga to Surakarta and the east. In the south of Semarang, this belt has two spurs toward Yogyakarta through Magelang and through Klaten. The belt coincides with the major trunk route of Java linking Jakarta with Surabaya, but it also goes through major productive agricultural areas which lie along the northern coast and the upper Solo basin.

S.027 This development belt has, in its center, Semarang, the development center of the Province, but also has a number of secondary growth centers which are growing on the basis of manufacturing and trade. They are:

- (1) Tegal: metal manufacturing (refer to Section 6.4.9), trade;
- (2) Pekalongan: textile manufacturing, trade;
- (3) Salatiga: agro-industries;
- (4) Surakarta: cigarette manufacturing, textile manufacturing, tourism;
- (5) Magelang: agro-industries, tourism; and
- (6) Klaten: basic metal processing (refer to Section 6.4.9).

^{1/} In terms of the value of foreign investment, Cilacap dominates. By the end of 1976, 52 percent of the approved investment was to be located at and around Cilacap, while the share of Semarang was 18 percent. However, in terms of the number of projects, Semarang had kept the share of 44 percent by that date.

(iii) Isolated Growth Centers

S.028 In addition to the above, there are two isolated growth centers which are:

- (1) Cilacap-Banyumas, and
- (2) Kudus.

The Cilacap-Banyumas area is a rich agricultural area in the Serayu basin. But, its significance is also due to the designation of Cilacap as a national growth center. Already, Pertamina and others have made considerable investment in the area. In addition, Banyumas would be able to supply forestry products for shipment through the port of Cilacap. Although its growth is not yet guaranteed, there is a good prospect for growth if necessary preparations are completed.

S.029 Kudus, located in the east of Semarang, is a center of a fertile agricultural area, but its development prospect derives from the kretek cigarette factories and associated printing activities. Demand for kretek cigarettes is increasing rapidly and in association with it, the printing industry is growing. There is good likelihood that the printing industry will grow independent of cigarette production. The growth of this area would further be accelerated by the impending water resources development in the area between Semarang and Kudus.

(iv) Minus Areas

S.030 Of the remaining areas, some areas are less promising than others. If those areas are called "minus areas", there are two large and one small blocks of minus areas. One large block is the highland area ranging from Temanggung to Mt. Slamet and the other large block is the very eastern end of the Province comprising Rembang, Blora and Purwodadi. The third and small block is the very southeastern part of the province, mainly in Wonogiri, bordering East Java and Yogyakarta.

(v) Intermediate Areas

S.031 The remaining areas can be called intermediate areas, and they represent the average characteristics of the Province, which has been delineated in the first half of this Section S.1.1.

(h) Review of Development Potentials of Sectors

S.032 Of the major productive sectors, agriculture is the most dominant in terms of the number of workers engaged. In the agriculture sector, the scarcity of land has led the people to intensify land use through double cropping and heavy fertilizer utilization. In this sector, there are a number of programs, such as BIMAS/INMAS program which are currently going on and propelling the development of the sector. The development prospects of this sector can be discussed by dividing it into two: paddy and other crops.

S.033 Paddy production has particularly attracted the attention of policy makers in the country. The currently available programs they have devised have undoubtedly contributed to increases in the production of paddy. The major bottlenecks to further increases, however, are the limited amount of land under irrigation. There are a number of studies which are currently being made for the purpose of increasing irrigated areas, but such expansion will not be rapid as time and resources are needed. Nevertheless, given the schedule of major irrigation works and tertiary and terminal facilities, a reasonable rate of progress can be expected.

S.034 As for other crops than paddy, upland crops are the major types of them. At present, upland crops have been largely limited to maize and cassava. However, diversification of upland crops would be needed if income of upland farmers are to be increased. New crops which could profitably be introduced or grown over a wider area include soybeans, peanuts, sorghum, vegetable, and sunflower. There are, however, a number of problems which need to be solved before these become income augmenting crops. Livestock is another prospective sector in non-paddy areas. For successful development in these upland crops and livestock production, a comprehensive rural development strategy including development of basic infrastructure, extension services, credit and marketing organizations, would be needed.

S.035 In the field of mining and manufacturing industries there are some promising ones. Although most of small-scale and cottage industries may not be able to expand, some of the food-processing industries can survive by introducing selective mechanization in the production process.

S.036 Highly promising industries in manufacturing are the metal processing, chemical, rubber and plastic industries. As they are, to a varying degree, agglomeration-oriented industries, potential locations of these industries are largely limited to the development center (Semarang) and the development belt. Much of new growth in metal processing would be absorbed in Tegal and Klaten, and most of the remaining in the vicinity of Semarang. However, petro-chemical industries will be located in Cilacap as it is the port of entry of crude oil to the entire region.

S.037 One particularly promising sector is tourism as Central Java is richly endowed with tourism resources. Despite the existence of the famous Borobudur within the Province, most tourists currently come and stay at Yogyakarta to visit the temple. This trend may not easily be changed, but there is a clear trend that the number of air-borne tourists to Semarang is increasing very rapidly. Thus, an establishment of a wider tourism complex, international and domestic, from Yogyakarta to Semarang, would further encourage the development of tourism in the Province and contribute materially to the development of the economy as a whole.

S.038 The construction industry has been aided by stepped-up spending for public works projects and for a variety of INPRES programs. Evidence

available indicates that they are helping to narrow the development gaps between urban and rural areas.

S.1.2 Alternative Development Strategies

(a) General

S.039 Alternative development strategies can be conceived with respect to intraprovincial resource allocation and interprovincial resource allocation. The former refers to those which are concerned with alternative ways of resource allocation within the Province and the latter refers to those which are concerned with alternative ways of resource allocation between Central Java and the rest of the nation. Within the former, emphasis of the Study team's analysis is placed on geographic distribution of resource allocation as it also implies sectoral resource allocation. In addition, intraprovincial resource allocation in the Study refers to a strategy which tries to alter the growth of population itself.

(b) Alternatives With Respect to Intraprovincial Resource Allocation

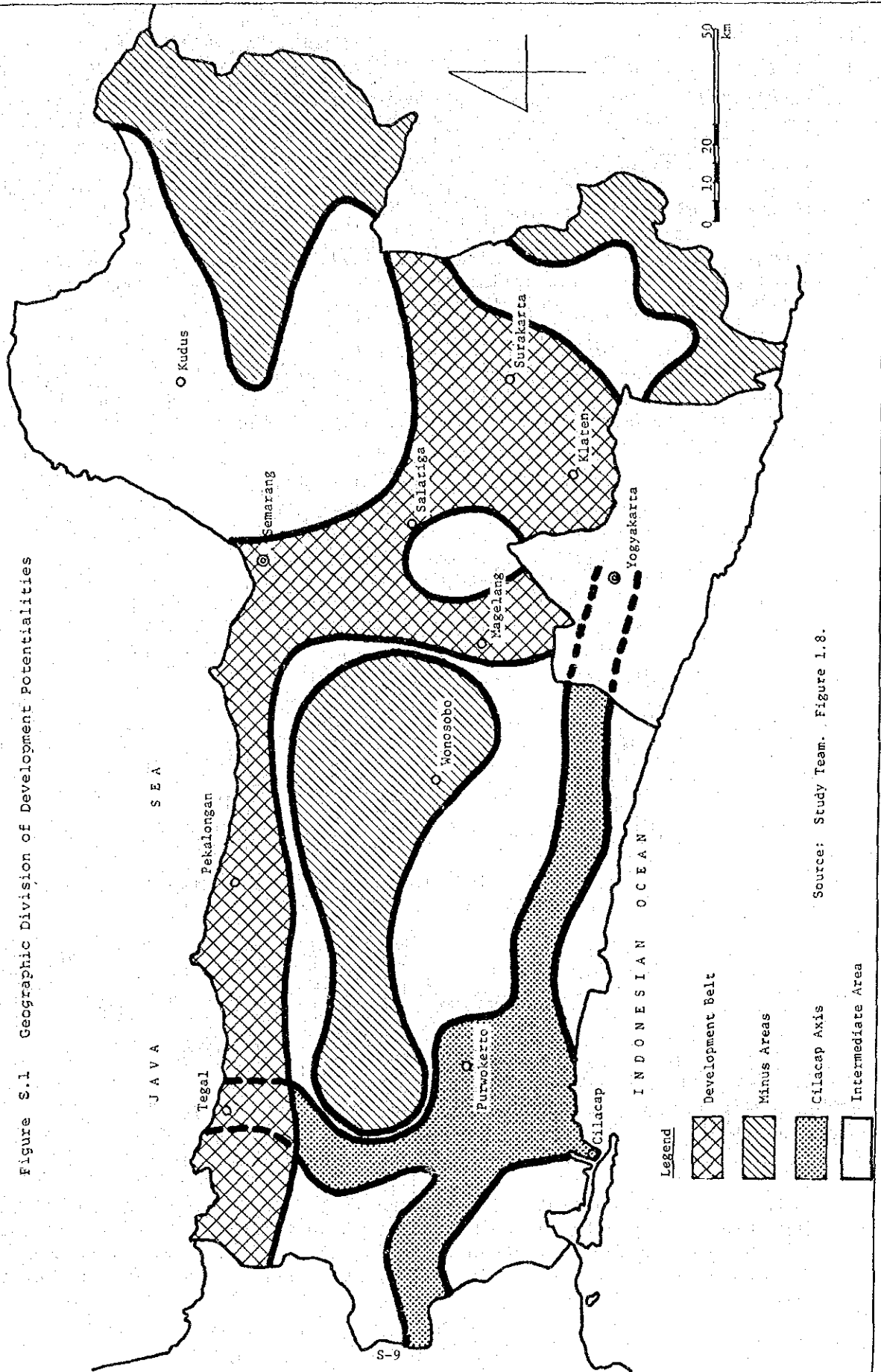
(i) Differential Growth Strategy

S.040 As is described above, there is the development belt (see Figure S.1). This development belt will continue to be the area which has the highest development potential. First of all, Semarang in its center will be the major engine which will promote the growth of this development belt. In addition, paddy production has been increasing significantly in the Pemali-Comal River basins as a result of improvement in the irrigation systems. Within the area, Tegal has a good development potential as a specialized manufacturing center for metal works which will complement agricultural development through the supply and repair of agricultural machinery.

S.041 Semarang itself can be given a strong development impetus if its port is improved as scheduled. Then, if improvements are made in the city to accommodate greater manufacturing activities commensurate with the expanded port capacity, the rapid economic growth of the city is practically guaranteed. The city can accommodate diversity of activities corresponding to the diversity of its natural setting. It would continue to be the administrative and cultural center of the Province as well as of manufacturing and trade. The development of Semarang would be stimulated further by water resources development, largely flood control and drainage, in the east of the city toward Kudus.

S.042 To the south of Semarang, Salatiga and Magelang will be able to capture the advantage of being close both to the marketing and trading centers and crop-producing highlands. They would be able to become centers of agro-processing.

Figure S.1 Geographic Division of Development Potentialities



Source: Study Team. Figure 1.8.

S.043 Surakarta will be able to develop on the basis of textile and other labor-intensive manufacturing industries. The traditional urban character of the city would be an asset for attracting new investors. When the Upper Solo Multi-Purpose Project is completed, it would favorably be affected by intensified agricultural and related activities. In addition, Surakarta will be an important part of the tourism complex which includes Yogyakarta and Semarang.

S.044 Klaten would be another specialized manufacturing center for metal works. The basic skills are already there. The Government's further encouragement will improve prospects greatly.

S.045 This alternative development strategy would be economically most efficient as compared with other alternatives, i.e., the greatest economic growth can be achieved for a given amount of investment resources. The major components of public investment required for the strategy would be as follows:

- (1) Substantial upgrading of the national highway along the northern coast from Brebes to Semarang and south to Surakarta and to the east, and of the other stretches of the national highway going through Magelang and Klaten toward Yogyakarta.
- (2) The Semarang port development with restructuring of certain areas including West and East Semarang in the city for industrial estate development.
- (3) Industrial estates development at Tegal, Pekalongan, Magelang, Salatiga and Klaten along with power supply and labor training centers, along with improvements in telecommunication systems to those cities. Proper scheduling of these estates is essential.
- (4) Strengthening of industrial extension services at these cities.
- (5) Irrigation rehabilitation and flood control/drainage improvement in the Pemali-Comal Basin.
- (6) The development of water storage schemes and drainage improvement for the Semarang-Demak-Kudus area, combined with industrial development at Kudus and potable water supply in the area.
- (7) Development of housing sites and improvement of existing communities at those urban centers.

S.046 A possible adverse impact of this strategy is widening of development gap between the development belt and the rest of the Province. It is possible to make a few comforting comments on this issue.

S.047 First, available information on the movement of the population indicates that people in the Province are quite mobile. It is well known that some people migrate spontaneously as far as to Sumatra and Kalimantan and many have been attracted to Jakarta by its economic advantages (refer to Section 2.2.3).

Therefore, if information is given, many people will be able to migrate readily to one of those centers. In addition, due to the shape of this development belt, no part of the Province would be more than 150 km away from the belt.

S.048 Second, information can be systematically provided to those people in the hinterland on the availability of job openings and training opportunities. In addition, the provision of migrant reception facilities will ease the obstacles to migration.

(ii) Minus Areas Strategy

S.049 The objective of this strategy is to improve the living standard of residents in rural low income areas, with emphasis on the minus areas, directly through a comprehensive attack on the source of poverty. If successful, this strategy would enable to solve a major objective of Repelita II, i.e., the redistribution objective.

S.050 The minus areas within the Province can be taken as two groups. As far as the chain of mountainous areas from Mt. Ungaran to Mt. Slamet is concerned, difficulty in marketing and insufficient knowledge about the kinds of crops suitable to the areas are major causes of underdevelopment. Therefore, when highway improvement is combined with appropriate extension services and development of marketing systems, the area will be able to command higher income. Typically such a rural development package will include the following elements:

- (1) Improvement of highway access to target rural areas from market towns such as kabupaten centers.
- (2) Provision of agricultural extension services with emphasis on farming of upland cash crops such as soybeans and groundnuts combined with poultry and beef fattening.
- (3) Organization of effective and efficient marketing systems.
- (4) If appropriate, the establishment of agro-processing facilities on cooperative basis.

S.051 The prospects for this kind of development in those highland areas is not necessarily assured. First, the investment requirement per unit increase in value added is generally high. This is so not only for capital investment but also for human skill input. Organizational and marketing improvements would require substantial amount of skilled manpower as the number of people involved would be enormously large. Second, there are a number of uncertainties which have not yet been clarified regarding the methods of rural development. Although agricultural programs have been tested well in predominantly paddy areas, similar programs have not been proved to be successful in sparsely developed highland areas. What can be recommended at this time is to start pilot schemes where a good development prospect is known to exist.

S.052 The eastern block of minus areas is different from the highland areas discussed above. The major problems here are the undependable supply of water coupled with poor soil characteristics. Although market access is also poor, its improvement alone would not help development. The area requires extensive water management measures and soil improvement of the block. As stated, this area is less promising than the highland. Any serious effort for its development should be based on a thorough examination of the area's potentialities.

(iii) Cilacap Axes Development Strategy

S.053 Cilacap has been designated as a growth center at the national level. But, despite its attractive port capability, the growth of this industrial city has been slow. Nevertheless, the potential benefit of the development of Cilacap is great. First, the entire southern coast of Java would be given encouragement if Cilacap prospers as it would be the only major city along the southern coast which is far less developed than the northern coast. Second, its development will certainly remove the constraint from which Central Java has been suffering, i.e., the lack of a port comparable with Tanjung Priok or Perak. Thus, if the Cilacap growth center succeeds in achieving intended development, Central Java would be able to develop comparably with East Java or West Java. Third, its development implies the emergence of a counter-development pole to the existing development belt in the Province. As a result, access to a development pole in the Province will be greatly improved.

S.054 The slow progress of Cilacap's development is, for one thing, due to slow progress in infrastructure development and, for another, due to the lack of urban activities on which new industrial activities can be added. Development of infrastructure is currently going on within Cilacap. A power transmission line will soon be brought into service, but, the development of other infrastructure such as water supply and telecommunication are less certain.

S.055 Another important measure needed for Cilacap's development is the improvement of access to and from other parts of the island. Both highway and railway links are poor at the moment. Bina Marga is currently undertaking works for upgrading the highway from Bandung to Purworejo via Wangon and the access road between Cilacap and Wangon. When this improvement is completed, the development prospect of Cilacap will greatly be improved. Such a highway improvement will do two things at the same time: improve the needed infrastructure, and to supplement the supporting urban activities which are insufficient within Cilacap itself and at the moment are provided by those in nearby cities such as Purwokerto.

S.056 The idea of improving the access of Cilacap to the east and west is justifiable and is an indispensable step for the development of Cilacap, but it would not be sufficient for quick development of the growth center. The north-south link to Tegal should also be improved. This highway stretch of less than 150 km will effectively link Cilacap

to the growing northern development belt of the Province. This link would be the most efficient way of linking Cilacap to a larger market and, therefore, should be given high priority.

S.057 The necessary measures for prompt development of Cilacap and Cilacap axes would be as follows:

- (1) Reliable power supply.
- (2) Water supply for industrial use.
- (3) The provision of land for industries in greater quantity and with greater weight-bearing capacity (refer to Section 6.3.9 (a))
- (4) Upgrading of highways directly north to Tegal, to Bandung to the west and to Yogyakarta to the east. A new link would be needed between Purworejo and Yogyakarta.
- (5) Interagency coordination for implementation of development programs.
- (6) Technical and financial assistance from the Central Government to the Provincial and kabupaten governments.

(iv) Population Strategy

S.058 This strategy has two elements; one aims at reducing the population of the Province by encouraging transmigration to outer islands and emigration to other provinces in Java. Historically, transmigration programs have been going on with governmental assistance. However, due to a large resource requirement (US\$4,700 per family according to the World Bank estimate), the rate of transmigration has been far less than the net natural growth of population. Therefore, a possible course of action is to expand enormously transmigration projects in outer islands so that a substantial reduction in population can be achieved.

S.059 The other element in the strategy is to strengthen family planning. Although the natural growth rate of population started to decline in the 1970's, there will be an upswing in the growth rate during the 1980's due to the baby boom which took place during 1950's and 1960's. Unless swift action is taken now, the population of the Province, and, for that matter, of the nation as a whole will become unbearably large. Once it gets large, existing problems will become much more intense.

(c) Alternatives With Respect to Interprovincial Resource Allocation

S.060 For the period for which provincial income estimates are available, the level of per capita income of Central Java has been declining relative to the national average, and it stood at 55 percent

in 1975 (see Table 1.10). Such widening of interregional income disparity is contrary to the objectives set for Repelita I or II. In particular, Repelita II places emphasis for achieving more equal distribution of the fruits of development. Therefore, alternatives considered in this section refer to the degree of income equality to be achieved at the end of Repelita III between Central Java and the nation. The degree of equality or disparity is considered to be dependent largely upon the amount of development resources to be allocated within Central Java. Specifically, the following two alternatives are considered:

- (1) To maintain the current level of disparity, i.e., per capita income of Central Java being 55 percent of the national level, or
- (2) To reduce the gap by raising per capita income of Central Java to 65 percent of the national level.

S.061 Naturally, a higher income level can only be achieved by increasing the amount of development resources to be allocated to Central Java. The second alternative is most desirable from the viewpoint of Central Java, but the availability of resources determines its feasibility.

S.1.3 Recommendation of a Development Strategy

(a) The Availability of Resources for Development

S.062 The available development resources for Central Java can be projected in two ways: Resource Alternatives I and II. The resource allocation in Resource Alternative I is determined by the condition that per capita income of Central Java will be maintained at 55 percent of the national average. On the other hand, Resource Alternative II will bring up the level to 65 percent by the end of the Repelita III period.^{2/} The derived total amount of development resources is 29 percent greater for Resource Alternative II for the six year period from 1978/79 to 1983/84 than that for Resource Alternative I. In addition, we shall examine Basic Resource Alternative which has been derived by extrapolating past trends of resource availability into the future. Resource Alternative I will require public investment resources by 1983 28.4 percent greater than Basic Resource Alternative and Resource Alternative II will require an amount 65.6 percent greater.

(b) Comparative Evaluation of Alternative Strategies

S.063 For the purpose of predicting consequences of each development strategy, specific assumptions have been made for the strategies. The principal ones are:

^{2/} The predicted level of per capita income, however, varies depending upon the development strategy taken. The estimation of the requirements was made for a "conventional" pattern of resource allocation within the Province.

- (1) For each strategy, per capita public investment in the strategic areas is twice as large as that in the rest of the Province, where strategic areas are those which are given emphasis for development in each alternative.
- (2) Private investment will be made in a fixed proportion to public investment and this proportion varies depending on the development potentiality of specific areas.
- (2) The sectoral composition of future private investment is identical to the existing composition, and the rate of return from investment is determined by the sector in which investment is made and does not depend on the location.
- (4) The family planning and transmigration programs assumed in Population Strategy will reduce the population of the Province by 662 thousand persons by 1983 relative to the projected population for other strategies.

S.064 The predicted consequences of each development strategy are summarized in Figures S.2 and S.3. As can be seen readily in the figures, Differential Growth Strategy would enable the Province to grow at the fastest rate, but the disparity between the Province as a whole and the minus areas would be increased. On the other hand, Minus Areas Strategy would improve the status of the minus areas drastically, but the overall growth would be the least. If Differential Growth Strategy is taken and Resource Alternative II is assumed, the level of per capita income of the Province would exceed the 65 percent level of the national average substantially. On the other hand, with Basic Resource Alternative, the level of per capita GRDP of the Province relative to the national average will keep falling. Only when the Differential Growth Strategy is taken its level will be kept at 53 percent in 1983.

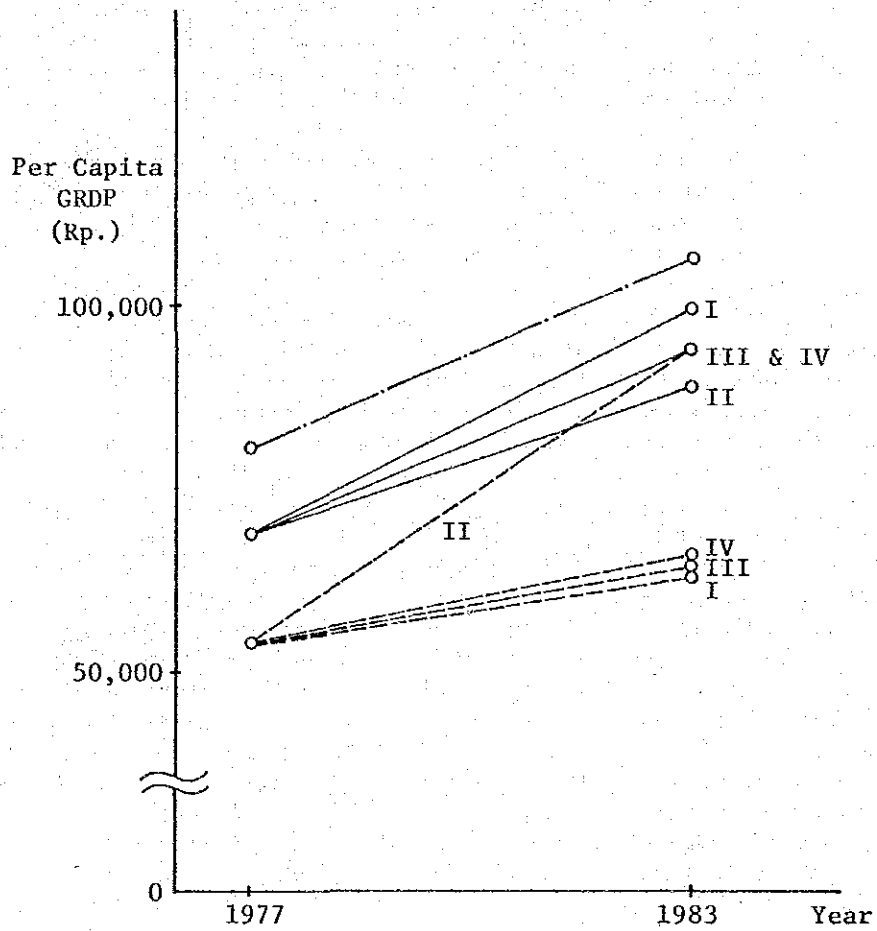
(c) A Recommended Development Strategy

S.065 Considering the predicted consequences presented above, we recommend a mixed strategy, which is called Revised Mixed Strategy, described below:

- (1) The amount of development resources is the level indicated by Resource Alternative I.
- (2) Differential Growth Strategy and Minus Areas Strategy is mixed in a proportion of two to one.
- (3) The family planning and transmigration programs assumed in the Population Strategy are included.
- (4) The Cilacap Axes Strategy as a whole is not included but Cilacap and its direct vicinity is given emphasis for development.

S.066 The predicted consequences of this strategy is shown in Figure S.4. With this strategy, per capita income of the Province

Figure S.2 Predicted Growth of Per Capita GRDP by Strategy Under Resource Alternative I

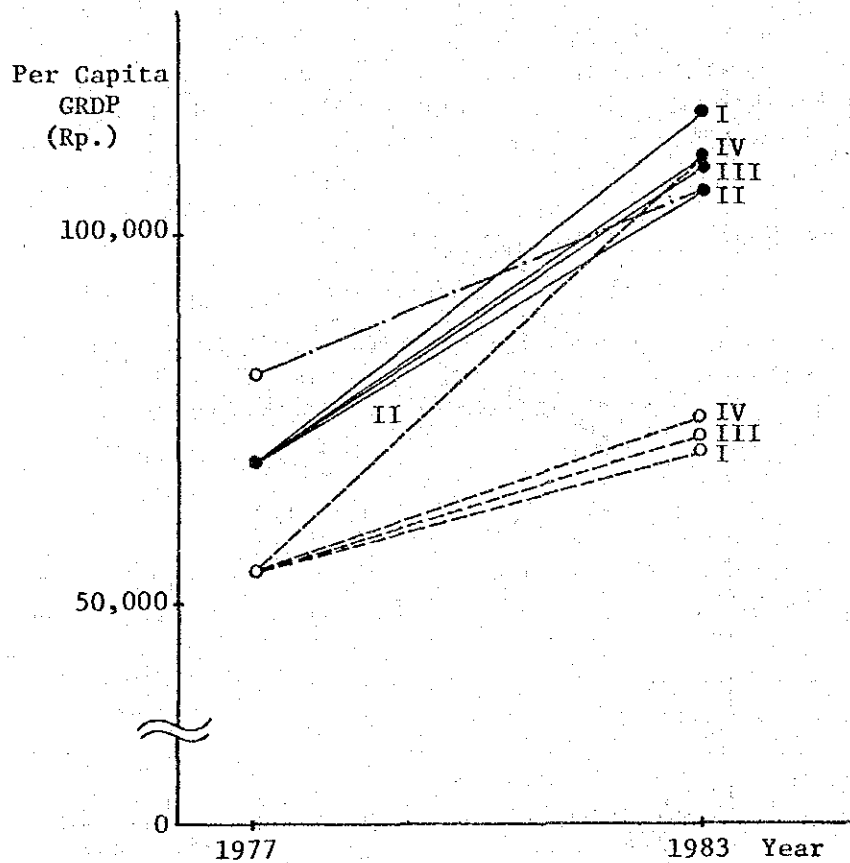


Legend

- Province
- - - Minus Areas
- - - 65% of Per Capita GDP of the Nation
- I: Differential Growth Strategy
- II: Minus Areas Strategy
- III: Cilacap Axes Strategy
- IV: Population Strategy

Source: Tables 14.4 to 14.7.

Figure S.3 Predicted Growth of Per Capita GRDP by Strategy Under Resource Alternative II

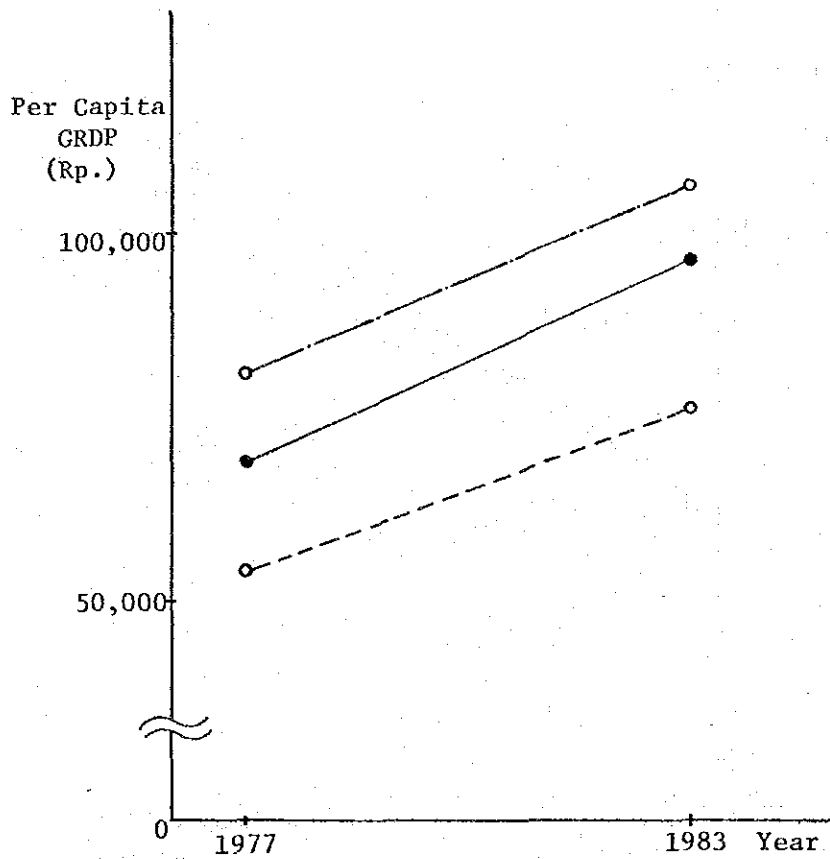


Legend

- Province
- - - Minus Areas
- · - 65% of Per Capita GDP of the Nation
- I: Differential Growth Strategy
- II: Minus Areas Strategy
- III: Cilacap Axes Strategy
- IV: Population Strategy

Source: Tables 14.4 to 14.7.

Figure S.4 Predicted Growth of Per Capita GRDP When
the Recommended Strategy Is Taken



Legend

- Province
- - - Minus Areas
- - - 65% of Per Capita GRDP of the Nation

Source: Study team.
Figure 14.7.b.

would gradually approach to the level of 60 percent of the national average and the minus areas' income level would increase at a greater rate than the national average. The essential elements of Population Strategy are included as they have favorable long-run impacts which can not be realized within several years. Cilacap Axes Strategy is reduced to its bare minimum. The development of Cilacap itself should be continued as substantial amounts of investment have already made or been committed.

S.067 The recommended programs of public investment by year and by sector from 1978/79 to 1983/84 are shown in Tables S.1 and S.2. Per capita GRDPs in 1983 are predicted for different areas as shown below:

(Unit: Rp. at Constant
1977 Prices)

(1) Province as a Whole	95,814
(2) Development Belt	123,108
(3) Minus Areas	74,515
(4) Other Areas	76,139

(d) Priority Development Programs and Areas

S.068 For implementing Revised Mixed Strategy, two large blocks of areas are considered to be high Priority Development Areas. These areas can further be divided into small areas as shown in Figure S.5, and are as follows:

Priority Development Areas

Large Block	Small Block	Major Areas Contained
I	A	KDY Semarang
	B	Dieng Plateau, Wonosobo
	C	Magelang, Temanggung, Kopeng, Bandungan
	D	Demak, Kudus, Jepara
II	A	Cilacap
	B	Purwokerto, Banyumas, Baturaden

However, it is to be noted that the above designation of Priority Development Areas does not necessarily imply that other areas should be neglected. To the contrary, the basic policies of the Differential Growth and Minus Areas Strategies should be maintained.

S.069 The characteristics of development aimed at each Priority Development Area and its major elements are described below:

Table S.1 Recommended Public Investment in Central Java,
1978/79-1983/84

(Unit: Rp. Million)

	Central Government	Provincial Government	INPRES Programs	KB/KDY Own Funds	Total
1978/79	118,816	12,386	45,567	10,192	186,961
1979/80	129,073	13,217	49,501	11,072	202,863
1980/81	136,766	14,247	52,451	11,732	215,196
1981/82	144,460	15,364	55,401	12,392	227,617
1982/83	158,136	17,144	60,647	13,565	249,492
1983/84	167,539	18,487	64,252	14,372	264,650
Total	854,790	90,845	327,819	73,325	1,346,779

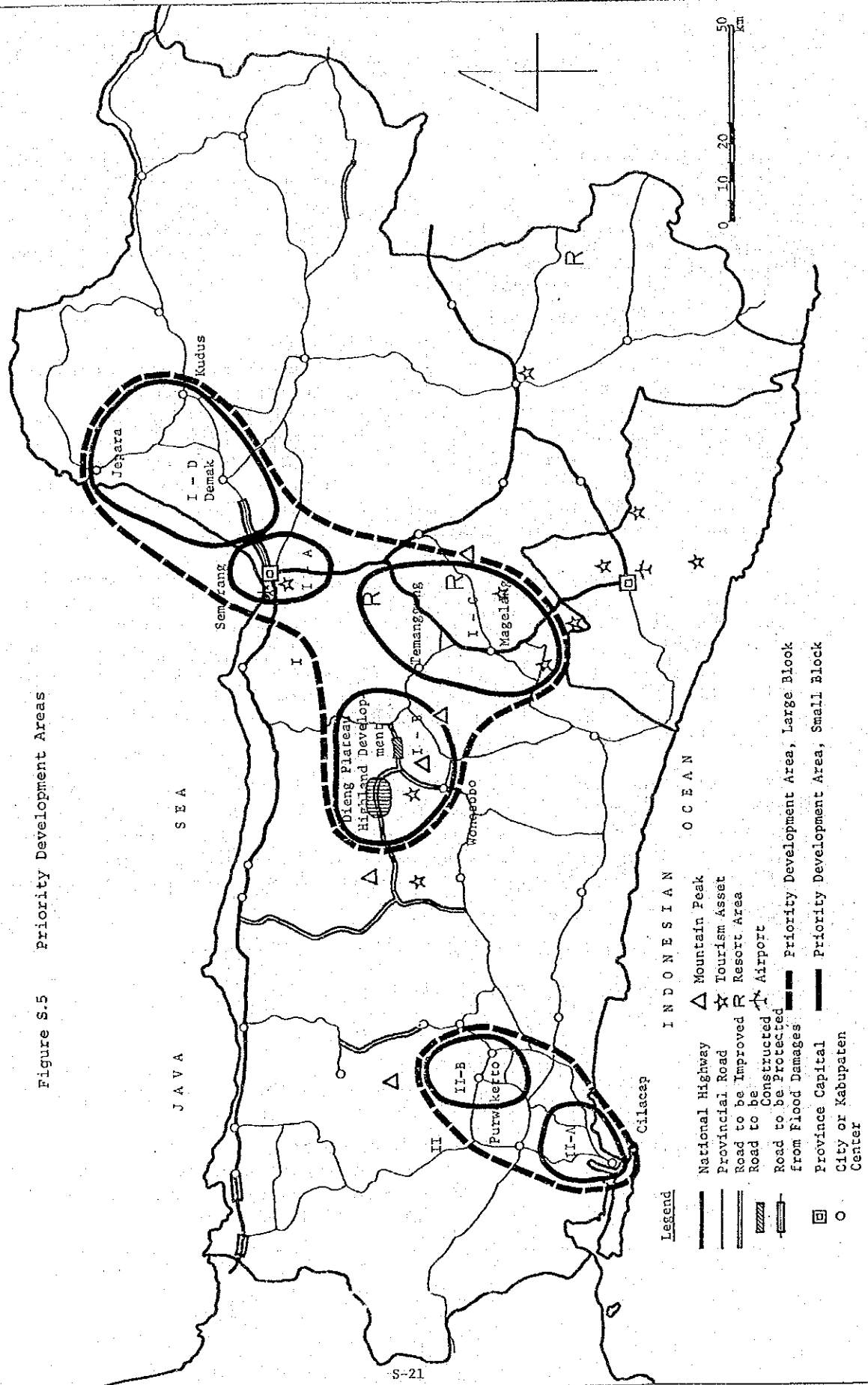
Source: Table 14.3.

Table S.2 A Recommended Investment Program^{1/} by Sector
by the Central Government to Central Java,
1978/79-1983/84

Sector	Amount (Rp. Billion)	Share (%)
Agriculture & Irrigation	240 ^{2/}	20.3
Industry & Mining	170	14.4
Electric Power	270 ^{3/}	22.8
Transportation & Communication	200	16.9
Education & Youth	70	5.9
Health & Family Planning	80 ^{4/}	6.8
Others	153 ^{5/}	12.9
Total	1,183	100.0

- Notes: ^{1/} Includes the INPRES programs.
^{2/} Includes the recommended investment to irrigation of Rp.244 billion (see Chapter III, Table 3.6), which is reduced to about Rp.210 billion.
^{3/} Comprises solely the recommended investment (see Chapter IX, Table 9.12), which has been reduced for the period to the figure shown above.
^{4/} Includes the recommended investment for family planning of Rp.64 billion (see Chapter XI, Table 11.23).
^{5/} Includes the recommended investment in tourism of Rp.20 billion (see Chapter VII, Table 7.4).

Figure S.5 Priority Development Areas



(i) Priority Development Area I

General Objectives

S.070 The development of this area should aim at capturing as much development potentials of the Province as possible. In addition, the development of this area should be undertaken for the purpose of spreading development from Semarang toward and into the minus areas. Specifically, two minus areas will be benefited from intensive development of this area.

Development Sectors

S.071 There are three sectors which will be paid special attention for development: industry, tourism and agriculture. Industrial development will be promoted at Semarang, Kudus, Magelang, Temanggung and the Dieng Plateau. The industry at Semarang will be oriented to the distribution hub existing in Semarang. The industry at Kudus will be based on printing and tobacco. The industrial development in all other locations will be of agro-processing type. Thus, their development are dependent on agricultural development in surrounding areas.

S.072 This Priority Development Area abounds in tourism resources. Among them, two most important will be Borobudur and the Dieng Plateau. In addition, resort areas such as Kopeng and Bandungan should be brought into the tourism development scheme. In addition, wood carving products made at Jepara should be brought into the scheme of tourism development. Tourism should cater to foreign as well as domestic tourists. Within the system of tourism locations existing in this area, Semarang and Magelang should play a leading role.

S.073 Agriculture is another important sector for the development of this area. The Demak-Kudus area requires dependable irrigation for production increases, whereas the Dieng Plateau need to specialize in highland crops catering to special markets. Other upland areas will be encouraged to be developed for other cash crops such as peanuts and soybeans as well as poultry and livestock.

Development Instruments

S.074 The following instruments will be used for development:

Area	Sector	Instruments
I-A	Industry	Port Development Urban Planning, Industrial Estates Water Supply, Highways, Industrial Extension Services

(to continue)

(continued)

Area	Sector	Instruments
	Urban Development	Urban Planning, Housing Site Development KIP
I-B	Agro-Tourism	Highways Agricultural Land Development, Agricultural Extension Services and Marketing Organizations Hotel/Restaurant/Resort Complex Preservation and Restoration of Historic Assets Industrial Sites Power Supply
I-C	Tourism/Resort	Hotel/Restaurant/Resort Facilities Recreation Parks Preservation and Restoration of Historic Assets Development of Scenic Sites Tourist Agencies
	Agriculture	Agricultural Extension Services Marketing Organizations and Information System
	Agro-Processing	Industrial Extension Services Industrial Estates Access to Loans
I-D	Agriculture	Water Reservoirs Drainage Improvement Tertiary Canal Development Road Protection from Flood Damages Marketing Organizations
	Agro-Processing	Industrial Extension Services Procurement and Marketing Organizations Access to Loans
	Industry	Industrial Extension Services Better Roads and Communication Access to Semarang Access to Loans

(ii) Priority Development Area II

General Objectives

S.075 The development of this area should aim at facilitating fuller realization of industrial development potentialities at and around Cilacap. For the immediate future, emphasis should be placed on developing rapidly the relatively small area centering around Cilacap and Purwokerto.

Development Sectors

S.076 The principal development sector in this area is industry at Cilacap. But, the industries at Cilacap should not compete with those in the Semarang area. Due to the relative isolation of Cilacap, this area need to specialize in heavy industries which can effectively utilize the deep sea port at Cilacap. At the same time, Cilacap should function as a center of distribution of industrial materials.

S.077 To further encourage these activities, the development of support activities is needed. The support activities include hard infrastructure such as highway, power supply and the supply of industrial water, as well as soft infrastructure such as cultural, educational and recreational opportunities. In addition, a better supply of agricultural products is also desirable for the promotion of development in this area.

S.078 Development efforts in Development Area A should sharply aim at selective development of heavy industries and distribution systems, whereas efforts in Development Area B should be directed for enrichment of cultural, educational and recreational development for complementing activities to be undertaken in Development Area A. This complementary specialization of activities by these two areas is based on the differences in natural and cultural backgrounds of the two areas, but is also a desirable strategy for spreading the development based in Cilacap.

Development Instruments

S.079 The following instruments will be used for development.

Area	Sector	Instruments
II-A	Industry	Improvement in Power Supply Improvement in Water Supply Expansion of Industrial Sites Highway Access Improvement Interagency Coordination Technical Assistance to the Province and the Kabupaten Better Access to Loans

(to continue)

(continued)

Area	Sector	Instruments
	Marketing	Highway Access Improvement Better Access to Loans
II-B	Agri- culture	Agricultural Extension Services for Diversification Better Access to Loans Improved Marketing Organizations
	Resort	Improved Highway Access Site Development
	Education & Culture	Expansion and Improvement in Facilities and Staff

(iii) Immediate Actions Needed

S.080 Two studies, one for each area, should be started for planning and coordinating development activities within the areas. Each study will examine the current situation of the development area carefully and identify ongoing and committed projects and will identify other desirable projects for the purpose of the development of the respective area and coordinate them into a consistent program for implementation.

S.081 The study for Priority Development Area I will be undertaken by an expatriate experts which is supported by a counterpart team of Indonesian nationals. The study for Priority Development Area II will be undertaken by a team of Indonesian experts who are assisted by expatriate experts.

S.082 Required man-months for these two studies are estimated as follows:

(1) Study for Priority Development Area I

(Unit: Man-Months)		
Specialist	Expatriate Team	Counterpart Team
Project Manager	10	10
Water Resource Engineer	10	10
Agronomist	10	10
Industrial Planner	6	6
Urban Planner	10	10
Tourism Planner	10	10
Transport Planner	6	6
Economist	10	10
Marketing Expert	6	6
4 Special Consultants	8	0
Total	86	78

(2) Study for Priority Development Area II

(Unit: Man-Months)

Specialist	Local Team	Expatriate Advisors
Project Manager	12	0
Industrial Planner	12	12
Public Utility Engineer	12	12
Agronomist	12	0
Architect	12	0
Urban Planner	12	0
Transport Planner	12	0
Economist	12	0
Total	96	24

S.2 Sectoral Briefs and Recommendations

S.2.1 Human Resources

(a) Profile of the Population Structure

S.083 The population growth rate of the Province is estimated to be between 1.6 percent and 1.9 percent per annum for the period of 1971 to 1976 (refer to Section 2.1.1 (c)).

S.084 The upper Solo basin and the surrounding area of Kabupaten and Kotamadya Tegal are already densely populated and still rapidly growing; Kabupaten Cilacap in the southwest and the corridor of kabupatens Rembang, Pati, and Jepara in the northeast are relatively under-populated, but steadily growing; the upland areas of kabupatens Magelang, Temanggung and Wonosobo are following this pattern to a lesser extent; and the growth of Semarang is mainly confined within itself (refer to Section 2.1.2 (c)).

S.085 The population of the Province is overwhelmingly young, about half of the population being younger than 14. While the rural area of the Province is continuously losing a part of the younger people, the urban area is attracting relatively younger people and losing people older than age 30 (refer to Section 2.1.3 (d)).

(b) Dynamics of the Population and Its Future

S.086 For the decade of the 1960's the population growth rate is estimated at 1.7 percent per annum, which is composed of the crude birth rate of 4.2 percent minus 2.1 percent of crude death rate and minus 0.4 percent of net outmigration (refer to Section 2.2.1 (a)).

S.087 The fertility level in the Province for the 1960's is estimated at 5,380 births per 1,000 women of reproduction age. The level reached a maximum point in the mid-1960's and since then appears to be declining very slightly, which is partly attributed to the recent concentration of fertility among mothers aged 20s and early 30s and to the decreased fertility among other mothers. Economic well-being appears to be connected with a high fertility rate, and general education has minimal effect, if any, on reducing fertility (refer to Section 2.2.1 (e)).

S.088 The movement of population from the Province to other provinces rarely declined below 80 thousands and sometimes amounted to more than 100 thousands per year in the late 1960's, but the number of migrants has been decreasing. The inflow of population to Central Java per year is estimated at between 40 thousands and 60 thousands, a substantial part of which are those who outmigrated once and now are returning (refer to Sections 2.2.3 (b) and (c)).

S.089 If the demographic factors remain the same, the population of Central Java will be about 26 million in 1981, 28 million in 1986, and nearly 32 million in 1991. Annual population growth rate will remain stable in the 1970's, but will again increase in the 1980's to mark 1.9 percent per year for the period of 1981 to 1986 and 2.1 percent for the period of 1986 to 1991 (refer to Section 2.2.4 (a)).

(c) Labor Force

S.090 The total economically active population in the Province numbered some 8 million in 1971, which is 54 percent of the population of age 10 or older, or 37 percent of the total population. The relatively low labor force participation rate is partly attributed to the young age structure and the low participation rate among women in the rural area (refer to Section 2.3.1 (a)).

S.091 The labor force is not endowed with good education and training: those who have not completed primary education are 80 percent among the population of age 10 or older, and the average years of education is 2.2 years. The geographical differentiation of educational endowment among the labor force within the Province is enormous (refer to Sections 2.3.2 (b) and (c)).

S.092 Of the total economically active population 63 percent are engaged in agriculture, 12 percent in trade and hotels, 10 percent in manufacturing, and 9 percent in community and other services. Self-employed workers share a substantial part in the labor force, while the workers are mobile with regard to employment status to a considerable degree (refer to Sections 2.3.3 (a) and (d)).

(d) Future Growth of the Labor Force and Its Implications

S.093 The Study team's projection revealed that the labor force in the Province, which was about 8 million in 1971, would surpass 12 million

in 1991, increasing by 54 percent in 20 years. There will be on the average a 200 thousand increase in labor force annually for 20 years (refer to Section 2.4.1 (b)).

S.094 Given the present economic trends, the composition of the labor force will show a marked change. The share of agriculture will decline from 64 percent in 1971 to 58 percent in 1991, while the manufacturing-mining-utilities-and-construction sector will increase from 12 to 14 percent and the trade and services sectors will increase from 25 to 28 percent (refer to Table 2.16). In the agriculture sector, the total labor force would see a 1.4-fold increase over the projected 20 years, while the landless agricultural laborers would expand 1.8-fold or the addition of another 1.2 millions (refer to Section 2.4.2 (b)).

S.095 The ways of improving employment conditions and living standards of the population should be considered in the framework of the whole nation. The labor absorbing potential of the industries in the Province does not seem to suffice even to keep the situation unchanged (refer to Section 2.4.4).

S.096 The investments in the agriculture sector is not significantly alleviating the employment problem of landless laborers in the rural area. Efforts should be taken to develop the type of intensification which requires more labor inputs (refer to Section 2.4.2).

S.097 Research and training are to be undertaken to overcome the technological problems in order to lower the required investment per employment in the manufacturing sector (refer to Section 2.4.4)

S.098 The Governments, National and Provincial, should allocate necessary resources to keep up the welfare standards in rural areas, and a well integrated plan in this field is needed (refer to Section 2.4.4).

S.2.2 Water Resources Development

(a) General

S.099 The development of water resources is fundamental to the development of the socio-economic standards in the Province because water is one of the most important resources and at the same time a potential menace. These four points deserve particular attention:

- (1) To construct new storage schemes for adding to and controlling the supply of water resources (refer to Section 3.3.1),
- (2) To improve the existing irrigation systems so as to utilize the available water to the maximum extent (refer to Section 3.3.1).

- (3) To prevent flood and improve drainage in the low-lying areas along the coast (refer to Section 3.3.3 (d)), and
- (4) To prevent soil erosion and preserve water through curbing over-cultivation and promoting reforestration (refer to Section 3.4.4).

(b) Allocation of Development Resources

S.100 The level of resource allocation to this sector which was reached in 1976/77 should be maintained through the end of the Repelita III period. Among various categories within this sector, "river rehabilitation and development" should receive a greater share of development resources (refer to Section 3.4.1).

S.101 The recommended amount of investment by the Central Government to this sector during the six year period from 1978/79 to 1983/84 is Rp.227 billion of which Rp.126 billion would have to be supplied in foreign exchange, and the remaining Rp.101 billion in local currency (refer to Section 3.4.3 and Table 3.6).

(c) Investment Projects Recommended

S.102 The following investment projects are recommended (refer to Section 3.4.3) for implementation (see Table 3.6 for specific time schedules):

(1) Pemali-Comal Basin

- 1) Tertiary development in the irrigated areas
- 2) Drainage improvement in the irrigated areas
- 3) Storage dams
- 4) Flood control in the lower reaches

(2) Jratunselna Basin

- 1) Tertiary development in the Glapan-Sedadi irrigation areas
- 2) Rehabilitation of the Semarang-Kudus Irrigation Systems
- 3) Drainage improvement in the coastal plains of the Glapan-Sedadi, Semarang-Kudus and Welahan areas
- 4) Flood control in the lower Serang and Wulan Rivers
- 5) Drainage improvement of the Juana Valley
- 6) Construction of three water storage schemes

(3) Serayu River Basin

- 1) Mrica and Maung Hydro-power generation

(4) Progo River Basin

- 1) Debris control around Mt. Merapi

(5) Upper Solo River Basin

- 1) Wonogiri Multi-Purpose Project and upper Solo River improvement

(6) South Kedu Basin (Refer to Section 3.3.2 (f))

- 1) Karangsembung Multi-Purpose Project

(d) Recommended Studies

S.103 A comprehensive study on flood control and water resources of the area of kabupatens Kendal and Batang is recommended. The area lies between Semarang and Pekalongan and appears to have never been covered by any comprehensive study. According to available information, about 2,800 ha within the area are suffering from regular floods and inundation (refer to Section 3.4.2).

S.2.3 Agriculture, Livestock, Fishery and Forestry

(a) Paddy Production

S.104 Due to high population density and the characteristics of natural endowments, paddy will necessarily continue to be the principal crop in the Province for the foreseeable future. Continued emphasis on increases in paddy production through governmental programs is warranted (refer to Section 4.4.1).

S.105 In this connection, further efforts should be directed to increasing yield. This can be achieved by selecting proper varieties of paddy and improving the specification of dosage and timing of fertilizer application relative to soil characteristics and the variety cultivated. Of course, expansion of the irrigated area is another important tool for increasing yield. Attention should also be directed to increasing yield of upland paddy (refer to Section 4.4.2).

(b) Prevention of Rat-Caused Damage

S.106 Rat-caused damage to paddy and sugar crops have been significant in the Province, particularly in mountainous kabupatens. A comprehensive study of the methods for preventing rat damages should be undertaken jointly by the Central and Provincial Governments with assistance from international agencies and/or countries having expertise in this field (refer to Section 4.4.3).

(c) Non-Rice Food Crops

S.107 Efforts should be directed to selected development of high value crops. Soybean and white maize deserve serious attention and, therefore, research should be directed to improving varieties and production methods of these crops (refer to Section 4.4.4 (a)).

S.108 In addition, a study should be undertaken for improving crop rotation by comparing and relating various potential crops at specific areas (refer to Section 4.4.4 (a)).

(d) Forestry

S.109 The land in the Province is over-cultivated from the view point of water and land conservation, and reforestation deserves high priority. On the other hand expensive forestry resources such as teak are being consumed as cooking fuel, railway locomotive fuel and railway ties. This is a wasting of resources. Therefore, a number of measures are needed in this field as follows (refer to Section 4.4.5):

- (1) To improve interinsular transportation for easier importation of less expensive wood for fuel.
- (2) To introduce kerosene and natural gas for cooking in cities, and to use diesel fuel for locomotives and concrete blocks for rail ties.
- (3) To swap national forest lands located in low lying areas for lands in highlands so that water protective capacity of forest lands can be improved.
- (4) A greater variety of plants should be prepared for the Greening Program including mulberry trees which can be used for sericulture. Particular attention should be paid to this plant because it can satisfy a number of objectives: 1) greening, 2) agro-industrial development with export potential, and 3) supply of cooking fuels.

(e) Crops for Rembang, Blora and Grobogan Areas

S.110 The area with undependable water such as most of kabupatens Rembang, Blora and Grobogan should receive special attention in the selection of crops which are tolerant to dry conditions. Promising crops are as follows: (1) sorghum, (2) several kinds of beans such as pigeon peas, black gram, green gram and *P. calcaratus* and (3) sunflower (refer to Sections 4.4.6, 6.7.10 and 6.7.11).

S.111 Among them, sorghum should be grown in combination with livestock production and sunflower in combination with extraction of edible oil. Oil industry has to be considered simultaneously. In addition, by-products of sunflower oil can be used for animal feed and bee-culturing (refer to Section 4.4.6).

(f) Highland Agricultural Development

S.112 Substantial agricultural development potential in highlands (above 500 meters in elevation) such as vegetable and perennial crops, animal husbandry and sericulture as well as tourism should be brought to realization by improving access from highland areas to larger markets.

A comprehensive study should be undertaken for the development of a selected area, possibly in and around the Dieng Plateau, taking into account the organization needed for its implementation (refer to Section 4.4.7) and marketing potentials.

(g) Agricultural Development Centers

S.113 Agricultural research should be decentralized so that more detailed guidance can be provided to farmers in various different conditions. The planned establishment of five Agricultural Development Centers should be implemented as soon as possible, and each should specialize in certain kinds of crops suitable for cultivation in the respective area (refer to Section 4.4.8).

(h) Integrated Regional Agricultural Planning

S.114 Agricultural development planning which is undertaken by a number of departments within the Province should be integrated. For this purpose, a study should be started on integrated regional agricultural planning under the guidance of the Ministry of Agriculture with participation of expatriate experts (refer to Section 4.4.9).

S.2.4 Agricultural Marketing and Rural Organizations

(a) Agricultural Marketing

S.115 Following policies and programs are recommended for the agricultural marketing (refer to Section 5.5.1):

- (1) Greater freedom should be given to traders so that agricultural marketing may become more efficient. Charges and checks on transporting goods at check points should be reduced to the minimum.
- (2) Loans should be provided to traders for covering marketing costs.
- (3) Fund supplied to BUUD/KUDs for marketing credits should be increased. For covering credit needs for rice milling operation alone, about Rp.700 million should be provided in total every year.
- (4) A study on marketing systems of upland crops should be undertaken for encouraging the development of less developed rural areas.
- (5) A considerable portion of the storehouses of the DOLOG should be rehabilitated. The cost of this rehabilitation would be in the order of Rp.500 million.
- (6) Candak Kulak Program should be continued.

- (7) The various rural credit programs currently being operated should be coordinated and also be consolidated. Greater roles may have to be given to the Village Credit Body and BRI Unit Desa.

(b) BUUD/KUDs

S.116 Recommendations for BUUD/KUDs are as follows (refer to Section 5.5.2 (a) to (f)).

- (1) For the foreseeable future, efforts should be directed to improving the performances of the functions which are currently assigned to BUUD/KUDs with a possible exception of credit provision. Further diversification of their activities should not be aimed at.
- (2) BUUD/KUDs may function better by adding credit provision operation to their members, but before an approval is given to specific BUUD/KUD to go into operation, careful screening of BUUD/KUDs should be undertaken.
- (3) To strengthen the financial basis of KUDs, modifications of the Standard Bylaws are necessary.
- (4) Reporting requirements to BUUD/KUDs should be simplified considerably, while maintaining the monitoring function of their reports.
- (5) Financial incentive systems should be introduced to BUUD/KUDs.

(c) Agricultural Extension Services

S.117 Recommendations for agricultural extension services are as follows (refer to Section 5.5.2 (g) and (h)):

- (1) The National Food Crop Extension Project which is supported by IBRD should be promoted.
- (2) Greater emphasis should be given to extension services for upland crop production.

(d) Gotong Royong

S.118 The existing system of Gotong Royong has been utilized effectively for the purpose of rural development. Greater and creative use of this system is encouraged (refer to Section 5.5.2 (i)).

S.2.5 Mining and Manufacturing

(a) Recommended Policies

(i) Investment Priority

S.119 In order to improve the utilization rate of existing production capacities, the following policies should be maintained (refer to Section 6.7.3):

- (1) New investment projects which may compete with existing establishments in the use of raw materials produced in Central Java should be discouraged (refer to Section 6.4.1).
- (2) Investment projects which would improve the capacity utilization of existing capital stock should be encouraged.
- (3) The highest priority should be given to selective mechanization of existing manufacturing plants in fields such as food processing, wood and related products, metal processing, and clay and related products (refer to Paragraphs 06.076 and 06.181).

(ii) Better Coordination Between the Investment Coordination Board of the Province and the National Investment Coordination Board

S.120 To eliminate unjustifiable duplication of investment and to channel prospective investment into appropriate locations from the viewpoint of national development, a system of coordination between the two levels of investment coordination boards should be established. Such a system of coordination would require not only constant flows of information regarding applicants but also an industrial development plan of each province which is coordinated at the national level (refer to Section 6.7.8).

(b) Recommended Programs

(i) Improvement in Industrial Statistics

S.121 Industrial statistics are lagging behind most other statistics in quality. Indeed, industrial statistics are among the most difficult to collect, but the available statistics are spoiled by careless mistakes during the process of compilation and publication. For improving the system of collecting and compiling industrial statistics, it is recommended that an expatriate expert in industrial statistics be invited to the Province for 12 months to make a thorough review of the present methods (refer to Section 6.7.1).

(ii) Strengthening the Industrial Extension Services

S.122 The effectiveness of industrial extension services can be enhanced by having (1) BIPIK concentrate on overall planning, in-service

training for staff of BAPPIKRA and limiting its services to selected areas and (2) BAPPIKRA undertake wider extension services to small-scale, household and cottage industries through officers employed at local governments (refer to Section 6.7.5).

S.123 In addition, greater emphasis should be placed on the marketing aspect. One small example of this policy is to make better use of showrooms of local products which are already existing. In-service training of industrial extension service officers should also be carried out only to make better use of booklets which have already been produced.

(iii) Program for Improving the Distribution System

S.124 The Provincial Government should provide incentives to potential local entrepreneurs for starting a systematic "putting-out" system in order to help small-scale and household industries. In other words, those agents which regularly provide materials to work on to primary manufacturing units, regularly collect products from them, and provide necessary training to the primary units, should be provided with financial incentives (refer Sections 6.6.4 and 6.7.6).

(iv) Annual Exhibition Show and Contest of Handicrafts Products

S.125 Annual exhibition shows and contests should be established by the Provincial Government for enhancing the motivation of craftsmen. The Governor should give prizes to those rated as the highest in skill and development potential (refer to Section 6.7.7).

(v) Promotion of Groundnut and Soybean Oil Manufacturing Industry

S.126 BKPM-D should pay particular attention to the promotion of groundnut and soybean oil manufacturing industry as this sector is particularly promising (refer to Section 6.7.10).

(vi) Promotion of a Pilot Project for Sunflower Oil Manufacturing

S.127 The Provincial Government and BAPPEDA should launch a pilot project for growing sunflower and collecting its seeds (by school children) so that sunflower oil manufacturing may become feasible (refer to Section 6.7.11).

(c) Recommended Studies and Pilot Schemes

(i) Study for Promotion of High Value Added Branches of Small-Scale and Household Industry

S.128 BAPPEDA and Dinas Perindustrian of the Provincial Government should establish a study team to specifically work at identifying feasible projects of high value added producing activities and for devising means of implementation for identified projects within the small-scale and household industrial sector. 36 man-months of expatriate expert services will be needed (refer to Section 6.7.2).

(ii) Pilot Scheme for Diversification of Small-Scale and Household Industries

S.129 As a first step, a pilot village factory may be established for producing ready-made shirts and trousers with 50 sewing machines secured by the Provincial Government. This will be a test case for industrial diversification as well as the putting-out system. One instructor will be needed for training young women in sewing (refer to Section 6.7.4).

(iii) Study for Infrastructure Development for Promotion of the Semarang Industrial Estate Tugu

S.130 A study for infrastructure development for promotion of the Semarang Industrial Estate Tugu is urgently needed. The study should be undertaken in anticipation of the impending port development at Semarang and should properly relate this industrial estate to the overall development of Semarang. Two expatriate experts for 12 man-months will be necessary for the study (refer to Section 6.7.9).

S.2.6 Tourism

(a) Tourism Development Potentials in the Province

S.131 Tourism is one of the most promising sectors in the Province as the Province abounds in rich tourism assets. Among the variety of tourism potentials, the following are principal assets for further development:

- (1) The Dieng Plateau--archaeological assets, hot springs and resorts (refer to Section 7.6.3).
- (2) Surakarta--archaeological assets, cultural assets and batik (refer to Section 7.6.4).
- (3) Borobudur and Prambanan--archaeological assets (refer to Section 7.6.5).
- (4) Jepara Coast--beaches and wood carving (refer to Section 7.6.1).
- (5) Wonogiri--water recreation at the reservoir (refer to Section 7.6.2).
- (6) Resort areas such as Tawangmangu, Baturaden, Kopeng and Bandungan (refer to Section 7.6.6).
- (7) Semarang--urban amenity, cultural and tourist facilities and services.

S.132 For proper development of these assets, systematic collection of data on tourist activities by the Provincial Government is necessary (refer to Section 7.6.8).

(b) Tourism Development in the Semarang-Yogyakarta Complex

S.133 As the first step for tourism development, a study should be undertaken for tourism development in the heart of Central Java covering Semarang in the north, the Dieng Plateau in the west, Yogyakarta in the south and Surakarta in the east. This should be an integral part of the proposed study for the priority development area in Part I of this Summary Volume (refer to Section S.1.3 (d) (iii)).

S.2.7 Transportation

(a) Highway Transportation

S.134 Recommendations for highway transportation are as follows:

- (1) In view of the increasing importance of highways, greater attention should be paid to this mode (refer to Section 8.1).
- (2) Particular attention should be given to the portions of national and provincial highways which are chronically damaged by floods and inundation. Those portions should be examined for improvement not only from the viewpoint of highway transportation but also from the viewpoint of flood protection and drainage. They are located in Demak, Pati, Brebes, Tegal and Kebumen (refer to Section 8.2.4 (a)).
- (3) The current practice of highway classification and investment criteria should be re-examined so that better allocation of investment funds can be made (refer to Section 8.2.4 (b)).
- (4) The currently used technology for highway construction and improvement should be re-examined so that the durability of highways may be increased. Particular attention should be given to the use of mechanized technology for construction of road beds (refer to Section 8.2.4 (c)).
- (5) Improvement in accessibility should be made to the minus areas through improvement of highways (refer to Section 8.2.4 (d)). Consideration should be given to tentative recommendations shown in Figure S.5.

(b) Railway Transportation

S.135 Future improvement should be concentrated on trunk lines and, at the same time, a study should be undertaken for planned phasing out

of branch lines with consideration of alternative modes of transportation which should be supplied instead (refer to Section 8.3.4 (a)).

S.136 Considering future increases in distributive activities at Cilacap, improvements should be made to the line connecting Cilacap with Tegal (refer to Section 8.3.4 (b)).

(c) Ports

S.137 The currently ongoing study for the development of the port of Semarang should be given serious attention as its development is vital for the future development of the Province as a whole. In connection with port improvements, inland infrastructure should also be given consideration for improvement (refer to Sections 8.4.2 (c) and 8.4.4 (d) and Paragraph 08.053).

S.138 As to the port of Cilacap, attention should be given to the development of inland infrastructure such as highways, railroads, industrial water supply and others (refer to Section 8.4.4 (c)).

(d) Air Transportation

S.139 A study for improvement of the airport at Semarang would be needed. The study should take into account the very rapid growth rate in the number of passengers and should examine the need to extend the runway and to improve terminal facilities and other related services (refer to Section 8.5.3).

S.2.8 Public Utilities

(a) Electric Power

S.140 Recommendations for electric power sector are as follows:

- (1) On the whole, the development of power sources and related transmission and distribution facilities deserves high priority (refer to Section 9.1.6 (a)).
- (2) Interconnections with other regions should be undertaken as planned (refer to Section 9.1.6 (b)).
- (3) The improvement in PLN general services is urgently needed (refer to Section 9.1.6 (c)).
- (4) For the industrial development at Cilacap, close coordination of the power sector with the industrial sector is needed (refer to Section 9.1.6 (e)).
- (5) For rural electrification, a greater degree of coordination between the PLN and the Provincial Government is needed (refer to Section 9.1.6 (f)).

(b) Telecommunication

S.141 Recommendations for telecommunication development are as follows:

- (1) Attention should be given to estimation of demand for telephone connections in unconnected areas and to development of appropriate telephone technology, such as a battery-operated short wave telephone system, for each specific type of demand. Particular attention should be paid to have telephone connection among all kabupaten centers (refer to Section 9.2.4).
- (2) Telephone charges should be adjusted to reflect the real cost of the services. Particularly, the installation charges need to be re-examined (refer to Section 9.2.1 (c)).
- (3) For radio and television broadcasting, the target should be to cover the entire area of the Province. For this purpose, two middle wave radio transmitting stations at Purwokerto and D.I. Yogyakarta and several TV transmitting stations should be constructed (refer to Section 9.2.4).

(c) Water Supply and Sanitation

(i) Water Supply for Urban Areas

S.142 For urban areas, water supply programs should be aimed at improving the existing situation by selecting a suitable technology among various alternatives. The alternatives should include: (1) a search for sources of better quality water, (2) communal water supply rather than individual, (3) trucking of good quality water rather than piping, (4) distribution of simple water treatment kits for individual households, (5) an educational campaign for discretionary use of waters of different quality by purpose, and (6) an educational campaign for spreading the practice of boiling water for human consumption (refer to Section 9.3.2 (d)). For the purpose of undertaking the educational campaign, the existing system of the Health Extension Services should be mobilized.

(ii) Water Supply for Rural Areas

S.143 For rural areas, an approach essentially similar, but containing a greater variety of elements, to that described above should be pursued. For this purpose, the water supply component of the INPRES/Health program should be substantially expanded (refer to Section 9.3.3 (c)).

S.144 A systematic survey of the water supply situation and water development potentialities in every desa should be carried out. This survey should be undertaken jointly with that for sanitation (refer to Section 9.3.3 (c)).

(iii) Sanitation

S.145 For urban areas, sanitation should be approached by the combination of tank trucks for collection from privies and treatment plants for concentrated treatment. Actions should be undertaken for all kotamadyas and then kabupaten centers (refer to Section 9.3.4 (a)).

S.146 For rural areas, the program of building Unit MCKs should be promoted (refer to Section 9.3.4 (b)).

S.2.9 Human Settlements and Community Facilities

(a) Human Settlements

S.147 The human settlements problem in Central Java is, as everywhere else, a complex of a large number of problems ranging from sheer population increase and rural-urban migration to poverty and insufficient planning. Consequently, a wide range of measures should be taken for improving human settlements in the Province. These measures are described in various parts of this report (refer to Section 10.1).

(b) Public Housing

(i) KIP Projects

S.148 KIP projects should be prepared and implemented for those cities and kabupaten centers such as Semarang, Surakarta, Cilacap, Pekalongan, Purwokerto, Kebumen, Jepara and Kudus. As the first step, assistance should be provided to the city in which a project is to be undertaken first from the Central Government for the selection of the project location and the development of a plan. For the implementation of KIP projects, the investment cost required for the following four cities, Semarang, Kudus, Purwokerto and Jepara (those cities which have been selected by the Central Government) would be around Rp.9.28 billion (refer to Section 10.2.5 (b) and 10.2.2 (a) (i)).

(ii) Site and Services Projects

S.149 As regards to site and services projects, the currently envisaged project standards are excessively high for Central Java. Consequently, a less expensive version should be devised for implementation at Central Java. The revised version should cost about half per housing site as much as the currently implemented projects (refer to Section 10.2.5 (c)).

S.150 Site and services projects would be needed at Semarang, Tegal, and Surakarta. Among them, Semarang alone would require 820 lots annually. The estimated annual development cost for the three cities is Rp.393 million (refer to Section 10.2.5 (c) and (f)).

(iii) Rural Housing Program

S.151 The rural housing program should be promoted to achieve one project per kecamatan by the end of Repelita III. Within this program, priority should be given to the Rehabilitation Subprogram rather than the Model Housing Subprogram. Also, MCK Subprogram rather than Water Supply Subprogram should be expanded (refer to Section 10.2.5 (e)).

(c) Health Facilities

S.152 PKMs should be developed so that at least one PKM serves at most 30,000 persons by the end of Repelita III. The development should include not only new construction but also upgrading of existing polyclinics, rehabilitation of old health centers and of family planning clinics (Klinik KB). The total number of PKMs to be developed additionally by the end of Repelita III is 576 and would cost about Rp.5,000 million (refer to Section 10.3.6 (a)). Generally, rural areas should receive priority as the present level of services is generally poorer (refer to Section 10.3.6 (a)). For this purpose, the rural community health care activities should be enhanced further.

S.153 The following policies are recommended:

- (1) Consideration should be given to providing motorcycles to doctors for extending services to remote areas (refer to Section 10.3.6 (b)).
- (2) Efforts should be directed to upgrading one kabupaten hospital from Grade D to Grade C for each kabupaten (refer to Section 10.3.6 (c)).
- (3) Of provincial hospitals, those two at Surakarta and Purwokerto should be upgraded to Grade B by the end of Repelita III (refer to Section 10.3.6 (c)).
- (4) The supply of doctors should be increased at the national level (refer to Section 10.3.6 (d)).
- (5) Efforts should be made to effectively employ those women who had received training as nurses (refer to 10.3.6 (d)).
- (6) Efforts should be made through SDs and mass media to provide general education on health care and family planning (refer to Section 10.3.6 (f)).
- (7) For achieving greater effectiveness in health extension services provided by PKM nurses and doctors, visual aids including posters and pamphlets should be produced and distributed (refer to Section 10.3.6 (f)).

(d) Educational Facilities

(i) SD (Primary Schools)

S.154 New construction of SD facilities and the recruitment of teachers should be planned on the basis of 3.6 percent annual increase in terms of the total number of pupils enrolled at SDs (refer to Section 10.4.7 (a) (i)). This growth rate should be maintained until the end of Repelita III. The investment requirement of SD construction would be Rp.5,340 million per year at 1976 prices (refer to Section 10.4.5 (b)). For determining specific locations of new SD sites, differences in demand and supply which differ significantly among different parts of the Province should be taken into account. Generally, priority should be given to urban areas rather than rural areas. Specifically, the following areas should receive priority: KDY Magelang, KDY Surakarta, KDY Pekalongan, KB Brebes, KDY Semarang, KB Cilacap, and KB Pati (refer to Section 10.4.7 (a) (i)).

S.155 For improving planning of SD construction, a systematic collection of population data should be undertaken by either Kanwil Education, Dinas Education or the Educational Coordination Board. In particular, efforts should be made to collect population by the age cohort of 5 years by kabupaten/kotamadya annually (refer to Section 10.4.7 (a) (i)).

S.156 In addition, the following policies are recommended:

- (1) To expand existing SDs rather than to establish new SDs (refer to Section 10.4.7 (a) (i)).
- (2) To reduce dropout rates (refer to Section 10.4.7 (a) (i)).
- (3) To give emphasis to retraining of teachers (refer to Section 10.4.7 (a) (ii)).
- (4) To expand existing SPG and STO by 100 percent (refer to Section 10.4.7 (a) (iii)) and to upgrade the quality of education at SPG and STO.

(ii) SLTP (Junior Secondary School)

S.157 The basis of planning new SLTP facilities and recruiting teachers should be that the total number of students enrolled will expand at the rate of 5 percent per year to the end of Repelita III (refer to Section 10.4.7 (b) (i)).

S.158 A substantial expansion of IKIP and PGSLP (short term SLTP teachers training course) should be undertaken (refer to Section 10.4.7 (b) (ii)).

S.159 Dinas Education and Kanwil Education should be unified to establish unified educational policies for SD and SLTP (refer to Section 10.4.7 (c)).

(iii) SLTA (Senior Secondary School)

S.160 The basis of planning should also be that the number of students will expand at the rate of 5 percent per year to the end of Repelita III (refer to Section 10.4.7 (d)).

S.161 IKIP should be expanded substantially in order to secure a sufficient supply of qualified teachers (refer to Section 10.4.7 (d)).

(e) Human Settlements Planning

S.162 Ideally, a long list of tasks need to be undertaken, tasks such as city planning, land use control, the provision of streets, water supply, power and sewage and so forth, the drafting of building regulations, the provision of market facilities, community centers, hospitals, schools, and the provision of police protection and protection from fires. But on the other hand, the resources to do so are limited. Viewed in this way and on the basis of field observations, the following are recommended (refer to Section 10.5):

- (1) the general planning capability of local governments including BAPPEDA and others should be improved (refer to Section 10.5 and also to Chapter XII), and
- (2) in particular, urban planning capability should be strengthened within local governments.

S.2.10 Social Development

(a) Sociological Aspects

(i) Entrepreneurship

S.163 Entrepreneurship in the society as a whole should be promoted through:

- (1) introduction of merit and incentive systems throughout the varieties of organizations, various levels of government, cooperative organizations and schools (refer to Section 11.1.3 (b) (i));
- (2) placing emphasis on financial independence of public organizations (refer to Section 11.1.3 (b) (ii));
- (3) provision of credits to small-scale manufacturers who have going concerns but lack capital for expansion (refer to Section 11.1.3 (b) (iii));
- (4) strict specification of jobs for workers at public organizations and restriction on their holding of second jobs (refer to Section 11.1.3 (b) (iv)); and

- (5) reorganization of formal and informal educational organizations, so that various kinds of techniques and skills are given in various forms for those employed and self-employed (refer to Section 11.1.3 (b) (v)).

(ii) Community Organizations and Welfare Programs

S.164 The development of community organizations should be given attention. Long-term comprehensive social plans to keep the welfare standards in rural communities should be prepared, and a close coordination of governmental organizations concerned are called for (refer to Section 11.1.3 (c)).

(b) Vocational Training and Job-Information System

(i) Vocational-Type Junior Secondary Schools

S.165 The present policy of the Government to integrate the vocational-type junior secondary schools into general junior secondary schools is supported (refer to Section 11.2.2 (b)).

(ii) Vocational-Type Senior Secondary School

S.166 A moderate increase of vocational-type senior secondary schools will be necessitated both from the viewpoint of manpower requirements and from the prospective social demand for more educational opportunities. Emphasis in education should be placed upon providing necessary skills and knowledge required for self-employment. Also, improvement in the level of education should be sought through better equipment and instructors (refer to Section 11.2.2 (b)).

(iii) Vocational Training Center

S.167 A considerable expansion of vocational training centers is recommended. Until 1983/84, 5 technical training centers in addition to the existing 2 centers, 4 small-scale agricultural training centers to the existing 2 centers, and 1 management training center to the existing 1 center are currently planned. The implementation of their establishment is recommended (refer to Section 11.2.2 (c)).

(iv) Job Information System

S.168 For the job information system in the Province, a wider range of coverage in locating job vacancies, including the outer islands, should be sought for. Legal means should be established to enforce the use of the information system by employers for recruitment (refer to Section 11.2.2 (d)).

(v) Provincial and Local Manpower Board

S.169 Establishment of Provincial Manpower Board, as well as Kotamadya/Kabupaten Manpower Board, is strongly proposed. The Boards

are given a role of integrating the efforts of all the ministries and educational systems concerned at local levels. Especially, greater responsibility should be given to local offices under the Ministry of Education and those under the Ministry of Manpower and Transmigration, and a closer cooperation and coordination of the two ministries are to be established (refer to Section 11.2.2 (e)).

(c) Family Planning

S.170 Recommendations for family planning are as follows:

- (1) Given the expected increase in the rate of population growth during the coming decades, much greater efforts should be extended for wider diffusion of family planning than ever before. The tentative goal set by the Study team is to reach the present level of East Java in terms of effective users in the year of 1980, eventually to mark the level above 500 effective users per 1,000 eligible women in the end year of the Repelita III (refer to Section 11.3.3 (a)).
- (2) The use of IUD is to be enhanced through intensive efforts to increase the effectiveness of contraceptive practices. Enough resources should be allocated to advocate the use and to improve the quality of the device (refer to Section 11.3.3 (a)).
- (3) The present geographical differentiation in the magnitude of diffusion of family planning should be overcome by putting intensive efforts on low-achieving areas (refer to Section 11.3.3 (a)).
- (4) The number of the family planning clinics (Klinik KB) should be nearly doubled so that the average coverage of each clinic goes down 3.5 thousand eligible women by 1983/84. Desa clinics are recommended to grow rather moderately in number, but qualitative improvement is urgently needed. Mobile units are to be increased in accordance with the increase in family planning clinics (refer to Section 11.3.3 (c)).
- (5) Field Workers Program (PLKB) should be greatly enhanced and strengthened, to have 11 thousand field workers by 1983/84. Paguyuban are encouraged to be organized throughout the Province in cooperation with the existing Women's Association (PKK). Necessary actions should be taken to invoke enough interest in participating in the movement (refer to Section 11.3.3 (c)).
- (6) A wider utilization of public facilities, including the school system, mass-communication media, and religious

organizations, for further diffusion of the concept of family planning, should be achieved (refer to Section 11.3.3 (d)).

- (7) BKKBN at the Provincial level should assume more responsibility in planning and budgeting than it does now. The present tendency of laying too much emphasis on the goal of the number of new acceptors should be replaced by more rational programs to obtain the increase in number of constant users and other ultimate goals (refer to Section 11.3.3 (f)).

(d) Transmigration

S.171 Recommendations for the transmigration program are as follows:

- (1) The goal in the number of transmigrants is set by the Study team at 110 thousand families or 550 thousand persons for the five year period from 1979/80 to 1983/84. A considerable part of the increase in the number of transmigrants should be spontaneous migrants. The Central Government should commit itself to the construction of new schemes in the outer islands, and also be realistic in setting the future target of transmigration capacity (refer to Sections 11.4.3 (a) and (b)).
- (2) The training of prospective migrants should be strengthened and expanded (refer to Section 11.4.3 (b)).
- (3) Transmigration of the people with other skills than agriculture should be given consideration (refer to Section 11.4.3 (b)).

(e) Comparison of Transmigration and Family Planning

S.172 Recommendations for the population strategy are as follows:

- (1) The cost of controlling one birth through family planning is estimated at around Rp.36 thousands, which is far below Rp.440 thousands, the estimated cost for reducing one population through transmigration. As far as the reduction of the absolute number of population is concerned, family planning is a much less expensive way (refer to Section 11.5.4).
- (2) Transmigration is beneficial for the economy of the entire nation, since it would produce a considerable amount of external effects. However, the Province should not rely solely on transmigration either for reduction of population pressure or for alleviation of the present employment situation, and every effort should be paid to advance

family planning programs. This, however, does not imply negating of the value of transmigration for national development (refer to Section 11.5.4).

S.2.11 Planning Administration

(a) Planning Process and Organizations

S.173 Recommendations for planning process and organizations are as follows:

- (1) The function of multi-sectoral analysis and planning should be strengthened at BAPPEDA with emphasis on improving the efficiency of resource allocation (refer to Section 12.4.1).
- (2) Clearer statements should be made in governmental plans regarding objectives, priorities and expected results from the strategy to be taken (refer to Section 12.4.2 (a)).
- (3) Greater coordination should be achieved in planning and implementing programs among Dinases, particularly among closely related ones (refer to Section 12.4.2 (b)).
- (4) BAPPEDA should recognize more explicitly the concept of economic feasibility as an important criterion for planning and evaluation (refer to Section 12.4.2 (c)).

(b) Training Programs

S.174 Recommendations related to training programs are as follows:

- (1) Instead of sending officials overseas, it is recommended that experts should be invited from overseas to give training in planning and project evaluation to officials concerned with planning in the Province, including those in BAPPEDA. The main program should be for two years and should be conducted by experts invited from international organizations, other countries or the Central Government (refer to Section 12.4.3 (a)).
- (2) More generally, existing national training programs should be utilized to a greater extent for training of officials in the Provincial Government (refer to Section 12.4.3 (b)).
- (3) For clerical and technical workers at various levels of governments in the Province, it is recommended that the Provincial Government hold two-week on-the-job training courses. In addition, technical skill contests should be held by the Provincial Government for stimulating technical improvement by their own initiatives (refer to Section 12.4.3 (c)).

(c) Provincial Enterprises

S.175 Provincial enterprises should undergo reforms. Some can be converted into organizations for on-the-job training while maintaining their regular production levels. In addition, the feasibility of the following two reforms should also be investigated: (1) to convert some of them into joint ventures with private enterprises, with the public sector holding about 50 percent of the shares; and (2) to utilize the enterprises as agencies for research and development (refer to Section 12.4.4).

(d) Inter-Governmental Relationship

S.176 The fiscal relationship between the Central Government and the Provincial Government should be investigated for improving the efficiency of resource allocation by the Central Government in meeting national objectives and for encouraging the autonomy of the Provincial Government. Also, INPRES programs should be examined to see if they are producing expected results and if they are reducing or increasing income disparities among groups of people (refer to Section 12.4.5).

S.2.12 Development Financing

(a) The Allocation of Public Development Resources

S.177 Relatively little attention has been given to the manufacturing sector in the allocation of public development resources. A greater amount of public development resources should be allocated to those infrastructure projects which support private manufacturing activities (refer to Section 13.5.2 (a)).

(b) Resource Mobilization for the Public Sector

S.178 The tax revenue of the Province should be increased through means which improve equity as well as the functioning of the Government, i.e., such means as reassessment of property values, reducing tax evasion and revitalization of Provincial enterprises (refer to Section 13.5.2 (b)).

S.179 A comprehensive study should be undertaken for improving the system of and raising the revenue from Provincial taxes (refer to Section 13.5.2 (b)).

(c) Statistical Information

S.180 A study for improving data collection and processing systems and for improving accuracy in information is needed. In this connection, the introduction of large-size electric calculators with a printing function should be considered (refer to Section 13.5.2 (c)).

(d) Private Savings

S.181 Inflation should be controlled for increasing savings in the private sector (refer to Section 13.5.2 (d)).

S.182 Efforts should be made for improving access to corporate stocks for the general public (refer to Section 13.5.2 (d)).

(e) Promotion of Small- and Medium-Scale Manufacturers

S.183 Recommendations for financing small- and medium-scale manufacturers are as follows (refer to Section 13.5.2 (e)).

- (1) Paperwork needed for obtaining credits by existing and prospective small- and medium-scale manufacturing enterprises should be simplified.
- (2) The interest rate policy should be re-examined so that better allocation of investment resources is achieved. Specifically, consideration should be given to equalization of interest rates for credits between manufacturing and agriculture sectors.
- (3) To attain greater economic efficiency, a greater role should be given to private banks, with a corresponding reduction in the role of national and other public banks.

