

PART

IV

IMPLEMENTATION PROGRAM

CHAPTER

16

SECTORAL RELATION AND
DEVELOPMENT STAGE

16.1 CRITERIA FOR PRIORITY

16.1.1 GENERAL

The planned physical structure should be a total system to integrate the parts into an orderly entirety suitable for a period of at least 20 years into the future. In other words, the sectoral projects executed at present should be composed into a total system coping with the future structure, whilst the structure plan should ensure the situation of those sectoral projects.

The structure plan should therefore be a presentation of the desirable future image. However, the structure plan basically does not have any power to restrict spontaneous developments, but rather gives only the general framework. Accordingly, the preparation of local plans with control power over developments is necessary, and these local plans should be based on the structure plan. Moreover, the revision of structure plan should be performed in accordance with the actual movements as detected by a monitoring system.

NECESSITY OF LONG-TERM PROSPECTS

When undertaking a project contained in the structure plan, attention should be paid to ensure that it is not a temporary solution to the problem. Some considerations to cope with the growth of needs should be included in the project. Especially for the development of infrastructure, sufficient capacity should be anticipated in order to ensure the growth of urban activities.

NECESSITY OF ADMINISTRATIVE GUIDANCE

The international utilization of the private sector is indispensable for the realization of the plan. However, the activities of the private sector are mostly short-sighted because of their pursuit of profit, and administrative guidance for development is necessary to make the best use of the private sector.

16.1.2 CRITERIA FOR PRIORITY

BASIC CONCEPT

In deciding the implementation priority of each project, some conditions should be taken into account such as sectoral relation, development benefits, financial return, and administrative considerations, etc.

From an urban planning point of view, the projects corresponding with the following conditions should be given a high priority.

- A project to meet an acknowledged shortage of capacity to cope to the future demand as well as to solve actual problems already happening due to the lack of development.
- A project to prevent a serious problem which is assumed to appear unless the prior investment for development is undertaken.
- A project taken to be an advantage from the national development planning point of view.
- A project from which a large socio-economic return and benefit can be expected.

Concerning the third condition, the increase in goods production and development of distribution function are included. For the fourth condition, any demerits should be simultaneously taken into account.

Next, a decision on the priority between sectors should be based on the consideration as to whether or not the project can be substituted by development in another sector. If

the project is not substitutional, consideration should be given to achieving the most advantageous solution for a comprehensive development.

In order to respond to this question, a planning decision as well as a political or a strategic decision is necessary. For instance, the road and the railway have mutually substitutional functions, but there is no proper principle to respond to the question as to which development would be more advantageous. The Study Team consider that they should be developed simultaneously, because of the necessity for coexistence. On the other-hand, between road development and housing development there is no substitutional function.

However the road development, in most cases, should be carried out prior to the housing development in order to avoid disorderly development. In this sense, the decision of priority between sectors should be determined by consideration of the development concept.

SECTOR RELATIONS

As mentioned already, essentially the structure plan should ensure the various urban activities and should provide for the future needs to encourage the socio-economic development.

In this context, planning policy is required to cope with the following two aspects of problems to be solved.

One is how the existing obstructions to development can be eliminated, and the other is how the future structure should be composed in harmony with the actual solution.

In order to solve these two problems simultaneously, the appropriate urban systems with a mutual relationship should be prepared, that is a strategic policy foreseeing the desired future image through the actual problems.

For the scale of establishment of that urban system, the peculiarities and the interrelationship between the projects should be the primary consideration.

(1) Urban Development and Rural Development

The interrelationship between the urban area, SMA and the rural areas, Mojokerto, Lamongan and Bangkalan areas should be ensured and for that purpose some significant problems should be resolved.

First is the water problem, which was evaluated to be a critical factor for the urban development of SMA. This is a serious situation, but the requirements must be adjusted so that a co-existence may be possible between the water for irrigation and that for urban use. In this context, a sufficient adjustment between the urban and rural development prospects, prior to execution, is necessary so as to make best use of the limited resources.

At least, as the basis of adjustment, zoning of the area to be urbanized and the area to be developed as agricultural land is essential, from a long term point of view.

For instance, observing the existing landuse, some factories are scattered in the advanced well irrigated agricultural area. This phenomenon is likely to be the result of political industrialization in the rural area. However, basically the manufacturing factories should be induced into the area planned for that purpose, and disorderly diversion from agricultural land to manufacturing use should be controlled as much as possible in order to avoid the serious problems concerned with water use and water pollution.

Second is the problem of the distribution facilities development. Even if a modern distribution system with terminal developments is established, the efficient function of those facilities cannot be anticipated without the development of an equivalent terminal system in the hinterland. The central function and the peripheral functions should be simultaneously encouraged so as to establish an integrated and consistent system. By the same way, the road development should take a mutual relationship.

Third is the problem of social change in the rural area. Accompanying the industrialization, a large population will migrate from the rural area into SMA, unless an intentional industrial development in the rural area is executed.

The excess inflow of population will give an obstruction to the appropriate industrialization of SMA, and at the same time, the required rural activity necessary to support the urban development, will disappear. The social distortion on composition of population should be continuously improved by determined policies.

Besides the above, there will exist other problems to be considered in the relation of urban and rural developments. However, a principle to solve any problem, must be that the allotments to be given to SMA and the other rural areas is made clear, and that the mutual relationship of those allotments is established.

(2) Sectoral Relations in Urban Development

The main target lies in ensuring the quality of residents lives. For that purpose, some policies such as aggressive industrialization, development of infrastructure, improvement of living environment, and efficient socio-economic system development, etc. are proposed in this study.

Observing the mutual relationship of these projects from a macro-scope viewpoint, the development of the infrastructure contributing to industrialization should be initiated, and it is recommended that the developments of infrastructure, industry, socio-economic system, and living environment, should be executed in that order.

The reasons are as follows:

- It was concluded from the Study that regional economic activation as a result of aggressive industrialization was indispensable for the achievement of the target.
- Relief of existing unemployment, creation of jobs for increasing labour force, and elevation of income level are the basic targets of national development and unless the appropriate industrialization is performed, the national target cannot be achieved.

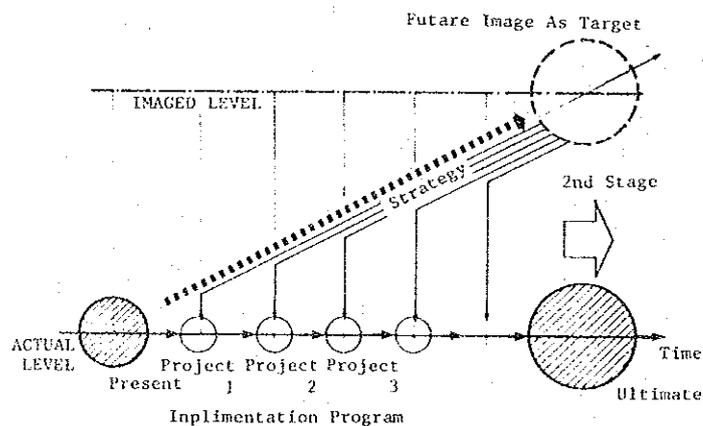


Fig. 16.1.1 CONCEPTUAL SCHEME OF DEVELOPMENT PROGRAMME

16.2 STAGING PROGRAMME

16.2.1 STRATEGIC PROGRAMME

An implementation programme of developments should be established with a view to minimize any adverse social impact and economic waste and imbalance which might be incurred.

During the process of implementation, the programme should be reviewed after the completion of every project finished in the light of the effects and impacts of the projects, and allowance should therefore be provided in the implementation programme for any requirement of adjustment.

The Team intends to divide the time span toward the year 2000 into three periods.

- 1st: period for economic base formation
- 2nd: period for adjustment
- 3rd: period of socio-economic self-support

The first is assumed to be a period of development of infrastructure as a basis for industrialization.

The second is a period to adjust the executed projects and their aimed effect, by carrying out smaller projects to raise the effect of the plan.

The third is a period to distribute development benefits to the hinterland through the inter-relationship system developed during the first and the second stages.

The third stage can be also recognized a period in which a self-supporting economy is formed by attaining a balance between society and economy. It is a preparation period for the next step beyond the year 2000.

The concept of this staging programme is shown in Fig. 16.2.1.

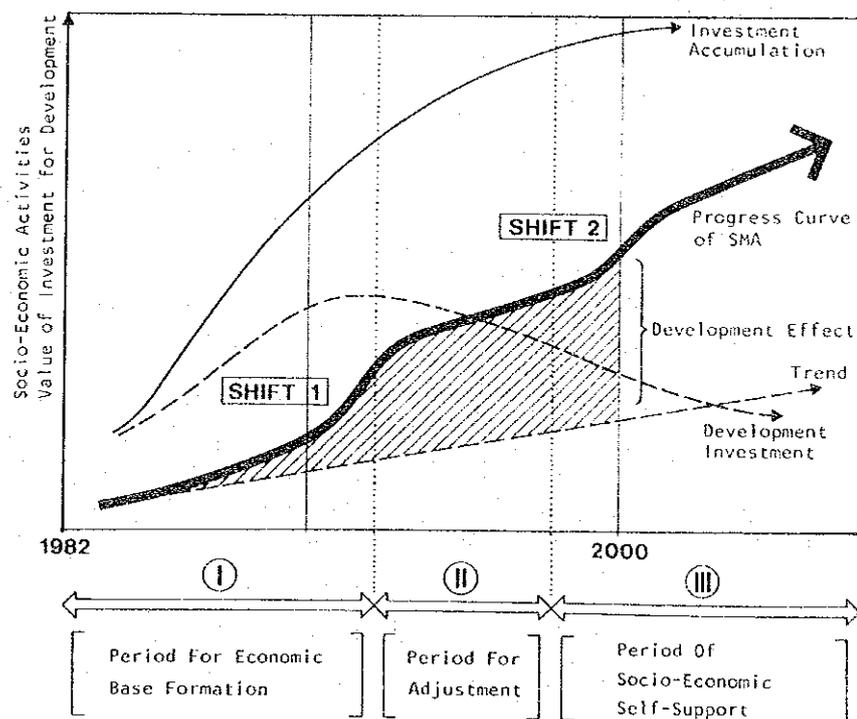


Fig. 16.2.1 CONCEPT OF DEVELOPMENT STAGE

16.2.2 STAGING PROGRAMME OF SPATIAL STRUCTURE DEVELOPMENT

A functional structure of the urbanization concept, comprises five factors as shown in Fig. 16.2.2.

- Work Places
- Housing
- Transport
- Urban Utilities
- Environment

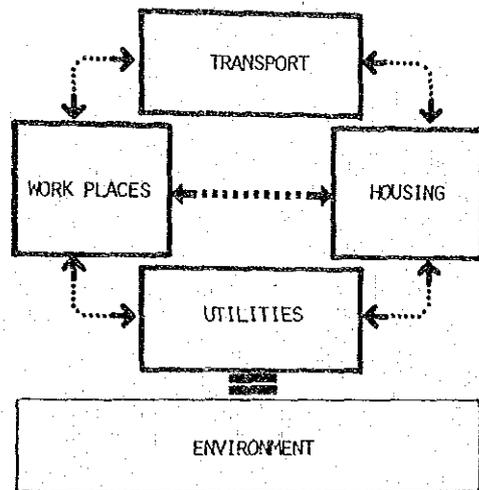


Fig. 16.2.2 CONCEPTUAL SCHEME ON FUNCTIONAL URBAN STRUCTURE

The fifth factor, Environment is seen as an entire system integrating the others, with the communications system being needed to interconnect with the other four factors.

One of the significant considerations for a programme of physical structure development across all stages is that every stage has to ensure the above system with a mutual relationship, even when the physical structure is proposed at any stage.

Based on this basic concept, the Study Team proposes the following development stage, and similarly Fig. 16.2.3 shows the conceptual scheme.

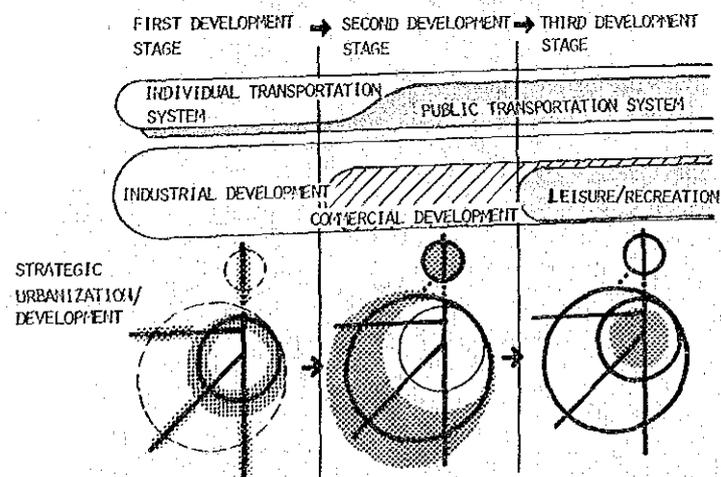


Fig. 16.2.3 DEVELOPMENT STAGE FOR SPATIAL STRUCTURE

FIRST DEVELOPMENT STAGE

- Development of major structures in the peripheral area of the busy central area in order to increase development capacity.
- Solution of the existing traffic problems, traffic bottle-necks, and anticipated problems in near future. However, it should be noted that those solutions are not countermeasures against intermediate problems, but that they are useful for a long-term solution.
- Development and Encouragement of the distributional function e.g. cargo terminals and port improvements for the planned industrialization.

SECOND DEVELOPMENT STAGE

- Formation of the entire structure; especially the infrastructure development in the outer area of SMA which is best executed at this stage in order to ensure the capacity to accommodate housing and industrial developments in the planned and orderly system.
- The outer ring roads and the extension of the east-west trunk routes are in the second stage.

THIRD DEVELOPMENT STAGE

- Redevelopment and improvement of the busy built-up area to emphasize the commercial and business function.
- Measures to cope with the mass-transportation systems.

Through these stages, the following developments should be continuously executed:

- Improvement of housing areas,
- Development of social facilities in accordance with increase of population, especially educational and medical facilities.
- Development of urban utilities related with up-grading the residential environment.

CHAPTER

17

DEVELOPMENT COST AND
BUDGET CONSTRAINT

17.1 PROGRAMME/PROJECT LIST AND COST

17.1.1 PROJECT LIST

Many of projects are listed to attain the aim of the structure plan and to solve the existing and future problems defined in the former section of this report.

The development projects contained in the proposed structure plan are summarized in Table 17.1.1. All of the projects are classified into one of three categories of development programme; I. Urban Development Program, II. Transportation Development Programme, and III. Urban Utility Development Programme.

The priorities used in the table are evaluated by the terms: Short Term (during Pelita IV) and long Term.

Evaluation of A, B and C

Priority "A" — The highest priority to be completed in the short term (Pelita IV) upto 1989.

Priority "B" — High priority to be completed in the long term upto 2000.

Priority "C" — The project to be prepared with a prospect beyond 2000 or to be executed after 2000.

17.1.2 PROJECT COST

In order to define the magnitude of the Projects, the costs are estimated. The cost of each project is estimated by applying a unit cost based on past data from Indonesia and Japan. The conversion rate between currencies is 1 US\$ = 680 Rp. = 250 Yen, as prevailing in the middle of 1982.

The total project cost is estimated by programme as follows;

I. Urban development programme	: 3,875,900 Million Rp.
II. Transportation development programme	: 4,486,600
III. Urban utility development programme	: 5,114,000
<hr/>	
Total	13,476,500

All of the projects are evaluated in terms of the Local and Central Government budget constraints in section 17.3 of this chapter.

17.2 PROSPECT OF DEVELOPMENT BUDGET

17.2.1 CHARACTERISTICS OF PROJECTS

The development plan which is proposed in this work includes various kinds of programmes, these are industrial development programme, distribution facility programme, commercial function programme, housing development programme, public facility programme, road and street programme, railway programme, water supply and river improvement programme, electricity expansion programme, etc.

They cover almost all the development programmes which are required for the comprehensive development of an urban area. Therefore, there are programmes included which should be done by the central government as well as the regional governments. At the same time, the total development cost stated in section 17.1 is so big that the regional government cannot fund the whole project. This means that the central government should bear a part of the cost as a matter of course.

The characteristics of each programme were studied and the programmes divided into two categories; the regional projects and the national projects. This is the initial allocation between fund sources.

17.2.2 FINANCIAL CHECK FLOW-CHART

The overall procedure for the financial check is shown in Fig. 17.2.1.

The procedure is divided into three parts; first: to check whether the regional governments can bear the cost of the regional projects; second: to check the propriety of the loans which the regional governments obtain for the projects; and thirdly: to check the investment by the central government in the SMA Region.

17.2.3 REGIONAL/NATIONAL PROJECTS INITIAL ALLOCATION

Table 17.2.1 lists the projects as initially allocated between Regional and Central governments with the estimated costs. There are some projects whose costs are borne by both regional and central governments.

The total cost of the regional projects is Rp 5,404.6 billion and that of the national projects is Rp 8,112.5 billion; the grand total amounts to Rp 13,517.0 billion.

This means that the regional governments should bear 40.0% of the entire cost, the central government should bear 60.0%; that is this development plan can be achieved on the condition that the central government supports just over half the project cost.

Table 17.1.1 PROJECT LISTS FOR SMA DEVELOPMENT

Development Programme/Project	Priority (A/B/C)	Project Cost (1982 Price) Mill. Rp.			
1. URBAN DEVELOPMENT PROGRAMME		<u>3,875,900</u>		4-5 Other Environmental Development Projects	A/B/C 306,000
1. Industrial Development Programme		<u>714,500</u>		4-6 Relevant Developments	259,600
1-1 Industrial Estate Development Project (Middle and Large Scale)	A/B	450,000		5. Major Public Facilities with high level Function Development programme	98,800
1-2 Industrial Estate Development Project (Small Scale)	A/B	60,000		5-1 Medical Facilities Development Project	B 18,000
1-3 Tg. Perak Port Supporting Area Development Project	B	137,500		5-2 Educational and Vocational Facilities Development Project	A/B 23,000
1-4 Renewal, Redevelopment and Improvement of the Built-up Industrial Area	B/C	56,000		5-3 Social-Cultural Facilities Development Project	B/C 6,800
1-5 Relevant Facilities		65,000		5-4 Park and Recreation Facilities Development Project	B/C 42,000
2. Distribution Facility and System Development Programme		<u>68,500</u>		5-5 Relevant Developments	9,000
2-1 Truck Terminal Development Project	A/B	27,300		11. TRANSPORTATION DEVELOPMENT PROGRAMME	4,486,600
2-2 Distributional Market Development Project	B	4,800		1. Road Development Projects	1,761,100
2-3 Warehouse Estate Development Project	B/C	27,200		1-1 Surabaya-Malang Tollroad	A 27,600
2-4 Distributional Relevant Facilities Development Project in the Built-up Area	B/C	3,000		1-2 Surabaya-Gresik Tollroad	A 70,600 B 9,300
2-5 Relevant Facilities		6,200		1-3 Middle Ring Road	A 545,600 B 23,400
3. Central Commercial Function Encouragement Programme		<u>138,600</u>		1-4 Outer Ring Road (1)	A 52,600 B 371,400
3-1 Redevelopment of Central Business District	B/C	48,200		1-5 Outer ring Road (2)	A 145,500 B 115,500
3-2 Central Commercial District Improvement Project	B/C	700		1-6 Jl. Gresik	A 36,100
3-3 Parking Lot Development Project	A/B/C	77,400		1-7 Gresik-Lamongan	B 8,900
3-4 Relevant Facilities		12,600		1-8 Wonokromo-Karangbilang-Krian	A 32,100 B 64,300
4. Housing Development Programme		<u>2,855,500</u>		1-9 Waru-Krian	A 6,500 B 57,600
4-1 New Housing Development Project by Public Body	A/B/C	643,900		1-10 Krian By-pass	B 15,000
(Among these projects, Driorejo Housing Complex Development	A	185,760		1-11 Wonokromo-Sidoarjo	B 94,700
4-2 Public Service Facilities Development Project for Population Increase	A/B/C	350,900		1-12 Airport-Sidoarjo	A 49,200
4-3 Improvement Project for the Built-up Residential Area	A/B/C	168,500		1-13 Gresik By-pass	A 20,300 B 14,900
4-4 Redevelopment Project for the Mixed Area with Commercial and Residential Function	B/C	627,000		2. Street Development Project	735,400
				2-1 Jl. Kenjerang	A 5,100 B 16,800
				2-2 Jl. Dupak Rukun-Kapass-Krampung-Kenjeran	A 43,400
				2-3 Tandes-Cerne	A 57,500 B 17,900
				2-4 Tandes-Jl. Darmah Husada	A 18,300 B 34,000
				2-5 Tandes-Manyar Kertoarjo	A 63,400 B 1,400
				2-6 Jl. Darmo Permai-Middle Ring Road	A 54,100 B 20,300
				2-7 Jl. Jagir Wonokromo	B 7,600

(Continue)

(Cont Inue)

Table 17.1.1 (Continued)

III. URBAN UTILITY DEVELOPMENT PROGRAMME			5,114,020
1. Water Supply Development			1,412,220
1-1	Umbulan Supply System	A	250,000
1-2	Water Transmission to Gresik	A	4,800
1-3	Mini Plant Development	A	900
1-4	Resources Development	A	120
1-5	Waru Supply System (Phase-I)	A	130,000
	(Phase-II)	B	213,000
1-6	4 Spring Water Development	A	56,400
1-7	Sala River Supply System	B	571,000
1-8	Replacement of Old Distribution Pipe	A	186,000
2. Waste Water Treatment System			1,757,200
2-1	Expansion of Public Toilet	A	400
		B	1400
2-2	Introduction of Night Soil Treatment Plant	A	11,300
		B	17,000
2-3	Pilot Project of Waste Water Treatment System	B	275,100
2-4	Full Scale Waste Water Treatment Plant	C	1,452,000
3. Solid Waste Treatment System			198,100
3-1	Provision of Container Depot	A	8,400
		B	12,300
3-2	Purchase of Equipment/Tool	A	8,000
		B	19,000
3-3	Incineration Plant	A	13,300
		B	79,700
3-4	Land Fill Site Development	A	26,500
		B	30,900
4. River/Canal Improvement Programme			251,400
4-1	Cleaning of Existing Canal	A	1,200
4-2	Construction of Sea Dike	A	4,100
		B	1,900
4-3	Up-Grading of Sea Dike	A	400
4-4	Improvement of Canals	A	183,300
		B	26,100
4-5	Construction of New Canal	B	9,400
4-6	Renewal of Dams	A	5,000
4-7	River Tributaries Improvement	B	20,000
5. Electricity Expansion			1,495,100
5-1	Generators, Substation, Transmission (Phase-I)	A	800,800
5-2	Generators, Substation, Transmission (Phase-II)	B	691,500
5-3	150 Substation (Phase-III)	C	2,800

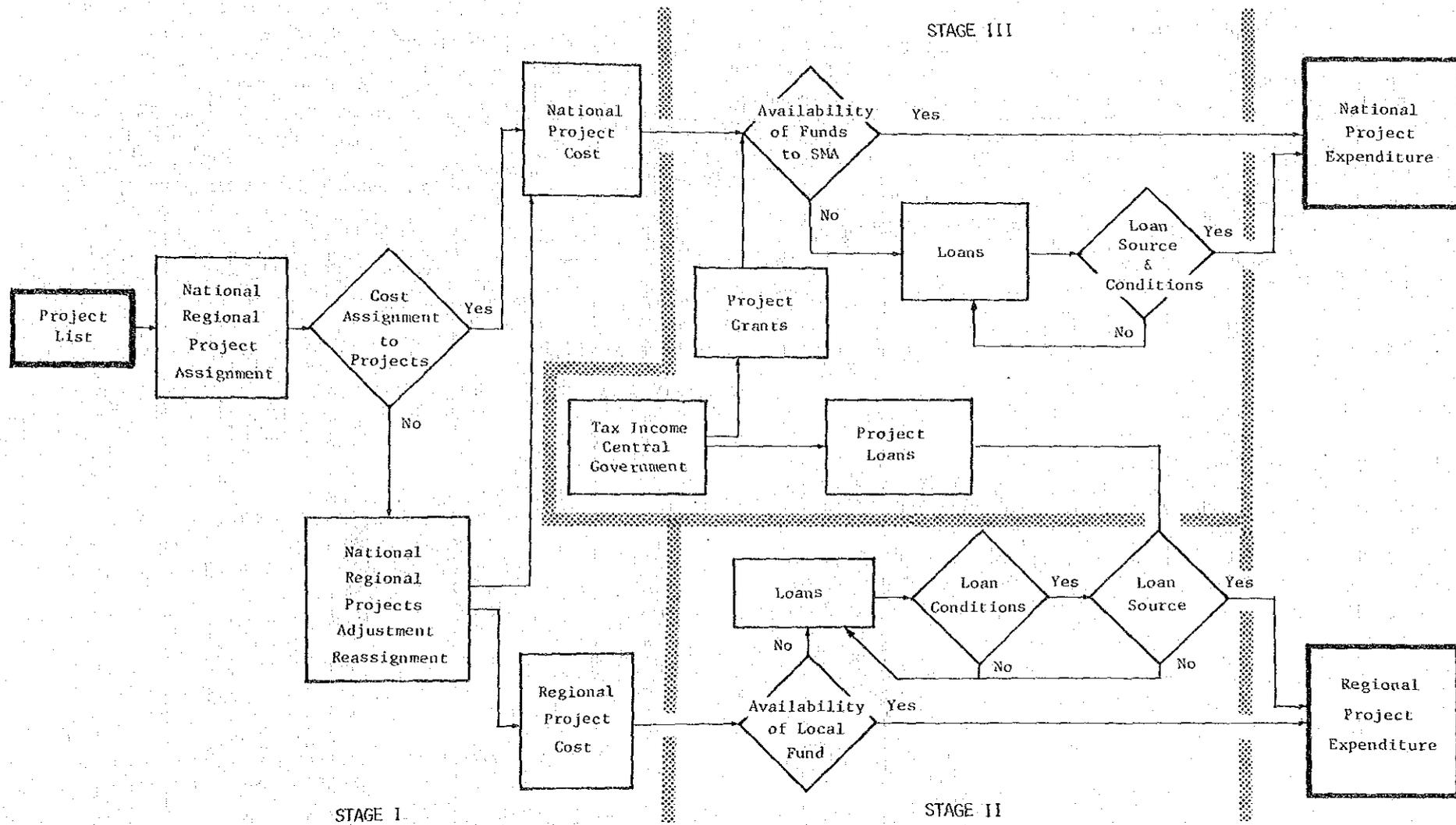


Fig. 17.2.1 FINANCIAL CHECK FLOW-CHART

Table 17.2.1 PROJECT COST INITIALLY ALLOCATED BETWEEN REGIONAL/NATIONAL FUNDS ON ASSUMED DIVISION

(billion rupiah)

Project	Cost		Project	Cost		Project	Cost	
	Regional	National		Regional	National		Regional	National
I. 1. 1-1		491.4	1-12		49.2	5-9		182.0
1-2		62.5	1-13		35.2	5-10		233.7
1-3		150.2	2. 2-1	21.9		6.		75.1
1-4	61.2		2-2	43.4		7.		562.1
2. 2-1		30.0	2-3	75.4		III. 1. 1-1	125.0	125.0
2-2		5.3	2-4	52.3		1-2	2.4	2.4
2-3		29.9	2-5	64.8		1-3	0.45	0.45
2-4	3.3		2-6	74.6		1-4	0.06	0.06
3. 3-1		53.0	2-7	7.6		1-5	171.5	171.5
3-2		0.8	2-8	113.7		1-6	28.2	28.2
3-3	85.1		2-9	45.7		1-7	285.5	285.5
4. 4-1	354.1	354.1	2-10	33.6		1-8	93.0	93.0
4-2	935.0		2-11	46.6		2. 2-1	0.9	0.9
4-3		185.4	2-12	24.9		2-2	14.15	14.15
4-4	689.7		2-13	29.0		2-3	137.55	137.55
4-5	336.6		2-14	35.4		2-4	726.0	726.0
5. 5-1	9.9	9.9	2-15	17.3		3. 3-1	10.35	10.35
5-2		25.3	2-16	43.6		3-2	8.5	8.5
5-3	7.5		2-17	5.6		3-3	46.5	46.5
5-4	46.2		3.		127.5	3-4	28.7	28.7
II. 1. 1-1		27.6	4. 4-1	46.0		4. 4-1	0.6	0.6
1-2		79.9	4-2		30.2	4-2	3.0	3.0
1-3	284.5	284.5	4-3	5.6		4-3	0.2	0.2
1-4		424.0	5. 5-1		4.6	4-4	104.7	104.7
1-5		261.0	5-2		1.7	4-5	4.7	4.7
1-6		36.1	5-3		0.4	4-6	2.5	2.5
1-7		8.9	5-4		104.5	4-7	10.0	10.0
1-8		96.4	5-5		362.3	5.		1,495.1
1-9		64.1	5-6		120.0			
1-10		15.0	5-7		81.5			
1-11		94.7	5-8		52.9			
						Sub Total	5,404.56	8,112.46
						Total		13,517.02

NOTES: No. of Project is identified by the Project described in Table 17.1.1.

17.3 BUDGET CONSTRAINT

17.3.1 INCOME AND EXPENDITURE

EXPENDITURE

The cost of each project is shown in the section of the section of 17.1 with the priority. The priority group A means that it should be executed up to 1989. The cost is allocated equally for each year after programme on the basis that the project begins in 1985; and is completed at the end of 1990, i.e. one sixth of the cost for each year. The group B projects should be executed by 2000. Again the cost is allocated equally between 1991-2000; hence the annual expenditure is one tenth of each project cost. The group C priority requires execution after the year 2000. It is assumed to compete by 2010. Therefore, as above, the annual allocated expenditure for each project is one tenth. The total expenditure for each year can be obtained by summing up the annual cost of each project.

INCOME

The income has two aspects. One is income from a project which generates income after completion of the project. For example the housing development programme generates rental income. Income conditions are assumed for each income-generating project according to the characteristics of each project. The other is income brought by an increased tax base derived from GRDP increase created by the investment in the projects.

EXPENDITURE/INCOME PLAN

This is the expenditure and income plan for each regional project, giving Project Cost, Expenditure plan for each project year, and an income plan where an income is generated. These are existed in the Table 17.3.1.

TAX INCOME INCREASE

In order to estimate the amount of tax income increase, the team adapted a mathematical model which explains tax income of the local government.

The model is as follows.

$$T = a + b \cdot \log G = c \cdot \log E$$

T : Tax Income (million Rp)

G : GRDP

E : Number of Employees (thousand)

This regression model means that the tax income is explained by production activity of enterprises and personal income of employees.

The team applied actual values of GRDP's and numbers of employees of municipalities in SMA and obtained the following equations.

Gresik

$$T = 19,382.6 + 226.8 \log G + 3,085.8 \log E$$

(8.97) (15.5)

(R = 0.999)

Bangkalan

$$T = 7,310.7 + 437.5 \log G + 529.9 \log E$$

(3.27) (2.46)

(R = 0.951)

Surabaya

$$T = 84,004.3 + 699.3 \log E + 12,116.3 \log E$$

(7.34) (8.16)

(R = 0.961)

Sidoarjo

$$T = 10,444.1 + 794.8 \log G + 391.2 \log E$$

(3.34) (4.16)

(R = 0.987)

These models have good correlation coefficients and t-values, so these are considered usable for forecasting the future tax income. Applying the forecasted GRDP and the numbers of employees of the four municipalities in SMA to these models. The forecasts of the tax incomes was obtained. In order to calculate the increase of tax income derived from the development plan, the trend curve and Case 4 are used. The difference of the two indicates the increase of tax income derived from the development plan.

The difference between the two can be assumed to use as funds for the investment, it means that the difference is regarded as "Income" from the development.

17.3.2 BUDGET CONSTRAINT

The argument stated in paragraphs above provides the expenditure/income prospect for each year. The result is shown in Table 17.3.2.

The difference of the expenditure and income means required funds for the development programme for each year, which the local governments have to procure from other sources.

The average of required cumulative funds is Rp 2,436 billion per year through 1985 to 2010. On the other hand, the yearly income after the completion of the investment (2010) is about Rp 120-130 billion. This means that the investment of Rp 2,436 billion creates Rp 120-130 billion in income; that is, a return of investment is about 5% per year. Consequently, the local governments cannot repay principal and interest of the funds they procure for the development. The conclusion is that the total amount of the project costs, Rp 5,404.6 billion, is too much for the local governments and a greater portion of the programme should be carried out by the central government.

Table 17.3.1 PROJECT EXPENDITURE/INCOME PLAN

I. URBAN DEVELOPMENT PROGRAMME	
1. Industrial Development Programme	1-4 Renewal, Redevelopment and Improvement of the Built-Up Industrial Area PC--Rp 61,174 million EP--equal annual allocation for 20 years (1991 - 2010) IP--To collect charges from enterprises at 9% p.a. of invested cost
2. Distribution Facility and System Development Programme	2-4 Distribution Facilities Development Project in the Built-Up Area PC--Rp 3,298 million EP--equal annual allocations for 20 years (1991 - 2010) IP--To collect charges from enterprises at 3% p.a. of invested cost
3. Central Commercial Function Encouragement Programme	3-3 Parking Lot Development Project PC--Rp 85,122 million EP--equal annual allocations for 26 years (1985 - 2010) IP--To collect charges from users at 3% p.a. cost
4. Housing Development Programme	4-1 New Housing Development Project PC--Rp 354,152 million NP--Rp 354,152 million EP--equal annual allocations years (1985 - 2010) IP--To collect rental charges at 5% p.a. of invested cost 4-2 Public Service Facilities Development Project for Population Increase PC--Rp 935,020 million EP--equal annual allocations for 26 years (1985 - 2010) IP--none 4-4 Redevelopment Project for Mixed Area with Commercial and Residential Function PC--Rp 689,714 million EP--equal annual allocations for 20 years (1991 - 2010) IP--none 4-5 Other Environmental Development Project PC--Rp 336,607 million EP--equal annual allocations for 26 years (1985 - 2010) IP--none
5. Major Public Facilities with High Level Function Development Programme	5-1 Medical Facility Development Project PC--Rp 9,902 million (NP = Rp 9,902 million) EP--equal annual allocations for 20 years (1991 - 2010) IP--none 5-3 Social-Cultural Facility Development Project PC--Rp 7,482 million EP--equal annual allocations for 20 years (1991 - 2000) IP--none 5-4 Park and Recreation Facility Development Project PC--Rp 46,209 million EP--equal annual allocations for 20 years (1991 - 2010) IP--none

II TRANSPORTATION DEVELOPMENT PROGRAMME	
1. Road Development Project	1-3 Middle Ring Road PC--Rp 284,500 million (NP = Rp 284,500 million) EP--annual allocation for 16 years (1985-2000) IP--Toll--- Traffic Volume : Sedan 27,000 cars/day Toll : Sedan Rp 400 Truck/Bus Rp 800
2. Street Development Project	PC--Rp 735,400 million EP--annual allocation for 16 years (1985-2000) IP--none
4. Terminal	4-1 Bus Terminal PC--Rp 46,000 million EP--equal annual allocation for 6 years (1985-1990) IP--none 4-3 Railway Station Plaza PC--Rp 5,600 million EP--annual allocation for 16 years (1985-2000) IP--none

III. URBAN UTILITY DEVELOPMENT PROGRAMME

1. Water Supply Development	PC--Rp 706,110 million (NP = Rp 706,110 million) EP--allocation for 16 years (1985-2000) IP--To multiply price per ton and forecasted demand volume
2. Waste Water Treatment System	PC--Rp 878,600 million (NP = Rp 878,600 million) EP--annual allocation for 26 years (1985-2010) IP--none
3. Solid Waste Treatment System	PC--Rp 99,050 million (NP = Rp 99,050 million) EP--annual allocation for 16 years (1985-2000) IP--none
4. River Improvement Programme	PC--Rp 25,700 million (NP = Rp 125,700 million) EP--annual allocation for 26 years (1985-2010) IP--none

Note: PC: Project Cost
EP: Expenditure Plan
IP: Income Plan
NP: National Project

Table 17.3.2 PROJECT EXPENDITURE/INCOME

(billion rupia)

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Income	1.6	3.3	4.9	6.6	8.2	29.3	33.4	37.5	41.4	45.8	49.9	54.0	58.2	62.3
Expenditure	261.2	261.2	261.2	261.2	261.2	261.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2	206.2
Difference	-259.6	-257.9	-256.3	-254.6	-253.0	-231.9	-172.8	-168.7	-164.5	-160.4	-156.3	-152.2	-148.0	-143.9
Accumulation	-259.6	-517.5	-773.8	-1,028.4	-1,281.4	1,513.3	-1,686.1	-1,854.8	-2,019.3	-2,179.7	-2,336.0	-2,488.2	-2,636.2	-3,023.2

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Income	66.4	102.9	104.8	106.7	108.7	110.4	112.5	114.5	116.4	118.3	120.2	122.2	122.4	122.5
Expenditure	206.2	206.2	179.7	179.7	179.7	179.7	179.7	179.7	179.7	179.7	179.7	179.7	-	-
Difference	-139.8	-103.3	-74.9	-73.0	-72.0	-69.1	-67.2	-65.2	-63.3	-61.4	-59.5	-57.5	122.4	122.5
Accumulation	-2,919.9	-3,023.2	-3,098.1	-3,171.1	-3,243.1	-3,312.2	-3,379.4	-3,444.6	-3,507.9	-3,569.3	-3,628.8	-3,563.9	-3,563.9	-3,441.4

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Income	122.7	122.9	123.1	123.3	123.5	123.7	123.9	124.1	124.2	124.4	124.6	124.8	125.0	125.2
Expenditure	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Difference	122.7	122.9	123.1	123.3	123.5	123.7	123.9	124.1	124.2	124.4	124.6	124.8	125.0	125.2
Accumulation	-3,318.7	-3,195.8	-3,072.7	-2,949.5	-2,826.0	-2,702.3	-2,578.4	-2,454.3	-2,330.1	-2,205.7	-2,081.1	-1,956.3	-1,831.3	-1,706.1

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Income	125.4	125.6	125.7	125.9	126.1	126.3	126.5	126.7	126.9	127.1	127.3	127.5	127.7	127.8
Expenditure	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Difference	125.4	125.6	125.7	125.9	126.1	126.3	126.5	126.7	126.9	127.1	127.3	127.5	127.7	127.8
Accumulation	-1,580.7	-1,455.1	-1,329.4	-1,203.5	-1,077.4	-951.1	-824.6	-697.9	-571.0	-443.9	-316.6	-189.3	-61.6	66.2

17.4 ADJUSTED REGIONAL DEVELOPMENT PROGRAMME

17.4.1 REVISED PROGRAMME

The reason why the regional government cannot afford all of the initially allocated projects is that the total investment cost is too high compared with the yearly income after 2010.

In order to make the return sufficient for the investment cost, the amount of the project cost should be reduced. Since the return is some 5% of the average yearly shortage of the funds.

The total cost should be reduced by half or so. The characteristics of each regional project were re-reviewed and selected three which should be transferred to the national project list.

The three projects are:

- I.4-1 New Housing Development Project
PC --- Rp 354.1 billion
- I.4-2 Public Service Facility Development Project for Population Increase
RC --- Rp 935.0 billion,
- I.4-4 Redevelopment Project for the Mixed Area with Commercial and Residential Function
PC --- Rp 689.7 billion,
- I.4-5 Other Environmental Development Project
PC --- Rp 336.6 billion of each year.
- II.1-3 Middle Ring Road
PC --- Rp 284.5 billion

Therefore, the total amount of the regional project costs becomes Rp 2,804.7 billion and that of the national project costs becomes Rp 10,712.4 billion. Hence, the yearly average amount of the required funds will be Rp 1,057 billion, which will make the return after (Rp 120 billion) 12%.

Table 17.4.1 shows the revised expenditure and income.

Table 17.4.1 REVISED PROJECT EXPENDITURE/INCOME

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Income	1.6	3.3	4.9	6.6	8.2	29.3	33.4	37.5	41.7	45.8	49.9	54.0	58.2	62.3	66.4	102.9
Expenditure	153.2	153.2	153.2	153.2	153.2	153.2	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0
Difference	-151.6	-149.9	-148.3	-146.6	-145.0	-123.9	-74.6	-70.5	-66.3	-62.2	-58.1	-54.0	-49.8	-45.2	-41.6	-5.1
Accumulation	-151.6	-301.5	-449.8	-596.4	-741.4	865.3	-939.9	-1,010.4	-1,076.7	-1,138.9	-1,197.0	-1,251.0	-1,300.8	-1,346.0	-1,387.6	-1,392.7
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Income	104.8	106.7	108.7	110.6	112.5	114.5	116.4	118.3	120.2	122.2	122.4	122.5	122.7	122.9	123.1	123.3
Expenditure	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	81.5	-	-	-	-	-	-
Difference	23.3	25.2	27.2	29.1	31.0	33.0	34.9	36.8	38.7	40.7	122.4	122.5	122.7	122.9	123.1	123.3
Accumulation	-1,369.4	-1,344.2	-1,317.0	-1,287.9	-1,256.9	-1,223.9	-1,189.0	-1,152.2	-1,113.5	-1,072.8	-950.4	-827.9	-705.2	-582.3	459.2	-335.9
Year	2017	2018	2019	2020												
Income	123.5	123.7	123.9	124.1												
Expenditure	-	-	-	-												
Difference	123.5	123.7	123.9	124.1												
Accumulation	-212.4	-88.7	35.2	159.3												

17.4.2 PROCUREMENT OF THE FUNDS

The income derived from the projects and the increased tax income are already taken into consideration in the calculation of the income in Table 17.4.1. Therefore, the required funds which are expressed as "Difference" in Table 17.4.1 should be procured by way of loans. The most important condition of loan is interest rate. The repayment of the loan for 4 cases of interests is calculated.

Table 17.4.2 shows the repayment schedule for 4 cases. In case of 8% p.a. interest, the project cannot finance the loan and indebtedness will increase. In case of 7% interest, the repayment will finish after 2060. In case of 6% interest, the repayment will finish after 2040. In case of 5% interest, it will finish after 2030.

It is not desirable that the investment should put pressure upon the financial resources of the local governments for a long period.

The team conceives that the repayment should come to an end within 20 years after the completion of the investment, which means that the local governments should not borrow money with interest in excess of 5% p.a.

There are four possible ways for the local governments to procure funds:

- (1) Loans from banks
- (2) Loans from central government,
- (3) Overseas loans and
- (4) Regional Bond.

Among the four, (1), (3) and (4) cannot provide loans with an interest rate as low as 5% p.a. In consequence, the only way which the local governments can choose is item (2), Loans from central government.

Table 17.4.2 REGIONAL PROJECT LOANS

	1985 1990	1991 1995	1996 2000	2001 2005	2006 2010	2011 2015	2016 2020	2021 2025	2026 2030	2031 2035	2036 2040	2041 2045	2046 2050	2051 2055	2056 2060	2061 2065
Required Fund	865.3	331.7	195.7	-135.8	-184.1	-613.6	-618.5	-623.5	-628.5	-633.5	-638.5	-643.5	-648.5	-653.5	-658.5	-663.5
8% Repayment of Principal & Interest	-	605.7	1,261.9	1,676.5	2,098.8	2,418.8	2,603.9	2,653.4	2,810.7	2,948.5	3,148.1	3,377.5	3,670.6	4,029.1	4,478.4	5,036.8
Necessary Loan	865.3	937.5	1,457.6	1,540.7	1,914.7	1,805.2	1,985.4	2,029.9	2,182.2	2,315.0	2,509.6	2,733.7	3,022.1	3,375.6	3,819.9	4,373.3
7% Repayment of Principal & Interest	-	584.1	1,202.2	1,761.7	1,906.0	2,124.7	2,182.3	2,075.6	2,035.8	1,930.1	1,825.1	1,676.2	1,498.0	1,270.4	989.8	640.1
Necessary Loan	865.3	915.8	1,397.9	1,425.9	1,722.0	1,511.1	1,563.8	1,452.1	1,407.3	1,296.6	1,186.6	1,032.7	849.5	616.9	331.3	(-23.4)
6% Repayment of Principal & Interest	-	562.4	1,143.6	1,451.7	1,725.9	1,857.5	1,810.7	1,583.5	1,398.9	1,124.8	920.1	437.4				
Necessary Loan	865.3	894.1	1,339.3	1,315.9	1,541.8	1,243.9	1,192.2	960.0	770.4	491.3	181.6	(-206.1)				
5% Repayment of Principal & Interest	-	540.8	1,086.1	1,346.4	1,557.7	1,615.1	1,484.5	1,167.2	881.0	497.6						
Necessary Loan	865.3	872.5	1,281.8	1,210.6	1,373.6	1,001.5	866.0	543.7	252.5	(-135.9)						

(Term of 10 year repayment)

17.4.3 NATIONAL PROJECT

As stated in the section 17.4.1 the revised total amount of the national project is Rp 10,712.4 billion.

The feasibility of the investment of the Central Government for SMA should be checked.

Table 17.4.3 shows the procedure of the feasibility check. Column A is the forecast of tax income of the Central Government. The forecast is obtained by means of following regression model.

$$T = -162,715.4 + 17,479.5 \log G \quad (R = 0.923)$$

T : Tax Income (billion rupiah)
G : GDP (billion rupiah)

The above said model was obtained by using the actual data of the tax income of the central government and GDP of Indonesia. As the correlation coefficient and the t-value are acceptable, the model is applicable to the forecast. The forecasts of GDP give the future tax income by way of the model.

Column B is the total local development funds which the central government will be able to use for the whole nation.

As the average ratio of the local development funds vs. tax income is 32.9%, columns B is 32.9% of column A. Column C is yearly distribution of required funds for SMA development (National Project) totalling Rp 10,712.4 billion. Column D shows the ratio of yearly national project cost vs. the local development funds (C/B).

The ratio in 1985 is 14.5%, 13.5% in 1986, 10.4% in 1990 and it decreases year by year. This means that the central government will have to invest 14.5% of the total development funds in SMA in 1985, 13.5% in 1986 and so on.

The political acceptability of the heavy investment in SMA is of great importance, and to assist in this decision an examination of the ratios was made.

It was assumed that the ratio should not exceed a value about three times as large as the ratio of economic scale of SMA vs. that of the nation.

The average of actual ratio of GRDP of SMA is 3.3% of Indonesia's GDP. According to the said assumption, the ratio should not exceed 10% of the values in column B. Column E is 9% of the local development funds (Column B). In case that the central government uses 9% of the total development budget for the SMA national project, the shortage will be shown in column F; that is, the central government will have to borrow money whose amount is equal to the shortage (1985 to 1990).

The central government might borrow the money from banks or overseas.

As general conditions, the team assumed the following case of the loan:
Interest rate : 8% p.a.

"Repayment moratorium" unredemable : 5 years

Term of repayment : 10 years.

Column G shows the

Table 17.4.3 NATIONAL PROJECT EXPENDITURE

	Tax Income A.	Local Development Funds B.	National Project Cost C.	National Project Cost vs. whole Nation D.	9% of B. E.	Shortage F.	Repayment in case of Loan G.	Revised National Project Cost H.	National Project Cost vs. whole Nation I.
1985	13,331.5	4,386.1	637.9	14.5	394.7	243.2	-	394.7	9.0
86	14,383.0	4,732.0	637.9	13.5	425.9	212.0	19.5	445.4	9.4
87	15,434.4	5,077.9	637.9	12.6	457.0	180.9	36.5	493.5	9.7
88	16,485.9	5,423.9	637.9	11.8	488.2	149.7	51.0	539.2	9.9
89	17,537.3	5,769.8	637.9	11.1	519.3	118.6	63.0	582.3	10.0
1990	18,588.8	6,115.7	637.9	10.4	550.4	87.5	72.5	622.9	10.0
91	19,640.3	6,461.7	493.7	7.6	581.6	-87.9	103.8	597.5	9.2
92	20,691.7	6,807.6	493.7	7.3	612.7	-119.0	123.1	616.8	9.1
93	21,743.2	7,153.5	493.7	6.9	643.8	-150.1	137.5	631.2	8.8
94	22,794.6	7,499.4	493.7	6.6	674.9	-181.2	147.5	641.2	8.6
95	23,846.1	7,845.4	493.7	6.3	706.1	-212.4	153.0	646.7	8.2
96	24,897.6	8,191.3	493.7	6.0	737.2	-243.5	154.7	648.4	7.9
97	25,949.0	8,537.2	493.7	5.8	768.3	-274.6	146.6	640.3	7.5
98	27,000.5	8,883.2	493.7	5.6	799.5	-305.8	138.8	632.5	7.1
99	28,051.9	9,229.1	493.7	5.3	830.6	-336.9	130.7	624.4	6.8
2000	29,103.4	9,575.0	493.7	5.2	861.8	-368.1	122.9	616.6	6.4
01	30,154.9	9,921.0	194.8	2.0	892.9	-698.1	90.5	285.3	2.9
02	31,206.3	10,266.9	194.8	1.9	924.0	-729.2	63.4	258.2	2.5
03	32,257.8	10,612.8	194.8	1.8	955.2	-760.4	40.9	235.7	2.2
04	33,309.2	10,958.7	194.8	1.8	986.3	-791.5	23.1	217.9	2.0
05	34,360.7	11,304.7	194.8	1.7	1,017.4	-822.6	9.5	204.3	1.8
06	35,412.2	11,650.6	194.8	1.7	1,048.6	-853.8	-	194.8	1.7
07	36,463.6	11,996.5	194.8	1.6	1,079.7	-884.9	-	194.8	1.6
08	37,515.1	12,342.5	194.8	1.6	1,110.8	-916.0	-	194.8	1.6
09	38,566.5	12,688.4	194.8	1.5	1,142.0	-947.2	-	194.8	1.5
2010	39,618.0	13,034.3	194.8	1.5	1,173.1	-978.3	-	194.8	1.5
				C/B	B x 9% (GRDP/GDP = 3.3%)	C - E	Interest Rate Unre- deemable 5 years term of 10 year repayment	E + G or C + G	H/B

Column G shows the repayment principals and interests for each year which the central government would make.

As the condition of the long repayment moratorium unredeemable term is obtained more easily with overseas loans than city banks, Overseas loans are recommended. Column H shows the total cost of SMA national project by year including the repayment for the loan.

The ratios of the total costs vs. the local development funds are shown in column I; that is, the central government will have to apply at most 10% of its development funds to SMA in 1989 and 1990 and less in other years.

17.4.4 LOANS FOR SMA

As stated in section 17.4.2, the local governments should borrow money from the central government for the development.

The amount of the necessary loans are shown in column K in Table 17.4.4 which are identical to the difference in Table 17.4.1. Column J is the amount of project loans which are obtained by multiplying the tax income and the average ratio of the loans. The average ratio of the project loans of the central government vs. its tax income is 18.0% which has been applied to column A in Table 17.4.3.

The ratio of loans to SMA vs. the project loans of the central government is shown in column L. The ratio is at most 6.3% in 1985 and those in other years are less than that, which means that the ratio of loans is also less than the assumed limit of 10%.

Table 17.4.4 LOANS FROM CENTRAL GOVERNMENT

(billion rupiah)			
Year	Project Loans of Central Gov't J	Loans to SMA K	SMA Loans vs. whole nation L
1985	2,399.7	151.6	6.3%
86	2,588.9	149.9	5.8
87	2,778.2	148.3	5.3
88	2,967.5	146.6	4.9
89	3,156.7	145.0	4.6
1990	3,346.0	123.9	3.7
91	3,535.3	74.6	2.1
92	3,724.5	70.5	1.9
93	3,913.8	66.3	1.7
94	4,103.0	62.2	1.5
95	4,292.3	58.1	1.4
96	4,481.6	54.0	1.2
97	4,670.8	49.8	1.1
98	4,860.1	45.2	0.9
99	5,049.3	41.6	0.8
2000	5,238.6	5.1	0.1
01	5,427.9	—	—
02	5,617.1	—	—
03	5,806.4	—	—
04	5,995.7	—	—
05	6,184.9	—	—
06	6,374.2	—	—
07	6,563.4	—	—
08	6,752.7	—	—
09	6,942.0	—	—
2010	7,131.2	—	—
Remarks	A x 18.0%		K/J

17.4.5 CONCLUSION

According to the argument in Sections 1 through 4 the SMA Development Programme is feasible through the following conditions and assumptions:

- (1) Term of investment; 25 years (from 1985 up to 2010)
- (2) Allocation of finance;
 - The national government : Rp. 10,712.4* billion (79%)
 - The local governments : Rp. 2,804.7 billion (21%)
 - The total : Rp. 13,517.0 billion (100%)

*This amount is identical to the share of 10% of the total national development budget in Indonesia. Whilst, the share of GRDP of SMA as at present about 3.3%.

- (3) The central government should finance a long-term loan almost equal to the investment cost of local government with 5–6% interest. In case of 6% interest, the payment will finish after 2040 and in case of 5% interest it will finish after 2030.
- (4) The central government loans funds to the local governments identical to the investment cost of the local governments. (at most 6.3% of the total loans)

CHAPTER

18

IMPLEMENTATION STRATEGY OF THE PLAN

18.1 PROBLEMS IN THE IMPLEMENTATION

18.1.1 ITEMIZATION OF PROBLEMS

There exists some problems to be solved in the preparation and execution of a plan based on this structure plan. Some of these problems relate to the philosophy of the plan, some to the administrative function, and some to problems which might occur in the process of execution of the plan. The Team studied anticipated problems in detail and divided them into four categories as follows:

- Promotion of the plan,
- Administration function,
- Institution, and
- Obstruction to execution of the plan.

The anticipated problems were then allocated to the categories as follows:

- Promotion of the Plan
 - Development technique
 - Staff up-grading
 - Effective financial arrangements
 - Utilization of the private sector
- Administration Function
 - Wide range administration
 - Overall adjustment function in administration
 - Decision authority of Local Authorities
- Institution
 - Land instituion
 - Environmental preservation
 - Unification of industrial standards
- Obstruction to Execution of the Plan
 - Development control
 - Illegal land occupation

18.1.2 PROBLEMS AND COUNTERMEASURES

The anticipated problems are all factors affecting the implementation of the plan and then must be investigated and solved beforehand.

The structure plan includes road construction, equipment for the railways and a new transportation system, consolidation of water supply and sewage, construction of houses and factories, and so on. These facilities will, as a whole, support the new urban function. In order to make them work as planned, each facility must be maintained in an operational condition to enable it to fulfill its function. This means that the ability to operate and maintain each facility is more important than ability to arrange for the initial construction of the facilities.

In Indonesia, new technology is created or introduced from overseas, and facilities are constructed based on this new technology. Generally speaking, the popular interest is, in most cases, of building the facilities, but not in maintaining them.

There are many examples of this such as:

- Many roads are not maintained and the surfaces of them are in bad condition.
- The sewage system does not exist, with the draining function being imperfect.
- Machinery parts are not exchanged until the machines is completely out of order.

This means that the facilities are always used at a low functional level, leading to low efficiency and short life for the facilities. The value invested is therefore reduced considerably and an enormous amount of long term loss occurs, including opportunity loss.

This phenomenon is common to many developing countries. The "Initial Investment Is All" approach leads to losses which might eventually reduce the speed of progress of a country. In order to create an appropriate situation, it is necessary to reform the consciousness of the people. To maintain the operating function of facilities can require as much cost as the initial investment and therefore it tends to prolong the collection on the invested funds. However, the increased cost is much less than the cost of losses and it has been proved that maintenance always pays in the long period, by improved asset value and efficiency.

Before the execution of the plan, discussions on this approach should be held and the plan should allow for the education and reformation of the consciousness of the officials of the administrative authority.

The city of Surabays is not an attractive city compared with other cities in Indonesia, and is inferior in terms of beauty and order. The beauty of city means not only a fine view, but also the attractiveness, efficiency and worth of the city.

Historically, Surabaya has been the premier port city, commercial city and administrative city in East Indonesia. When considering the year 2000 and beyond, the malfunctions of the city might be an obstacle to further expansion of the city's function.

Surabaya should devote increased efforts to increasing the attractions of the city.

PROMOTION OF THE PLAN

(1) Development Technique

Generally speaking, in regional development planning or urban planning the decision on how to raise funds for the development is based on the philosophy of the plan. The "How" is the methodology to make the development succeed.

In the case of the "Benefit Theory", for example, those who get benefit from the development should bear the cost proportionally to the magnitude of their benefit. In order to make the system feasible, a method to measure the benefit and a method to allocate the cost must be established, and also the allocated cost must be payable.

On the other hand, in case of a national project, the development cost is borne by the central government or given to municipalities as a subsidy. In order to make it feasible, it must be understood and supported by all the people, that the beneficiaries are not only the people in a specific region but also all the people of the country. In most cases, these two theories are used in mixed form. The methodology to be used must be decided before the execution of a plan.

Since the decision can require political consideration, the decision makers should be those who are in responsible posts.

(2) Staff up-grading

Plans like this need administrative staffs with a high level of speciality in each field, and who can look over the whole project and can make recommendations for political decisions. It is important that the staff fully understand the characteristics of the region.

(3) Effective Financial Arrangements

Finance is one of the most important factors which affects the planned projects. Plans which include a lot of projects, such as this structure plan, require a financial study in which the characteristics of each project and efficiency of the projects as a whole are considered at the same time. In most cases, undertakings carried out by administrative bodies are based on a single budget policy and therefore whilst the efficiency of each

undertaking is pursued, the total efficiency of all is not always attained.

In execution of this structure plan, the means and rules for up-grading the total overall financial efficiency must be included.

(4) Utilization of the Private Sector

Many of the projects in the plan should be undertaken by the private sector as in order to make this plan succeed it is inevitable to utilize the power of the private sector. Applying developers of the private sector to housing projects, applying private manufacturers to the development of industrial parks, and applying private enterprise to management of the new transportation system are good examples. In these cases, attention should be paid to the fact that the final objective of a private enterprise is to pursue profit.

It is important to give the private sector the chance to get an appropriate profit and, at the same time, to ensure that public requirements are met. Rights and duties of the private sector should be expressed clearly for example by way of a "Development Brief".

ADMINISTRATIVE FUNCTION

(1) Wide Range Administration

There are seven Municipalities in the region covered by this plan, and the Central and the Provincial Government are also concerned. The relationship between the Municipalities and Governments with respect to the plan are very complicated, and "proprietary rights" will tend to be a hindrance for the execution of the plan.

Therefore, it is necessary to introduce a "Wide Range Administrative Body" to the plan. It is desirable that the body would have a role which directs the plan itself and a role which adjusts the interests of each authority and makes decisions accordingly. The latter role should involve participation of those who are in responsible municipal posts and also include administrative staffs from the Central and Provincial Governments.

(2) Overall Adjustment Function in Administration

There are several types of undertakings carried out by administrative bodies and each of them is a means to upgrade the people's welfare.

However, the activities of these undertakings are sometimes related to each other and a intention by one section might have a negative effect on another section.

This may cause a lowering of the total efficiency or else unintended inconveniences.

To cope with this, an overall adjustment function is required to be allocated to the local authority. This function is inevitable for the successful execution of the plan.

(3) Decision Authority of Local Authorities

The control of Central Government is strong in Indonesia and decision making on local projects is mostly done by Central Government on the basis of applications from Local Authorities.

In order to maintain the unity of scattered peoples, centralization of power is necessary, but this can cause inconvenience at the local regional level. As the economy and society are becoming more and more complicated, the negative effect of centralization will increase. In order to avoid this and to simplify the procedure of submissions for Central Government's approval, it is important that responsibility to make certain decisions on projects is given to the local authorities.

INSTITUTION

(1) Land Institution

Land price increases will disturb the smooth execution of a regional development plan and there are many examples of imperfect plan execution caused by increase in land

prices.

In order to prevent this, it is necessary to introduce countermeasures against increase in land prices and a balance between posted prices and real prices is required. Land price must be controlled by an effective land institution.

(2) Environmental Preservation

The possibility of environmental destruction and an increase in public nuisance will occur as industry progresses, and the economy and society become more complicated. The Team conceives that the plan must not cause environmental destruction and the following items should be institutionalized and carried into effect.

- To establish an environmental standard,
- To make environmental assessment a requirement before construction of a factory
- To make installation of public nuisance prevention equipment a requirement at every factory, etc.
- To carry out environment patrols
- To establish punishment rules for violation of the environmental standard
- To induce factories which generate public nuisances in their operations to move to a estate complex.

(3) Unification of Industrial Standards

The lack of enforcement of the unified industrial standard (S.I.I.) not only causes inconvenience but also unseen losses.

The variety of standards used causes the procurement of industrial products to be hindered by lack of availability. A machine might stop for a long time, or chemical products might not be able to be procured locally, because of the need and high cost of imports. In order to prevent this, the industrial standards should be further developed and enforced.

OBSTRUCTION TO EXECUTION OF THE PLAN

(1) Development Control

It is important that the plan be executed as scheduled, and obstructions which may cause delay or stoppage should be eliminated by scheduling the plan beforehand. Some important examples are as follows:

- In order to prevent disorderly inflow of people to the region, some rules for immigration should be established such as issuance of working permits.
- In order to prevent disorderly development in the urban area, some rules for detailed landuse designation should be established.
- In order to prevent disorderly development of housing areas, some criteria should be prepared and a development approval system introduced.

(2) Illegal Land Occupation

There are a many examples of illegal land occupation in Indonesia. Some roads, public lands and public facilities are occupied for private use such as open-air stalls. This means not only that the illegal occupation causes public inconvenience but also that vested rights may arise and become an obstruction to the execution of the plan.

To maintain strict discipline is not always effective since those places are utilized because of their advantages for business. The following two points should be considered.

- To provide some areas for exclusive use and to induce transfer to these districts
- To establish an institution of public facility use and to carry out a thorough education

of the population.

18.2 ADMINISTRATIVE POLICY AND STRATEGY

18.2.1 POPULATION CONTROL

A general viewpoint is necessary for an argument on population control, especially countermeasures against surplus increases. Plans for regional distribution, and control of inflow to urban areas are necessarily discussed at a national viewpoint. However, from an urban development point of view at a regional level, the following are to be considered for population control:

- Basically, the rate of increase of population in SMA should be controlled so as to equal the capacity to absorb the increase developed by the programme. This is necessary to eliminate any possible social upheavals.
- An administrative guidance for job introduction and employment security should be firmly performed to control the illegal inflow of labourers.
- A mandatory directive by the relevant authorities is necessary to clear illegal occupants.

18.2.2 LAND PREPARATION

The area to be newly developed by the public authorities is assumed to be around 2,730 ha for the public facilities up to the year 2000. This excludes the major infrastructure as shown in Table 15.1.9 in the section 15.1 of Part III. Including the major infrastructures, more than 5,000 ha will be required by the public authorities.

The land preparation of this enormous area has to be assured deliberately. In consideration of budget constraints, some measures for the public land preparation are best developed by utilizing the private sector activities. Referring to systems regulated in other countries, the following are studied for their applications in Indonesia by the relevant autonomies.

REGULATING CRITERIA FOR HOUSING DEVELOPMENT

As mentioned in section 18.4, this is a method of development guidance for private sector activities, and regulates the beneficial rates system. Section 18.4 shows the detailed characteristics of this concept.

SYSTEM OF PRIOR INTENTIONAL LAND ACQUISITION

The difficulty of land acquisition at the initial stage of project execution sometimes occurs in every country.

The ownership of alternative land for substitution sometimes supports successful negotiations. For this reason, it is recommended that the relevant authorities intentionally obtain alternative land prior to the execution of projects and before land prices rise.

LAND CONSOLIDATION SYSTEM

The Study Team proposes to apply an urban development system, so-called "Land Consolidation System" or "Land Re-adjustment System" in order to produce the land for public use within the project area. This will have the residents' support and will also improve the housing environment. This system is very popular in Japan and other countries, and the detailed system is introduced as below:

(1) System of the Project

The purpose of a land consolidation project is to attain the comprehensive improvement of urban environment and utilization of land through coordinated planning and arrangement of public facilities such as roads, parks and water supply, sewerage and the orderly arrangement of housing sites.

The forms of roads, housing sites, etc., are changed in the re-arrangement of plot forms to allow improvement of public facilities and the higher utilization of land, in say, the change from agricultural use to housing and other urban use. The principal of this system briefly illustrated as shown in Fig. 14.2.1 in section 14.2.

The largest feature in executing the project is that landowners, etc., are required to submit land within the ranges of benefits they receive, according to the respective rates (called "reduction of land lot"), to allot the submitted land for public facilities required for creating a better environment. The land lots of respective rightful owners and the land lots for public facilities are exchanged and adjusted in their location and forms, to form an urban area as planned.

Since the project involves the restriction of rights and compulsion in this way through joint submission of small parcels of land and assignment of locations forms, etc. of individual housing sites, the act stipulates in detail the executors, execution procedure, expense sharing, etc., in order to attain the smooth operation of the project and the protection of private landownership and other land rights.

(2) Executors

A similar system in operation in Japan acknowledges that since land consolidation projects are accompanied with coercion such as restrictions on private landownership etc., replotting of land and moving of buildings, only the following bodies can become executors of the projects and strict legal procedures are required in executing the projects.

Private executors;	Land consolidation associations
Administrative agencies	The Minister of Construction Governors of prefectures Heads of cities, towns, and village

Housing and Urban Development Corporation
Regional Development Corporation

(3) Application of the Project

Land Consolidation projects can be applied over a very wide range of development, covering redevelopment, new development of land ripe for development, removal and elevation of railway track, new establishment and extension of station fronts, preparation of industrial complexes, preparation of distribution centres, and restoration after from disasters, etc. Of the projects, typical types can be arranged as follows according to purpose.

- 1) to redevelop existing urban area
- 2) to form a new urban centre (e.g. new station)
- 3) mainly to cope with the sprawling of urban areas
- 4) to develop new housing sites
- 5) to develop a distribution centre, etc.
- 6) for restoration after a disaster

TAX INCENTIVES FOR OWNERS SUBMITTING LAND FOR PUBLIC PURPOSE

Some administrative considerations such as the exemption or reduction of taxation are best applied as an incentive for landowners to sell their land to the public authorities for a public purpose.

SUPERVISION OF APPROPRIATE LAND PRICE

The illegal or improper raising of land prices should be controlled by the superintendency of the relevant authorities. It is desirable that the existing system functions with a tied relationship to the relevant development planning authorities.

18.2.3 ENCOURAGEMENT OF PRIVATE INVESTMENT

More than anything else, SMA has to become attractive to invite sufficient industrial investments for realization of the planned industrialization. Various incentives for the investors should be strategically assured in various economic fields.

In terms of this, two principals exist as follows:

AGGRESSIVE INDUCEMENT OF FOREIGN AND DOMESTIC INVESTMENT

Generally, the country of Indonesia is considered to be attractive for international investors because of abundant resources, manpower, and social stability. However, observing the regional distribution of investment, although the domestic investments are comparatively positive, the foreign investments are evaluated to be inactive in SMA, compared with the activity in Jakarta.

The particular characteristics of SMA should be encouraged by the creation of incentives, and the priority of SMA has to be publicized world wide. The following incentives are considered desirable.

- To strengthen a relationship with markets and major freight generators, by the development of a road network, and
- To develop industrial estates with well-developed infrastructure.

From an administrative point of view, there are two significant policies to be enacted, Firstly a simplification of procedures and a partial localization of administrative decisions should be taken to eliminate a negative factor for investors who intend to locate in SMA.

The other is to activate the inducement of foreign middle and small sized investments so as to encourage a productive technology transfer.

It might be obvious that the international economic condition is likely to be severe during the coming decade, however, continuous endeavors should be directed to induce foreign investments.

ENCOURAGEMENT OF SMALL SCALE INDUSTRY

The Government has aggressively encouraged small scale industry, by the so-called "BIPIK" programme. (Bimbingan dan Penyuluhan Industri Keul = Guidance and Counseling of Small Industry). It is expected that this programme will be promoted more effectively. It is also recommended to develop a low interest loan system to small business owners for participation in consolidation projects or modernization of management and productive system.

18.2.4 ESTABLISHMENT OF URBANIZATION RULE

A local plan based on the structure plan should be established in each local autonomy, and they should be studied in detail and authorized as soon as possible.

The considered factors for the urban rules are as follows:

DEFINITION OF PARKING CENTRAL AREA

In this area, the following are regulated:

- Obligation to develop parking space within property boundaries according to a parking development standard,
- Control of road-side parking, and
- Restrictions on vehicles on and off loading on the road, etc.

ESTABLISHMENT OF CRITERIA FOR HOUSING DEVELOPMENT

The following criteria are recommended to be regulated for housing development:

- Ratio of public land use area.
- Type and size of public facilities to be developed,
- Engineering standards for development of housing land
- Payment of beneficial rates for public facilities*,
- Housing standards and building codes developed,
- Tree planting, and
- Other environmental considerations, etc.

Note: * This is described in detail in section 18.4 of Part IV.

DEFINITION OF THE AREA TO BE DEVELOPED

It is recommended that the areas to be developed should be defined by the master plan or the local plan, e.g. areas to be redeveloped, areas to be improved, and areas to be cleared, etc.

Within the regulated area, some development activities such as building, rebuilding and expansion are best restricted to conform to the characteristics of the planned development, because of the ease of execution of the development project.

ESTABLISHMENT OF REGULATION FOR NATURAL PRESERVATION

In acknowledgement that the natural environment is itself one of the significant amenities, some countermeasures should be considered against natural destruction.

The areas where development is restricted should be made clear and supervision of conformance should be performed.

Simultaneously, a supervising system for industrial pollution should be established.

ADJUSTMENT RULE FOR CONVERSION OF CULTIVATED LAND INTO URBAN USE

An adjustment rule for conversion of cultivated land into urban use is necessary in order to not only achieve an orderly urbanization, but also conserve the agricultural industry.

Suitable discussions about the adjustment should be held between the relevant authorities.

18.3 GOVERNMENT ORGANIZATION

18.3.1 WIDE RANGE ADMINISTRATIVE BODY

MAJOR REASONS FOR AN ADMINISTRATION FUNCTION

This development plan includes various kinds of projects such as the development of industrial areas, physical distribution facilities, business areas, housing, public facilities, construction of roads, development of railway, airport, water-supply system, waste treatment system, electric power expansion, and so on.

These projects have a close relationship with each other and they will be executed at the same time.

The competent sections of these projects are so numerous that special consideration must be taken in the administration system. On the other hand, there are a lot of administrative bodies which will be involved in the execution of the plan; there are four municipalities, a provincial government and the central government. Here also arises a special consideration within the administration system.

WIDE RANGE ADMINISTRATIVE BODY

In order to execute the plan smoothly, to examine the plan and to adjust and control the relevant bodies, the introduction of a wide range administrative body would be effective and necessary.

NECESSARY FUNCTION

The administrative body should have the following functions:

- Planning and investigation of the plan: -- to study each project which covers a wide area of the region.
- Implementation of the plan
- Adjustment of interests between the related administrative bodies
- Adjustment between various kinds of projects
- Central planning decisions made by Municipalities

The wide range administrative body should comprise authorized representatives of all bodies and should be authorized to control and promote the plan. Consideration these conditions, it is recommended that the wide range administrative body should be formed as shown in Fig. 18.3.1.

The conference should be composed of mayors of the related municipalities (Kota-madya/Kabupaten), the Governor of East Java and Vice-Ministers of related Ministries. It would make final decisions of various matters concerning the Development Plan.

The Council should be composed of chiefs of bureaus of the Municipalities and the Province.

It would have functions to adjust interests between Municipalities, to adjust relationships between projects and to formulate policies for approval by the Conference.

The Committees should be composed of technical experts and senior staffs of the Municipalities and the province. Several Committees should be prepared for different themes of the plan. They would have the function to make defined plans such as investigation of each project, promotion of each project and examination of financial matters.

FINANCIAL ADJUSTMENT

As mentioned before, there are many administrative bodies involved in this plan so conflicts of interests between the bodies are inevitable. Among these, the division of project costs between Authorities is the most important.

There are three possible methods in considering how to bear the cost as follows:

- Area-Oriented: Each municipality bears the cost of a project which would be executed in the area of the municipality.
- Capability-Oriented: Each municipality bears the cost of a project according to its financial capabilities.
- Benefit-Oriented: Each municipality bears the cost of a project according to the magnitude of the benefit it would receive from the project.

Each method has merits and demerits. The benefit-oriented method is an ideal one from the view point of impartiality but it is almost impossible to measure the magnitude of the benefits in many projects and this method cannot be recommended.

Area or capability-oriented methods may be adopted, since the amount of the cost the municipalities would bear can be easily calculated. Among the two, we conceive that area-oriented method is more impartial than capability-oriented, since the financial capability of each municipality is not necessarily proportional to the projects executed in its area.

Therefore, it is recommended that the division of the project cost should be done according to the area-oriented method.

However, in the case where financial adjustment between municipalities appears difficult, capability-oriented method would also be adopted by way of mutual agreement in the Conference and Council.

18.3.2 MONITORING SYSTEM

As stated before, there are many kinds of projects involved in the plan and they are related in a complex manner to each other. Consequently, they have many impacts on the economy and society of SMA and in order to make the plan appropriate and proper for SMA as a whole, the Team conceives that the process of the development should be checked at each step. Therefore, a monitoring system should be introduced into the structure of the promoting organization of the development programme. The monitoring process would be carried out upon:

- Industry,
- Society,
- Civil Life, and
- Administration.

Every project has some impact on the activity of enterprises and other industrialization projects and it is important to check whether a project has positive influence on the economic activities in the region. In case of a negative influence, the promoting unit of the particular development should reconsider the development and, if necessary, it should be changed so that the required effect of the plan would be realized.

The plan has a similar impact upon society, civil life and administration, too. The expanded industrialization should not distort the social and economic life of the people in SMA and GKS. In order to prevent this the Team conceives that a plan monitoring system is an effective tool and should be introduced to the promoting organization of the plan. The plan should be checked from the view points of:

- whether each project has a negative effect upon any kind of activity in the region, and
- whether the plan has the required effect on the region as scheduled.

The Team conceives that the monitoring function should be established at the Committee level, as the members would have the technical and specialized knowledge of their various kinds of expertise. There are two ways to do the monitoring. One is by questionnaire, the other is by interview. It is desirable that both systems are used and they are executed according to the following conditions:

- To gather information from selected private enterprises, the general citizens, public enterprises and public officials;
- To monitor periodically (desirably once a year or more);
- To analyze the information and study the importance of the problems presented through the monitoring process;
- To reconsider the plan and revise it, if necessary (feed-back method);
- To refer the revised plan to the Council and/or the Conference depending on the importance of the problem; and
- To continue the monitoring process after the completion of the execution of the plan (5 years after 2010 or more).

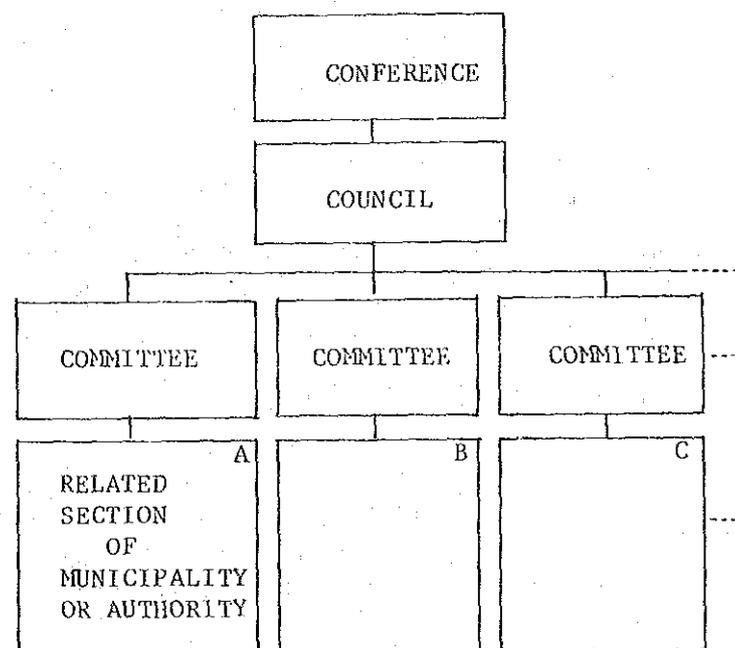


Fig. 18.3.1 WIDE RANGE ADMINISTRATIVE BODY

18.4 GUIDANCE FOR PRIVATE SECTOR ACTIVITY

18.4.1 HOUSING DEVELOPMENT

It is indispensable to make use of the private sector activities under appropriate administrative controls to obtain a sufficient supply of housing for the enormous increase of population.

First, the government should develop guide-lines and regulations for housing development as soon as possible in order to avoid social and physical upheavals as well as to simplify the public facility developments required.

Second, the Study Team recommends that the relevant authorities establish a supervising system for housing developments with some mandatory administrative measures. Basically, the following should be taken into account:

ESTABLISHMENT OF AN ALLOTMENT PROGRAMME FOR HOUSING SUPPLY BETWEEN PRIVATE AND PUBLIC SECTORS

The public authorities should be committed to supply at least 20% of the anticipated new demand in order to activate the private sector activities as well as to make them orderly. According to this assumption, the public authorities would have to prepare land infrastructure for at least around 2,550 ha for housing developments in SMA.

CONCEIVABLE REGULATIONS FOR HOUSING DEVELOPMENT

The following items should be considered when preparing guide-lines and regulations:

(1) Inducement of Benefit theory

In the case of development by the private sector, the government accepts some of the beneficial rates for the public facilities development in accordance with the amount of units developed.

(2) Obligation of Partial Public Facilities Development

For large-scale development of more than a certain level, the private sector should be additionally obliged to prepare the land or to pay the rates equivalent to landcost for fundamental public facilities;

- For the elementary school,
- For the necessary social and medical facilities,
- For the utility facilities, (solid waste treatment plant, sanitary treatment plant, etc.)
- For the infrastructures (Streets at collector level and lower and the drainage canals in the secondary system.)

An appropriate scale of development for this regulation should be defined. It is recommended that this applies in full for the development of more than 50 ha at the ultimate stage, which is similar to half size of community unit, Rukun Warga.

Besides this, it is also recommended that an obligation level is regulated in accordance with the development category or size.

PROMOTION OF JOINT-VENTURE PROJECT WITH THE PUBLIC AUTHORITIES AND THE PRIVATE SECTOR

It is recommended to promote housing development by joint financing, so-called "Third Sector", with a cross-subsidization system.

This is based on the concept that the public bodies supply the houses for low-income groups and the private sector shares the houses apply for middle and high incomes, and the beneficial rates are allotted in accordance with the income levels. This system will be suitable for large-scale development of more than 100 ha and will permit deliberate urbanization.

18.4.2 INDUSTRIAL DEVELOPMENT

PROMOTION OF COMPLEX DEVELOPMENTS

Preservation of the environment is an important political matter against the promotion of industrialization. Although severe regulations have a tendency to be an obstruction for industrial investment, some basic rules should be enacted to keep a proper environment.

Essentially, the industrial lands are best utilized by being gathered in complexes as much as possible to simplify the administrative control of industrial pollution and aggressive promotion by the relevant authorities is indispensable to get the existing scattered factories consolidated and conforming.

Tax incentives proposals are recommended for preparation for the factories relocated or located in a planned complex in order to facilitate promotion.

ESTABLISHMENT OF COOPERATIVE SOCIETIES

It is recommended that the relevant authorities administrate for the organization of a cooperative society for each estate or complex.

This society should be responsible for the comprehensive management of cooperative facilities and supervise the environmental pollution and the operating of workers buses, etc.

COMMERCIAL DEVELOPMENT

The economies of the tertiary sector are spontaneously activated to correspond with the entire socio-economic growth through the inter-relationship between industrial sectors. Accordingly, from an urban planning point of view, it is a principal argument how to make the physical environment more effective for economic activities.

First, some urban planning or development regulations are best prepared in order to obtain sufficient open space for smoother traffic flows.

The regulations should comprise the following:

(1) Parking Lot Development Standard

Commercial facilities should develop their own parking space for their employees and clients. A recommended standard is to ensure parking area within the property lines for 1 vehicle per 300 square metre of shopping business floor area.

(2) Building Set-back Regulation

It is important to supervise conformance to the existing regulations established in Surabaya City.

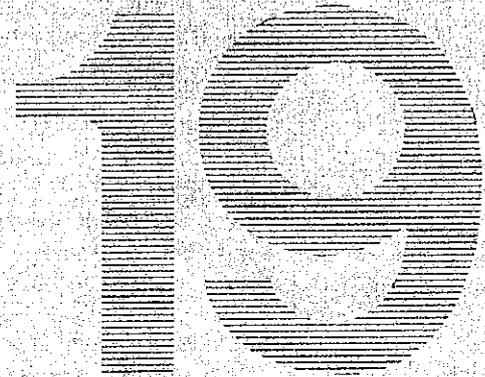
(3) Restriction of Small Scale Buildings Development in the Regulated Zone

Especially, in the central area, it should be regulated that small scale building development or redevelopment is illegal not only from an efficient land use of views but also from an urban landscape point of view.

(4) Regulation of the commercial area to be intensified

The area in which the commercial buildings should be multi-storey should be regulated in order to produce openspace in the busy area. The ratio of building area to the property area is therefore suggested as less than 50%, and at same time, the ratio of floor area to the property area is to be more than 200% from an urban planning point of view. The determination of the standard, however, should be based on more study.

CHAPTER



SHORT - TERM DEVELOPMENT PROGRAM

19.1 SCOPE OF SHORT-TERM DEVELOPMENT PROJECTS

19.1.1 BASIC CONCEPT OF SHORT-TERM DEVELOPMENT PROJECTS

Short term projects should be those of the highest priority. The projects selected as short term projects were evaluated by the priority criteria and available budget for SMA. Short term projects should be completed within the Pelita IV upto 1989. The short term projects should be executed as the first phase in line with the overall targets, which are already established in each sector.

Coping with the priority criteria described in section 16.1 of Part – IV, detail criteria are described below:

- To solve existing problems
- Provision for industrialization; land acquisition and development of infrastructure
- To execute the provisional projects for Surabaya-Malang Tollroad to maximize the tollroad development efficiency.
- To develop infrastructure prior to land development so as to lead to future urbanization.

19.1.2 SHORT TERM PROJECTS

According to the criteria, the projects to be executed in the short term programme are listed in Table 19.1.1 and shown in Fig. 19.1.1.

Table 19.1.1 LIST OF SHORT TERM PROJECTS

I. URBAN DEVELOPMENT PROGRAMME

- (1) Industrial Estate Development Project (Large and Middle Scale)
- (2) Industrial Estate Development Project (Small Scale)
- (3) Truck Terminal Development Project
- (4) Parking Lot Development Project
- (5) New Housing Development Project (by Public Body)
- (6) Public Service Facilities Development Project for Population Increase
- (7) Improvement Project for the Built-up Residential Area
- (8) Other Environmental Development Projects
- (9) Educational and Vocational Facilities Development Project

II. TRANSPORTATION DEVELOPMENT PROGRAMME

- (1) Road Development Projects
 - Surabaya-Malang Tollroad
 - Surabaya-Gresik Tollroad
 - Middle Ring Road
 - Outer Ring Road (1)
 - JL. Gresik
 - Wonokromo-Karangpilang-Krian Road
 - Gresik By-pass
 - JL. Dupak Rukun-Kapass Krampung-Kenjeran Street
 - Tandes-Manyar Kertoarjo Street
 - JL. Darmo Permai-Middle Ring Road
 - JL. Jagir Wonokromo
 - Menganti-Rungkut Street
 - JL. Margomulyo-Sepanjang Street
 - Port-JL. Gunungsari Street

- Port-JL. Gunungsari Street
- Kanal-P.T Cemen Street
- Intersection Grade Separation
- JL. Tg. Perak-Gresik
- JL. Raya Diponegoro-Banyurip
- JL. Tidar-Semarang
- JL. Pandegiling-Sulawesi
- Wonokromo Interchange
- JL. Kaya Jend. Akhamed Yani-Rungkut

- (2) Bus Terminal Development Project
- (3) Ferry Terminal Development Project
- (4) Railway Development Projects
 - Rehabilitation of Tg. Perak Freight line and Sidoarjo-Tarik Line
 - Coach Yard Rehabilitation in Sidotopo
 - Construction of New Ring Line (Western Section, Phase-I)
 - Truck Elevation, Eastern Ring Section, Phase-I
 - Electrification
 - Development and Improvement of Stations, Phase-I
 - Development of Station Plaza
 - Land Acquisition for Yard, Depot and Workshop
 - Purchase of Coaches and Diesel Cars
 - Development of New Transportation System
- (5) Airport Improvement Project
- (6) Tg. Perak Port Development Project

III. URBAN UTILITY DEVELOPMENT PROGRAMME

- (1) Water Supply Development Projects
 - Umblan Supply System
 - Water Transmission to Gresik
 - Mini Plant Development
 - Resources Development
 - Waru Supply System (Phase-I)
 - 4 Spring Water Development in Bangkalan
 - Replacement of Old Distribution Pipe
- (2) Waste Water Treatment System Development Projects
 - Expansion of Public Toilets
 - Introduction of Night Soil Treatment Plant
- (3) Solid Waste Treatment System Projects
 - Provision of Container Depot
 - Purchase of Equipment/Tool
 - Incineration Plant
 - Land Fill Site Development
- (4) River/Canal Improvement Projects
 - Cleaning of Existing Canals
 - Construction of Sea Dike
 - Up-Grading of Sea Dike
 - Improvement of Canals
 - Renewal of Dams
- (5) Electricity Expansion Project

CHAPTER

20

MODEL PLANS FOR ACTION PROJECTS

20.1 PRELIMINARY STUDIES FOR SELECTED TRANSPORT PROJECTS

20.1.1 GENERAL

In this section, the viability of the following two projects will be assessed. First is the Middle Ring Road Project, which is planned to be incorporated into the tollway network system in SMA together with Surabaya-Malang and Surabaya-Gresik Tollways.

The other is the New Transit System Project, which is expected to secure the traffic demand in the north-south direction passing through the busy central urban area of Surabaya and to relieve the shortage of road density in that area. The corridor locations of these projects are presented in Fig. 20.1.1.

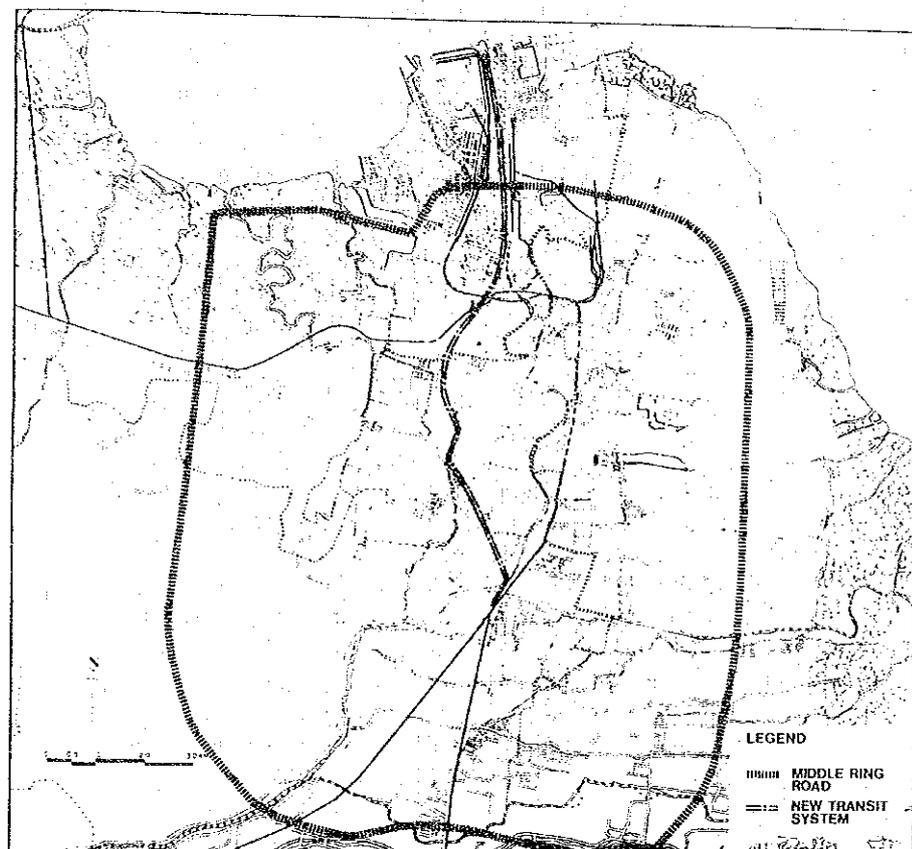


Fig. 20.1.1 LOCATIONS OF PROJECT CORRIDORS

20.1.2 MIDDLE RING ROAD PROJECT

PREMISE

In order to carry out the prefeasibility study for the Middle Ring Road, the following premises are assumed:

- Middle Ring Road is proposed to operate as a tollway with a tariff system of toll charge proportional to distance.
- Toll rate is determined within a limit of user's financial benefit directly received from use of the tollway. That is, savings in time costs and vehicle operating costs. Referring to the relevant tollway study reports, a toll rate was assumed to be Rp.30/km as a consequence.
- When a road is operating as a tollway, there must exist a parallel non-toll road in order to assure the equal opportunities to all the potential road users.

CONSTRUCTION COST ESTIMATES

(1) Total Length of the Project Road

The total length of the project road was assumed to be 41.5 km and it consists of the East-Ring (Waru-Sukolilo-Tg. Perak) of 22.5 km and the West-Ring (Waru-Karangpilang-Tandes) of 16.0 km.

(2) Cost Estimates

Referring to the experience in tollway construction in Indonesia and relevant study reports and data, costs for the road construction, land acquisition and operation/maintenance were estimated as shown in Table 20.1.1.

The economic costs of the project were assumed to be 88% of the estimated financial costs, but excluding land acquisition costs, based on the recent study on tollway project of "Jakarta Harbour Road, November, 1981".

Table 20.1.1 CONSTRUCTION COST ESTIMATES

	(at 1982 Prices)		
	Construction Costs (x 10 ⁶ Rp.)	Land Acquisition Costs (x 10 ⁶ Rp.)	Operation/Maintenance Costs (x 10 ⁶ Rp./year)
<u>Before the year 1990</u>			
Tollway (East-Ring, 2-lane: 22.5 km)	148,670	89,580	765 + 637
Tollway (West-Ring, 2-lane: 8 km and 4-lane: 8 km)	96,910	35,910	720 + 600
Parallel Road (41.5 km)	136,950	37,560	249
<u>Before the year 2000 (Additional Costs)</u>			
(Additional Costs)			
Tollway (East-Ring, 2-lane: 19.0 km and 4-lane: 6.5 km)	8,580	-	195 + 165
Tollway (West-Ring, 4-lane: 12.8 km and 6-lane: 3.2 km)	14,790	-	279 + 232

FINANCIAL IRR

Based on the estimated streams of project costs and revenue, financial internal rates of return were calculated as shown in Table 20.1.2. In order to assess the financial viability of the project, several case studies were conducted varying some factors of cost and revenue components. The conditions applied in these cases are as follows:

- Base Case: All of the project costs are owed by a tollway operating body and the toll rate rises at 3% p.a. with revisions every 5 years after 1982.
- Case A: The project costs excluding the land acquisition costs and owed by the operation body and the toll rate rises as same as in the Base Case.
- Case B: The project costs excluding the land acquisition costs are owed by the operation body and the toll rate rises at 5% p.a. with revisions every 5 years after 1982.
- Case C: All of the project costs are owed by the operating body and the toll rate rises at 5% p.a. with revisions every 5 years after 1982.

Table 20.1.2 COMPARISON OF FINANCIAL IRR FOR DIFFERENT CASES

Case No.	Financial IRR (%)
Base Case	4.6
Case A	7.7
Case B	11.1
Case C	7.8

ECONOMIC IRR

Comparison of pcu-km and pcu-hour on the road network was made between "With" and "Without" Middle Ring Road, which is composed of both tollway and parallel road. Based on the comparative results, economic benefits were derived from the savings in vehicle operating costs and time costs in money terms.

Economic internal rates of return on the project were calculated for the respective cases based on the cost and benefit flows. The results are summarized in Table 20.1.3.

Table 20.1.3 ECONOMIC IRR FOR DIFFERENT CASES

Case No.	Economic IRR (%)
Base Case	38.3
Case A	23.1
Case B	18.2

Note:

Case A: 50% of the original estimation is adopted.

Case B: Only the saving in vehicle operating costs is adopted.

Case C: All of the project costs are owed by the operating body and the toll rate rises at 5% p.a. with revisions every 5 years after 1982.

CONCLUSION AND RECOMMENDATION

The tollway project for Middle Ring Road is financially feasible. In order to reduce a burden of liability on tollway operation it is desirable for the operating body that the Government provides the land at the Government's cost. The Government expenses for the project will be justified by the economic feasibility of the project.

Fund raising and repayment conditions for the project implementation are also factors which affect the feasibility of the project. During a detailed study phase, the following conditions and factors should be considered in order to prepare a real implementation programme:

- Price escalation of the construction costs for both foreign and local currency portions,
- Financing plan for the capital requirements for both foreign and local currency portions,
- Loan conditions and repayment schedule,
- Clarification of responsible organizations to be liable for loans and bonds; and also their extent of liability,
- Proportions of equity/owned capital,
- Taxation on the revenue.

The Middle Ring Road Project, consisting of the tollway and its parallel general road, is economically feasible. As seen in Table 20.1.3, the negative factors to reduce the benefits of the project were overwhelmed by the significance of the project road.

Therefore, it is recommended to prepare for the following detailed study phase as soon as possible.

20.1.3 NEW TRANSIT SYSTEM PROJECT

COST ESTIMATES

The proposed New Transit System is planned to utilize as much as possible the existing right-of-way of the unused steam tram tracks between Wonokromo and Tg. Perak. It is also intended to operate the system on an elevated structure and to provide the effective land space for roads, urban facilities and so forth. Therefore, the land which is produced by the track elevation and used for urban activities is assumed to be compensated for as a form of subsidy to the construction of the New Transit System.

As a result, construction and operation costs of the New Transit System project were estimated as shown in Table 20.1.4.

Table 20.1.4 ESTIMATED CONSTRUCTION AND OPERATION COSTS OF NEW TRANSIT SYSTEM

Construction Costs:	17,875x10 ⁶ Rp./kmx80%x12 km =	171,600 mill. Rupiah
Rolling Stocks:	330x10 ⁶ Rp./unitx188 units =	62,040 mill. Rupiah
Operating Costs:	250x10 ⁶ Rp./kmx12 km =	3,000 mill. Rupiah

FINANCIAL IRR

Based on the implementation schedule and the traffic demand forecast of the New Transit System, financial rates of return were calculated for the alternative fare rates of Rp.10/km and Rp.15/km as presented in Table 20.1.5.

Table 20.1.5 FINANCIAL IRR OF THE PROJECT

Alternative Fare Rate	Financial IRR (%)
Rp. 15/km	13.9
Rp. 10/km	8.7

Notes:

The project life span was assumed to be 25 years from the commencement of operation. The fare rates were assumed to rise 3% p.a. with revisions every 5 years after 1982.

CONCLUSION AND RECOMMENDATION

The New Transit System project is financially feasible. Therefore, it is recommended to start the preparation of master plan study for an urban mass transit system in SMA and a subsequent feasibility study on Wonokromo-Tg. Perak line should be carried out as soon as possible towards the realization of a total commuter train network in SMA.

20.2 MODEL PLANS OF ACTION AREA

20.2.1 GENERAL

The structure plan is already proposed in a previous section of this report. In order to promote a clearer understanding of the structure plan some model plans of action area are presented in this section. A model plan is generally understood as mediation between the structure plan and local plan, and is expected to guide a local plan.

Model areas are selected from within the proposed structure plan as the key development areas for realizing the structure plan.

- Tandes district:
As a model for new Industrial and distribution complex developments in SMA.
- Park Town area in Sanbikerep on Gunungsari Hill:
As a model for new residential development in SMA.

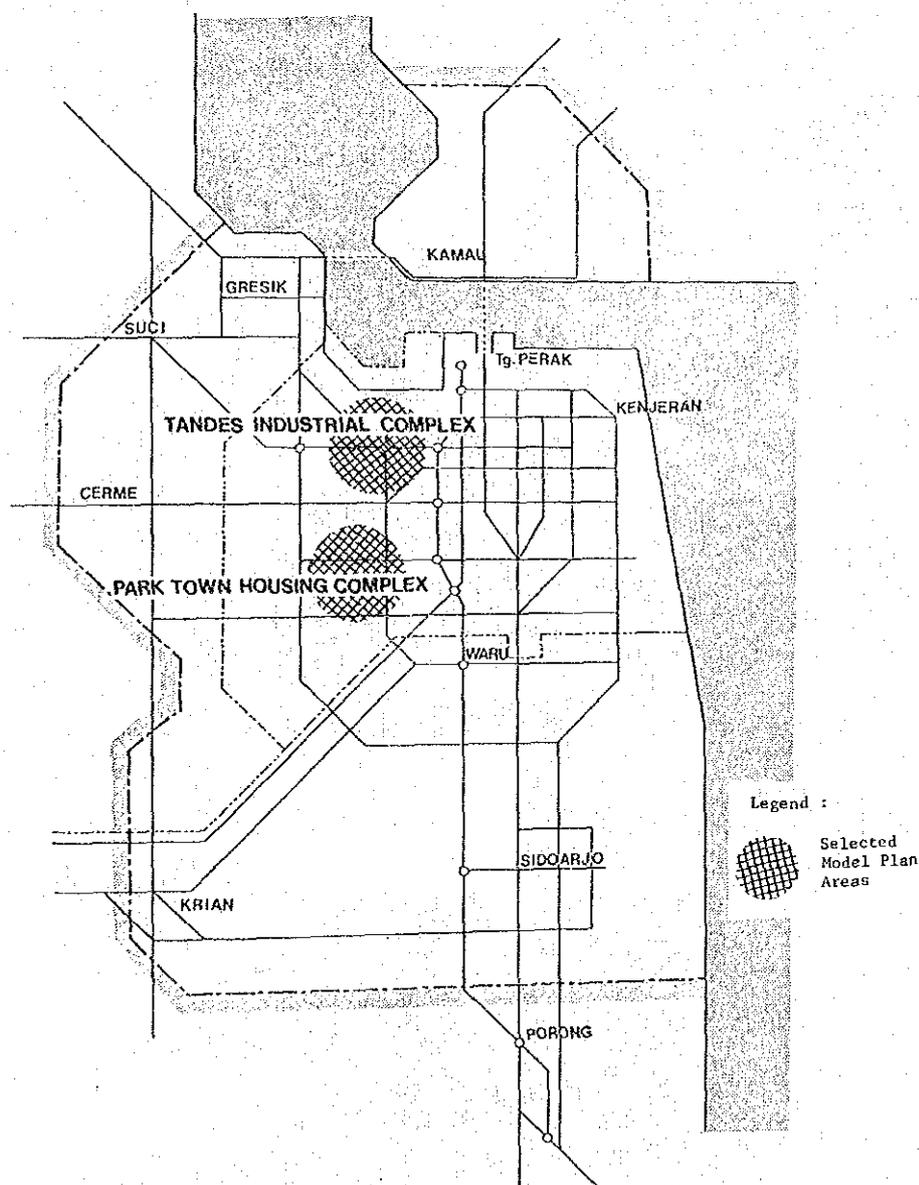


Fig. 20.2.1 SELECTED MODEL PLAN AREAS

20.2.2 TANDES INDUSTRIAL COMPLEX DEVELOPMENT

Tandes industrial complex is located between JL. Tandes – JL. Gresik and Gresik railway line – Surabaya/Malan Tollroad.

Tandes industrial complex is developed in accordance with the urban block development in the area. The area is developed as mainly an industrial and terminal area.

LANDUSE PLAN

A total area of 1,200 ha is established for this complex and becomes 1,600 ha in the long future by adding 400 ha of reclamation.

The area is allocated to be 660 ha (1000 ha in the long future) for industrial purposes, 165 ha for residential and 375 ha (435 ha in the long future) for urban facilities and park/green areas as shown in Table 20.2.1.

Table 20.2.1 LANDUSE ALLOCATION OF TANDES INDUSTRIAL COMPLEX

LAND USE	TANDES INDUSTRIAL COMPLEX		PROJECT COST (1982 Price) Mil. Rp.
	ha	%	
Industrial Estate	600	50.0%	150,000
Cargo Terminal & Warehouse Estate	60	5.0	26,800
Housing	165	13.8	90,800
Bus Terminal	15	1.2	14,400
Regional Center	15	1.2	9,000
Park	85	7.1	29,800
Green Belt, Other Relivant Public Facilities	260	21.7	64,200
Total	1,200	100.0	385,000

Fig. 20.2.2 shows the allocation of these areas determined by their function/characteristics, mutual relation and location conditions. It is desirable for cargo terminals and warehouse estates to locate near major roads such as an access road of a tollroad.

Industrial areas are allocated along the other major roads mentioned above and developed in the future reclamation area. The existing areas, where industries have already been established, are developed at unity with the area development.

Residential areas and urban utilities areas are suitable to locate near railway stations.

(1) Industrial area

The total area of 660 ha is allocated for the industrial area. The cargo terminal and warehouse estate share 60 ha and these are located near Tandes interchange of the Surabaya-Gresik Tollroad.

(2) Residential area

The residential area allocates 165 ha and composes residences and community facilities. The residential area plans at an average density of population of 250/ha (in gross) as public housing. This density is applied for the medium density residences with sufficient open space. In the allocation of densities, higher density plans should be near railway stations and gradually a lower density in the peripheral area.

(3) Urban facilities

The urban facilities such as passenger terminals are allocated in front of railway stations. Bus terminals, especially for the intra-city and inter-city terminal, and station plazas are developed in a sensitive relationship.

(4) Park and green

A major park on a large scale is planned in the centre of the Tandes industrial complex. The park has a large function with central parking lot, sports park with comprehensive programme, flower garden, picnic plaza, etc. The corridors, between the park and urban facilities and of adjacent area of river/canal, are developed as green belts and are expected to have a function of leisure by providing spaces for sports such as tennis, ponds, rest spots, etc. The corridor of major roads is also a part of green belts by providing plantings. Utilities and flood retarding ponds are located down stream of canals/rivers. It is desirable for the utility systems to be stored in utility ducts, which is usually constructed under roads and streets.

TRANSPORTATION NETWORK

This model plan area is enclosed by major roads and the Surabaya-Gresik tollroad is planned to pass in the centre of this area from east to west. JL. Margomulyo, running north to south in the centre of this area, connects JL. Gresik and JL. Tandes. Tandes interchange is planned at the crossing of the tollroad and JL. Margomulyo.

Some local road and service roads are provided to serve the traffic between industries and the major roads and railway station.

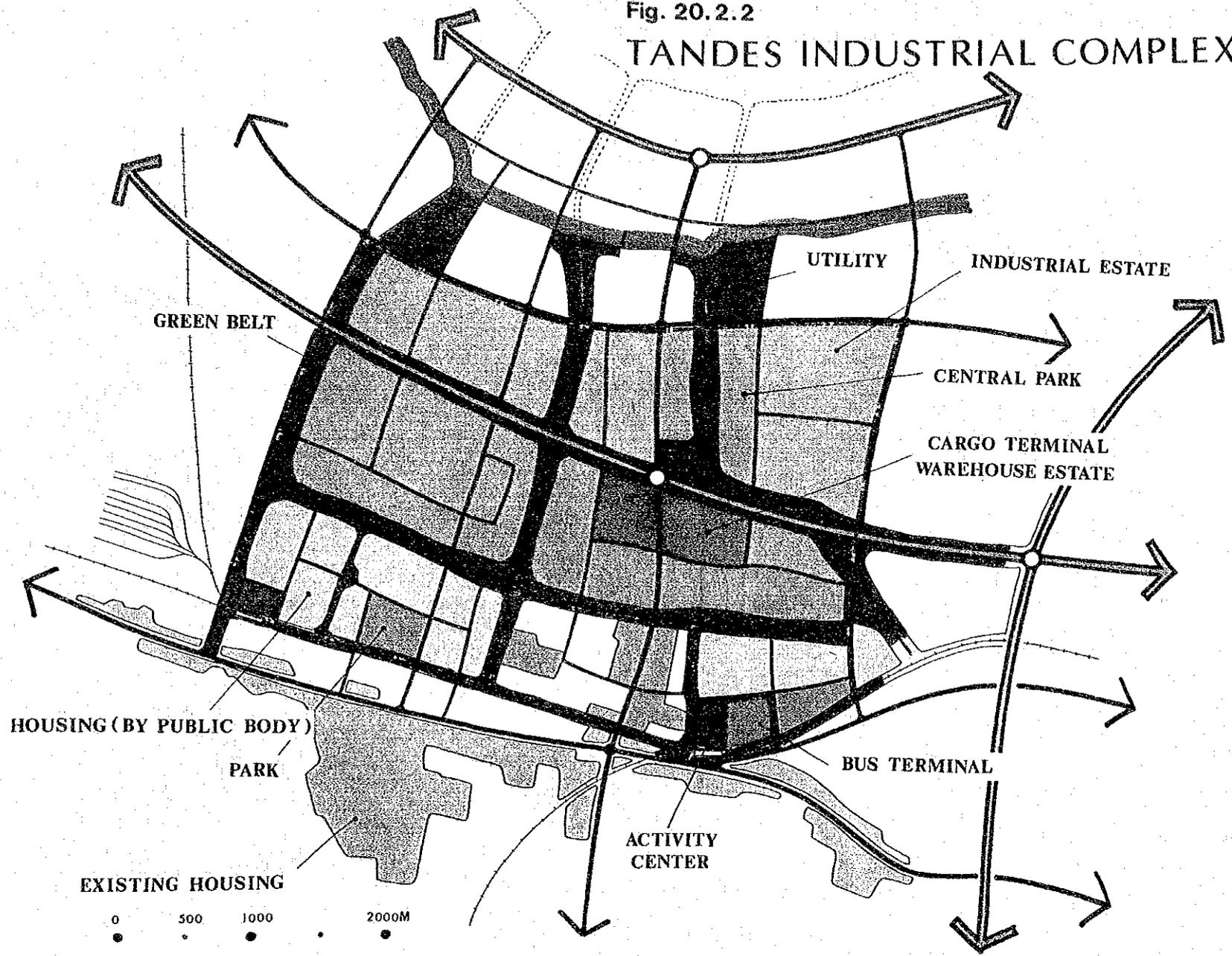
Bus routes are also expected to be established between major transport facilities, factories, etc.

IMPLEMENTATION PLAN

It is difficult to develop the area (1,200 ha) at one time due to the scale of this project and the conformity with the other projects anticipated in SMA. The project is therefore executed in several stages. The project is assumed to commence from the eastern side of this area in accordance with major roads development including Tandes interchange. The project cost is estimated as shown in Table 20.2.1.

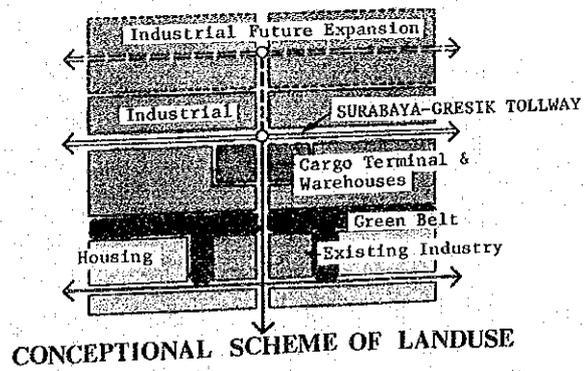
Fig. 20.2.2

TANDES INDUSTRIAL COMPLEX

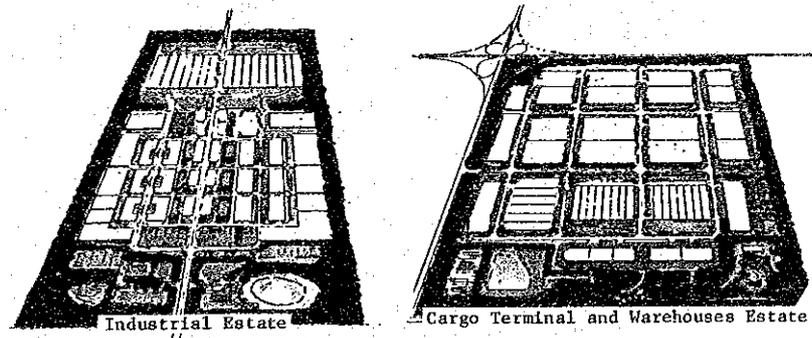


EXISTING HOUSING

0 500 1000 2000M



CONCEPTIONAL SCHEME OF LANDUSE



SKETCH OF DEVELOPMENT

20.2.3 PARK TOWN HOUSING COMPLEX DEVELOPMENT

Park Town Housing Complex is located in Sanbikerep on Gunungsari Hill of Surabaya.

LANDUSE PLAN

The housing complex is planned to be the total area of 1,200 ha and composed of 680 ha for residential area, 100 ha for industrial area and 420 ha for park/green and urban facilities as shown in Table 20.2.2 and Fig. 20.2.3. The general landuse of this park town is planned to allocate the residential area on the hill and the industrial area near the interchange of outer ring road(1).

The residential area composed of park, green, community centre and education/cultural facilities. The green corridor involved by the above elements form a grid pattern.

Table 20.2.2 LANDUSE ALLOCATION OF PARK TOWN HOUSING COMPLEX

LAND USE	PARK TOWN		PROJECT COST (1982 Price) Mill. Rp.
	ha	%	
Industrial Estate	100	8.3	25,000
Cargo Terminal & Warehouse Estate	-	-	-
Housing	680	56.7	374,200
Bus Terminal	-	-	-
Regional Center	15	1.2	9,000
Park	25	2.1	8,800
Green Belt, Other Relivant Public Facilities	380	31.7	83,400
Total	1,200	100.0	500,400

The residential unit enclosed by the green corridor maintains the area unity as well as providing smooth communications with the surrounding villages.

(1) Industrial Area

The industrial area is planned to be allocated land near the interchange of the outer ring road in order to promote effective cargo movement.

(2) Residential Area

The residential area shares the largest area of total 680 ha and is composed of residences, community centre, etc.

Two types density areas are set; population of 150/ha in gross for private housing.

The density within a residential area is permitted at rather a higher density near a railway station, regional centre as well as unit centres, and gradually reducing to lower densities in the peripheral area.

The residential area ensures the area with sufficient open space providing abundant green areas.

The public housing area shares 280 ha (14,000 houses) and 400 ha (1,200 houses) for private housing area. The public housing units locates near regional centres and private units in the area surrounding the public housing area.

(3) Urban Facilities

The urban facility spaces allocated areas adjacent to railway stations and at the crossing points of local major roads planned in this complex area. Regional centres are planned at the intersections of the green corridors, and unit centres in the centre of the housing complex unit, which is enclosed by the local major roads.

Some of major educational, cultural and recreational facilities are allocated at prominent sites.

(4) Park and Green Area

A total 5 parks are planned in this complex. They are developed as the part of green belt. They function as the butter zones between complex units as well as leisure space by the provision of pedestrian walkways, bicycle roads, small sports space as tennis court, pond, rest spots, etc.

Main utilities space is provided in two sites located at the down hill due to the topography and the large area. It is desirable for the utility system to be stored in utility ducts, which is usually constructed under roads and streets.

TRANSPORTATION NETWORK

The outer ring road and secondary major roads enclose the complex area. In the area local major roads at 1.2 km intervals form a grid pattern. In the complex unit area service roads provide a loop feature and connect to the secondary major roads.

A bus network serves the railway stations and the industrial areas for the commuter service.

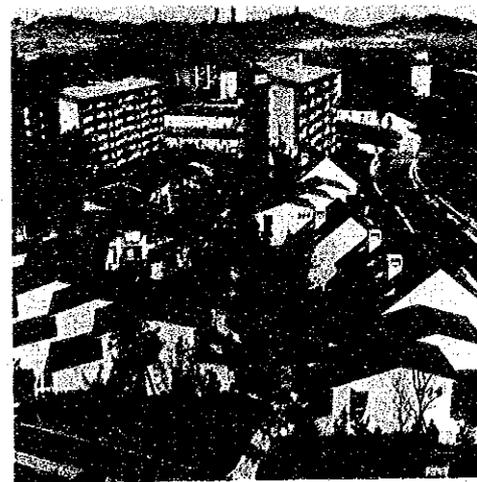
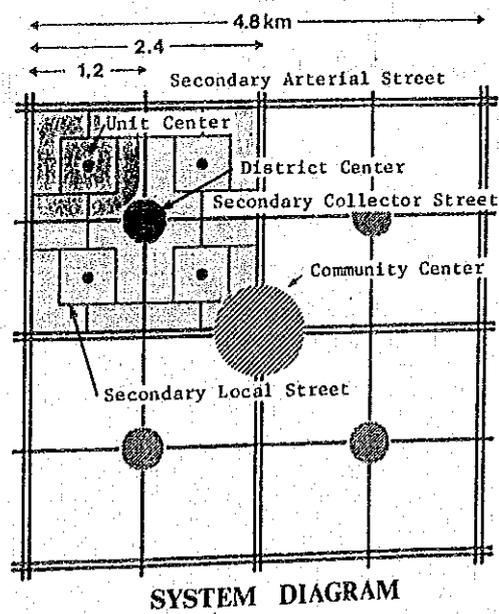
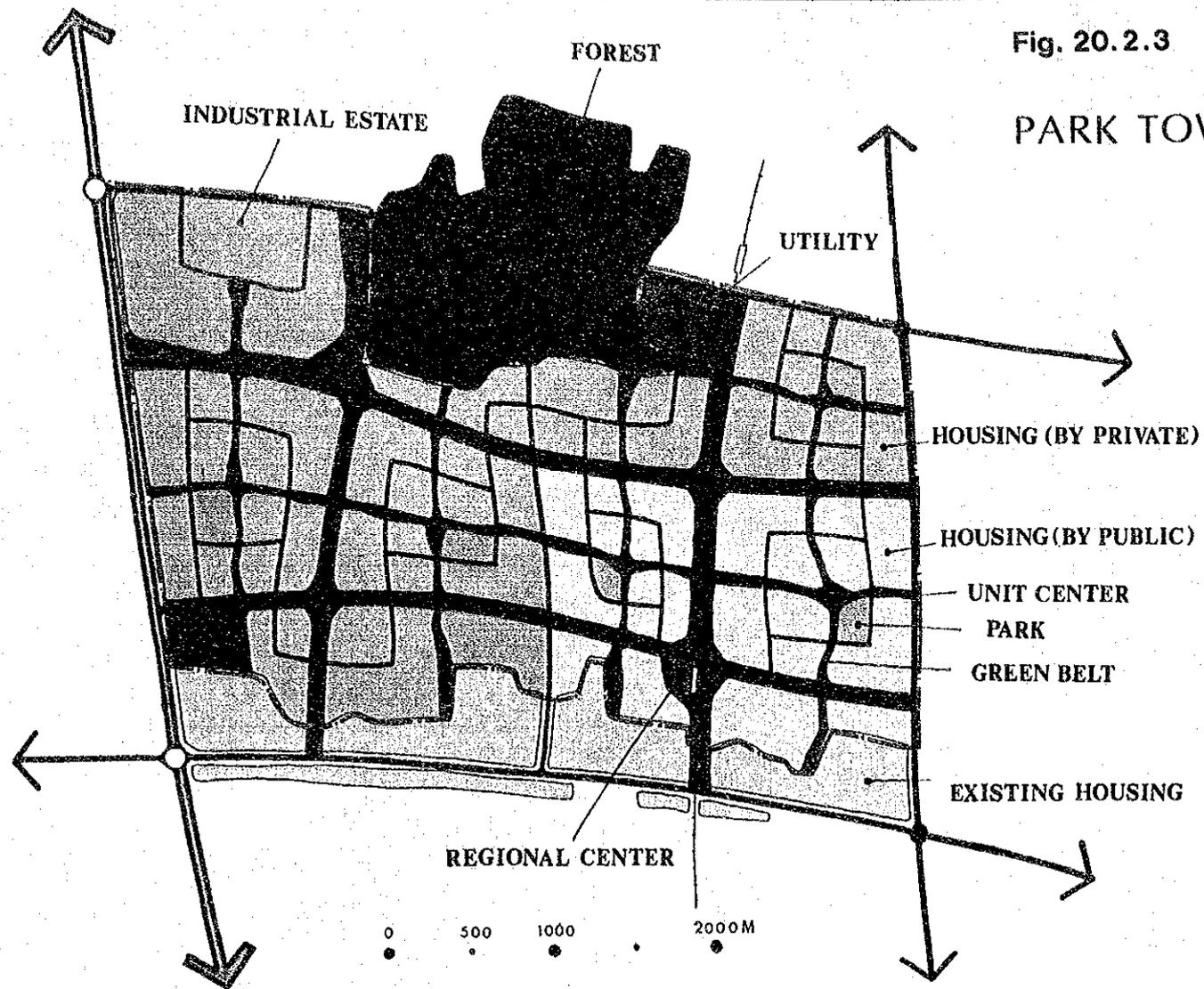
IMPLEMENTATION PLAN

It is difficult to develop the complex (1,200 ha) at one time due to the size of this project and development schedule of the other projects anticipated in SMA. The project is therefore executed in several stages. It should be established that the development of the transport system, major roads and railway, and public housing/industrial area be commenced at the first stage. On these basic developments private housing is well induced.

The project cost is estimated as shown in Table 20.2.2.

Fig. 20.2.3

PARK TOWN



An Example in Tama Newtown Developed by
Japan Housing and Urban Development Corporation

HOUSING IMAGE OF UNIT DEVELOPMENT

APPENDIX

SCOPE OF WORK

PARTICIPANTS LIST

SCOPE OF WORK
FOR
URBAN DEVELOPMENT PLANNING STUDY
ON
GERBANGKERTOSUSILA REGION
(SURABAYA METROPOLITAN AREA)
IN
THE REPUBLIC OF INDONESIA

BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
DIRECTORATE GENERAL CIPTA KARYA
MINISTRY OF PUBLIC WORKS

28 AUGUST 1981

Koji Hasekura

KOJI HASEKURA

TEAM LEADER , JAPANESE PRELIMINARY

STUDY TEAM.

JAPAN INTERNATIONAL

COOPERATION AGENCY

(1)

SCOPE OF THE WORK
FOR
URBAN DEVELOPMENT PLANNING STUDY
ON
GERBANGKERTOSUSILA REGION
(SURABAYA METROPOLITAN AREA)
IN
THE REPUBLIC OF INDONESIA

I. INTRODUCTION

In response to the request made by the Government of the Republic of Indonesia, the Government of Japan has decided to conduct an Urban development planning study on Gerbangkertosusila region (Surabaya Metropolitan Area) in the Republic of Indonesia (hereinafter referred to as 'the study') in accordance with laws and regulations in force in Japan.

The Japan International Cooperation Agency (hereinafter referred to as 'JICA'), the official agency responsible for implementation of technical cooperation programs of the Government of Japan, will carry out the study in close cooperation with the authorities concerned of the Government of the Republic of Indonesia.

The following scope of work was set forth, basing on the results of the JICA's preliminary surveys carried out in May and August 1981.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are

1. to formulate a development structural plan and a development strategy up to year 2000 for SURABAYA METROPOLITAN AREA within GERBANGKERTOSUSILA REGION.
2. to perform technology transfer to Indonesian counterpart personnel in the course of the study.

(2)

III. SCOPE OF THE STUDY

1. Study area:
 - 1.1. The study area covers GERBANGKERTOSUSILA REGION (Kotamadya of Surabaya and Mojokerto and the Kabupatens of Gresik, Lamongan, Mojokerto, Sidoarjo and Bangkalan).
 - 1.2. The planning area covers Surabaya Metropolitan area which will be defined in the course of the Study.
2. Target year.
 - 2.1. Long Term Planning Horizon is 20 years
 - 2.2. Short Term ;Fiscal year 1988/89
3. Activities of the Study.
 - 3.1. Data collection and analysis
 - 3.1.1. Review of existing reports
 - 3.1.2. Socio-economic aspects of the study area
 - a. Population
 - b. Commerce and industries
 - c. Others
 - 3.1.3. Land use and land development
 - 3.1.4. Urban transport
 - 3.1.5. Housing
 - 3.1.6. Infrastructure, public utilities and services
 - 3.1.7. On-going and proposed development projects
 - 3.2. Identification of local development potentialities and resources
 - 3.2.1. Preparation of criteria of local development potentialities
 - 3.2.2. Classification of local development potential zones
 - 3.2.3. Classification of local development resources
 - 3.3. Presentation of a general development concept showing sectoral implication policy for GERBANGKERTOSUSILA REGION.
 - 3.3.1. Socio-economic frame-work, national and regional wise.
 - 3.3.2. Regional structure within the context of national development

(3)

- 3.3.3. General land use
- 3.3.4. Urban transport
- 3.3.5. Housing
- 3.3.6. Other infrastructure and public facilities
- 3.3.7. Environmental aspects
- 3.4. Presentation of development structural plan for Surabaya Metropolitan area.
 - 3.4.1. Socio-economic frame-work.
 - 3.4.2. Land use plan
 - 3.4.3. Transportation network
 - 3.4.4. Parks and open space
 - 3.4.5. Water supply and drainage
 - 3.4.6. Housing
 - 3.4.7. Public utilities and other infrastructure
- 3.5. Presentation of a long-term Development Strategy for Surabaya Metropolitan area.
 - 3.5.1. Implementation scheme
 - a. Administration and management
 - b. Investment.
 - 3.5.2. Development projects
 - 3.5.3. Preservation
 - 3.5.4. Guideline for private sector's activities
- 3.6. Presentation of a Short-term Development Program for Surabaya Metropolitan Area.
 - 3.6.1. Policies on investment programme for critical sectors.
 - 3.6.2. Integrated development program for major projects with priorities and management program.

IV.

STUDY SCHEDULE

The whole work will be conducted in accordance with the attached schedule.

(4)

IV. UNDERTAKING BY THE GOVERNMENT OF THE REPUBLIC INDONESIA

1. To provide the Study Team with relevant data, information and materials necessary for the execution of the Study
2. To provide fund for local counterpart salaries assigned to the Study and operational cost.
3. To secure permission for entry into private properties and restricted area in connection with the field survey, according to prevailing government of Indonesia regulations.
4. To exempt the Study Team from any taxes and duties for materials, equipment and personal effects necessary for the study performance which are to be brought into Indonesia by the Study Team.
5. To provide the Study Team with suitable office space with necessary equipment and services for the Study.
6. To provide the Study Team with drivers and gasoline necessary for the Study performance
7. To recruit counterpart personnel/staf and field surveyors necessary for the Study Team
8. To organize an inter-department committee and to hold necessary meetings in Indonesian authorities concerned for the Study
9. To make arrangements for the Study Team to take back to Japan the data, maps and materials for analyses using computers subject to the approval of the Government of the Republic of Indonesia
10. To assist the Study Team a quick access to medical services during its stay in Indonesia, if requested
11. To undertake to bear claims if any, against the Study accruing in the course of, or otherwise connected with the discharge of their official functions in the Republic of Indonesia, except for those claims arising from the willfull misconducts or gross negligence of the Study Team members.

(5)

V. REPORTS

JICA will prepare and present the following reports in English to the Government of the Republic Indonesia.

- 1) Inception Report
* One hundred (100) copies at the beginning of the Study
- 2) Progress Report I and II
* One hundred (100) copies in the course of the Study in Indonesia.
- 3) Interim Report
* One hundred (100) at the end of the Study in Indonesia.
- 4) Draft Final Report
* One hundred (100) copies within four (4) months after the commencement of the Study in Japan.

* The Government of the Republic of Indonesia will provide JICA with its comments within one (1) month after the receipt of the Draft Final Report.
- 5) Final Report
One hundred (100) copies within two (2) months after the receipt of the comments on the Draft Final Report from the Government of Republic of Indonesia.
- 6) Summary Report
Two hundred (200) copies of Interim Report, Draft Final Report, Final Report respectively.

(6)

MAIN PARTICIPANTS OF THE STUDY
FOR
URBAN DEVELOPMENT PLANNING STUDY
ON
GERBANGKERTOSUSILA REGION
(SURABAYA METROPOLITAN AREA)
IN
THE REPUBLIC OF INDONESIA

(1) Directorate General Cipta Karya

- | | | |
|-----|---------------------|---|
| 1. | Mr. Radinal Mochtar | (Director General of Cipta Karya) |
| 2. | Mr. Risman Maris | (Director of City and Regional Planning - DITADA -) |
| 3. | Mr. Ruslan Diwiryo | (Ex-Director of DITADA) |
| 4. | Mr. Budisantoso | (Sub-Director of DITADA) |
| 5. | Mr. Sunaryo | (Sub-Director of Programme, DITADA) |
| 6. | Mr. Sudarmadi | (Deputy Chief of Public Works, Chief of Cipta Karya, East Java) |
| 7. | Mr. Harsoyo Mulyo | (Staff of DITADA) |
| 8. | Mr. Mustaram | (- ditto -) |
| 9. | Mr. Harry Djauhari | (- ditto -) |
| 10. | Mr. M. Yusuf Abidin | (- ditto -) |
| 11. | Mr. Sjahminan | (Cipta Karya, East Java) |

(2) Government of East Java

- | | | |
|----|------------------|---|
| 1. | Mr. O. Soedarman | (Planning Board, BAPPEDA, East Java Province) |
| 2. | Mr. Supardi | (BAPPEDA, East Java Province) |

(3) Counterparts

- | | | |
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| 2. | Mr. Poerbo Siswojo | (BAPPEDA, East Java Province) |
| 3. | Mr. Purnomo Hadi | (- ditto -) |
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| 5. | Mr. Risanto | (- ditto -) |
| 6. | Mr. Warsito | (BAPPEDA, Kod. Surabaya) |
| 7. | Mr. Nugraha | (DITADA, Cipta Karya) |
| 8. | Mr. Daen | (Lecturer, Airlangga University) |

(4) Japan International Cooperation Agency

Supervisory Committee

- | | | |
|----|------------------------|--|
| 1. | Mr. Tsutomu Takahashi | (Chairman of the Supervisory Committee) |
| 2. | Mr. Koji Hasekura | (Member of the Supervisory Committee) |
| 3. | Mr. Yoji Baba | (- ditto -) |
| 4. | Mr. Fumio Endo | (- ditto -) |
| 5. | Mr. Sintaro Goto | (Ex-Member of the Supervisory Committee) |
| 6. | Mr. Masatake Murahashi | (- ditto -) |
| 7. | Mr. Tsuneo Okimura | (- ditto -) |

JICA Office

- | | | |
|----|------------------------|---|
| 1. | Mr. Ryonosuke Goto | (Assistant Representative of JICA, Jakarta) |
| 2. | Mr. Tadashi Sato | (JICA, Tokyo) |
| 3. | Mr. Masahiro Kobayashi | (- ditto -) |

Embassy of Japan

1. Mr. Motowo Fujiyoshi (First Secretary)
2. Mr. Takeo Yamazaki (Ex-First Secretary)

Study Team

1. Mr. Nobuwaka Yamakawa : Team Leader, Pacific Consultants International (PCI)
2. Mr. Shigeo Obara : Socio-Economic Planner, Mitsubishi Research Institute (MRI)
3. Mr. Yoshinobu Nomura : Urban Planner, PCI
4. Mr. Hironobu Sakai : Urban Facilities and Regional Planner, PCI
5. Mr. Kenichiro Yanagizawa : Finance and Administrative Planner, MRI
6. Mr. Hidemoto Nojima : Civil Engineering and Urban Utilities Planner, PCI
7. Mr. Yuji Itai : Urban Planner, PCI
8. Mr. Hideo Arikawa : System Engineer, PCI
9. Mr. Kazuo Hiramoto : Regional Planner, MRI
10. Mr. Isamu Gunji : Regional Economy and Transportation Planner, PCI
11. Mr. Mitsuo Kurokawa : Transportation Planner, MRI
12. Mr. Katsuhide Nagayama : Urban Planner, PCI
13. Mr. Kenji Fukuhara : Transport Facilities Planner, PCI
14. Mr. Tashihiko Kondo : Landuse Researcher, PCI
15. Mr. Masato Azuma : River Engineer, PCI

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