

CHAPTER 3

RELEVANT DEVELOPMENT PLANS AND STUDIES

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3.1 General

Several studies were obtained and reviewed for the purpose of gathering information that might be helpful in the development and evaluation for the Outer Circular Highway. This Chapter describes the type of information contained in those report and gives a brief knowledge gained which were utilized in connection with the Study on the Outer Circular Highway.

3.2 Colombo Metropolitan Regional Structure Plan (CMRSP)

The report of the Colombo Metropolitan Regional Structure Plan (CMRSP) was published by the Urban Development Authority (UDA) in May, 1998. This is the outcome of a collaborative work during the three years (1996-1998) with the assistance of both local and foreign consultants and with the support from various individuals and organizations. The study area is named as the Colombo Metropolitan Region (CMR) representative of the Western Province consisting of three districts of Colombo, Gampaha and Kalutara totaling 369,420ha. in extent.

The concept of the Plan is based on the principles of ' Sustainable Development '. The objective is to design a strategic physical plan and prepare an action programme for the development of the region to meet the aspirations and improving the quality of life of the people of the Western Province of Sri Lanka. The principle objectives are as follows:

- Provide opportunities for increased economic development, employment generation and improved living standards and quality of life for all inhabitants of the CMR.
- Improve accessibility and mobility
- Promote environmentally sustainable urban growth
- Reinforce the core function of the metropolitan area
- Increase the housing supply
- Formulate an investment programme for funding

The issues and proposals by sectors in the Plan are as follows: Population / Land Use / Environment / Transport / Infrastructure / Economy & Employment / Health / Education / Housing / Agriculture / Industry / Tourism / Core Area Development Plan / Proposed Growth Centers /Proposed Implementation Strategy. The report proposed action projects of the following each category for the CMR from 1999 through 2010.

- Physical Infrastructure (Transport / Sewerage / Telecommunication / Electricity / Water Supply)
- Social Infrastructure (Housing / Education / Environment / Health)
- Urban Development

3.3 Colombo Urban Transportation Study (CUTS)

The purpose of the study is to identify transport problems, current and forecast, to discuss the issues raised in trying to deal with them, to establish a transport strategy and to design the solution of the transport problems. The study area consists of the City of Colombo and its suburbs. The study was made by Halcrow Fox in association with Engineering Consultants Ltd. and reported partially in 1996 to the Transport Studies and Planning Centre, the Ministry of Transport and Highway.

3.4 Pre-Feasibility Study for an Outer Circular Road to City of Colombo

The Colombo Master Plan Project Team formulated a structure plan for the Colombo Metropolitan Region in 1978 envisaging an orderly restructuring of the region. The Outer Circular Highway is to be found in the 1991 proposal of the RDA to conduct pre-feasibility study and the pre-feasibility study was completed in October, 1993 by a local firm, Consulting Engineer & Architects Associated. The pre-feasibility concluded that it is recommended as a four-lane highway with design speed of 90-110km/hr.

The feasibility concluded as follows:

- The highway is expected to provide a series of important intersections with main radial roads originating from the center of Colombo. These nodal points would attract development and commercial activity due to enhanced accessibility resulting in greater employment opportunity outside the Colombo.
- The grade separated intersection is recommended as it provides a better level of service with a lesser possibility of accidents although the at-grade intersection yields slightly higher IRR.
- A limited access facility is recommended to avoid ribbon development.
- Three alternative alignments are recommended for further study.

3.5 Southern Area Development

The Government of Sri Lanka has been placing high priority on the development of Southern

Area which is comparatively less developed in pursuing balanced socio-economic development of the Nation. The Southern Area Development Programme (SADP) was in force to accelerate the development and Southern Development Authority (SDA) was established in 1995. The strategic plan of the SADP envisages the development of small to medium scale industries and integrated eco-cultural resorts and the agri-businesses employing particularly the young and unemployed.

To substantiate this policy for the Southern Area, which is representative of the Southern Province consisting of three administrative districts of Galle, Matara and Hambantota, southern part of the Sabaragamuwa Province, southern part of the Uva Province and southern part of the Eastern Province, the Government of Japan implemented a technical cooperation for the Master Plan Study for Southern Area Development in 1996 and 1997 in response to a request from the Government of Sri Lanka. The Southern Area does not have the infrastructure and resources necessary to provide employment and other opportunities for its inhabitants.

3.6 Southern Transport Corridor

The Southern Transport Corridor has been proposed in the context mentioned in the Clause 3.4 as a means of providing capacity and speed in accessibility to Colombo and to Matara.

The origin of the Southern Transport Corridor was found in the 1991 proposal of the RDA to conduct pre-feasibility study for a trunk road from the Outer Circular Highway to Galle and Matara. The pre-feasibility study was executed by a local firm, Resources Development Consultants, and the report was made in 1993. The pre-feasibility concluded that it is recommended as a two-lane dual carriageway with design speed of 80-100km/hr and right of way of 60metres which includes a two-way bicycle way and provision for staged construction up to a six lane divided highway.

In 1998, the feasibility study was implemented by a consultant, Wilbur Smith Associates in association with Resources Development Consultants with finance of Asian Development Bank. The feasibility concluded as follows:

- The full length of the road from Colombo(at Kottawa on Highway Road) to Matara for a distance of about 130km should be constructed.
- Without new road, traffic condition and road safety will deteriorate.
- The cost for a new highway, built to 4-lane standards with at-grade junction, is RS 15.4 billion(US\$238million). If the road is constructed initially as a single 2-lane highway, the cost can be reduced to Rs 11.2billion.

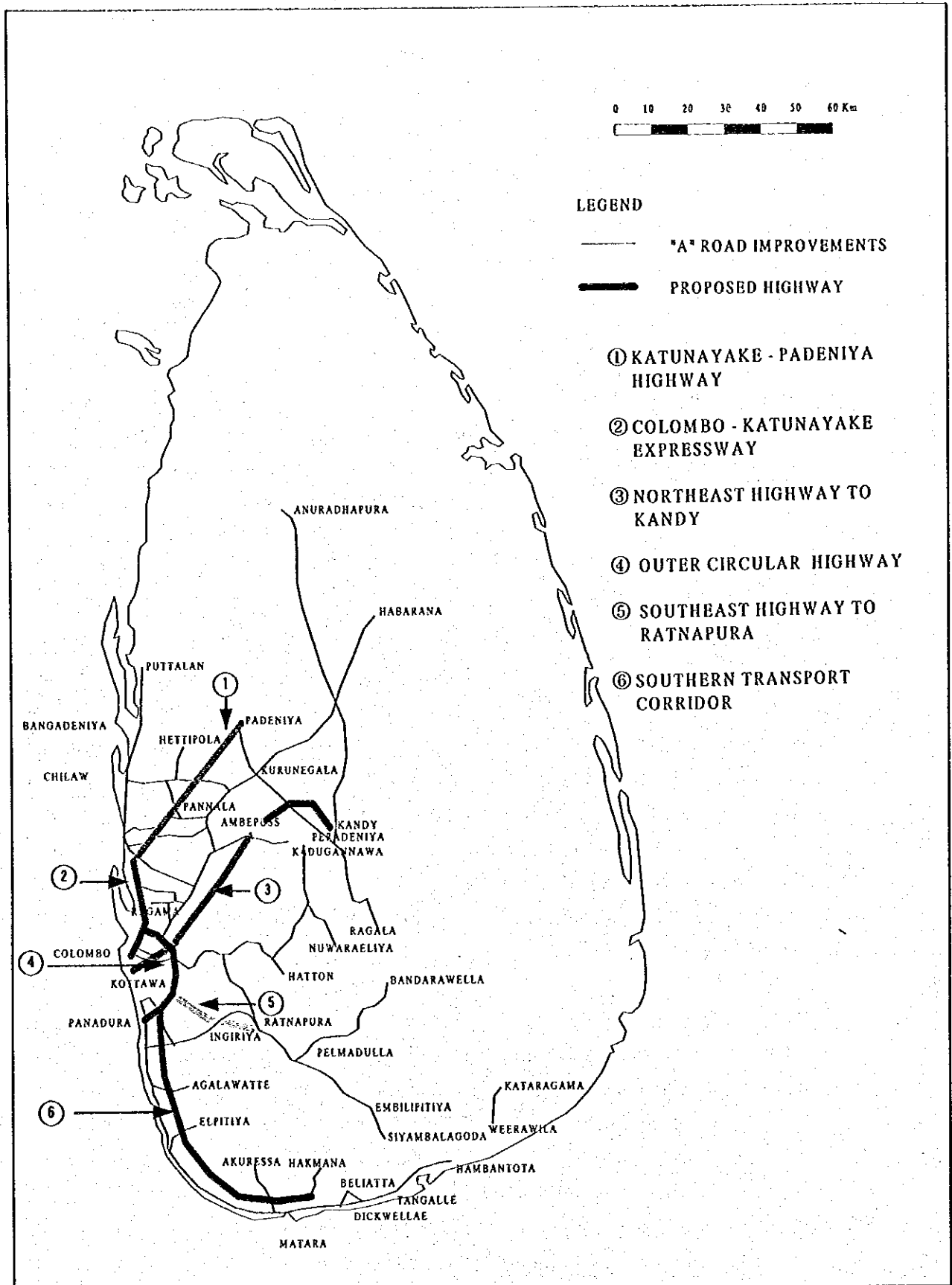


Fig. 3.1 Proposed Highway

- The highest economic returns are achieved with a 2-lane highway. 12 percent can be obtained with a 2007 opening (2010 for a 4-lane road), which makes the road economically feasible.

The subsequent preliminary engineering and detailed design are scheduled to commence in 1999 following mapping of the corridor.

3.7 Colombo – Katunayake Expressway (CKE)

The expressway would connect the City of Colombo with the Bandaranaike International Airport. The intention here is to provide reliable and timely services for travelers going to and from the airport. The alignment which was initiated in the feasibility study executed by the JICA in 1983 was highly unlikely that the expressway would be constructed as proposed due to high population density and strong public opposition.

The expressway is presently relocated along most of its alignment in a marshy area where is away from high densely populated area.

The Government of Sri Lanka has indicated that the CKE should be financed through private concession as a toll road. The Government through the Road Development Authority (RDA) and Bureau of Infrastructure Investment (BII) is calling for the tender for the design and construction of the expressway. The RDA is proposing to provide a fully access controlled 4-lane toll expressway for a distance of about 25km. The expressway starts at new Kelani Bridge and ends the intersection of the road A3 with the access road to the Bandaranaike International Airport and Katunayake Free Trade Zone. The expressway is expected as a first link between Colombo and international airport and the associated industrial estate located in the vicinity. And also it is expected to handle the rapidly expanding container traffic between the Colombo Port and its inland storage depots. Furthermore, the expressway will interconnect with the Outer Circular Highway which will be able to convey traffic the suburbs of Colombo and also southern area via the Southern Transport Corridor.

The implementation has been initiated such as a land acquisition of major portion and an environmental impact assessment which has been preliminary approved by the Central Environmental Authority (CEA).

3.8 Land Reclamation and Urban Development in Kerawalapitiya

The Sri Lanka Land Reclamation and Development Corporation has reclaimed and developed 400 acres of land in Kerawalapitiya, in which the proposed interchange for the Katunayake

Expressway and Outer Circular Highway will be located. Of these 400 acres, 150 acres have been allocated for the use of industry. The major industry is to be petrochemical. Furthermore, a conservation scheme of marsh in Muthurajawela where is north of Kerawalapitiya, is programmed in the future.

There is a plan to construct an access road or railway between the Port of Colombo and the development area including new bridge at Mattakkuliya.

3.9 Other New Highway Projects

In addition to the above mentioned highway, the RDA is planning the future development of the national highway network by the constructing alternate highways to supplement the existing trunk road system so that the capacity of the road network could cater for the future traffic demand.

The Government has indicated that some of the future highway projects should be financed through active participation of the private sector as BOO or BOT.

3.9.1 Colombo – Kandy Expressway

The proposed expressway will run from the Baseline Road at the northern end of City of Colombo to near the 111km post on the existing Road A1 at the east side of the Mahaweli Ganga in Kandy. It will pass through north of Biyagama, Dompe, Kirindiwela, Attanagalla, Galapitamada to Nelundeniya that is a point about 7km east of Ambepussa and the 68km post on the existing Road A1. After crossing the Colombo – Kandy Road (A-1) at Nelundeniya the expressway will pass through Wattarama, Hataraliyedda and Katugastota. The expressway is expected to have a role as a by-pass of the Colombo – Kandy Road which runs through densely populated areas. Widening of the existing road will not be possible due to the highly developed nature along the road.

The expressway will interconnect with the Outer Circular Highway at about 3km north of Kaduwela which will be able to convey traffic the suburbs of Colombo, Bandaranaike International Airport via Colombo – Katunayake Expressway and also southern area via the Southern Transport Corridor.

The Colombo-Kandy Expressway is expected to be financed through active participation of the private sector, either on the basis of BOO/BOT or on a joint venture basis with the Government.

The pre-feasibility and feasibility study for the expressway which will enable smooth and quick travel between Colombo and Kandy is scheduled to conduct with assistance of the Swedish International Development Cooperation (SIDA). The feasibility study will be implemented in 1999 through 2000.

3.9.2 Alternate Highway from Katunayake to Padeniya

The proposed highway will connect Katunayake and Padeniya to provide for a shorter alternative route from Colombo to Anuradhapura. The starting point of the proposed highway is the terminal point of the proposed Colombo – Katunayake Expressway and the end point is at Padeniya on the Anuradhapura – Padeniya Road (A28) which is a trunk road with a good alignment and having adequate right of way for future development.

The RDA carried out the pre-feasibility study in 1991 and the subsequent feasibility study was made by a firm of Korean consultant in 1995 and 1996.

3.9.3 Alternate Highway from Colombo to Ratnapura Via Ingiriya

The proposed highway will start from the Outer Circular Highway and traverse through Ingiriya to Ratnapura. Ratnapura is the provincial Capital of Sabaragamuwa Province and the City of Colombo is connected to Ratnapura by the trunk Road A4. The existing trunk road is a 2-lane and there is severe traffic congestion on the road up to a distance of about 20km from the city of Colombo. The pre-feasibility study was carried out in 1991.

3.10 Major Road Rehabilitation Projects

The RDA is planning the future development of the national highway network by the rehabilitation of the existing trunk road to supplement the existing trunk road system so that the capacity of the road network could cater for the future traffic demand. The rehabilitation is scheduled in all-over the country and the relevant rehabilitation projects to the Outer Circular Highway are as follows:

3.10.1 Colombo – Ratnapura Road (A 4)

Colombo – Ratnapura – Wellawaya – Batticaloa Road (A 4) is an important trunk road in the country connecting the City of Colombo to Batticaloa which is the Provincial Capital of

Eastern Province. The road traverses from the western coast to the eastern coast right across the country. The Outer Circular Highway will cross the road at the 21km post between Kottawa and Homagama.

The road section located in the Colombo Municipal Council area has been widened from 2 to 4 traffic lanes (i.e. up to the 9km post). The road section from the 9km post to 26km post is under the design for the rehabilitation. The scope of work for rehabilitation is :

- (1) Widening of existing road carriageway to provide for 4 traffic lanes.
- (2) Improving the alignment at critical sections
- (3) Providing well constructed road shoulder to adequate width
- (4) Rehabilitation of existing road pavement and providing a wearing surface
- (5) Improving of culverts, bridges and drainage

3.10.2 Panadura – Ratnapura Road (A 8)

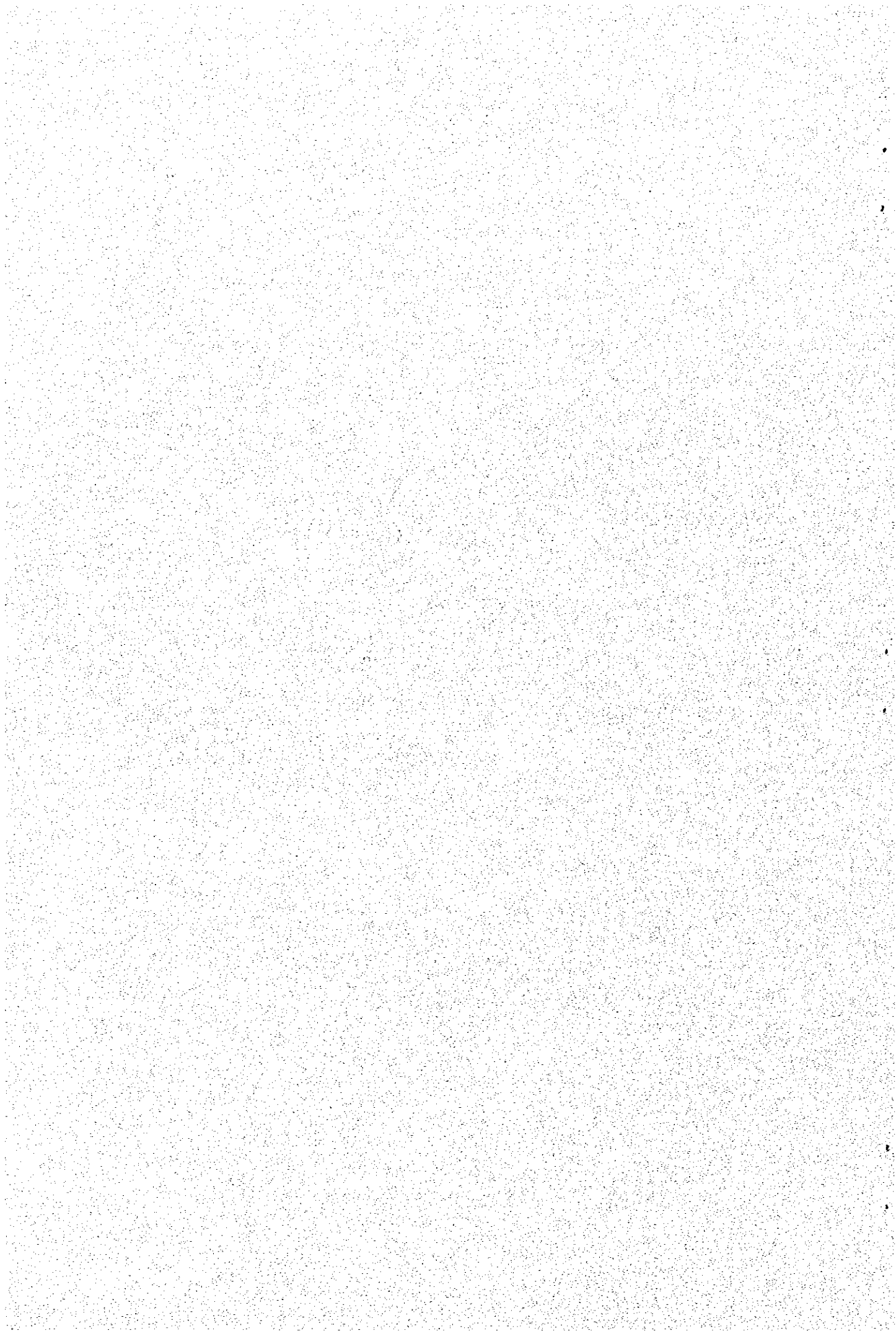
Panadura – Bandaragama – Horana – Ingiriya - Ratnapura (A8) is one of the trunk roads connecting Panadura where it intersects the Galle Road (A2) to Ratnapura which is the Provincial Capital of Sabaragamuwa Province. The Outer Circular Highway or Southern Transport Corridor will cross the road at the 9km post before Bandaragama.

The road section from Panadura to Ingiriya, the 34km post, will be rehabilitated starting from 1999. The scope of work for rehabilitation is :

- (1) Widening of the road pavement to 2-lane standards
- (2) Improving the alignment at critical sections
- (3) Providing well constructed road shoulder to adequate width
- (4) Rehabilitation of existing road pavement and providing a wearing surface
- (5) Improving of culverts, bridges and drainage

CHAPTER 4

SOCIO-ECONOMIC FRAMEWORK



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4.1 General

4.1.1 Objectives of the Socio-Economic Framework Formulation

In order to provide exogenous variables for the traffic demand analysis for the Colombo Metropolitan Region (CMR), forecast of the following items are carried out till the year 2020 in this chapter:

- 1) Economic framework (GDP) of Sri Lanka at the national and District levels,
- 2) Population by DS Division in the CMR,
- 3) Employment by DS Division, and
- 4) Vehicles by vehicle type and DS Division.

An analysis and discussion of the economic framework is not the main purpose of this project. However, the framework is indispensable for forecasting the population, employment and vehicles ownership.

4.1.2 Basic Policy for Formulating the Socio-Economic Framework

The Study Team has put a high priority on the following issues for formulating its forecasts:

1) The Effective Use of Results from Existing Studies

Many kinds of basic data and information from existing studies are referred to and effectively applied. The processing and application of such data and information makes it possible to complete the work of the Project on schedule.

2) The Making of Forecasts for three cases

The Study Team produced forecasts for the above-mentioned variables for three cases: Base, High and Low Case. The High Case and Low Case are used to analyze uncertainty regarding the Base Case. In other words, they are utilized for sensitivity analysis purposes for the traffic demand forecast for the CMR.

3) The Maintaining of Consistency as Much as Possible within and among the Variables of the Different Levels of Forecasting

For Example:

- Consistency between the national economic framework and the economic framework for the CMR and its Districts
- Consistency between the CMR and District economic frameworks in relation to forecasts on employment and vehicle ownership by the introduction of an explicit relationship.

4) The Clarification of the Forecasting Methods Adopted in This Study

The Study Team has tried to make its forecasting methods as clear as possible. However, due to the lack of data and information, the Consultant has at times found it necessary to make estimates based on its experience.

4.1.3 Existing Studies

The Study Team reviewed the following existing studies at the beginning of its work:

- (1) Colombo Urban Transport Study (CUTS)
- (2) Colombo Metropolitan Region Structure Plan (CMRSP), and
- (3) Southern Transport Corridor Project

The Study Team mainly referred to data and from the following reports in making its forecasts.

CUTS : Forecasting methods and forecasts for "Cars" and "Motorcycles"

CMRSP : Data and information for the Study Team's establishment of the economic framework till the year 2020

4.2 Forecast of Economic Growth by District

4.2.1 General

1) Objective and Contents of the Forecasts.

Forecasting economic growth by District in the CMR is indispensable for forecasting employment and vehicle ownerships by traffic zone (DS Division) in the CMR.

Unfortunately, District forecasts cannot be found in the existing study reports. In this section, forecasts for the following index are carried out:

Index : GDP (at 1982 constant prices, in millions in Rs.)

Level : National and district level

Classification: Ten (10) industrial sectors

However, only the Base Case is presented for the national economy, while the Base, High and Low Cases are given for the District economic development scenarios shown in this report. The latter cases correspond to the same cases at the national level.

2) Issues Taken into Consideration in Forecasting

The Study Team takes into consideration the following three issues when making its national and District economic forecasting till the year 2020 as its final target year.

(1) Attainment

The extrapolation method for forecasting is rejected in favor of possible attainable growth, taking into consideration foreseeable severer worldwide circumstances.

(2) Consistency

Consistency between the national, the CMR, and District levels is maintained.

(3) Spatial socio-economic development

In this study, the spatial socio-economic plan shown in the CMRSP is reflected in the forecasts.

4.2.2 Outline of Forecasting Steps and Procedures

1) Forecasting Steps and the Consequence.

The Study Team adopted the following forecasting steps. Firstly, the Study Team made a tentative national and District economic development scenario by industrial sector. Secondly, discussions with the Economic Research Department, the Central Bank of Sri Lanka, the National Planning Department, the Ministry of Finance of Sri Lanka, the branch offices of the Asian Development Bank (ADB) and the Overseas Economic Cooperation Fund (OECF) were then held. Finally, the Study Team revised and finalized its forecasts based on comments from these organizations. A flow chart showing the restraining and promoting factors of economic growth, which were decided as a result of the discussions are depicted in the Fig. 4.1 below. The flow chart indicates how these factors are applied to determine future national economy.

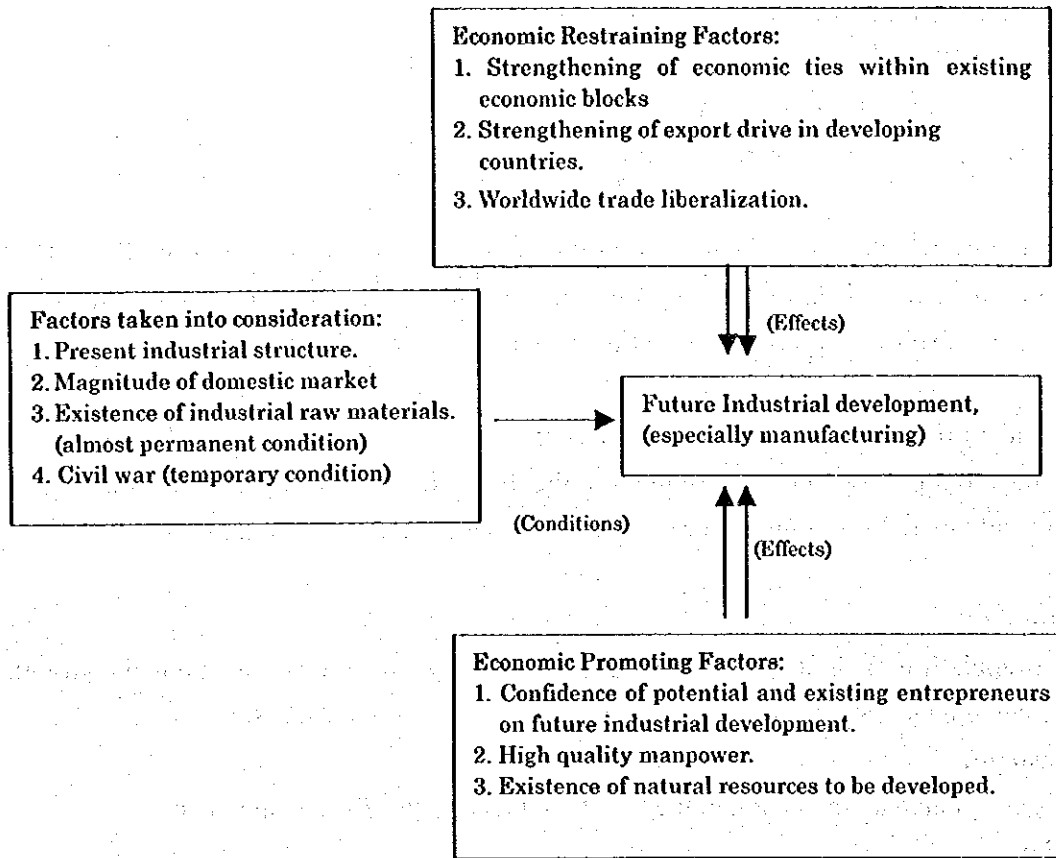


Fig. 4.1 Conceptual Model for Forecasting of National Economy

2) Forecasting Procedures and Case Setting

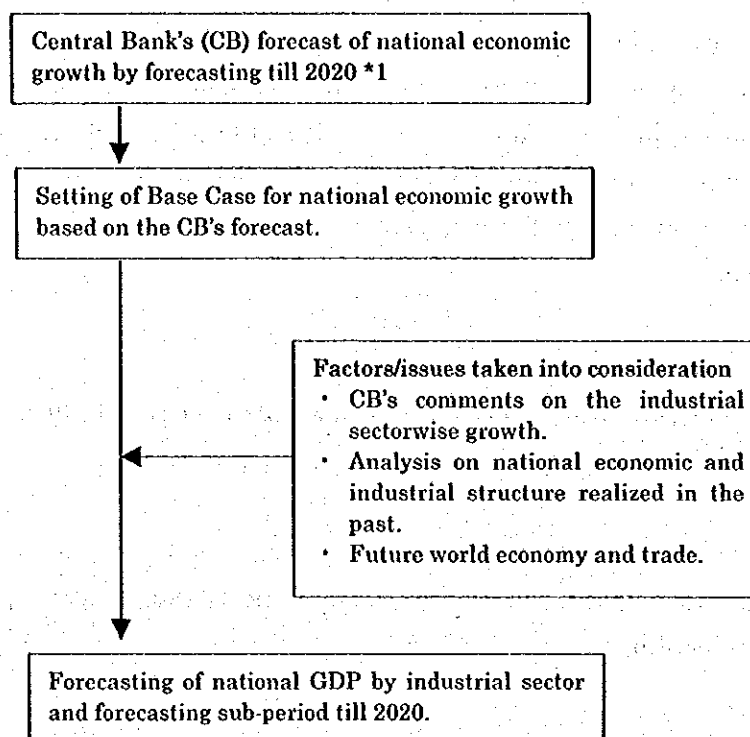
(1) Forecasting Procedure

Forecasting procedures for national GDP by industrial sector are depicted in Fig. 4.2, with the forecasting procedures for the CMR and District GDP by industrial sector depicted in Fig. 4.3. Along with the procedures, factors/issues taken into consideration in the forecasts, together with fundamental data and information used for the estimation, are also shown.

Note:

-Forecasting is carried out till the year 2020 with three sub-periods: 1998 – 2005, 2005 – 2010 and 2010 – 2020. The growth rates are different for the sub-periods.

-Data on District employment by industrial sector in 1994 exist. Otherwise, labor productivity for the manufacturing industry by District and for the CMR and District GDP by industrial sector in 1994 could not be estimated.



- Note *1: • The CB's forecast is based on the condition that the Civil War will cease by/around the middle of the next decade.
- The CB's forecast is shown with a band of the economic growth rates by forecasting subperiod.

Fig. 4.2 : Forecasting Procedures of National GDP by Industrial Sector

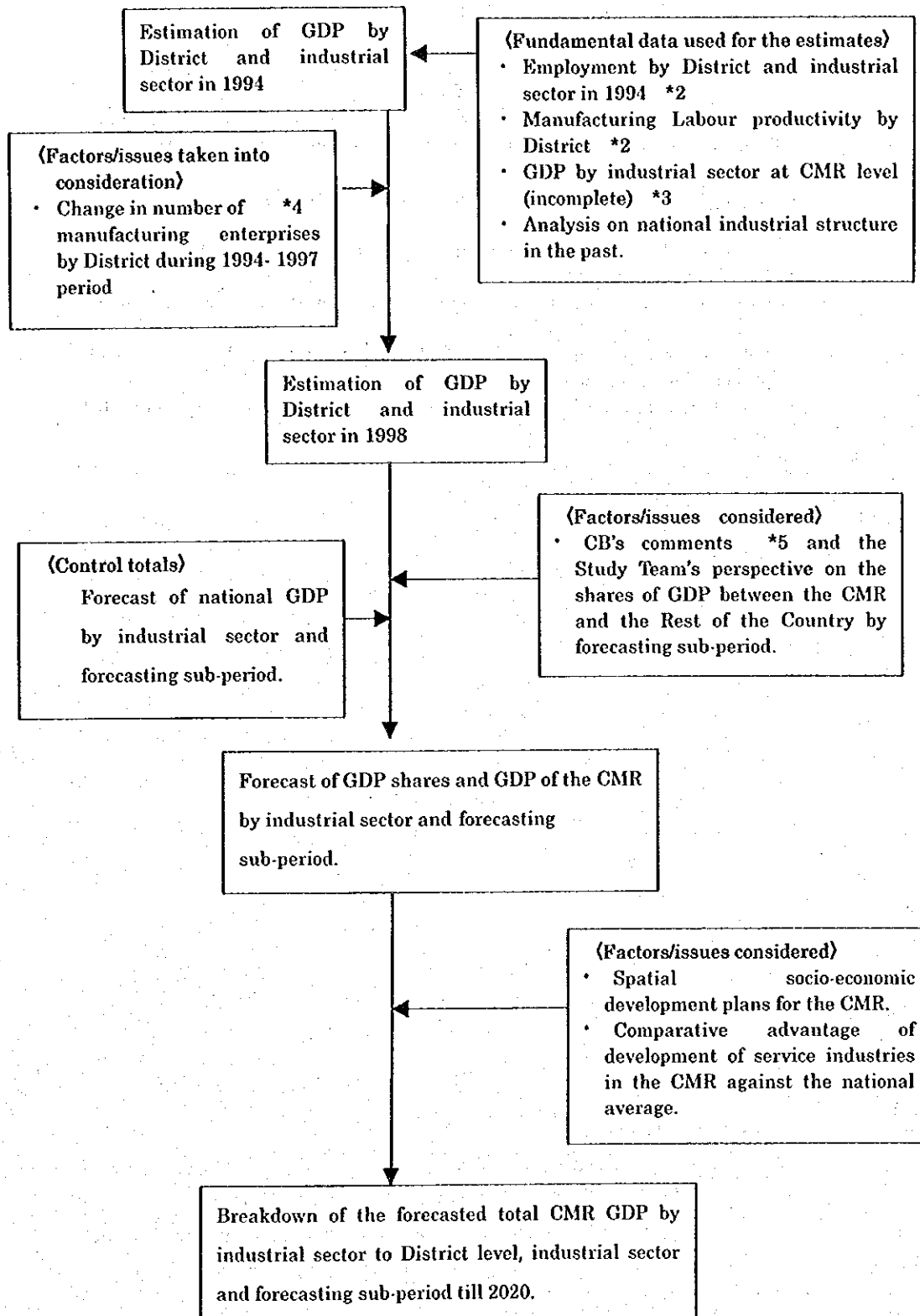


Fig. 4.3 : Estimating and Forecasting Procedures of CMR and District GDP by Industrial Sector

- Note *2: Source : CMRSP, Vol.3, p72, Table 3.10
*3: Source : CMRSP, Vol.3, p72, Table 3.7
*4: Source : Review of Activity p35, Ministry of Industrial Development, etc.
*5: The CB's comment on the share is as follows:
The share of the Rest of the Country will decrease till/around 2010 and the share will increase afterwards. Because the following factors will promote the faster development in the areas:
There has been the National Development Strategies (UDA).
in addition to that:
- The cease of the Civil War will bring about a stable social order in the area,
 - Policy of decentralization of power from central government to local government will cause favorable circumstance for the development in the area,
 - Policy of transferring ownership of plantation estate to the farmers will provide chances of the development, and
 - Completion of the national road network will promote the development in the area.

(2) Case Setting

As pointed out before, three forecasts at the CMR and District level are conducted in this study: a Base, High and Low Case forecast. The cases correspond logically to three types of national economic development scenarios. The High and Low Cases are prepared for sensitivity analysis purposes. Accordingly, the results of the two cases are not analyzed from the viewpoint of feasibility as is done in the Base Case. Fig. 4.4 shows the case setting methodology.

Note:

-A fixed set of growth rates for "Agriculture", "Mining", "Community Service" and "Others (n.e.s)" are applied commonly to the three cases, based on discussions with the CB and the National Planning Department.

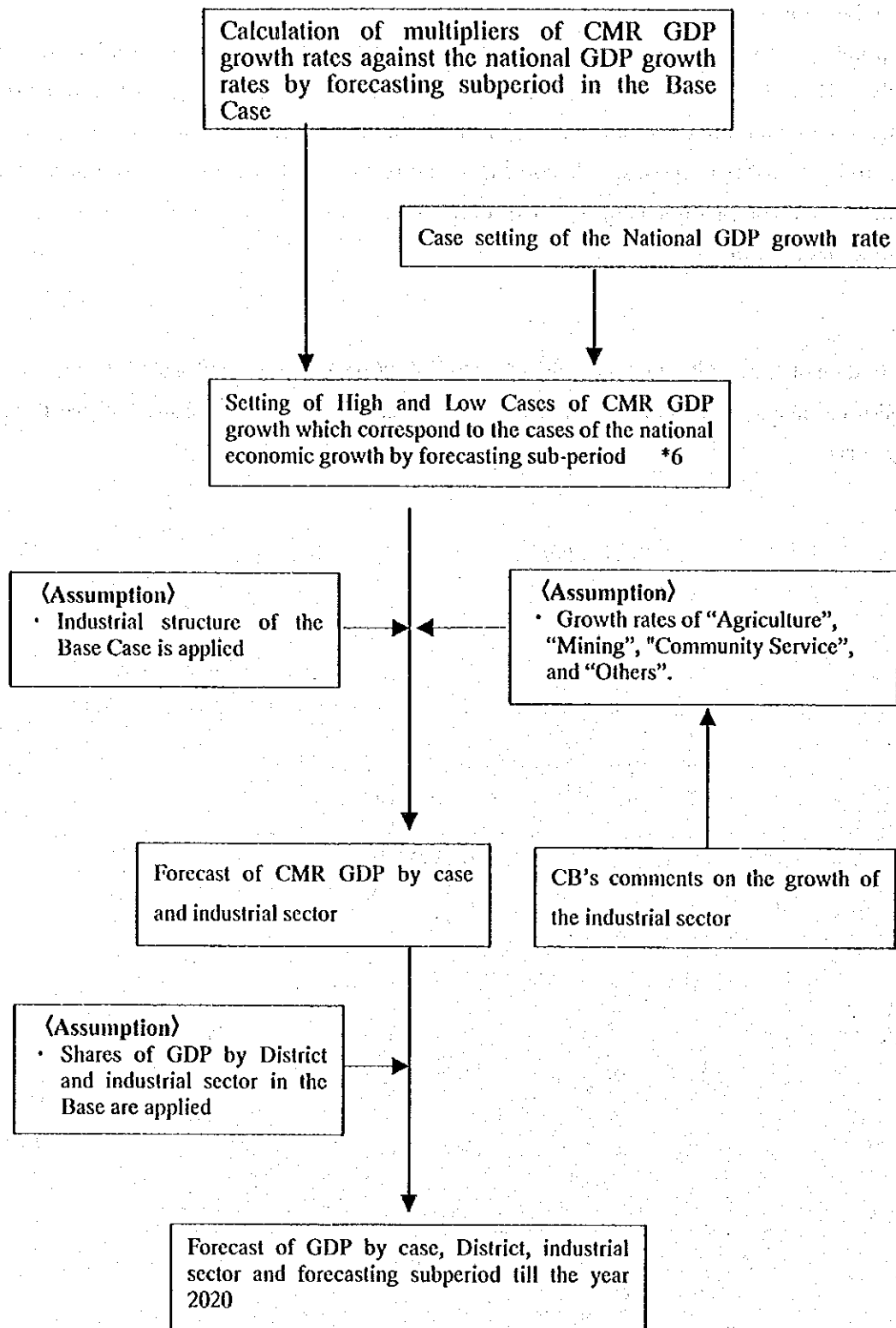


Fig. 4.4 Procedure for Case Setting (High and Low Cases)

(continued)

Note *6: • Estimation of multipliers using Base Case

Economic Growth Rate (% / annum)	Sri Lanka ①	1998	2005	2010
		2005	2010	2020
	CMR ②	5.0	6.0	6.5
Multiplier ② / ①		1.24	1.17	0.95

Case setting of national economic growth and CMR economic growth, which correspond to the former, applying the Multiplier.

Economic Growth Rates (% / annum)

		1998	2005	2010
		2005	2010	2020
High Case	Sri Lanka	5.5	7.0	7.5
	CMR	6.8	8.2	7.1
Low Case	Sri Lanka	4.5	5.0	5.5
	CMR	5.6	5.9	5.2

4.2.3 Results of Forecast.

1) Sri Lanka National Economic Growth

Forecast of the national economy (Base Case) till the year 2020 is tabulated in Tab. 4.1. The comments from the Central Bank are reflected in the forecasts.

The economy is expected to grow at 5.0% /annum for the period 1998 – 2005, the rate is a little below than the realized rate since 1990. The growth rate is expected to be 6.0% /annum for the period 2005 – 2010 and 6.5%/annum for the last period 2010 - 2020.

The manufacturing industry is expected to power national economy, followed by the service industry (Transport, Trade and Banking industries).

Tab. 4.1 : Forecast of National Economic Growth by Industrial Sector till the Year 2020
 - Base case -
 - GDP (1982 constant factor cost prices, millions in Rs) -

1. Values

	Actual *1			Forecast *3		
	1990	1995	1998 *2	2005	2010	2020
Agriculture, Forestry & Fishing	30,011	33,659	33,846	38,878	42,945	55,512
Mining & Quarry	3,901	4,048	4,221	4,685	5,047	5,857
Manufacturing	22,429	34,294	42,883	64,683	91,449	186,128
Construction	8,761	11,564	13,548	20,033	27,799	54,503
Electricity, Gas & Water	1,618	2,537	2,996	4,372	5,982	11,403
Transport, Storage & Communication	14,410	18,803	23,206	35,235	50,522	105,742
Trade	26,497	35,906	42,110	61,444	84,070	163,294
Banking Insurance & Real Estate	6,556	9,707	12,785	20,330	29,831	62,436
Ownership of Dwelling	3,705	3,938	4,089	4,445	4,742	5,396
Public Administration & Defence	6,355	7,218	8,070	10,477	12,625	20,176
Others (n.e.s)	4,940	6,243	7,110	9,611	11,920	18,335
Total GDP	129,244	167,953	194,864	274,193	366,932	688,782

2. Annual Average Growth Rates (% / annum)

	Actual		Forecast			
	1990	1995	1998	2005	2010	1998
	1995	1998	2005	2010	2020	2020
Agriculture, Forestry & Fishing	2.3	0.2	2.0	2.0	2.6	2.3
Mining & Quarry	0.7	1.4	1.5	1.5	1.5	1.5
Manufacturing	8.9	7.7	6.0	7.2	7.4	6.9
Construction	5.9	5.4	5.8	6.8	7.0	6.5
Electricity, Gas & Water	9.4	5.7	5.5	6.5	6.7	6.3
Transport, Storage & Communication	5.5	7.3	6.1	7.5	7.7	7.1
Trade	6.3	5.5	5.5	6.5	6.9	6.4
Banking Insurance & Real Estate	8.2	9.6	6.9	8.0	7.7	7.5
Ownership of Dwelling	1.2	1.3	1.2	1.2	1.3	1.3
Public Administration & Defence	2.6	3.8	3.8	3.8	4.8	4.3
Others (n.e.s)	4.8	4.4	4.4	4.4	4.4	4.4
Total GDP	5.4	5.1	5.0	6.0	6.5	5.9

3. Composition Ratios (%)

	Actual			Forecast		
	1990	1995	1998	2005	2010	2020
Agriculture, Forestry & Fishing	23.2	20.0	17.4	14.2	11.7	8.1
Mining & Quarry	3.0	2.4	2.2	1.7	1.4	0.9
Manufacturing	17.4	20.4	22.0	23.6	24.9	27.0
Construction	6.7	6.9	7.0	7.3	7.6	7.9
Electricity, Gas & Water	1.3	1.5	1.5	1.6	1.6	1.7
Transport, Storage & Communication	11.1	11.2	11.9	12.9	13.8	15.4
Trade	20.5	21.4	21.6	22.4	22.9	23.7
Banking Insurance & Real Estate	5.1	5.8	6.6	7.4	8.2	9.1
Ownership of Dwelling	2.9	2.3	2.1	1.6	1.3	0.8
Public Administration & Defence	4.9	4.3	4.1	3.8	3.4	2.9
Others (n.e.s)	3.8	3.7	3.6	3.5	3.2	2.7
Total GDP	100.0	100.0	100.0	100.0	100.0	100.0

Note *1 : Source: Central Bank of Sri Lanka

*2 : Provisional

*3: Consultant forecast

2) CMR and Districts Economic Growth (Base Case)

Forecasts of District GDP are shown in Tab. 4.2 and forecasts by District and industrial sector in Tab. 4.3. The comments from the Central Bank are also reflected in the forecasts.

(1) CMR and Districts Economic Growth till the Year 2020

The CMR's GDP is estimated to be 99,532 million Rs (1982 constant prices) and it is expected to grow to 388,112 millions in 2020, about four (4) times that of 1998. It will grow at 6.2%/annum for the period 1998 – 2005, 7.0%/annum for 2005 – 2010 and 6.2%/annum for 2010 – 2020. Growth rates till the year 2010 are higher than those for national economy by 0.2 – 0.5%/annum points, but lower by 0.3%/annum points for the period 2010 – 2020. Accordingly, the CMR's GDP shares as a whole rises from 51.1% in 1998 to 58.0% in 2010 and goes down to 56.3% in 2020.

The GDP of the Gampaha District is expected to grow most speedily with an average growth rate of 6.5% annum for the period 1998 – 2020, followed by Colombo and Kalutara District.

Tab. 4.2 : (Summary) Forecasts of GDP by District in the Colombo Metropolitan Region (CMR) till the Year 2020
- Base case -

1. GDP's (1982 constant factor cost price, millions in Rs)

		CMR				Rest of the Country	Sri Lanka
		Colombo	Gampaha	Kalutara			
Actual	1994	73,961	38,539	25,135	10,287	85,308	159,269 *
	1998	99,532	49,839	36,347	13,346	95,332	194,864 *
Forecast	2005	151,647	76,135	55,528	19,984	122,546	274,193
	2010	212,673	105,632	79,211	27,830	154,259	366,932
	2020	388,112	192,442	146,049	49,621	300,670	688,782

2. Shares (%)

Actual	1994	46.4	24.2	15.8	6.5	53.6	100.0
	1998	51.1	25.6	18.7	6.8	48.9	100.0
Forecast	2005	55.3	27.8	20.3	7.3	44.7	100.0
	2010	58.0	28.8	21.6	7.6	42.0	100.0
	2020	56.3	27.9	21.2	7.2	43.7	100.0

3. Average Annual Rates (% / annum)

Actual	1994 - 1998	7.7	6.6	9.7	6.7	2.8	5.2
Forecast	1998 - 2005	6.2	6.2	6.2	5.9	3.7	5.0
	2005 - 2010	7.0	6.8	7.4	6.8	4.7	6.0
	2010 - 2020	6.2	6.2	6.3	6.0	6.9	6.5
	1998 - 2020	6.4	6.4	6.5	6.2	5.4	5.9

Source : Consultant estimate and forecast

Note * : Source: Central Bank of Sri Lanka

Tab. 4.3 : Forecasts of GDP by Districts in the CMR and Industrial Sectors till the Year 2020
(Unit: 1982 constant factor cost prices, millions in Rs)

1 - 1 1998 (Estimate)

					Sri Lanka
	CMR	Colombo	Gampaha	Kalutara	
Agriculture, Forestry & Fishing	2,809	474	1,218	1,117	33,846
Mining & Quarry	612	266	190	156	4,221
Manufacturing	37,473	18,864	15,756	2,853	42,583
Construction	7,045	3,021	2,561	1,463	13,548
Electricity, Gas & Water	1,642	824	557	261	2,996
Transport, Storage & Communication	12,763	6,034	4,780	1,949	23,206
Trade	22,276	11,749	6,990	3,537	42,110
Banking, Insurance & Real Estate	8,106	5,140	2,301	665	12,785
Community Service *	5,447	2,784	1,702	961	12,159
Others (n.e.s)	1,359	683	292	384	7,110
Total	99,532	49,839	36,347	13,346	194,864
	(51.1%)	(25.6%)	(18.7%)	(6.8%)	(100.0%)

Source : Consultant estimate

Note * : Sum of "Ownership of Dwelling" and "Public Administration and Defence".

1 - 2 2005 (Forecast)

- Base case -

					Rest of the	Sri Lanka
	CMR	Colombo	Gampaha	Kalutara	Country	
Agriculture, Forestry & Fishing	3,227	545	1,400	1,282	35,671	38,898
Mining & Quarry	679	295	211	173	4,006	4,685
Manufacturing	58,656	28,978	24,903	4,775	6,027	64,683
Construction	10,465	4,470	3,809	2,186	9,568	20,033
Electricity, Gas & Water	2,414	1,207	818	389	1,958	4,372
Transport, Storage & Communication	20,143	9,473	7,570	3,100	15,092	35,235
Trade	33,916	18,126	10,507	5,283	27,528	61,444
Banking, Insurance & Real Estate	13,626	8,701	3,827	1,098	6,704	20,330
Community Service	6,685	3,417	2,089	1,179	8,237	14,922
Others (n.e.s)	1,836	923	394	519	7,775	9,611
Total GDP	151,647	76,135	55,528	19,984	122,546	274,193

1 - 3 2010 (Forecast)

- Base case -					(Continued)	
	CMR	Colombo	Gampaha	Kalutara	Rest of the Country	Sri Lanka
Agriculture, Forestry & Fishing	3,564	601	1,546	1,417	39,381	42,945
Mining & Quarry	732	318	227	187	4,315	5,047
Manufacturing	83,714	40,275	36,397	7,042	7,735	91,449
Construction	14,775	6,130	5,532	3,113	13,024	27,799
Electricity, Gas & Water	3,357	1,641	1,166	550	2,625	5,982
Transport, Storage & Communication	29,340	13,790	11,054	4,496	21,182	50,522
Trade	47,168	25,137	14,633	7,398	36,902	84,090
Banking, Insurance & Real Estate	19,967	12,619	5,737	1,611	9,864	29,831
Community Service	7,780	3,977	2,431	1,372	9,587	17,367
Others (n.e.s)	2,276	1,144	488	644	9,644	11,920
Total GDP	212,673	105,632	79,211	27,830	154,259	366,932

1 - 4 2020 (Forecast)

- Base case -						
	CMR	Colombo	Gampaha	Kalutara	Rest of the Country	Sri Lanka
Agriculture, Forestry & Fishing	4,607	777	1,998	1,832	50,905	55,512
Mining & Quarry	849	368	264	217	5,008	5,857
Manufacturing	155,737	72,590	70,304	12,843	30,391	186,128
Construction	26,465	10,955	9,756	5,754	28,038	54,503
Electricity, Gas & Water	5,850	2,839	2,041	970	5,553	11,403
Transport, Storage & Communication	57,051	26,914	21,466	8,671	48,691	105,742
Trade	83,771	45,232	25,149	13,390	79,523	163,294
Banking, Insurance & Real Estate	38,824	25,151	10,739	2,934	23,612	62,436
Community Service	11,456	5,856	3,580	2,020	14,116	25,572
Others (n.e.s)	3,502	1,760	752	990	14,833	18,335
Total GDP	388,112	192,442	146,049	49,621	300,670	688,782

Source : Consultant forecast

(Continued)

2. Average Annual GDP Growth Rates in the CMR (% / annum)

- Base case -

	1998 2005	2005 2010	2010 2020	1998 2020
Agriculture, Forestry & Fishing	2.0	2.0	2.6	2.3
Mining & Quarry	1.5	1.5	1.5	1.5
Manufacturing	6.6	7.4	6.4	6.7
Construction	5.8	7.1	6.0	6.2
Electricity, Gas & Water	5.9	6.8	5.7	5.9
Transport, Storage & Communication	6.7	7.8	6.9	7.0
Trade	6.2	6.8	5.9	6.2
Banking, Insurance & Real Estate	7.7	7.9	6.9	7.4
Community Service	3.0	3.1	3.9	3.4
Others (n.e.s)	4.4	4.4	4.4	4.4
Total GDP in CMR	6.2	7.0	6.2	6.4

(2) Reasons for Faster Development in the Rest of the Country after the Year 2010.

Economic growth in the Rest of the Country for the period 2010 – 2020 is expected to be 6.9%/annum, which is higher than that of the CMR by 0.5%/annum points. This phenomenon reflects the following issues:

-The Urban Development Authority (UDA) has provided the Study Team the following National Spatial Planning Strategy:

The main object of the National Spatial Planning Strategy is to introduce planned spatial development in order to distribute both population and economic activities fairly evenly throughout the country.

In order to achieve the objectives of sustainable human settlement and development and explore the potentials for economic development in Sri Lanka in the future, the following development strategies are proposed.

* Introduction of high density development zone in the Western and Southern Provinces to promote industry, commercial and banking activities, tourism, agro-based industries and fisheries, since these regions will have the best infrastructure facilities in the country.

Colombo Harbour will support development activities in the Western Province and the Hambantota Harbour in the Southern Province.

* Development of North Central Province, parts of the Eastern and Northern Province and Northern part of the Central Province as secondary densely development zone with a view to promoting Maritime activities of the Trincomalle harbour and establishing large scale industries, agro-based industries, and activities related to the Mahaweli Development scheme, where the availability of land is an important incentive to promote industrial development. Less intensified development will be pursued in this zone in relation to the high density development zone.

* Introduction of regulation to enforce low density development in the hill country, particularly in parts of the Central, Uva and Sabaragamuwa Provinces, and to protect the environmentally sensitive areas in those Provinces, such as virgin forests, water bodies and high mountains and watershed areas.

* Identification and designation of existing and proposal forest areas with a view to increasing the national forest cover to 30% by year 2010.

* Promotion of agriculture development in the North Western Province, parts of Eastern (Amparai) and Northern Provinces with agro-based industries and the development of urban service centres to support marketing of rural products.

* Development of major urban metropolitan cities such as Colombo, Ruhunupura, Trincomalee, Jaffna and Anuradhapura as Sub National Capital Cities, where the potentials for urban development remain very good.

-Along with the above-mentioned spatial planning strategies, the following policies, which were pointed out by the Central Bank, support the realization of these strategies:

- * Policy of decentralization of power from the central government to local governments to create a favorable environment to develop areas
- * Policy of transferring ownership of plantation estates to farmers to stimulate development
- * Expectation of a cessation in the civil war around the middle of the next decade, which will bring about a stable social order
- * Completion of the national road network which will contribute to local development

Forecasts of District GDP (High Case) are shown in Tab. 4.4, and those of Low Case in Tab. 4.5.

Tab. 4.4 : Forecasts of GDP by Districts in the CMR and Industrial Sectors till the Year 2020
(Unit: 1982 constant prices, millions of Rs)

1. 2005 (Forecast)

- High case -				
	CMR	Colombo	Gampaha	Kalutara
Agriculture, Forestry & Fishing	3,227	545	1,400	1,282
Mining & Quarry	679	295	211	173
Manufacturing	61,226	30,248	25,994	4,984
Construction	10,924	4,666	3,976	2,282
Electricity, Gas & Water	2,520	1,260	854	406
Transport, Storage & Communication	21,026	9,888	7,902	3,236
Trade	35,402	18,920	10,967	5,514
Banking, Insurance & Real Estate	14,222	9,082	3,994	1,146
Community Service	6,685	3,417	2,089	1,179
Others (n.e.s)	1,836	923	394	519
Total GDP	157,747	79,244	57,781	20,721

2. 2010 (Forecast)

(Continued)

- High case -				
	CMR	Colombo	Gampaha	Kalutara
Agriculture, Forestry & Fishing	3,564	601	1,546	1,417
Mining & Quarry	732	318	227	187
Manufacturing	92,689	44,593	40,299	7,797
Construction	16,359	6,787	6,125	3,447
Electricity, Gas & Water	3,717	1,817	1,291	609
Transport, Storage & Communication	32,486	15,269	12,239	4,978
Trade	52,225	27,832	16,202	8,191
Banking, Insurance & Real Estate	22,108	13,972	6,352	1,784
Community Service	7,780	3,977	2,431	1,372
Others (n.e.s)	2,276	1,144	488	644
Total GDP	233,936	116,310	87,200	30,426

3. 2020 (Forecast)

- High case -				
	CMR	Colombo	Gampaha	Kalutara
Agriculture, Forestry & Fishing	4,607	777	1,998	1,832
Mining & Quarry	849	368	264	217
Manufacturing	188,094	87,672	84,911	15,511
Construction	31,963	13,231	11,783	6,949
Electricity, Gas & Water	7,065	3,429	2,465	1,171
Transport, Storage & Communication	68,904	32,506	25,926	10,472
Trade	101,176	54,630	30,374	16,172
Banking, Insurance & Real Estate	46,890	30,376	12,970	3,544
Community Service	11,456	5,856	3,580	2,020
Others (n.e.s)	3,502	1,760	752	990
Total GDP	464,506	230,605	175,023	58,878

Source: Consultant forecast

Tab. 4.5 : Forecasts of CMR GDP by Districts and Industrial Sectors till the Year 2020
(Unit: 1982 constant prices, millions of Rs)

1. 2005 (Forecast)

- Low case -				
	CMR	Colombo	Gampaha	Kalutara
Agriculture, Forestry & Fishing	3,227	545	1,400	1,282
Mining & Quarry	679	295	211	173
Manufacturing	56,172	27,751	23,848	4,573
Construction	10,021	4,280	3,647	2,094
Electricity, Gas & Water	2,312	1,156	783	373
Transport, Storage & Communication	19,290	9,072	7,249	2,969
Trade	32,480	17,359	10,062	5,059
Banking, Insurance & Real Estate	13,049	8,333	3,665	1,051
Community Service	16,685	3,417	2,089	1,179
Others (n.e.s)	1,836	923	394	519
Total GDP	145,751	73,131	52,348	19,272

2. 2010 (Forecast)

- Low case -				
	CMR	Colombo	Gampaha	Kalutara
Agriculture, Forestry & Fishing	3,564	601	1,546	1,417
Mining & Quarry	732	318	227	187
Manufacturing	75,886	36,509	32,994	6,383
Construction	13,393	5,557	5,015	2,821
Electricity, Gas & Water	3,043	1,488	1,057	498
Transport, Storage & Communication	26,597	12,500	10,021	4,076
Trade	42,758	22,787	13,265	6,706
Banking, Insurance & Real Estate	18,100	11,439	5,201	1,460
Community Service	7,780	3,977	2,431	1,372
Others (n.e.s)	2,276	1,144	488	644
Total GDP	194,129	96,320	72,245	25,564

3. 2020 (Forecast)

- Low case -		(Continued)			
	CMR	Colombo	Gampaha	Kalutara	
Agriculture, Forestry & Fishing	4,607	777	1,998	1,832	
Mining & Quarry	849	368	264	217	
Manufacturing	127,859	59,596	57,719	10,544	
Construction	21,728	8,994	8,010	4,724	
Electricity, Gas & Water	4,803	2,331	1,676	796	
Transport, Storage & Communication	46,838	22,096	17,623	7,119	
Trade	68,775	37,135	20,647	10,993	
Banking, Insurance & Real Estate	31,874	20,648	8,817	2,409	
Community Service	11,456	5,856	3,580	2,020	
Others (n.e.s)	3,502	1,760	752	990	
Total GDP	322,291	159,561	121,086	41,644	

Source: Consultant forecast

4.3 Forecast of CMR Population by DS Division

4.3.1 Forecasting Methods

1) Outline of Method

As shown in Tab. 4.7, the Urban Development Authority (UDA) has made population projections for the CMR DS Divisions by case. Natural Low Growth Case, Natural High Growth Case and Growth Center Case. The former two cases correspond to the cases with different natural growth rates (low, high) in the DS Division concerned. The last case reflects population growth upon the realization of growth centers proposed by UDA.

With regard to the above cases, the Study Team has decided to adopt the UDA's Natural High Growth Case as a Low Case and the UDA's Growth Center Case as a High Case for the Team's.

2) Analysis on the UDA's Projections

Population growth rates at the CMR level and the CMR's shares in regard to the whole country (Sri Lanka) are summarized in Tab. 4.6.

Tab. 4.6 Growth Rates and Shares of Population at CMR Level
- UDA's Projection -

1. Population Growth Rates (% / annum)

	1996 2005	2005 2010	2010 2020	1996 2020
Natural Low Case	0.74	0.48	0.65	0.65
Natural High Case	1.88	1.44	0.97	1.41
Growth Center Case			2.00	2.24
Sri Lanka Standard case *1	0.99	0.90	0.69	0.85

Note *1 : Standard case, Department of Census and Statistics.

2. Shares of the Population (%)

	Natural Low	Natural High	Growth Center	Sri Lanka Natural *2
1996	25.8	25.8	25.8	100.0
2005	25.2	27.9		100.0
2010	24.7	28.7	31.6	100.0
2020	24.6	29.5	35.9	100.0

Note *2: Consultant's estimate of population for the standard case is as follows:

(1000 persons)

1996:	18,111	2010:	20,691
2005:	19,782	2020:	22,174

The following facts can be pointed out from the above Tables:

(1) The Sri Lanka Standard Case is very close to that of the Natural Low Case, and both cases are much less than the Growth Center Case as compared to the Natural High Case. This is the reason for adopting the Natural High Case as the Low Case for the Team's forecast.

(2) Growth Center Case,

-Growth seems a little high taking into account the National Development Policy *3, though it is allowable from viewpoint of future CMR Economic Growth (see Tab. 4-6).

-The CMRSP points out that economic growth in the CMR of 8% / annum for the coming 10 – 15 years is requisite to the realization of the CMRSP around 2010 (see CMRSP, Vol. 1, p79). As discussed in Section 4-2, the Study Team supposes the realization of the required economic growth to be very difficult, implying that the realization of the Growth Centers around 2010 is also a little unrealistic. This implies that the Growth Center Case by itself is not suitable to be adopted, as the Study Team's forecast, but suitable as a higher case for the Team's forecast.

Note *3: The policy aims at avoidance of concentration of population to certain areas where living standard is higher than ones in the other areas by means of faster promotion of economic development in the areas where living standard is relatively lower.

Tab. 4.7 Forecast of District/DS Division Population (UDA)

District / DS Division	Actual 1981	Estimate		Forecast *3			
		1994 *1	1996 *2	2000	2005	2010	2020
Colombo District	1,699,241	2,057,354	2,009,300	2,187,200	2,366,500	2,486,100	2,785,400
				2,082,600	2,159,200	2,208,600	2,358,400
				2,294,200		2,761,300	3,348,600
Hanwella	106,402	132,775	134,300	147,300	162,200	172,100	197,000
				138,300	144,400	142,700	160,000
				144,000		180,000	244,000
Colombo	587,642	666,797	638,700	659,500	683,500	699,500	739,500
				645,500	654,500	662,400	679,900
				775,000		880,000	1,000,000
Homagama	141,752	140,825	142,000	169,500	179,000	185,300	201,200
				144,300	168,000	170,800	178,000
				166,000		200,000	234,000
Kaduwela	126,053	145,527	146,700	155,600	165,800	172,700	189,900
				149,500	153,700	156,600	164,200
				160,600		202,000	256,800
Kasbawa	120,892	163,366	162,800	188,300	214,200	231,400	274,500
				172,500	183,200	190,700	210,700
				172,600		206,000	249,000
Kalonnawa	114,338	168,070	169,400	199,300	233,300	256,000	312,800
				177,900	191,500	201,200	227,500
				181,000		214,000	253,000
Maratuwa	134,826	189,147	190,400	219,200	252,000	274,000	328,700
				198,800	212,100	221,400	246,700
				209,000		265,500	336,800
Nugegoda	367,331	450,845	425,000	448,500	476,500	495,100	541,800
				455,800	451,800	462,800	491,400
				486,000		613,800	774,000
Gampaha District	1,390,862	1,695,728	1,718,300	1,870,900	2,058,900	2,179,900	2,482,500
				1,769,600	1,840,000	1,891,700	2,029,000
				2,014,900		2,535,000	3,226,500
Attanagalla	105,781	128,571	130,200	141,300	154,200	162,700	184,000
				133,600	139,000	142,600	152,200
				133,600		152,000	190,000
Biyagama	94,237	108,991	110,000	116,800	124,600	130,000	143,000
				112,100	115,400	117,700	123,400
				112,000		168,000	208,000
Dirulapitiya	96,746	102,594	103,000	105,400	108,200	110,100	114,800
				103,900	105,200	106,100	108,300
				104,500		102,000	110,000
Gampaha	116,297	141,954	143,800	156,400	171,000	180,500	204,700
				147,700	153,600	157,700	168,500
				250,700		330,000	460,000

(continued)

District / DS Division	Actual 1981	Estimate		Forecast *3			
		1994 *1	1996 *2	2000	2005	2010	2020
Ja-Ela	119,520	140,059	141,500	151,100	162,200	169,600	188,100
				144,400	149,200	152,400	160,700
				156,000		190,000	216,000
Katana	109,476	172,365	177,600	218,000	263,800	294,200	370,400
				188,600	206,300	219,100	254,500
				188,000		266,000	389,000
Kelaniya	109,927	128,415	129,700	138,300	148,300	154,900	171,500
				132,400	136,600	139,500	147,000
				139,000		166,000	201,000
Mahara	108,391	128,993	130,500	140,300	151,600	159,100	178,000
				137,500	138,300	141,500	150,000
				136,600		152,000	175,500
Mirigama	111,294	131,965	133,400	143,200	154,400	162,000	180,600
				136,400	141,100	144,300	152,600
				137,000		144,000	154,000
Minuwangoda	107,277	125,727	127,000	135,700	145,800	152,500	169,200
				129,800	134,000	136,800	144,300
				130,000		167,000	189,000
Negombo	103,706	145,648	149,000	166,800	200,000	218,100	263,400
				155,800	166,800	174,500	195,400
				276,000		419,000	656,000
Wattawa	109,635	127,117	128,300	136,500	145,800	152,100	167,700
				130,700	134,800	137,500	144,400
				135,000		145,000	156,000
Weke	98,575	113,329	114,300	121,100	129,000	134,100	147,100
				116,500	119,700	122,000	127,700
				116,300		134,000	142,000
Kalutara District	829,700	937,183	946,300	1,028,800	1,100,700	1,269,800	1,268,500
				964,800	994,700	1,015,700	1,072,000
				1,039,000		1,235,000	1,383,000
Aglawatte	69,619	84,845	86,000	93,400	102,000	107,600	121,800
				88,200	91,800	94,300	100,700
				98,100		105,000	111,000
Bandaragama	62,184	105,055	108,800	138,400	171,800	194,100	249,800
				116,600	129,600	139,300	165,500
				120,000		164,000	206,000
Beruwela	111,479	127,790	129,000	136,500	145,200	151,100	165,600
				131,300	135,000	137,500	144,000
				136,000		147,000	158,000
Bulathsinhala	62,649	52,374	*4187,400	191,000 *4	195,500 *4	198,500 *4	206,000 *4
				189,000 *4	191,500 *4	193,200 *4	197,500 *4
				200,000 *4		255,000 *4	295,000 *4
Dodangoda	43,817	54,889	55,700	61,200	67,600	71,900	82,500
				57,400	60,000	61,800	66,700
				57,400		72,000	84,700

(continued)

District / DS Division	Actual 1981	Estimate		Forecast *3			
		1994 *1	1996 *2	2000	2005	2010	2020
Horana	122,846	134,202					
Kalutara	111,928	121,920	122,600	127,000 124,000 136,000	132,000 126,200	156,500 127,700 155,000	143,800 131,400 170,300
Mathugama	62,566	66,393	66,600	88,200 67,200 88,500	90,100 68,000	91,300 68,500 119,000	94,500 70,000 129,000
Panadura	137,694	140,976	141,200	142,500 141,600 149,000	144,000 142,300	145,000 142,800 160,000	149,500 144,000 171,000
Walallawita	44,922	48,739	49,000	50,600 49,500 54,000	52,500 50,300	53,800 50,900 58,000	57,000 52,200 58,000
Total (CMR)	3,919,803	4,690,265	4,673,900	5,086,900 4,817,000 5,348,100	5,526,100 4,993,900	5,935,800 5,116,000 6,531,300	6,536,400 5,459,400 7,958,100

Note:

- *1: - Estimate
- Source: Department of Census and Statistics
- *2: Urban Development Authority (UDA), Unpublished
- *3: -Source: UDA, Unpublished
-Upper row: High Case based on the Natural High Growth
-Middle row: Low Case based on the Natural Low Growth
-Down row: Projection case on condition of realization of proposed Growth Centers on the year 2010
- *4: Includes Horana DS Division

4.3.2 Forecasting Procedures of DS Division Population

The Study Team adopts the following procedures for predicting DS Division population, taking into account the above-mentioned characteristics and UDA's projection.

Formula 1 : 2005 Forecast:

$$P_{2005}^i = 1/2 \times \left[P_{2000}^{iH} + P_{2000}^{iG} \right] + 0.67 \times \left[1/2 (P_{2010}^{iH} + P_{2010}^{iG}) - 1/2 (P_{2000}^{iH} + P_{2000}^{iG}) \right]$$

P_{2005}^i : Population of DS Division i in 2005

P_{2000}^{iH} : Population of DS Division i in 2000 in Natural High Case

P_{2000}^{iG} : Population of DS Division i in 2000 in Growth Center Case.

0.67 : Attribution ratio of the differences between 2000 and 2005 to 2005, estimated by referring the shares shown in Table 4-6.

Formula 2: 2010 Forecast:

$$P_{2010}^i = P_{2010}^{iH} + 0.6 \times (P_{2010}^{iG} - P_{2010}^{iH})$$

0.6 : Attribution ratio of the difference between the two projection in 2010 to the one in 2010, estimated by referring differences in the economic scale expected in 2010 which would be brought about by the assumed economic growth in the CMRSP and the Study Team's forecast of economic growth.

Formula 3 : 2020 Forecast:

$$P_{2020}^{i} = P_{2020}^{i,H} + 0.8 \times (P_{2020}^{i,G} - P_{2020}^{i,H})$$

0.8 : Attribution ratio of the difference between the two projection in 2020 to the one in 2020. Estimation base is the same as the one in the Procedure 2.

The above formulas are applied only where the projected value in the Growth Center Case is higher than in the Natural High Case in the year concerned. When the former is lower than the latter (marked *1 in Tab. 4.9), the former is adopted without any modification as the Study Team's forecast.

4.3.3 Results of Forecast

Forecast of the Population by DS Division in the CMR until the year 2020 tabulated in Tab. 4.9. Characteristics of the forecast are summarized as follows:

Tab. 4.8 Characteristics of Study Team's Population Forecast**1. Population**

	1996	2005	2010	2020
CMR	4,673,900	5,786,100	6,175,600	7,649,300
Growth Center	4,673,900		6,531,300	7,958,100
Natural High	4,673,900	5,526,100	5,935,800	6,536,400
Colombo district	2,009,300	2,464,600	2,620,800	3,218,100
Growth Center	2,009,300		2,761,300	3,348,600
Natural High	2,009,300	2,366,500	2,486,100	2,785,400
Gampaha District	1,718,300	2,189,000	2,361,200	3,083,500
Growth Center	1,718,300		2,535,000	3,226,500
Natural High	1,718,300	2,058,900	2,179,900	2,482,500
Kalutara District	946,300	1,132,500	1,193,600	1,347,700
Growth Center	946,300		1,235,000	1,383,000
Natural High	946,300	1,100,700	1,269,800	1,268,500

2. Population Growth Rate (% / annum)

	CMR		Colombo District			Gompaha District			Kalutara District			
		G	H		G	H		G	H		G	H
1996 - 2005	2.40		1.88	2.30		1.83	2.73		2.03	2.02		1.69
2005 - 2010	1.30		1.44	1.24		0.99	1.53		1.15	1.06		2.90
2010 - 2020	2.16	2.00	0.97	2.07	1.95	1.14	2.70	2.44	1.31	1.22	1.14	0.00
1996 - 2020	2.07	2.24	1.41	1.99	2.15	1.37	2.47	2.66	1.54	1.47	1.59	1.23

Note: G: Growth Center Case

H: Natural High Case

3. Shares of Population in Sri Lanka (%)

	1996	2005	2010	2020
CMR	25.8	29.2	29.8	34.5
Growth Center Case	25.8		31.6	35.9
Natural High Case	25.8	27.9	28.7	29.5
Colombo district	11.1	12.5	12.7	14.5
Growth Center Case	11.1		13.3	15.1
Natural High Case	11.1	12.0	12.0	12.6
Gampaha District	9.5	11.1	11.4	13.9
Growth Center Case	9.5		12.3	14.6
Natural High Case	9.5	10.4	10.5	11.2
Kalutara District	5.2	5.7	5.8	6.1
Growth Center Case	5.2		6.0	6.2
Natural High Case	5.2	5.6	6.1	5.7
Sri Lanka *3	100.0	100.0	100.0	100.0

Note *3 : Standard Case, Department of Census and Statistics.

Population concentration in the Gampaha District will be highest and, followed by Colombo and Kalutara Districts.

DS Divisions with more than a population growth of 2.50% / annum (1996 – 2020) are as follows:

Gampaha District

- Gampaha
- Katana
- Negambo

Kalutara District

- Bandaragama
- Matugama

Tab. 4.9 Forecast of CMR District Population till the Year 2020

	Population				Average Annual Changing Rate				
	1996	2005	2010	2020	1981 1994	1996 2005	2005 2010	2010 2020	1996 2020
COLOMBO DISTRICT	2,009,300	2,464,600	2,620,800	3,218,100	1.50	2.30	1.24	2.07	1.98
Hanwella	134,300	166,000	176,800	234,600	1.77	2.38	1.27	2.87	2.35
Colombo	638,700	765,800	807,800	947,900	0.96	2.04	1.07	1.61	1.66
Homagama	142,000	184,400	194,100	227,400	Δ 0.05	2.95	1.03	1.60	1.98
Kaduwella	146,700	177,700	190,300	243,400	1.10	2.15	1.38	2.49	2.13
Kesbewa	162,800	195,000	*1 206,000	*1 249,000	2.51	2.03	1.10	1.91	1.79
Kolonnawa	169,400	203,100	*1 214,000	*1 253,000	3.36	2.04	1.05	1.69	1.69
Moratuwa	190,400	246,900	*1 265,500	335,200	2.88	2.93	1.46	2.36	2.38
Nugegodo	425,000	525,700	566,300	727,600	1.62	2.39	1.50	2.54	2.27
GAMPAHA DISTRICT	1,718,300	2,189,000	2,361,200	3,083,500	1.57	2.73	1.53	2.70	2.47
Attanagala	130,200	145,900	*1 152,000	188,800	1.54	1.27	0.82	2.19	1.56
Biyagama	110,000	137,600	152,800	195,000	1.11	2.52	2.12	2.47	2.41
Divalapitiya	103,000	102,800	*1 102,000	*1 110,000	0.43	0.00	0.00	0.76	0.27
Gampaka	143,800	238,200	270,200	408,900	1.58	5.77	2.55	4.23	4.45
Ja-Ela	141,500	171,100	181,800	210,400	1.23	2.13	1.22	1.47	1.67
Katana	177,600	240,300	*1 266,000	385,300	4.10	3.42	2.05	3.77	3.28
Kelaniya	129,700	153,300	161,600	195,100	1.20	1.87	1.06	1.90	1.72
Mahara	130,500	146,900	*1 152,000	*1 175,500	1.36	1.32	0.68	1.45	1.24
Mirigana	133,400	141,700	*1 144,000	*1 154,000	1.33	0.67	0.32	0.67	0.60
Minuwangoda	127,000	154,800	161,200	185,000	1.23	2.22	0.81	1.39	1.58
Negombo	149,000	286,500	338,600	577,500	2.89	7.53	3.40	5.48	5.81
Wattala	128,300	141,700	*1 145,000	*1 156,000	1.14	1.11	0.46	0.73	0.82
Weke	114,300	128,200	*1 134,000	*1 142,000	1.07	1.28	0.89	0.58	0.91
KALUTARA DISTRICT	946,300	1,132,500	1,193,600	1,347,700	0.92	2.02	1.06	1.22	1.48
Agalawatta	86,000	102,700	*1 105,000	*1 111,000	1.56	1.99	0.44	0.56	1.07
Bandaragama	108,800	149,500	*1 164,000	*1 206,000	4.72	3.59	1.87	2.30	2.70
Baruwala	129,000	143,400	*1 147,000	*1 158,000	1.04	1.18	0.50	0.72	0.85
Bulathsinhala	*2 52,600	60,800	65,300	77,900	Δ 1.17	1.62	1.44	1.78	1.65
Dodangoda	55,700	67,200	72,000	84,300	1.80	2.11	1.39	1.59	1.74
Horana	*2 134,800	155,600	167,100	199,300	0.66	1.61	1.44	1.78	1.64
Kalutara	122,600	148,700	*1 155,000	165,000	0.64	2.17	0.83	0.63	1.25
Matugama	66,600	99,600	107,900	122,100	0.44	4.57	1.61	1.24	2.56
Panadura	141,200	150,300	154,000	166,300	0.17	0.70	0.49	0.77	0.68
Walallawita	49,000	54,700	56,300	57,800	0.61	1.23	0.58	0.26	0.69
WESTERN PROVINCE	4,673,900	5,786,100	6,175,600	7,649,300	1.40	2.40	1.31	2.16	2.07

Note *1 : adopts the UDA's Natural High Growth case as the low case and the UDA's Growth Center case as the high case for the Team's forecast

*2 : allocates the projected total population of Divisions Bulathsinkera and Horana into the two divisions with the composition ratios of the populations of the two Divisions in 1996

4.4 Forecast of Employment by DS Division in the CMR

4.4.1 Outline of Forecasting Method

1) Present Situation of the Forecast and the Relating Data and Information.

In order to forecast employment by DS Division, the following fundamental data is indispensable;

- (1) Employment by DS Division and industrial structure (Employment structure) in 1998 (Base year for the forecast).
- (2) Future improvements in labor productivity by industrial sector, and
- (3) Future GDP by DS Division and industrial sector.

However, only the following data and information are available for forecasting:

- (1) Employment by DS Division in 1994,
- (2) Employment structures for several DS Divisions in 1996, but not quantified, and
- (3) GDP forecasts by District and industrial sector till the year 2020.

2) Factors/Issues Taken into Consideration in Forecast

Considering the above-mentioned situation, the following factors/issues are taken into account:

- (1) Future improvement in the labor productivity by industrial sector should be considered; otherwise, GDP forecasts will lead an overestimate of employment.
- (2) Forecasted employment at an aggregated level should be consistent with forecasted population.
- (3) The employment structure in some DS Divisions should be reflected in the forecasts as much as possible.

3) Forecasting Method for High and Low Cases

As shown in Section 4-2, GDP by District and industrial sector are forecasted for three cases (Base, High, and Low Cases). The Study Team has made forecasts for employment by DS Division using these cases as well in the following manners:

The Base Case is first forecasted and then the High and Low Cases are forecasted applying the following formula:

$$E_t^{ki} = m_t^k \times E_t^{B,i}$$

- E_t^{ki} : Employment in DS Division i for Case k (High or Low),
 E_t^{Bi} : Employment in DS Division i for Base Case,
 m_t^k : Magnitude of GDP after discounting for future improvements in labor productivity for Case k in relation to the Base Case.

4.4.2 Forecasting Procedure of Employment by DS Division

Taking into consideration the issues presented in Section 4.4.1, the forecast is made via the following procedures. The outline of the procedures is shown in Fig. 4.5.

Procedure 1 : Estimate of Employment by DS Division in 1998.

The estimated is made by applying the average annual growth rates for employment for the period 1981 – 1994 and tabulated in Tab. 4.10.

Tab. 4.10 Estimate of Employment by Division in the CMR in 1998

	1981	1994	1998	A.A.I.R.(%/annum)	
				1981 { 1994	1994 { 1998
COLOMBO DISTRICT	507,474	678,793	746,630	2.41	2.41
Hanwella	29,079	46,126	53,430	4.19	3.74
Colombo	191,221	197,300	195,710	0.23	△ 0.20
Homagama	38,637	48,447	51,160	1.81	1.37
Kaduwella	34,556	50,843	57,050	3.37	2.92
Kesbawa	33,675	59,675	72,680	5.51	5.05
Kolonnawa	28,264	51,811	64,170	5.91	5.49
Moratuwa	38,944	64,388	75,960	4.67	4.22
Nugegodo	113,098	159,841	176,470	2.95	2.51
GAMPAHA DISTRICT	346,971	576,743	693,850	4.73	4.73
Attanagala	25,461	37,672	42,960	3.43	3.34
Biyagama	22,087	36,548	43,730	4.68	4.59
Divalapitiya	25,356	37,585	42,880	3.44	3.35
Gampaka	29,814	45,737	52,930	3.81	3.72
Ja-Ela	29,014	47,878	57,190	4.64	4.54
Katana	34,737	69,275	90,820	7.10	7.00
Kelaniya	29,045	41,740	47,030	3.12	3.03
Mahara	25,461	44,156	53,970	5.24	5.15
Mirigana	26,264	45,024	54,740	5.10	5.01
Minuwangoda	26,829	48,349	60,200	5.73	5.63
Negombo	24,543	46,250	58,890	6.32	6.23
Wattala	27,104	39,914	45,430	3.38	3.29
Weke	22,697	36,472	43,080	4.34	4.25
KALUTARA DISTRICT	207,908	286,859	319,240	2.71	2.71
Agalawatta	18,000	27,806	31,880	3.89	3.48
Bandaragama	14,718	31,981	43,440	8.38	7.96
Baruwala	23,432	33,258	36,840	3.00	3.59
Bulathsinhala	19,360	19,457	19,180	0.04	△ 0.36
Docangoda	11,775	16,538	18,240	2.89	2.48
Horana	34,215	44,446	47,610	2.14	1.73
Kalutara	30,148	33,683	34,280	0.84	0.44
Matugama	15,367	21,370	23,490	2.79	2.39
Panadura	29,998	43,287	48,270	3.17	2.76
Walallawita	10,195	14,463	16,010	2.99	2.57
WESTERN PROVINCE	1,062,353	1,542,395	1,759,720	3.23	3.35

Procedure 2: Calculation of GDP by District and industrial sector till 2020, which is discounted by improvements in labor productivity by industrial sector in future. The calculation is required to avoid an overestimation of employment, which would be brought about by the before-discount GDP. The after-discount GDP is facilitated as basis for the calculation of average annual growth rates of employment in future.

The Study Team assumes the following improvements in labor productivity by industrial sector, based on and taking into consideration the following issues:

- (1) General knowledge on improvements in the labor productivity by industrial sector,
- (2) The industrial structure in Sri Lanka, and
- (3) Consistency between employment at aggregate levels based on assumed improvements and forecasted GDP, and forecasted population

Tab. 4.11 Improvement of Labor Productivity by Industrial Sector (unit: %/annum)

Agriculture, Forestry & Fishing	: 1.0	Transport, Storage & Communication	: 2.5
Mining & Quarring	: 1.0	Trade	: 2.5
Manufacturing	: 3.5	Baking, Insurance & Real Estate	: 3.5
Construction	: 2.0	Community Service *	: 1.5
Electricity, Gas & Water	: 2.5	Others (n.c.s)	: 1.0

Note * : "Ownership of Dwelling" plus "Public Administration & Defence".

Source: Consultant's estimate.

Procedure 3 : Forecast of Employment by District

There is the possibility that the sum of the employment by DS Division which is forecasted by applying individual growth rates in future to the DS Divisions concerned, may diverge from the expected range of values. Therefore, the forecast by District is used as a control total.

Employment is forecasted by applying the following formula:

$$E_t^j = m_t^j \times E_{1998}^j$$

E_t^j : Employment in District j in year t

E_{1998}^j : Employment in District j in 1998.

m_t^j : Magnitude of the After – discount GDP of District j in year t against the after – discount GDP in 1998.
 (= $GDP_t^{jA} / GDP_{1998}^{jA}$, A : after – discount).

Procedure 4 : Re-calculation of GDP by industrial sector (output of the Procedure 2)

As mentioned in Section 4.4.1, the Study Team tries to reflect the employment structure of DS Divisions in its forecast.

The employment structure is reflected in the following formula:

$$GDP_t^{iA} = \sum_l w_{1996}^l \times GDP_t^{jLA}$$

GDP_t^{iA} : After – discount GDP in DS Division i in year t. The GDP is one for calculating the average annual growth rate of the employment in DS Division i, and not the GDP in the DS Division i.

w_{1996}^l : Weight to be applied to the GDP_t^{jLA} of Industry l. The weights are estimated in 1996.

GDP_t^{jLA} : After-discount GDP of Industry l in District j in year t.

The weights are assumed based on the following information and data and finalized applying checking their consistency. They are tabulated in Tab. 4.12.

- (1) “Major Employment Areas and Types of Employment of the CMR”
(CMRSP, Vol 3, p36, Table 2.24, not quantified),
- (2) “Industrial Employment in Urban Center – CMR”
(CMRSP, Vol. 3, p37, Table 2.25), and
- (3) Employment by DS Division in 1998 (see Table 4-10)

**Tab. 4.12 Estimate of Employment Shares by DS Division
in the CMR and Industrial Sector in 1996**

Employment Shares by Industrial Sector (unit :%)					
Colombo District					
Hanwella	Agricul: 70	Trade : 30			
Colombo	Industry:40	Transport: 5	Trade : 25	Banking : 5	Community:25
Homagama	Industry:40	Community:60			
Nugegoda	Industry:20	Transport: 10	Community:70		
Gampaha District					
Biyagama	Industry:90	Trade : 10			
Gampaha	Trade :50	Community:50			
Ja-Ela	Industry:60	Other : 40			
Katana	Industry:90	Transport: 10			
Weke	Agricul: 60	Trade : 40			
Kalutara District					
Harana	Industry:20	Trade : 80			
Kalutara	Trade :50	Community:50			

Source : Consultant's estimate.

Note : Agricul : Agriculture, Forestry & Fishing.

Industry : "Mining & Quarry", "Manufacturing", and "Construction".

Transport : Transport, Storage & Communication.

Trade : Trade

Banking : Banking, Insurance & Real Estate.

Community: Community service ("Ownership of Dwelling" and "Public, Administration & Defense")

Others : Others (m,e,s)

Procedure 5 : Forecast of Employment by DS Division

Procedure 5 – 1 : First Trial of Forecast

The first trial of the forecast is carried out applying the following formula:

$$E_t^i = n_t^i \times E_{1998}^i$$

E_t^i : Employment i DS Division i in year t.

E_{1998}^i : Employment in DS Division i in 1998 (see Tab. 4.10)

n_t^i : Magnitude of the after – discount GDP in year t against the after – discount GDP in 1998.

As to the eleven DS Divisions shown in Tab. 4.12, the results of Procedure 4 are used to calculate the n^i 's, while for the remaining DS Divisions, the after – discount GDP of the District concerned are applied due to a lack of information on the employment structure in the DS Divisions concerned.

Procedure 5 – 2: Finalization of the Forecast

The E_t^i 's that belong to District j are adjusted so that the sum of E_t^{ij} is equivalent to E_t^j (the results of Procedure 3), using the composition ratios calculated for E_t^j (the results of Procedure 5 – 1).

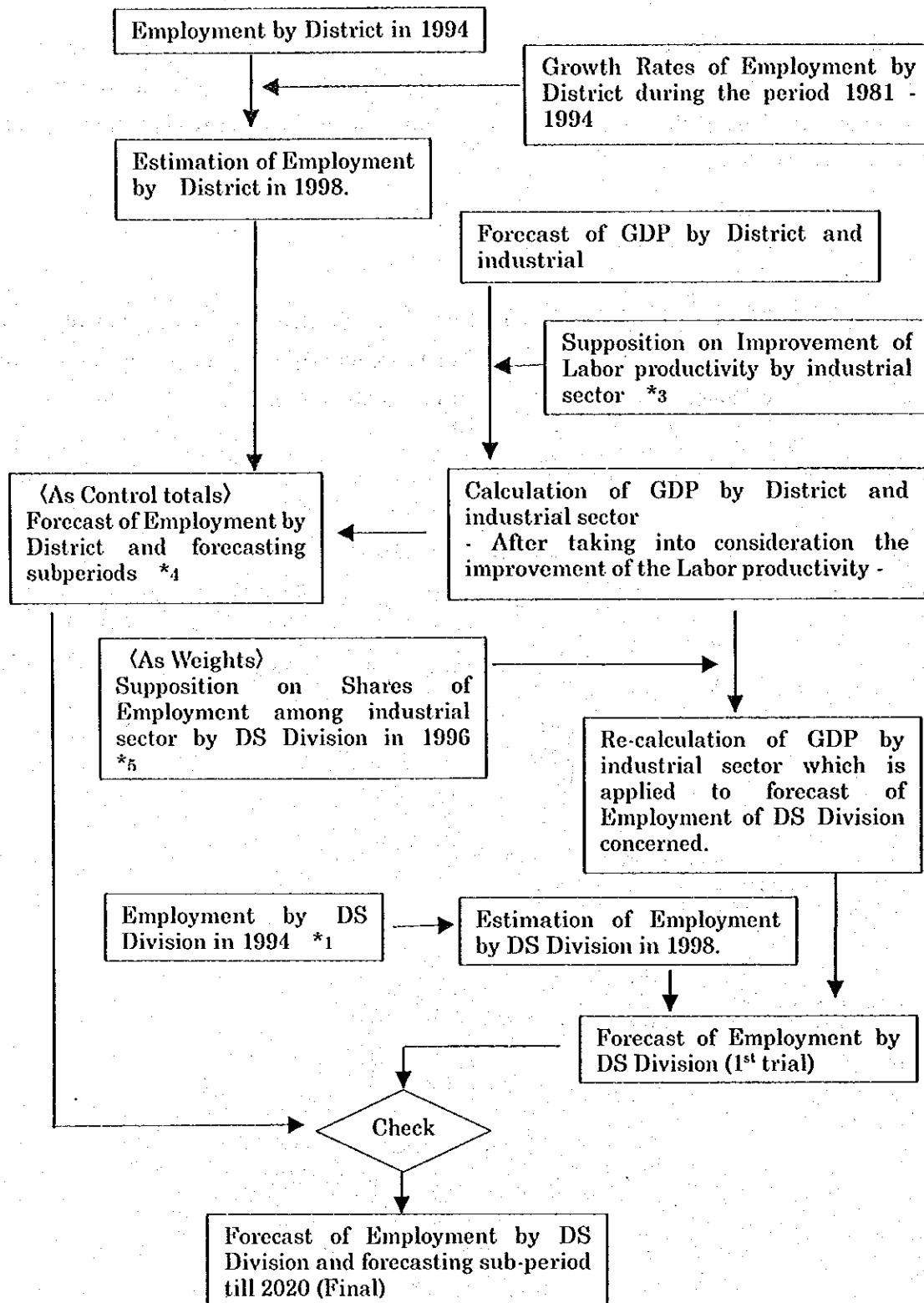


Fig. 4.5 Estimating and Forecasting Procedures of Employment by DS Division in the CMR.

- Note *1 : Source : University of Moratawa.
- *2 : Consultant's forecasts for three development scenarios.
- *3 : Supposition is made based on:
- Analysis on the relationship of Growth Rates of GDP and employment at CMR in the past, and
 - Knowledge of the consultant on the improvement of the labor productivity by industry.
- *4 : After checking sum of the employment forecasted by District from viewpoints of forecasts of population, labour force and unemployment Rate.
- *5 : Supposition is made based on the following information and data:
- "Major Employment Areas and Types of Employment of the CMR". (CMRSP, Vol. 3, p36, Table 2.24), and
 - "Industrial Employment in urban Center -- CMR" (CMRSP, Vol. 3, p36, Table 2.25).
 - Employment by DS Division in 1998 (see Tab. 4.10)

4.4.3 Results of Forecast

The results of the forecasts for the three cases, which are obtained applying the above-mentioned forecasting procedures, are tabulated in Tab. 4.13 and Tab. 4.14.

The ratios of CMR employment to population by the case in 2020 are as follows:

Base Case : 48.9%
 High Case : 58.5%
 Low Case : 40.6%

The labour participation ratio in 2020 is estimated at around 50%. Accordingly, the Base Case corresponds to an almost perfect employment situation in 2020 and around 10% unemployment situation will occur in the Low Case in 2020. On the other hand, the High Case would not be realized without about 647,000 commuters coming into the CMR from outside the Province.

Tab. 4.13 Forecast of Employment by District in the CMR and Economic Scenario

I. Base Case

I-1 Employment

	1998	2005	2010	2020
CMR	1,759,720	2,207,050	2,691,970	3,738,130
Colombo District	746,630	935,730	1,125,930	1,543,810
Gampaha District	693,850	869,440	1,073,810	1,481,280
Kalutara District	319,240	401,880	492,230	713,040

I-2 Average Annual Growth Rate (% / annum)

	CMR	Colombo	Gampaha	Kalutara
1998 - 2005	3.29	3.28	3.28	3.37
2005 - 2010	4.05	3.77	4.31	4.14
2010 - 2020	3.34	3.21	3.27	3.78
1998 - 2020	3.48	3.36	3.51	3.72

II. High Case

II-1 Employment

	1998	2005	2010	2020
CMR	1,759,720	2,295,360	2,960,010	4,471,160
Colombo District	746,630	973,940	1,239,750	1,849,960
Gampaha District	693,850	904,720	1,182,110	1,775,140
Kalutara District	319,240	416,700	538,150	846,060

II-2 Average Annual Growth Rates (% / annum)

	CMR	Colombo	Gampaha	Kalutara
1998 - 2005	3.87	3.87	3.86	3.88
2005 - 2010	5.22	4.94	5.49	5.25
2010 - 2020	4.21	4.08	4.15	4.63
1998 - 2020	4.33	4.21	4.36	4.53

III. Low Case

III-1 Employment

	1998	2005	2010	2020
CMR	1,759,720	2,106,020	2,458,200	3,106,540
Colombo District	746,630	898,810	1,026,670	1,280,030
Gampaha District	693,850	819,650	979,380	1,228,100
Kalutara District	319,240	387,560	452,150	598,410

(continued)

III-2 Average Annual Growth Rates (% / annum)

	CMR	Colombo	Gampaha	Kalutara
1998 - 2005	2.60	2.69	2.41	2.81
2005 - 2010	3.14	2.70	3.63	3.13
2010 - 2020	2.37	2.23	2.29	2.84
1998 - 2020	2.62	2.48	2.63	2.90

Source: Consultant's estimate and forecast.

Tab. 4.14 Estimate of Employment by DS Division in the CMR

1. Base case					
	1998	2005	2010	2020	A.A.C.R 1998 { 2020
COLOMBO DISTRICT	746,630	935,730	1,125,930	1,543,810	3.36 %PA
Hanwella	53,430	69,450	85,290	120,770	3.78
Colombo	195,710	245,520	295,520	401,810	3.32
Homagama	51,160	62,380	73,540	97,280	2.96
Kaduwellla	57,050	72,920	88,570	123,620	3.58
Kesbewa	72,680	92,640	112,840	157,490	3.58
Kolonnawa	64,170	81,790	99,630	139,050	5.58
Moratuwa	75,960	96,820	117,940	164,600	3.58
Nugegodo	176,470	214,410	252,600	339,190	3.01
GAMPAHA DISTRICT	693,850	869,440	1,073,810	1,481,280	3.51
Aftanagala	42,960	54,020	66,880	92,720	3.56
Biyagama	43,730	54,780	68,110	94,300	3.56
Divalapitiya	42,880	53,920	66,750	92,550	3.56
Gampaka	52,930	65,520	79,100	105,820	3.20
Ja-Ela	57,190	71,610	89,010	123,380	3.56
Katana	90,820	113,920	141,860	197,220	3.59
Kelaniya	47,030	59,140	73,210	101,500	3.56
Mahara	53,970	67,870	84,010	116,490	3.56
Mirigana	54,740	68,840	85,220	118,150	3.56
Minuwangoda	60,200	75,700	93,720	129,940	3.56
Negombo	58,890	74,050	91,680	127,100	3.56
Wattala	45,430	57,130	70,720	98,060	3.56
Weke	43,080	52,940	63,540	84,050	3.08
KALUTARA DISTRICT	319,240	401,880	492,230	713,040	3.72
Agalawatta	31,880	40,210	49,230	71,980	3.77
Bandaragama	43,440	54,800	67,070	98,080	3.77
Baruwala	36,840	46,470	56,880	83,170	3.77
Bulathsinhala	19,180	24,200	29,610	43,300	3.77
Dodangoda	18,240	23,000	28,160	41,180	3.33
Horana	47,610	60,450	74,980	106,050	3.71
Kalutara	34,280	42,040	50,750	71,130	3.37
Matugama	23,490	29,630	36,270	53,040	3.77
Panadura	48,280	60,890	74,530	108,970	3.77
Walallawita	16,010	20,190	24,750	36,140	3.77
WESTERN PROVINCE	1,759,720	2,207,050	2,691,970	3,738,130	3.48

2. High case					
	1998	2005	2010	2020	A.A.C.R 1998 ~ 2020
COLOMBO DISTRICT	746,630	973,940	1,239,750	1,849,960	4.21 %PA
Hanwella	53,430	72,290	93,910	144,720	4.63
Colombo	195,710	255,540	325,400	481,990	4.18
Homagama	51,160	64,930	80,970	116,570	3.81
Kaduwella	57,050	75,690	97,520	148,130	4.43
Kesbewa	72,680	96,420	124,250	188,720	4.43
Kolonnawa	64,170	85,130	109,700	166,620	4.43
Moratuwa	75,960	100,770	129,860	197,240	4.43
Nugegoda	176,470	223,170	278,140	406,450	3.87
GAMPAHA DISTRICT	693,850	904,720	1,182,110	1,775,140	4.36
Attanagala	42,960	56,210	73,630	111,110	4.41
Biyagama	43,730	57,000	74,980	113,010	4.41
Divalapitiya	42,880	56,110	73,480	110,910	4.41
Gampaka	52,930	68,180	87,070	126,810	4.05
Ja-Ela	57,190	74,520	97,990	147,860	4.41
Katana	90,820	118,540	156,170	236,340	4.44
Kelaniya	47,030	61,540	80,590	121,640	4.41
Mahara	53,970	70,620	92,480	139,600	4.41
Mirigana	54,740	71,630	93,810	141,590	4.41
Minuwangoda	60,200	78,770	103,170	155,720	4.41
Negombo	58,890	77,060	100,930	152,320	4.41
Wattala	45,430	59,450	77,850	117,510	4.41
Weke	43,080	55,090	69,950	100,720	3.94
KALUTARA DISTRICT	319,240	416,700	538,150	846,060	4.53
Agalawatta	31,880	41,690	53,820	85,410	4.58
Bandaragama	43,440	56,820	73,330	116,380	4.58
Baruwala	36,840	48,180	62,190	98,690	4.58
Bulathsinhala	19,180	25,090	32,370	51,380	4.58
Dodangoda	18,240	23,850	30,790	48,860	4.58
Horana	47,610	62,680	81,970	125,830	4.52
Kalutara	34,280	43,590	55,490	84,400	4.18
Matugama	23,490	30,720	39,650	62,930	4.58
Panadura	48,280	63,140	81,480	129,300	4.58
Walallawita	16,010	20,940	27,060	42,880	4.58
WESTERN PROVINCE	1,759,720	2,295,360	2,960,010	4,471,160	4.33

3. Low case

	1998	2005	2010	2020	A.A.C.R 1998 { 2020
COLOMBO DISTRICT	746,630	898,810	1,026,670	1,280,030	2.48 %PA
Hanwella	53,430	66,710	77,770	100,130	2.90
Colombo	195,710	235,830	269,470	333,160	2.45
Homagama	51,160	59,920	67,060	80,660	2.09
Kaduwella	57,050	69,850	80,760	102,500	2.70
Kesbewa	72,680	88,990	102,890	130,580	2.70
Kolonnawa	64,170	78,560	90,850	115,290	2.70
Moratuwa	75,960	93,000	107,540	136,480	2.70
Nugegodo	176,470	205,950	230,330	281,230	2.14
GAMPAHA DISTRICT	693,850	819,650	979,380	1,228,100	2.63
Attanagala	42,960	50,930	61,000	76,870	2.68
Biyagama	43,730	51,640	62,120	78,180	2.68
Divalapitiya	42,880	50,830	60,880	76,730	2.68
Gampaka	52,930	61,770	72,150	87,730	2.32
Ja-Ela	57,190	67,510	81,180	102,290	2.68
Katana	90,820	107,400	129,380	163,510	2.71
Kelaniya	47,030	55,750	66,770	84,150	2.68
Mahara	53,970	63,980	76,620	96,580	2.68
Mirigana	54,740	64,900	77,730	97,960	2.68
Minuwangoda	60,200	71,360	85,480	107,730	2.68
Negombo	58,890	69,810	83,620	105,380	2.68
Wattala	45,430	53,860	64,500	81,300	2.68
Weke	43,080	49,910	57,950	69,690	2.21
KALUTARA DISTRICT	319,240	387,560	452,150	598,410	2.90
Agalawatta	31,880	38,780	45,220	60,410	2.95
Bandaragama	43,440	52,850	61,610	82,310	2.95
Baruwala	36,840	44,810	52,250	69,800	2.95
Bulathsinhala	19,180	23,340	27,200	36,340	2.95
Dodangoda	18,240	22,180	25,870	34,560	2.95
Horana	47,610	58,300	68,870	89,000	2.88
Kalutara	34,280	40,540	46,620	59,700	2.55
Matugama	23,490	28,570	22,320	44,510	2.95
Panadura	48,280	58,720	68,460	91,450	2.95
Walallawita	16,010	19,470	22,730	30,330	2.95
WESTERN PROVINCE	1,759,720	2,106,020	2,458,200	3,106,540	2.62