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# 1. スリ・ランカ国政府要請書

## APPLICATION FOR THE TECHNICAL CO-OPERATION BY THE GOVT. OF JAPAN

### 1. Project Digest

- 1) Project Title: Preparation of Storm Water Drainage Master Plan for the Colombo Metropolitan Region. (CMR) - Phase I
- 2) Location: Overall project is located in the CMR area which covers the entire Western Province - comprising of the districts of Colombo, Gampaha & Kalutara.

#### Phase I Project Area

As the CMR is spread over a vast area and the scope of the work is big it is now proposed to consider a limited area within the CMR for phase I of the project.

Project area is bounded to the North by Dandugam Oya (stream). to the South by Bolgoda Lake North, to the East by outer circular road of RDA/CDA and to the West by the coast line.

Location map is annexed (Please see annexures 1 & 2)

### 3) Implementing Agency:

- a) Name of the Agency:

Sri Lanka Land Reclamation & Development Corporation under the Ministry of Housing & Urban Development

- b) No. of the staff of the agency:

Chairman  
General Manager  
Deputy General Manager - 08  
Assistant General Manager - 10  
Chief Engineer - 07  
Senior Engineer - 07  
Engineer - 30

- c) Budget allocation of the agency :Rs.500 million

- d) Organisation chart :see annexure 3

### 4) Justification of the Project

- a) Present conditions of the sector

The Colombo Metropolitan Region. (CMR) is a low lying coastal plain subject to frequent flooding.

The urbanization of the Colombo Metropolitan Region, (CMR) will increase the incidence of flooding in an area already subject to frequent natural inundation. This situation can be mitigated by having an effective storm water management system. Hence it is imperative to prepare a storm water drainage master plan in accordance with the proposed "Colombo Metropolitan Regional Structure Plan" prior to development takes place as planned.

Flooding causes considerable economic disruption and social hardship to a high proportion of the population, particularly the urban poor who live in low lying areas which routinely flood. It results in damage to property, premature deterioration of roads and other infrastructure, and reduces the land area available for development. The presence of flood water presents a major health hazard by encouraging the breeding of mosquitoes and contaminating clean water supplies. It is the most critical environmental problem in the region.

b) Sectoral development policy of the national govt.

To institute a regional storm water management plan which is fully integrated into the overall development plan of the CMR to ensure sustainability of the environment.

c) Problems to be solved in the sector:

- 1) Inadequacy of storm water drainage which results in flooding, to be overcome and preparation of a suitable storm water drainage system to cater for the present drainage problems and future development envisaged in the project area.
- 2) Adhoc filling of lowlands, marshy lands and abandoned paddy lands to be controlled. Planned development may be allowed after preparing a well designed storm water drainage system.
- 3) Low income shanty dwellers who encroach the canal banks & marshes have to be relocated & upgraded in a better environment.
- 4) Management & maintenance of the improved storm water drainage system.

d) Outline of the project:

Development of a region requires preparation of a comprehensive plan which includes storm water drainage and other infrastructure.

To study the existing storm water drainage system and flood problems in the project area and preparation of an effective storm water drainage master plan considering the future development envisaged in the area.

Main components of the project are:

1. Preparation of a storm water drainage master plan after reviewing the urban development envisaged in the CMR structure plan. This master plan will also identify wetland areas for development, storm water detention, conservation and bio diversity.
2. Carrying out feasibility studies for rehabilitation and improvements to the storm water drainage system in the project area.
3. Studies for rehabilitation and restoration of lakes and water bodies.

e) Purpose (short - term objective) of the Project:

- 1) Management of Storm Water drainage and flood control in the region.
- 2) Improvement of water quality and environmental conditions of the region.

f) Goal (long - term objective) of the project:

This region is planned to develop rapidly. It is intended that the development should be on an environmentally sound and sustainable basis. Ad-hoc filling of marshes and thus creation of drainage and flood problems had been witnessed in the region in the past. This has also created the mosquito menace and wider spread of Filariasis, Malaria, Diarrhoea, Encephalitis and other vector diseases thus creating health hazards. Development of high land areas for urbanization will also result in rapid run-off of storm water thus increasing the flood problems.

Hence it is imperative to prepare master drainage plans to prevent undue flooding and identify areas which will have to be preserved for flood detention and for ecological balance. Improvements to waterways and reservations to be kept must also be identified to allow efficient flood discharge. Room for future improvements and maintenance requirements should also be considered in determining the reservations of the waterways and water bodies. This process will also help to identify areas that can be allowed to be reclaimed and developed without causing drainage & flood problems.

The development of an area not only includes the creation of new facilities such as housing, infrastructure, industry and recreation, but also the conservation of existing facilities. The ecological value of the area must be considered as well as the economic activities and social well being of the people in the area.

With a view to arresting any further unplanned development, SLLRDC has stepped forward to formulate an environmentally sound and sustainable land development plan for the region.

g) Prospective beneficiaries:

4.6 Million population within the CMR, (which accounts for 30% of the population of Sri-Lanka - 1994) which will increase upto 5.8m by year 2010.

- 1) Low income families of the area, due to reduction of health hazards and improvement of the environment.
- 2) Children living in the area, due to reduction of health hazards and improvement of the environment.
- 3) Residents in the area, due to the improvement of the environment & reduction in flood damage.
- 4) Farmers in the area, due to improved drainage conditions and reduction in flood damage.
- 5) Fisher folk, due to increased income resulting from improved water quality.
- 6) Industrialists, investors, property developers, as a result of creation of buildable land.
- 7) Unemployed youth due to employment generation as a result of setting up of industries. commercial ventures in the newly reclaimed land.
- 8) Country as a whole, due to paving way for planned development in the CMR & hence income generation and improved environment & health conditions.

h) The project's priority in the National Development plan/Public Investment Program:

The CMR accounts for 66% of the urbanization and attributes to 45% of the national income. Therefore projects within the CMR is a top priority in the Sri Lankan national context.

5) Desirable or scheduled time of the commencement of the project:

The 1st quarter of 2000

6) Expected funding sources and/or assistance:

JICA Assistance, O.E.C.F

7) Other relevant projects : None

## 2. Terms of Reference of the proposed study

### 1) Necessity/Justification of the Study

Lack of knowledge on hydrology and hydraulics of the CMR prevents the formulation of proper development plans in an environmentally friendly manner. At present, adhoc reclamation of marshes and unplanned development of high land areas take place, creating drainage and flood problems. Therefore, it is necessary to carry out hydrological, hydraulic and environmental studies and prepare storm water drainage master plans for alleviation of existing drainage problems and facilitating multidisciplinary and integrated development of the region in the future.

### 2) Necessity/Justification of the Japanese Technical Co-operation.

Our Corporation is functioning by it's own funds. Therefore it is constrained with funds to embark on massive projects of this nature. Govt. of Sri Lanka also finds it difficult to fund studies of this nature for entire Sri Lanka. We have the mandate to review applications received from the public for reclamation of marshes and grant approval with drainage proposals. At the moment we consider applications received from the project areas on case by case basis and not on an overall Master Plan basis. Lack of the Master Drainage Plan has been a long felt need. Hence the most appropriate agency from whom the funds could be sought for this venture is the Japanese Technical Co-operation Fund as the Japanese Govt. (OECF) has already stepped in to fund Greater Colombo Flood Control and Environment Improvement Project Phases 1, 2 & 3.

### 3) Objectives of the Study

To study the storm water drainage within the project area and prioritize areas and carry out detailed feasibility study.

### 4) Area to be covered by the study :

Storm water drainage, flooding, restoration of lakes, water bodies and canals, within the project area of CMR.

### 5) Scope of the study:

- a) Data collection - periodic collection of water samples at selected points and chemical analysis of same. Regular water level measurements at selected points. Flow discharge measurements at selected points including establishment of rating curves. Surveys - Topographic and Hydrographic Surveys.
- b) Carry out hydrological and hydraulic modelling and study drainage & flood problems & recommend solutions.
- c) Study all the significant inflows to the canals and lakes in terms of their pollution loading and recommend ways of

reducing pollution levels. Rehabilitation and restoration of polluted waterways and water bodies.

- d) Study the ways of improving the performance at sea outfalls and recommend suitable solutions.
- e) Prepare Initial Environment Examination Reports (IEER).
- f) Preparation of Master Drainage Plans and feasibility reports.

6) Study schedule:

To be determined by the Study Team

7) Expected Major outputs of the study:

Master plan for Surface drainage in the CMR, which will yield the following outcomes.

- 1) Flood alleviation in the existing residential, industrial & commercial areas.
  - 2) Facilitates planned development in the project area of the CMR to set up satellite towns, housing estates, industrial parks and commercial ventures which will provide employment opportunities and promote growth rate of the economy.
  - 3) Identification of wetland areas for conservation, storm water detention and bio diversity.
  - 4) Improved health condition of the population in the project area.
- 8) Request of the study to other donor agencies, if any: None
  - 9) Other relevant information, if any: None

3. Facilities and Information for the Study team:

- (1) Assignment of counterpart personnel of the implementing agency for the study:

It is desired that a local team (engineers and scientists from SLLR&DC) undertakes the study under the guidance of foreign experts.

- (2) Available data, information, documents maps etc. related to the study:
  - 1) 1:50000 and 1:63360 scale topo sheets are available on which contour lines are drawn at 20m intervals.
  - 2) NOPLANS Scale 1:1000 & 1:2000, for part of the project area.



3) Continuous rainfall records of Colombo Meteorological Station and Katunayake International Airport are available.

4) Bolgoda Basin Research Study

Rainfall data, water level and discharge measurements, over a period of 3 to 5 years, and cross sections of rivers of Bolgoda basin are available. Longitudinal sections, cross sections and details of structures of a stream in the main sub catchment are also available.

5) Kelani Ganga Flood Protection Study

6) Monthly average runoff of Attanagalu Oya is available for a couple of years

(3) Information on the Security conditions in the study Area:

This is a safe area to work.

#### 4. Global Issues (Environment, Women In Development, Poverty etc.)

(1) Environmental components of the project:

Identification of lowland marshy areas, required for storm water detention and bio-diversity, will help to conserve wetlands and prevent ad-hoc development of marshes. A properly designed drainage system will improve the water quality of the water ways and water bodies in the region. Cleaner waterways and water bodies will add to the scenic beauty of the region.

(2) Anticipated environmental impacts by the project:

No adverse impacts, only beneficial impacts.

(3) Women as main beneficiaries or not:

Reducing the health hazards due to polluted water, the mosquito menace of stagnant water ways, will greatly benefit the women of the region. Upgrading of low income communities, living on the banks of waterways and water bodies will improve the health conditions of them and decrease the diarrhoea related diseases prevalent among children. This will ease a great burden off the women's shoulders.

Improved living conditions and availability of job opportunities in the project area will have direct benefits to the women.

(4) Project components which requires special considerations for women:

None

(5) Anticipated impacts on women caused by the project:

1) Adverse Impacts

Relocating the shanty dwellers living on canal reservations may require some adjustments to the women, due to the change of neighbourhood to live in, distance of children's schools might increase, etc.

2) Beneficial Impacts

Alleviation of floods will ease a recurrent problem and allow them to lead a more organized life style.

Facilitates employment opportunities in the industrial and commercial establishments which will be set up in the flood free environment in the CMR.

(6) Poverty Reduction Components of the Project, if any:

1) Uplifting the living standards of the poor people in the region by overall development.

2) Generation of employment directly by the implementation of the project and indirectly by way of development that will take place in the future.

(7) Any constraints against the low income people caused by the project:

Shifting from the neighbourhood they have been living for generations may need some adjustment.

5. Undertakings of the Government of (the recipient country)

In order to facilitate a smooth and efficient conduct of the study, the Government of (the recipient country) shall take necessary measures:

1) to secure the safety of the Study Team

2) to permit the members of the Study Team to enter, leave and sojourn in (the recipient country) in connection with their assignment therein, and exempt them from alien registration requirement and consular fees.

3) to exempt the Study Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of (the recipient country) for the conduct of the Study.

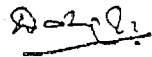
4) to exempt the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study.

- 5) to provide necessary facilities to the Study Team for remittance as well as utilization of the funds introduced in (the recipient country) from Japan in connection with the implementation of the Study.
  - 6) to secure permission or entry into private properties or restricted areas for the conduct of the Study.
  - 7) to secure permission for the Study to take all data, documents and necessary materials related to the Study out of (the recipient country) to Japan.
  - 8) to provide medical services as needed. Its expenses will be chargeable to members of the Study Team.
6. The Government of (the recipient country) shall bear claims, if any arises against member(s) of the Japanese Study Team resulting from, occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the member of the Study Team.
7. (The implementing agency) shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The Government of (the recipient country) assured that the matters referred in this form will be ensured for a smooth conduct of the development Study by the Japanese Study Team.

Signed:

Titled:

  
General Manager,

Sri Lanka Land Reclamation & Development Corporation

D. T. TALAGALA  
General Manager  
Sri Lanka Land Reclamation  
and Development Corporation  
No. 03, Sri Jayewardanapura Mawatha,  
Welikada, Rajagiriya.

Date:

Signed:

Titled:

Secretary  
Ministry of Urban Development, Housing & Construction

Date:

Signed:

Titled:

Director General, Dept. of National Planning

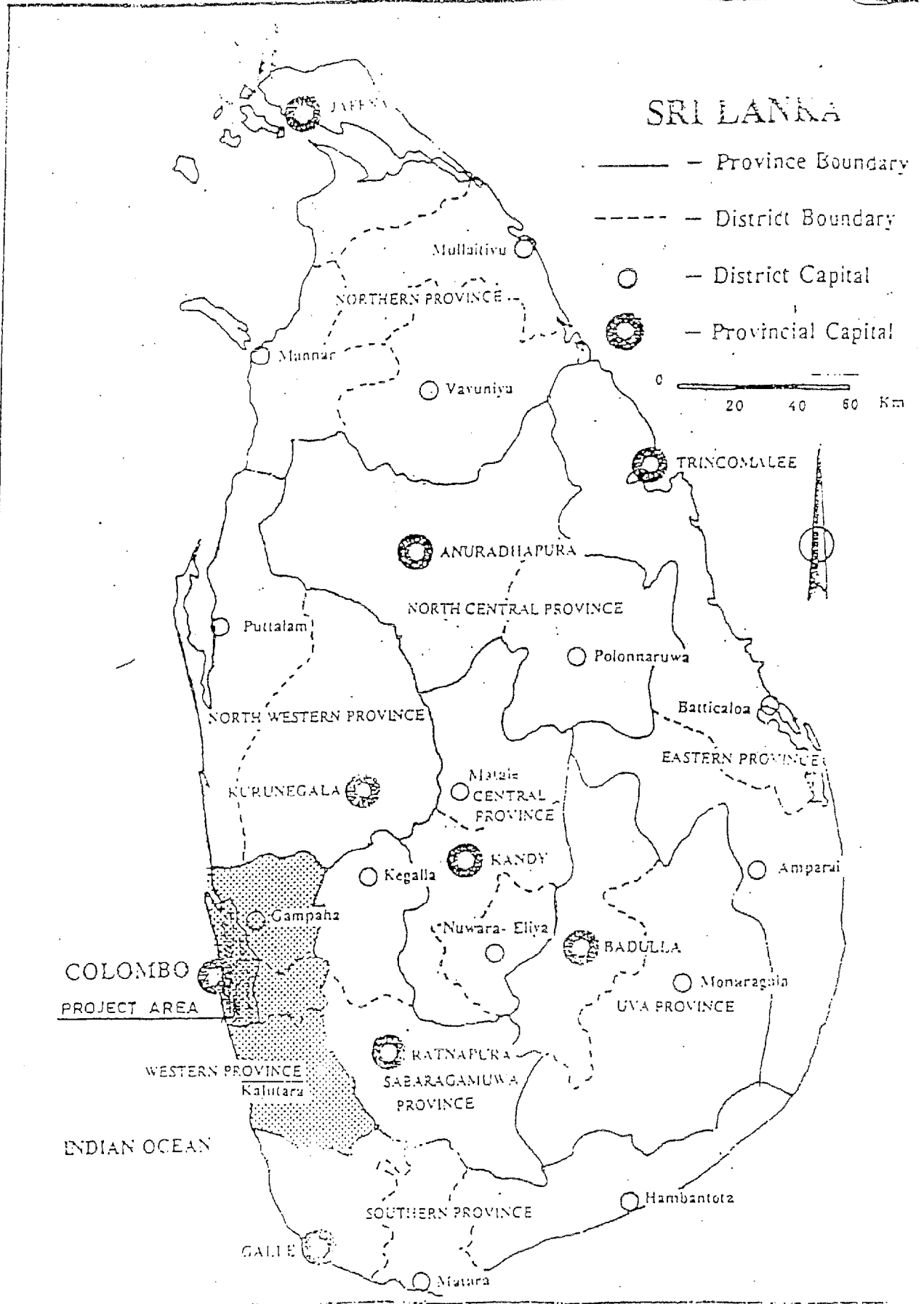
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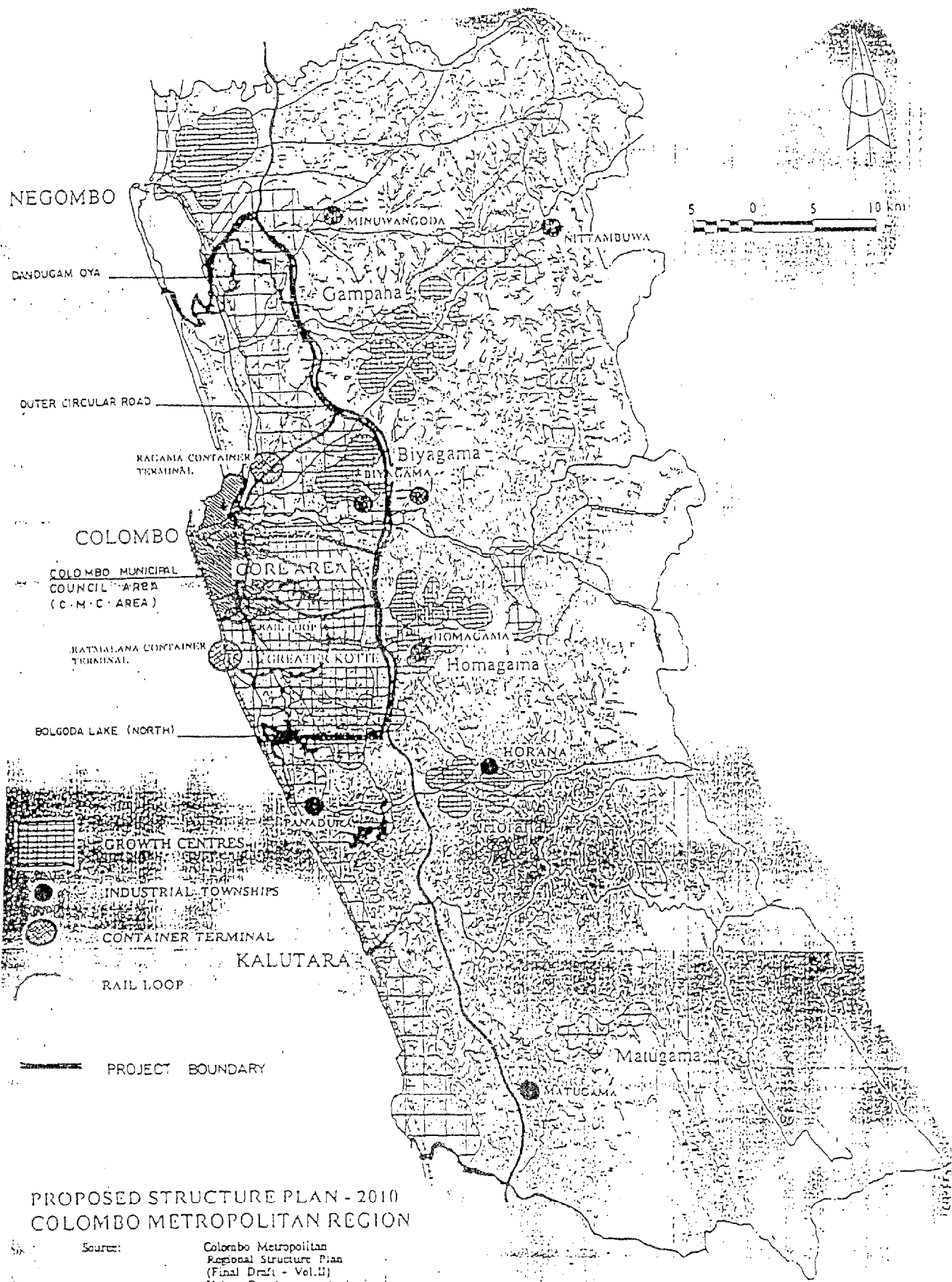
Director General, Dept. of External Resources,  
On behalf of the Govt. of Sri Lanka,

Date:



### COLOMBO METROPOLITAN REGIONAL PLAN

PROVINCES AND DISTRICTS OF SRI LANKA



ANNEXURE 3

SRI LANKA LAND RECLAMATION AND DEVELOPMENT CORPORATION  
ORGANISATION STRUCTURE

