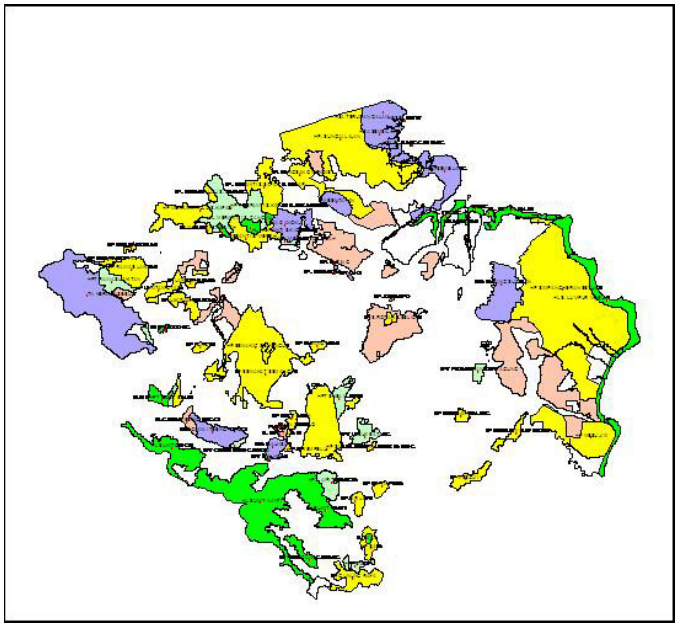
1. Program Title: Program 3-7
Rehabilitation of Existing Protected Forests

2. Location

Subject sites are the existing Conservation Forests (HSA), and Protection Forests (HL). Priority is given to the six forests that have resident staff: HSA. Padang Sugihan, HSA. Bentayan, HSA. Dangku, HSA. Gumai Pasemah, HSA. Isau-Isau Pasemah, PLG/TWA. Bukit Serelo.
HSA. Sungai Sembilang is expected to be transfered to the National Park.



3. Objectives

- To cover the designated area with tree species native to the locations.
- To rehabilitate biodiversity within the designated protected areas.

4. Executing Agency

- Provincial Conservation Office (Balai KSDA) : Responsible for program development, budget, selecting priority area, calling for outside exparts, forest border construction, evaluation of monitoring results.
- Extension offices at protected forests: Responsible for implementing programs, cooperation with local communities, monitoring the forest condition and the habitats, training of local residents as field workers.
- Provincial Forestry Office: Responsible for assisting preparation of nurseries, supplying seeds and suplings, policing against illegal logging.

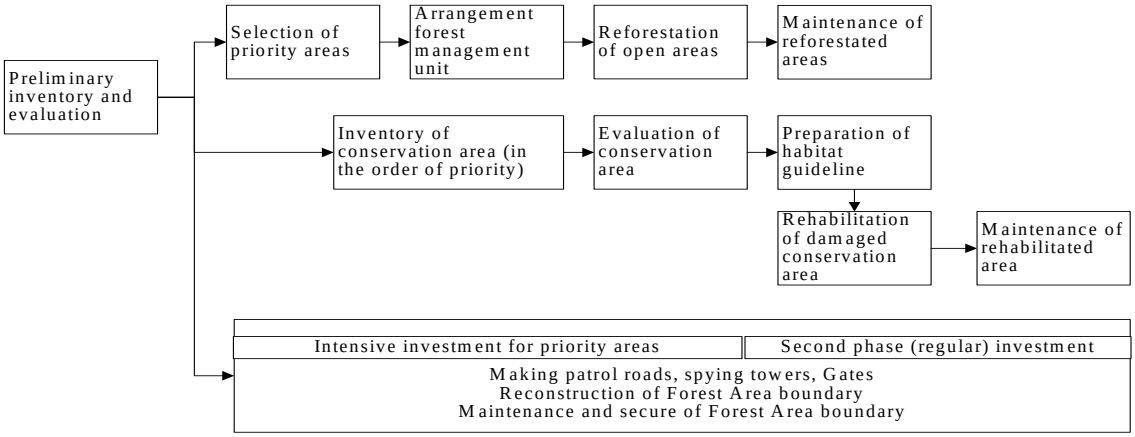
5. Program Description

The program is composed of the following six (6) activities:

- Forest border construction,
- Forest rehabilitation (priority on where currently not covered by tree vegetation),
- Habitat rehabilitation (priority on where tree vegetation remains),
- Law enforcement,
- Human resource development
- Monitoring and research

5. Program Description (continuous)

Steps for rehabilitation of new protected forest are as follows:



It is recommended that the Musi River Basin be included in "List of Priority River Basins for Reforestation (Ministry of Forest – Kimpraswil)" and "River Basins for Reforestation and Rehabilitation on SK21 (Ministry of Forest)".

6. Implementation Schedule

Implementation schedule is as follows:

Priority Program		1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
No.	Title	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
3-7	**Rehabilitation of existing protected forests**																												
3-7-1	Forest border construction																												
	-Reconstruction of forest area boundary	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	-Maintenance and secure of forest area boundary	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-7-2	Monitoring and research																												
	-Selection of priority areas	■	■	■	■	■	■	■	■																				
	-Inventory of preserved area									■	■	■	■	■	■	■	■												
	-Evaluation of conservation area																	■	■	■	■								
	-Preparation of habitat guideline																	■	■	■	■	■	■	■	■				
3-7-3	Human resource development																												
	-Arrangement forest management unit									■	■	■	■	■	■	■	■												
	-Reforestation of open areas									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	-Maintenance of reforestated areas									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-7-4	Reforestation																												
	-Making patrol roads, spying towers, gates									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
3-7-5	Law enforcement																												
	-Rehabilitation of damaged conservation area																									■	■	■	■
	-Maintenance of rehabilitated area																									■	■	■	■

Urgent program in priority areas
Continuous program
Urgent program in priority areas

7. Program Cost

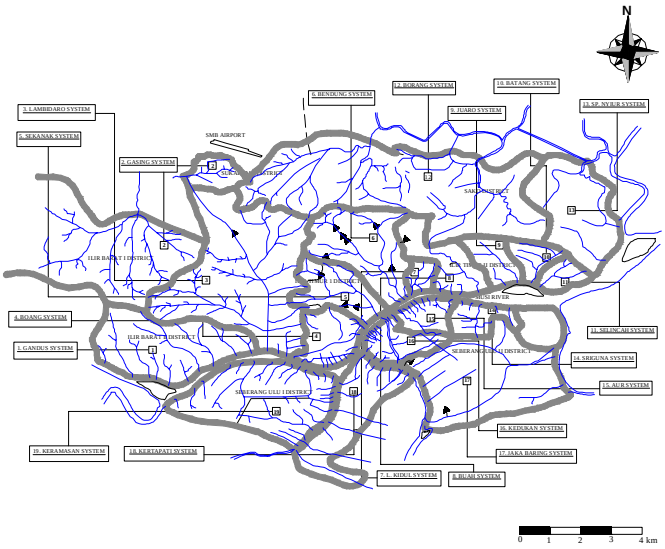
Forest border construction (42 x 30 km)	Rp. 2,232 million
Monitoring and research (6 sites)	Rp. 227 million
Human resource development (6 sites)	Rp. 150 million
Reforestation (6 sites, 1,200 ha)	Rp. 4,168 million
Law enforcement (6 sites)	Rp. 4,810 million
Forest rehabilitation (200 ha)	Rp. 1,900 million
Total	Rp. 13,487 million

8. Others

1. Program Title: Program 4-1
Community Drainage Management

2. Location

- Whole Palembang City (401 km^2)
- Tertiary to household drainage channels
- The applied cases will be the model of all the other cities in the Musi River Basin.



3. Objectives

For the improvement of urban environment, involvement of the community is indispensable. Though improvement or new construction of infrastructure will be needed, improved environment can be achieved with the people's willingness. This program is proposed as the start of the urban environment improvement. The objectives of this program are:

- To improve urban water environment
- To empower communities to manage micro-drainage channels properly

4. Executing Agency

- Dinas Kimpraswil of Palembang Municipality with participation of NGOs

5. Program Description

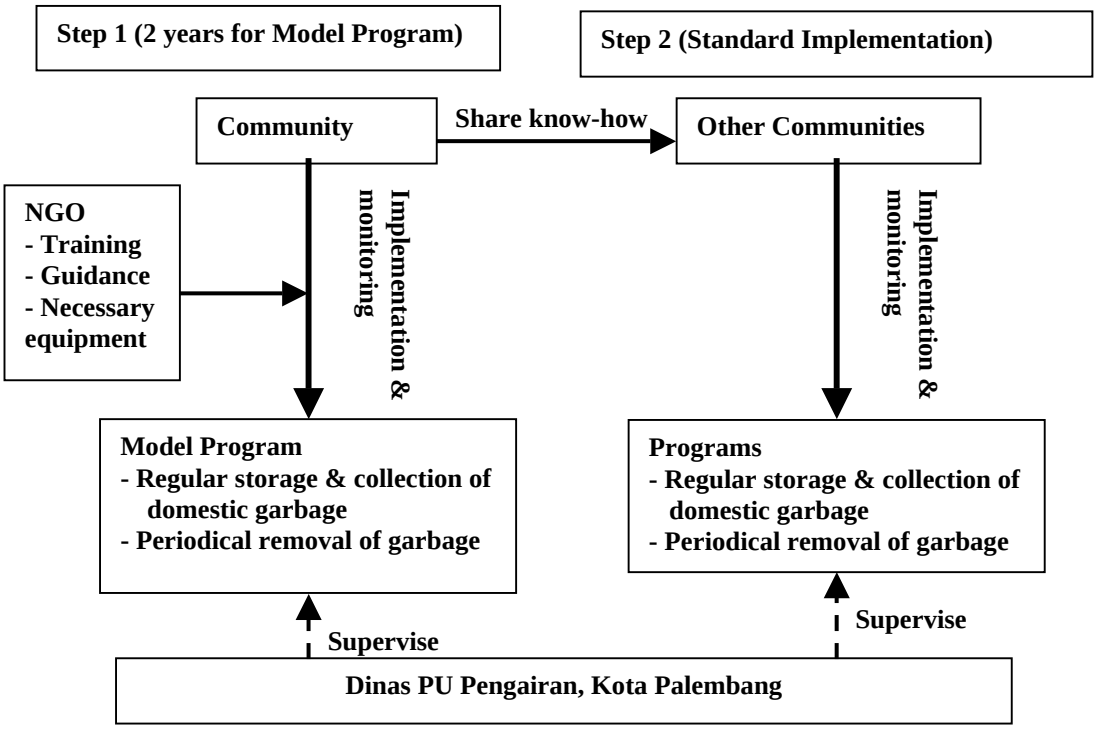
The Program aims to improve urban water environment by active participation of community members with assistance of NGOs. The Program consists of the following major activities:

- To select one drainage area as a model project area,
- To hold public consultation meetings to discuss current issues, measures to be taken, implementation method, etc.,
- To establish a system to store and collect domestic garbage regularly,
- Periodical removal of domestic garbage, wild plants, and mud sediment from drainage channels by community participation,

5. Program Description (continuous)

- Public information for prevention of garbage dump,
- To hold meetings to evaluate the activities,
- To spread the activities to other drainage areas by transferring know-how obtained through the model project

Steps for community drainage program are as follows:



6. Implementation Schedule

Implementation schedule is as follows:

Priority Program		1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
No.	Title	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4-1	**Community drainage management**																												
4-1-1	Model project	Preparatio				Full Operation																							
4-1-2	Monitoring of past project																												
4-1-3	Standard implementation																												

7. Program Cost

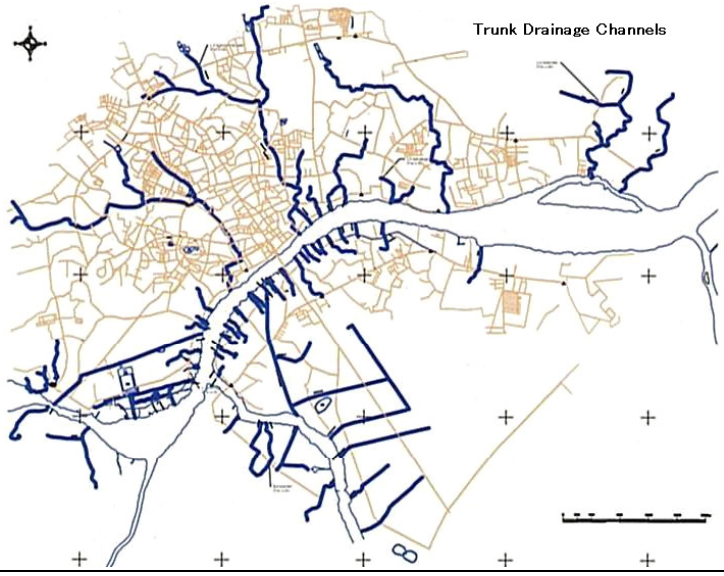
1. Direct Cost
   Model project Rp. 400,000,000
2. Indirect Cost
   Physical Contingency Rp. 40,000,000
3. Total Rp. 440,000,000

8. Others

1. Program Title: Program 4-3
Trunk Drainage Channels Rehabilitation

2. Location

- Whole Palembang City (401 km^2)
- Primary to secondary drainage channels
- The applied cases will be the model of all the other cities in the Musi River Basin.



3. Objectives

There are total of 19 drainage system in Palembang Municipality. Though the trunk channels have been improved in major drainage basins in the City center, deterioration of the facilities and deposition of mud are identified in almost all channels. Strengthening of the capability of the regular maintenance of the structures shall be a prerequisite to the new construction of the facilities. The objectives of this program are:

- To improve urban water environment by drainage system rehabilitation
- To establish a system for drainage system rehabilitation
- To strengthen regular maintenance capacity of the drainage facilities
- To improve capacity of drainage channels and sanitary condition, and scenery in the city

4. Executing Agency

- Dinas Kimpraswil, Palembang Municipality

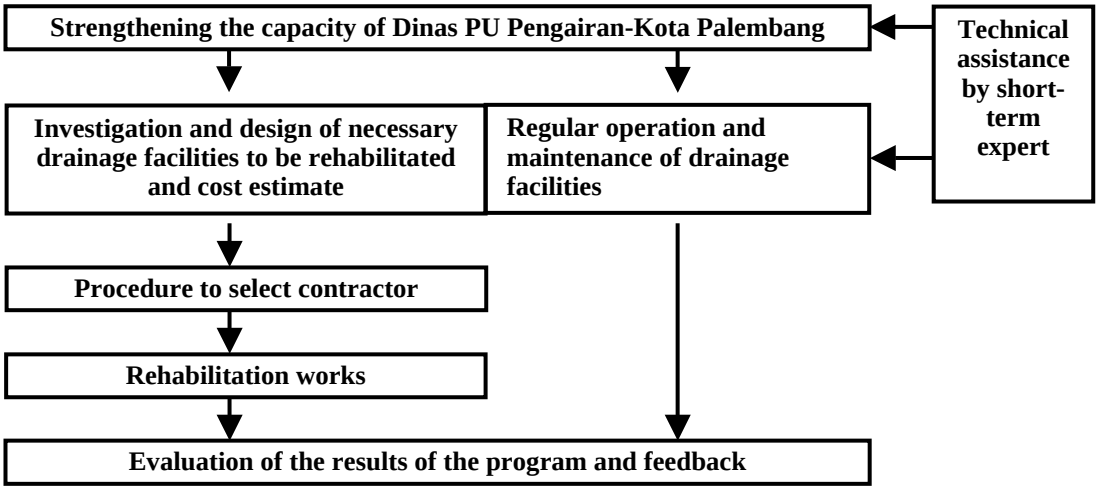
5. Program Description

The Program is intended to strengthen the capacity of Dinas PU Pengairan-Kota Palembang to rehabilitate and maintain the drainage facilities and to improve urban water environment by proper rehabilitation and maintenance of the trunk drainage channels in Palembang Municipality. The Program consists of the following major activities:

5. Program Description (continuous)

- To strengthen the capacity of personnel and organization of Dinas PU Pengairan-Kota Palembang to rehabilitate and maintain the drainage facilities with a technical assistance of a short-term expert,To investigate and design necessary drainage facilities to be rehabilitated and to estimate project cost,
- To select contractor to undertake the rehabilitation works,
- To conduct rehabilitation works including rehabilitation of existing drainage facilities, excavation of garbage and sediment,
- To conduct regular maintenance of the drainage channels,
- To evaluate the results of the program periodically and improve the program continuously.

Steps for trunk drainage channels rehabilitation program are as follows:



6. Implementation Schedule

Implementation schedule is as follows:

Priority Program		1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
No.	Title	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
4-3	**Trunk drainage channels rehabilitation**																												
4-3-1	Establishment of rehabilitation system																												
4-3-2	Trunk channels rehabilitation																												

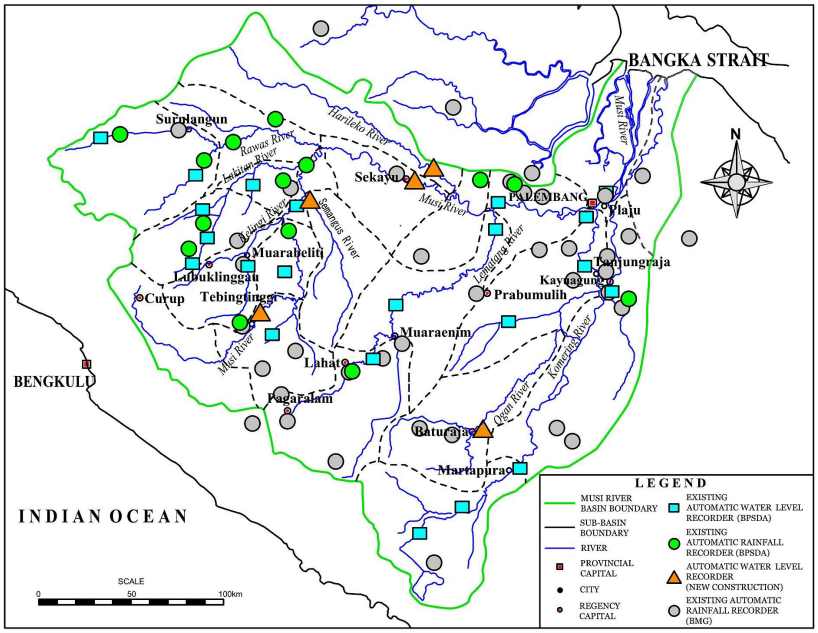
7. Program Cost

1. Direct Cost	
Excavation of Garbage and Mud	Rp. 7,875,000,000
Rehabilitation of Trunk Drainage Channels	Rp. 20,000,000,000
3. Indirect Cost	
Administration Cost	Rp. 1,394,000,000
Engineering Service Cost	Rp. 1,181,000,000
Physical Contingency	Rp. 3,045,000,000
4. Total	Rp. 33,495,000,000

8. Others

1. Program Title: Program 5-1
Hydrological Monitoring System Establishment

2. Location



3. Objectives

- To rationalize the monitoring network with proper observation and collection of hydrological data (meteorology, rainfall, water level, river discharge and sediment discharge) for basic analysis and study on water use.

4. Executing Agency

- Musi Balai PSDA under Dinas PU Pengairan in coordination with BMG and other relevant agencies

5. Program Description

(1) Inventory Survey (Program 5-1-1)

Musi Balai PSDA shall undertake a detailed inventory of the hydrometric stations and equipment in the field and in the office, their conditions and approximated costs of repair and upgrade. Prepare a plan to repair and rehabilitate hydrometric stations and to prepare list of equipment with cost for procurement.

(2) Establishment of Organization (Program 5-1-2)

Establish Water Resources Data and Information Unit in Musi Balai PSDA (**Program 6-5-1**). Musi Balai PSDA should coordinate with BMG and establish a rule for rainfall data transfer from BMG to Musi Balai PSDA.

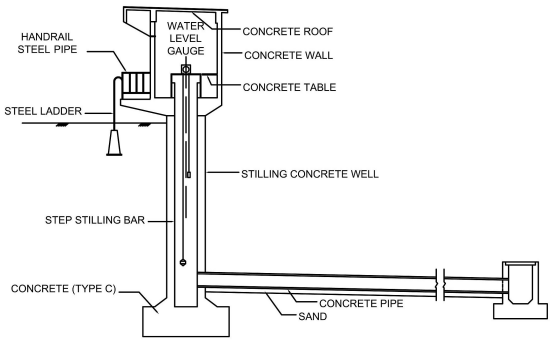
(3) Capacity Building (Program 5-1-3)

Musi Balai PSDA shall grasp present capability of hydrometric monitoring group and prepare a capacity building plan. Conduct capacity building to technical personnel for hydrological monitoring work.

(4) New Construction and Improvement of Facilities (Program 5-1-4)

The following five water level gaging stations are to be constructed to improve the distribution of stations and enhance the present monitoring system. Automatic water level gages of floating type are to be installed in the new stations.

- Musi River at Tebingtinggi (upstream of the Musi River)
- Musi River at Sekayu (midstream of the Musi River)
- Halireko River upstream point from confluence with the Musi River
- Semangus River upstream point from confluence with the Musi River
- Organ River at Baturaja



A typical water level gaging station is illustrated.
Rainfall and water level gaging stations are to be rehabilitated, based on the results of the inventory survey conducted by Musi Balai PSDA in 2002. The survey result indicates as follows:

- A total of 4 meteorological stations need the improvement
- A total of 12 rainfall gaging station need the improvement
- A total of 22 water-level gaging station need the improvement

(5) Monitoring (Program 5-1-5)

Hydrological monitoring work shall be conducted following the proposed monitoring program (see Table G2.3.2). Required man-power: Chief hydrographer 1, Assist. hydrographer 2, Supporting staff 2, etc. Required equipment: Vehicle 2, Boat 1, Discharge measurement equipment 1, Bed load measurement equipment 1.

6. Implementation Schedule

Implementation schedule is as follows:

Priority Program		1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
No.	Title	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
5-1	**Hydrological monitoring system establishment**																												
5-1-1	Inventory survey	Preparation			Full Operation																								
5-1-2	Establishment of organization and management																												
5-1-3	Capacity building																												
5-1-4	New construction and improvement of facilities													Test															
5-1-5	Monitoring																												

7. Program Cost

(1) Program 5-1-1 n.a.
(2) Program 5-1-2 n.a.
(3) Program 5-1-3 Rp. 5 million/year
(4) Program 5-1-4

- New Construction of Water Level Gaging Station Rp. 1,200 million
- Improvement of Hydrological Observation Station Rp. 548 million
  1. Meteorological Station: (Rp. 184 million)
  2. Rainfall Station: (Rp. 100 million)
  3. Water Level Gaging Station: (Rp. 264 million)

(5) Program 5-1-5

- Monitoring equipment (initial cost) Rp. 800 million
- Monitoring man-power Rp. 93 million/year

Total Initial cost: Rp. 2,548 million
Annual O&M cost: Rp. 98 million/year

8. Others