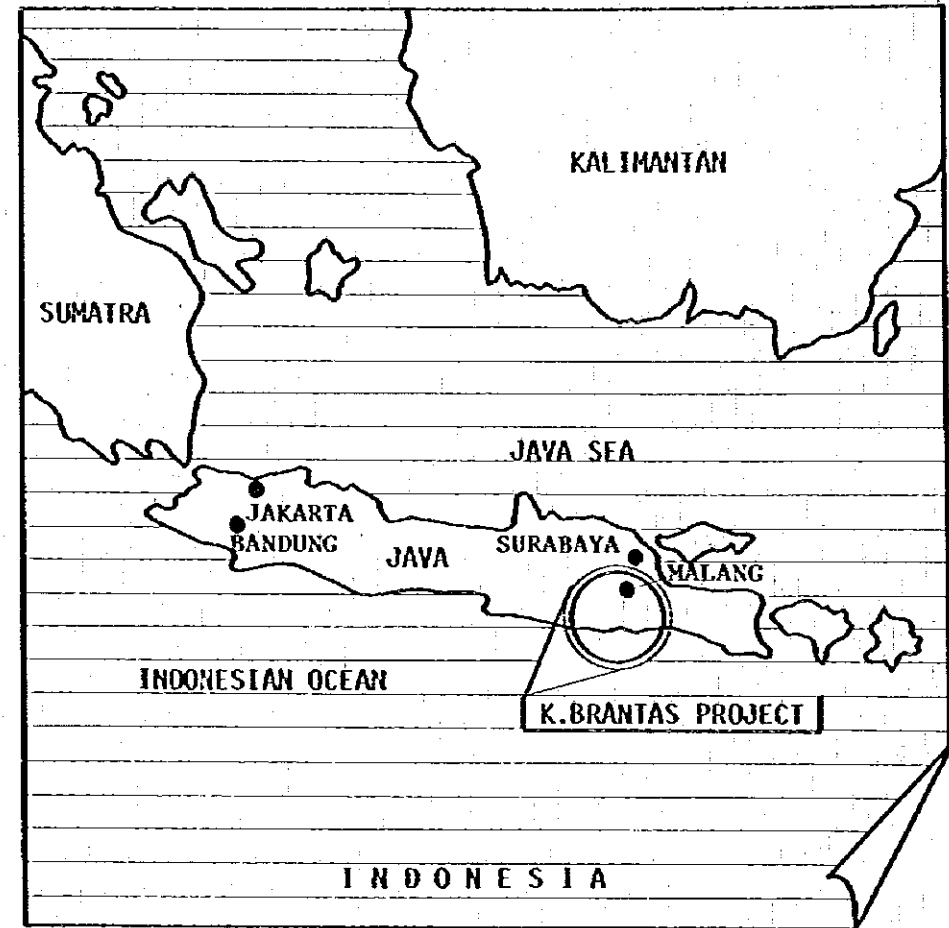


RAPID PROGRESS OF BRANTAS BASIN DEVELOPMENT

JUNE, 1979



PROYEK BRANTAS WITH COLOMBO PLAN EXPERT
R. SUGIMOTO

Japan International Cooperation Agency

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Overall Planning of Brantas River Basin Development Executing Office

[Completed]

Neyama Diversion Tunnel
Selorejo Multipurpose Project (Dam)
Karangkates Multipurpose Project (Dam)
New Lengkong Dam Project
Porong River Project (1st Satge)
Karangkates Second Stage Project
(Lagor Reservoir)
Wlingi Multipurpose Project (Dam)

[Under Construction and Design]

Wlingi Second Stage Project
(Lodoyo Dam)
Surabaya River Project and
Extension Project
Porong River Project (2nd Stage)
Brantas Middle Reaches River
Improvement Project
Widas Irrigation Project
(Irrigation with Dam)
Tulungagung Flood Control and
Drainage Project

[Future Project]

Sengguruh Dam Project
Kesamben Dam Project
Widas Flood Control and Drainage Project
Kedungwarak dam
Semantok dam
Kuncir dam
Cerne dam
Kali Konto River Improvement
Ngrowo Basin Development
Upstream of Karangkates Development
(Mt. Kelud Sabo Project)
(Mt. Semeru Sabo Project)

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Outline of the Brantas River

Location East Java

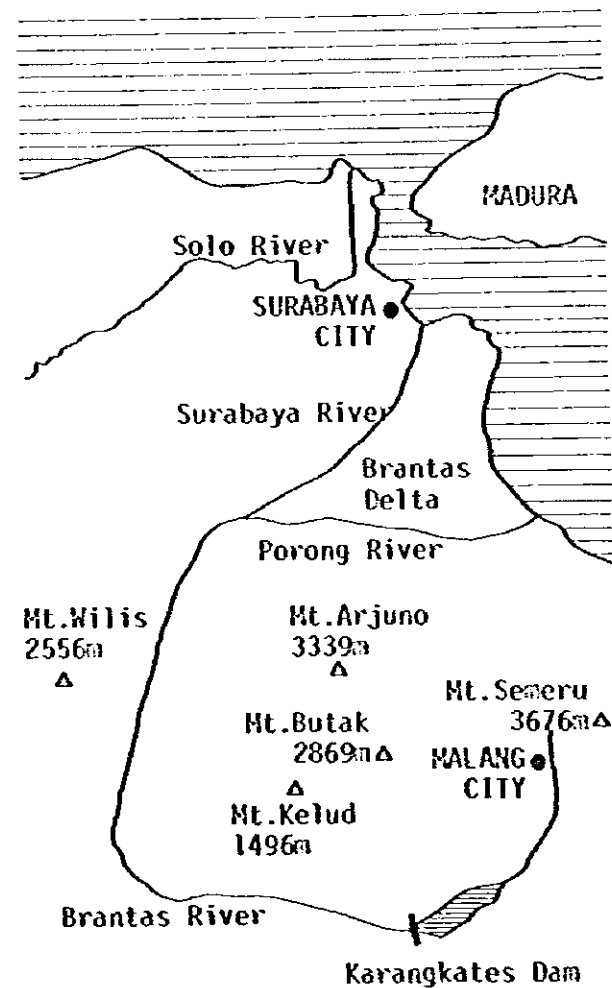
Catchment area	12,000 Km ²
Length of river	320 Km
Design Flood Discharge	1,500 Km ³
Source of river	Mt. Arjuno 3,339 m
Population	11 milion
Main city	Surabaya 2 milion
	Malang 0.4 milion
	Kediri 0.2 milion
Farm products	rice
	sugar
Climate	typically tropical
	wet and dry season
Annual rainfall	3,000 - 4,000 mm
	part of mountains
	1,500 - 2,000 mm
	part of plain
Temperature	SURABAYA 27°C
	MALANG 24°C

REMOTE SENSING PHOTOGRAPH BY SATELLITE



date of photographing
29. 9. 1972

name of satellite
Landsat - 1





KARANGKATES DAM (1959 - 1972)

Gross Storage Capacity

$$343 \times 10^6 \text{ m}^3$$

Effective Storage Capacity

$$253 \times 10^6 \text{ m}^3$$

Type of Dam

rock fill

Max height

100 m

Crest length

800 m

Power Station

35,000 KW x 3

Future development and management.

(1) Development of Hydro Power.

-Sengguruh Dam

-Kesamben Dam

-Upstream of Karangkates Development

Total 11 dams

(2) Integrated Control of dams.

[Necessity of Integrated Control of dams]

-Four dams has already constructed and two dams are under construction.

-Hydro Power, Flood Control and Water Utilization became more and more important

according to the rapid economic growth and population-concentration to the city.

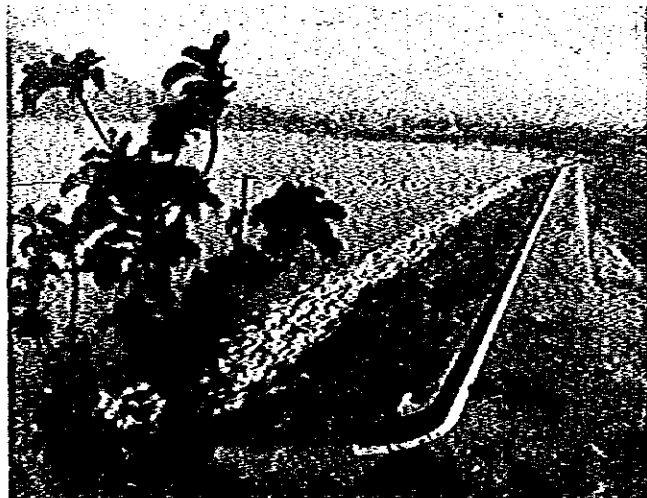
-Further large amount of water demand is estimated according to increase of population, development of industries,

propagation of sewerage and increase of agricultural products.

-We have to utilize water more effectively which is precious national resources.

[Integrated Control Office]

-To establish the system is to find out most effective operational method in total.



SELOREJO DAM (1965 - 1970)

Gross Storage Capacity

$$62 \times 10^6 \text{ m}^3$$

Effective Storage Capacity

$$50 \times 10^6 \text{ m}^3$$

Type of Dam

earth fill

Max height

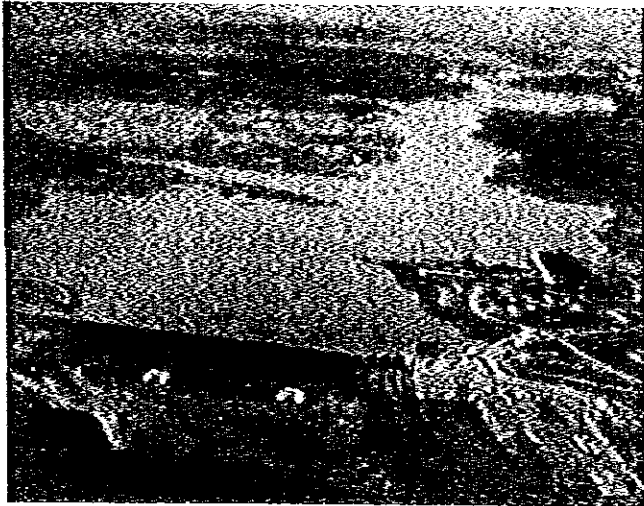
46 m

Crest length

447 m

Power Station

4,500 KW



KILINGI DAM (1971 -1978)

Gross Storage Capacity
 $24 \times 10^6 \text{ m}^3$
 Effective Storage Capacity
 $5.2 \times 10^6 \text{ m}^3$
 Type of Dam
 rock with earth fill
 Max height Crest length
 49.5 m 717 m
 Power Station
 27,000 KW x 2
 Irrigation
 15,000 ha

(3) The Contents of Integrated Control of Dams.
 -Flood Control and Water Utilisation.

3-1 Flood Control.

-How can we decrease the peak of discharge in the down stream?

-To grasp the flood characteristics such as the time and the amount of the peak of discharge should be made more quickly and more accurately at each target points in the down stream, and then knowing above data the municipality is able to forecast the flood.



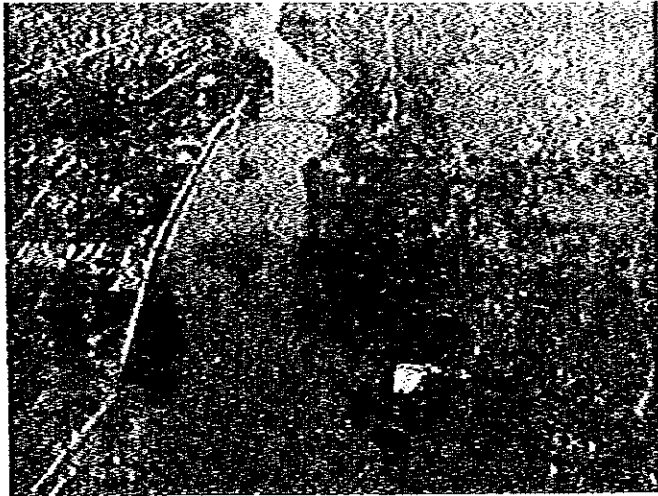
LODOYO DAM (1978 - 1980)

Gross Storage Capacity
 $5.2 \times 10^6 \text{ m}^3$
 Effective Storage Capacity
 $5 \times 10^6 \text{ m}^3$
 Type of Dam
 movable weir
 Purpose
 afterbay

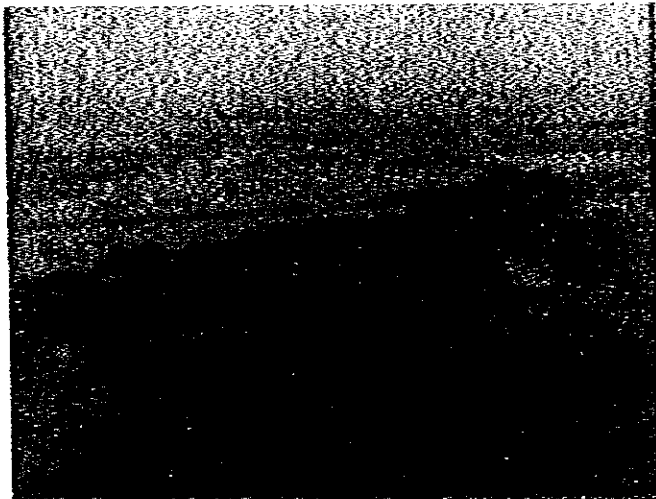
3-2 Water Utilization.

-Important things are meteorological forecast in the long term, and to clear the relation between rainfall and secondary run-off.

-Most effective integrated dam control is possible by considering the empty capacity in each dams and the waterlevel in the down stream and the discharge.



RIVER OF BRANTAS MIDDLE REACHES



INUNDATION AREA IN WIDAS RIVER BASIN

Mt. Kelud eruption, Inundation area and Middle reaches improvement.

1-1 Volcanic Activity of Mt. Kelud.

Mt. Kelud is an active volcano and a main source of sediment yield to the Brantas.

Eruption intervals are between 3 and 37 years, and 15.5 years on an average, like the interval of eruptions between 1951 and 1966.

1-2 Sediment Control.

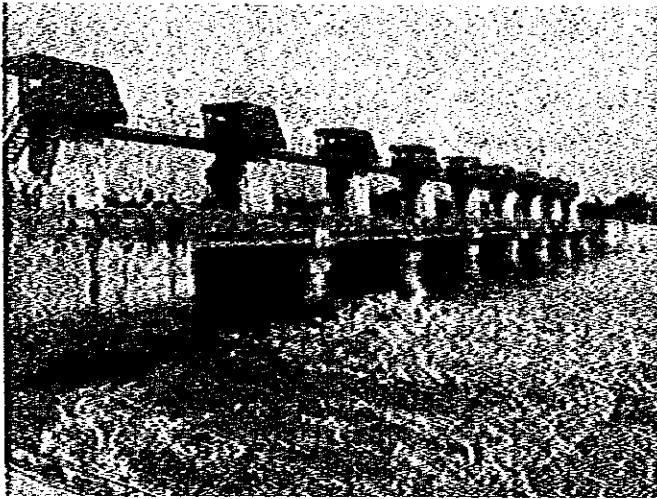
The eruption of Mt. Kelud and present situation of the debris control works on the western and southern slopes of Mt. Kelud, and deals with the master planning for sediment control on the hilly area around Mt. Kelud, which should be worked out keeping the consistency with river improvement planning in this time.

Stable Brantas river will be achieved not only by improvement of river channel but also by the sand arresting works on the Brantas river basin.

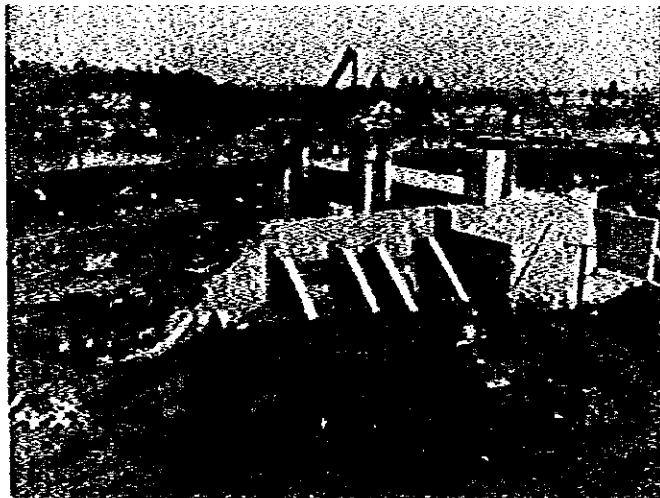
1-3 Inundation area.

In Brantas river stretch, major tributaries such as Widas, Ngrowo and Konto river join the Brantas river, and inflow from these tributaries are largely retarded due to land inundation and swamp.

Middle reaches improvement discharge was estimated by present condition without future development plan for these inundation area.



NEW LENGKONG DAM (1970 - 1973)

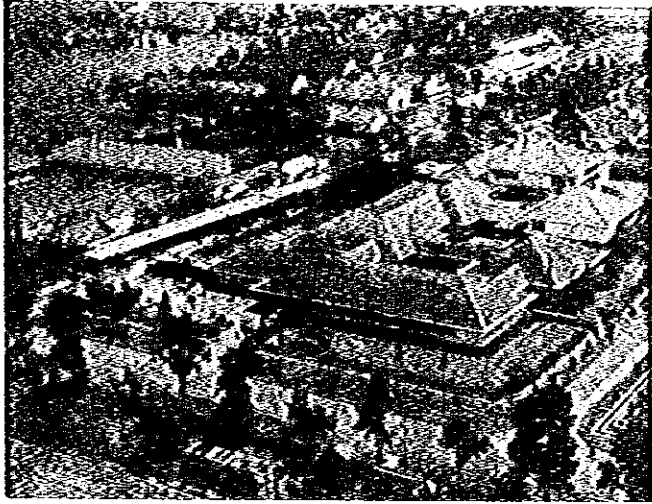


NEW GUNUNGSARI DAM (under construction)

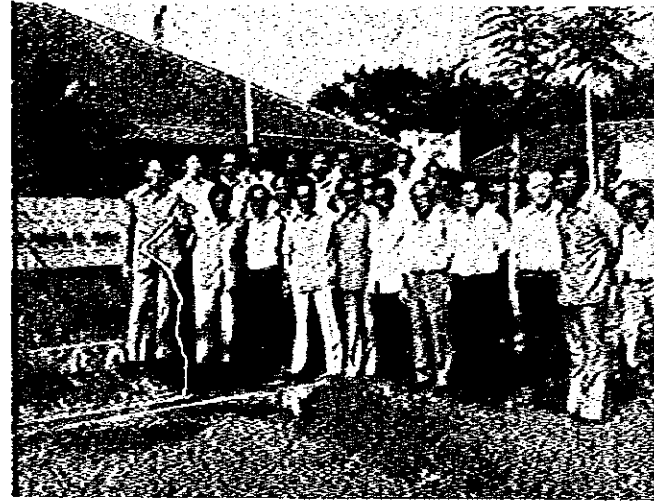
- For future development, to make clear the retardation the swamp in the middle reaches of the Widas river is effectiveness.
- The relation between the probable flood peak in the Brantas River and flood retardation in the swamp should be studied.

Improvement of Inundation Area in the Surabaya City.

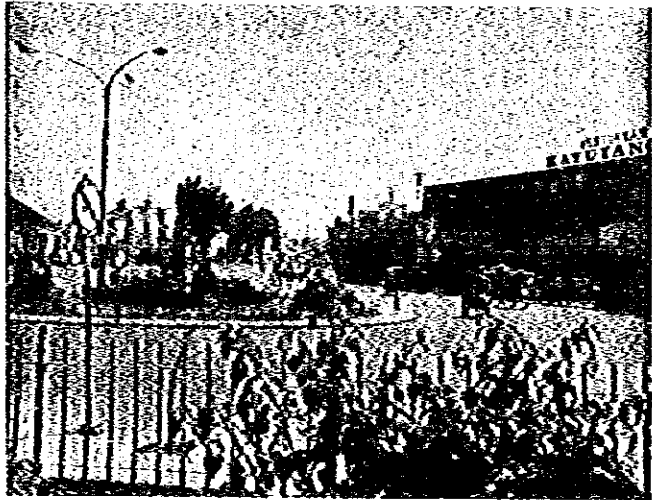
- Surabaya is the second largest city in Indonesia and has two million of population.
- Surabaya is a prominent commercial, industrial and agricultural city in Indonesia.
- Improvement of the Mas River (Mas river streams through the center area of Surabaya City and at present, the function of Mas River is one of main drainage canals in Surabaya City), is designed to make low water level by excavation of river bed and to widen the river channel, but improvement plan is not including pumping drainage method.
- Therefore, to make formulation of a plan for improvement of drainage system (mainly pumping method) in the urban area is important.



BRANTAS OFFICE
(Jl. Surabaya 2 A, Malang)



STAFF OF PROYEK BRANTAS



CENTER PARK IN MALANG CITY



MAIN STREET (Jl. Ijen)

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text suggests that organizations should implement robust systems to track and report on their operations, ensuring that all data is reliable and up-to-date.

2. The second section focuses on the role of leadership in setting the tone for an organization's culture. It argues that leaders must be visible and vocal in their commitment to ethical standards and high performance. By modeling the behavior they expect from their teams, leaders can foster a positive work environment where employees are motivated and engaged. This section also touches on the importance of communication and collaboration in achieving organizational goals.

3. The third part of the document addresses the challenges of change management. It notes that organizations often face resistance when implementing new initiatives or processes. To overcome this, it recommends a structured approach that involves clear communication, stakeholder involvement, and ongoing support. The text highlights that successful change management requires a focus on the benefits of the change and a commitment to providing the necessary resources and training for employees.

4. The fourth section discusses the importance of continuous learning and development. It suggests that organizations should invest in their workforce by providing opportunities for skill enhancement and professional growth. This can be achieved through various means, such as formal training programs, on-the-job experiences, and mentorship. The text emphasizes that a learning-oriented culture is essential for staying competitive in a rapidly changing market.

5. The final part of the document concludes by reiterating the key themes discussed throughout the text. It stresses that success is not achieved overnight but through a combination of strategic planning, effective execution, and a commitment to excellence. The author encourages organizations to embrace a growth mindset and to remain resilient in the face of challenges. The document ends with a call to action, urging leaders to take the steps necessary to build a strong, sustainable organization.

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