

# The Concept of Financial Sustainability of Water Resources Management in a River Basin

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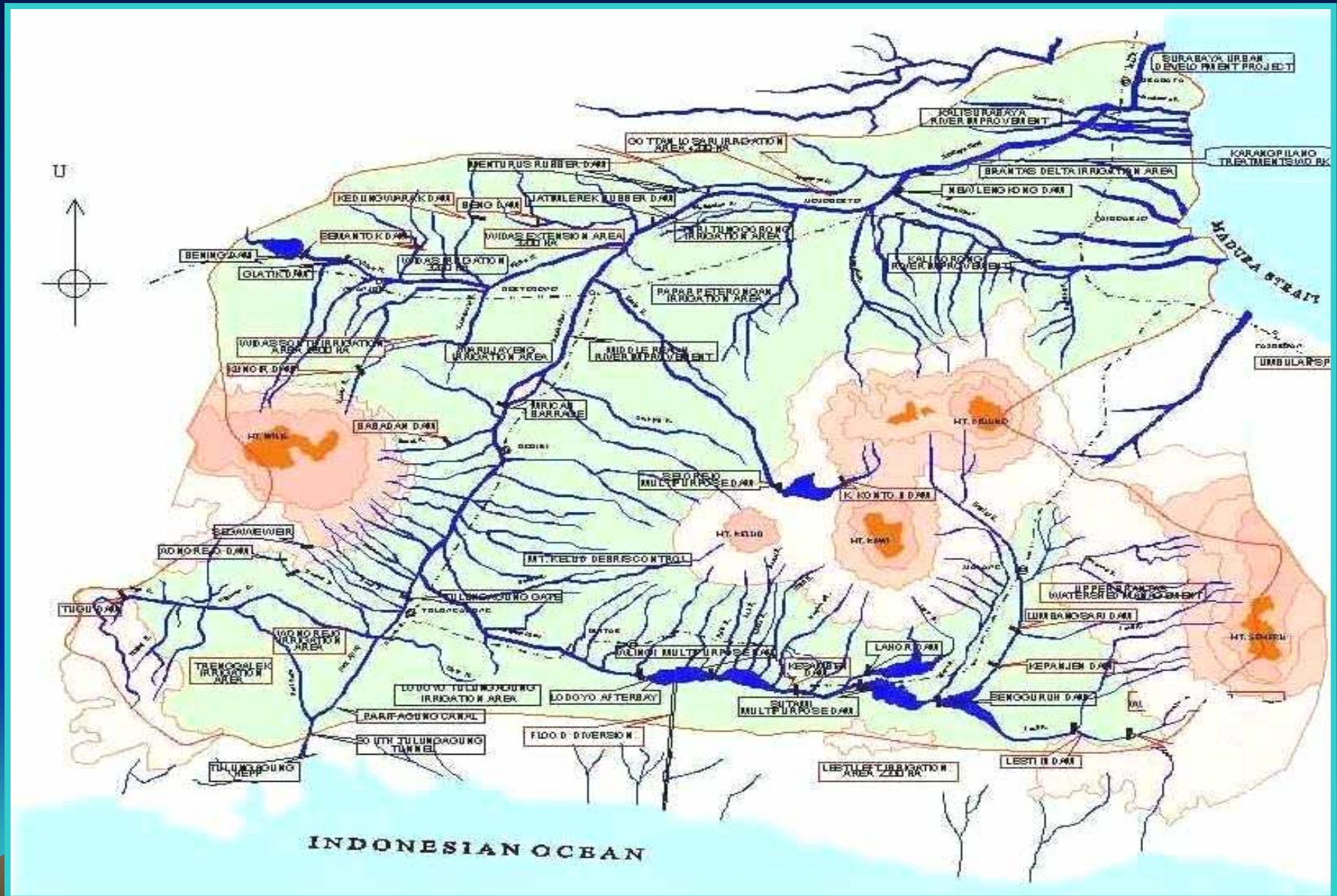


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# WORKING AREA OF JASA TIRTA I PUBLIC CORPORATION



# Map of Brantas River Basin



# Water resource sustainability will be achieved if 6 (six) aspects of sustainability can be fulfilled:

- **Technical sustainability:** balance between water and demand supply, and between pollution load and assimilative capacity of the water body.
- **Financial sustainability:** achievement of funding requirements for the water resources development and management.
- **Institutional sustainability:** ability of management institution to maintain the river system with planning, implementation and operational capacity.
- **Social sustainability:** financial participation and positive social control, from stakeholders and the public as general
- **Economic sustainability:** support to external and internal development aspects.
- **Environment sustainability:** lesser negative impacts on long-term development and well environment supporting preservation of water resources.



## Limited fund to the financial sustainability:

- Operation and maintenance of water resources infrastructures could not be well-implemented.
- Decreasing of performance those infrastructures. In return, it will increase the rehabilitation cost.
- Cancellation of development of water resources infrastructure
- Reduces the flood control ability
- Sharpens the imbalance of water service capability between one area to another.





## Some issues in WRM:

- Watershed degradation has become an important constraint:
  - ✓ erosion and natural forces enhances sedimentation
  - ✓ shortens economic life of major dams in the basin
  - ✓ natural base flow degradation during dry spells.
- Water quality degradation occurs where pollution from domestic, industrial and agriculture sources has loaded the river and creates span with the designated standard.



## The funding of water resources management also has chances:

- Limited water availability due to increase in water demand and constraints in supply (limited availability).
- Out of balance condition conflict of interest between users.
- It emerges the change of paradigm toward water: “besides as social good, water has also considered as economic good”.
- Water supply business is categorized as a promising business because it has real consumer and the demand always increase
- Will be an opportunity for the businessman and society.
- The financial system shall be developed to guarantee the financial sustainability of water resource management.



# Financial Structure for Water Resources Management (Paragraph 77, Law No. 7/2004 on Water Resources)





# NATIONAL BASIC LAWS AND REGULATION :

Paragraph 78 of the Law of the Republic of Indonesia No. 7 of 2004 explains about:

- Cost for water resources management as stated in Article 77 Paragraph 1 should be burden by Government, local government, state owned company/local owned company, cooperation, other body, and individual or corporate private institution.
- The financing of water resources management responsible by Government and local government as mentioned in Paragraph 1, will be done based on their authority in water resources management.

Article 79 Paragraph (2): For the service for social purpose and for public service and welfare, Central and Local Government – in certain limitation – could support fund for water resources management to water resources institution BUMN/BUMD.



# NATIONAL BASIC LAWS AND REGULATION :

Other related regulations :

Government Regulation No. 6 of 1981 on Funding for Water Resources Infrastructure Exploitation and Maintenance (Paragraph 2):

Contribution to exploitation and maintenance cost of water resources infrastructure covers:

- (1) Fund collected as a payment from the parties who have obtained the benefit from the use and the comfort through the availability of water, from water bodies, and through the availability of water resources infrastructures as the achievements of Corporation's management either for immediate use or subsequent use for third party; and
- (2) Fund collected as a payment from them, due to their activities, cause pollution in water and water resources in the working area of the Corporation.



# THE BASIC PRINCIPLE AND POLICIES OF FINANCIAL SYSTEM :

## ➤ Basic Principles

### ✓ Cost Recovery Principles

The Full Cost Recovery principles covers:

- ❖ O&M Cost Recovery:
  - Operation and Maintenance of water resources infrastructure,
  - Catchments management and water resource conservation, and
- ❖ Investment Cost Recovery, i.e. the return of investment for development and the development fund.

The amount of cost is calculated based on the decided norms and the real needs for water resources management in each river basin.

# THE BASIC PRINCIPLE AND POLICIES OF FINANCIAL SYSTEM :

## ✓ Mechanism of Contribution

The mechanism of contribution is done by applying the principles:

### ❖ Beneficiaries Pay Principle

The specific-commercial users must pay the contribution in the form of water service fee to River Basin Management Institution. The beneficiaries pay principle is complemented by "users pay principle" and "polluters pay principle".

### ❖ Government Obligation Principle

The Central/Local Government has their responsibility to provide the fund from national/local budget needed by river basin management institution in form of PSO to bear the cost for funding social service (irrigation) and for the welfare and safety of the people (flood control, water quality management, etc.)



# THE BASIC PRINCIPLE AND POLICIES OF FINANCIAL SYSTEM :

## ✓ **Acceptability**

To get the commitment for implementation, the amount of contribution must be acceptable by stakeholders. The criteria must be fulfilled fair, transparent and participative.

Some cost allocation method can be applied in water resource development and management:

### ❖ Quantity Based Method:

Cost allocation is calculated proportionally based on the physical criteria of water usage which is relatively countable

### ❖ Priority Based Method:

The cost is charged to the main (single) purpose, another non-priority purpose is not necessary to pay contribution.

### ❖ Benefit Based Method:

The cost allocation is calculated based on the benefit gained from each purpose (water value-economic benefit). This method is most likely used due to the cost can be allocated fairly.

# THE BASIC PRINCIPLE AND POLICIES OF FINANCIAL SYSTEM :

## ✓ **Transparency and Accountability**

To get support from the beneficiaries in giving the contribution, the use of fund shall be done transparently and accountable based on the agreed mechanism.

## ✓ **From Water-Back to Water**

The financial contribution from the beneficiaries can be reused to bear the cost for water resource management.

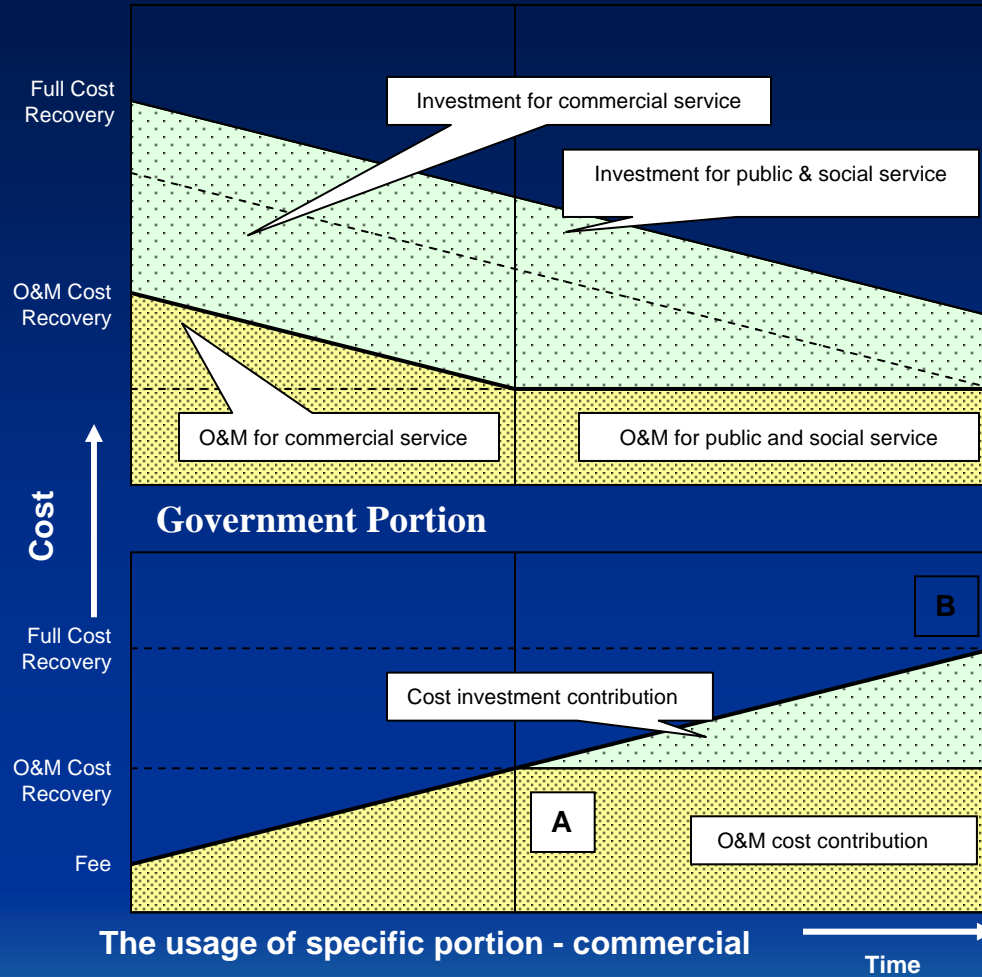
## ✓ **The Flexibility of Use of Fund**

In the program arrangement, the fund collected from the users contribution shall be used flexibly based on the priority without considering the administrative area boundary and certain group of users.





# The Steps of Form of Water Resource Management Distribution Vs Steps of Water Resources Financing in Water Resouces Funding Management



	Step I	Step II
Private Institution Participation	Service Contract	Management Contract
Institution Status	Perum - Perumda/ Balai PSDA	Perum/Perumda is Public Corporation

Step I : O&M Cost Recovery step  
 Step II : Full Cost Recovery step

# THE BASIC CONCEPT OF FINANCIAL SUSTAINABILITY OF WATER RESOURCE MANAGEMENT IN A RIVER BASIN :

- **The System and Approach of Water Resource Management**
  - Approach of water resources management (i.e. bureaucratic, normative, and government centrist) needs to be adjusted.
  - The approach of water resources management in the future shall be more open and responsive (community based approach).
  - A real form of “water resources decentralization”, that is “from society – for society”.
- **The Government acts as a regulator, no longer as a developer and service provider.**
- **The water resources in the future shall be managed by professional institution supported by society and private sectors participation.**



## THE BASIC CONCEPT OF FINANCIAL SUSTAINABILITY OF WATER RESOURCE MANAGEMENT IN A RIVER BASIN :

- The Management Institution is in the form of corporation (BUMN/BUMD), which obtains authority from Government to take the contribution from the beneficiaries.
- By BUMN/BUMD form, the Government will have agents to cooperate with private sectors in developing and managing water resources.
- Based on the rule, BUMN/BUMD shall be available in the form of Public Corporation (Perusahaan Umum).
- The chosen of the form is based on the economic condition of the society and water resources potency as well as the Government policy as the owner of water resources.



# THE BASIC CONCEPT OF FINANCIAL SUSTAINABILITY OF WATER RESOURCE MANAGEMENT IN A RIVER BASIN :

## ➤ The Financial System of Water Resources Management

- Besides paying the tax for taking and using the water, the specific – commercial users also pay the contribution (water service fee) to water resources management institution for the service they have given.
- Tax is used based on the priority and the policy of Local Government, so the tax has been paid will difficult to be allocated for water resources management.
- The fund collected from the society is used for funding the service to the society. Thus, the earmarked fund principle can be applied in this contribution.

The amount of contribution for each group of beneficiaries is calculated fairly and transparently based on the benefit gained – economic benefit.

# THE APPLICATION OF SUSTAINABLE FINANCING SYSTEM IN BRANTAS RIVER BASIN :

## ➤ The application of the system and the water resources management approach

In Brantas river basin, the BUMN, i.e. PJT I has been established in 1990 based on the Government Regulation No.5/1990 and No. 93/1999. PJT I is a pilot to develop and to apply the corporatization concept to manage water resources in a river basin :

- Gradually minimizing the load for Central/Local Governance Budget
- Gradually increasing the O&M contribution from the beneficiaries
- Give the best-responsive service toward the demand and the hope from stakeholders,
- Emerge the conducive working situation with private sectors,
- Apply the accountability system to shareholders and stakeholders



# THE APPLICATION OF SUSTAINABLE FINANCING SYSTEM IN BRANTAS RIVER BASIN :

## ➤ The Application of Water Resources Management Financial System

The water service fee has been applied in Brantas and Bengawan Solo river basin. The contribution is paid by specific-commercial users (Water Enterprise, Electricity State Company, and industry).

The contribution from specific – commercial users is step by step increasing:

Brantas River Basin

Description	Unit	1992	1998	2003	2005
Total Revenue	Billion Rp	9.41	26.12	38.57	52.47
- PLN	Billion Rp	5.07	9.67	17.99	29.14
- PDAM	Billion Rp	2.22	2.60	9.90	11.35
- Industry	Billion Rp	2.12	4.07	10.68	11.98
Normal O&M demand	Billion Rp	21.70	43.08	95.1	106.7
The operating system of O&M degree	%	43.4	60.6	40.56	49.17



# THE APPLICATION OF SUSTAINABLE FINANCING SYSTEM IN BRANTAS RIVER BASIN :

## ➤ The Application of Water Resources Management Financial System

Bengawan Solo River Basin

Description	Unit	2003	2005
Total Revenue	Billion Rp	2.84	3.88
- PLN	Billion Rp	1.36	1.54
- PDAM	Billion Rp	0.043	0.165
- Industry	Billion Rp	1.44	2.18
Normal O&M demand	Billion Rp	37.51	41.85
The operating system of O&M degree	%	7.57	9.27

## CONSTRAINTS:

- The contribution from the users has not yet reached O&M Cost Recovery.
- The cost components in this contribution still cover only for some part of O&M cost for infrastructure and natural resources management cost.
- The cost allocation could not be done properly, because it's not easy to get the agreement toward the formula for cost allocation (method) due to no guidance established.
- The cost for maintenance for catchments and water pollution control is still minimum.



## CONCLUSSION AND RECOMMENDATION :

- Water resources sustainability will be achieved if 6 (six) aspect of sustainability can be fulfilled, i.e. technical, financial, institutional, social, economic and environment sustainability
- The cost of water resources management is determined based on actual/real budget needed for water resources management including conservation, water use and controlling of destructive power of water.
- The financial sharing for water resources management can only happened if the opinion “water is government business” could be changed gradually to the “water is not only government business but also our (stakeholder) business”.
- The cost allocation to determine financial sharing could not be done properly, because it is not easy to get agreement toward the formula for cost allocation (method) due to no guidance established.
- It is recommended to NARBO members to establish a working group or technical groups to discuss a specific topic related to finance of water resources management and for sharing experiences.



Thank you very much

