



Ministry of Public Works – Government of Indonesia
Directorate General of Water Resources



Water Service Fee Implementation in Indonesia

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First Vice Ministerial Meeting – Japan and Indonesia

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Presentation Outline

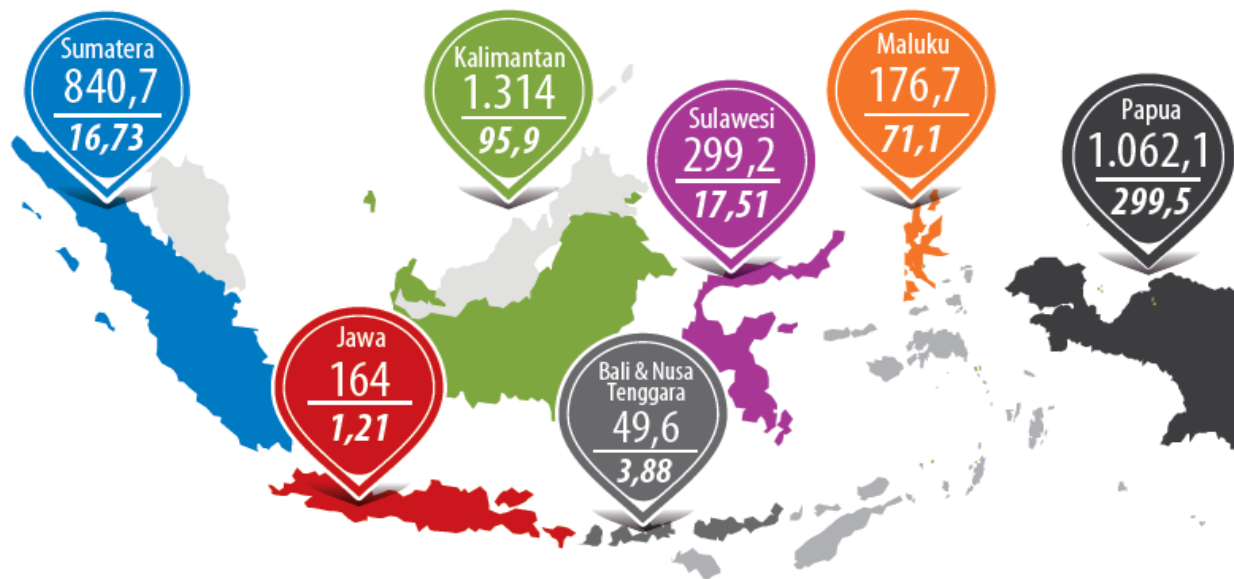
- Water Resources in Indonesia
- Implementation of Water Service Fee
- Conclusion

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WATER RESOURCES IN INDONESIA

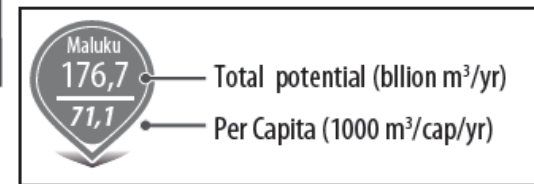
Indonesia: Abundant in Water

A vast archipelago along the equator with close to 17,000 islands, cross-roads for Asia dan Australia



| | |
|------------------|----------------|
| INDONESIA | 3.906,5 |
| SUMATERA | 840,7 |
| JAVA | 164,0 |
| BORNEO | 1,314,0 |
| CELEBES | 299,2 |
| LESSER SUNDA | 49,6 |
| MOLLUCAS | 176,7 |
| PAPUA | 1,062,1 |

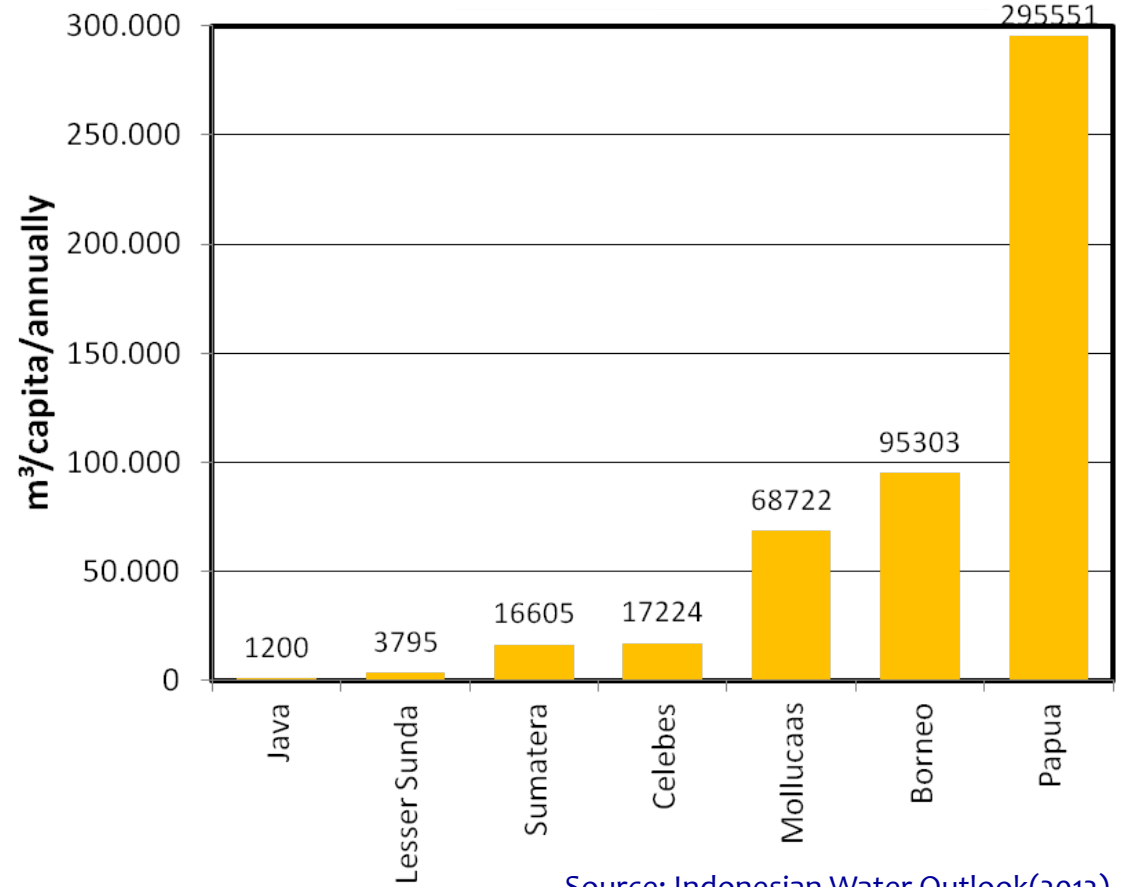
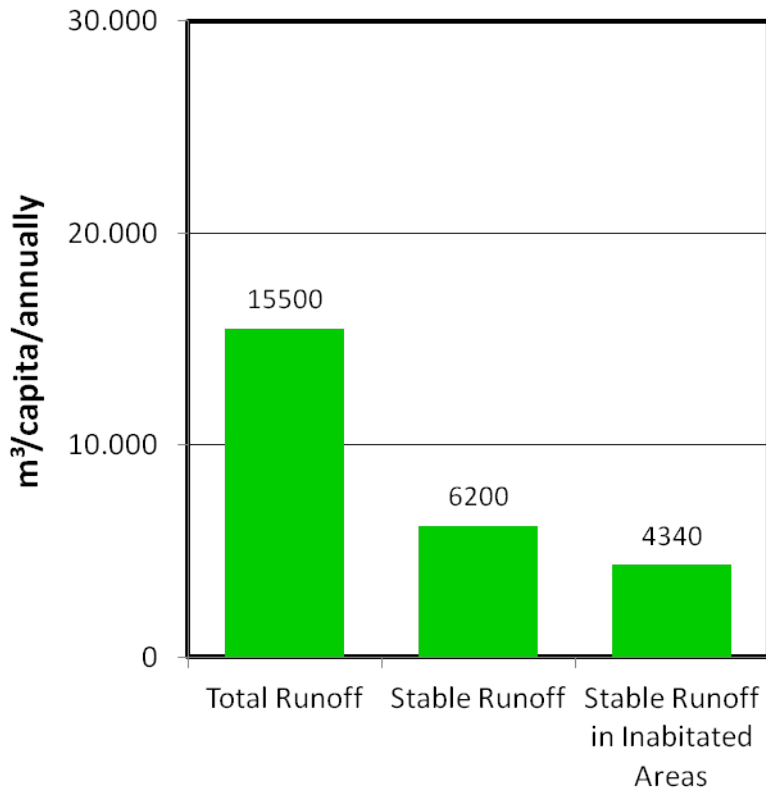
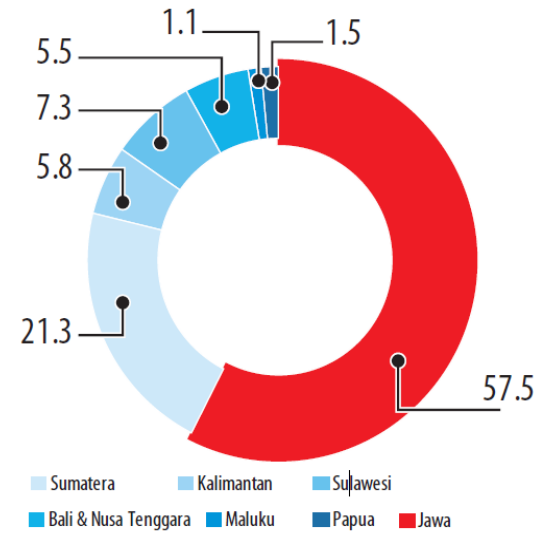
Indonesia (total)
3.906,5 / 16,6



Blessed with the monsoon and dipole climate, fertile land due to geo-volcanic benefits, this archipelago hosts 237,64 million inhabitants (2012)

Water Distribution Problem

Even water is abundant, equality against time and space affected by the population distribution.



Source: Sarwoko & Anshori (2003) recalculated

Source: Indonesian Water Outlook(2012)

Water Resources Legislation in Indonesia

Water Resources Law No 7 / 2004

- The new water resources law (no 7 of 2004) was enacted to replace to older one (no 11 of 1974).
- Basic issues in the new water law that are addressed:
 - Equality and transparency
 - Water use right
 - River basin management
 - *Water service fee*, etc.

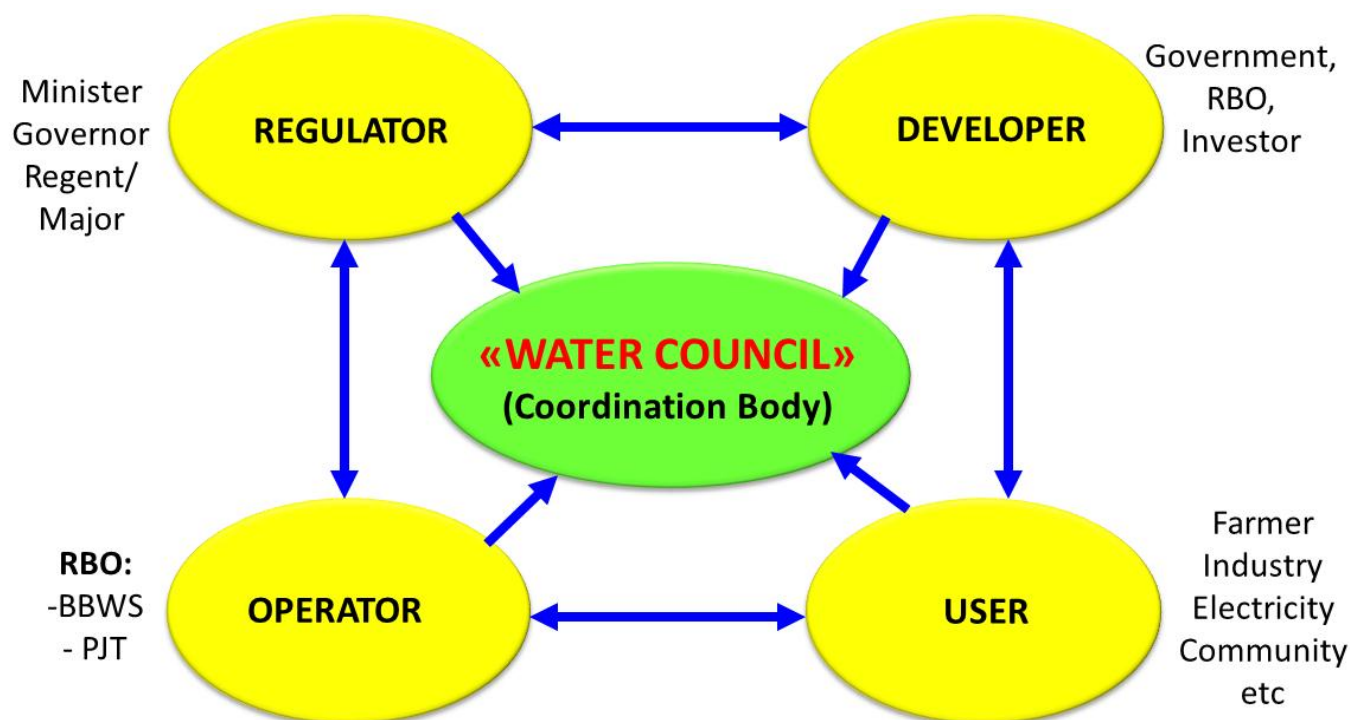
Gov't Regulation No 42 / 2008

- This regulation describes and stipulate implementation of the Water Resources Law No 7 of 2004.
- Various issues are regulated within this regulation:
 - Water management
 - Institutional set-up
 - Water allocation and licensing
 - *Methods of water service calculation*, etc.

Water Resources Legislation in Indonesia

Institutions and Government Agencies in a River Basin

In regard to the Water Resources Law the following schematic diagram show relationship between institutions and agencies within a river basin. A **coordination body** serves as a hub for the regulator, developer, operator and users to confer.



Coordination between Institutions in a River Basin

Water Service Fee as a Water User's Obligation

Constitution of 1945 Paragraph 33 verse (3): Land and **water** and its richness therein is owned by the state and managed for the best **welfare of the people**.

Water resources is an ultimate resource required to support economic development and welfare of the people, thereto needs to be developed and managed in a sustainable manner – requisite of the **Water Resources Law**.



Sustainability involves **technical, institutional, financial, social, economic and environmental** aspects.



FINANCIAL ASPECT

WATER SERVICE FEE ~ Biaya Jasa Pengelolaan Sumber Daya Air (BJP-SDA) is quoted from the water users, specifically the **commercial users** and used by the RBO to carry out operation and maintenance activities and ensure water services within the basin.

Water Resources Law No 7 of 2004 Para. 77 and 80

Government Regulation No 42 of 2008 on Water Resources Management – Para. 116 and 118

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IMPLEMENTATION OF WATER SERVICE FEE

Water as Economic Good

-- Reasoning Behind the Water Service Fee --

The Dublin Principles (1992)

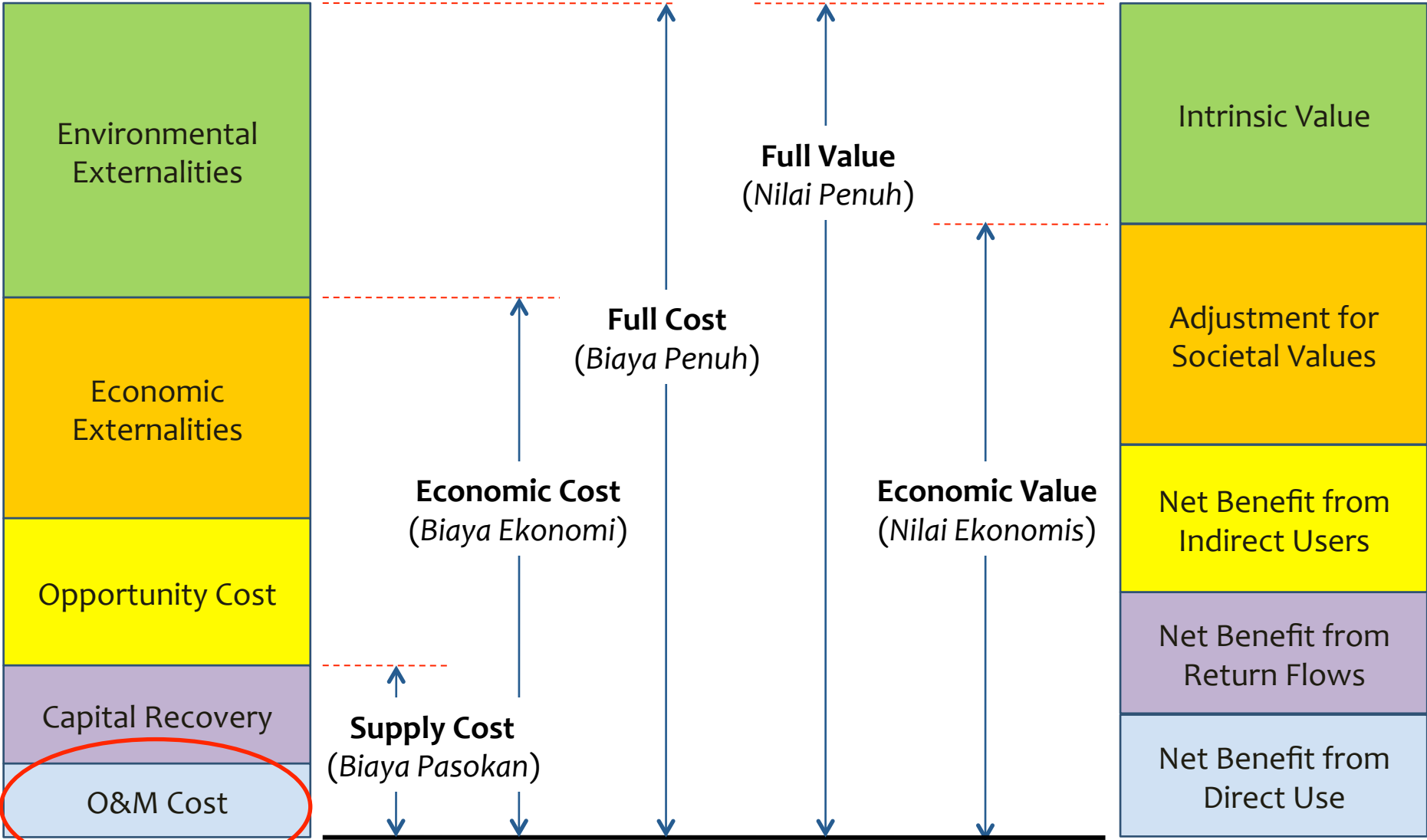
- Principle 1: Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment;
- Principle 2: Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels;
- Principle 3: Women play a central part in the provision, management and safeguarding of water;
- Principle 4: Water has an **economic value** in all its competing uses and should be recognized as an economic good.

Considering the Principles ...

- Schools of thought:
 - Water as an economic good is related to free-market principles;
 - Water as an application of **reason to choice**.



Cost and Value Perspective of Water



Water Service Fee » presently in Indonesia

Source: Rogers, 2002

Water Service Fee Implementation

Water Service Fee ~ BJPSDA

- BJPSDA is quoted to specific water users (para. 80 [1] of the Water Resources Law No 7 of 2004).
- Purpose of the BJPSDA is to finance water resources management activities in the basin (para. 80 [3])
- Only quoted on the **commercial users** (by law)

BJPSDA Formulation

$$WSF[u] = \frac{\sum C \times NB[u] \times d[u]}{V[u]}$$

- Where:
 - WSF = water service fee tariff for the specific user group [u]
 - C = O&M cost
 - NB = benefit obtained by the specific user group [u] from the water services
 - d = degree of allocation (0-100%)
 - V = abstracted water by the specified user group [u]

Basics of Jasa Tirta I Public Corporation

Constitution

- Jasa Tirta I Public Corporation is a state-owned enterprise with the responsibility as a corporate-type of river basin organization = **operator**.
- Tasks and function are stipulated with under the **Gov't Regulation No 46 of 2010**.

In Numbers

- 2 basins (Brantas & B. Solo)
- 5 division
- 509 employees
- Serving hydro-energy generation 1,200 million k-Wh
- Irrigation services: 5,300 million m³ (Brantas & B. Solo)
- 250 mill. m³ industry bulk-water
- 400 mill. m³ domestic bulk-water

HEPP = 6 in the Brantas Basin; 3 in the B. Solo (East Java) dan 1 (Central Java)



Bening Reservoir



Mrican Barrage



Selorejo Reservoir



Wonorejo Reservoir



Lengkong Baru Barrage



Lodojo Barrage



Wlingi Reservoir



Sutami Reservoir



Sengguruh Reservoir



Menturus Rubber Dam



Lahor Reservoir



Tulungagung Tunnel



Gunungsari Barrage



Jatimlerek Rubber Dam



Jati Rubber Dam



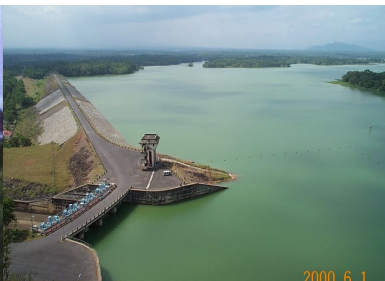
Babat Barrage



Jabung Gate



Floodway Pelangwot



Wonogiri Reservoir



Colo Barrage

Water Service Fee as a Water User's Obligation

BJPSDA (*Water Service Fee*)

- As stipulated by the Water Resources Law (No 7 of 2004), Gov't Regulation No 42 of 2008, O&M activities within a specific river basin can be undertaken by a state-owned enterprise form of RBO = financed with the water service fee.
- Concept of water service fee within the Water Resources Law is as an **ear-marked fund** (from water back to water) in order to lessen up the financial inequalities.

Jasa Tirta I Public Corporation

- BJPSDA is quoted by Jasa Tirta I Public Corporation as stipulated by the Gov't Regulation No 46 of 2010, to the **commercial users**:
 - HEPP (power generating)
 - Domestic bulk-water
 - Industrial bulk-water
 - In-land fisheries etc.
- Jasa Tirta I Public Corporation as a corporate type of RBO works along with the Balai as a quasi-RBO representing the Ministry of Public Works.

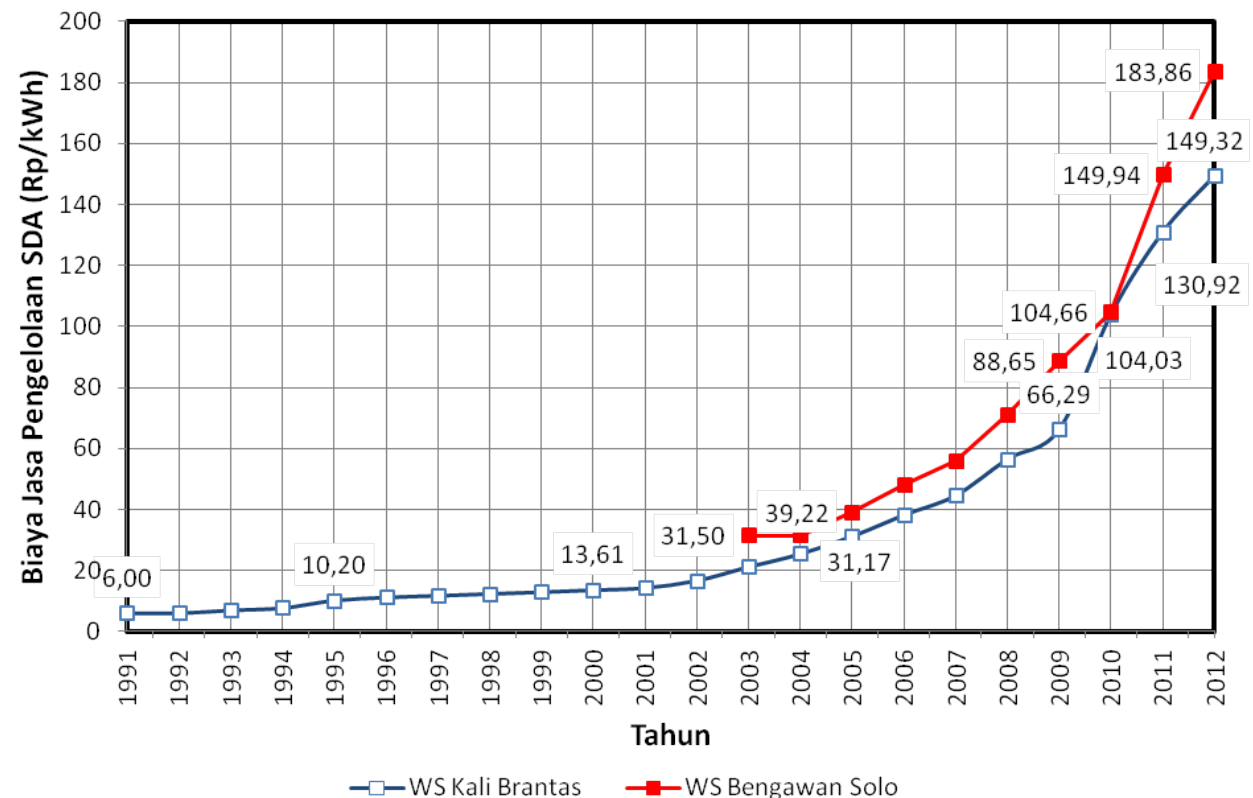
Example of Water Service Fee

Comparing Water Service Fee to the Water Value

Comparison of Electricity Cost (kWh) Water Service for HEPP (Brantas & B.Solo)

| Prime Mover | USD¢ |
|----------------------|-------|
| HEPP (small scale) | 5-6 |
| HEPP (medium-large) | 4-5 |
| Wind (medium) | 9-13 |
| Wind (large) | 8-11 |
| Bio-mass | 6-7 |
| Bio-massa (gasified) | 5-6 |
| Solar (small-medium) | 20-60 |
| Geothermal (large) | 5-6 |
| Coal | 4-5 |
| Oil (MFO based) | 22-28 |

Source: USAID (2007) recalculated



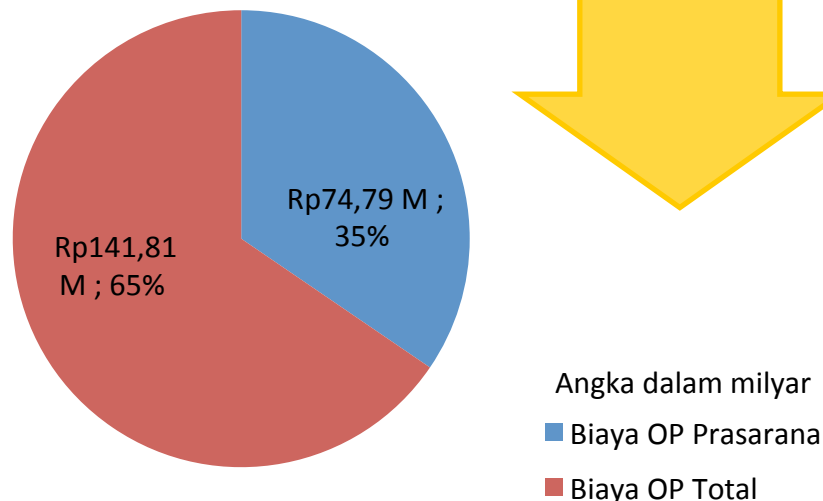
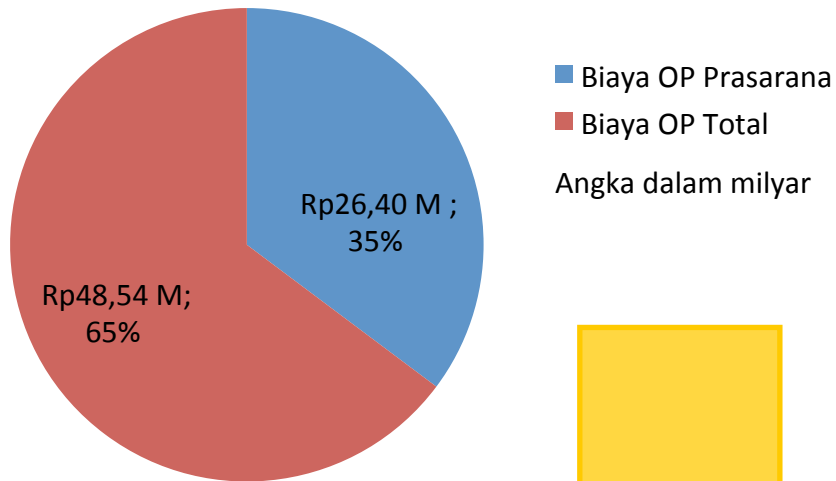
HEPP power buy by the *off-taker* = Rp 350; resale of power > Rp 650.

Economic cost of HEPP power = Rp 450-580 (medium) dan Rp 375-480 (large)

BJPSDA = Rp 183.86 (B.Solo) dan Rp 149.32 (Brantas) → debated by the users.

Consistency in Using the Water Service Fee is the Key Success for Sustainable O&M

Percentage of O&M Cost as of 2007



Percentage of O&M Cost as of 2012

- O&M activities funded by the water service fee must be treated as an ear-marked fund – consistent allocation for O&M activities.
- One of the example is: dam safety.



Conclusion

- Water as an economic good and demand management are compatible to the Indonesian context, as an element of the implementation of the **integrated water resources management** under the Water Resources Law (No 7 of 2004)

- The Indonesian has implement water service fee (in form of BJPSDA in the Brantas and Bengawan Solo River Basin, Java) by Jasa Tirta I Public Corporation since 1990 and 2002; however the fee is still limited to **operation & maintenance cost recovery**.

Conclusion

- Further key area for improvement in water service fee for Indonesia:
 - equitable yet simple **formulation** system for tariffication process; and
 - **guidelines** to estimate various posting costs for O&M and cost-recovery schemes.

