

# ROLE OF JASA TIRTA II PUBLIC CORPORATION ON WATER MANAGEMENT AND WATER ALLOCATION IN CITARUM RIVER BASIN

*Presentation for :*  
**NARBO 4<sup>th</sup> Training – Srilanka, November 6 ~ 10, 2006**

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**J A S A T I R T A I I  
P U B L I C C O R P O R A T I O N**



# Description of Citarum River Basin



Western part of the world

- Basin Area : 12,000 km<sup>2</sup>
- Population (1999) : 8,595 million
- Average Rainfall : 4000 mm/year
- Water Potentials : 12.95 billion m<sup>3</sup>/year
- River Length : 300 km



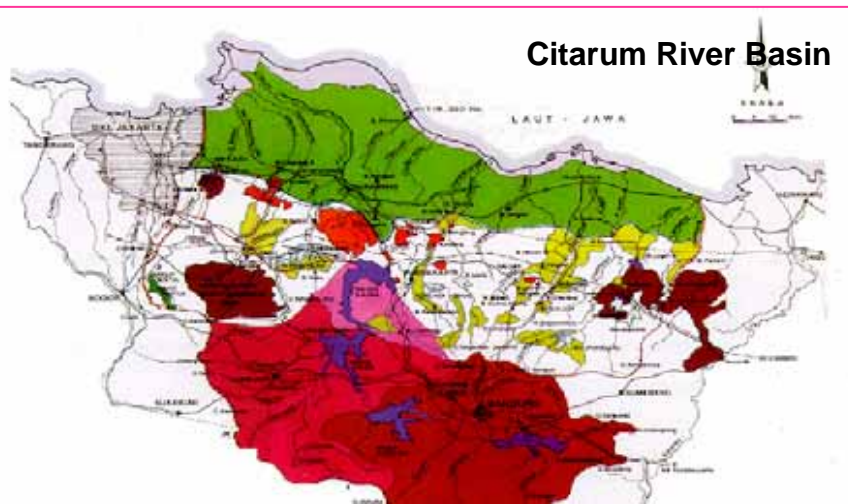
Indonesian Archipelago

- Land Use :
  - Irrigated 33 %
  - Agricultural 258 %
  - forest 19 %
  - settlements 7 %
  - Swamp & fish ponds 4 %
  - others 9 %



Java island

West Java Province



Citarum River Basin



# HISTORY OF CITARUM WATERSHED MANAGEMENT

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## CONSTRUCTION PERIOD

**Jatiluhur Multipurpose Project (1956 - 1967)**

## OPERATION AND MAINTENANCE PERIOD

**Jatiluhur State Owned Company (1967 -1970)**

Government Regulation (GR) No. 8/1967, 24 Juli 1967

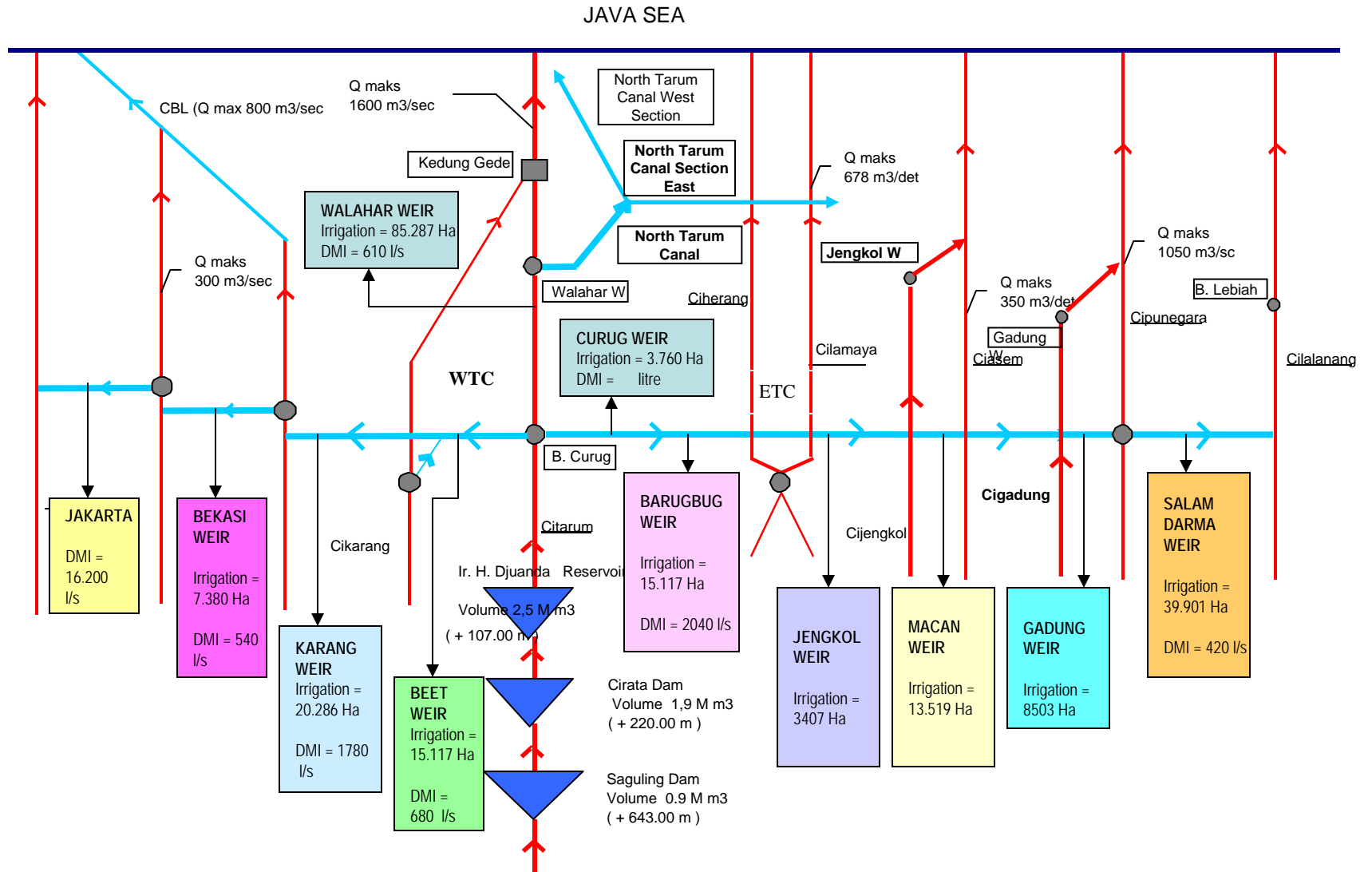
**Jatiluhur Authority Public Corporation**

- GR 20/1970, 23 Mei 1970
- GR 35/1980, 13 Oktober 1980
- GR 42/1990, 23 Agustus 1990

**JASA TIRTA II PUBLIC CORPORATION**

GR 94/1999, 13 October 1999

# SCHEME OF CITARUM WATER SYSTEM

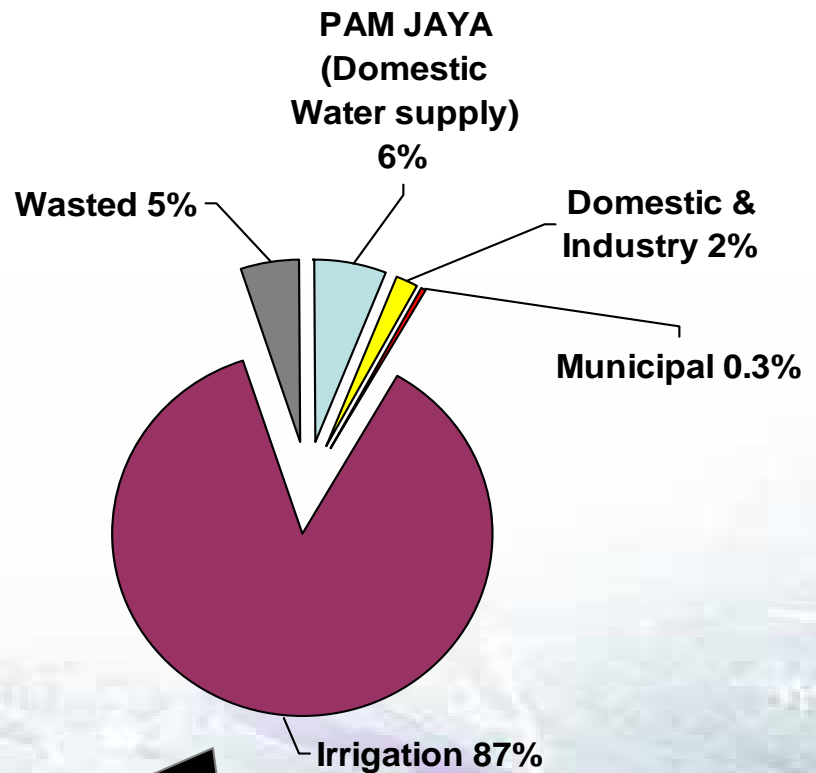
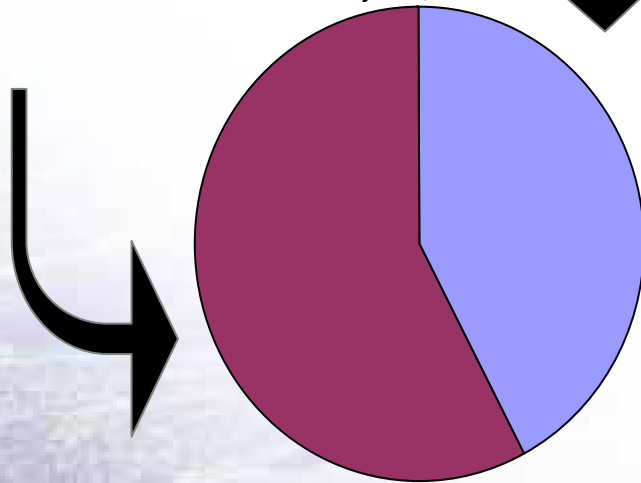


# WATER RESOURCES POTENTIAL IN CITARUM RIVER BASIN

Total  $\pm 12.95$  Billion  $m^3$ /year  
Citarum : 6.00  $Bm^3$ /year  
Other river : 6.95  $Bm^3$ /year

Regulated 7.65 Billion  $m^3$ /year  
Equal to 59.07%  
(From Citarum  $\pm 6.00$   $Bm^3$ /year  
and other river  $\pm 1.65$   $Bm^3$ /year)

Unregulated  $\pm 5.30$   $Bm^3$ /year  
Equal to 40.93%.



# AVERAGE ANNUAL FLOW OF WATER IN THE BASIN

<b>NO</b>	<b>RIVERS</b>	<b>AVERAGE ANNUAL FLOW IN 10<sup>6</sup> m<sup>3</sup></b>	<b>MONITORING STATION</b>
<b>1.</b>	<b>CIPAMINGKIS</b>	<b>280</b>	<b>PAMINGKIS WEIR</b>
<b>2.</b>	<b>CIBEET</b>	<b>1.180</b>	<b>BEEET WEIR</b>
<b>3.</b>	<b>CITARUM</b>	<b>5.770</b>	<b>JUANDA Dam/Reservoir</b>
<b>4.</b>	<b>CIKAO</b>	<b>480</b>	<b>CURUG WEIR</b>
<b>5.</b>	<b>CILAMAYA / CIHERANG</b>	<b>660</b>	<b>BARUGBUG WEIR</b>
<b>6.</b>	<b>CIJENGKOL</b>	<b>250</b>	<b>JENGKOL WEIR</b>
<b>7.</b>	<b>CIASEM</b>	<b>570</b>	<b>MACAN WEIR</b>
<b>8.</b>	<b>CIGADUNG</b>	<b>180</b>	<b>GADUNG WEIR</b>
<b>9.</b>	<b>CIPUNEGARA</b>	<b>1.900</b>	<b>SALAMDARMA WEIR</b>
<b>10.</b>	<b>CIPANCUH</b>	<b>150</b>	<b>PANCUH Dam/Reservoir</b>
<b>11.</b>	<b>BEKASI</b>	<b>1.030</b>	<b>BEKASI WEIR</b>
<b>12.</b>	<b>CIKARANG</b>	<b>500</b>	<b>KARANG WEIR</b>
	<b>JUMLAH</b>	<b>12.950</b>	

## WATER BALANCE IN CITARUM RIVER BASIN (From 1990 – 2005)

Year	INFLOW (million m3)			UTILIZATION (million m3)				Balance
	Citarum	Other river	Total	Irrigation	Domestic	Industry	Total	
1990	4,677.99	3,857.50	8,535.49	5,416.80	204.60	81.30	5,702.70	2,832.79
1991	4,692.99	3,901.50	8,594.49	5,220.08	235.30	108.20	5,563.58	3,030.91
1992	8,169.00	6,407.00	14,576.00	5,273.89	198.50	117.50	5,589.89	8,986.11
1993	7,248.99	6,660.40	13,909.39	4,654.02	249.70	110.60	5,014.32	8,895.07
1994	5,498.67	5,167.40	10,666.07	4,961.13	331.30	126.80	5,419.23	5,246.84
1995	6,351.01	5,841.20	12,192.21	5,671.69	294.30	147.40	6,113.39	6,078.82
1996	6,963.00	6,062.80	13,025.80	6,334.98	331.30	137.90	6,804.18	6,221.62
1997	3,684.94	3,236.20	6,921.14	5,232.58	395.30	155.90	5,783.78	1,137.36
1998	7,671.01	6,442.60	14,113.61	6,551.46	448.10	149.40	7,148.96	6,964.65
1999	5,766.98	4,692.40	10,459.38	5,470.46	422.90	153.80	6,047.16	4,412.22
2000	4,964.68	5,505.90	10,470.58	6,010.75	428.20	164.70	6,603.65	3,866.93
2001	7,125.32	6,461.90	13,587.22	6,317.21	471.20	196.40	6,984.81	6,602.41
2002	5,540.19	5,882.00	11,422.19	5,781.61	522.20	203.60	6,507.41	4,914.78
2003	4,294.46	3,617.87	7,912.33	5,062.11	550.70	193.70	5,806.51	2,105.82
2004	4,743.05	5,462.30	10,205.35	5,412.40	523.30	207.50	6,143.20	4,062.15
2005	5,749.16	7,008.88	12,758.04	5,670.23	586.32	202.69	6,459.24	6,298.80



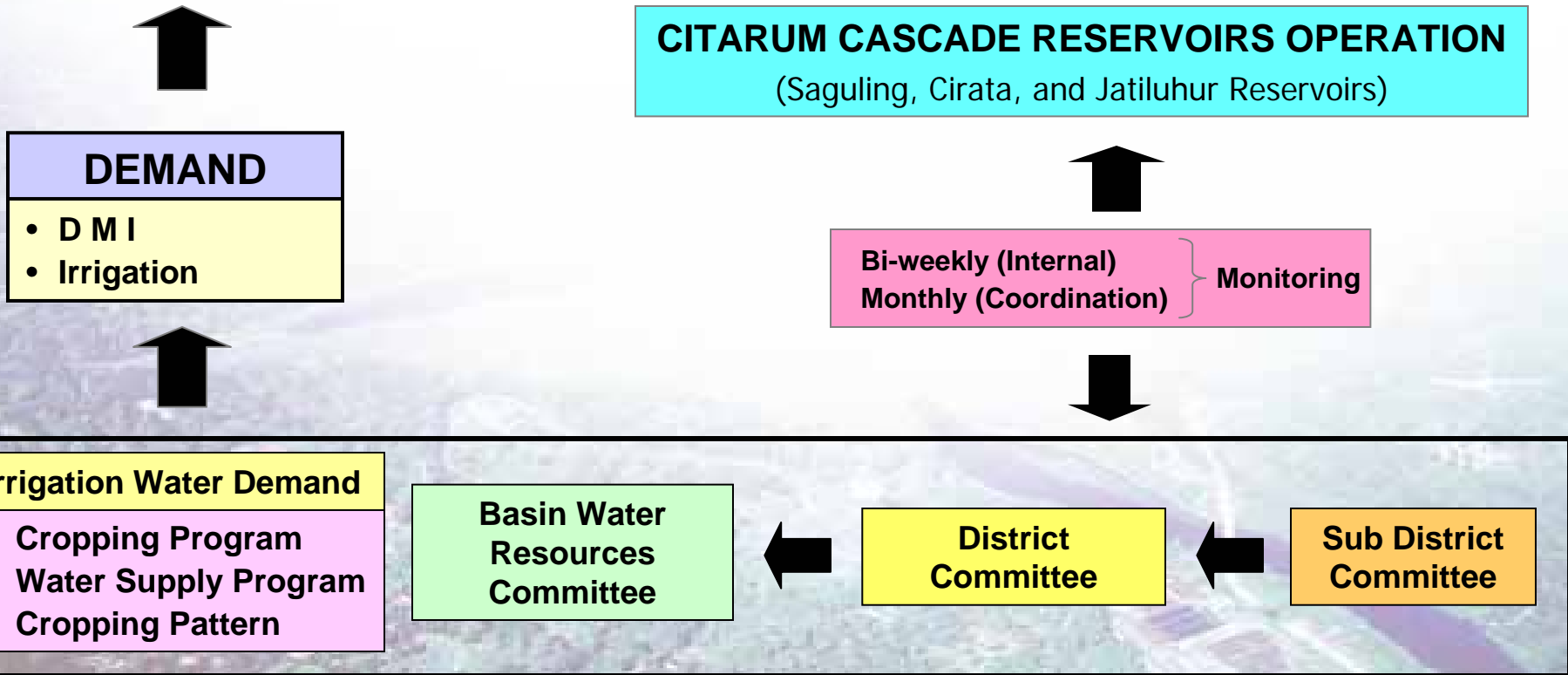
# Citarum Water Resources Management

## Operation of Large-scale Irrigation System

SUPPLY	Dry S.	Wet S.
Local sources	30%	70%
Reservoirs	70%	30%

Note:

Using schematic water resources infrastructures with water demand in specific location, water requirement from Jatiluhur reservoir is computed



# WATER RESOURCES MANAGEMENT

Operation by Jasa Tirta II Public Corporation

**JASA TIRTA II PUBLIC CORPORATION**

**Integrated Water Resources Management  
(IWRM)**

**1. Catchment Area Management**

**2. Water Quantity Management**

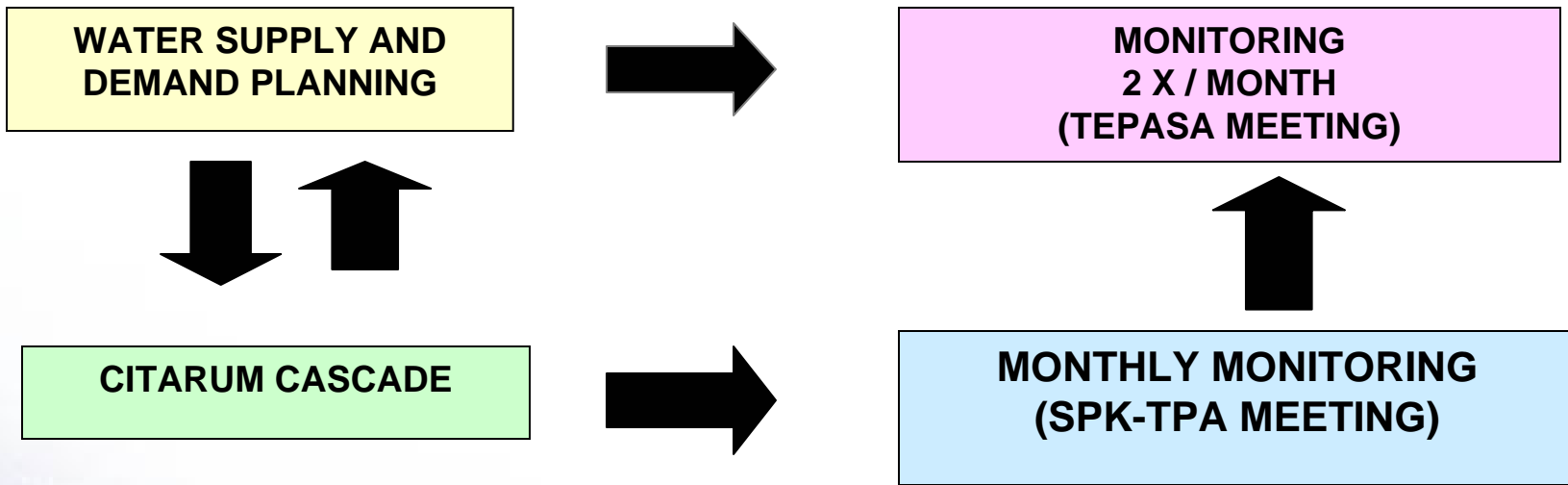
**3. Water Quality Management**

**4. River Environment Management**

**5. Flood & Drought Management**

**6. Water Resources Infrastructure Management**

# WATER ARRANGEMENT EVALUATION



RPPA: Regulation of Director PJT II

POLA OPERASI KASKADE CITARUM:

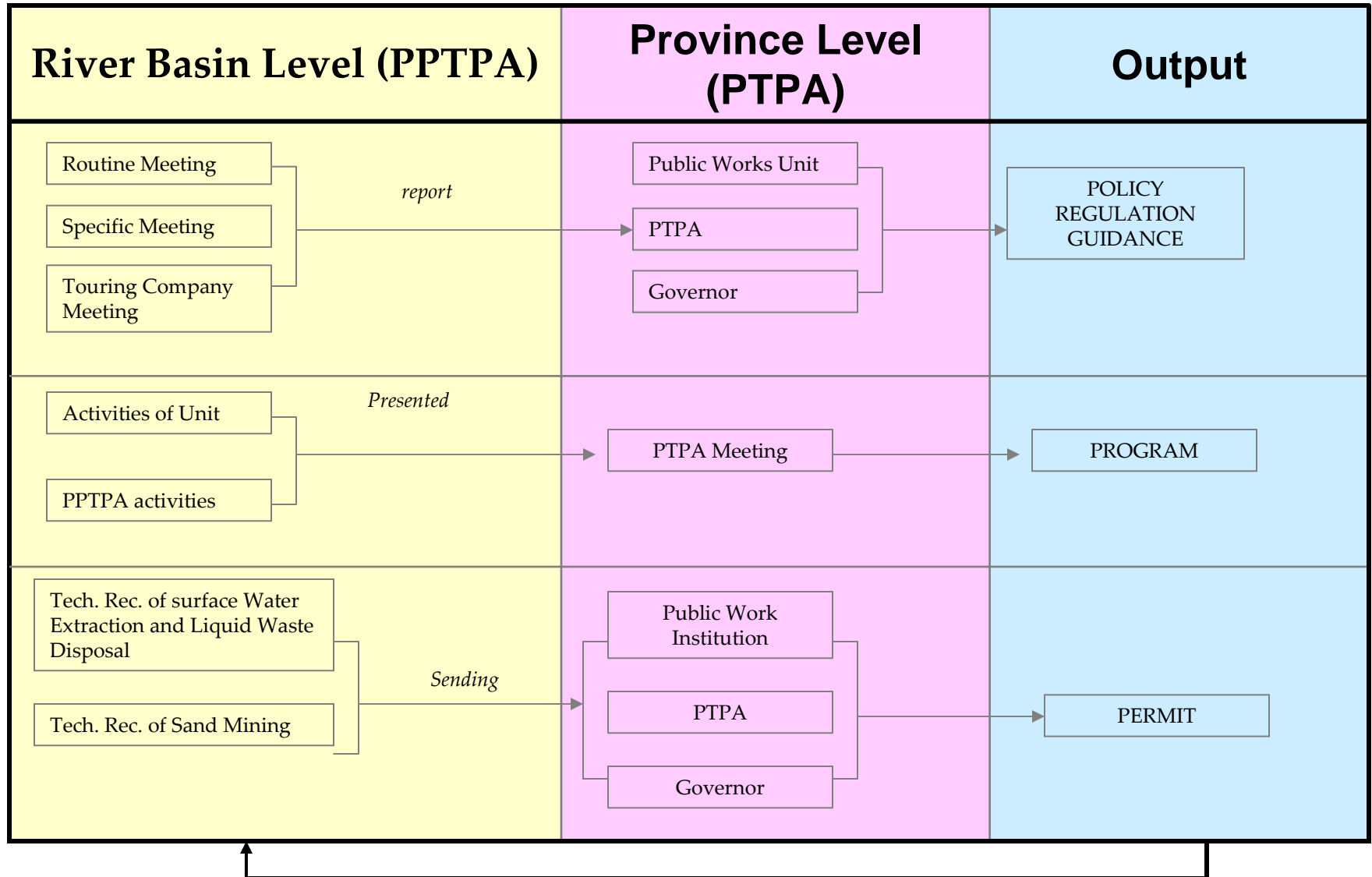
MOU between PJT II & PT PLN (Persero)

Meeting of Coordination water management secretariat of Citarum (SPKTPAC)

Members:

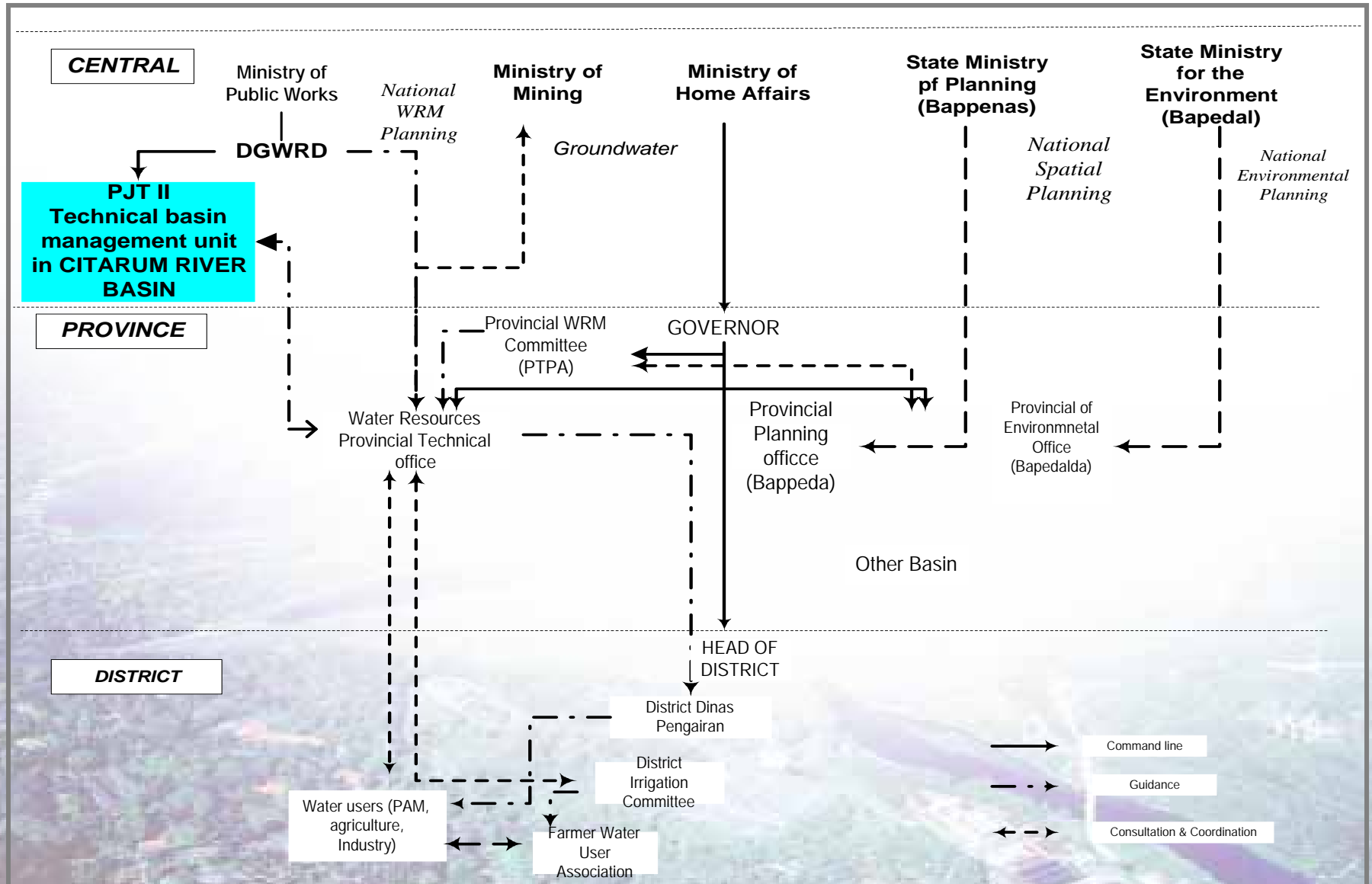
1. Jasa Tirta II Public Corporation
2. PT PLN (Persero)
3. PT Indonesia Power
4. PT PJB (pengelola bendungan Cirata)
5. Water Resources Management Service (Dinas PSDA)
6. Public Work Department
7. Planning Unit of District West Java Province
8. BPPT
9. Meteorological and Geophysical (BMG)
10. Other stakeholders

# COORDINATION AMONG STAKEHOLDERS IN THE CITARUM RIVER BASIN



↑  
Feed Back

# INVOLVEMENT OF GOVERNMENT ADMINISTRATION LEVELS IN WATER RESOURCES MANAGEMENT OF CITARUM RIVER BASIN



# **Issues & Challenges**

## **in Citarum River Basin**

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**Overall issues to be faced in water quantity management include :**

- Water should be treated as an economic good, including pricing of services provided by water management.**
- The capacity for water management needs further development**
- The institutional setting for water resources planning and management should be further harmonized**
- No longer should water management be oriented at simply satisfying all demands, but demand management should be incorporated in the management process.**

**The expected socio-economic development of the region forms a considerable challenge for water management.**

# CONCLUSION

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- Water potency in the Citarum river basin approximately 12.95 billion m<sup>3</sup> annually. Using the existing hydraulic infrastructures it's only 7.65 billion m<sup>3</sup> could be regulated and the rest is still wasted to the sea.
- Citarum River in the biggest one connected with 4 rivers to the west and 4 rivers to the east by manmade canals namely West Tarum canal (WTC) and East Tarum Canal (ETC) formed a unit of hydrological boundary of Citarum intergrated basin of 12,000 km<sup>2</sup>.
- Three big reservoirs, in the upstream, Saguling, Cirata and Djuanda Reservoir regulates river run off and releases stable water flows to the curug barrage and diverted to the west Tarum Canal and east tarum canal by gravitation to the north.
  - The annual allocation of water in the main river and canals is subject to the results of coordination by River Basin Water management executive committee (PPTPA).
  - The expected socio-economic development of the region forms a considerable challenge for water management.
  - From as assessment of the present situation in the basin and surrounding region and from projections of future water requirements, a more concrete set of issues can be identified that are critical if the water resources potential of the basin is to be fully utilized and in a sustainable way.



*Thank  
You*