

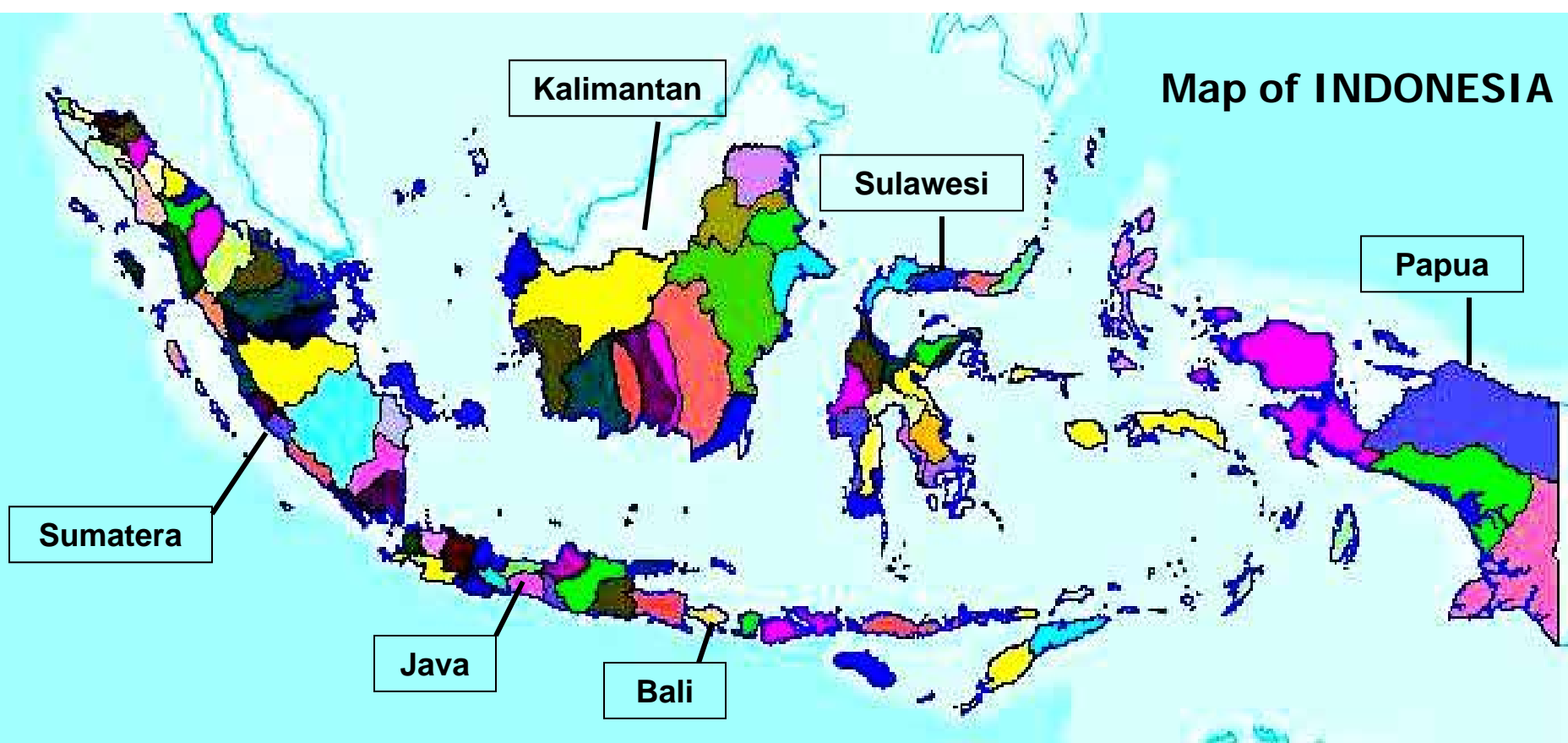


BASIN WATER RESOURCES MANAGEMENT AND ORGANIZATION IN INDONESIA

**Presented by:
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April 2005

Map of INDONESIA



Composed of 17,508 island, with
coastline of 84,000 km.

Total land area of 1.92 million km²

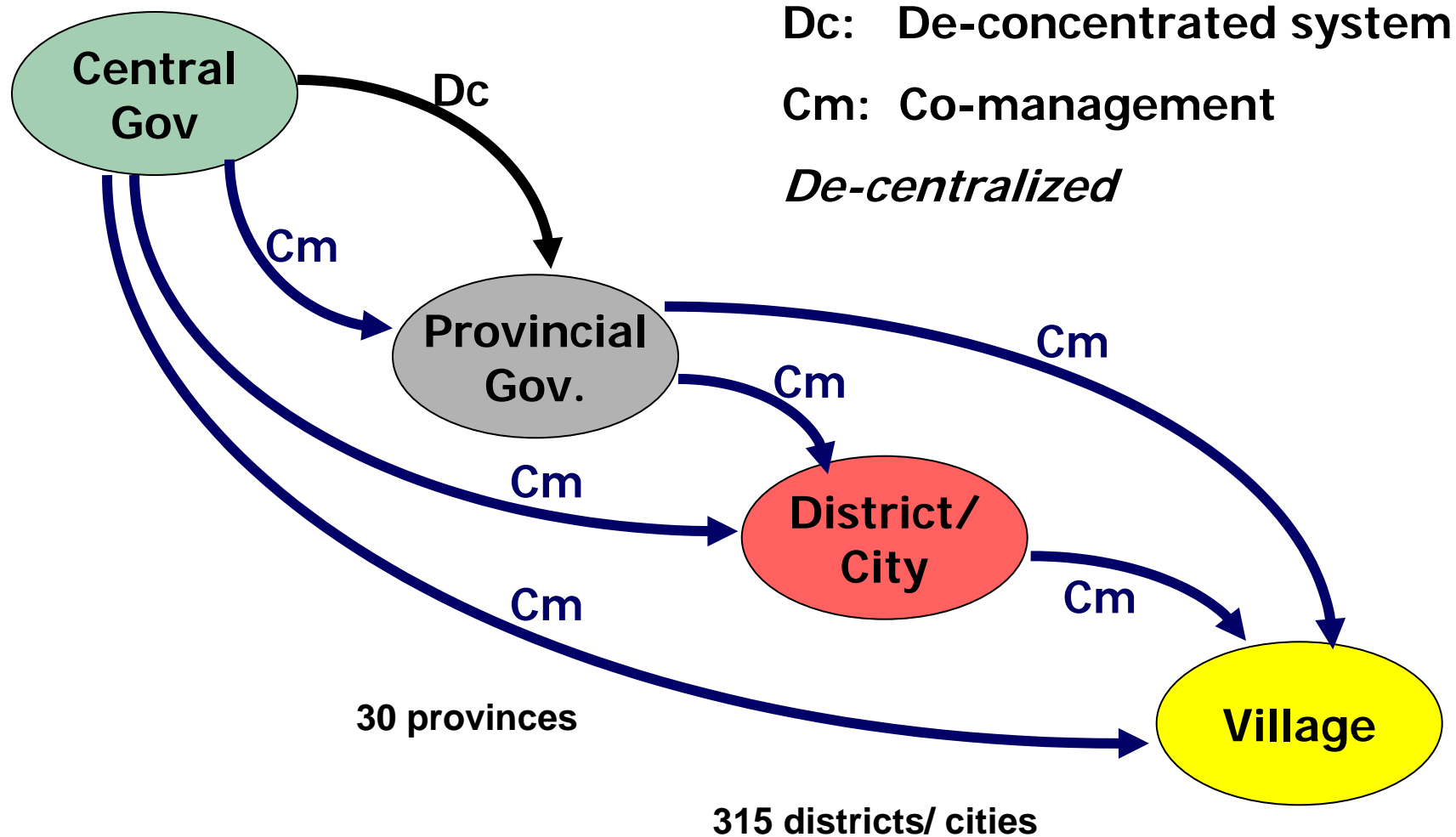
Total population: 206 million
people, 65% live in Java

Wet season: Oct – March
(53% - 86 % of the mean
annual rainfall)

Dry season : Apr – Sept

Total water availability:
15.500 m³/ capita / year

Governmental and Public Administration System.



WRM Issues and Problems



FLOOD

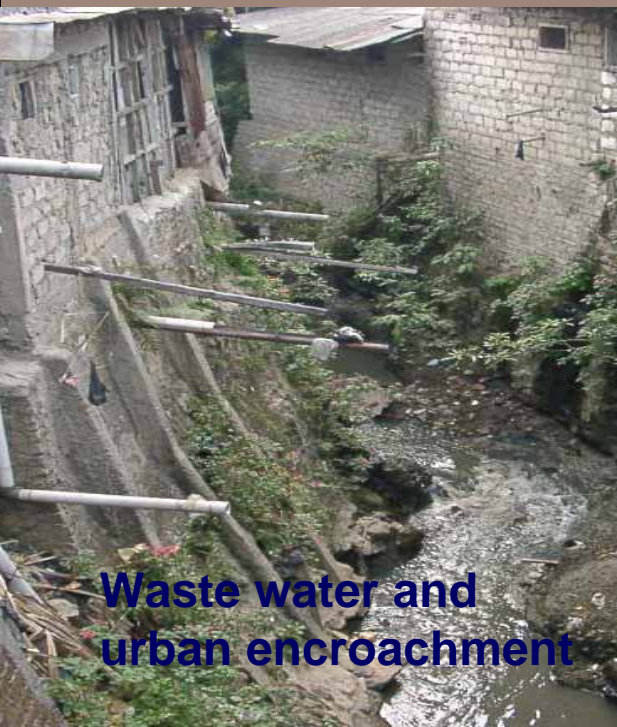


DEFORESTATION

18,500,000 ha in critical condition.



DROUGHT



Waste water and urban encroachment



High POPULATION



GARBAGE

WRM ISSUES

❖ Water resources problems

- Lack of water allocation owing to increasing of water demand
- Very limited access in the system of fresh water supply
- Decreasing of water quality
- Increasing run off owing to watershed degradation
- Lack of water conservation

❖ Need for national food security

- Very limited in O&M budgetting for irrigation systems.
- Late of routine maintenance
- Conversion of irrigation land use to another purposes.

❖ Legal products and Institutional problems

- Shifting to the new paradigm
- Weakness in the water resources administration systems.
- Weakness in the coordination system.



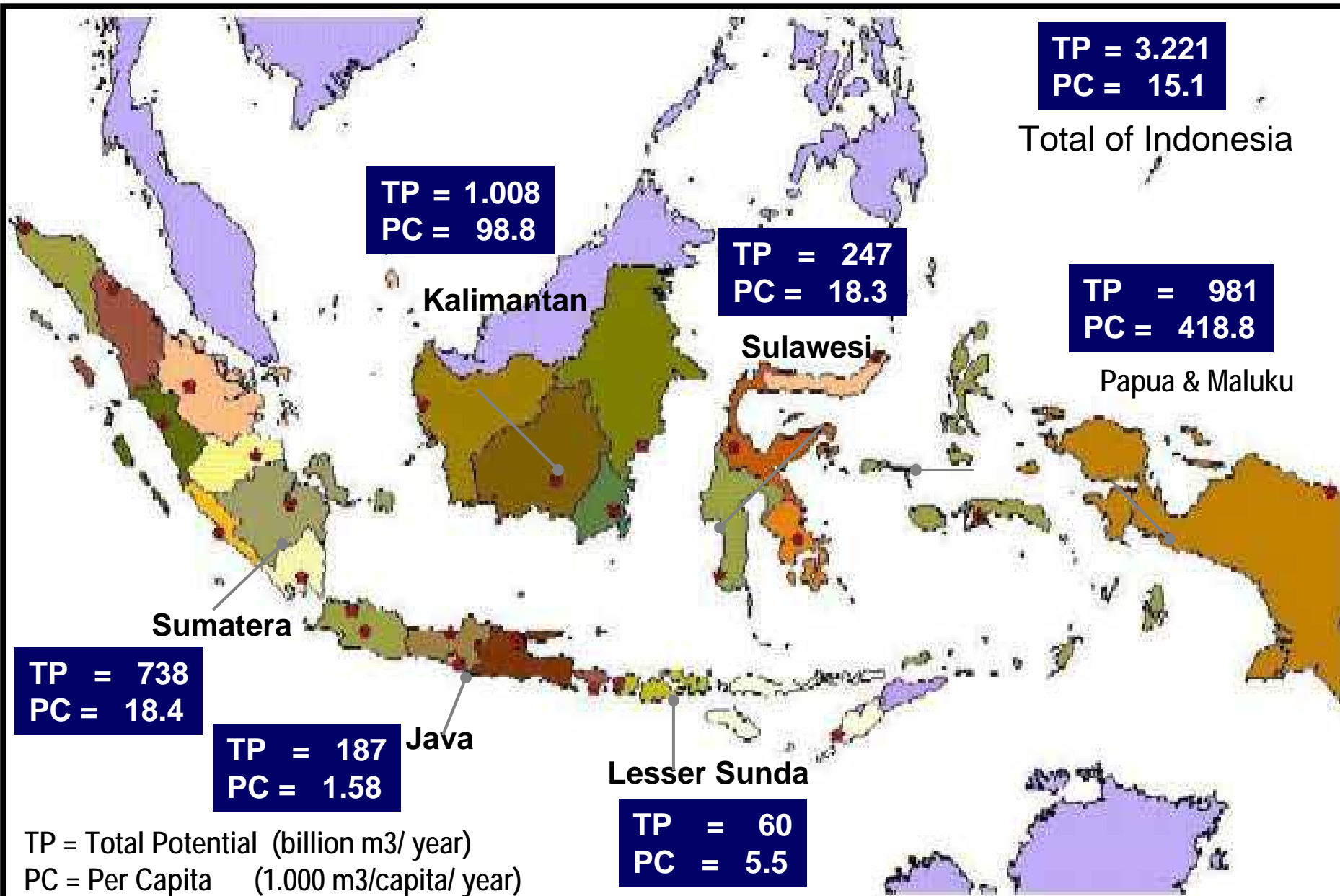
Surface Water Resource Potential and Demand by Island

Large Island	Area	Surface Water Potential	Estimate low flow	Irriga + DMI Demd			WR Utilizat
	1000km ²	(m ³ /sec)	(m ³ /sec)	1990 (m ³ /s)	2000 (m ³ /s)	2015 (m ³ /s)	in 2015 %
Java/ Bali	139	6,199	786	1,074	1,777	1878	29.8
Sulawe- si	187	2,488	561	126	365	529	21.3
Sumatra	470	23,660	4,704	297	497	693	2.9
Kaliman- -tan	535	32,279	6,956	73	93	193	0.6

Source: UNDP/FAO Study 1992

Note : Irrigation demand is the range of 87% to 95% of the total demand.

Potential Water Availability di Indonesia 2001



FILOSOPHIC BACKGROUND

- Water is vital for human life and living at all times
- Therefore as stated in the constitution water governed by the state and utilized at the greatest possible for people welfare.
- Water is dedicated to the need of the people in all aspects (socio economic, environment, culture, politics and national security) to create growth, equity, justice, self-resilian.
- In order to achieve good control of water, efforts should be done towards:
 - Efficiency of water use
 - Sustainable water management
 - Dynamic water conservation
- Optimum and sustainable water utilization could be brought into reality

Basic Consideration

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graph LR; A[Basic Consideration] --> B[Basic Philosophic]; A --> C[Administ. Consideration]; A --> D[Techical Consideration]
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Basic Philosophic

1. WR are a blessing of the One and Only God that give benefits for the welfare of the whole people.
2. Water is a source of life.

Administ. Consideration

Article 33, para (3) of National Constitution 1945: “Water resources are controlled by The State and are use for the maximum benefits of the people in a fair manner”.

Techical Consideration

1. Water is renewable natural resources.
2. Water are mostly constant in quantity, but the availability of water depend on climatic conditions of an area.
3. Surface water & Groundwater are linking in one hidrological system.
4. Water is actually dynamic resource by nature, flowing to lower places without distinguishing the administrative regions .

SHIFTING PARADIGM

- **SUSTAINABLE DEVELOPMENT**
- **DECENTRALIZATION AND AUTONOMY**
- **HUMAN RIGHT**
Each individual has the right to access water for daily basic needs.
- **DEMOCRATIC**
Public participation in the process of policy formulation, planning, and program implementation.
- **GLOBALIZATION**
Water is a global problem and becoming business of everybody

WRM VISION AND MISSION

VISION:

Establishing water utilization for the social welfare of all people

MISSION:

1. Conserving of water resources
2. Utilizing and developing of water resources
3. Controlling and mitigating of disaster related water
4. Empowering and enhancing community and private sector involvement, and government competencies in water resources management.
5. Enhancing of transparency and availability of water resources data and information.

KEY PRINCIPLES OF A NATIONAL WATER RESOURCES POLICY (NWRP)

1. Introduce a water use rights frameworks for water allocation and utilization;
2. Improve efficiency in the utilization of water, particularly for irrigation;
3. Facilitate conjunctive allocation and use of surface and groundwater through a unified licencing mechanism;
4. Seek attainment of regional surface and ground water quality levels conducive to national socio-economic development and environmental sustainability;
5. Develop institutions for prioritized, integrated spatial and river basin planning processes based on participatory involment of stakeholder representatives in publicly transparent water resources and irrigation decission-making;
6. Strengthen the enabling mechanisms for community management and financing of irrigation networks, municipal water supply and sanitary wastewater disposal;
7. Establish a monitored planning, programming and budgeting system for prioritized and sustainable WR development invesment and management under the proposed legal framework for regional autonomy and related national revenue sharing;

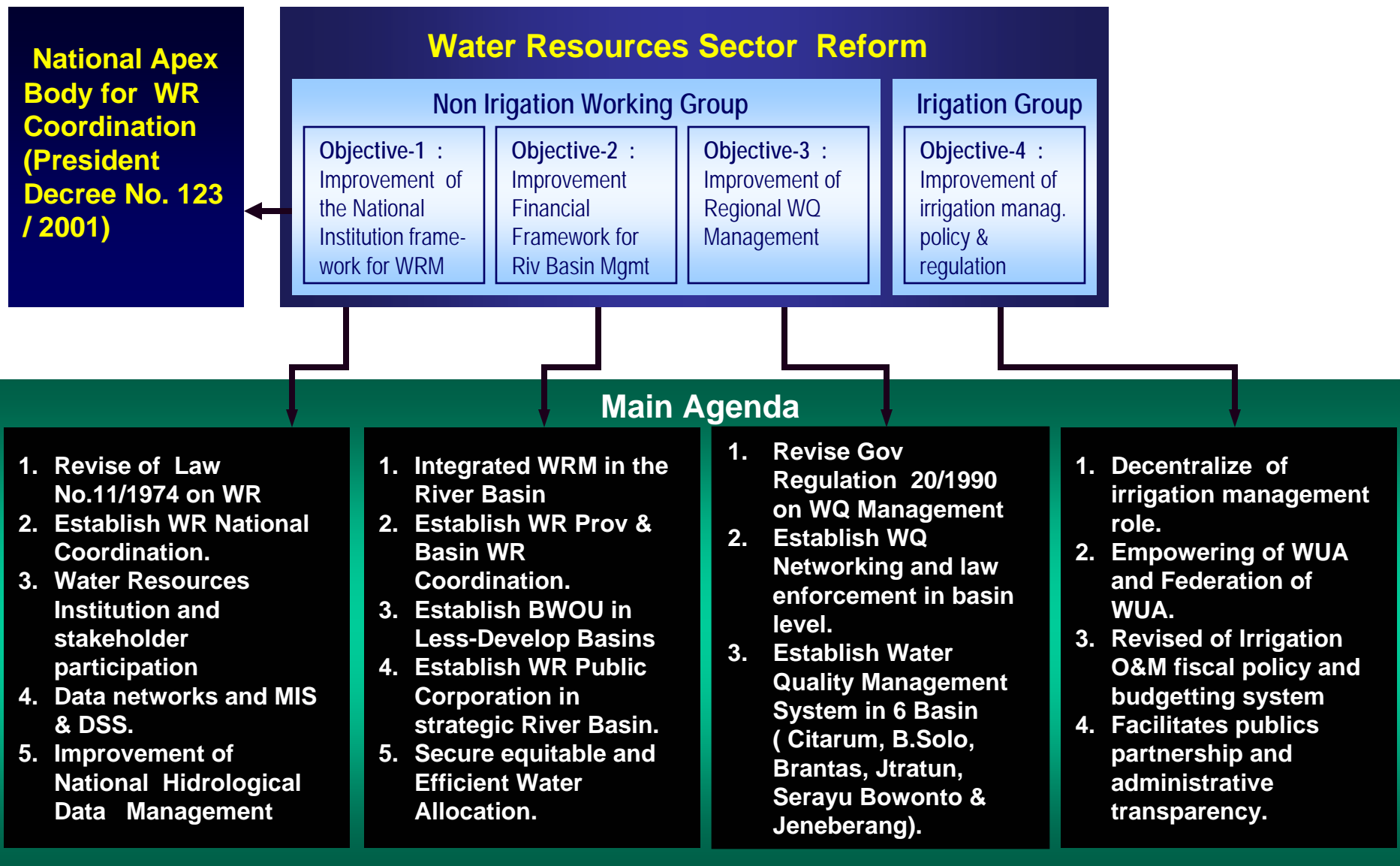


KEY PRINCIPLES OF A NATIONAL WATER RESOURCES POLICY (NWRP)

8. Create a regional WR regulatory and management structure to support and implement integrated RBM under the principle “One Basin, One Management” through Basin Water Resources Management Units and, wherever feasible, corporatized self-financing entities under Regional Government control;
9. Reinforce the principle of beneficiary contribution towards the government costs of public water supply and irrigation services, and the principle of “Polluter Pays”
10. **Improve the regulatory and incentive framework for public participation and partnership in water resources and water quality management, as well as irrigation management through investment, operating and maintenance concessions ;**
11. Improve coordination between forestry, agriculture, conservation and WR sector public and private activities to promote environmentally sustainable watershed, flood plain and estuarine management; and
12. Establish specific integrated policies for environmentally sustainable wetland conservation and swampland development.



WATER RESOURCES SECTOR ADJUSTMENT PROGRAM (WATSAP)



Why we need to revise The Existing LAW No. 11/ 1974 ?

- 1. to anticipate complexity in the development of issues on water resources**
- 2. to put water in harmoniously social, environmental and economic dimensions;**
- 3. to attain integrity in water resources management (WRM);**
- 4. to accommodate the demand for decentralization and regional autonomy;**
- 5. to give better attention to the basic human rights to water;**
- 6. to put the mechanism and process of formulating policies and a more democratic plans of WRM in place .**

CHARACTERISTIC OF THE NEW LAW No.7/ 2004 on WR

- 1. no longer focused on the construction (development) of WR infrastructures, but on the provision of conditions for sensible, sustainable WRM**
- 2. not only covering the domains of WRM, but also the process of WRM.**
- 3. The law's scope is aimed at integrating WRM in all its aspects → a coherent integral approach is adopted.**
- 4. openness and encourage participation of stakeholders.**
- 5. The law is integrating social function and economic values.**

Comparison: The Old and The New Law

Law No. 11/ 1974

Chapt I.	GENERAL PROVISIONS
Chapt II.	FUNCTION
Chapt III	MASTERY RIGHT AND AUTHORITY
Chapt IV	PLANNING AND DESIGN
Chapt V	SUPERVISION
Chapt VI	EXERTION
Chapt VII	EXPLOITATION AND MAINTENANCE
Chapt VIII	CONSERVATION
Chapt IX	FINANCING
Chapt X	CRIMINAL PENALTIES
Chapt XI	TRANSITIONAL PROVISIONS
Chapt XII	CONCLUDING PROVISIONS

Total = 17 Articles

Law No. 7/ 2004 on WR

Ch I.	GENERAL PROVISIONS
<i>Ch II.</i>	<i>AUTHORITY AND RESPONSIBILITY</i>
Ch III.	WATER RESOURCES CONSERVATION
Ch IV.	WATER RESOURCES UTILIZATION
Ch V.	CONTROL OF WATER DESTRUCTIVE POWER
Ch VI.	PLANNING
Ch VII.	CONSTRUCTION, OPERATION & MAINTENANCE
<i>Ch VIII.</i>	<i>WATER RESOURCES INFORMATION SYSTEM</i>
<i>Ch IX.</i>	<i>EMPOWERMENT AND SUPERVISION</i>
Ch X.	FINANCING
<i>Ch XI.</i>	<i>RIGHTS, OBLIGATION AND ROLES OF THE COMMUNITY</i>
<i>Ch XII.</i>	<i>COORDINATION</i>
<i>Ch XIII.</i>	<i>SETTLEMENT OF DISPUTES</i>
<i>Ch XIV.</i>	<i>COMPLAINTS BY THE COMMUNITY AND ORGANIZATIONS</i>
<i>Ch XV.</i>	<i>INVESTIGATION</i>
Ch XVI.	CRIMINAL PENALTIES
Ch XVII.	TRANSITIONAL PROVISIONS
Ch XVIII.	CONCLUDING PROVISIONS

Total = 100 Articles

FRAMEWORKS OF ROLE SHARING ON BASIN WATER RESOURCES MANAGEMENT

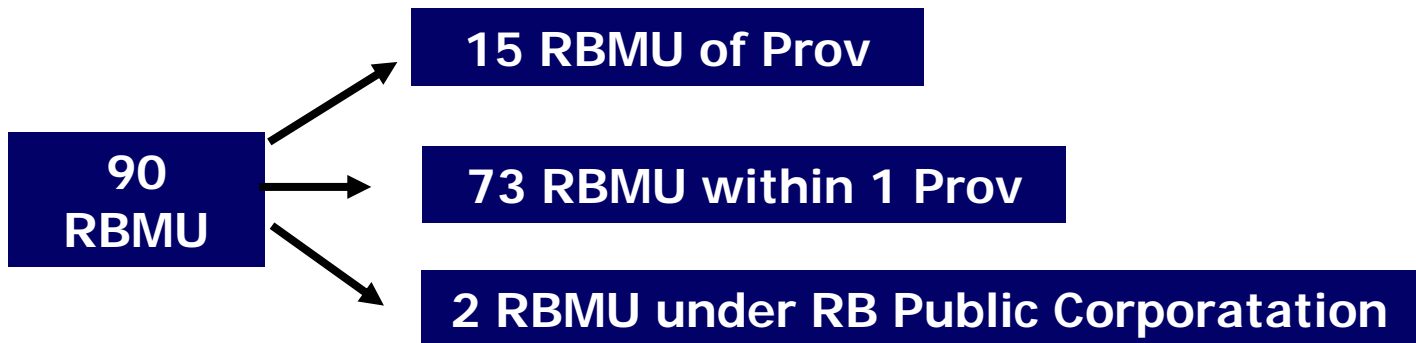
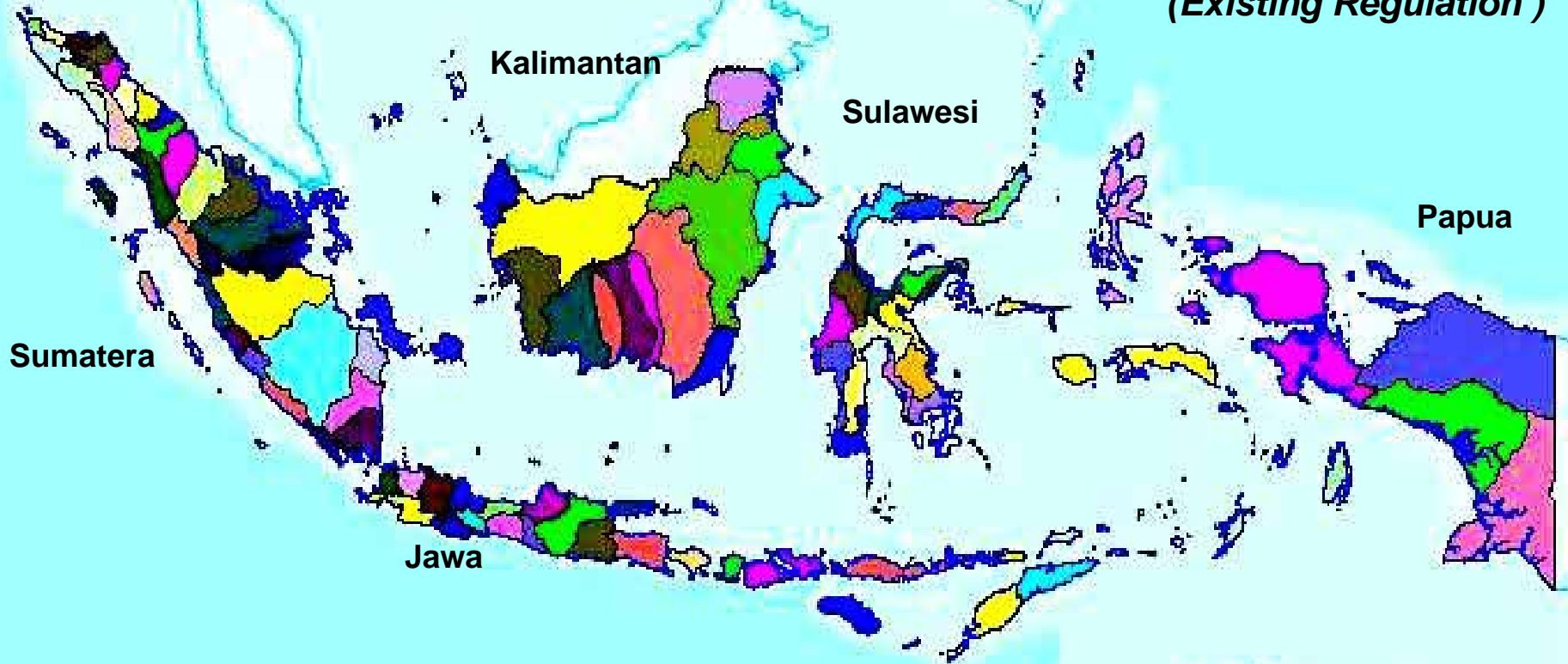
CENTRAL GOVERNMENT	PROVINCIAL GOVERNMENT	DISTRICT/CITY GOVERNMENT
<p>WR Management in the River Basin:</p> <ul style="list-style-type: none"> - Crossing Provinces - Cross States - National Strategic <p style="text-align: right;"><i>Article No.14</i></p>	<p>WR Management in the River Basin :</p> <ul style="list-style-type: none"> - Crossing Districts/ City <p style="text-align: right;"><i>Article No.15</i></p>	<p>WR Management in the River Basin :</p> <ul style="list-style-type: none"> - Within District/ City. <p style="text-align: right;"><i>Article No.16</i></p>

A part of the Government's authorities in water resources management as mentioned in Article 14 may be carried out by the regional governments in accordance with the laws and regulations. (Article No.18)

River Basin Management Unit in Indonesia

Copy from Ministry of Public Works Regulation No.39/ 1989

(Existing Regulation)



INTEGRATED WRM IN THE RIVER BASIN

WATERSHED MANAGEMENT

1. LAND USE PLANNING
2. LAND USE MONITORING AND CONTROL
3. FOREST MANAGEMENT
4. LAND REHABILITATION AND SOIL CONSERVATION
5. RESTORATION AND MANAGEMENT OF WATER RECHARGE AREA.

WATER SOURCES MANAGEMENT

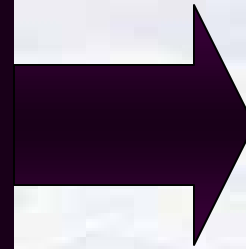
1. WATER QUANTITY MANAGEMENT
2. WATER QUALITY MANAGEMENT
3. FLOOD MANAGEMENT
4. RIVER INFRASTRUCTURE MANAGEMENT
5. RIVER ENVIRONMENTAL MANAGEMENT

WATER USE MANAGEMENT

1. WASTE WATER MANAGEMENT
2. EFFICIENCY OF WATER USE MANAGEMENT
3. IRRIGATION WATER AND SYSTEM MANAGEMENT

WHAT'S WILL BE INTEGRATED?

1. Upper and Lower watershed
2. Quantity and Quality
3. Rainfall, Surface Water and Groundwater
4. Land use and water utilisation
5. Fresh water and river mouth and estuarine.
6. Inter sectoral
7. Inter stakeholder
8. Inter local government.



Base on Criteria
of achievement:

ECONOMIC
EFFICIENCY

SOCIAL OF
JUSTICE

ENVIRONMENTAL
SUSTAINABILITY

WR Planning Systems

Base on Administrative Boundary:

Articles 14, 15, 16

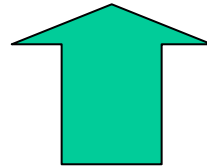
THE NATIONAL POLICY



THE PROVINCIAL POLICY



THE DISTRICT/ MUNICIPAL POLICY



POLA



PLAN



PROGRAMS



ACTIVITIES

*Articles 11 para (2), 59 para (3),
62 para (6)*

Base on River Basin Boundary

IWRM INSTITUTION FRAMEWORK

Ministry/
Governor/
Head of
District or
City

REGULATOR

Gov. Project.
Public Investor

DEVELOPER

**cCOORDINATION
Board**

OPERATOR

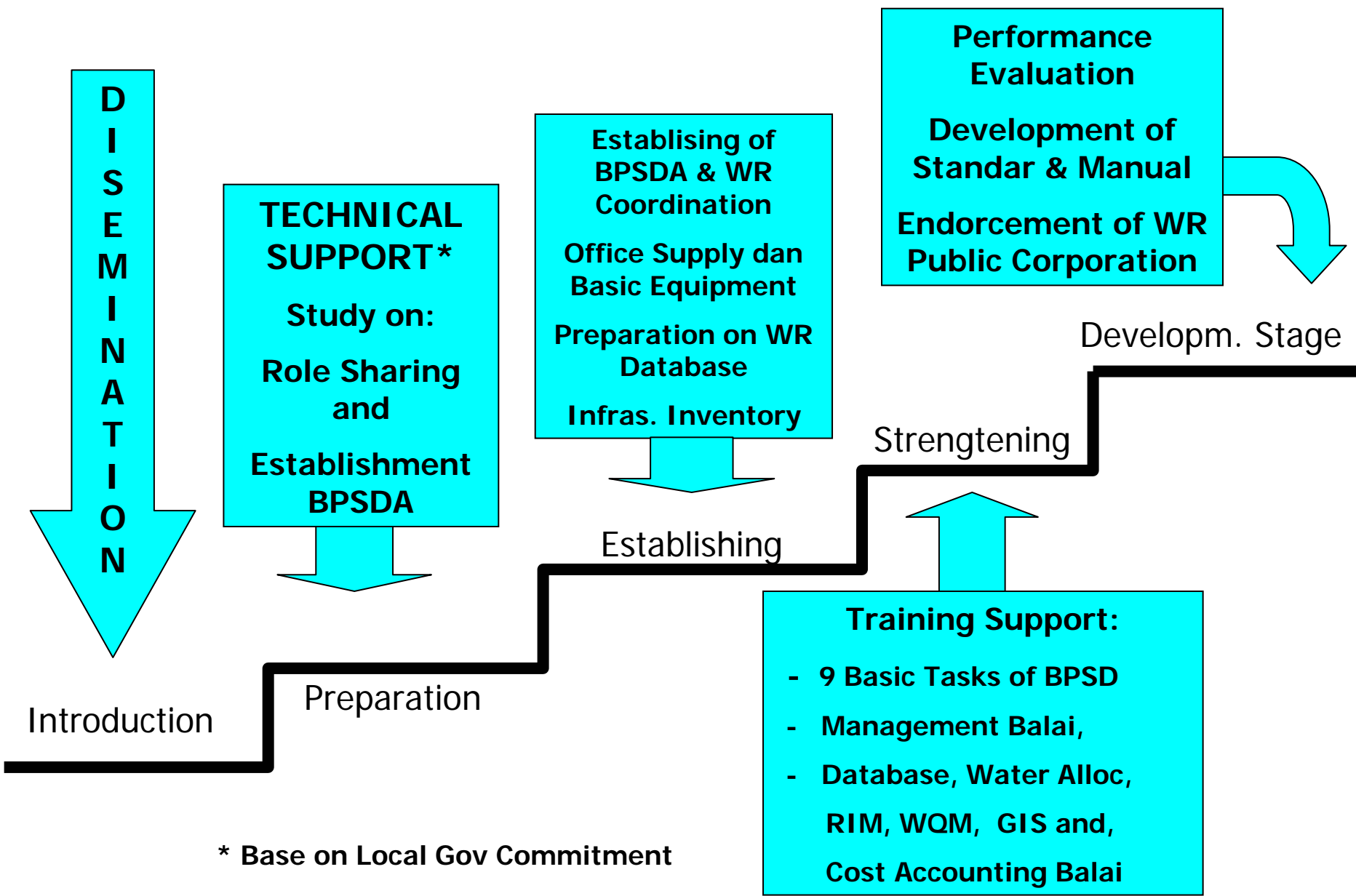
Agriculture
Municipal
Energy
Industry
Fishery
NGO
Scientist

USER/ PUBLIC

BPDAS
PJT (RB Corpor.)
BPSDA (BWUs)



STRATEGY FOR EMPOWERING on GGWRM



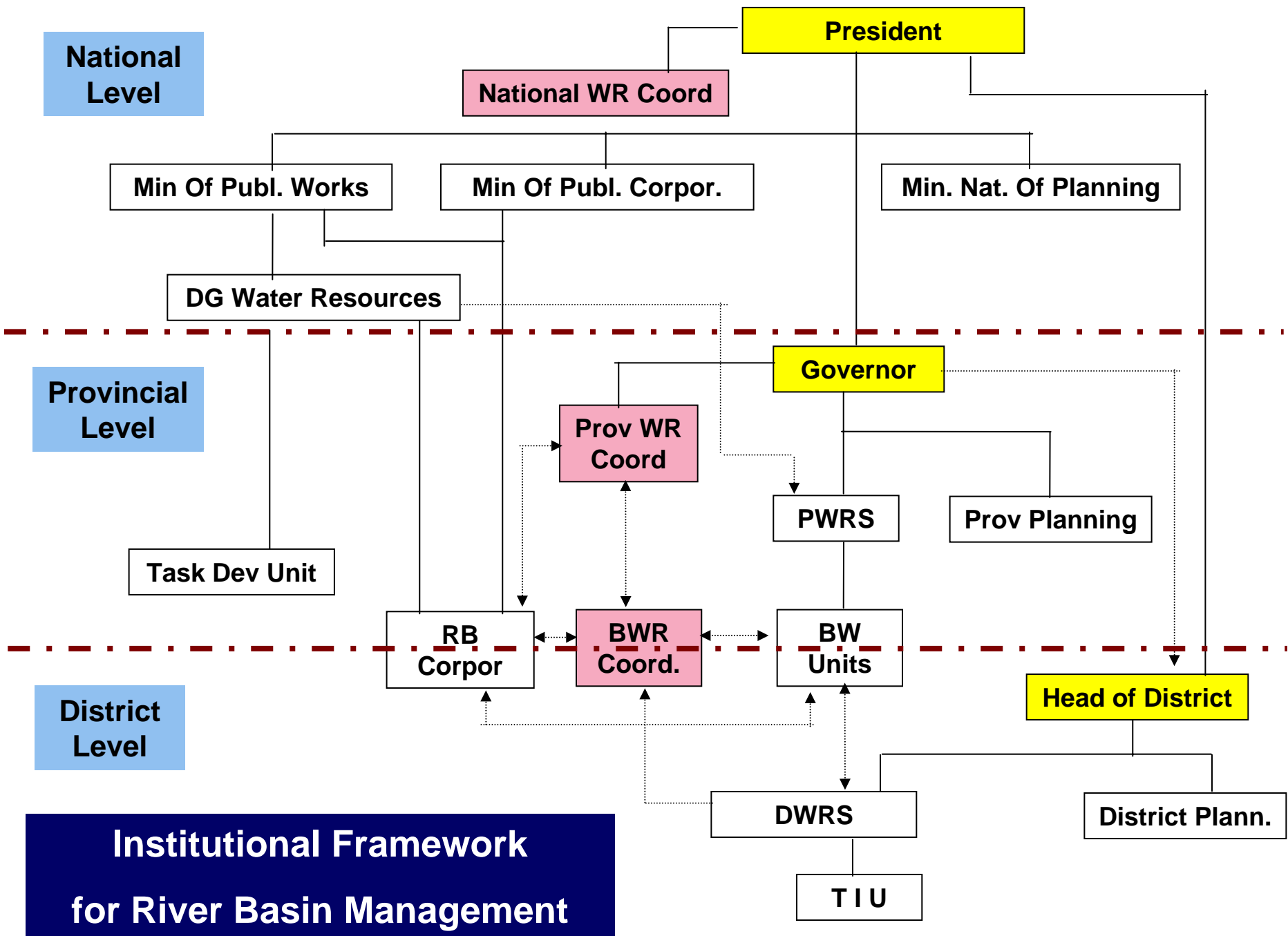
LIST OF BALAI PSDA (River Basin Operator under Regional Gov)

Status per June 2004

No	PROP. / KAB.	NAME of BALAI
1	Prov. East Java	1.Bango-Gedangan (Malang), 2.Puncu Selodono (Kediri), 3.Buntung-Paketingan (Surabaya), 4.Madiun, 5.B.Solo (Bojonegoro), 6.Sampean Baru (Bondowoso), 7.Bondoyudo-Mayang (Lumajang), 8.Gembong-Pekalen (Pasuruan), 9.Madura (Pamekasan)
2	Prov.Central Java	1.Pemali-Comal, 2.Jratun, 3.Seluna, 4.B.Solo (Wonogiri), 5.Probolo, 6.Serayu-Citanduy.
3	Prov. Yogya	1.Progo-Opak-Oyo, 2.Sermo
4	Prov. West Java	1.Ciliwung-Cisadane, 2.Cisadea-Cimandiri, 3.Citarum, 4.Cimanuk-Cisanggarung, 5.Citanduy-Ciwulan
5	Prov. Banten	1.Banten
6	Prov. North Sum.	1.Wampu-Besitang, 2.Belawan-Belumai-Ular, 3.Bah Bolon-Asahan, 4.Lau Renun-Lau Biang, 5.Kualuh-Bt.Gadis, 6.Bt.Toru, 7.Nias
7	Prov. West Sum.	1.Kuantan-Indragiri (WS Rokan, Kampar, Indragri, Sualang), 2.Batanghari (WS Siak, Silaut, Batanghari)
8	Prov. South Sum.	1.Sugihan (WS Sugihan), 2.Musi (WS baturasa-Cerucut dan Musi)
9	Prov. Lampung	1.Mesuji-Tl.Bawang, 2.Seputih-Sekampung, 3.Semangko (Satgas)
10	Prov. South Sul.	1.Pompengan-Larona, 2.Sadang, 3.Walanae-Cenranae, 4.Jeneberang
11	Prop. East NT	1.Timor-Sumba-Alor, 2.Flores-Lombien
12	District of Pacitan	1.Pacitan (Satgas)

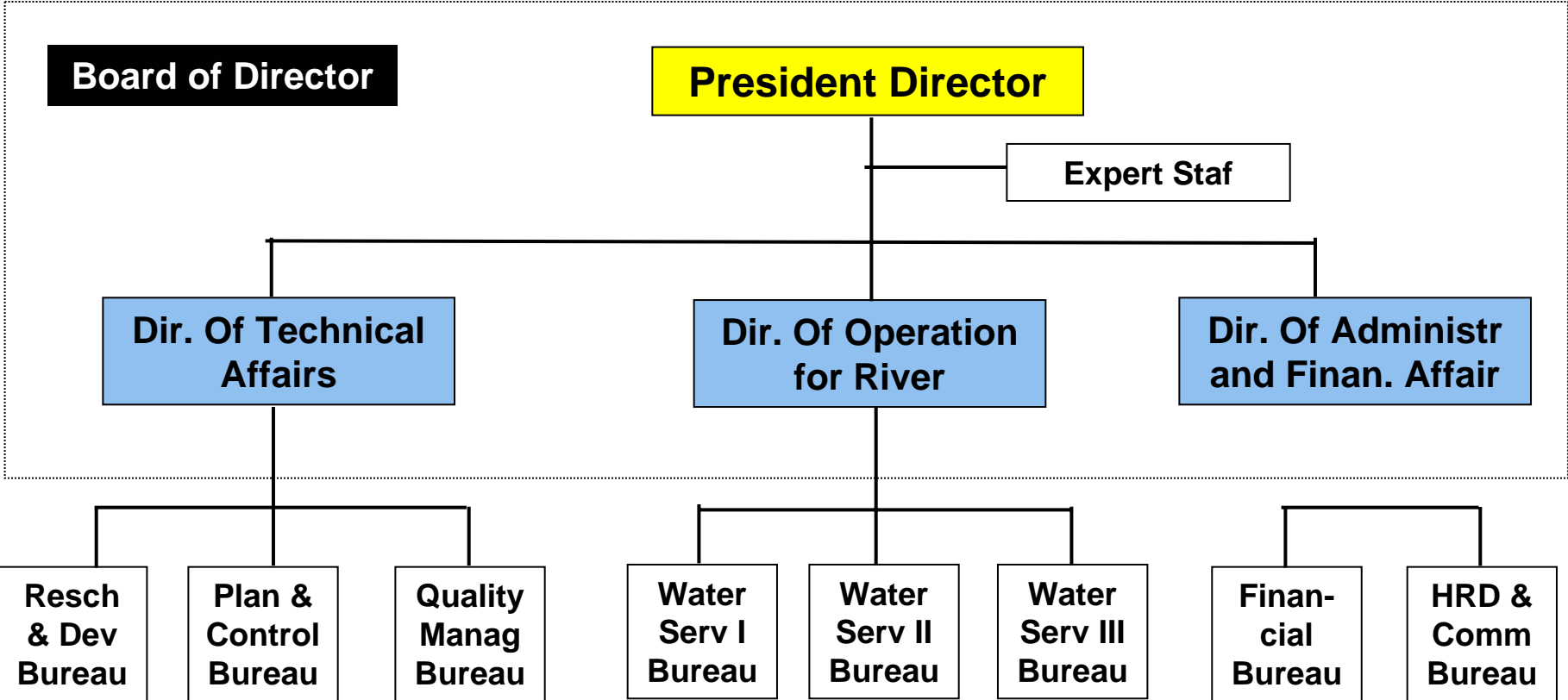
Institutional Aspects.

- 1. The community will not only be given the role in the preparation of WRM policy, but also the role in the process of planning, construction, operation and maintenance, monitoring and supervision of the WRM.**
- 2. Establishment of Coordination Committees on WRM at different administrative levels. (The National, and The Provincial, and The District/Municipality, and The River Basin).**
- 3. The functions of the WR Coordination Committees are:**
 - a. to coordinate the formulation of WRM policies and strategies;**
 - b. to conduct internal and external consultation with all parties in to achieve integrated policy and conflict resolution inter sector and inter area of government administrative on WRM;**
 - c. to give consideration/recommendation to the Regulator on WRM;**

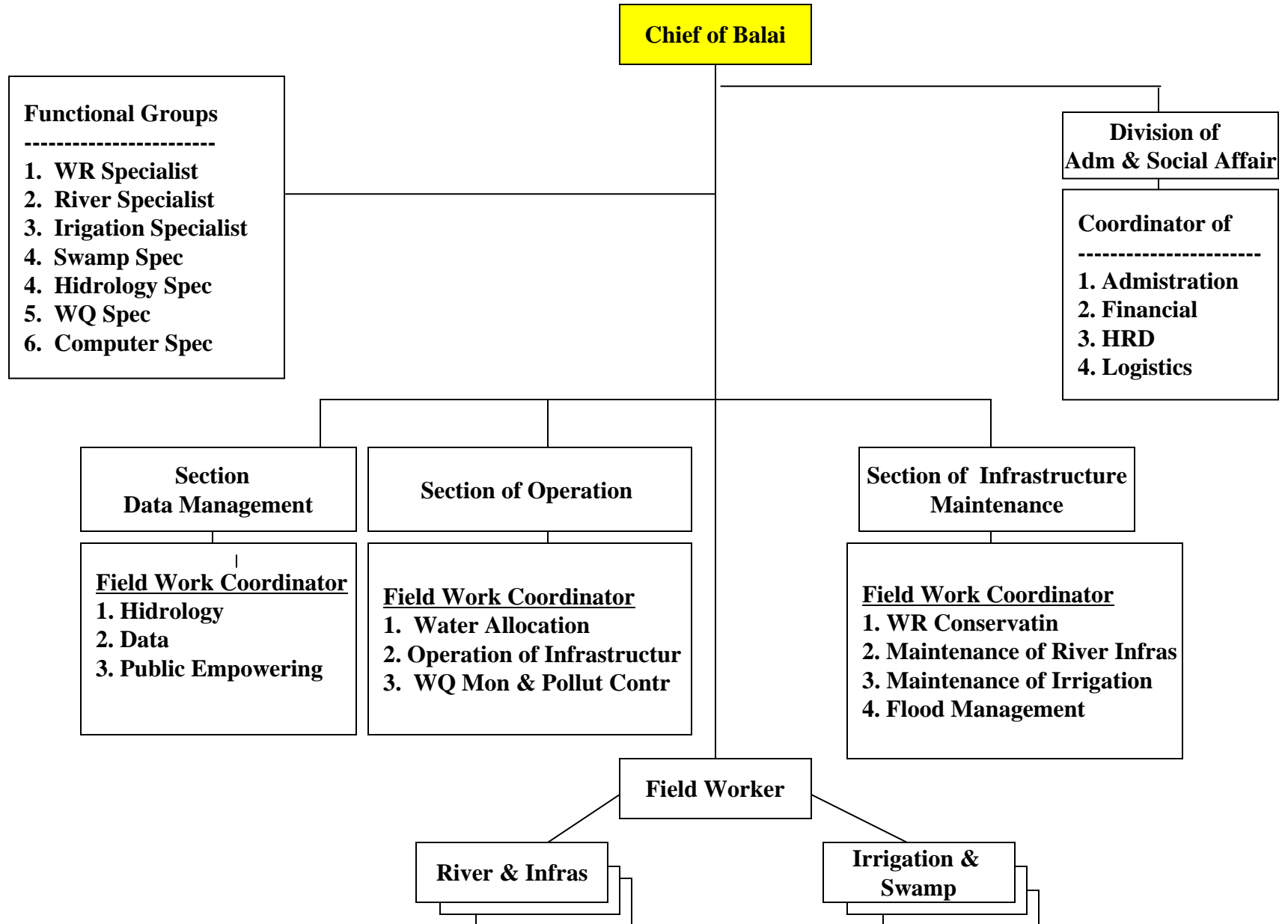


**Institutional Framework
for River Basin Management**

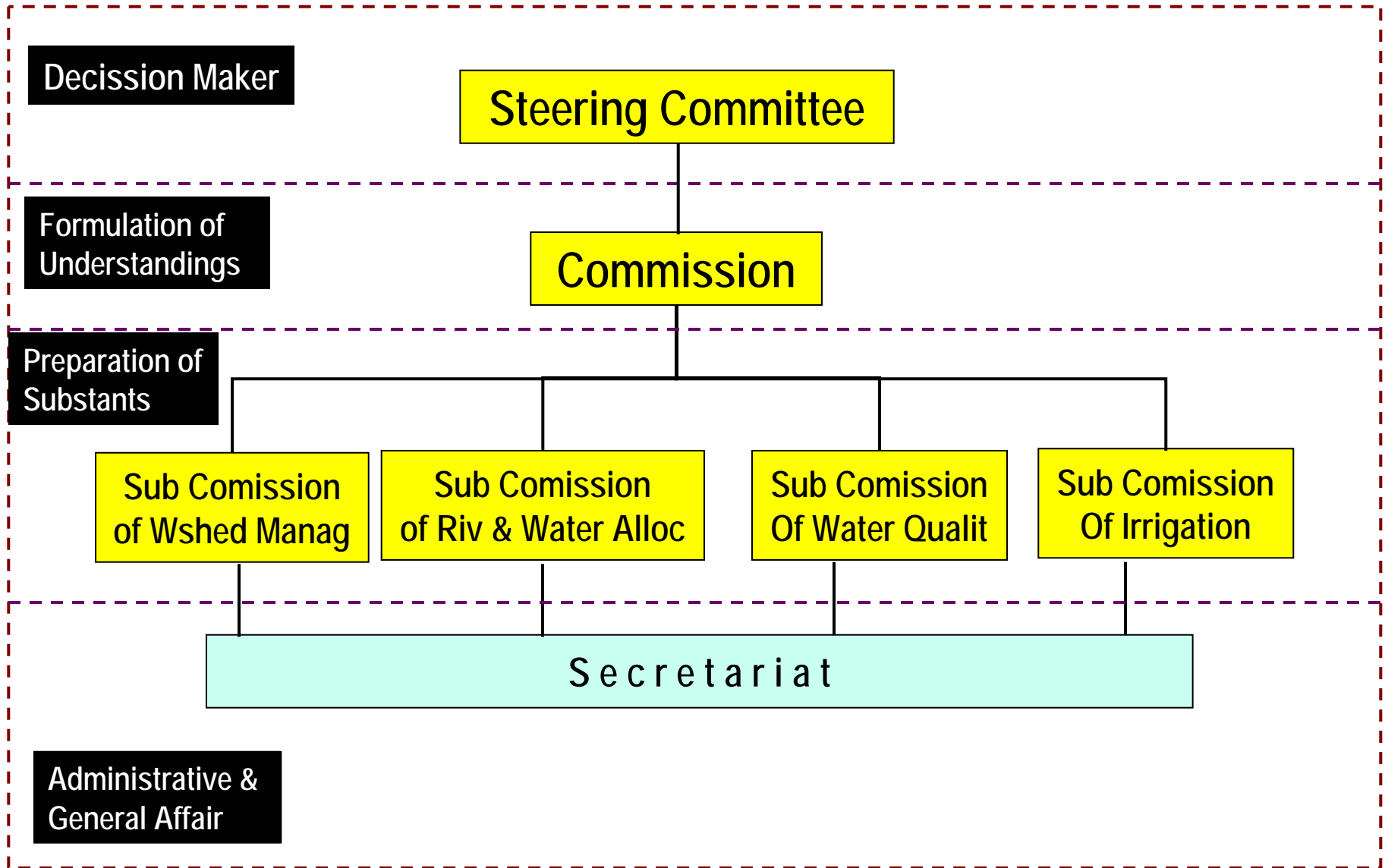
Organization of River Basin Corp (Jasa Tirta).



TYPICAL ORGANIZATION OF BALAI PSDA (BWU)



Organization of WR Coordination/ WR Council



Others Institutional Aspects.

- 1. Data Networks and MIS** (Database and, the WR MIS).
- 2. Secure, Equitable and Efficient Water Allocation** (annual allocation plan, a water accounting system for physical accounting of surface and groundwater allocated for various users in the basin).
- 3. Water Quality Management** (in-stream WQM and, Off-stream WQM).
- 4. River Infrastructure Management** (river morphology, river bed and river bank stability, river corridor management, sand mining, river system dredging, river mouth stability, estuary maintenance and, maintenance of all infrastructure in the rivers such as weirs, barrages, dikes, revetments, bank protection etc.)
- 5. Flood Management** (flood forecasting and warning system, flood plain management, flood disaster emergency plans, flood fighting, flood operation and updating flood hydrology to determine current levels of flood protection).
- 6. Potential Sources of Revenue.**

WRM Financing

1. **The funding sources for each type of WRM financing may come from :**
 - a. information system;**
 - b. planning;**
 - c. construction;**
 - d. operation and maintenance;**
 - e. M&E and empowerment of the community.**

2. **In an urgent situation for the effective utilization of water resources the Government and the related regional governments through a cooperation scheme shall jointly decide the management financing.**

Potential Source of Revenue.

1. The funding sources for each type of WRM financing may come from:
 - a. the state budget;
 - b. private sector budget; and/or
 - c. revenues of WRM services.
2. The water users for basic daily needs and for people's agriculture shall not be charged WRM fee.
3. The users of water resources other than for the purposes shall be charged the WRM fee.
4. The amount of WRM fee for each type of WR used shall be based on the considerations of the economic abilities of the users' groups and the volume of WR use.

Conclusion

- 1. Concern about water must extend far beyond concerns for survival and health and productivity of life. .**
- 2. The chain of water management from source to consumer must be regarded holistically including its natural state, abstraction, allocation and quality.**
- 3. Balancing these demands is a complex and sensitive process, and compromises inevitably have to be made. These conflicting demands needs to effectively mediated.**
- 4. Sustainable development of water resources in Indonesia can only be fully realized through implementation a WRM new policy, strategies and systematic programs.**
- 5. Integrated WRM as well as River Basin Management is not a product, but a process which promotes the co-ordinate development and management of water, land and related resources.**
- 6. There is a need for coherent national policies to overcome fragmentation, and transparent and accountable institution particularly at the basin level**

Thank's for your kind attention