

Strategies for Sustainable Hydrology and Water Resources Environment Management in Indonesia

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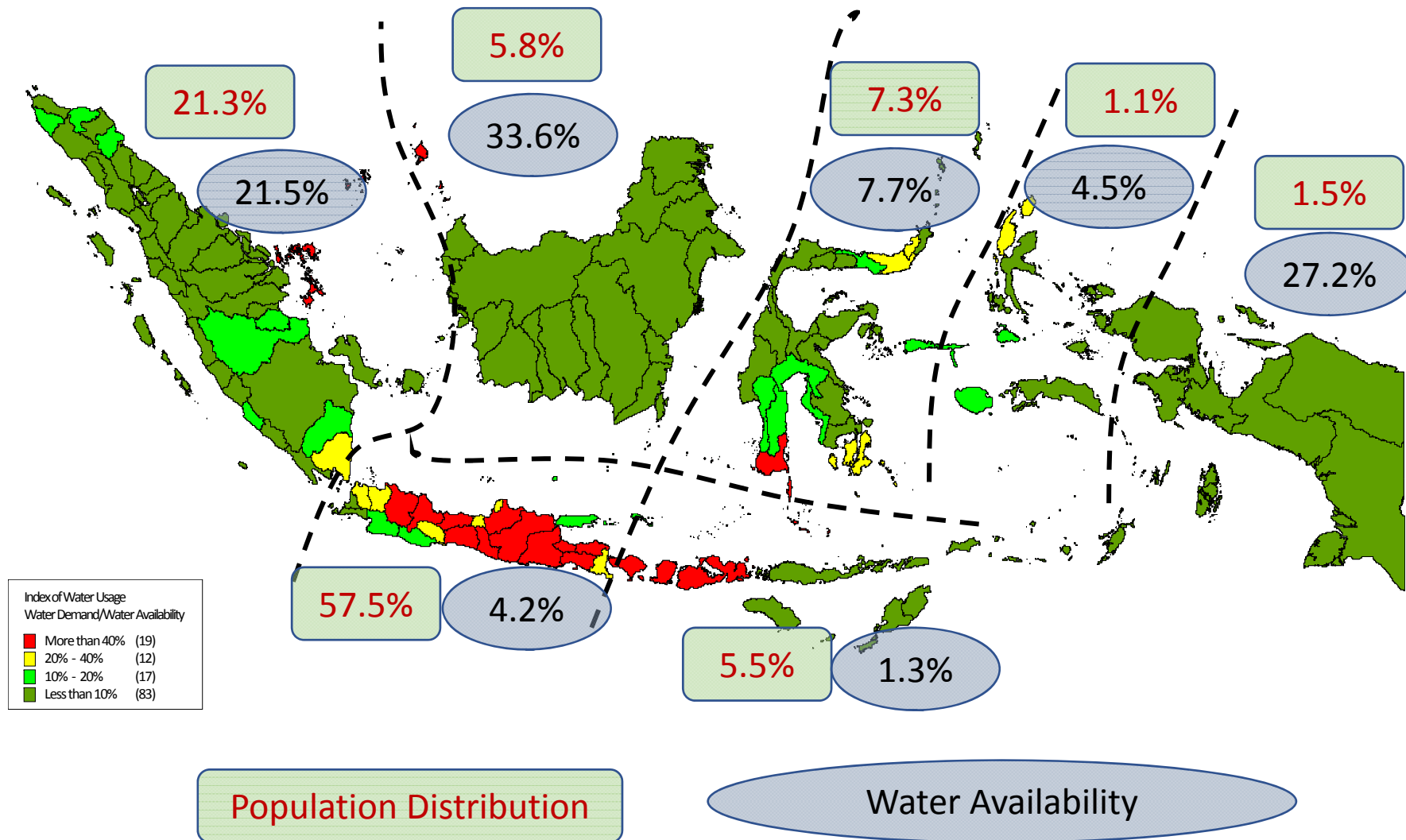
Outline

- Issues of the National Water Resources Management
- Policies & Strategies in Hydrology and Water Resources Environment
- Strategic Programs in Hydrology & Water Resources Environment

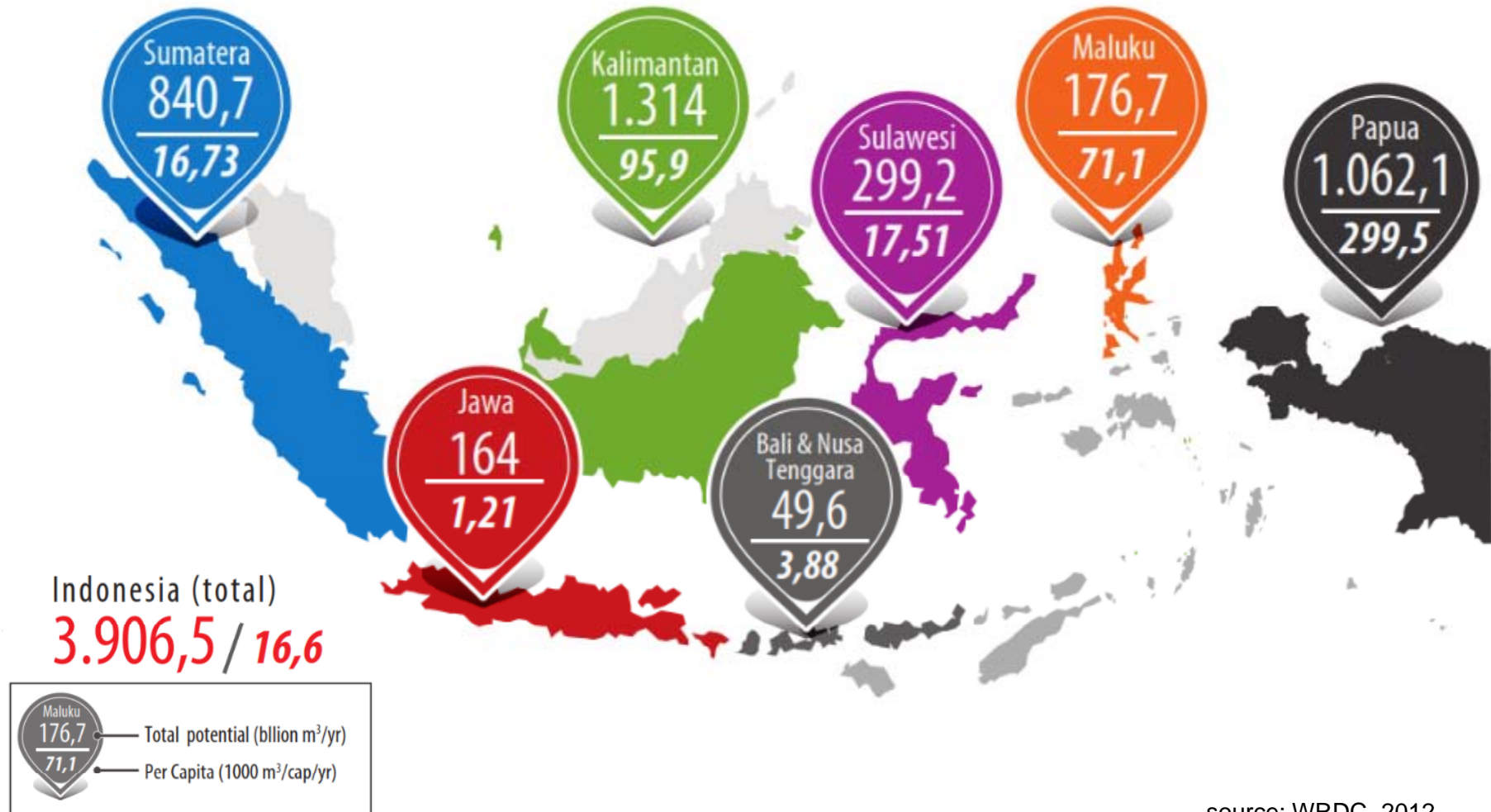




Population Distribution and Water Availability



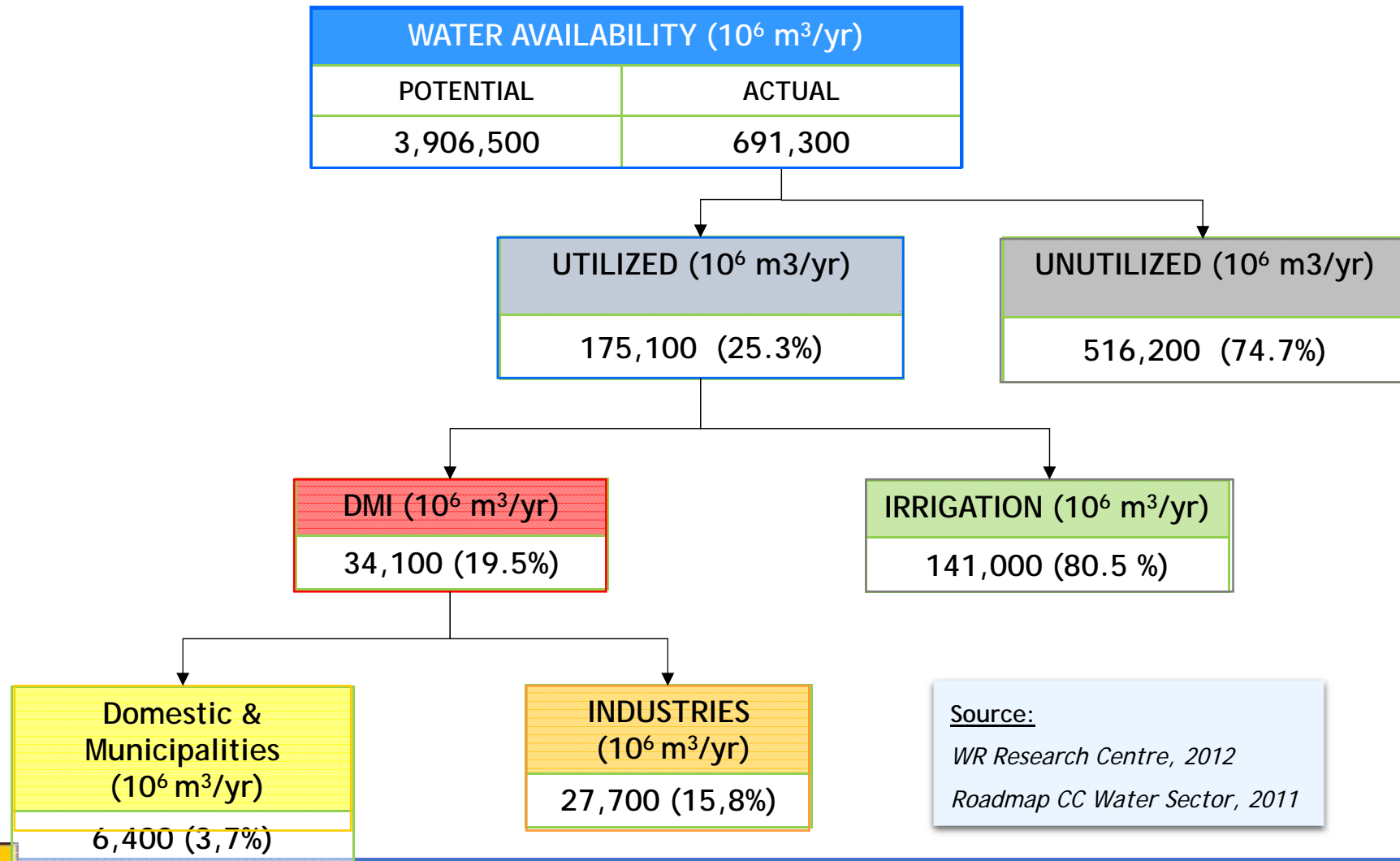
Water Potencies and Availability



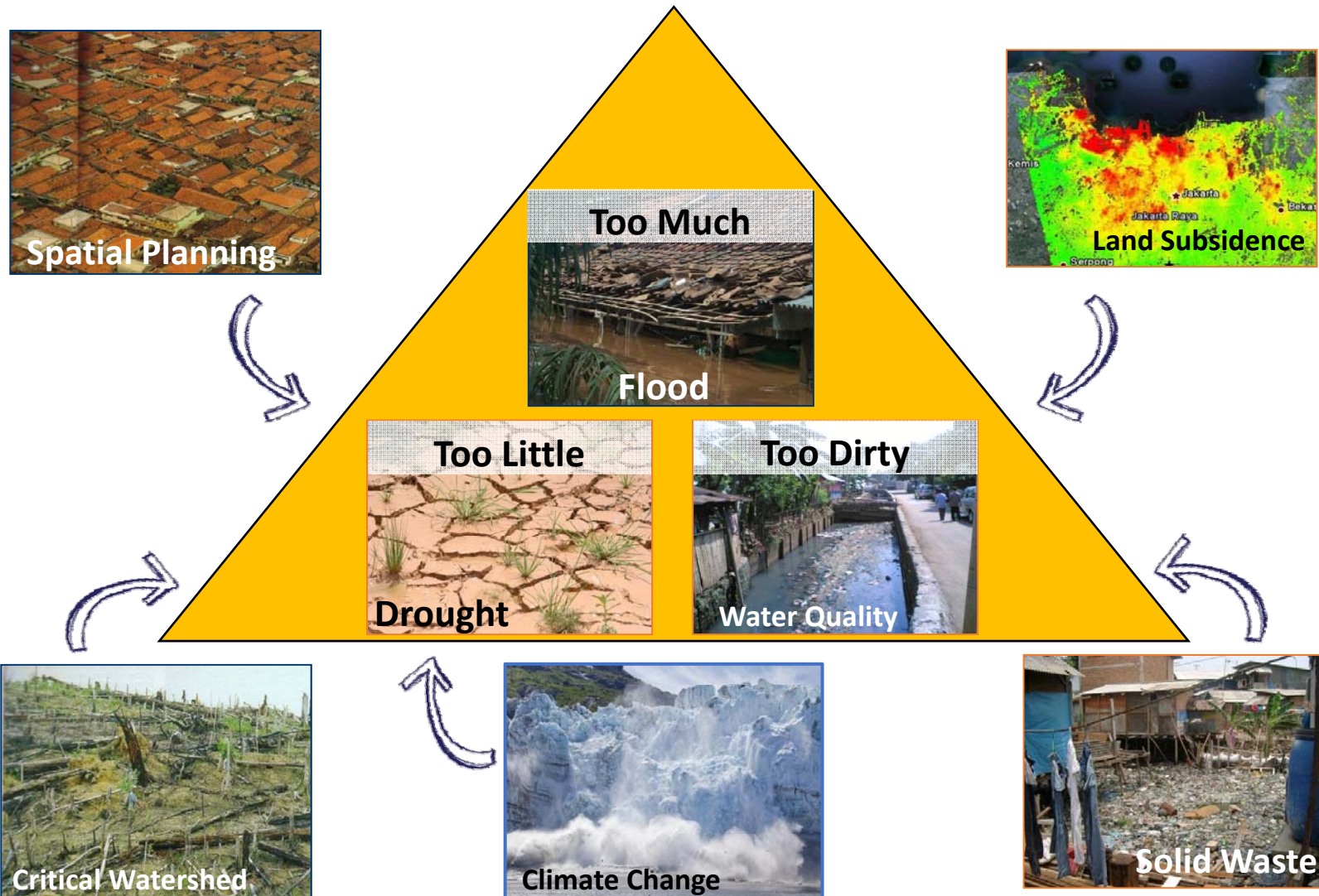
source: WRDC, 2012



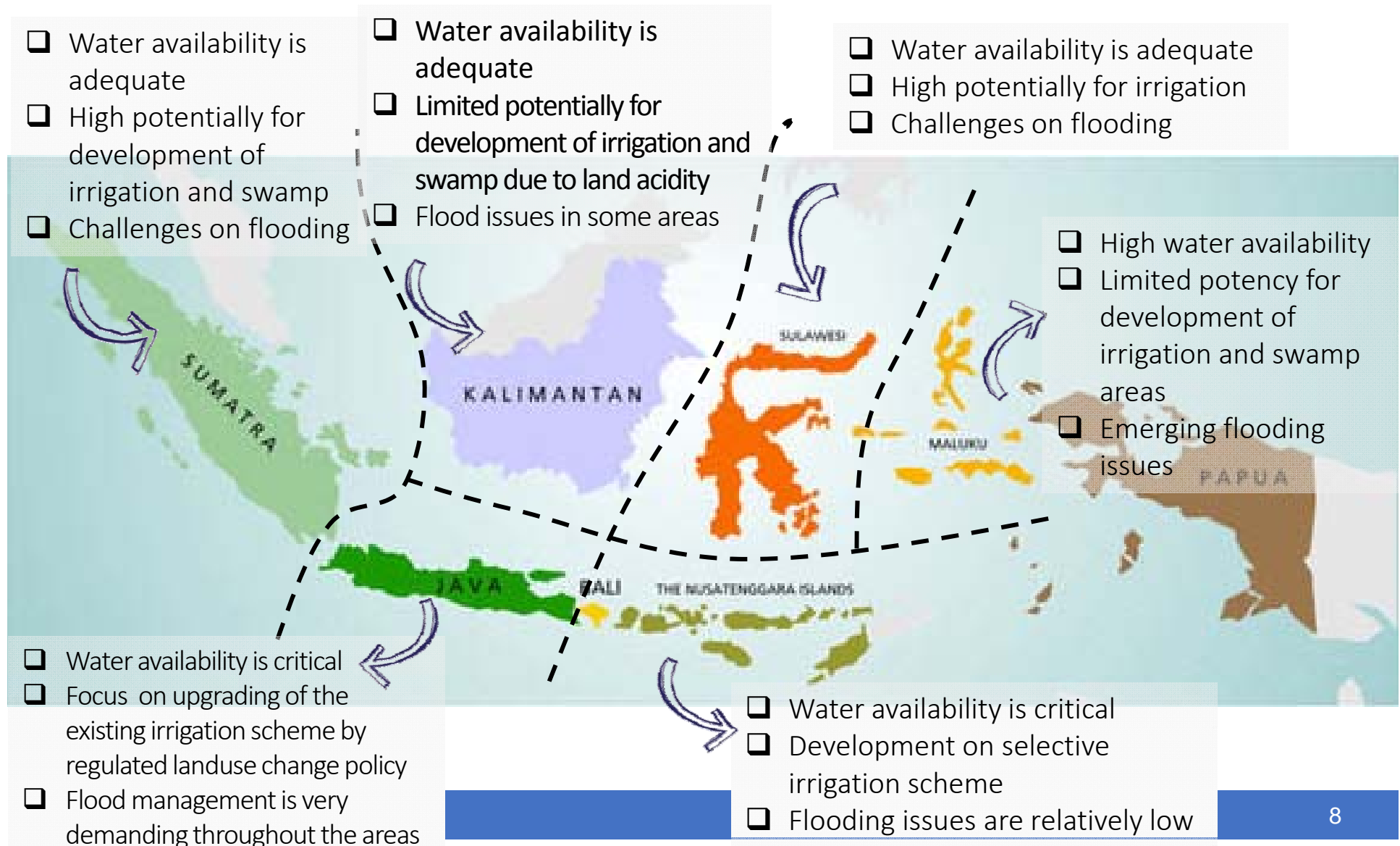
Water Usage Situation



Challenges in Water Resources Management



Zoning of Water Resources Conditions



Challenges of Water Resources Management in Decades

Low perceived complexity

1960s Engineering

1970s Engineering + agriculture + economics

1980s Engineering + agriculture + economics + management + user organization

1990s Engineering + agriculture + economics + management + user organization + institution + gender

High perceived complexity

2000 Engineering + agriculture + economics + management + user organization + institution + gender + policies/politics + environmental and intersectoral aspects + green water

2005 Engineering + agriculture + economics + management + user organization + institution + gender + policies/politics + environmental and intersectoral aspects + green water + climate change

Beyond 2010 Engineering + agriculture + economics + management + user organization + institution + gender + policies/politics + environmental and intersectoral aspects + green water + climate change + culture

1960s – beyond 2010





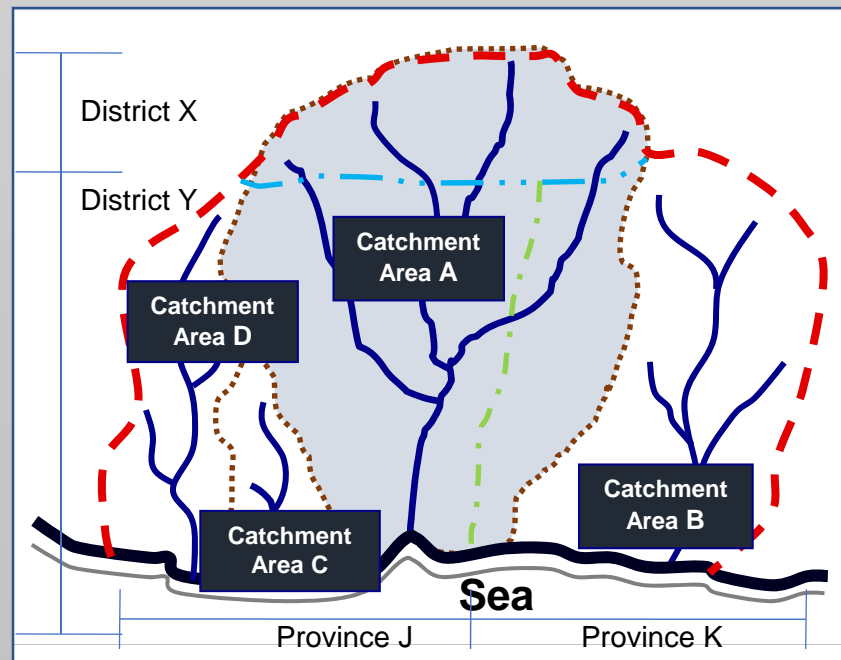
Policies & Strategies in Hydrology and Water Resources Environment



Managing Water Resources based on River Basin

1

The hydrologic cycle and the nature of the water which happens dynamically across administrative boundaries



Information

- Catchment Area Boundary
- Province Administrative
- - - - - River Basin Boundary
- . . . - District/City Boundary



Prevent conflict; as well as placing water as the unifying element among regions

2



Effective and Efficient Management

3

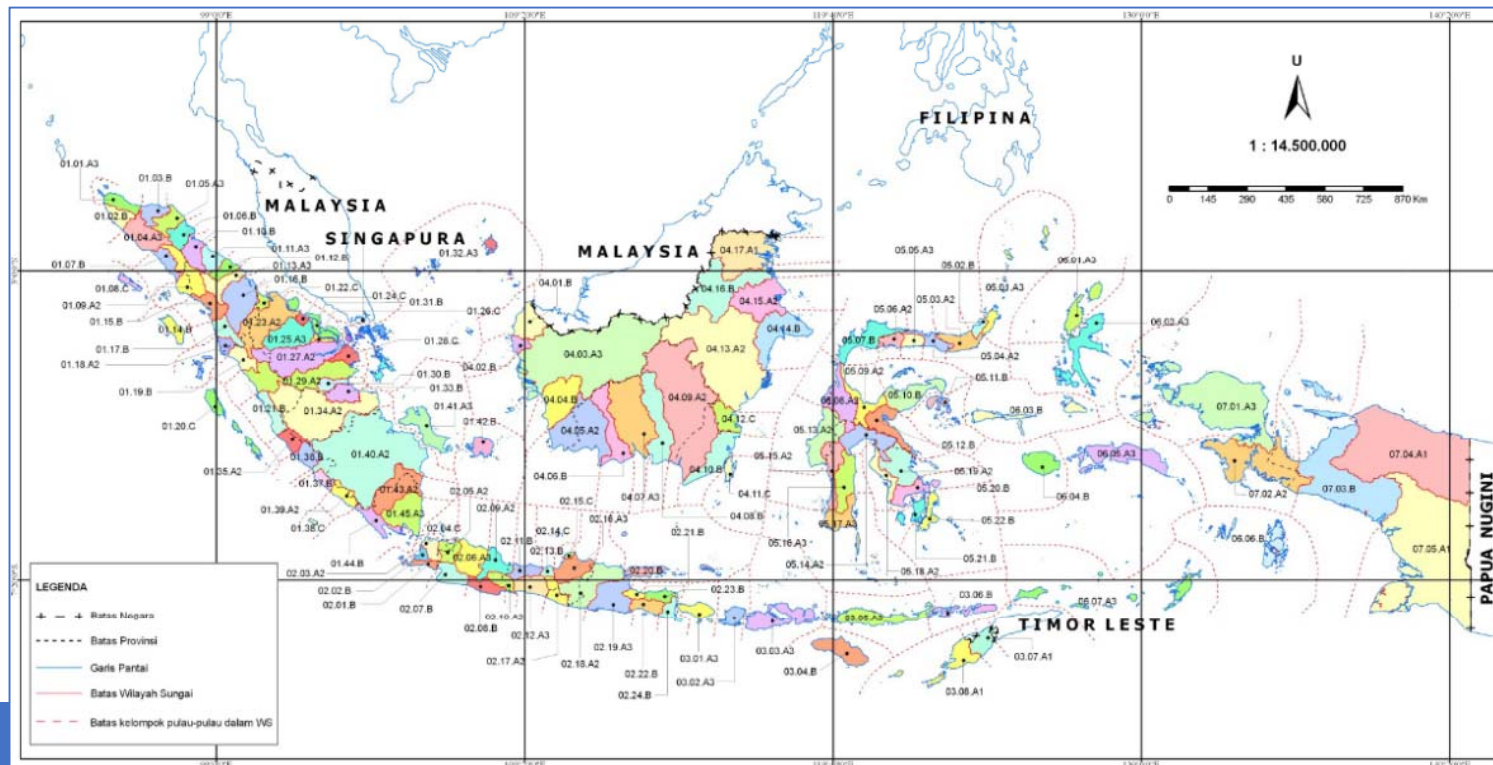


River Basin Territories in Indonesia

Minister of Public Works and Housing Regulation

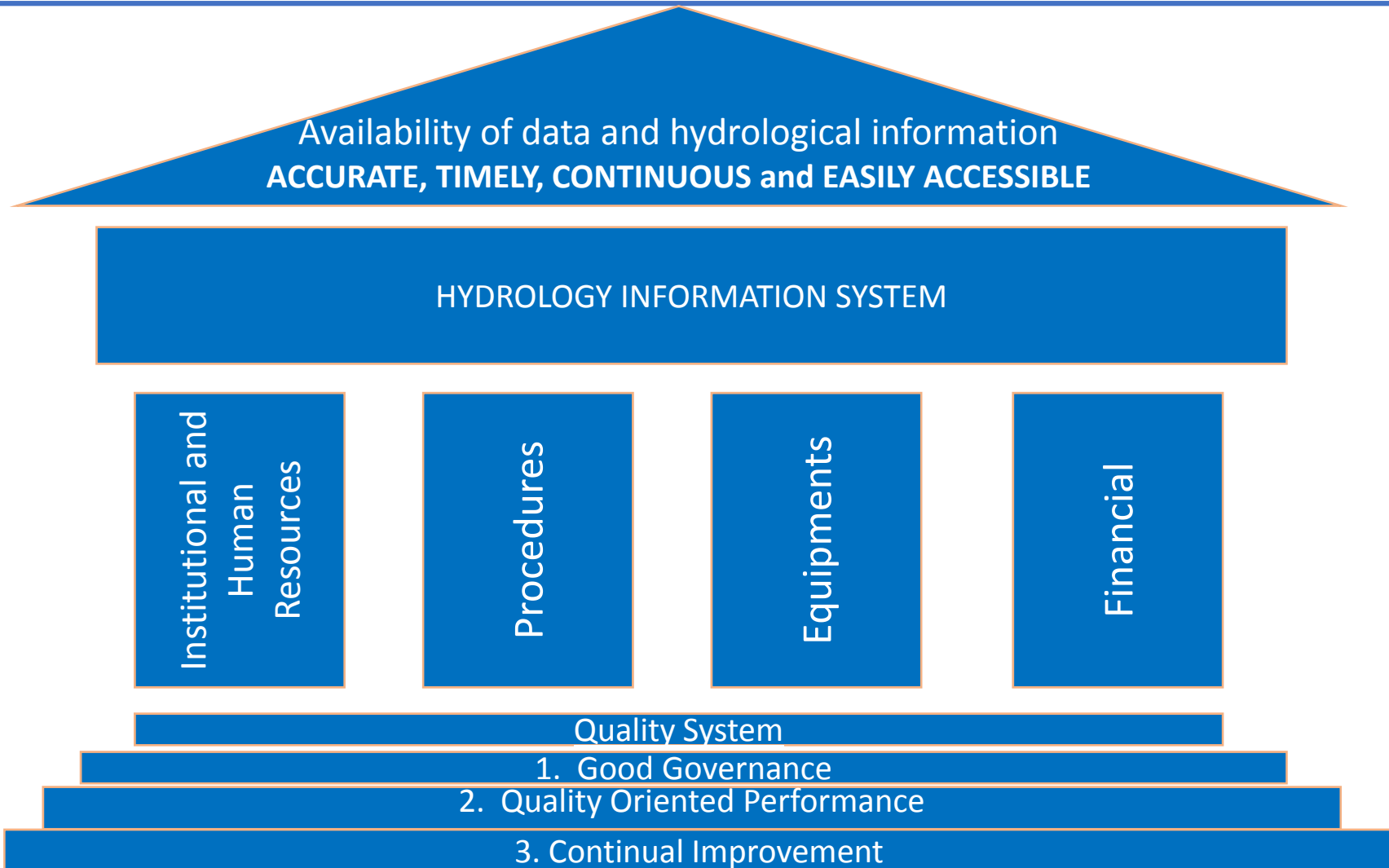
No. 04/PRT/M/2015 Regarding Criteria and River Basin Designation

Criteria	Cross-National Trans	Province Trans Boundary	National Strategic	District/City Trans Boundary	District/City	Total
Sum	5	31	28	52	12	128



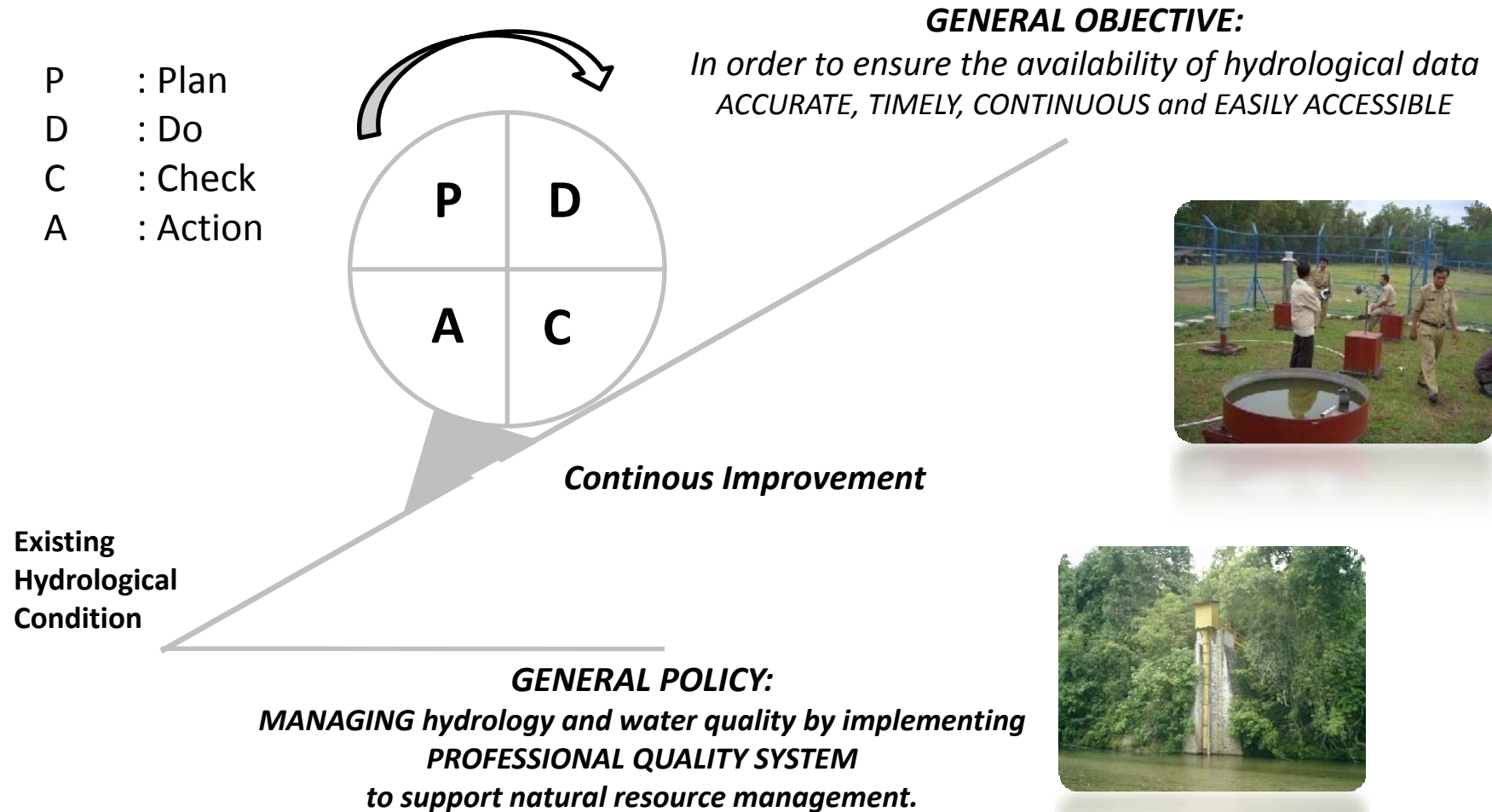
Vision and Missions

Hydrology and Water Resources Environment Management

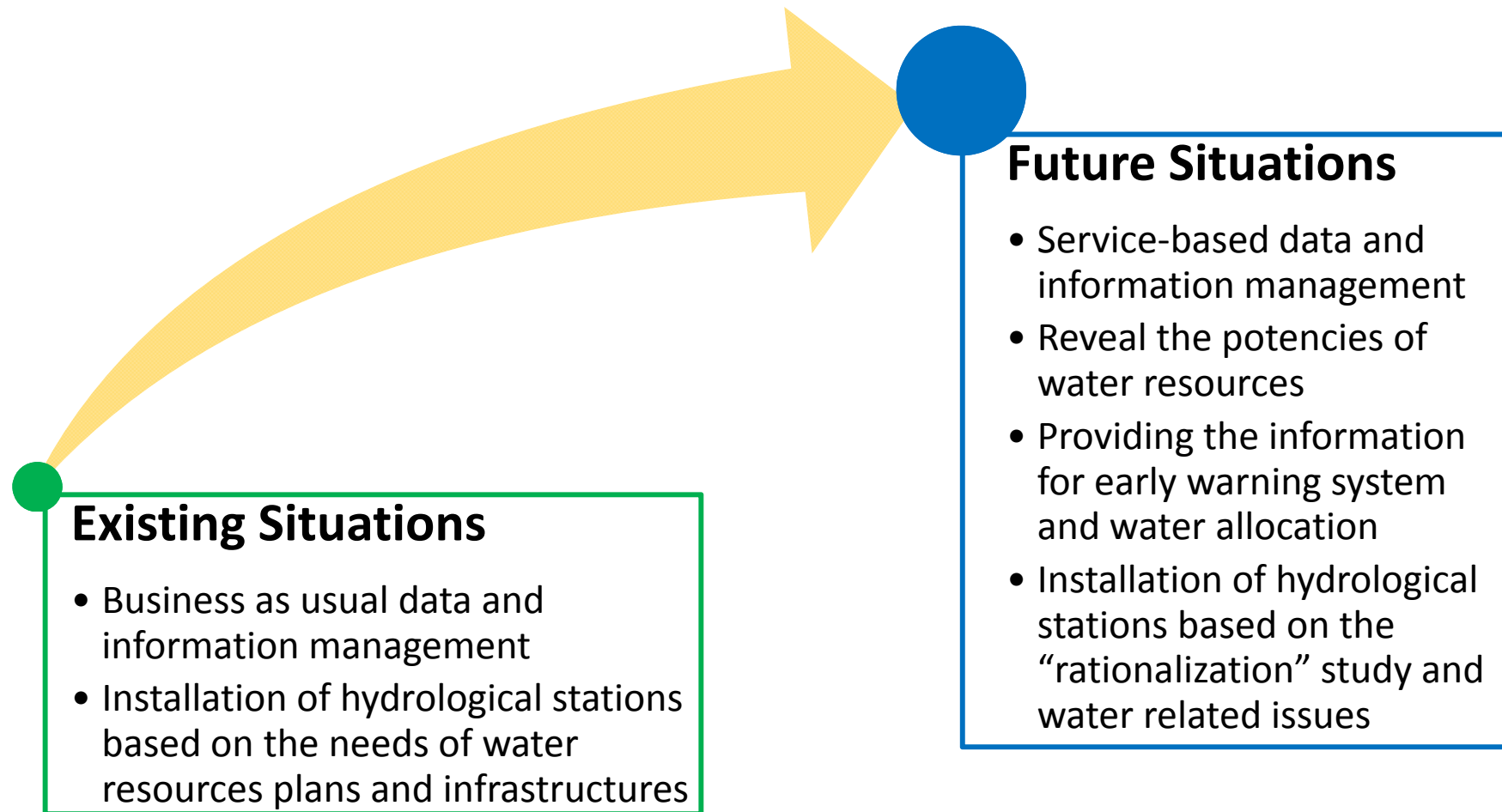


Strategy to Reach Vision and Missions

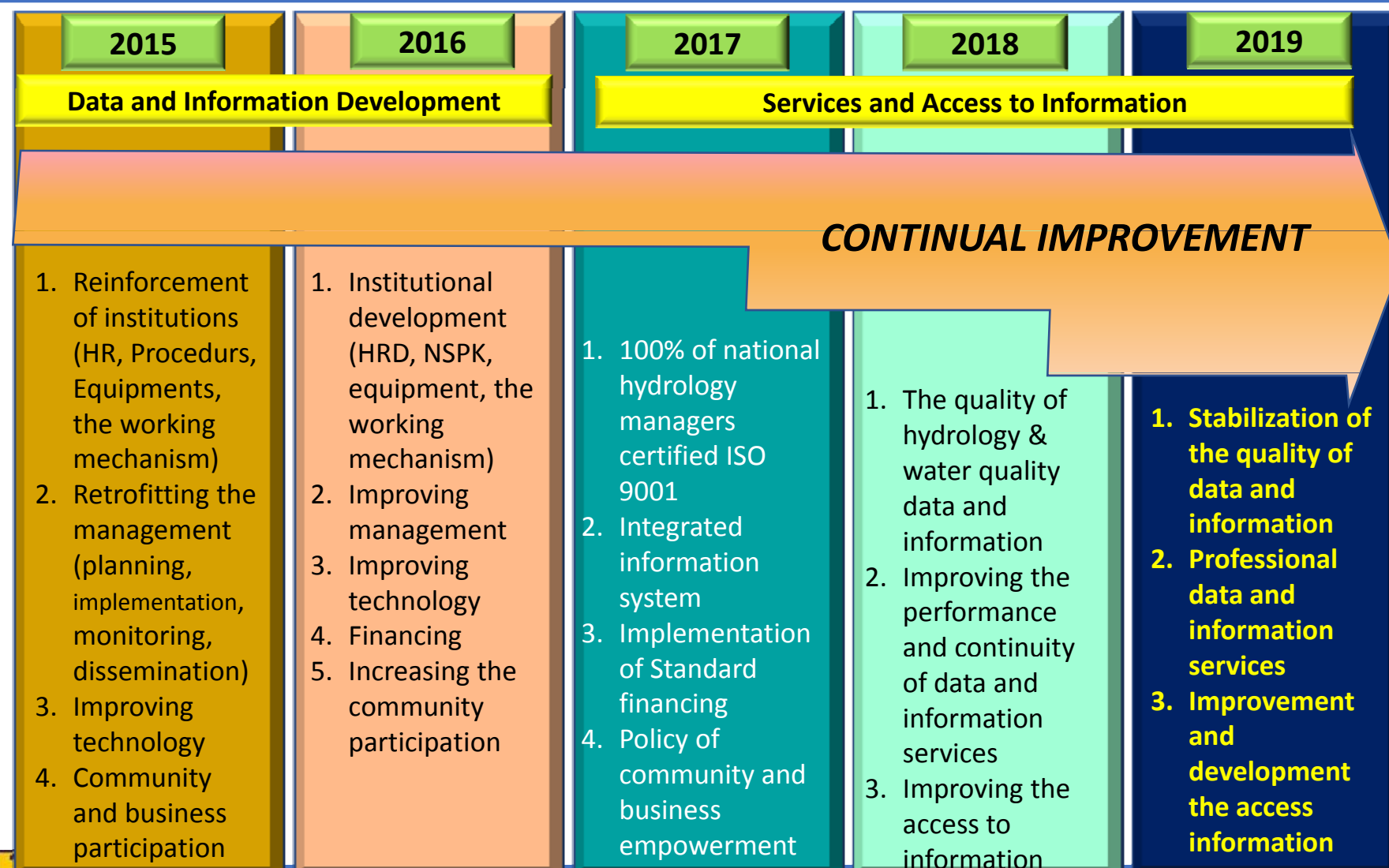
Hydrology and Water Resources Environment Management



Paradigm Shift in Hydrology and Water Resources Environment



Action Plan of Hydrology and Water Resources Environment Management

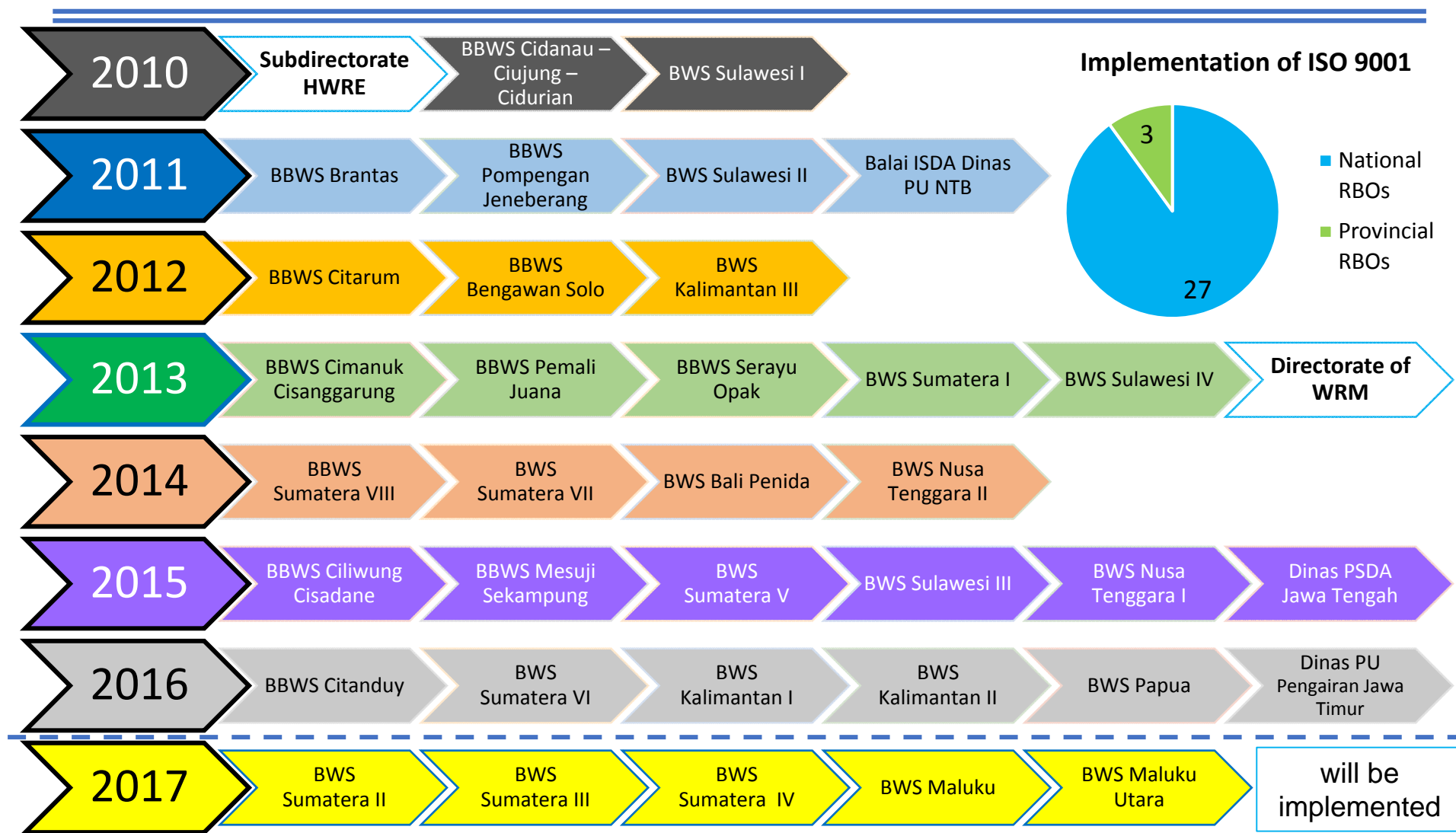




Strategic Programs in Hydrology & Water Resources Environment



Implementation of ISO 9001 (Quality Management Standard) in Hydrology and Water Resources Environment Management



Target: 100% Implementation of ISO 9001 for all RBOs in 2018

Quality Management Procedures for Hydrology and Water Resources Environment

- Director General of Water Resources Decree No. 116 of 2009 Regarding Hydrology and Water Quality Management

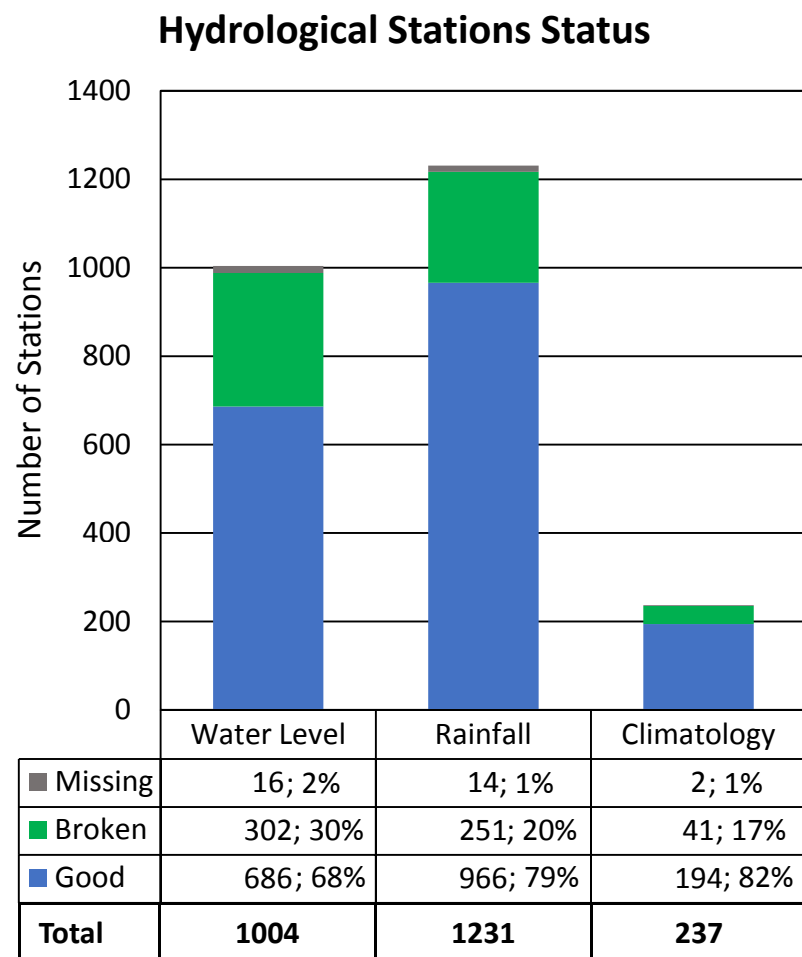


- Director General of Water Resources Decree No. 322 of 2011 Regarding Hydrology and Water Quality Analysis

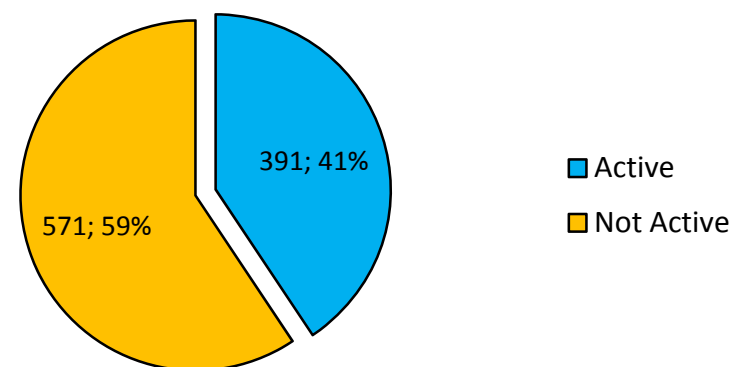


Hydrological Stations Status

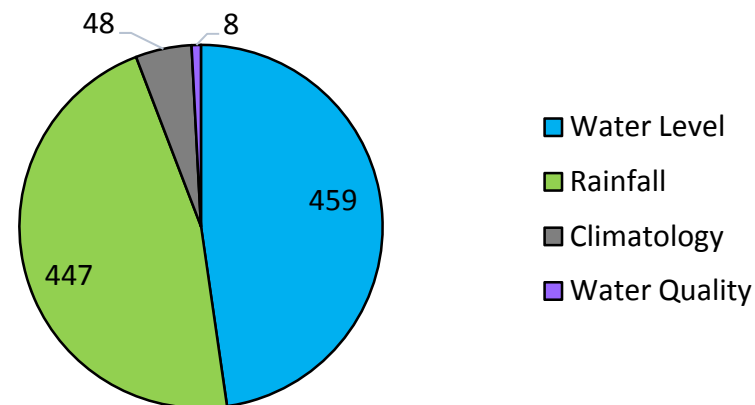
Status: February 14th 2017



Telemetry Measurements Status



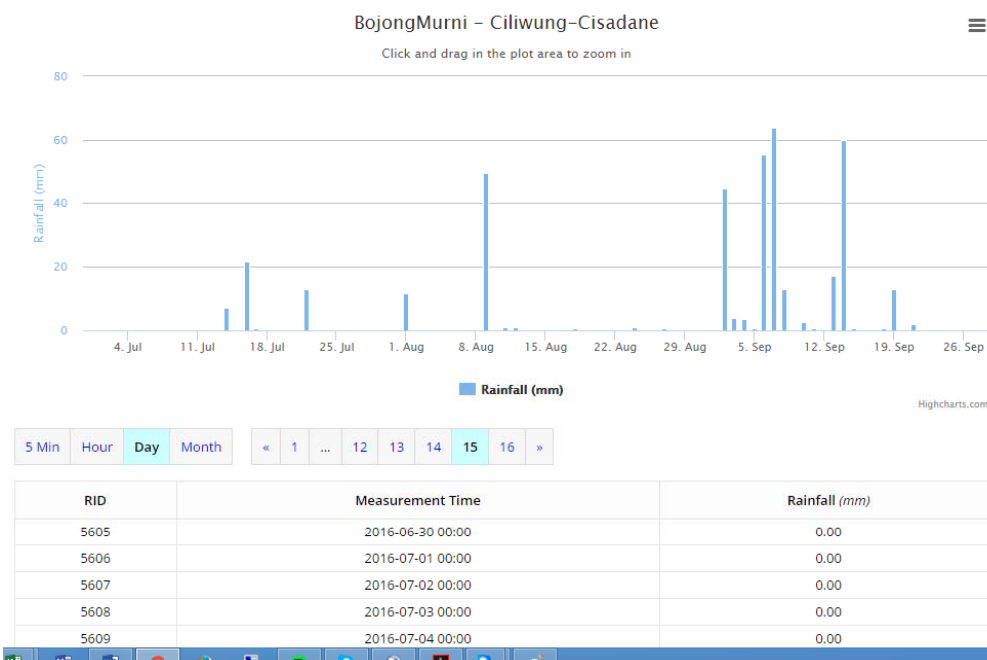
Number of Telemetry Measurements



Telemetry Data Display for Water Level and Rainfall

[developed by water resources research and development center]

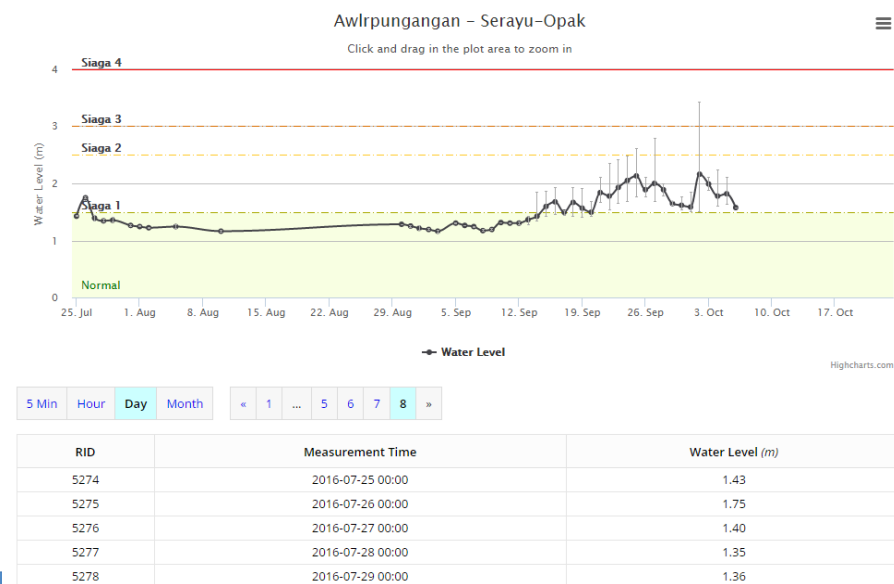
BojongMurni - Ciliwung-Cisadane



Rainfall Data



Awlarpungangan - Serayu-Opak



Water Level Data

A new system is being prepared by Directorate General of Water Resources in 2017 to synchronize all telemetry systems in Indonesia



Improvement the Database and Spatial Information Systems

112.78.146.38/sisda/pemetaan

STANDARISASI PEN...

SISDA
Sistem Informasi Sumber Daya Air

Enter a location

ADD LAYER

Type Layer
Pos Duga Air

Wilayah Sungai
VIS ACEH-MEUREUDU

Add

Sabang
Pulau We

Pulau Breueh

Banda Aceh

Lho-ga

Sigli

Tanjong

Gn. Hulumasen

Tangse

Bleue

Lhokseumawe

Lhoksukon

Idi

Lap. Terbang

95.7458, 6.3180

Google

Longitude Latitude Go! Clear

Map data ©2015 Google Terms of Use

Tabel

Layer Aktif
nonsduaaair AcehMeareuduu

Search...

Drag a column header here to group by that column

Gid	KODE	NAMA POS	NOMOR REGI...	PROPIN
7	11020101	POS AWLR GEUNII		ACEH
8	110800002	KR. ACEH - KP. LAMPISANG TUNONG		Aceh
9	110800003	KR. KEUMIREU - KP. SIRON		Aceh
10	111800001	POS AWLR SARAH MANE		Aceh
11	110900001	Pos AWLR Tiro		Aceh
12	110800005	AWLR INDRAPURI		Aceh
13	110800006	AWLR WADUK KEULILING		Aceh

(PDSDA version 6.0)



Data and Information Dissemination on Hydrology and Water Resources Environment in RBOs

Activities:

- Data and information sharing on Hydrology and Water Resources Environment among RBOs and Stakeholders
- Evaluating the performance and having suggestions for Hydrology Units in RBOs



Data and Information Dissemination in Citarum RBO



Information System Management on Hydrology, Hydrometeorology and Hydrogeology (H3)

Goals:

1. To improve the H3 data and information accuracy, correctness and timeliness of the submission.
2. To ensure continual services of the H3 data and information.
3. To guarantee the compatibility of the H3 data and information processing in related institutions.
4. To ensure sustainability the H3 data and information services which is supported by the availability of adequate resources.

Main institutions on the H3 information system management:

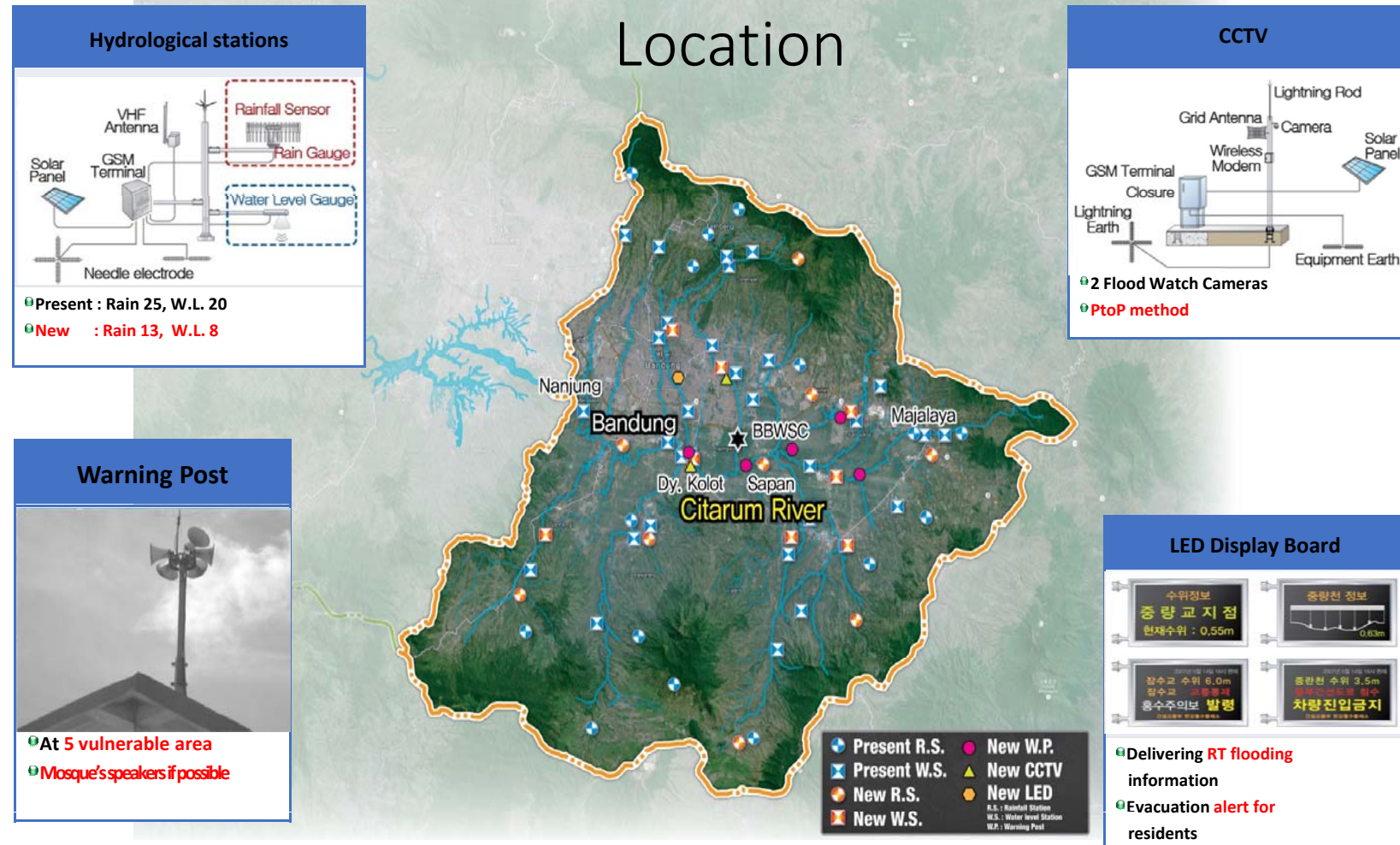
1. Ministry of Public Works and Housing
2. Meteorology, Climatology and Geophysics Agency
3. Ministry of Energy and Mineral Resources



Capacity Building in Hydrology and Water Resources Environment for RBOs

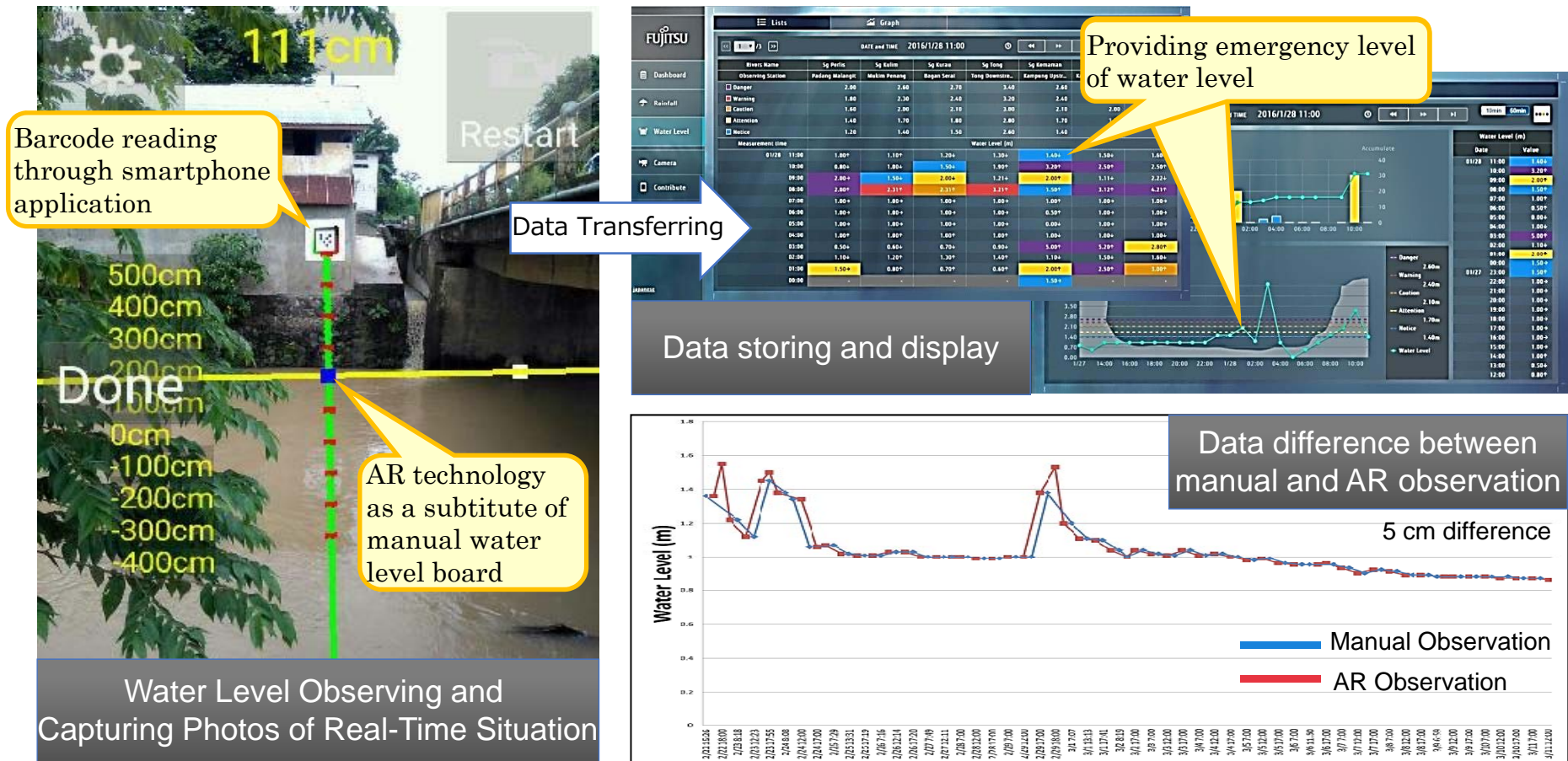


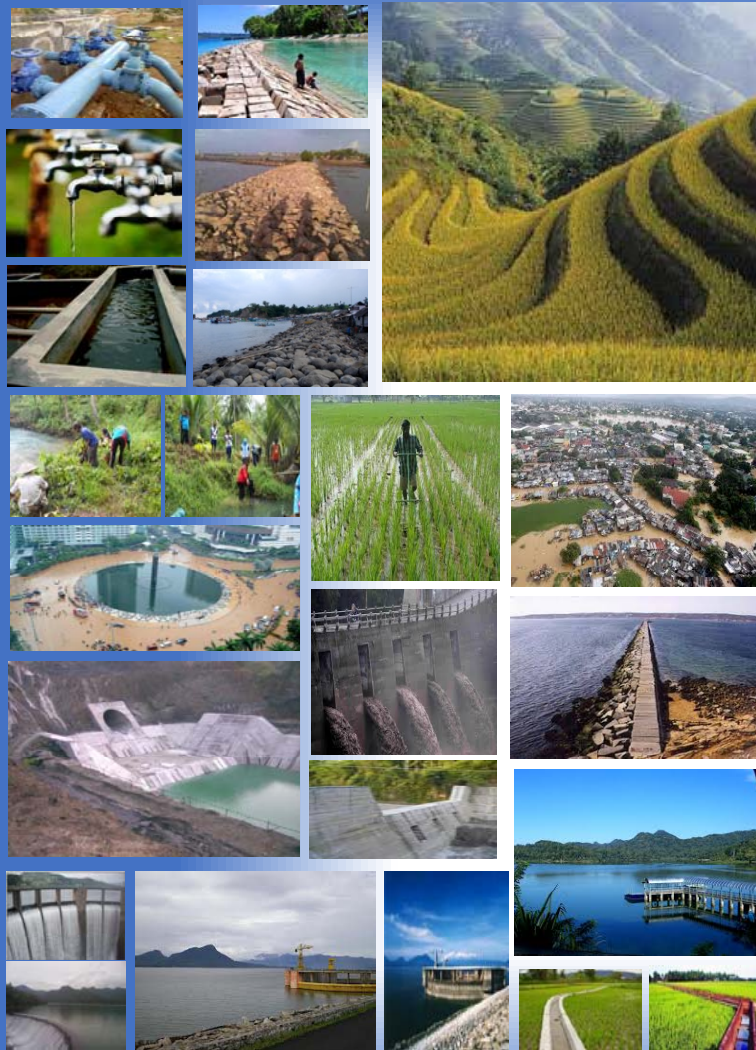
Pilot Project : Flood Early Warning System in Citarum River Basin [in cooperation with KOICA]



Experimental Study : River Information System by using Augmented Reality (AR) Technology [in cooperation with JICA]

Using smartphone application to observe water level and capture photos of real-time situation for supporting flood early warning system





Thank You

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