National Stakeholder Consultations on Water: Supporting the Post-2015 Development Agenda

Indonesia

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Global Water Partnership Southeast Asia

INDONESIA

NATIONAL CONSULTATION ON WATER
IN THE POST-2015 DEVELOPMENT AGENDA

Chapter 1 Importance of water in national development

Indonesia, is a country in Southeast Asia. Indonesia is an archipelago comprising about 17,508 islands of which 6,000 are inhabited. It has 34 provinces with about 240 million people, and is the world's fourth most populous country, giving a such great challenge in term of food, energy and water securities. Indonesia is a republic, with an elected legislature and president. The nation's capital city is Jakarta. The country shares land borders with Papua New Guinea, East Timor, and Malaysia. Other neighboring countries include Singapore, Philippines and Australia. Indonesia is a founding member of ASEAN and a member of the G-20 major economies. The Indonesian economy is the world's sixteenth largest by nominal GDP and fifteenthlargest by purchasing power parity.

No	Islands	Land Area		Population		Available water (potential-annual average)	
		sqkm	%	million	%	Million m3	%
1	Jawa	124,088	6.4	136.61	57.5	164,000	4.2
2	Sumatera	505,301	26.2	50.63	21.3	840,737	21.5
3	Kalimantan	533,902	27.7	13.07	5.5	1,314,021	33.6

4	Sulawesi	189,362	9.8	13.79	5.8	299,218	7.7
5	Bali & Nusa Tenggara	72,971	3.8	17.37	7.3	49,620	1.3
6	Maluku	89,116	4.6	2.57	1.1	176,726	4.5
7	Papua	411,878	21.4	3.59	1.5	1,062,154	27.2
	Indonesia	1,926,618	100	237.64	100	3,906,476	100

The average spatial rainfall distribution is quite varied from 800 to 4,000 mm/year, mainly influenced by Monsoon, El Nino Southern Oscillation in Pacific Ocean, and Dipole Mode Events in Indian Ocean. The rainfall water flows to 5,886 rivers and 521 natural lakes, giving an abundant potential of water of about 3,906 billion m^3/year.

The fast rising demands for water needed for basic human life, health, food production, industrial process , energy production and for environment is mainly driven by : (i) A huge number and rapid growth of population. Present total population is about 240 million people. It has doubled in the last 40 years and still growing at about 1.49 % per year; (ii) Fast developing economy which is presently the world's sixteenth largest by nominal GDP and fifteenth largest by purchasing power parity. It keeps on developing and is projected to be the fifth largest in 1930. (iii) Change of lifestyle due to improving economy, reduction of poverty, improved technology , urbanization,etc.

The increasing insecurity of the water resources are mainly caused by : (i) Uneven distribution of population as shown in table on Page 1. Especially the condition of Jawa island where 57.5 % population holds only 4.2 % of national potential water;

(ii) Deterioration of hydrological conditions of rivers and other public water resources (more floods in rainy seasons but less base flow in dry seasons) due to worsening watershed degradation caused by to uncontrolled deforestation, urbanization, land conversion for farming and plantation, mining, industry, etc.

(iii) Impacts of global climate change on hydrological conditions; (iv) Deterioration of water quality in rivers and other public water resources due to pollution from domestic, commercial, industrial and agricultural sources. (v) Lack of good governance namely: -Overlapping functions among WRM institutions, -Unresolved conflicts in water use, -Lack of accurate WRM data and information, -Lack of financing for WRM investment and infrastructure development.

Chapter 2. Key national priorities for the sustainable development of water

2.1 Key Water Resources Management

Faced the reality of problems and challenges above GoI had issued the National Policy on Water Resources Management (WRM) in 2011, to provide direction on WRM in national level for period 2011-2030. The national policy adressed 6 (six) policies area namely: (i) General, (ii) Water resources

conservation, (iii) Water resources utilization, (iv) Water related disaster controll, (v) Improvement of business sector and society roles in WRM and (vi) Development of water resources information system. Following are outline of priority according to each policy:

Priorities out of general policy:
(i) improvement of coordination and integrated management of water resources, through (a) Rearrangement task and function of institutions related to WRM to improve coordination and integration of cross sector program; (b) Completion preparation of Strategic Plan for River Basin WRM for all 131 River Basin of Indonesia by 2015; (c) Improvement coordination on WRM at National, Provincial and river basin level through establihment and functioning of WRM councils;
(ii) Development of WRM Technology,
(iii) Enhancement of Water Financing by enacted of water resources management fee and
(iv) Improvement of Law enforcement by activate WRM criminal investigator.

Priorities out of Water Resources Conservation Policy:
(i) Improvement of water sources protection and conservation measures through a/o maintainance of watershed by means of rehabilitation of forest and critical land in integrated and participative way for 2.5 million Ha in 5 years;
(ii) Improvement of water resources preservation through a/o Improve water storage measures to retain / collect excessive water during rainy season by all stakeholder, improve measures on water use efficiency and controll of groundwater extraction, and
(iii) Improvement of Water quality management and pollution control through a/o enactment criteria on strategig environmental assessment, environmental impact assessment, monitoring and and activate water quality criminal investigation.

Priorities out of Water Resources Utilization Policy:
(i) Improvement of water resources management for public equality and welfare through a/o Establishment: water allocation at water sources to provide various needs and water utilization zone as input for review of regional spatial plan;
(ii) Improvement of water resources provision measures through a/o defined allocation plan and water use right, realize fulfillment of basic daily water use, define minimum service standard;
(iii) Improvement of water resources use efficiency through a/o development of institution instrument to controll water use at basin level, improve law enforcement for exessive water users, and improve irrigation water use efficiency;
(iv) Improvement of water resources development through a/o implementation of water resources develoment in every river basin, develop bulk water provision system, develop dringking water supply system to achieve 78 % in urban area and 62 % in rural area by 2015, apply climate modification technology system;
(v) Controlling of water resources exploitation management through a/o regulation of WR exploitation based on principle of harmonious among social, economic and environmental interest, set up and apply WRM norm, standard, manual and criteria, set up local regulation for controlling building material extraction.

Priority out of Water related disaster controll Policy:
(i) Improvement of prevention measures;
(ii) Improvement of disaster mitigation
(iii) Improvement of disaster recovery measurements.

Priority out of Improvement of Business Sector and Society Roles (BSS) in WRM Policy:
(i) Improvement of BSS roles in planning of WRM,
(ii) Improvement of BSS roles in implementation of WRM;
(iii) Improvement of BSS roles in supervision of WRM.

Priority out of Development of Water Resources Information System (WRIS) Policy:
(i) Improvement of institution and human resources in WRIS;
(ii) Development of WRIS Network;
(iii) Development of Information Technology.

2.2 Key Water Sanitation and Hygiene (WASH)

The priorities include drinking water supply, sanitation service and hygiene facility.

A**.** Drinking water:

1) Improvement of raw water security.
   It requires the improvement of access to rural and urban safe drinking water which includes:
   - Development of bulk water system for domestic, urban and industrial needs fulfillment;
   - Development of drinking water supply system in the framework of increasing public health level;
2) Development of drinking water technology innovation.
   The priority includes encouraging individual or community group to develop technology of drinking water from surface water in order to reduce groundwater use;
3) Water utility institutional arrangement and strengthening.
   The priority includes development of standards and criteria at all levels, including provision of regulations, norms, standard and guidelines;
4) Improvement of financing system and alternative financing capacity.
   This includes promoting public private partnership particularly on drinking water development;

B. Sanitation and Hygiene

1) Facilitating public sanitation facilities for settlement areas near water body;
2) Improvement of access to sanitation taking into account the spatial direction and institutional-based approach as well as community-based in compliance with local characteristics;
3) Habit change through education starting from pre- and primary schools;

4) Public awareness campaign of sanitation as a basic need among government decision makers, legislators, private sector and communities. The campaign includes encouraging use of toilets;

5) Institutional arrangement and strengthening.
The priority includes capacity development and provision of regulations, norms, standard and guidelines;

6) Provision of software required for sanitation service development (master plan, detailed engineering design and urban sanitation strategy);

7) Development of breakthrough idea and technology innovation.

2.3 Key Wastewater and Water Quality

a) Present Problems and challenges

Water quality in most rivers in Indonesia are influenced by polution from domestic, industry, agriculture, and livestocks wastes. It depends on the land use allocation as stipulated in spatial planning map. If industrial and public wastewater treatment plants (WTPs) are available then the quality of water bodies (rivers, lakes, etc.) will mainly influenced by non-point source (NPS) pollutants. Therefore agricultural land use, such as irrigated or dry land agriculture and land for animal grazing (livestock), will be the main sources of NPS pollutant. However, since the WTPs which were already built today mostly only for industry (with problems related to practice & monitoring) and construction of public WTPs (and its network) is just started in several pilot cities therefore the sources of pollutants are both from NPS and point sources. The monitoring results showed that more than 50% parameters BOD, COD, *fecal coli* and *total coliform* that are monitored did not suite with criteria of water quality class I of Government Regulation No. 82/2001. For BOD parameter, only 26% of total water sample collected fully accord with the water quality criteria class I and only 33% of the total water sample acord with the water quality criteria class II. Parameter COD that acord with water quality class I only 29% of total water sample. Basically, the potency of pollutants for each type of land use per ha could be determined/predicted.

b) Recomendation on Water Quality

b.1) To move from recognizing the challenge of protecting ecosystem challenge to taking the necessary action, requires that we appreciate both the intrinsic value of ecosystems and their ability to provide goods and services to humankind, and then take the needed steps to provide the required protection, including:

- Adopting a participatory ecosystem-based management (river basin/watershed/aquifer) approach to water resources management, which provides a framework for addressing environmental needs;
- Providing ecosystem security by leaving enough water in ecosystem to both sustain them, and their ability to provide services;

- Protecting surface and groundwater from pollution by controlling of pollution and waste.

b.2) Addressing these three main issues require also the following:

- Strengthening or empowering stakeholder participation in decision making by raising awareness and capacity building;
- Developing and exchanging knowledge by using soft engineering, appropriate clean technology, indigenous crop varieties, reconsidering infrastructure and ecosystem-based management know-how, in combination with traditional and appropriate social and economic mechanisms;
- Valuing water in a way that accounts for ecosystem functions and services, and charges polluters for the full cost to the system;
- Establish the government's regulation which addresses specifically the water quality management and water pollution controlling which refer to Water Law No.7/2004.
- Restoring river in term of quality and quantity (peak and low flow) by preparing an appropriate land use plan (or spatial planning) as well as spatial use (land use) Control by monitoring and law enforcement.
- Besides continuing to construct WTPs accordingly for point source pollutant load control, appropriate measures to control NPS pollutants to each location (each type of land use) should be developed in order to meet the requirement of river water quality class.
- Activating the criminal investigators work by provision of Manual and Procedures for water quality criminal investigation.

b.3) Role of stakeholders in management of wastewater and water quality:

Government has a role in i) develop and establish law, regulation, guideline and socialization, ii) guidance and surveliance, and iii) administration and law enforcement,

Corporate/company/operator has a role in: i) preventing and controling pollution to environment, ii) monitoring and reporting, iii) provide information/report that correct, accurate, and right, and iv) manage, recover and rehabilitate pollutionof environment,

Community has a role in: i) giving a recommendation/idea, ii) social control, iii) giving report and complain on the occasion pollution on environment that harmful for community.

2.4 Suggested areas for future sustainable development targets for water

1) **Presidential Direction**
   To fulfill demand of water for basic and healthy needs for dry and infertile areas by 2025,

2) **Commitment to Agenda Rio+ 20**
   Target achivement of safe drinking water and sanitation in the post 2015 period will be continuation of the remaining MDGs target by 2015 untill all population of Indonesia have

access to safe water facilities. This in line with commitment to Rio+20 since provision of access for drinking water that safe and affordable is a human right. This commitment is plan to be achieved by mobilization of resources, improvement of capacity and technology transfer.

3) Drinking water supply

Government regulation on the water supply was issued in the year 2005 after the enactment of the new water resources law (N0. 7/2004). This regulation was issued in 2005 under the title of the Government Regulation on the Development of Drinking Water Supply System No. 16/2005. Some of government concerns on drinking water supply system among others are, as follows:

i) Development of Drinking Water Supply System (DWSS) will be implemented in integrated way with development of sanitation infrastructures system
ii) DWSS will be implemented base on on the following principles: sustainability, balance, public utilization, integrated and harmonization, continuation, fairness, independent, transparency and accountability .
iii) Regulation on the development of DWSS is intended:
   (a) to realize the quality of management and service drinking water supply with affordable price
   (b) achieving a balance interest between consumers and provider of water drinking service
   (c) achievement in the increase of efficiency and coverage of drinking water service
iv) DWSS can be implemented through a pipe networking system and/or a non-pipe networkng systems
v) DWSS with a pipe networking system may consist of the following: raw water supply system, production system, a unit of service system, a and unit of menegment.
vi) DWSS with a non-pipe networking may consist of the followings: a shallow well; a hand pump, rain water colletor tank; water terminal; a drinking water truck of bottled drinking water, and a water source protection structure

4) Sanitation

So far there is no regulation that specifically address sanitation issues nor a plan to develop government regulation on sanitation. Part of the Drinking Water Supply System No. 16/2005 address the government concerns on sanitation.

However, the Government Regulation on the Water Resources Management No 42/2008 address some of the concerns on sanitation, those are:

i) Arrangement on sanitation infrastructures are regulated through the followings:
   - Establishment of a guideline to construct sanitation infrastrucrures
   - Separation of construction of drainage system a nd waste water system especially for urban areas
   - Disposal of waste water in urban areas should be collected through the waste water network and directed to the central waste water treatment
   - The central waste water treatment or development environmentally sound treatment should be constructed on each center of settlement or city.

ii) Implementation of sanitation policy will be implemented by ministry in charge or ministry in charge of water resources management
iii) Local government responsible to manage license issuance for construction of sanitation infrastrutures.

5) Raw Water Resources Provision

For sustainability of raw water storage in term of quantity and quality, watershed stewardship is compulsory. Watershed conservation and management (including soil and water conservation) should be appropriately planned and implemented accordingly.
For the purpose of water security for irrigated agriculture and domestic, municipal & industry (DMI) it was recommended to increase the existing water storage per capita per year from 52 m^3 up to 920 m^3 in 2030.
Specifically to support development of a Drinking Water Supply System during the last 5 year has been increased significantly to achieve MDGs target 2015. The followings are the raw water supply program for the last 10 years since 2004/2005:

a) Raw Water Supply Capacity 16,13 m^3/s (2004-2009)
b) Raw Water Supply Capacity 56,3 m^3/s(2009-2014)

6) Wastewater Management

To manage pollution, a development action plan should be elaborated for both point source and non-point source (NPS) pollutant management. Since industrial wastewater treatment plants (WTPs) is already existed which is still required stricter monitoring and law enforcement (activating environmental criminal investigators), public WTPs construction should be sped up for better water body (rivers, lakes, reservoirs) water quality.

NPS pollutants control methods and plan should be developed immediately. Experiences in handling NPS pollutants from western nations should be studied before implementing in developing countries. Since spatial plan determine the types and quantity of pollutants, a better spatial plan preparation approach should be develop for better pollution management, especially land use allocation within river corridor.

Manual and procedure for pollution or water quality criminal investigation should be developed as prerequisites for activation the criminal investigators

Chapter 3 Water Resources Management monitoring and reporting issues

- Establishment of Monitoring & Evaluation Team to evaluate and provide recommendation on the implementation of water resources development and management to related ministries and institution. The Team member should consist of representatives of neutral stakeholders such as academia, professional organization, relevant NGOs, and representative of water users.

- The Monitoring & Evaluation Team should establish: a) to establish monitoring & evaluation procedure, b) to set up verifiable success indicators of program implementation, and c) target & working program of the Monitoring & Evaluation Team. The evaluation results will be given to Ministers and Chair of Institutions for inputs to correct any discrepancies between the plan and its realization.

Annex List of participants and other basic information

Jakarta - Indonesia 4 April 2013

No.	Name	Position/Designation
Line Ministries		
National Development Planning Board (BAPPENAS)		
1	Mr. Nugroho Tri Utomo	Director of Housing & Settlement
2	Dr. Donny Azdan	Director of Water and Irrigation
3	Mr. Abdul S	Subdirectorate Drinking Water and Waste Water
Ministry of Public Works		
4	Dr. Mochammad Hasan	Director General of Water Resources
5	DR. M. Basuki	Director General of Spatial Planning
6	Mr. Graita Sutadi	Director General of Research and Development Institute
7	Mr. Pitoyo Subandrio	Director of Rivers and Coastal Area
8	Mr. Eko Subekti	Director of Irrigation and Swamp
9	Mr. Oloan Simatupang	Subdirectorate Drinking Water Development, Directorate General of Human Settlement
10	Ms. Asri Indijani	Staff Director Drinking Water Development, Directorate General of Human Settlement

11	Mr. Andi Renald	Directorate General of spatial planning
10	Mr. Dwi Purnomo	Staff Directorate of Water Resources Management
13	Ms. Rini Agustin	Staff Director of Public Health & Sanitation
14	Mr. Wahyu Nugroho	Subdirectorate of Raw Water and Groundwater Water, Directorate of Irrigation and Swamp
15	Mr. Leonarda Ibnu Said	Subdirectorate Data and Information, Directorate Bina Program
16	Mr. Tommy Sitompul, M.Eng	Subdirectorate of Hydrology
17	Dian Ardani, ST.M.Eng	Data and Information, Directorate Bina Program
18	Nurllia Anjani	Data and Information, Directorate Bina Program
Ministry of Environment		
19	Mr. Hermono Sigit	Deputy II Agency for Environment and Pollution Control
20	Mr. Sabar Ginting	Deputy III Agency for Environtment and Climate Change control
21	Mrs. Jossy Suzanna	Environtment and Climate Change control
Ministry of Agriculture		
22	Ms. Nur Asri Ayuningtyas	Director of Water management
Ministry of Health		

23	Ms. Siti Nur Ayu	Representative from Director of Health Environment
Ministry of Public Welfare		
24	Ms. Erlia Rachmawati	Assistant , Department of Housing, Land Use and Clean Water
Functional Institutions		
Ministry of Research and Technology		
25	Mr. Erwin Mulyana	Head of UPT Weather Modification - BPPT
26	Mr. Sutrisno	Head of Environmental Technology - BPPT
River Basin Organization		
27	Mr. Gok Ari Joso Simamora	Director Perum Jasa Tirta II (Jati Luhur River Basin Corporation)
28	Mr. Ervan M Sofwan	Head of BBWS Citarum (CITARUM River Basin Agency)
29	Mr. C. Riden Gunawijaya	BBWS Citarum (CITARUM River Basin Agency)
30	Mr. Imam Santoso	Head of BBWS Ciliwung Cisadane (CILIWUNG CISADANE River Basin Agency)
Water Utilities		
31	Mrs. Nunung	PDAM DKI Jakarta (Public Water Company)
32	Ms. Irma Damayanti	PALYJA (Water Company)
33	A.R.E Baroto	PALYJA (Water Company)
34	Meyritha Maryanie	PALYJA (Water Company)
University		

35	Dr. Robert Kodoatie	University of Diponegoro
36	DR. Ir. Indreswari Guritno, MS	University of Indonesia
NGO		
37	Ir. Kusnaeni, Dipl. HE	JIKPA
38	Ir. Mardjono Notodihardjo	Yayasan Sembrani
39	Ir. Rubiyanto	Yayasan Adhi Eka
40	Mr. Ahmad Hanan	Head of KNIBB
41	Mr. Syaiful Mahdi	Head of KNI ICID
42	Mr. Zaffrulah B. Putra, ST	BPSPAM (Water Utility Regulatory Board)
43	Mr. Raymond Kemur	Consultant CDTA INO
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49	Ir. Achmadi Partowijoto, CAE	
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52	DR. Ir. Sutardi, M. Eng	
53	Ir. Imam Anshori, MT	
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