

Roadmapping for River Basin Investment: Lessons Learnt

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Water Operational Plan 2011-2020

Guiding the implementation of the Water Financing Program

- 1. Deepen and expand analytical work**
 - **Country Water Assessments**
 - **Asia-Pacific Water 2050 Study**
- 2. Advance inclusive water policy reforms**
 - **Governance reengineering**
 - **Water-food-energy nexus**
- 3. Strengthen lending and non-lending assistance**
 - **sustaining ADB investments at \$2.0-2.5 billion annually**
 - **implementing specific priority thrusts**

ADB's Water Operational Plan 2011-2020: Priority Thrusts

- **Increased water use efficiencies**
- **Expanded wastewater management**
- **Embedded integrated water resources management**
- **Expanded knowledge and capacity development**
- **Enhanced partnerships with private sector**

Example of Roadmapping: Water Resources Management in Citarum River Basin, Indonesia

- **Long term partnership of ADB in Indonesia**
- **Introduction of IWRM at basin level**
- **Multi-stakeholders engagement**
- **Technical and institutional support**

The Citarum River Basin

The biggest and the longest river in West Java Province

Catchment Area: 6,614 Km²

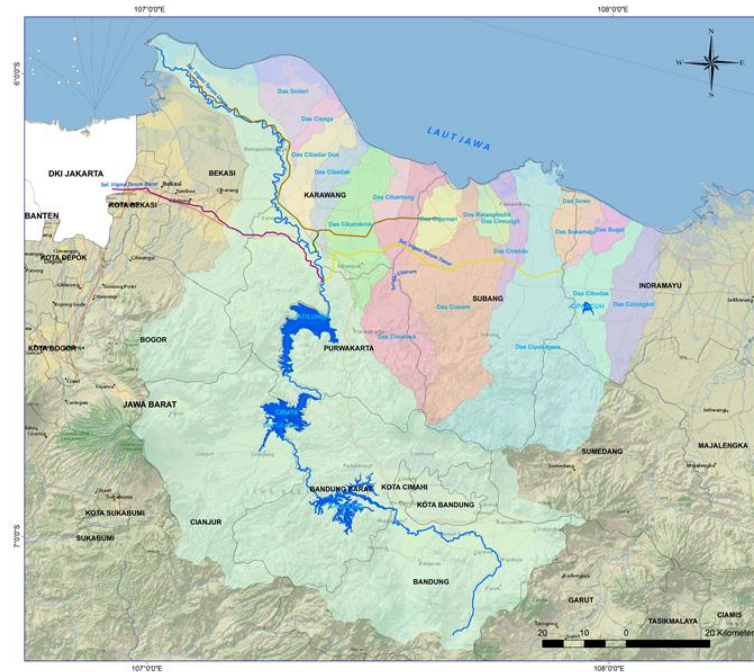
Management Area: 13,000 Km²

Population along the river 10 million (50% Urban)

Total population in the basin:
15,303,758 (50% Urban) (Data BPS 2009)

Supplies water for 80% of Jakarta citizens
(16 m³/s)

Irrigation area: **300,000 Ha**
Electricity output: **1,400 Mwatt**



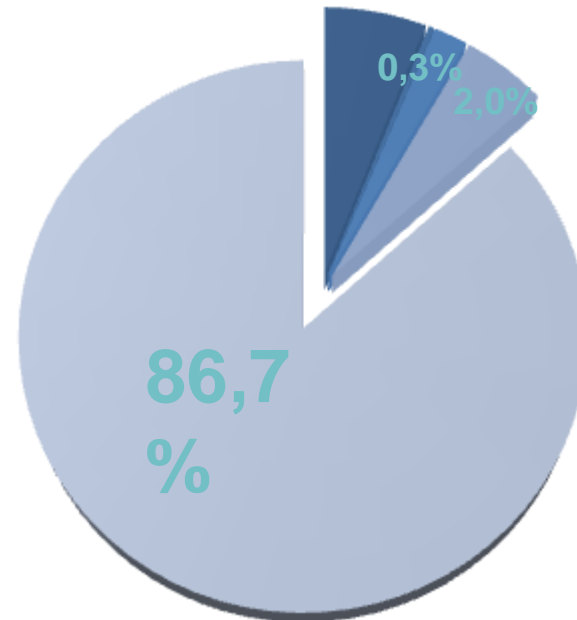
Water Use

POTENTIAL



- **ALREADY UTILIZED**
7,5 billion m3/year (57,9%)
- **FUTURED POTENTIAL**
5,5 billion m3/year (42,1%)

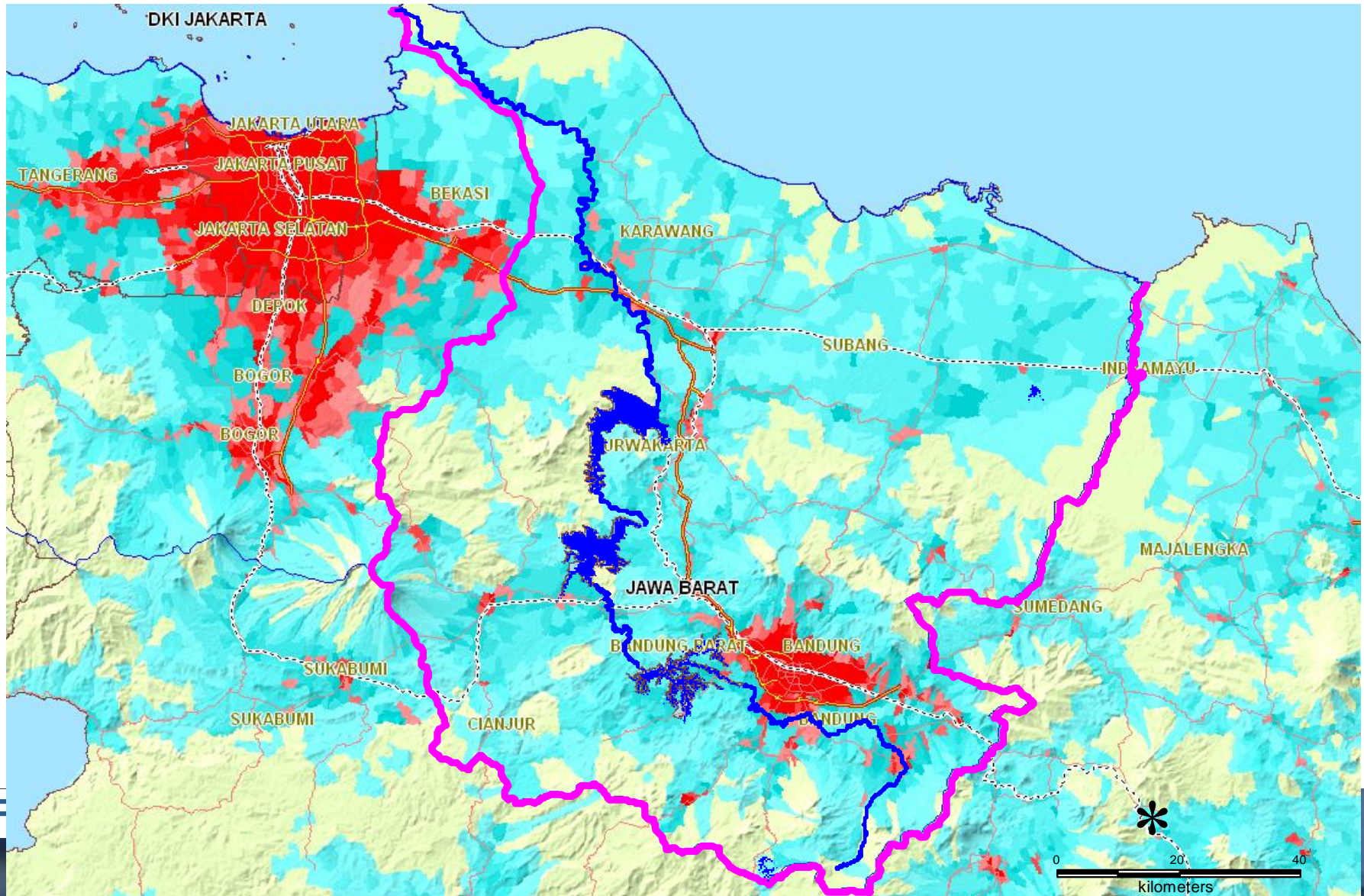
UTILIZATION



- Drinking water for Jakarta 6,0%
- Drinking water Bandung 0,3%
- Industry 2,0%
- Irrigation 86,7%
- Others 5,0%

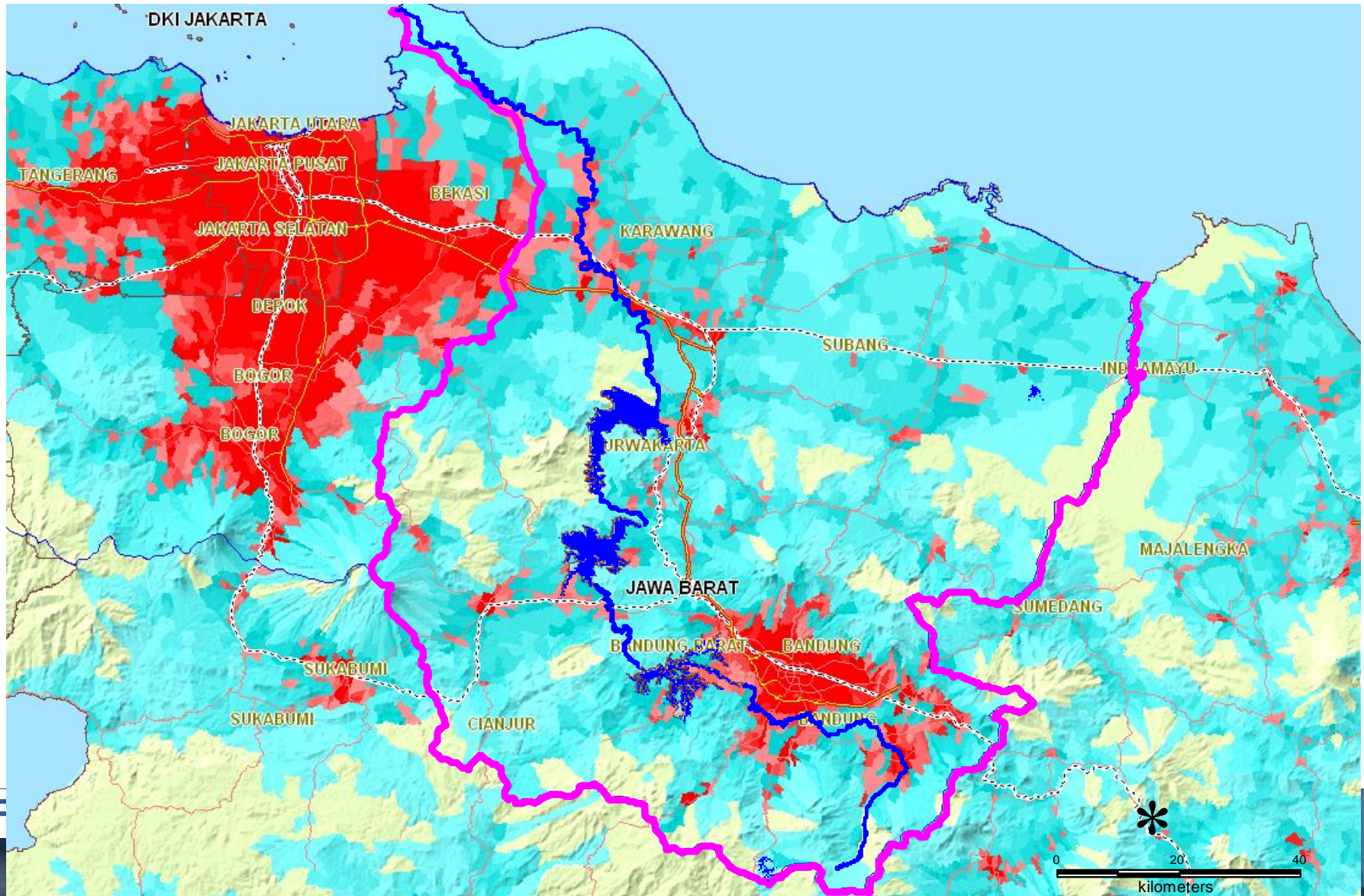
Rapid Urbanization 2010

ADB



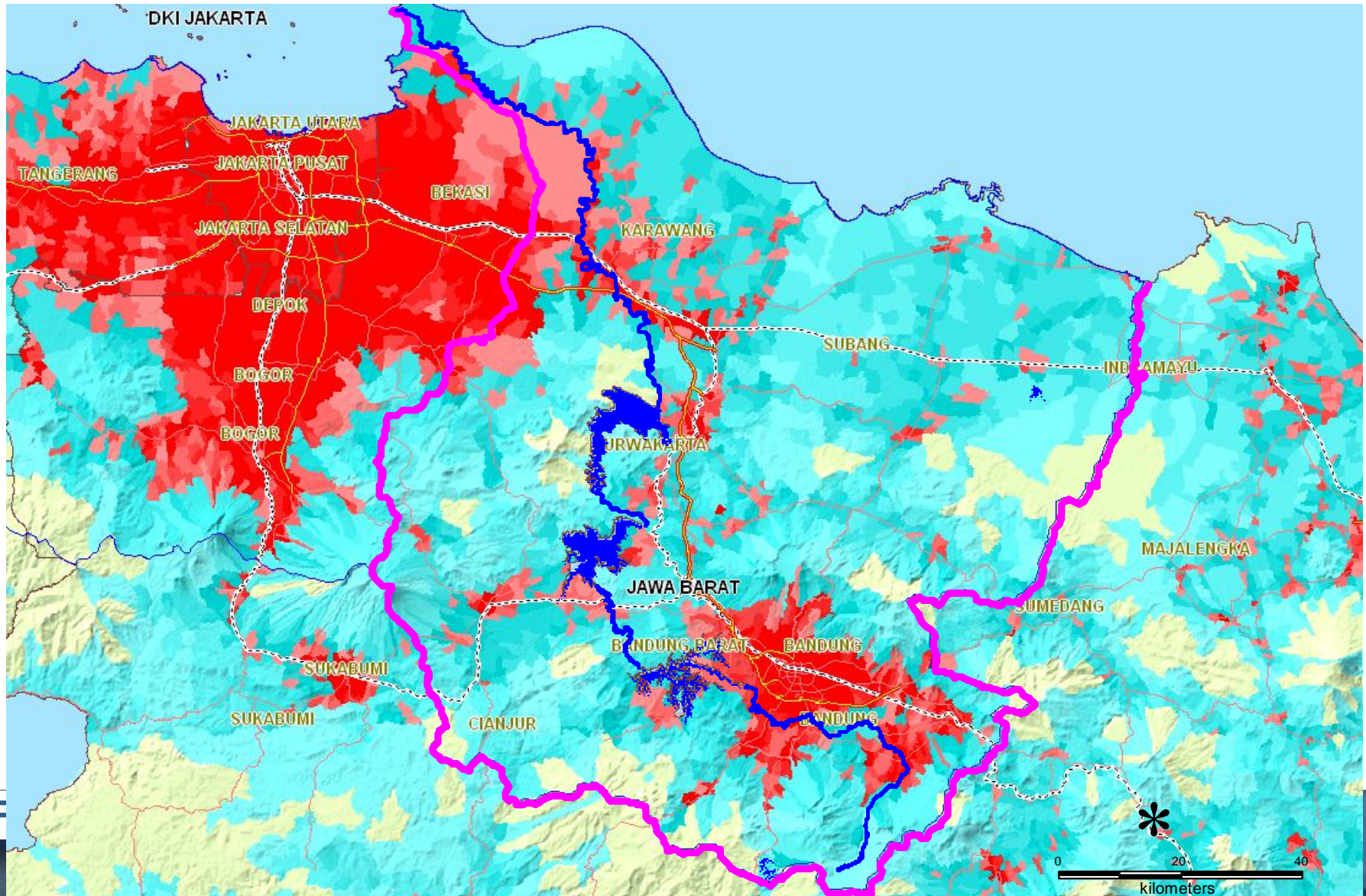
Rapid Urbanization 2030

ADB



Rapid Urbanization 2050

ADB



Flooding

ADB
October 14, 2012



Photo Doc: Cita-Citarum

Major floods recorded in Bandung 1931, 1945, 1977, 1982, 1984, 1986, 1998, 2005, 2010, 2012



Water Quality

- 1,500 industries in Bandung and surrounding:
- 280 ton of chemical waste dump into Citarum everyday
- Lack of sanitation and waste water treatment facilities
- Water quality monitoring in the late 1990s shows that annual average of BoD concentrations as high as 300 mg/liter.
- The annual uncollected garbage that invariably ends up accumulating in the drainage system and rivers amounts 500,000 m³/year
- BoD concentrations at the Saguling reservoir inlet still go up to as high as 130mg/l during dry season
(Indonesia Power and Padjajaran University survey in 2004)



Degraded Watershed



Photo Doc: Cita-Citarum

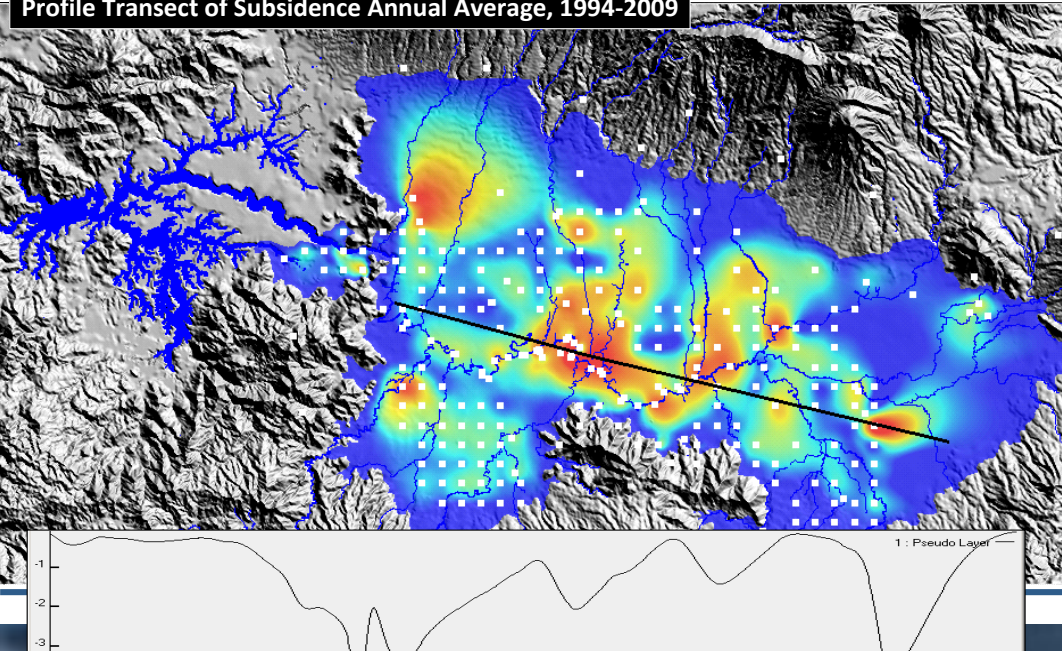
Average annual sedimentation into the three reservoirs estimated at 8 million m³/year

Groundwater Over Exploitation

Subsidence is severe in Bandung Metropolitan:

- Not only at Dayeuhkolot, but many other places
- From 1988 more than 3-4 meter subsidence
- Severe impact on river hydraulics (and flooding)
- Irreversible aquifer damage starting

Profile Transect of Subsidence Annual Average, 1994-2009



Water Supply Shortage

Current conditions (2010):

- Demand in project area is 18.6 m³/s
- Demand in PDAM service area is 5.1 m³/s
- PDAM service capacity is 3.7 m³/s
- **Conclusion: Current water shortage in project area is 14.9 m³/s, and shortage in water utility (PDAM) service area is 1.4 m³/s**

Projections 2030:

- Projected demand in the project area is 26.4 m³/s
- Projected demand in the PDAM service area is 15.3 m³/s
- **Conclusion: Additional bulk water supply need for project area is 22.7 m³/s, whereas the additional bulk water supply need for the PDAM service area is 11.6 m³/s**

Government and ADB Collaboration: IWRM Road Map

A “roadmap” is just like a strategic plan

3 years participatory process
Involvement of stakeholders

It involves asking the following questions:

Where do we want to go?

Where are we now?

How do we get from here to there?

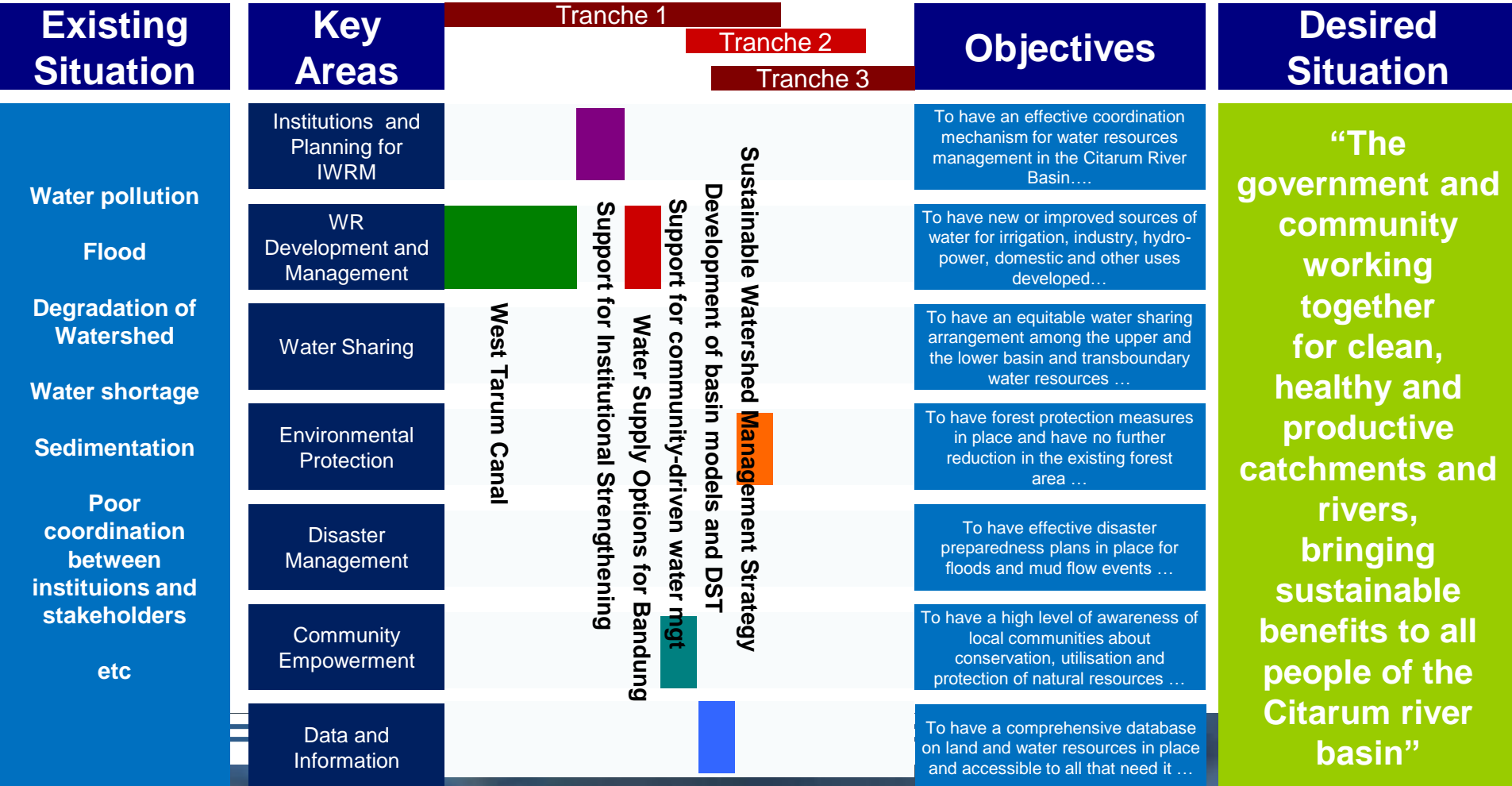


Bring Vision to Actions

Time



Vision



Financing for Implementation

- **The Roadmap 2013 comprises 399 activities with a combined investment cost of 7,2 billion USD, of which 500 million USD is funded through an ADB loan.**
- **The loan is disbursed based on Period Financing Requests (PFR) that draws funds from a Multi Financing Facility (MFF).**
- **The Roadmap projects are bundled in 12 Integrated Investment Packages, based on 4 locations (upstream, midstream, downstream and general) and 3 phases (short, medium and long term)**
- **Each Integrated Investment Package shall benefit from internal synergies, and shall be financed from multi-source funding, triggered by the projects funded by MFF**
- **PFR-2 is part of Integrated Investment Package B that is focused on the bulk water supply and upper watershed rehabilitation and management**

Implementation is a joint effort: All stakeholders have their contributions

Challenges and Factors for Success

CHALLENGES

- **IWRM: an Holistic Approach – Practical?**
- **Competing needs among sectors**
- **Alignment of sectoral and basin plans and Timely financing**
- **Divergence of priority at local level**

FACTORS for SUCCESS

- **Influencing "driving forces": set the enabling conditions for implementation**
- **Alignment of processes and Integration of basin plans into government planning cycle**
- **Communication and knowledge sharing**
- **Capacity building and institutional development**



Thank you!

www.adb.org/water