




Water supply and sanitation



Apa itu “water supply”? Apa itu “sanitation”?

- ▶ Water supply (pengertian umum):
 - ▶ Public → improved water supply
 - ▶ Individual
- ▶ Sanitation:
 - ▶ Etimologi kata “sanitasi” → sanus, sana, sanum, sano (latin)
 - ▶ Pengertian dan cakupan sanitasi lingkungan
 - ▶ Implikasi “The international drinking water supply and sanitation decade, 1981-1990”
 - ▶ Trend pengertian sanitasi kini



SDG's on Water and Sanitation

- By 2030, universal and equitable access to safe and affordable drinking water for all, access to adequate and equitable sanitation and hygiene for all and open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- Note:
 - Water and sanitation as a human right
 - Go beyond access are being considered (Improving water quality by reducing pollution)
 - Increasing water-use efficiency



Health effect of inadequate water supply and sanitation

- Water and sanitation are essential to human health → water related diseases → water borne diseases → diarrhoea
- Unsafe drinking water → diarrhea in children (20 % of child death each year)
- 30% indonesians suffer from water-borne diseases (cholera, dysentery, typhoid fever) every year
- WSP (world Bank): poor sanitation and hygiene causes at least 120 million disease episodes, and 50,000 premature death annually
- Infant mortality and child malnutrition in low income areas of Indonesia is gretly associated with inadequate acces to safe water and basic sanitation




Economic impact of inadequate water supply and sanitation

- ▶ Inadequate water supply and unsanitary condition → obstacles to improve living standard → chronic ill health → poor nutrition → poor school performance → reduce productivity → permanent disability → a drag on economic development
- ▶ A WSP study from southeast Asia (2006) → Indonesia lost an estimated US\$6.3 billion due to poor sanitation and hygiene, equivalent to app. 2.3 % GDP



Sustainable Development Goals

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1. No Poverty
 2. Zero Hunger
 3. Good Health and well-being
 4. Quality education
 5. Gender equality
 6. **CLEAN WATER AND SANITATION**
 7. Affordable and clean energy
 8. Decent work and economic growth
 9. Industry, innovation and infrastructure
 10. Reduce inequality
 11. Sustainable cities and communities
 12. Responsible consumption and production
 13. Climate action
 14. Life below water
 15. Life on land
 16. Peace, justice and strong institutions
 17. Partnership for the goals



WSS Regulation: US vs EU (Europe Union)

- WSS US:
 - Federal : Environmental Protection Agency (EPA)
 - State
- WSS EU:
 - Member states responsibility
 - Union-wide policy → directives
 - European Environmental Agency (EEA)



Classification of water supply (US)

- Public
 - Regulated by EPA
- Private drinking water wells
 - No regulation
 - No recommended criteria or standard

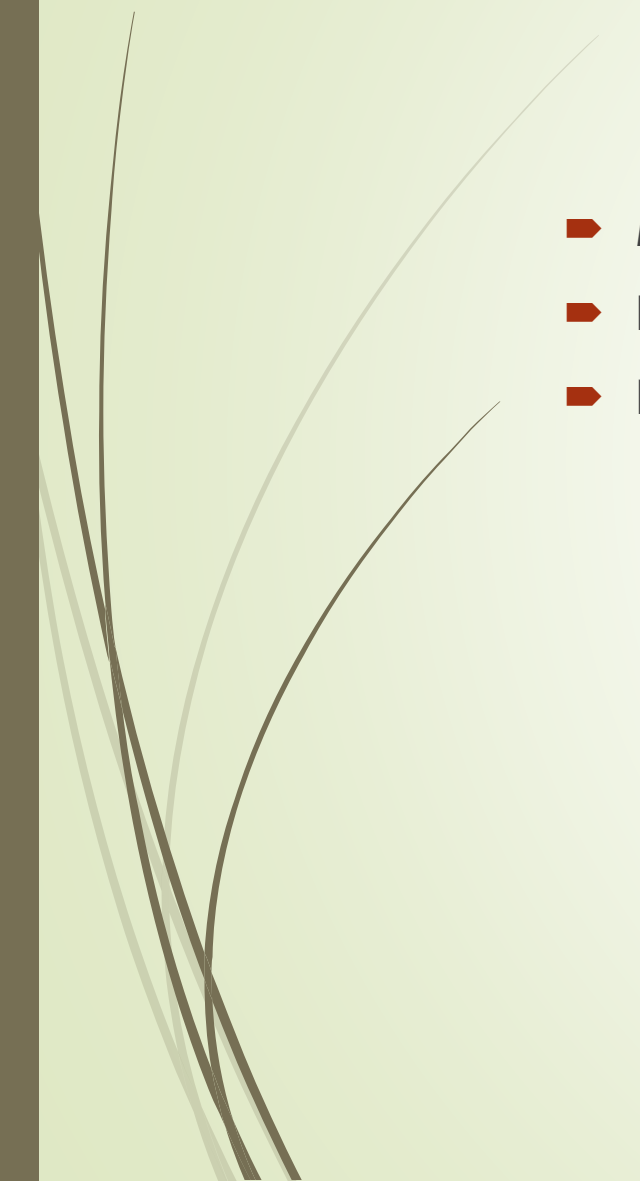



EPA classification (public water supply)

- ▶ Community water System (CWS):
 - ▶ A public water system that supplies water to the same population year round
- ▶ Non-Transient Non-Community Water System (NTNCWS):
 - ▶ A public water system that regularly supplies water to at least 25 of the same people at six months per year.
 - ▶ E.g.: schools, factories, hospitals which have their own water systems
- ▶ Transient Non-Community Water Systems (TNCWS):
 - ▶ A public water system that provides water in a place such as a gas station, or campground where people do not remain for long periods of time



WSS in Singapore

- ▶ Ministry of environment and water resource
 - ▶ Public Utilities Board (PUB)
 - ▶ National Environment Agency
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Water supply and sanitation in Indonesia

- ▶ Low water accessibility
- ▶ Bad sanitation services
- ▶ >40 million without access to improved water
- ▶ >110 million without sanitation services
- ▶ only 2% city residents served by sewerage system
- ▶ Aggravated by bad water pollution in Java & Bali
- ▶ Improved water (2015): 70,97%
- ▶ Sanitation service (2015): 62,14 %



WSS Indonesia

- ▶ Clean Water and Sanitation (salah satu point dari SDGs)
- ▶ Water Supply and Sanitation
- ▶ Improved water (source) and improved sanitation →
- ▶ Improved access (improved water), improved (sanitation) service quality

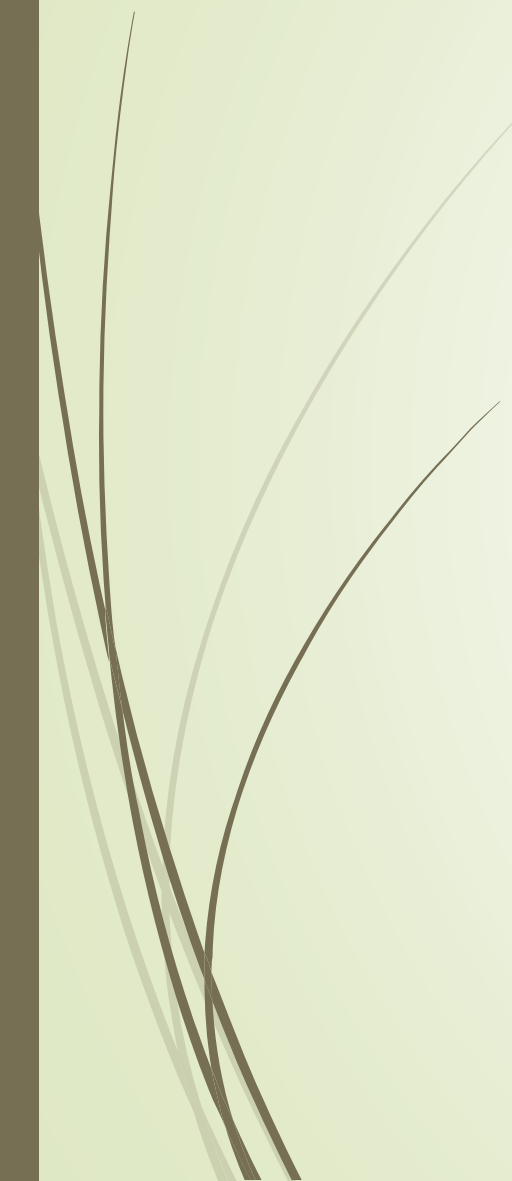


Water sources in Indonesia

- River and lake (60%)
- springs (25%)
- Groundwater (15%)
- water source for Jakarta:
 - Jatiluhur (70 km dari Jakarta)
 - Shallow groundwater
 - springs



Source of Water pollution (surface and ground water) in Indonesia

- Domestic waste water
 - Industrial waste water
 - Wash out from agriculture
 - Solid waste
 - Note: rare centralized wastewater treatment plant
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Domestic waste water Indonesia

- ▶ Hanya sekitar 42,8 % rumah memiliki sarana pengolahan air limbah domestik
- ▶ Lebih setengah rumah tangga membuang air limbah ke lingkungan
- ▶ Air limbah domestik → mencemari sumber air



Improved water source in Indonesia

- Urban (44%): 92 %
- Rural (56 %): 74 %
- Total: 82 %
- Source: Joint Monitoring Programme for water supply and sanitation WHO/UNICEF (2012)



Improved sanitation in Indonesia

- Urban : 81,25 %
- Rural : 47,31 %
- Total : 65,61 %

Puguh Prasetyoputro and Sri Irianti (2013)

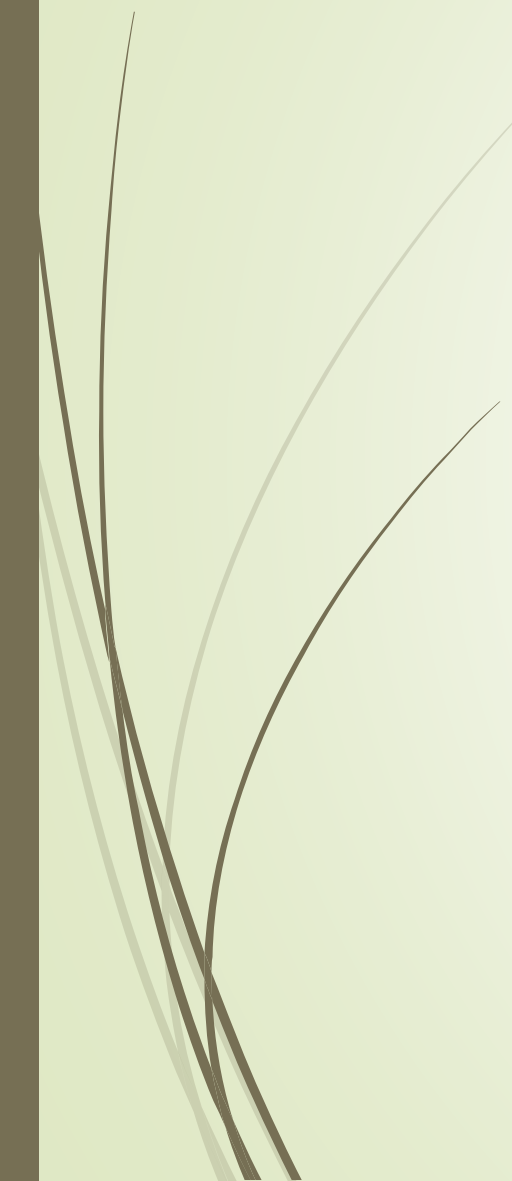
Total in 2012 : 59 % (WHO/UNICEF, 2014)

total in 2010: 54 % (WHO/UNICEF-JMP, 2013)

- Sewerage system (centralized) :
 - Urban: 2 %
 - Rural : 0 %




Water supply di Indonesia

- Siklus air di alam
 - Sumber air yang dapat digunakan
 - Karakteristik kualitas air berdasarkan sumber air
 - Efisiensi PDAM: 20-43%
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Strategy of WSS

- Acts
 - Legal framework
 - parliament
- Policies
 - Sector guidance and priorities
 - Cabinet
- Strategies
 - Sector directions
 - Ministry
 - nasional
- Plans, guidelines, etc.
 - Detail work plans
 - Implementing agencies



The National strategy for WSS (Bangladesh)

- Goal
- Objective of the National strategy
- Timeframe
- Guiding Principles
 - Bases of the strategy → guiding principles
- The framework of the strategy
 - Themes (WaSH intervention, emerging challenges, sector governance) and strategy
- The strategies and strategic directions



Syarat kualitas air minum dan air bersih di Indonesia

- ▶ Syarat kualitas air minum:
 - ▶ Permenkes No 416/ Menkes/PER/IX/1990 tentang syarat-syarat dan pengawasan kualitas air
 - ▶ Air minum, air bersih, air kolam renang, air pemandian umum
 - ▶ Kepmenkes No 907/Meskes/SK/VII/2002 tentang syarat syarat dan pengawasan kualitas air minum
 - ▶ Peraturan Menteri Kesehatan RI No. 492/MENKES/PER/IV/2010, Tentang Persyaratan Kualitas Air Minum
- ▶ Syarat kualitas air bersih:
 - ▶ Permenkes No. 416



Sanitation

- On-site/on-plot
- Off site
 - DEWATS: IPAL komunal
 - Centralized: IPAL Terpusat



Matur nuwun

