

ASEAN IWRM PERFORMANCE REPORTS & MONITORING INDICATORS

Singapore Summary Report (Water Pollution Management)

IWRM Issue 5 – Water Pollution Management (18 indicators)			
Indicator Types	Indicators	2010	2013
Outcome Indicators	1. Percentage of monitored water bodies' ambient water quality meeting designated uses (agriculture, water supply, fisheries, industrial, etc.)	<u>Recreational water quality</u> 83% of the six recreational beaches monitored by NEA were graded "Very Good" or "Good" and were assessed to be suitable for primary contact recreational activities.	<u>Recreational water quality</u> 100% of the six recreational beaches monitored by NEA were graded "Very Good" or "Good" and assessed to be suitable for primary contact recreational activities.
	2. Percentage of industrial/domestic effluent discharge complying with the country's effluent discharge standard	98%	97%
EE Indicators	1. Any "Policy" on water pollution control	Yes. To protect stormwater quality, there are separate systems for the collection of stormwater and used water. Heavy industries which pose a greater risk of pollution are sited outside of water catchment areas.	Yes. To protect stormwater quality, there are separate systems for the collection of stormwater and used water. Heavy industries which pose a greater risk of pollution are sited outside of water catchment areas.
	2. Any "Legislation/regulation" for water pollution control (i.e. for the management of water quality and wastewater quality)	Yes. The provision, operation and maintenance of sewerage system are governed by the Sewerage & Drainage Act. The discharge of wastewater into open drains is	Yes. The provision, operation and maintenance of sewerage system are governed by the Sewerage & Drainage Act. The discharge of wastewater into open drains is

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		regulated by the Environmental Protection and Management Act	regulated by the Environmental Protection and Management Act
	3. Any “Financial framework and Financing plans” for water pollution control	NA (Singapore’s waterways are urbanized channels designed to convey stormwater which are dry most of the time)	NA (Singapore’s waterways are urbanized channels designed to convey stormwater which are dry most of the time)
IS Indicators	1. Any “Agency/Department” responsible for water pollution control	Yes. The sewerage system is managed by PUB. The discharge of wastewater into open drains is regulated by NEA	Yes. The sewerage system is managed by PUB. The discharge of wastewater into open drains is regulated by NEA
	2. Any “Steering committee” on river water quality and environmental issues (e.g. inter-agency committee)	PUB and NEA have an inter agency task forces for Marina, Jurong lake and Punggol-Serangoon reservoir catchment. PUB also has an interagency team with other governmental agencies for farm areas.	PUB and NEA have an inter agency task forces for Marina, Jurong lake and Punggol-Serangoon reservoir catchment. PUB also has an interagency team with other governmental agencies for farm areas.
	3. Any “Formal institutional arrangements” among related agencies to manage water pollution	Yes. Through its Central Building Plan Unit, NEA ensures that environmental factors are incorporated into land use planning, development and building control of new developments	Yes. Through its Central Building Plan Unit, NEA ensures that environmental factors are incorporated into land use planning, development and building control of new developments
	4. Any “Private/public partnership and	Yes. PUB’s Our Waters	Yes. PUB’s Our Waters

Source: ASEAN Working Group for Water Resources Management (AWGWRM) – July 2015
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	participation” in managing water pollution	programme aims to nurture a sense of ownership in people and encourage them to be guardians of our water by adopting waterways or reservoir parks, sponsoring water programmes and community events or providing reservoirs to assist schools or other interest groups to start water projects. PUB also works with the NGO Waterways Watch Society. PUB’s ABC Waters programme also aims to improve the quality of water through various programmes such as ABC Waters Learning trails, ABC waters design guidelines and certification, ABC Waters Professional Programme.	programme aims to nurture a sense of ownership in people and encourage them to be guardians of our water by adopting waterways or reservoir parks, sponsoring water programmes and community events or providing reservoirs to assist schools or other interest groups to start water projects. PUB also works with the NGO Waterways Watch Society. PUB’s ABC Waters programme also aims to improve the quality of water through various programmes such as ABC Waters Learning trails, ABC waters design guidelines and certification, ABC Waters Professional Programme.
MT Indicators	1. Any river water quality master plan at national and local levels	NA (Singapore waterways are urbanized channels designed to convey stormwater which are dry most of the time. Our water quality focus is not on river water; rather it is on	NA (Singapore waterways are urbanized channels designed to convey stormwater which are dry most of the time. Our water quality focus is not on river water; rather it is on

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		reservoir water for suitability for treatment to drinking water quality & water-based recreational activities)	reservoir water for suitability for treatment to drinking water quality & water-based recreational activities)
	2. Any relocation plans for highly polluting industries in a river basin	Yes. Pollutive industries are gradually sited out of water catchments	Yes. Pollutive industries are gradually sited out of water catchments
	3. Any effluent discharge standards	Yes. The standards can found on this website. http://www.nea.gov.sg/anti-pollution-radiation-protection/water-pollution-control/allowable-limits	Yes. The standards can found on this website. http://www.nea.gov.sg/anti-pollution-radiation-protection/water-pollution-control/allowable-limits
	4. Any river water quality monitoring program	Yes. PUB's water quality monitoring programme involves regularly monitoring the reservoirs & waterways. Water samples are collected and analysed	Yes. PUB's water quality monitoring programme involves regularly monitoring the reservoirs & waterways. Water samples are collected and analysed
	5. Any river water quality information system/database	Yes. PUB's water quality monitoring programme involves regularly monitoring the reservoirs & waterways. Water samples are collected and analysed and stored in a Laboratory Information Management System & Water	Yes. PUB's water quality monitoring programme involves regularly monitoring the reservoirs & waterways. Water samples are collected and analysed and stored in a Laboratory Information Management System & Water

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		Quality Data Management System.	Quality Data Management System.
	6. Any program to disseminate to the public regular report on river water quality status	NA (PUB's monitoring of reservoir water quality is for water treatment purpose. For recreational activities, they will be temporarily discontinued until water quality improves)	NA (PUB's monitoring of reservoir water quality is for water treatment purpose. Drinking water quality report is available at http://www.pub.gov.sg/general/water_supply/Pages/DrinkingWQReport.aspx .For recreational activities, they will be temporarily discontinued until water quality improves)
	7. Any groundwater quality monitoring programs and systems	NA (Groundwater is not monitored as it is not a source of water supply at this stage)	NA (Groundwater is not monitored as it is not a source of water supply at this stage)
	8. Any computer simulation models used to predict river water quality	Yes. Coupled 1D-3D hydrodynamic model using SOBEK and Delft-3D, PCSWMM & ELCOM-CAEDYM	Yes. Coupled 1D-3D hydrodynamic model using SOBEK and Delft-3D, PCSWMM & ELCOM-CAEDYM
	9. Any public awareness program on water pollution prevention	Pls see item 4 under "IS indicators". The public is also educated through regular inspections via interagency taskforces visits to more pollutive sub-catchments.	Pls see item 4 under "IS indicators". The public is also educated through regular inspections via interagency taskforces visits to more pollutive sub-catchments.