# **Singapore Summary Report (Water Pollution Management)**

IWRM Issue 5 – Water Pollution Management (18 indicators)			
Indicator Types	Indicators	2010	2013
Outcome Indicators	<ol> <li>Percentage of monitored water bodies' ambient water quality meeting designated uses (agriculture, water supply, fisheries, industrial, etc.)</li> </ol>	Recreational water quality 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.	Recreational water quality 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.
	<ol> <li>Any "Legislation/regulation" for water pollution control (i.e. for the management of water quality and wastewater quality)</li> </ol>	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

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

**Source:** ASEAN Working Group for Water Resources Management (AWGWRM) – July 2015 [weblink - <u>aseaniwrm.water.gov.my</u>]

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

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

**Source:** ASEAN Working Group for Water Resources Management (AWGWRM) – July 2015 [weblink - <u>aseaniwrm.water.gov.my</u>]

		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.go v.sg/general/water supply/Pages/Drin kingWQReport.as px .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.