

Japanese Water Quality Target and Total Pollutant Load Control System(TPLCS)

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WEPA International Workshop

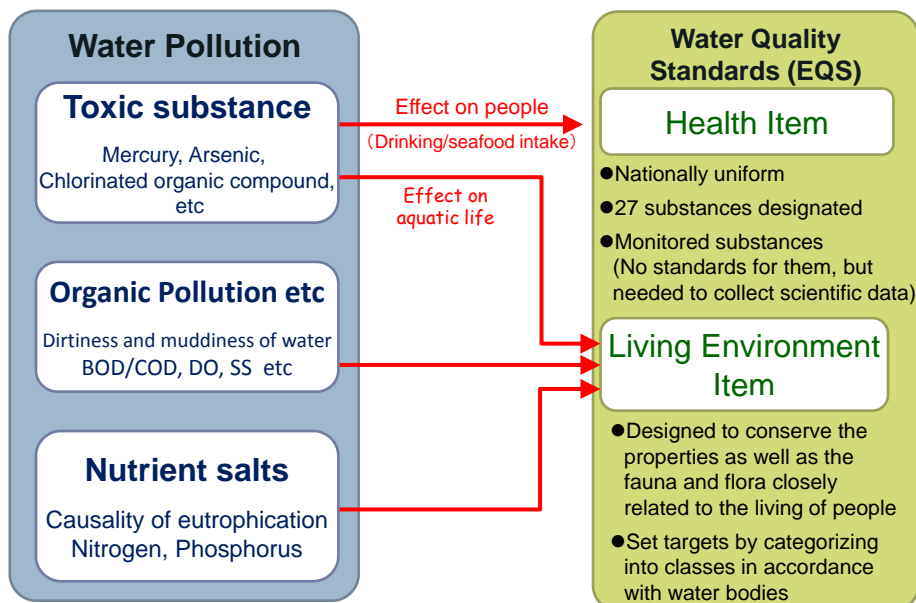
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1. WATER QUALITY STANDARD AND WATER POLLUTION CONTROL LAW

Water Quality Standards (EQS)

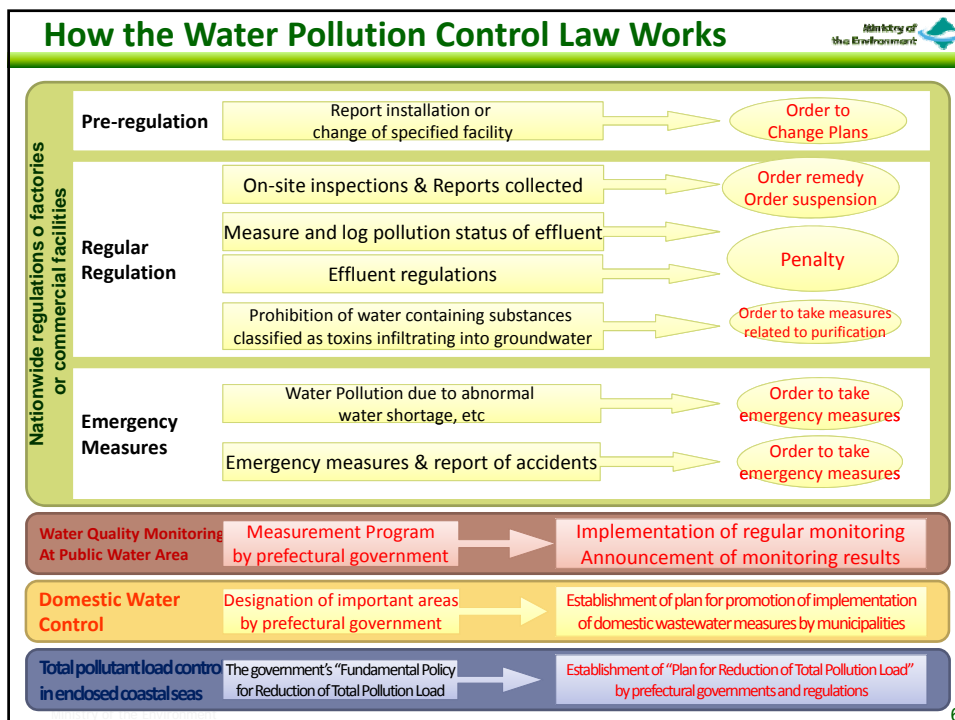


Items of Environmental Quality Standard for Water Pollution

Health items		Standard Value	Item	Standard Value
Cadmium		0.01 mg/L or less	1,1,1-trichloroethane	1 mg/L or less
Total cyanide		Undetected	1,1,2-trichloroethane	0.006 mg/L or less
Lead		0.01 mg/L or less	Trichloroethylene	0.03 mg/L or less
Hexavalent chromium		0.05 mg/L or less	Tetrachloroethylene	0.01 mg/L or less
Arsenic		0.01 mg/L or less	1,3-dichloropropene	0.002 mg/L or less
Total mercury		0.0005 mg/L or less	Thiuram	0.006 mg/L or less
Alkylmercury		Undetected	Simazine	0.003 mg/L or less
PCB		Undetected	Thiobencarb	0.02 mg/L or less
Dichloromethane		0.02 mg/L or less	Benzene	0.01 mg/L or less
Carbon tetrachloride		0.002 mg/L or less	Selenium	0.01 mg/L or less
1,2-dichloroethane		0.004 mg/L or less	Nitrate nitrogen & Nitrite nitrogen	10 mg/L or less
1,1-dichloroethylene		0.02 mg/L or less	Fluoride	0.8 mg/L or less
Cis-1,2-dichloroethylene		0.04 mg/L or less	Boron	1 mg/L or less
			1,4-Dioxane	0.05mg/ or less

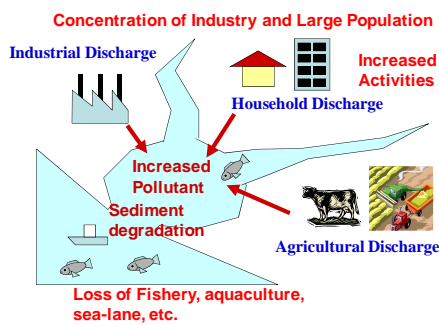
Living environment items	River	Lake	Sea Area
BOD	≤ 1 - 10 mg/L	-	-
COD	-	≤ 1 - 8 mg/L	≤ 2 - 8 mg/L
pH	6.0 - 8.5	6.0 - 8.5	7.0 - 8.3
SS	≤ 25 - 100 mg/L etc.	≤ 1 - 15 mg/L etc.	-
DO	2-7.5 mg/L ≤	2-7.5 mg/L ≤	2-7.5 mg/L ≤
Coliform bacteria count	≤ 50 - 5,000 MPN/100 mL	≤ 50 - 1,000 MPN/100 mL	≤ 1,000 MPN/100 mL
N-hexane extracts	-	-	Undetected.
Total nitrogen	-	≤ 0.1 - 1 mg/L	≤ 0.2 - 1 mg/L
Total phosphorous	-	≤ 0.005 - 0.1 mg/L	≤ 0.02 - 0.09 mg/L
All zinc	≤ 0.03 mg/L	≤ 0.03 mg/L	≤ 0.01 - 0.02 mg/L

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2. TOTAL POLLUTANT LOAD CONTROL SYSTEMS (TPLCS)

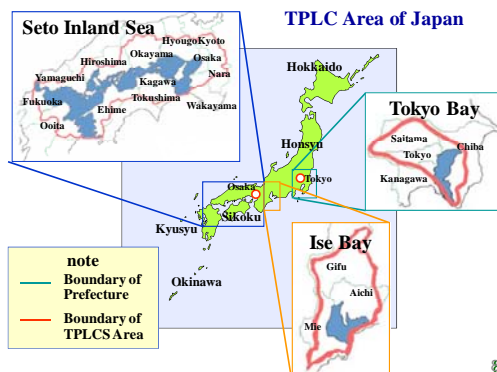
What is TPLCS for Enclosed Coastal Seas?



- Water Pollution Control Law, The law Concerning Special Measures for Conservation of the Environment of the Seto Inland Sea (Enacted in 1978)
- A system in order to prevent water pollution of enclosed coastal seas, where population and industries are concentrated.



Photo: Mass mortality of Yellow-tail by Red Tide (Kagawa prefecture)



Outline of TPLCS

TPLCS Policy (Minister of the Environment)

Basic matters regarding to reduction schedule, reduction amount, etc.

- Water Pollution Control Law Article 4.2
- Hearing to the Prefectural Governors
- Consult to Conference on Environmental Pollution Control

Total Pollutant Load Reduction Plan

Reduction method and amount for each sources (households, industrial, & others)

- Water Pollution Control Law Article 4.2
- Minister's agreement with an advise of Conference on Environmental Pollution Control

Standards of Regulation

- **Maximum Allowable Loading**
= Concentration
× Volume of specified effluent

(for specified facilities that's daily volume of effluent is more than 50m3)

Reduction Guidance

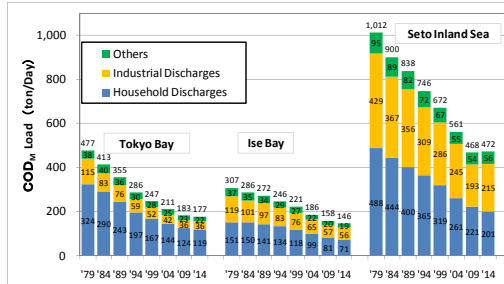
- Guidance for small size and unregulated facilities.
- Guidance for agriculture and livestock industry

Project Execution

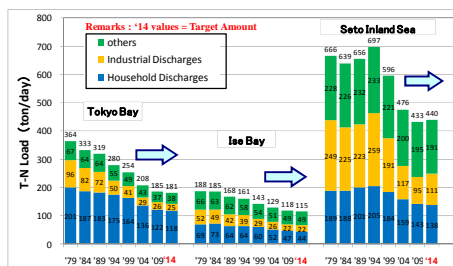
- Maintain the Sewerage and Johkaso system.
- Sophistication project of Sewage Treatment.

Pollutant Load Reduction from Inland

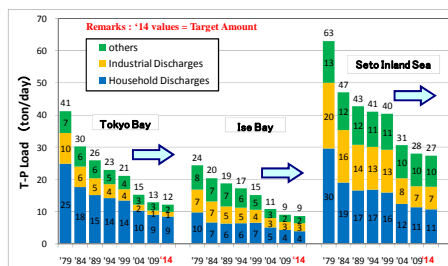
	Basic Policy	Target year	Target Items
1st	1979. 6	FY1984	COD
2nd	1987. 1	FY1989	COD
3rd	1991. 1	FY1994	COD
4th	1996. 4	FY1999	COD
5th	2001. 12	FY2004	COD, N, P
6th	2006. 11	FY2009	COD, N, P
7th	2011. 6	FY2014	COD, N, P



Pollutant Load (COD_{Mn})

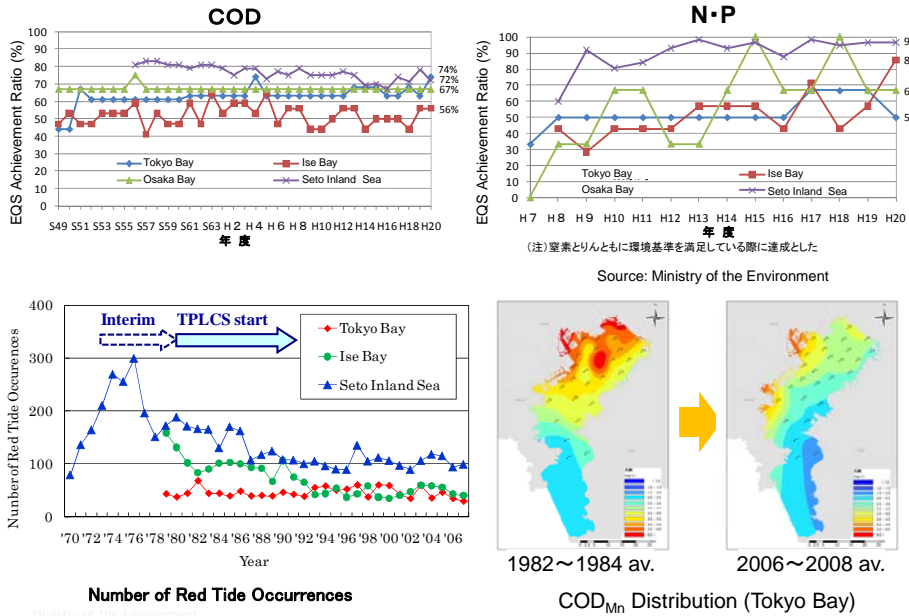


Pollutant Load (N)



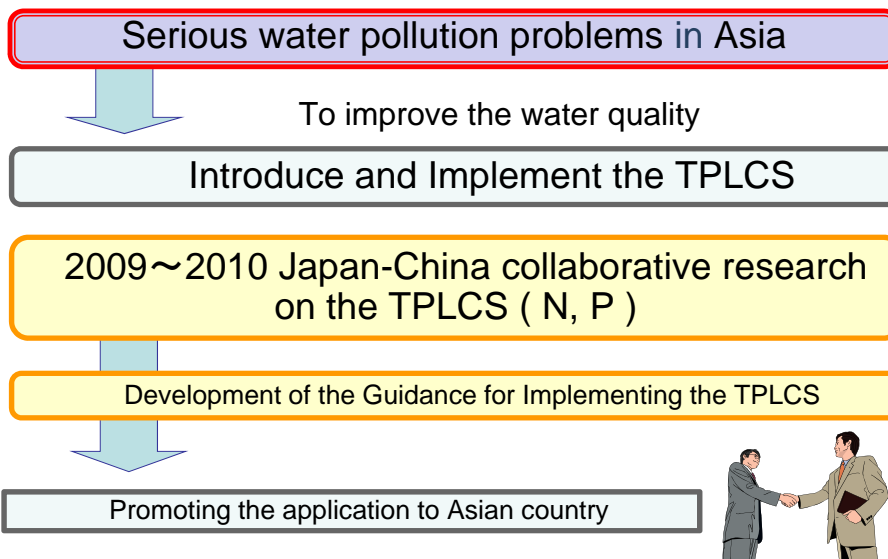
Pollutant Load (P)

Achievement rate of EQS and Transition of Red-Tide incident



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Project aimed to support Implementation of TPLCS in Asia

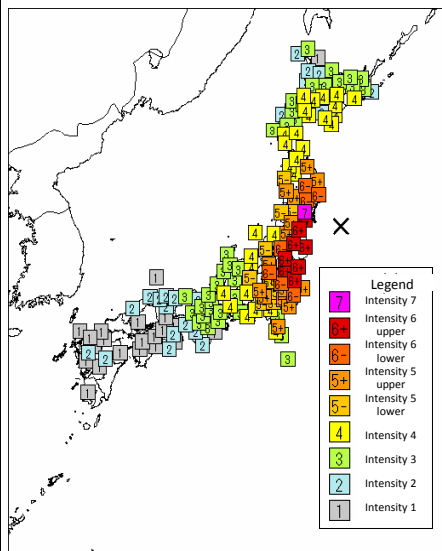


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3. THE GREAT EAST JAPAN EARTHQUAKE

Overview of the Earthquake



Distribution of seismic intensity

- Mar 11 2011 14:46
- Epicenter: the Pacific Ocean near Japan
- Magnitude 9.0
- Big shake measured throughout Japan



Inside the MoE following the quake

Overview of Tsunami



Before and after Tsunami (Sendai-city, Miyagi Prefecture)

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- Observed Tsunami over 9.3 meters high (at maximum)
- 561 km² flooded



A ship run onto the ground (Kesenuma-city, Miyagi Prefecture)

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The Damages



(Otsuchi Town, Iwate)



(Miyagi)

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- The dead: 15,769
- The missing: 4,227
- Total: 19,996

- The injured: 5,929
- Evacuees: 82,945

(As of Sep 6 2011)



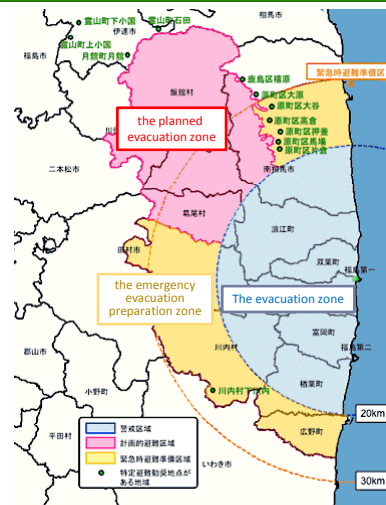
(Iwaki City, Fukushima)

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Major Effects

- Lifeline tremendously damaged (electricity, gas, water etc.)
- Transportation was largely crippled
- Many areas became isolated
- Widespread tsunami damage in many areas
- Damages on the nuclear power plant

➔ Great unprecedented and complex disaster



The evacuation zone, the planned evacuation zone and the emergency evacuation preparation zone surrounding the Fukushima No.1 nuclear power plant

Toward Reconstruction

- Catastrophic situation due to the effects of the earthquakes, tsunami



- Make best efforts to help victims return to their normal lives
 - Reconstruction of lifelines and infrastructure
 - Assistance to rehabilitate the lives of the victims
 - Measures against disaster waste
 - Decontamination