



Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand (SCS SAP Project)

Fourth Meeting of the Regional Steering Committee

22-24 June 2026, Hainan, China

DRAFT REPORT

SUMMARY ACHIEVEMENTS IN IMPLEMENTING THE SAP ON LAND-BASED POLLUTION, 2008-2025



UNEP/GEF Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand (SCS SAP Project)

Summary achievements in implementing the SAP on Land-based Pollution, 2008-2025

1/ National policies and laws, and financial mechanism for the management of land-based sources of pollution

1. 1. Update of legislative and institutional frameworks for land-based pollution management in participating countries (using multi-sectoral approaches)

Baseline in 2008: Effectiveness of existing legal and institutional frameworks limited by predominantly single sector approaches

Legislative and institutional frameworks	Time	Remarks
<i>Cambodia</i>		
Sub-degree on Management of Garbage and Solid Waste of Downtowns	2015	No. 113
Sub-degree on Electronic Waste	2015	
Sub-decree on wastewater management and treatment system	2017	
Sub-decree on the Management of Plastic Bags	2017	No. 168
Sub-decree on product and plastic waste management		On-going
<i>China</i>		
Environmental Protection Law	2014	Amended
Water Pollution Prevention and Control Law	2018	Amended
Soil Pollution Prevention and Control Law	2018	
Air Pollution Prevention and Control Law	2018	Amended
Environmental Impact Assessment Law	2019	Amended
Cleaner Production Promotion Law	2019	Amended
Solid Waste Pollution Prevention and Control Law	2020	Amended
Noise Pollution Prevention and Control Law	2021	
Wetland Protection Law	2021	
Circular on Further Promoting the Nationwide Battle to Prevent and Control Pollution	2021	
Marine Environmental Protection Law	2023	Amended
Fisheries Law	2025	Amended
<i>Indonesia</i>		
Solid Waste Management Act	2008	No. 18/2008
Environmental Management Act.	2009	No. 32/2009
Indonesia Maritime Law	2014	No. 32/2014
Omnibus Law (Cipta Kerja)	2023	No. 11/2020 No. 6/ 2023
Water resources Law	2019	No. 17/2019
Coastal, Marine and Small Islands Law	2014	No. 1/2014
Presidential Decree regarding National Medium Term Development Plan (RPJMN) 2015-2019	2015	No. 2/2015

Presidential Decree regarding National Medium Term Development Plan (RPJMN) 2020 – 2024	2020	No. 18/2020
<i>Philippines</i>		
National Environmental Awareness and Education Act (RA 9512)	2008	
Extended Producer Responsibility Act of 2022 (RA 11898)	2022	
<i>Thailand</i>		
Marine and Coastal Resources Management Promotion Act, B.E.2558	2015	
The Water Resource Act, B.E. 2561	2018	
<i>Vietnam</i>		
Strategy for sustainable development of Vietnam's marine economy by 2030, vision to 2045	2018	Resolution No.36/NQ-TW
Law on Natural Resources and Environment of Sea and Islands	2015	
Law on Environmental Protection	2020	Updated from 2014 one
National Marine Space Planning for 2021-2030, vision to 2050		Decision 139/2024/QH15

1.2. Revision/development and enactment of national/provincial policies and supporting regulations for land-based pollution management

Baseline in 2008: Absence of clear and effective policies, laws, and regulations relating to control of land-based pollution

<i>National/provincial policies and supporting regulations</i>	Time	Remarks
<i>Cambodia</i>		
The Royal Government introduced a levy on plastic bags	2018	Applied at supermarkets and shopping centers
National Policy on urban solid waste management 2020-2030	2020	
Sub-decree on establishment of urban waste management	2021	
National Circular Economy Strategy and Action Plan 2021-2030	2021	
Plastic action plan and roadmap for Cambodia		On-going
<i>China</i>		
The Implementation Plan for Controlling Pollutant Emission Permit System	2016	
The Action Plan for Water Pollution Prevention and Control	2015	
The 13th Five-Year Plan for Wastewater Treatment Systems and Recycled Water Re-use Facilities Construction in Urban and Rural Cities	2016	
Three-Year Action Plan for Improving Efficiency of Urban Sewage Treatment (2019-2021)	2019	
National Programme for the Prevention and Control of Pollution in coastal sea area	2017	
Implementation plan of agricultural diffuse pollution prevention and control	2015	
Action plan for agricultural and rural pollution treatment and control	2018	
The Key Points of Aquaculture and Rural Green Development in 2019	2019	

Implementation Plan of Water Pollution Prevention and Control in Guangdong Province	2015	
Implementation Plan for coastal water pollution Prevention and Control in Guangdong Province	2018	
Three-Year Action Plan for Improving Efficiency of Urban Sewage Treatment in Guangdong Province (2019-2021)	2019	
Implementation Plan of Water Pollution Prevention and Control in Guangxi Zhuang Autonomous Region	2015	
Three-Year Action Plan for Improving Efficiency of Urban Sewage Treatment in Guangxi Zhuang Autonomous Region, (2019-2021)	2019	
Implementation Plan of Water Pollution Prevention and Control in Hainan Province	2015	
Three-Year Action Plan for Improving Efficiency of Urban Sewage Treatment in Hainan Province (2019-2021)	2019	
Regulations on the Prevention and Control of Water Pollution in Guangdong Province	2021	Amended
Regulations on the Prevention and Control of Water Pollution in Guangxi Zhuang Autonomous Region	2020	
Regulations on the Prevention and Control of Water Pollution in Hainan Province	2017	
Regulation of Guangdong Province on Marine Environmental Protection	2018	Amended
Regulation on the Administration of Pollutant Discharge Permits	2021	
14th Five-Year Plan for Marine Ecological and Environmental Protection	2022	
Action Plan for Comprehensive Management and Control of Key Sea Areas	2022	
Implementation Plan for Comprehensive Management and Control of the Pearl River Estuary and Adjacent Sea Areas	2022	
Regulation on Ecological Protection Compensation	2024	
Action Plan for Comprehensive Treatment of Solid Waste	2026	
Indonesia		
Government Regulation on National Spatial Planning Plan (RTRWN)	2008	No. 26/2008
Government regulation on environmental maritime protection, focusing on seaport facilities	2010	No. 21/2010
Ministerial Decree on Water pollution control procedures	2010	No. 01/2010
Government regulation on domestic waste management and waste categories as domestic waste	2012	No. 81/2012
Ministerial Decree concerning procedures for implementing reduction, reuse and recycling through waste banks.	2012	PermenLH no. 13/2012
Minister of Health Regulation Related to The Handling of Hazardous Chemicals	2013	43/2013
Ministerial Decree on Wastewater quality standards	2014	No. 5/2014
Regulation of the Minister of Marine Affairs and Fisheries Number regarding Fish Farming	2014	PERMEN-KP No. 49/2014

Government Regulation on Industrial Area, Focusing on Waste Water Treatment Installation.	2015	142/2015
National Action Plan for Maritime Policy 2016-2019	2016	Coordinating Ministry Of Maritime 19.639.Keg
Government Regulation on Economic Instrument for the Environment.	2017	No. 46 / 2017
Presidential decree on Indonesia maritime policy	2017	No. 16/2017
National policies and strategies for domestic waste and waste similar to domestic waste	2017	No. 97/2017
Government Regulation regarding National Spatial Planning (RTRWN) revision of Government Regulation No. 26/2008	2017	No. 13/2017
Jambi Province Regional Regulation, concerning Environmental Protection and Management	2017	No. 6/2017
Presidential Regulation on marine litter handling, followed by National Action Plan for handling marine litter in 2018 – 2025	2018	No. 83 / 2018
Establishment of the RC3S office (Clean Sea Regional Capacity Center) which aims to increase capacity at the regional level in preventing marine pollution from land-based sources	2018	SK. 748/MenLHK/Setjen/KUM.1/9/2019
Ministerial Decree on solid waste reduction roadmap by producers	2019	Permen LHK no. 75/2019
Government Regulation on Specific Waste Management	2020	PP 27/2020
Government Regulation on the Implementation of Spatial Planning	2021	No.21/2021
Government Regulation concerning the Implementation of Environmental Protection and Management	2021	No. 22/2021
Decree of MOEF on requirement and mechanism for dumping of waste to the sea	2021	No. P.12/MENLHK/ SETJEN/ KUM.1/4/2018
Government Regulation which explicitly mentioned the Protection Ocean Health and Management (preventing marine litter, coastal degradation, and also including sea water quality standards)	2021	No. 22 of 2021
Government Regulation on the Implementation of Environmental Protection and Management	2021	No. 22/2021
Minister of Environment and Forestry Regulation concerning the Management of Hazardous and Toxic Waste (B3)	2021	No. 5/2021
Minister of Environment and Forestry decree concerning Waste Management of the Waste Bank	2021	No. 14/2021
Presidential Decree concerning the Indonesian Maritime Policy Action Plan (KKI).	2022	No. 34/2022
Decree of the Minister of Transportation, concerning Determination of Class II Mandatory Guide Waters in Sei Kolak Kijang Waters in the Working Area of the Class III Kijang Harbor Master and Port Authority Office, Riau Islands Province	2023	No. KM 40/2023

Regulation of the Governor of the Bangka Belitung Islands, concerning Plan for Development of Tourism Development Areas for the Toboali Province and Surrounding Areas	2023	No. 20/2023
Minister of Environment and Forestry Regulation concerning Application of the Indonesian National Qualifications Framework in the Field of Environmental Quality Test Sampling and Environmental Quality Measurement	2023	No. 13/2023
Regulation of the Minister of Environment and Forestry of the Republic of Indonesia concerning Business Licensing and Government Approval in the Field of Hazardous and Toxic Waste Management	2023	No. 9/2023
Decree of the Minister of Maritime Affairs and Fisheries, concerning Water Conservation Area in the Indragiri Hilir Region, Riau Province	2023	No. 107/2023
Decree of the Minister of Maritime Affairs and Fisheries, concerning Water Conservation Areas in the Ketugar Region and Surrounding Waters as well as Perlang, Bangka Belitung Islands Province	2023	No. 108/2023
Decree of the Minister of Maritime Affairs and Fisheries, concerning Conservation Area in Waters in the Tuing Region, Bangka Belitung Islands Province	2023	No. 1/2023
Decree of the Minister of Maritime Affairs and Fisheries, concerning Conservation Areas in the Waters of the Lepar Island and Pongok Island Regions, Bangka Belitung Islands Province	2023	No. 185/2023
Decree of the Minister of Maritime Affairs and Fisheries, concerning Water Conservation Area in the Indragiri Hilir Region, Riau Province	2023	No. 107/2023
Decree of the Minister of Transportation, concerning Determination of shipping lanes, route systems, traffic procedures and ship anchoring areas according to their importance in shipping lanes entering Tanjung Ular Port, Bangka Belitung Province	2024	No. KM 113/2024
Decree of the Minister of Transportation, concerning Shipping Channels, Route Systems, Traffic Procedures and Ship Docking Areas according to their Importance in the Shipping Routes Entering Tanjung Buton Port, Riau Province	2024	No. KM 9/2024
Government Regulation concerning Industrial Zoning	2024	No. 20/2024
Minister of Environment and Forestry Regulation, concerning Implementation of Supervision and Administrative Sanctions in the Environmental Sector	2024	No. 14/2024
Minister of Environment and Forestry Regulation, concerning Implementation of Nationally Determined Contributions in Handling Climate Change	2024	No. 12/2024
Minister of Environment and Forestry Regulation, concerning Implementation of the Indonesian National Qualifications Framework in the Sector of Hazardous and Toxic Waste Management	2024	No. 11/2024

Minister of Environment and Forestry Regulation, concerning Management of Waste Containing Hazardous and Toxic Materials and Waste of Hazardous and Toxic Materials	2024	No. 9/2024
Decree of the Minister of Maritime Affairs and Fisheries, concerning Producer of Geospatial Data and Thematic Geospatial Information within the Ministry of Maritime Affairs and Fisheries	2024	No. 75/2024
Minister of Industry of the Republic of Indonesia Regulation concerning Industrial Area Standards and Accreditation of Industrial Area	2025	No. 26/2025
<i>Philippines</i>		
Strict implementation of the 50 Meters Buffer Zone	2009	EMB MC 2009-14
Procedural Manual for the Designation of Water Quality Management Areas (WQMA)	2009	DENR MC 2009-15
Clarification to DENR Memorandum Circular No. 2010-14 and other EIS System Policy Issuance	2010	EMB MC 2010-002
Clarification on the Applicability of Effluent Regulations	2012	EMB MC 2012-001
Guidelines for Water Quality Management Area Action Planning and LGU's Compliance Scheme	2013	EMB MC 2013-06
Adoption of Integrated Water Quality Management Framework	2013	DAO 2013-08
Resolution Directing the Department of Environment and Natural Resources (DENR) to Prepare and Implement the Banning of the Use of Unnecessary Single-use Plastics by National Government Agencies (NGAs), Local Government Units (LGUs) Offices and All Other Government Controlled Offices	2020	NSWMC Resolution No. 1363 Series of 2020
Adoption of the National Plan of Action for the Prevention, Reduction and Management of Marine Litter (NPOA-ML)	2021	DMC 2021-10:
<i>Thailand</i>		
The second national environmental health strategic plan 2012-2016	2012	
Environmental Quality Management Plan 2017-2021	2017	
Master Plan on Water Resource Management (2018-2037)	2018	
Thailand's Roadmap on Plastic Waste Management 2018 -2030 and Action Plans on Plastic Waste Management Phase 1 (2020-2022) & Phase 2 (2023-2027)	2018	
Action Plan on Enhancing Water Quality in Songkla Lake River Basin 2021-2027	2021	
Environmental Quality Management Plan 2023–2027	2023	
Action Plan on Plastic Waste Management Phase 2 (2023–2027)	2023	
<i>Vietnam</i>		
National action plan on ocean plastic waste management to 2030	2019	Decision No. 1746/QD-TTg
The national strategy on integrated solid waste management up to 2025 with a vision to 2050	2018	Decision No. 491/QD-TTg
Strategy for sustainable exploitation of natural resources and protection of the marine and island environment to 2030, with a vision to 2045	2023	Resolution No. 48/NQ-CP

Plan for the Monitoring Network System for the Period 2021–2030, with a Vision to 2050	2024	Decision No. 224/QD-TTg
Master plan for the exploitation and sustainable use of coastal zone resources	2024	Decision No. 1117/QD-TTg
Implementation Plan for the Coastal Zone Master Plan	2025	Decision No. 236/QĐ-TTg

1.3. Harmonized national Standard Operating Procedures for land-based pollution control and management [including agreed sediment, biota, & water quality criteria]

Baseline in 2008: Lack of Standard Operating Procedures for land-based pollution management

SOPs or Guidelines	Year	Remarks
<i>Cambodia</i>		
Prakas on water quality indicators	2021	
Prakas on persistent organic pollutants promulgation from outbreak	2020	
Prakas on technical guideline on equipment installation and waste water treatment process	2022	
<i>China</i>		
Ambient air quality standards	2012	GB 3095—2012
Technical specification for offshore environmental monitoring including seawater quality, sediment, biological quality monitoring and monitoring for pollution sources directly discharged into sea and its impact on offshore water environment	2020	HJ442-2020
Technical guideline for the development of water pollutant discharge standards in watersheds	2020	HJ945.3-2020
Manual for produced pollutant and discharged pollutant coefficient of National Survey of Pollution sources of China	2020	
The 26 Industrial Discharge standards of water pollutant such as electronic industry,	2008-2021	
Technical guideline for three-level inspection of sewage outfalls into environmental water bodies	2021	HJ1232-2021
Standard for conservation effectiveness assessment of ecology and environment in nature reserve (on trial)	2021	HJ1203-2021
Guide Rule of Rural domestic sewage treatment	2018	GB/T 37071-2018
Technical Guidance for ecological restoration of river and lake buffer zone	2021	
Technical guideline for supervision and management of sewage outfalls into environmental water bodies—Technical guideline for demonstration of setting up sewage outfalls into sea	2024	HJ 1406-2024
Guangdong Aquaculture Effluent Discharge Standard	2024	DB44/ 2462-2024
Guagnxi Mariculture Effluent Discharge Standard	2024	DB45/T 2841-2024
Hainan Aquaculture Effluent Discharge Standard	2023	DB46/475-2023
<i>Indonesia</i>		
Minister of Health decree concerning community-based wastewater management system procedures	2012	No. 852/Menkes/SK/IX/2012
Minister of Transportation Regulation Concerning Prevention of Maritime Environmental Pollution	2014	No. 29/2014

Minister of Marine Affairs and Fisheries Regulation concerning General Guidelines for the Grow-Out (Fattening) of Black Tiger Shrimp (<i>Penaeus monodon</i>) and Whiteleg Shrimp (<i>Litopenaeus vannamei</i>)	2016	No. 75/PERMEN-KP/2016
Minister of Public Work and Housing concerning Procedure for waste water management system	2017	No. 04/PRT/M/2017
Minister of Environment and Forestry decree concerning procedures for waste water discharge permit	2018	No. P.102/MENLHK/SETJEN/KUM.1/11/2018
Minister of Marine Affairs and Fisheries Regulation concerning Technical Implementation Units for Aquaculture Fisheries	2020	No. 67/PERMEN-KP/2020
Minister of Environment and Forestry decree concerning PROPER, company performance rating in environmental management,	2021	No. 03/2014 as revised to no.1.2021
Minister of Environment and Forestry Regulation governs waste management through community-based waste banks	2021	No. 14/2021
Minister of Environment and Forestry decree concerning Environmental Quality Index (IKLH)	2021	No. 27/2021
Government Regulation of the Republic of Indonesia on the Implementation of Environmental Protection and Management (Water Quality Standards and Marine Water Quality Standards)	2021	No. 22/2021
Minister of Environment and Forestry of the Republic of Indonesia Regulation on the List of Business and/or Activities Required to Have an Environmental Impact Assessment (AMDAL), Environmental Management and Monitoring Efforts (UKL–UPL), or a Statement of Environmental Management Capability (SPPL)	2021	No. 4/2021
Minister of Environment and Forestry of the Republic of Indonesia Regulation on Procedures for Environmental Impact Assessment (AMDAL), Environmental Management and Monitoring Efforts (UKL–UPL), and Statement of Environmental Management Capability (SPPL)	2021	No. 5/2021
Minister of Environment and Forestry of the Republic of Indonesia Regulation on Procedures and Requirements for Environmental Management of Hazardous and Toxic Waste	2021	No. 6/2021
Minister of Environment and Forestry of the Republic of Indonesia Regulation on Environmental Protection and Management (Environmental Quality Standards)	2021	No. 22/2021
Ministry of Industry Regulation concerning Procedure for Issuing Recommendations for Imported Non-hazardous/ Non-toxic Waste as Industrial Raw Material (Industrial Waste Utilization)	2024	No. 39/2024
Minister of Industry of The Republic of Indonesia Regulation on Green Industry Standards for the Flat Glass Industry	2024	No. 46/2024
Minister of Environment and Forestry Regulation concerning Implementation of Government Regulation Number 46 of 2016 concerning Procedures for Carrying out Strategic Environmental Assessment (SEA)	2024	No. 13/2024
Minister of Environment and Forestry Regulation concerning the Technical approval for wastewater disposal/utilization	2025	No.11/2025

<i>Philippines</i>		
Water Quality Monitoring Manual, Volume I – Ambient Water Quality Monitoring Manual; Volume 2 – Effluent Quality Monitoring Manual	2008	EMB MC 2008-008
Procedural Manual for the Designation of Water Quality Management Areas (WQM)	2009	DENR MC 2009-15
Amending Revised Procedural Manual for DAO 03-30 dated 30 June 2003 on the Classification of the Fast-food Stores, Restaurants and Similar Quick-Service Establishments	2009	EMB MC 2009-002
Guidelines for use of screening and Environmentally Critical Area (ECA) map system	2010	EMB MC 2010-004
Guidelines on the Use of Alternative Fuels and Raw Materials in Cement Kilns	2010	DAO 2010-06
Standardization of Requirements and Enhancement of Public Participation in the Streamlined Implementation of the Philippine EIS System	2010	DENR MC 2010-14
Implementing Guidelines on the Operationalization of the Area Water Quality Management Fund under RA 9275	2012	DAO 2012-06
Adoption of Integrated Water Quality Management Framework	2013	DAO 2013-08
Guidelines for Water Quality Management Area Action Planning and LGU's Compliance Scheme	2013	EMB MC 2013-06
Revised Procedures and Standards on the Management of Hazardous Wastes	2013	DAO 2013-22
Revised Guidelines for Pollution Control officer Accreditation	2014	DAO 2014-02
Revised Guidelines for Coverage Screening and Standardized Requirements under the PEISS	2014	EMB MC 2014-005
Technical Guidelines for Specific Categories of Treatment, Storage and Disposal (TSD) Facilities	2016	EMB MC 2016-002
Operational Manual for the National Water Quality Management Fund (NWQMF) and Area Water Quality Management Fund (AWQMF)	2016	EMB MC 2016-007
Water Quality Guidelines and General Effluent Standards of 2016	2016	DAO 2016-08
EMB Approved Methods of Analysis for Water and Wastewater	2016	EMB MC 2016-012
Guidelines for Site Characterization	2017	EMB MC 2017-003
Guidelines for Site Remediation	2017	EMB MC 2017-004
Designation of Different Water Bodies as a Water Quality Management Area (WQMA) and Creation of its Governing Board (GB)	2006-20 19	DAOs 2006 to 2019
Supplementary Clarification on the coverage of DAO 2016- 08 Relative to the Granting of not more than five (5) Years Grace Period	2019	EMB MC 2019-001
Guidelines Governing Waste-To-Energy (WtE) Facilities for the Integrated Management of Municipal Solid Wastes	2019	DAO 2019-21
Adopting the National Solid Waste Management Commission (NSWMC) Resolution No. 669 Series of 2016 “Guidelines Governing the Establishment and Operation of Waste-to-Energy Technologies for Municipal Solid Waste”	2019	EMB MC 2019-008
Updated Guidelines in the processing and issuance of ECC for Category B Projects	2019	EMB 2019-003
Advance Training Modules for Pollution Control Officers (PCOs)	2019	EMB MC 2019-004

Procedures on Electronic Payment Facility for Environmental Compliance Certificate (ECC) and Certificate of Non-Coverage (CNC) Online Applications	2019	EMB MC 2019-005
Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual	2020	NSWMC Resolution No. 1380 Series of 2020
Suspension on the Implementation of Advances Training Modules for Pollution Control Officers	2020	EMB MC 2020-001
Reiteration on the Implementation of Sections 10 and 14 of DENR Administrative Order No. 2014-02	2020	EMB MC 2020-002
Clarification on the Reporting Requirements for Specific Parameters Under DENR Administrative Order No. 2016-08 or the Revised Water Quality Guidelines and General Effluent Standards of 2016	2020	EMB MC 2020-004
Clarification in the Implementation of Rules 13.8 and 14.18 of DENR Administrative Order No. 2005-10	2020	EMB MC 2020-006
Guidelines for Site Control	2020	EMB MC 2020-008
Interim Guidelines on Issuance of Special Permit to Transport (SPTT) for the Transportation of Hazardous Wastes within the Community Quarantine Period	2020	EMB MC 2020-14
Addendum to the Interim Guidelines on Issuance of Special Permit to Transport (SPTT) for the Transportation of Hazardous Wastes within the Community Quarantine Period	2020	EMB MC 2020-15
Amendment of the Interim Guidelines on Issuance of Special Permit to Transport (SPTT) for the Transportation of Hazardous Wastes within the Community Quarantine Period	2020	EMB MC 2020-16
Clarificatory Guidance on the Issuance of Hazardous Waste Generator Registration for Malls or Commercial Building Owners and Clustered Establishments	2020	EMB 2020-19
Provisional Guidelines on the Hazardous Wastes Management during the Extended Enhanced Community Quarantine Period	2020	EMB MC 2020-20
Guidelines on the Total Pollution Load Estimates for Freshwater Bodies concerning its Assimilative Capacity	2020	EMB MC 2020-25
Clarification on the Renewal and Revocation of Accreditation of Pollution Control Officers	2020	EMB MC 2020-28
Guidelines on the Conduct of Online Training for Pollution Control Officers (PCOs) and Managing Head	2020	EMB MC 2020-29
Clarification on Annex 5 (Requirements for Training Organization/Institution Recognition and its Renewal) Under DAO 2014-02	2020	EMB MC 2020-32
Adopting the Interim Guidelines on the Management of Covid-19 Related Health Care Waste	2020	NSWMC Resolution No. 1364 Series of 2020
Updated Water Quality Guidelines (WQG) and General Effluent Standards (GES) for Selected Parameters	2021	DAO 2021-19
Clarification on the Implementation of Section 10 Of DENR Administrative Order No. 2016-08	2021	EMB MC 2021-01

Guidance on the Registration Requirements for Category A Hazardous Waste Treatment, Storage and Disposal (TSD) Facility	2021	EMB MC 2021-03
Implementing Rules and Regulations of Republic Act No. 11898	2023	DAO 2023-02
Compliance Reporting and Audit Guidelines for Republic Act No. 11898 or the Extended Producer Responsibility Act of 2022	2024	DAO 2024-04
<i>Thailand</i>		
SOP on Seawater Quality Monitoring	2009	
SOP on Water Sampling from pollution generated sources	2010	
SOP on Standard Designation and Review on controlling discharge from sources	2019	
<i>Vietnam</i>		
National technical regulations on seawater quality	2015	QCVN 10-MT:2015/BTN MT
National technical regulation on Marine water quality	2023	QCVN 10:2023/BTNMT
National Technical Regulation on Marine Pollution Prevention Systems of Ships	2024	QCVN 26: 2024/BGTVT

1.4. Updated and adopted National Investment Plans for land-based pollution management in the SCS

Baseline in 2008: Guidelines for assessing the economic impacts of land-based pollution developed but not yet applied as part of benefit-cost analysis of pollution management in the SCS

China: China's budget allocations at the national level primarily consist of central ecological and environmental protection transfer payments, which are used to support ecological and environmental protection and restoration. These specifically include: funds for key ecological protection and restoration projects, funds for marine ecological protection and restoration, funds for water pollution prevention and control, funds for soil pollution prevention and control, and funds for rural environmental improvement (State Council of the PRC, 2025). Among these, the funds for marine ecological protection and restoration refer to special funds arranged by the central government through the general public budget to support marine ecological protection and restoration in key regions that play a significant role in safeguarding ecological security and have a broad ecological benefit scope (official website of the Chinese government, 2020). From 2020 to 2024, over 4.8 billion yuan of central marine ecological protection and restoration funds were allocated. In addition, according to incomplete statistics, the central government invested a total of about 5.5 billion yuan (RMB) from 2017-2021 in Guangdong, Guangxi and Hainan by the means of the special fund for water pollution prevention and control, and fund for marine ecological protection and restoration, and fund for urban sewage and garbage treatment facilities and sewage network projects

Indonesia: National investments (Figure 1) for different activities, including:

- ❖ Development of communal domestic waste treatment facilities in densely populated areas
- ❖ Developing wastewater treatment plants in several urban areas.
- ❖ Construction and revitalisation Final Disposal Facilities.
- ❖ Construction of flats or new settlement to move residents who originally lived in slum areas
- ❖ Assistance to local governments in term of facility such as garbage collector motor, truck etc.

Private sector has been also engaged through Community Social Responsibility (CSR)

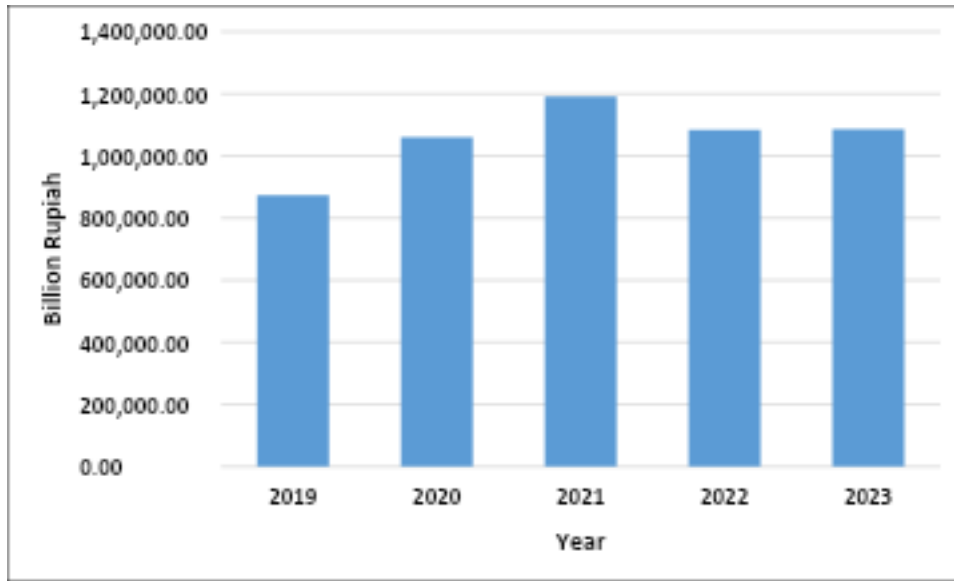


Figure 1. Budget allocation for expenditures managing environment of the ministries in Indonesia 2019-2023 (Environmental Statistics of Indonesia, 2020-2024).

In addition to being funded by the central government (the Ministry of Environment), environmental management is also carried out by regional governments, specifically provincial governments (Figure 2).

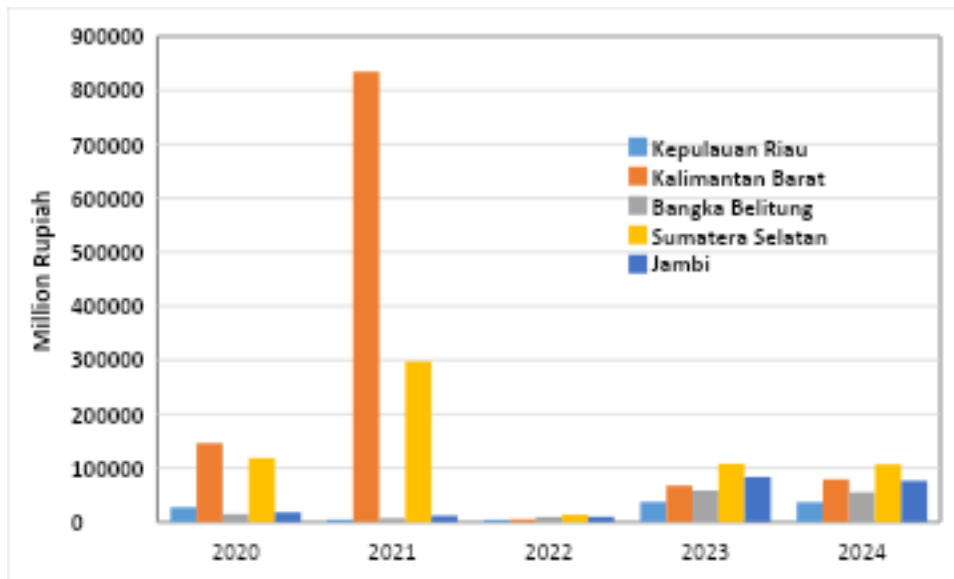


Figure 2. Budget of Environment Expenditures by Province in the Indonesia's South China Sea area (million rupiah)

Thailand: Budget allocation for each fiscal year for water quality and wastewater management, environment management, waste management and air-quality management. For example, 1,139 millions baht equivalent to 55% of the total for water quality and wastewater management in 2021.

Vietnam: Budgets for environment management came mainly from national and provincial budgets and from environment-related funds (e.g. the Vietnam Environmental Protection Fund)

1.5. National best practices in waste water management, law enforcement, and community and industry participation in managing land-based sources of pollution documented and shared

Baseline in 2008: Lesson learned in community-based wastewater management in Batam, Indonesia documented and shared regionally although other examples from East Asian seas region largely focus on broad scale ICM planning

Cambodia:

- Setting up working group by MoE on water quality controlling and monitoring and then sent the group member to take water sample from the public water for detecting the pollution substances from urban areas. As result, the water quality is under standard.
- Installed and operated small treatment plant for wastewater in Preah Sihanouk Ville
- Conducted the research study to define the pollution factors surrounding Mekong River by cooperation among Ministry of Environment, WEPA, Royal University of Phnom Penh and Cambodia Technology Institute
- Development of the plastic management website (<https://combattingmarineplastic.moe.gov.kh>)
- Awareness raising on plastic pollutions through videos and educational and promotional materials
- Certification for environment best performers – to incentivize best practices for managing plastic waste

China: A number of integrated management practices on land-based pollution were developed, including:

- Maozhou River Watershed Management Practice in Shenzhen, Guangdong;
- Integrated water environment treatment of Lianjiang River in Guangdong;
- Integrated Qing'ao Bay watershed management practice, Shantou, Guangdong;
- Integrated watershed management practice in Qinjiang River, Guangxi;
- Wuyuan River Watershed management practice in Haikou, Hainan.
- The mariculture tail water treatment in high level ponds of Zhanjiang city, Guangdong.

Indonesia

- Development of environmental monitoring system for water quality for all of the provinces in Indonesia, including provinces located in the Indonesia's part of the South China Sea areas. Regulated and implemented based on Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 27 of 2021 on the Environmental Quality Index (IKLH).
- Development of Integrated and Electronic Environmental Data Management System called SIMPEL which has been implemented based on the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.87/MENLHK/SETJEN/KUM.1/11/2016 on the Electronic Reporting System for Environmental Permitting for Businesses and/or Activities.
- Development of program on PROPER (Program for Pollution Control, Evaluation, and Rating) is a national environmental performance evaluation program implemented by the Ministry of Environment and Forestry of Indonesia. It assesses the compliance and environmental management performance of businesses and activities based on regulatory requirements and beyond-compliance initiatives. PROPER assigns public performance ratings—Gold, Green, Blue, Red, and Black—to encourage compliance, promote transparency, and incentivize continuous improvement in environmental management. It is regulated by Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 1 of 2021 on the Program for Pollution Control, Evaluation, and Rating of Environmental Performance of Businesses and/or Activities.

- Development of 3R program as national implemented program. The 3R Program (Reduce, Reuse, Recycle) implemented by the Ministry of Environment and Forestry (KLHK) is a national waste management initiative aimed at reducing waste generation at the source, increasing resource efficiency, and minimizing the amount of waste disposed of in landfills. The 3R program focuses on (1) Reduce: Preventing and minimizing waste generation through sustainable consumption, eco-design, and waste prevention policies; (2) Reuse: Encouraging the repeated use of products and materials to extend their life cycle and (3) Recycle: Promoting waste segregation and recycling of materials such as plastics, paper, metals, and organic waste.

The key components of this program are among others: Development of waste banks (Bank Sampah) at community and municipal levels; Promotion of community-based waste management (TPS 3R) facilities; Support for recycling industries and circular economy initiatives; Public awareness campaigns and capacity building for local governments and communities.

The objectives of this program are to reduce the volume of waste sent to final disposal sites (TPA); to support the achievement of national waste reduction targets; to strengthen community participation in waste management; and to contribute to pollution reduction in terrestrial and marine environments.

The 3R program is implemented under the national waste management framework, including Law No. 18 of 2008 on Waste Management and its implementing regulations, and supports Indonesia's commitment to sustainable development and circular economy principles.

- Developing activities such as Beach Clean Up, installing trash boom in the river before reaching the sea.
- Develop clean river program such as PROKASIH, Citarum Harum.
- Community participation in 3 R program, Trash Bank Program.
- Industry participation in PROPER Program.
- Participation of local government, shops, supermarkets, community., in reducing plastic waste by encouraging to reuse of environmentally friendly bags

Philippines

- Capacity Development on Improving Solid Waste Management through Advanced/Innovative Technologies
- The Technical Cooperation Project (TCP) for Capacity Development on Improving Solid Waste Management through Advanced/Innovative Technologies in the Republic of the Philippines
- Clean Water Program
- Philippine Minamata Initial Assessment
- Reducing Environmental and Health Risks to Vulnerable Communities from Lead Contamination from Lead Paint and Recycling of Used Lead Acid Batteries
- Strengthening of the National Research and Development Program for the Prevention and Control of Water Pollution
- ODS – Institutional Strengthening Project XII
- Solid Waste Management for Local Government Units (SWM4LGUs)
- Healthy Oceans and Clean Cities Initiative (HOCCI)
- Clean Cities, Blue Ocean (CCBO)
- Development of Capacity for the Substitution and the Environmentally Sound Management (ESM) of Mercury-Containing Medical Measuring Devices
- National Integrated Coastal Management Program for Sustainable Development of the Coastal and Marine Environment and Resources of the Philippines
- Demonstration of Best Available Technique (BAT) and Best Environmental Practice (BEP) in Open Burning Activities in Response to the Stockholm Convention

- Reduce, Reuse, Recycle to Protect the Marine Environment and Coral Reefs (3RProMar)

Thailand:

- Regulation on wastewater effluent standards
- Working groups on development of wastewater effluent standards
- Manual of Wastewater Management on small enterprises that produce certain types of goods or services
- Manual of Wastewater Management on pig farming business
- Manual of Wastewater Management on aquaculture and coastal aquaculture
- Manual of Wastewater Management on ranch
- Manual of Wastewater Management on municipality and household
- Modeling for estimation of pollution carrying capacity in four main rivers
- Development of coastal and marine environmental monitoring programmes to support pollution prevention and environmental management
- Promotion of community participation and stakeholder engagement in pollution prevention and coastal environmental protection activities
- Collaboration with industries and local authorities on wastewater management and pollution reduction measures
- Public awareness campaigns and environmental education programmes on marine litter and land-based pollution prevention
- Strengthening environmental monitoring and assessment related to oil spill incidents and tarball pollution in coastal areas
- Development of technical guidelines and environmental assessment approaches for oil spill management and post-spill environmental monitoring
- Promotion of inter-agency cooperation under the National Oil and Chemical Spill Contingency Plan
- Organization of technical workshops, training programmes, and regional knowledge-sharing activities under the IMT-GT framework
- Promotion of science-based environmental management, pollution monitoring, and ecosystem protection approaches

Vietnam

- Project: Controlling marine environmental pollution due to socio-economic activities in the sea areas of Quang Ninh - Hai Phong, Da Nang - Quang Nam, and Ba Ria Vung Tau - Ho Chi Minh City, implemented by VASI in 2013
- Project "Reducing Ocean Plastic Waste in Vietnam" from 2020 to 2023
- The project "Strengthening propaganda on management, protection and sustainable development of Vietnam's seas and islands"

2/ Status in improving water quality in identified hot spots and monitoring stations

2.1. Targets in the SAP

The specific targets for improving water quality are to meet ASEAN seawater quality (14 parameters) criteria (except pollutants from scientifically identified natural sources, if any) for:

- 90% of monitoring stations in the 17 hot spots characterized by the RWG-LbP between 2002 – 2004;
- 80% of other monitoring stations (more than 400 at that time) in coastal waters of the South China Sea.

The concrete numbers of hot spots and monitoring stations as targeted for implementing the SAP in participating countries are presented in table 1.

Table 1. Targets for improvement of water quality in hot spots and monitoring stations of each country

Targets	Cam	China	Ind	Phi	Thai	Vie
90% of hot spots meet water quality criteria	3	3	3	3	2	3
80% of water monitoring stations meet water quality criteria	6	80	80	7	136	17

2.2. Status of water quality in recent years

The data and information below were based on initial country reports presented in the RWG-LbP meetings and additional inputs following the 3rd meeting held in Phu Quoc, Vietnam, November 2025. The inputs from Cambodia, China, Indonesia, the Philippines and Thailand indicated status in meeting targets designed in the SAP (Table 2). Available data also indicated positive trends in improvement of water quality in Thailand but complicated figure in different areas of Indonesia (Annex 1).

Table 2. Ratio (%) of monitoring stations where water quality meeting ASEAN seawater quality until 2021

Targets in the SAP	Cam	China	Ind	Phi*	Thai	Vie
90% monitoring stations of hot spots meet water quality criteria	60-70	NA, 94 & 100 (China Seawater Quality)	95%	5, 40 & 64	75 & 100	NA
80% of nationwide water monitoring stations meet water quality criteria	80-90	80	80%	NA	84	NA

* Based on Fecal Coliform only

3/ Challenges and lessons learnt in implementing the NAP during 2008-2021

3.1. Challenges

Cambodia

- Inadequate of financial source to support for NAP implementation, workshops, and other activities
- Capacity of officials is limited
- Inadequate infrastructure and equipment to deal with plastic waste
- Public awareness of people to participate in LBP management is limited

China

- There are shortcomings in environmental infrastructure construction such as sewage network and waste treatment facilities in coastal towns and rural areas.

- Capacity building needs to be further strengthened.
- The water quality standard system for coastal and marine ecosystems needs to be further improved.
- Lack wastewater treatment technologies that synergize pollution control and carbon reduction.
- Community_based public awareness remain inadequate in scope, intensity, and depth.

Indonesia

Land-based pollution management in Indonesia faces interconnected technical, infrastructural, and social-behavioural challenges. Addressing these challenges requires integrated approaches that combine improved technology, infrastructure investment, institutional coordination, and sustained community engagement.

1. Technical Challenges

- Limited monitoring and data quality: Inconsistent sampling methods, limited laboratory capacity, and uneven technical expertise affect the accuracy and reliability of pollution data.
- Complex and diverse pollution sources: Pollution originates from households, industries, agriculture, and informal sectors, making source identification and control technically challenging.
- Insufficient adoption of appropriate technologies: Many wastewater treatment systems, especially at small and medium enterprises (SMEs) and municipal levels, are outdated or poorly operated.
- Limited integration of data systems: Environmental monitoring, reporting, and enforcement systems are not always fully interoperable, reducing regulatory effectiveness.

2. Infrastructure Challenges

- Lack of investment in environmental management infrastructure related to land-based pollution.
- Inadequate wastewater and solid waste infrastructure: Many cities lack centralized wastewater treatment plants, sewer networks, and properly managed landfills.
- Uneven regional development: Infrastructure gaps are more pronounced in small cities, coastal areas, and outer islands.
- High investment and operational costs: Pollution control infrastructure requires substantial capital investment and long-term operational funding.
- Limited facilities for waste recycling and treatment: Insufficient 3R facilities, recycling centers, and waste-to-energy plants constrain pollution reduction efforts.

3. Social and Behavioural Challenges

- Low public awareness and participation: Limited understanding of pollution impacts leads to poor waste segregation, illegal dumping, and improper wastewater disposal.
- Behavioural resistance to change: Shifting long-standing consumption and disposal habits requires sustained education and incentives.
- Informal sector integration: Informal waste collectors play a critical role but are often not fully integrated into formal waste management systems.
- Weak compliance culture: In some sectors, environmental compliance is still perceived as a regulatory burden rather than a shared responsibility.

Thailand:

- COVID-19 situation generated infectious wastes – masks, ATK, and plastic garbage from food delivery system -> leak to coastal areas
- Private and public involvement is very important for land-based pollution, not only the government sector.
- Raising awareness on entrepreneurs to reduce their wastewater is still needed.
- Increasing marine litter and plastic waste remain challenges for coastal and marine environmental management.

- Strengthening preparedness and response capacity for oil spill incidents and tarball pollution remains an ongoing priority.
- Continuous enhancement of environmental monitoring systems and inter-agency coordination is needed to support integrated marine pollution management.
- Emerging pollutants, including microplastics and hazardous contaminants, require further monitoring and scientific assessment.
- Greater regional cooperation and information sharing are important for addressing transboundary marine pollution issues within the IMT-GT subregion.

Philippines

The capacity of DENR-EMB to handle their responsibilities in the implementation of these various laws has been continuously upgraded. However, even with much effort, there are still gaps and necessities that are needed to be responded to.

Vietnam

- Although the rate of pollution, environmental degradation, natural resource and biodiversity loss has been controlled, it is still complicated, in some places and areas still at an alarming rate; especially emerging is pollution in some river basins, craft villages, air pollution in some big cities
- Infrastructure for environmental protection, although invested, is still lacking and weak, not meeting the requirements of reality.
- The volume of generated solid waste and hazardous waste is increasing, the composition structure is complicated, while the management capacity at local is still limited.

3.2. Lessons learnt

Cambodia

- Technical steps for developing NAP and implementation
- Report system by online
- Set up working group on water quality controlling and monitoring

China

- Completed governance reform of the organizational structure of ecological environment and natural resources:
- Improved law and regulation systems and formulated more than 20 pollutant discharge standards related to land-based pollution control and prevention:
- The goals and tasks of the SAP were integrated into national /local policy framework and action plans for land-based pollution control:
- Taking an ICARM (integrated coastal area and river basin management) approach, to implement comprehensive measures.
- Established the financing mechanisms to support water pollution control and prevention.

Indonesia

PROPER Implementation

Lessons learned from the implementation of PROPER Program in Indonesia:

- Public disclosure is a strong incentive: Making environmental performance ratings public encourages companies to improve compliance and environmental management to protect their reputation.

- Beyond-compliance incentives work: Recognizing companies that exceed regulatory requirements (Green and Gold ratings) effectively drives innovation and voluntary environmental improvements.
- Data-driven assessment improves credibility: Using monitoring and reporting data strengthens objectivity and transparency in environmental performance evaluation.
- Integration with other systems is essential: Linking PROPER with systems such as SIMPEL and environmental permitting improves efficiency and consistency in oversight.
- Continuous supervision remains necessary: Self-reporting must be supported by inspections and verification to maintain trust in the rating system.
- Overall, PROPER demonstrates that performance-based environmental regulation can complement command-and-control approaches and effectively improve environmental compliance and sustainability outcomes.

Integrated environmental monitoring and reporting system (SIMPEL) in Indonesia

Lessons learned from the implementation of the integrated environmental monitoring and reporting system (SIMPEL) in Indonesia:

- Digital integration improves efficiency and transparency. An integrated electronic system reduces fragmented reporting, improves data accessibility, and enhances transparency for regulators at national and sub-national levels.
- Standardized reporting strengthens compliance monitoring
- Uniform formats and schedules enable consistent evaluation of environmental performance across sectors and regions.
- Technology must be supported by institutional capacity
- Effective implementation depends on the technical capacity of both regulators and regulated entities, including sampling, laboratory analysis, and data management skills.
- System integration increases regulatory impact
- Linking SIMPEL with permitting and performance assessment systems (such as PROPER) enhances enforcement credibility and policy relevance.
- Verification mechanisms remain critical
- Electronic self-reporting must be complemented by inspections and audits to ensure data reliability.
- Gradual implementation encourages adoption
- Phased rollout and continuous system improvement help increase user acceptance and compliance.

Overall, SIMPEL shows that integrated digital environmental monitoring systems can significantly strengthen environmental governance when supported by capacity building, verification, and inter-institutional coordination.

Program of 3R (Reduce, Reuse, Recycle) and Waste Banks in Indonesia

Lessons learned from the implementation of the 3R (Reduce, Reuse, Recycle) program and Waste Banks (Bank Sampah) in Indonesia:

- Community participation is the foundation of success. The effectiveness of 3R and waste bank programs depends heavily on active community engagement, local leadership, and sustained public awareness.
- Economic incentives drive behavioural change. Linking waste segregation to financial or social benefits encourages households to participate consistently in waste sorting and recycling.
- Source separation is critical. Waste reduction and recycling are significantly more effective when segregation is carried out at the household or community level.
- Institutional support strengthens sustainability. Local government facilitation, technical guidance, and policy backing are essential to maintain long-term program operation.
- Market access determines program viability. The success of waste banks depends on stable downstream markets for recyclable materials.

- Capacity building is essential. Continuous training in waste management, administration, and entrepreneurship improves program effectiveness.
- Overall, the implementation of 3R and waste banks in Indonesia demonstrates that community-based, incentive-driven approaches can significantly reduce waste volumes and support circular economy objectives when supported by strong institutional frameworks.
- To control pollution from land-based sources requires a relatively large investment, the role of the central government is very important in assisting the lack of capacity of local government.
- To change people's behavior to care about the environment, it is necessary to ensure that their activities provide economic benefits.

Philippines

- Maximizing communication/networking with LGUs, the academe and other Government Agencies
- Importance of budget allocation
- Capacity-building of personnel thru online workshop/webinars
- Information dissemination to stakeholders e.g., NGAs, LGUs, NGOs, POs, and the Youth

Thailand

- Permit system for wastewater should be implemented in Thailand, in order to reduce amount of pollution into water
- Strong punishment should be applied
- Admire and reward for the good practice of manufacturers or communities are essential,
- Promote more on using less chemical on agriculture and aquaculture
- Integrated and science-based approaches are essential for effective land-based and marine pollution management.
- Continuous environmental monitoring and data sharing support evidence-based decision-making and pollution prevention.
- Multi-stakeholder participation, including government agencies, private sector, local communities, and academic institutions, is critical for successful pollution management.
- Regional cooperation and technical knowledge exchange are important for addressing transboundary marine pollution, oil spill incidents, and tarball management.
- Preparedness, emergency response capacity, and post-spill environmental assessment should be continuously strengthened to improve marine pollution management.
- Public awareness and community engagement play important roles in preventing marine litter and reducing pollution from land-based sources.

Vietnam

- Economic development must be in harmony with nature, respect the laws of nature, do not trade the environment for economic growth.
- Environmental protection is the responsibility of the whole political system and the whole society, in which local authorities, businesses, communities and people play an important role.
- Land-based pollution control must be based on institutional quality improvement and effective and effective law enforcement
- Concentrating on environmental management of industrial parks, industrial clusters and craft villages; resolutely review the requirement to have a centralized wastewater treatment system, for large-scale waste dischargers, to install a system of equipment to control and monitor discharge activities; apply sanctions for establishments causing environmental pollution to comply with requirements on environmental protection to implement the technology conversion roadmap
- Increasing the mobilization of resources in the society in combination with increasing budget expenditure; effectively apply the principle that polluters must pay treatment costs and compensation, beneficiaries of

environmental values must pay; continue to promote the participation of businesses, organizations, communities and people in environmental protection.

Annex1. Trend of changes of water quality in some countries

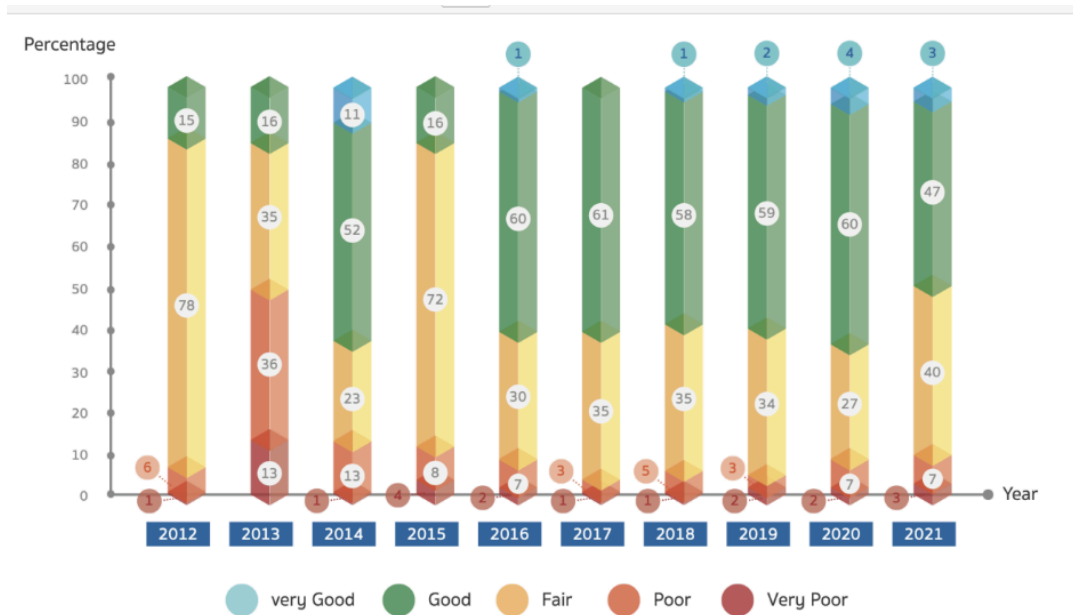


Figure 1. 1. The diagram indicating improvement trend of water quality in Thailand during 2012-2021

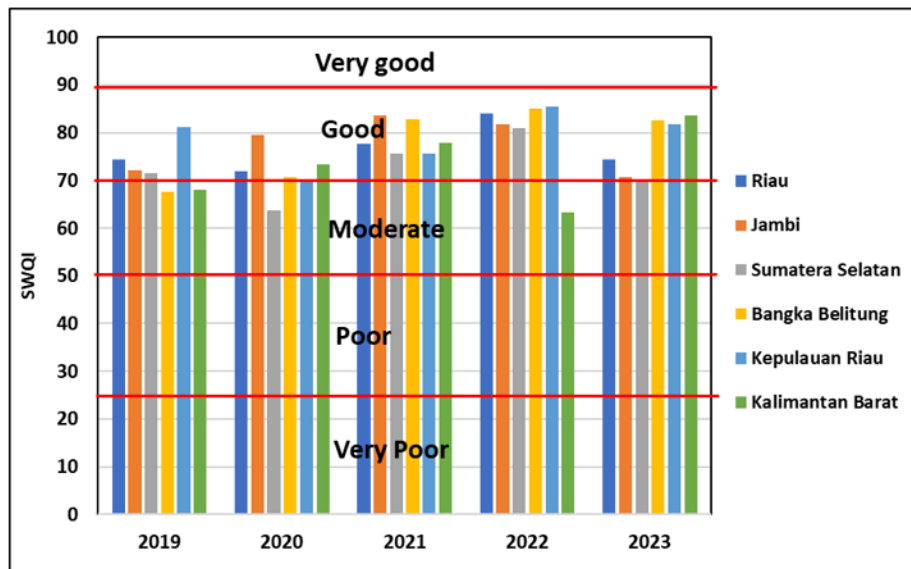


Figure 27 Distribution of marine water quality index (IKAL) values across the provinces associated with Indonesia's South China Sea (SCS) region (source: Environment Statistics of Indonesia, 2020, 2021, 2022, 2023, 2024)

Figure1. 2. Trends of change of marine water quality index in Indonesian provinces bordering the SCS