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

First Meeting of the Regional Working Group on Land-Based Pollution

Teleconference, 13 December 2022

REVIEW AND PRIORITIZATIN OF LAND-BBASED POLLUTION ACTIVITIES FOR PROJECT IMPLEMENTATION

Activities for SCS SAP project implementation under component 2

1/ Outlines on Component 2: Strengthening knowledge-based action planning for the management of coastal habitats and land-based pollution to reduce environmental degradation of the South China Sea

This component will result in: an enhanced information-base for coastal habitat management and action planning; effective integration of regional science in the management of land-based pollution; strengthened and harmonized national policies and laws, and supporting financial mechanism, for the management of land-based sources of pollution; improved national and regional values for the economic evaluation of coastal habitats for use in development planning and decision-making; regionally appropriate tools and mechanisms to guide the development of sustainable management systems for coastal habitats and land-based pollution; and an updated and Ministerially adopted Transboundary Diagnostic Analysis and Strategic Action Programme, including prioritization of national management actions to address climate variability and change. Each of the outcomes to be delivered via Component 2 of the project are outlined below.

Outcome 2.1 Enhanced information-base for coastal habitat management, monitoring and action planning

The science-based planning for coastal habitat management fostered by the SCS project relied on the extensive compilation, review and analysis of information and data relating to specific habitat sites. This involved the development of comparable national data and information sets relating to, inter alia, the distribution and diversity of coastal habitats, the species richness and hotspots of biodiversity, present threats and the status of management. Much of this information was synthesised and published as the national reports on coastal habitats that provides a permanent record of the information used as the basis for planning. These national reports will be updated in the SCS SAP project as well as site characterizations. These regional activities aim to support the national level activities in ensuring most up to date approaches and scientific information will be included.

These enhancements to the information-base for coastal habitat management and action planning will be used to guide the preparation of updated National Reports, the National Action Plans, as well as the revised TDA and SAP.

Outcome 2.2 Effective integration of regional science in the management of land-based pollution

The South China Sea TDA and SAP identified pollution from land-based sources in particular inadequate waste-water treatment as a key issue, along with inadequate standards and lack of capacity to monitor, regulate and control pollution discharges. High concentrations of suspended solids largely result from poor land-use practices, including logging activities and conversion of forests in upland areas. On the other hand, high nutrient loads mainly result from untreated domestic wastes that are directly discharged into the receiving water bodies. Both contaminants impact the ecological functioning of coastal ecosystems. In addition, heavy metals such mercury (Hg), Arsenic (As) and lead (Pb) have tended to increase in both biota and sediments in coastal waters of the South China Sea during the last decade. These heavy metals have potential negative impact on the health of marine living resources and humans who consume seafood products.

A total of 17 pollution hot spots were characterised in formulation of the land-based pollution component Strategic Action Programme. It was identified that that present pollutant and contaminant discharges may have transboundary consequences in some of the identified “hot spots” and sensitive areas in terms of increasing the rate of habitat degradation in those coastal ecosystems. Accordingly, it was identified during SAP formulation that the purpose of SAP activities relating to land-based pollution is not to finance interventions that directly reduce the load of contaminants reaching the marine environment from land-based sources but to support the integration of regional science with national-level policy making and planning for the management of land-based pollution. Accordingly, the over-arching goal of the land-based pollution component of the SAP was agreed as follows:

"To foster regional co-operation in the identification of sensitive ecosystems, land-based contamination problems, evaluation of their significance and development of standards for national level adoption within a regional context in order to develop an appropriate precautionary approach to discharges to the South China Sea marine basin"

Activities of Component 2 will result in estimates of total contaminant loading and carrying capacity of the SCS via application of quantitative modeling and GIS-based techniques for seven heavy metals (Hg, Cd, Pb, Cu, Cr, As, Zn). This builds on work of the SAP formulation project to model the carrying capacity of the South China Sea marine basin with respect to nutrients. The project will expand on this modeling via an activity to quantify the impacts of estimated heavy metal contaminant loadings for use in national and regional planning. Methodologies and procedures will also be established through the project for the characterization of heavy metal pollution hotpots, including the conduct of diagnostic analyses to identify priority actions to remediate environmental compromises at these locations. Innovatively, this work will be replicated during the project cycle to quantify effluent volumes and contaminant loadings from coastal aquaculture operations.

Outcome 2.3 Strengthened and harmonized national policies and laws, and supporting financial mechanism, for the management of habitats and land-based sources of pollution

Each of the participating countries have environmental laws or acts under which environmental standards are in place with mechanisms for approved enforcement procedures to ensure compliance. In order to meet with standards and regulations stipulated under the law, structural facilities like waste water treatment plants are one way to treat waste water before discharging it to the environment. In addition to enforcement of existing laws and regulations only and building treatment facilities, environment planning, a part of the development process may prevent and mitigate potential impacts. In line with this, most countries in the region have Environmental Impact Assessment (EIA) prior to development. Countries are also working on environmental awareness, communication and education to enhance public understanding of pollution problem and practices at the individual level that may reduce contaminant loads to the environment. In addition, monitoring of pollution sites and water quality is currently undertaken by all countries while some countries include monitoring programmes for sediment quality and bio-parameters as well. National level activities will support the review of legislative and institutional frameworks for land-based pollution management and habitat management in participating countries and revision of national/provincial policies; revision of national/provincial policies; development, enactment and implementation of supporting regulations for land-based pollution, in close cooperation with regional partners.

2/ Regional and national activities

Outputs & key actions	**Delivery**	**Regional & national activities and execution arrangement**
2.1.1. Validation of existing or improved algorithms with on-site data		
• Support site activities and ensure latest remote sensing algorithms and tools to provide data on coastal site • Create partnerships with initiatives and projects leading innovation on remote sensing (i.e. with GRID, WCMC, latest	• Regional report on methodologies and procedures for the application of aerial visual survey and remotely sensed data in coastal habitat management in the SCS marine basin published	Regional: (1) Ddevelopment of methodology & procedure; (2) Conducting training workshops National: Review past activities, gap analysis & training needs on application of aerial visual survey and remotely sensed data in coastal habitat management

research) • Training and support to national teams	and accessible online • Training/Workshop	Consultant, RWG & Focal Points on habitats
2.1.2 Mechanism for collection and exchange of regional coastal habitat and pollution information and data established		
• Regional coordination to ensure all Component 1 site activities collection of data are integrated into a regional meta-database • GIS and meta-database of SCS coastal habitat information • Partnerships with national regional organizations to coordinate information and data (i.e. COBSEA, PEMSEA) • Partnership with IW:LEARN Data and Information (DIM) working group and synergies with other LMEs, as well as links to SDG reporting	• Agreed site characterisation forms for the compilation of regionally comparable coastal habitat information and data • GIS and meta-database online and routinely updated by SAP implementation partners	Regional: (1) Agreed characterisation form; (2) Development of GIS & meta-database; (3) Shairing with partners National: Provision of habitat data following site chracterisation forms, including pollution related parameters RWG & National Focal Points on habitats & LbP
2.1.3 Role of coastal habitats of the South China Sea in climate change adaptation and the sequestration and storage of carbon		
• Review of approaches and data available to assess role of habitats in capture and storage of carbon and potential partnerships (i.e. Global Blue Forests project, UNEP Blue Carbon Initiative) • Review of the potential impacts of sea level rise, climate change, ocean acidification and episodic events on coastal habitats • Methodology to integrate climate change aspects into TDA and SAP	• Published report on the capture and storage of carbon by coastal habitats, including national and regional strategic planning recommendations, shared online • Volume of CO2 captured and stored by SCS habitats defined • Extent of uptake of information on carbon sequestration and storage used in mgmt. planning • Communications on review outcomes published by media outlets and syndicated via LME LEARN	Regional: (1) Documentation of regional data & infromation; (2) Communication; (3) Methodology to integrate climate change aspects into TDA and SAP National: Review of available data and information related to assessement of role of habitats in capture & storage of carbon as well as impacts of sea level rise, climate change, ocean acidification and episodic events at the national level Consultant, RWG & Natioal Focal Points on habitats

2.1.5. Review of current status of habitat and pollution data available in the SCS, gaps and challenges and innovative technology and approaches to monitoring and assessments that can support SCS monitoring programme		
• Assess current status of habitat and pollution data available in the SCS. Analysis and mapping of each countries monitoring programmes, identifying elements towards a regional mechanism for monitoring and reporting on the marine and coastal environment (in partnership with regional organizations) • Also review harmonization of joint reporting to other commitments (SDGS, CBD etc.) • Countries (6) contribute to compiled meta-database on existing data • Recommendations and innovative approaches to support monitoring and assessments	• Review assessment report with contribution from all countries Proposal and recommendations on sustainable solution to support monitoring and assessments (to be integrated in SAP)	Regional: (1) Development of template for building metadata; (2) identifying elements towards a regional mechanism for monitoring and reporting on the marine and coastal environment National: (1) Analysis and mapping of each countries monitoring programmes; (2) Provision of metadata on existing data following the agreed template; (3) Country report on the marine and coastal environment RWG & National Focal Points on LbP
2.2.1 Updating the nutrient carrying capacity model for the SCS marine basin and integration into SCS GIS		
• Building upon SCS project nutrient carrying capacity assessment and UNEP Global Nutrient Project (pilot project in Manila Bay and Laguna de Bay), replicate exercise in key areas/hotspots	• Nutrient carrying capacity developed and implemented • Communications products available for regional and global sharing • 1 * IW Experience Note	Regional: (1) Development of carrying capacity assessment (2) Regional & global sharing National: Nomination of appropriate consultant and review of outputs as well as replicating exercise, if applicable Consultant, RWG & Focal Points on LbP
2.2.2. Regional level assessment of impacts of key contaminants (nutrients, heavy metals, oil, litter) and national or local assessments based on NAP and hotspots		
• Complementing the work of the National Report and NAP update (see output 2.6.5) on land-based pollution; • Overview of existing data and models on key contaminants, building on existing initiatives. Fully integrate all new national and	• Published report shared nationally and regionally • Pollution hotspot site characterization templates developed	Regional: (1) Publishing & sharing reports; (2) Development of template for hotspot characterisation; (3) policy briefts and recommendations National: (1) Overview of data & models on key contaminants; (2) Provision of hotspot information following the template developed

regional research • Review commitments to Global and regional obligations with regards to pollution and provide recommendations • Regional Report as contribution to TDA and SAP revision	• Hotspot information accessible online • Science-Policy Interface and development of policy briefs and recommendations • 1 * IW Experience Note	(3) Provision of national reports and national action plans RWG & National Focal Points on LbP
2.2.3. Quantification of effluent volumes and contaminant loadings from coastal aquaculture to the SCS marine basin		
• Effluent from aquaculture and mariculture operations identified as key threat to dominant coastal biomes • Quantification of effluent volumes and contaminant loadings from coastal aquaculture	• Number of aquaculture sites for which effluent and contaminant loadings estimated • Published methodology and procedures for estimating aquaculture pollution loadings and impacts • 1 * IW Experience Note	Regional: (1) Developing methodology & procedures for estimating aquaculture pollution loadings and impacts; (2) Mapping aquaculture sies regionally National: Review of data and infromation on effluent and contaminat loading from culture operations operations identified as key threat to dominant coastal biomes RWG & National Focal Points on LbP
2.3.1. National best practices in waste water management, law enforcement, and community and industry participation in managing land-based sources of pollution and habitat management documented and shared		
Building upon lesson learned in community-based wastewater mgmt. in Batam, Indonesia and work of PEMSEA and COBSEA • Agree on mechanism to fully share National best practices and contribute to regional and global platforms • Review **best practices** also related to work on Blue/Green and circular economy initiatives and Sustainable Consumption and Production	• Catalogue of best practice technologies and management approaches for land-based pollution published and accessible online • Number of best practice technologies and measures tested, documented and shared. Including how these will contribute to the SDGs	Regional: Developing mechanism for sharing best practices, including building the catalogue National: Provision of best practices related to LbP management, including on Blue/Green and circular economy initiatives and Sustainable Consumption and Production RWG & National Focal Points on habitats & LbP
2.3.2 Review of legislative and institutional frameworks for land-based pollution and habitat		

management in participating countries		
• National level review as part of the NAPs, under coordination of the IMC • Regional review of legislative and institutional frameworks for land-based pollution and habitat management	• Review published and shared regionally • Gaps identified and institutional, policy reforms identified (see output 2.3.3)	Regional & National: (1) Review of legislative and institutional frameworks for land-based pollution and habitat management; (2) Identification of gaps and needed reforms RWG & National Focal Points on LbP and RTF & Focal Point on Legal Maters
2.3.3. Harmonized national Standard Operating Procedures for land-based pollution control and management [including agreed sediment, biota, & water quality criteria]		
• Update on gaps and needs for SOPs in line with regional and global agreements • Support for SOPs developed and adopted	• Regional guidelines on Standard Operating Procedures published • Adopted National Standard Operating Procedures available online	Regional: Developing & publishing onine regional guidelines on SOPs National: Review of national SOPs for land-based pollution control and management (including agreed sediment, biota, & water quality criteria) RWG & National Focal Points on LbP
2.3.4. Revised national/provincial policies and supporting regulations for land-based pollution and habitats developed, enacted and implemented		
• Support to countries to update/develop new national/provincial policies and supporting regulations for land-based pollution and habitats Reflect gaps, reforms and other recommendations into revised NAPs and SAP	• 6 national reports on policy and legal aspects of land-based pollution management • Endorsed policy and executive orders, provincial/local ordinances and by-laws.	Regional: Integration of gaps, reforms and other recommendations into revised SAP National: (1) Country reports on policy and legal aspects of land-based pollution management; (2) Support to update/develop new national/provincial policies and supporting regulations for land-based pollution and habitats RWG & National Focal Points on LbP and RTF & Focal Point on Legal Maters
2.4.2. Compilation of good examples, and identify recommendations to strengthen a blue economy		

(and circular economy) approach and innovative financing for pollution and habitat management		
• Partnerships established with key regional organizations (PEMSEA, COBSEA, ASEAN) on current status, gaps and needs for enhancing blue and circular economy in the region • Compilation of good examples from within and beyond the region where relevant • Recommendations on actions to further support SAP implementation	• Report on good examples, and recommendations to strengthen a blue economy (and circular economy) approach and innovative financing for pollution and habitat management • SAP revision incorporated blue and circular economy	Regional: Establishment of partberships; (2) Incorporating blue economy & circular economy in the revised SAP National: Review and documentation of good examples, and recommendations to strengthen a blue economy & circular economy approach and innovative financing for pollution and habitat management RWG & National Focal Points on habitats & LbP
2.5.1. Online catalogue of best practice management measures and technologies for sustainable use of SCS coastal habitats and land-based pollution management		
• Compilation of regional best-practices (from SCS project and other initiatives) • Best practices on innovative management approaches and nature-based solutions • Coordination with national NTWG and Committees to document best practices for site activities	• Catalogue of best practices accessible online • Communications products on best practices produced and syndicated online	Regional: (1) compilation of good practices from different sources and (2) updated best-practices online National: Provision of good pracices from national and site levels RSTC, NTWG & Focal Points on habitats and LbP
2.5.2 Government officials, community leaders, and habitat and pollution managers exposed to on-going practices in rehabilitation, management, and pollution control and treatment via programme of training, study tours and exchange		
• In partnership with existing networks (i.e. PEMSEA Network of Local Governments for Sustainable Coastal Development), develop program of training, study tour and exchange initiatives; • Implement training, study tour and exchange initiatives in all countries	• Reports of study tour and exchange initiatives • Annual reports of best practice examples of community level inputs to SAP implementation initiatives	Regional: (1) Building partnerships; (2) Organisation of study tours National: (1) Suggsting and conducting study tours with linkage with site managers; (2) Documentation of best practice example of community level RWG & Focal Points on habitats & LbP
2.6.2. SCS State of Coastal Habitats report in line with global commitments (SDGs, CBD)		

• Methodology/Guidelines for update of national habitat reports • Partnership with key regional institutions and projects to combine resources and information • Update of national habitat reports • Regional synthsize/ SCS State of Coastal Habitats report in line with global commitments (SDGs, CBD)	Published state of coastal habitat reports	Regional: SCS State of Coastal Habitats report in line with global commitments (SDGs, CBD) National: Updated National Habitat Reports RWG & Focal Points on habitats
2.6.3 National and regional consultative process to develop updated Strategic Action Programme SAP for adoption at the Ministerial level (Yr 5) including agreed monitoring and reporting mechanisms		
• Methodology developed for NAPs and SAP update based on latest IWLEARN guidelines, and including preliminary information on climate change, marine litter and other emerging issues • Incorporation of additional elements (depending on information availability) including blue and circular economy and nature-based solutions • SAP drafted for review by RSTC and regional working groups, as well as peer review process • SAP adopted at Steering Committee and presentation to COBSEA's IGM • SAP monitoring framework • Contribution assessed of SAP implementation to the SDGs and CBD Post 2020 Framework	• Adoption by appropriate Ministers of an updated Strategic Action Programme for the South China Sea • Endorsed Strategic Action Programme published	Regional: Methodology for NAPs and SAP update, considering incorporation of additional elements; (2) Draft, review & adoption of SAP National: Organisation of national consultations Consultant, IMC; RSTC & PSC
2.6.4 Prioritization of national management actions for incorporation into national policies and plans, in particular for climate variability and change and blue economy		
• Recommendations and project concepts for SAP implementation including regional level implementation, incorporation into national	Recommendations, actions and project concepts for SAP	National: Prioritisation of national management actions NTWG, IMC

planning (financial mechanisms addressed in outcome 3.3)	implementation	
2.6.5 Updated and adopted National Action Plans for mangroves, coral reefs, seagrass and wetlands, and land-based pollution including enactment of supporting legislation where required		
Linked with 2.6.2 • Methodology developed for NAP update including preliminary information on climate change, marine litter and other emerging issues • Incorporation of additional elements (depending on information availability) including blue and circular economy and nature-based solutions	Adopted National Action Plans and sustainable financing strategies accessible online	Regional: Bulding methodology for NAP update National: (1) Conducting procedure for adoption of updated National Action Plans Consultant, IMC, NTWG, NWGs on habitats, LbP & EV & LM