

Terminal Evaluation Report

UNDP-GEF Project: EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management

GEF Project ID: 4343

UNDP Project ID: 4552

Countries: People's Republic of China (with Republic of Korea fully self-financing)

Region: Asia and the Pacific

Focal Area: International Waters (GEF-5)

GEF Agency: United Nations Development Programme (UNDP)

Executing Agency: United Nations Office for Project Services (UNOPS)



Project focus area within the Yellow Sea Large Marine Ecosystem (extracted from project document)

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| 12 October 2020 | 01 | First draft |
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Opening Page

PROJECT DETAILS:

| | | |
|----------------------------------|---|--------------------|
| Project Name: | EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management | |
| Project ID: | GEF Project ID: 4343 | UNDP PIMS ID: 4552 |
| Country: | China (with Republic of Korea fully self-financing) | |
| Region: | Asia and the Pacific | |
| Focal Area: | International Waters | |
| Funding Source: | GEF Trust Fund (GEF-5 replenishment cycle) | |
| GEF Focal Area Objective: | Objective 2 (IW-2): Catalyze multistate cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LMEs) while considering climatic variability and change | |
| Implementing Agency: | United Nations Development Programme (UNDP) | |
| Implementation Modality: | Agency Execution | |
| Executing Agency: | United Nations Office for Project Services (UNOPS) | |
| Responsible Partners: | N/A | |

FINANCIALS:

| | |
|-----------------------------------|-----------------|
| Project Preparation Grant: | USD 0 |
| GEF Project Grant: | USD 7,562,430 |
| Cofinancing Total: | USD 225,481,766 |
| GEF Agency Fees: | USD 680,619 |
| Total Cost: | USD 233,044,196 |

PROJECT TIMELINE:

| | |
|---|-------------------|
| Received by GEF: | 09 September 2010 |
| Concept Approved: | 01 April 2013 |
| Project Approved for Implementation: | 24 February 2014 |
| Start Date: | 11 July 2014 |
| Project Closed (revised): | 31 December 2020 |

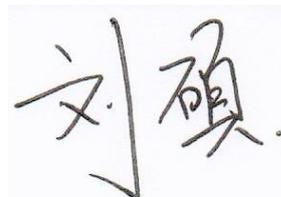
TERMINAL EVALUATION DETAILS:

| | |
|----------------------------|---------------------|
| TE Timeframe: | August-October 2020 |
| Reporting Language: | English |

TE Team



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The terminal evaluation (TE) team would like to acknowledge the informative feedback and logistical support provided by the project stakeholders, including government officials, project implementation stakeholders, project partners, project beneficiaries, , the UNDP CO staff, the UNDP Regional Technical Advisor, UNOPS staff, and the Project Manager and project team members.

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Executive Summary

The International Waters focal area project was approved under the GEF-5 replenishment cycle through an agency implementation modality, supported by the UNDP as the GEF implementing agency and UNOPS as the executing agency. Basic project information and finances are summarized below in **Table 1**.

Table 1: Project information table

| | | | |
|---|---|---|---|
| Project title: | EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management | | |
| Project Details: | | Project Milestones: | |
| UNDP Project ID (PIMS #): | 4552 | PIF Approval Date: | 01 Apr 2013 |
| GEF Project ID: | 4343 | CEO Endorsement Date: | 24 Feb 2014 |
| UNDP Atlas Business Unit, Award ID, Project ID: | Atlas ID: 74724 Project ID: 87001 | ProDoc Signature Date: | 11 Jul 2014 |
| Country/Countries: | China (with Republic of Korea fully self-financing) | Date Project Manager hired: | 2015 (first PM) Nov 2016 (second PM) |
| Region: | Asia and the Pacific | Inception Workshop date | 13 Jul 2017 |
| Focal Area: | International Waters | Midterm Review Completion date: | Mar 2018 |
| GEF Operational Programme or Strategic Priorities/Objectives | GEF-5 International Waters, Objective 2 | Terminal Evaluation Completion date: | Oct 2020 |
| | | Revised Operational Closure date | 31 Dec 2020 |
| Trust Fund: | GEF Trust Fund | | |
| Implementing Partner (GEF Executing Entity): | United Nations Office for Project Services (UNOPS) | | |
| NGOs/CBOs involvement: | Recipients of small grants; members of the Yellow Sea Partnership. | | |
| Private sector involvement: | Engaged in demonstration activities. | | |
| Geospatial coordinates of project sites: | 35.00 N, 123.00 E | | |
| Financial Information: | | | |
| PPG: | at approval (USD) | at PPG completion (USD) | |
| GEF grant for preparation: | 0 | 0 | |
| Co-financing for preparation: | 0 | 0 | |
| Project: | at CEO Endorsement (USD) | at TE (USD) | |
| [1] UNDP contribution: | 1,692,000 | 2,967,000 | |
| [2] Government: | 92,655,060 | 192,709,103 | |
| [3] Other multi-/bi-laterals: | 129,334,706 | 6,891,327,224* | |
| [4] Private sector: | 0 | 0 | |
| [5] NGOs: | 1,800,000 | 128,085 | |
| [6] Total co-financing [1 + 2 + 3 + 4 + 5]: | 225,481,766 | 7,087,131,412 | |
| [7] Total GEF funding: | 7,562,430 | 7,450,419** | |
| [8] Total project funding [6 + 7]: | 233,044,196 | 7,094,581,831 | |

Notes: *Co-financing reported by the Republic of Korea Ministry of Oceans and Fisheries covers funding expended over the period of 2014-2020 for the coastal and marine initiatives across the country, not only the YSLME area. ** Total GEF funding based upon UNDP Combined Delivery Reports (CDRs), and 2020 figures based on information contained in a 10 November dated CDR.

TERMINAL EVALUATION PURPOSE

The TE has the following complementary purposes:

- To promote accountability and transparency.
- To synthesize lessons that can help to improve the selection, design, and implementation of future UNDP-supported GEF-financed initiatives; and to improve the sustainability of benefits and aid in overall enhancement of UNDP programming.

- To assess and document project results, and the contribution of these results towards achieving GEF strategic objectives aimed at global environmental benefits.
- To gauge the extent of project convergence with other development priorities, including poverty alleviation, strengthening resilience to the impacts of climate change, reducing disaster risk and vulnerability, as well as cross-cutting issues such as gender equality, women's empowerment, and supporting human rights.

METHODOLOGY

The TE was an evidence-based assessment, relying on feedback from individuals who have been involved in the design, implementation, and supervision of the project, review of available documents, and findings of online stakeholder surveys. The overall approach and methodology of the evaluation followed GEF and UNDP.

The timing of the TE coincided with the COVID-19 pandemic. As of 11 March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic as the new coronavirus rapidly spread to all regions of the world. International travel to China and ROK was restricted during this timeframe. As an adaptive management measure, stakeholder interviews were made on virtual platforms and an online survey was conducted to obtain direct feedback from YSLME fishers. Domestic travel restrictions were lifted during the timeframe of the TE and, hence, the national TE consultant carried out a field mission in September 2020 to project demonstration sites in Shandong Province.

PROJECT DESCRIPTION

The project was designed to build upon the regional cooperation for the sustainable use of the Yellow Sea Large Marine Ecosystem (YSLME) put in place by People's Republic of China (China) and the Republic of Korea (ROK), supported by the Democratic People's Republic of Korea (DPRK), the Yellow Sea Partnership (YSP), and the Global Environment Facility (GEF). The initial project (Phase I), implemented over the period of 2004-2011, completed a regional Transboundary Diagnostic Analysis (TDA) and finalized a regional Strategic Action Programme (SAP) for the period of 2009-2020.

The project objective was to foster long-term sustainable institutional, policy, and financial arrangements for effective ecosystem-based management of the YSLME. To achieve this objective, the project strategy included supporting the formation of an YSLME Commission that will oversee the implementation of the SAP, and supporting the littoral states' efforts to reduce the decline in biological resources and to restore depleted fish stocks in this large marine ecosystem.

PROJECT THEORY OF CHANGE

For the purposes of contextualizing and orienting the TE, the TE team constructed a generalized theory of change for the project (see **Figure 2**) based upon the project strategy, the causal chain analysis included in the 2020 TDA, and the draft updated SAP (2020-2030).

The threats facing the YSLME are multiple and complex. As a result of years of overfishing of commercially valuable species and uncontrolled pollution, both from point and non-point sources, there has been changes in biomass and species composition. This has been exacerbated by regional climate change impacts, including increasing sea surface temperatures and acidification. The expansion of mariculture and a lack of consistent management practices influencing the nutrient cycle and the increased eutrophication and contributing towards harmful algal blooms (HABs) and jellyfish blooms. Land-based sources of pollution are also significant stressors to the coastal and marine ecosystems. Significant economic development in China and ROK in the past 20-30 years has been accompanied with increases of industrial emissions, discharges of sewage, runoff from agricultural lands where fertilizer use has intensified, and inadequate solid waste management, particularly related to plastics. Three of the emerging issues identified in the 2020 TDA include air pollution (particulate matter PM10 and PM2.5) from emissions from industry, marine plastics, and contaminants of emerging concern. Loss of habitat and modification of coastal ecosystems through reclamation and other development activities have resulted in biodiversity loss and reduced resilience to withstand disasters and the impacts of climate change.

The design of the Phase II project addressed the barriers hindering adoption of a regional, ecosystem-based approach towards the sustainable management of the YSLME and was directly aligned with the priorities outlined in the 2009-2020 SAP. Component 1 addressed the need for strengthening regional cooperation and enhancing inter-sectoral coordination to tackle the multi-faceted ecosystem threats. Building upon the momentum gained during the Phase I project, GEF resources were allocated to advance the process of forming a durable regional governance mechanism and strengthen and expand stakeholder involvement. The focus of Component 2 was on improving ecosystem carrying capacity with respect to provisioning services, specifically fisheries. The GEF alternative was rooted in the importance of adopting an ecosystem-based approach to fisheries and the recognition that recovering and sustaining fish stocks requires a joint, regional strategy. Promoting sustainable mariculture practices is an integral part of the strategy, as the vast reach of mariculture installations have prompted regional level concerns. Addressing land-based pollution was the aim of the interventions delivered under Component 3, with funds allocated to disseminate innovation into ecological engineering approaches such as constructed wetlands, raise community awareness on marine litter, and enhance regional coordination on reducing and controlling

microplastics. Component 4 focused on regional cooperation regarding biodiversity conservation and addressing vulnerability to climate change, including strengthened connectivity of marine protected areas (MPAs) in the YSLME, expanding involvement of the civil society, and enhancing joint monitoring and sharing of information.

GEF funding is meant to be catalytic, feeding into national initiatives, strengthening regional cooperation towards safeguarding and generating global environmental benefits in the YSLME. Achieving sustainable management of the YSLME will require time and there are a number of assumptions and impact drivers that influence further progress towards longer term outcomes, e.g., as outlined in the updated 2020-2030 SAP and eventual, systemic change and impact. An important assumption is that political and financial commitments for regional cooperation are durable and that national policies continue to be consistent with priorities of the YSLME. The project theory of change also includes an assumption that there is sufficient stakeholder buy-in for applying an ecosystem-based approach to fisheries on a regional scale, and the parties support joint surveys and share information to facilitate that process. Achieving certification of fisheries will partly be driven by consumer demand and willingness to pay for sustainable production, and it is important that sustainable options are attractive to fishers and mariculture operators. There needs to be appropriate regulatory and incentive frameworks in place to ensure broader uptake of best management practices. Continued increase in public awareness will also drive demands on controlling pollution and ensuring conservation objectives are fulfilled. The exchange of information is critical in facilitating improvements across the YSLME, e.g., adaptive management measures depend on feedback from regional monitoring efforts. With respect to biodiversity conservation, multi-stakeholder endorsement of regional strategies will facilitate progress, i.e., apart from governmental stakeholders, the civil society and private sector have important roles in terms of community engagement, introducing innovation, and sustainable financing. Strengthening resilience of coastal ecosystems and communities will likely continue at the local level, e.g., through further adoption of integrated coastal zone management (ICM). Through regional cooperation approaches, such as clustering, these local efforts can lead ecosystem scale management, supported by joint early warning systems and other collaborative mechanisms.

GLOBAL ENVIRONMENTAL BENEFITS GENERATED

The following global environmental benefits have been generated through the Phase II YSLME project:

Substantive progress towards regional agreement and collaborative management to support SAP implementation

Facilitated by Interim Commission Council (ICC) and six Regional Working Groups (RWGs), there has been substantive progress towards reaching a clearer understanding on a regional governance mechanism for the YSLME. At the time of the TE and confirmed during the 5th ICC meeting on 19 October 2020, government officials from China and ROK have agreed to the text of a memorandum of understanding (MOU) that confirms their commitment towards regional governance and sets out the next steps for operationalizing an agreed collaborative arrangement.

Advanced level of transboundary diagnostic analysis and strategic action program formulation and implementation

The project funded updating the TDA, with the report issued in June 2020, and a new SAP covering the period of 2020-2030 has been drafted and was being socialized at the time of the TE in September 2020. The analyses undertaken as part of the updated TDA provided an opportunity to revisit the concerns addressed in the TDA completed during the Phase I project and to consider emerging issues, including air pollution, marine plastics, and contaminants of emerging concern.

The two countries have made significant investments in line with the ecosystem-based management priorities outlined in the 2009-2020 SAP, including monitoring, surveillance, and control of fisheries operations, buy-back of fishing vessels, improving mariculture operations, expanded monitoring of point and non-point sources of pollution, development and operation of environmental information systems, collection and control of marine litter, upgraded and expanded wastewater collection and treatment, restoration of degraded coastal ecosystems, management of MPAs, marine surveys, public awareness campaigns, etc.

SUMMARY OF CONCLUSIONS

Following a highly successful Phase I project that closed in 2011, the Phase II project was developed to support the implementation of the 2009-2020 YSLME SAP. The Phase II project obtained endorsement from the GEF CEO in February 2014 and was approved by the Government of China in July of that year, the official start date of the 4-year duration project. Project implementation was significantly delayed, with the project inception workshop held in July 2017, three years after the official July 2014 start date. Two, no-cost time extensions were granted, shifting the closure date to 31 December 2020. As of 30 June 2020, USD 6.95 million of the USD 7.56 million GEF project grant had been expended

GEF Additionality

China and ROK have made substantial investments in coastal and marine environment improvements in the YSLME over the past 10 years. GEF additionality included facilitating regional dialogue and formulating options for durable regional cooperation and financing arrangements; exchanging knowledge and lessons among the scientific communities; providing

added value to innovative approaches and technologies, such as integrated multi-trophic aquaculture, ecological engineering approaches like constructed wetlands; providing small grants to civil society organizations and research institutions for promoting best practice management and raising community awareness; delivering technical assistance in analyzing current and emerging threats, updating the TDA and developing an updated regional SAP for the period of 2020-2030.

Project Design/Formulation

The project design was aligned to the priorities agreed to in the 2009-2020 SAP, with a focus on facilitating further progress towards establishment of a regional governance mechanism in Component 1, reducing pressures on fisheries in Component 2, addressing the threats associated with pollution in Component 3, and strengthening the conservation of critical coastal and marine habitats in Component 4.

The broad scope of the project presented implementation challenges. The number of planned activities was somewhat reduced in response to one of the midterm review recommendations, but the overall strategy remained extensive, with the GEF resources spread fairly thin across the thematic subject areas. Moreover, the project activities under Components 2 and 3 were primarily centered in China. This is somewhat understandable, as ROK is not a recipient country of GEF funds, but as an international waters project, the strategy could have better emphasized issues and activities that promote regional cooperation. The two countries are independently making substantial investments on domestic improvements.

There were a few monitoring and evaluation shortcomings in the project design, including some baseline conditions not being validated, unclear baseline and end targets, and not specifically describing the means of verification for some of the metrics in the project results framework.

With respect to the management arrangements aspects of the project design, combining the functions of Chief Technical Advisor and Project Manager into one position was an under-estimation of the required workload for this complex project, requiring extensive stakeholder engagement and guidance on a wide variety of thematic subjects.

Adaptive Management

As part of the agreement to grant two separate, no-cost time extensions for the project, an updated TDA and SAP were completed. These were significant and timely achievements, as the 2009-2020 SAP extended to the last year of the project, thus the updated SAP, covering the period of 2020-2030 provides well-timed support to the MOU under negotiation on regional governance.

The current Project Management Office (PMO) team did a good job at making up time lost as a result of the delay in initiating the project implementation. Timely adjustments were made in response to the midterm review recommendations, including reducing the number of overall activities and shifting more funding into the small grants mechanism on the project, allowing broader participation of the civil society sector. More frequent project meetings were held between UNDP and UNOPS to increase delivery of project outputs, and the Ministry of Natural Resources (MNR) assigned a senior official to serve as team leader in coordinating the update of the TDA and SAP. Project resources were also reallocated to shore up the PMO team, including hiring of interns.

The decision to use partner cooperation agreements (PCAs) in lieu of contracts with multiple organizations and individuals was a constructive adaptive management measure. The cumulative value of the four PCAs executed with the Yellow Sea Fisheries Research Institute (YSFRI), the First Institute of Oceanography (FIO), the National Marine Environmental Monitoring Center (NMEMC), and the North China Sea Environmental Monitoring Center (NCSEMC) was approx. USD 2 million, which is a bit more than 25% of the USD 7.56 million GEF project grant.

The constraints imposed in response to the COVID-19 pandemic starting in early 2020 presented significant disruptions to the implementation strategy for the remainder of this final year of the project. Adaptive management measures were implemented, including convening virtual meetings and trainings, but restrictions on organizing gatherings of people have impacted the effectiveness of stakeholder engagement and discussions on regional cooperation arrangements.

Country Ownership

Both countries have allocated substantial funds towards achieving ecosystem improvements in the YSLME, consistent with the priorities agreed upon in the 2009-2020 SAP. Co-financing from the two national governments considerably exceed the figures confirmed at project entry. Moreover, the project preparation costs were fully funded through co-financing contributions; GEF resources were not utilized for the development of the project design.

Major institutional restructuring in China coincided with the project lifespan - this presented challenges to the implementation but also strengthened stakeholder influence in the long-term. The State Oceanic Administration (SOA), formerly a stand-alone institution was merged into the newly established Ministry of Natural Resources (MNR). The restructuring has consolidated many marine related functions under the MNR and has elevated the Chinese focal point for

the YSLME project to a ministerial level. Cross-sectoral collaboration remains a priority, considering that fisheries fall under the mandate of the Ministry of Agriculture and Rural Affairs (MARA) and the Ministry of Ecology and Environment (MEE) is responsible for pollution related issues and is the focal agency to the UN Convention on Biological Diversity (CBD), UN Framework Convention on Climate Change (UNFCCC), and other multilateral environmental agreements.

Although a formal regional governance mechanism has not yet been established, the two parties have continued to engage in constructive dialogue through the ICC and separate bilateral channels. A clear message communicated during the TE interviews was that a regional governance arrangement is needed for the YSLME. There are bilateral agreements and various technical cooperation arrangements, and China and ROK are active members on regional platforms, such as Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), North-East Asian Marine Protected Areas Network (NEAMPAN), Northwest Pacific Action Plan (NOWPAP), etc. But there is an overwhelmingly consistent view among YSLME stakeholders supporting the need for a regional governance mechanism to address ecosystem-wide issues. This is testament to the relevance of the project.

Country ownership was somewhat diminished as a result of how the activities under Components 2 and 3 were mostly carried out in China, rather than focusing more on regional issues. This resulted in a slight reluctance among some of the Korean stakeholders to engage in the project.

Actual Stakeholder Participation and Partnership Arrangements

Regional stakeholder engagement was further strengthened during the Phase II project, facilitated by the six RWGs: RWG-F: Fisheries; RWG-M: Mariculture; RWG-H: Habitats; RWG-P: Pollution; RWG-A: Assessment; RWG-G: Sustainability (Finance and Governance). The counterpart national working groups (NWGs) provided platforms for enhancing stakeholder collaboration at the domestic level.

Over the approximate 3-year period from July 2017 until May 2020, the project has organized 57 stakeholder events, including meetings, workshops, seminars, trainings, etc., with a reported cumulative total of 1,845 people participating, of whom 30% were women.

The key stakeholders involved in the project largely carried over from those who participated during the Phase I project. Consistent with the GEF International Waters (IW) focal area strategic approach, Phase I projects typically have a strong engagement with the scientific community, leading the collaborative TDA process. The focus of Phase II was on implementation of the priority actions in the 2009-2020 SAP – often requiring an expanded set of stakeholders. Actual stakeholder engagement had shortcomings in capturing this need for broader stakeholder involvement, including for example MARA, MEE, and provincial authorities in China, and subnational authorities and development agencies in ROK.

Through the small grants mechanism, the project facilitated meaningful engagement among local Chinese NGOs and research institutions. A total of seven (7) grants were awarded, ranging in value from USD 39,778 to USD 100,000, with a cumulative value of USD 478,767. Some of the activities implemented through these grants were focused in strengthening regional collaboration among civil society organizations. It would have been advisable to have also offered the opportunity to Korean NGOs to participate in the call for proposals.

The project has also engaged the private sector, particularly regarding mariculture. GEF funds allocated to support the analysis of the performance and environmental conditions of integrated multi-trophic aquaculture (IMTA), partnerships were established with individual enterprises and business associations. Such partnerships are important for securing multi-stakeholder buy-in for sustainable production practices.

The project endeavored to strengthen the Yellow Sea Partnership (YSP), an alliance established during the Phase I project and consisting of international and domestic NGOs, complementary regional programmes, such as the UNEP Regional Seas Programme, particularly the NOWPAP, and national institutions. Members of the YSP participated in many of the project meetings and events, and project progress reports indicate that guidelines were developed and that the PMO acted as the secretariat. The 2018 Communications and Awareness Raising Strategy for the project does not mention the role of the YSP. The sustainability of the YSP is questionable following project closure.

Risk Management

Twelve (12) risks were identified in the project design and assessed for probability of occurrence and potential impact to implementation. The project did a good job at reporting on risk management (e.g., in the annual project implementation reports – PIRs), indicating mitigation measures proposed and implemented, and identifying and acting upon new risks.

The 2017 PIR mentions mitigation measures considered for engagement of DPRK, e.g., through utilizing diplomatic channels with China. The report also includes discussion on the risk of negotiating joint fisheries stock assessments. This was followed up in the 2018 PIR, explaining that the PMO had identified swimming crab and small yellow croaker as target species for facilitating discussions on joint stock assessment.

The risk of partners being unwilling to make formal commitments was highlighted in the 2018 PIR, and recommended mitigation measures included a planned exchange visit to the Helsinki Commission, the governing body of the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM Convention). The risk was revisited in the 2019 PIR, which discusses the movement towards the concept of a flexible, innovative governance mechanism, in lieu of a formal commission.

The risk management section of the 2019 PIR also pointed out the risk of ensuring ownership of the newly established MNR in China. The description of mitigation measures to this risk mentions that the MNR had agreed to formally establish the Inter-Ministerial Coordination Committee (IMCC) to facilitate cross-sectoral and inter-sectoral cooperation. Moreover, the report states that ministry officials informed the project team that the IMCC would meet quarterly instead of annually to ensure sufficient attention was placed on the YSLME project.

The critical risks associated with the COVID-19 pandemic were discussed in the 2020 PIR. The impacts to the negotiations and eventual institutionalization of the regional governance mechanism and the updated SAP were described, as convening physical stakeholder gatherings were constrained.

Gender and other Cross-Cutting Issues

Limited resources were allocated for integrating gender equality and human rights. The project did a good job tracking participation of women, but there were no specific strategies, e.g., gender action plan, and a limited scope of social and environmental risk screening on the project was made at the project preparation phase. The available version of the social and environmental risk screening (Annex 5 to the project document) was undated and not signed. For Question No. 3 in the screening (Does the proposed project include activities and outputs that support upstream planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change), the response was “No”. The response to potential upstream impacts should have been “Yes”, and social and environmental safeguards should have been more elaborated in the project design.

There were some community development related activities, such as assessing the socioeconomic impacts of the fishing vessel buy-back program in China, delivering training to displaced fishers, and on raising public awareness regarding marine litter and integrated coastal management (ICM). And the project made substantive contributions towards strengthened knowledge and assessment tools regarding the vulnerability of coastal areas in China to climate hazards.

Cross-cutting issues are incorporated into the draft, updated 2020-2030 SAP, including Target 3 (Build social safeguards into development of sustainable marine food supply), Target 5 (Reduce exposure to pathogens and emerging contaminants in the marine environment), Target 7 (Assess and adapt to long term changes in the marine ecosystem), and Target 9 (Prevent and reduce marine disasters). Moreover, Section 4.1 of the draft 2020-2030 SAP under the “Enabling Conditions for the YSLME SAP” chapter is on mainstreaming gender into management actions.

Catalytic/Replication Effect

Knowledge transfer under the project was facilitated across several fronts, particularly through the interactions on the regional and national working groups, capacity building activities, exchange visits, seminars, and production and dissemination of knowledge products, training modules, and communication posts.

The project has produced a number of high quality knowledge products, including several well-made videos on some of the primary thematic areas of the project, e.g., “Saving the critically-endangered spoon-billed sandpiper” (released in May 2020 on Biodiversity Day), “Restoring the ecosystem carrying capacity and enabling the return of fish species in the Yellow Sea” (released in June 2020 on World Oceans Day), “Sealing a new ecological contract with the Yellow Sea through IMTA: the story of Dongchu Island” (released in June 2020 on World Oceans Day), “Cracking down on the tiny but dangerous microplastics: Responding to challenges of marine litter” (released in June 2020 on World Oceans Day), “Saving the remaining intertidal mudflats in the Yellow Sea for the critically-endangered spoon-billed sandpiper” (released in June 2020 on World Oceans Day), “Developing a network of marine protected areas in the Yellow Sea (released in June 2020), and “Restoring the ecosystem carrying capacity of the Yellow Sea” (project video).

An extensive amount of information was uploaded to the project website, which was regularly maintained. The project also had an extensive footprint on social media, including Facebook, Instagram, Twitter, and WeChat Information has also been shared through the GEF IW:LEARN, which is the GEF IW focal area knowledge management platform, and the TE team was informed that most of the content from the project website will be uploaded to IW:LEARN.

Exchange visits involving scientific experts were important in terms of transfer of knowledge and influencing the catalytic effect of the project. For example, sharing information on the use of biodegradable fishing gear in ROK was of interest among the Chinese counterparts, and exchanging approaches used for jellyfish monitoring helped to harmonize the methodologies used in the two countries. Operators in China have considerably more experience in commercial scale

implementation of IMTA, and Korean experts shared their research findings on productivity, nutrient dynamics, and disease transfer between organisms.

Another example of a catalytic effect was the construction of a training center by the Dongchu Island Fishery Cooperation. The center has a 120 m² meeting room for training on IMTA techniques. Three training courses for Chinese mariculture managers and academia were conducted in 2018-2019.

A twinning exchange between the YSLME project and the Caribbean Regional Fishery Mechanism (CRFM) was facilitated by IW:LEARN and IOC/UNESCO to share knowledge on IMTA technology with three Caribbean countries. Project partners hosted the Executive Director of CRFM and a senior government official from Jamaica on a week-long visit, as part of CRFM's efforts to advocate IMTA as a sustainable production approach in line with the blue economy strategies in the region.

There are a number of items requiring follow-up action after project closure. Sustained engagement of high level officials is needed to facilitate agreement to the MOU under discussion and the updated 2020-2030 SAP. Several draft strategies, guidelines, and protocols have not yet been approved or widely socialized among relevant stakeholders. A few examples of such strategies and plans include the following: Regional Guidelines for Responsible Fisheries in the YSLME, Framework Plan for the YSLME Biodiversity Conservation in the Republic of Korea (2018-2030), YSLME Biodiversity Conservation Plan (2018-2030), MPA Network Development Training Toolkit, Regional Jellyfish Monitoring Program, and Comprehensive Monitoring System for the YSLME.

The project has not yet developed an exit strategy or sustainability plan for ensuring the outstanding issues are tended to after project closure. The 2018 Communication & Awareness Raising Strategy for the project mentions the concept of identifying individual or organizational level Yellow Sea champions/ambassadors, but there is no evidence that such champions/ambassadors have been designated.

Progress to Impact

As described in the 2011 TE of the Phase I project and mentioned in the design of Phase II, a non-legally binding governance mechanism was considered the most likely arrangement for some time. As Phase II nears project closure, there has been accelerated progress with respect to negotiating the terms of a MOU that would reaffirm the two countries commitment and provide further direction on the agreed next steps. One option being discussed is to build upon the technical cooperation agreement between the two countries.

Problems associated with overfishing, i.e., fishing effort exceeding ecosystem carrying capacity, was one of the primary issues identified in the TDA completed during the Phase I YSLME project and prominently highlighted in the 2009-2020 SAP. The Phase II project strategy included activities supporting the countries' efforts at reducing pressures on YSLME fisheries, as well as addressing adverse impacts of mariculture on ecosystem health. One of the common management measures between the two countries is a reduction in the number of fishing vessels, through buy-back programs and other economic displacement schemes. Significant numbers of vessels have been taken out of the capture fisheries sector. A high proportion of the reductions occurred among small-scale fishers, particularly in China. The importance of small-scale fishers on capture fisheries is substantial, not only in terms of production volumes but also because they are often exempt from regulatory regimes and because the livelihoods and safety of the fishers are regularly in danger, as their economic outputs are often insufficient for investing in better equipment and knowledge.

Fishing pressure has also been reduced by displacing larger vessels to more offshore waters where fishing is controlled through fishery agreements, whereas fisheries in coastal waters are managed by seasonal closures and other management measures. The two countries have established a series of agreements on the production and protection of YSLME fisheries.

Apart from reduction in fishing vessels, other management measures and habitat enhancement initiatives are being implemented in the two countries. ROK continues to expand the application of Total Allowable Catch (TAC) approaches, with 18 species under TAC systems by the end of 2017. TAC implementation has been gaining traction in China in recent years for some species, with 5 currently under implementation. Seasonal closure of fishing grounds is a management measure widely applied across the region. Evidence of environmental status change has been reported in China, trophic levels (TL) of dominant capture fishery species in 1998-2000 were 3.46-3.48, whereas the TL of dominant species in 2014-2015 were 3.73-3.84.

Restrictions on further land reclamation instituted in both countries in recent years have been a major achievement in terms of reducing environmental stress across the coastal areas of the YSLME. Restoration of coastal ecosystems, expansion of protected areas, and increased awareness among local communities have facilitated environmental status changes, e.g., increased populations of endangered species, including the spoon-billed sandpiper (*Calidris pygmaea*, IUCN Red List Critically Endangered). Coastal zones also provide protection against storm surges and other expected impacts of climate change, as recognized through the expanded adoption of ICM in the two countries.

Pollution and climate change related issues remain significant concerns. In fact, three of the emerging issues identified in the 2020 TDA are associated with pollution, i.e., air pollution from industrial emissions, marine plastics attributed to the overuse of plastics and inadequate control of marine litter, and contaminants of emerging concern that are related to sewage discharge. The findings of the updated TDA also point out worsening trends associated with changes in biomass and species composition, driven by pollution and regional climate change (warming, decreased pH levels). And the challenge of microplastics is increasingly recognized as a significant issue, affecting all tropic levels in marine ecosystems.

Extensive macroalgae blooms have occurred in the Yellow Sea over the past 20 years, influenced by multiple stressors, including land-based pollution discharges, climate change (e.g., warming sea surface temperatures), and expanded mariculture operations, including seaweed cultivation. Results of a remote sensing study¹ published in 2020 report that there was a 50% increase in chlorophyll concentrations in the Yellow Sea from the 1990s until 2011, followed by a 34% decrease to 2019. There is general consensus that more needs to be done in terms of pollution reduction, adopting sustainable management practices of mariculture installations, and gaining a better understanding of ecosystem dynamics in the Yellow Sea to control macroalgal blooms and other threats to ecosystem health.

EVALUATION RATINGS:

Evaluation ratings are summarized below in **Table 2**.

Table 2: Evaluation ratings

| Criteria | Rating | Comments |
|---|--------------------------------|--|
| 1. Monitoring and Evaluation (M&E) | | |
| M&E design at entry | Moderately Satisfactory | The M&E plan was developed using the standard UNDP template for GEF-financed projects. The indicative M&E budget was USD 197,000, or 2.6% of the USD 7,562,430 GEF project grant – this is roughly aligned with the current (July 2020) UNDP guidance, which stipulates 3% when the GEF project grant is between USD 5-10 million. A rating of moderately satisfactory is applied because some of the baseline conditions, end targets, and means of verification of the project metrics were not fully articulated. |
| M&E plan implementation | Satisfactory | The project has consistently produced quality and timely progress reports, having internal ratings consistent with independent evaluation findings and project risks highlighted. Some of the baselines, indicators, and end targets in the project results framework were not clarified during project implementation. Substantive adjustments were made in response to the midterm review recommendations. |
| Overall quality of M&E | Satisfactory | Overall, the quality of M&E on the project is rated as satisfactory. The project board (the ICC) was an important platform for M&E, providing strategic feedback to issues raised through project reporting. A significant level of adaptive management was applied during the second half of the project, to make up lost time and deliver financially and strategically. The project results framework was reviewed at the inception phase, changes to the results framework were discussed but not encouraged, and uncertainties remained throughout implementation. |
| 2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution | | |
| Quality of UNDP Implementation / Oversight | Satisfactory | The UNDP CO has provided consistent administrative and strategic guidance throughout the project development and implementation phase, and played an important role in mediating discussions on recommended changes to the project strategy with Chinese and Korean government officials in 2015, and facilitating an eventual resolution. Project inception, however, occurred in July 2017, three years following the official start date of the project in July 2014. The UNDP regional technical advisor (RTA) has been actively involved, providing strategic guidance to the project team and sharing best practices and lessons learned from overseeing GEF IW projects throughout Asia and the Pacific. |
| Quality of Implementing Partner Execution | Satisfactory | The current project management office (PMO) team, assembled since March 2017, has been able to make up considerable ground after the first PMO team was replaced. There were missteps associated with the recruitment of the first PMO team, but the delay in starting implementation was also due to political issues that were beyond the control of the implementing partner. The decision to consolidate many of the technical activities under four PCAs was an effective adaptive management measure that saved considerable time. |

¹ Sidman, G, S. Fuhrig, and G. Batra. 2020. The use of remote sensing analysis for evaluating the impact of development projects in the Yellow Sea Large Marine Ecosystem. *Sustainability* 2020, 12, 3628.

| Criteria | Rating | Comments |
|--|--------------------------------|---|
| | | Having different accounting systems from UNDP creates some challenges in reconciling expenditures. |
| Overall quality of Implementation / Execution | Satisfactory | The delay in initiating the project reduced overall effectiveness and likelihood that results will be sustained. There have been upsides to the extended project duration, e.g., completion of the updated TDA and preparation of the updated SAP (2020-2030), as well as navigating through the institutional restructurings in China that started in 2018. Overall, the quality of implementation and execution is rated as satisfactory, particularly during the second half of the project. |
| 3. Assessment of Outcomes | | |
| Relevance | Highly Satisfactory | <p>The project is highly relevant nationally and regionally.</p> <p>Firstly, the project design was directly aligned with the 2009-2020 SAP.</p> <p>In China, the project objectives are consistent with a number of national and subnational strategies and plans, including the National 13th (2016-2020) Five-Year Plan (FYP) for Marine Economy Development and the 13th FYP's for Liaoning, Jiangsu, and Shandong provinces on Marine and Fisheries Development, Marine Functional Zoning, Marine Ecological Red line Protection Plan, and Marine Environmental Protection Plan.</p> <p>In ROK, complementary strategies and plans include the Basic Plan for the Restructuring of Inshore and Offshore Fisheries, the Marine Environment Monitoring Network, the Second Comprehensive Plan for the Management of Nonpoint Pollution Sources (2012-2020), the Second Basic Plan for Marine Litter Management (2014-2018), and the First Basic Plan for the Conservation and Management of Marine Ecosystems (2009-2018).</p> <p>The project was aligned with Objective 2 of the GEF-5 Programming Strategy for the International Waters focal area: "Catalyze multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LMEs) while considering climatic variability and change".</p> <p>The development objectives of the project were aligned with the United Nations Development Assistance Framework (UNDAF) and the UNDP Country Programme Document (CPD) for China for the period of 2016-2020, specifically UNDAF Outcome #2, "More people enjoy a cleaner, healthier environment as a result of improved environmental protection and sustainable green growth", and CPD Output 2.1 "China's actions on climate change mitigation, biodiversity, and chemicals across sectors are scaled up, funded, and implemented".</p> |
| Effectiveness | Moderately Satisfactory | Overall achievement of the project outcomes is rated as moderately satisfactory ; brief analyses of each of the 16 outcomes is presented below. |
| Component 1: Ensuring Sustainable Regional and National Cooperation for Ecosystem-Based Management | | |
| <i>Outcome 1.1: Regional governance structure, the YSLME Commission established, operational and sustained</i> | | Moderately Satisfactory |
| The YSLME ICC and the supporting RWGs have facilitated consistent and substantive dialogue between the parties. At the time of the TE and confirmed during the 5 th ICC meeting on 19 October 2020, the text of an MOU has been agreed between the countries that reportedly defines the parameters for continued progress towards achieving a durable YSLME regional governance arrangement. The draft, updated SAP provides a framework for prioritizing actions over the next 10 years (2020-2030). The end target of having a functioning commission is unlikely to be achieved by project closure. | | |
| <i>Outcome 1.2: Improved inter-sector coordination and collaboration at national level</i> | | Moderately Satisfactory |
| IMCC meetings in China and ROK were convened during the course of the project. There is limited information available regarding the details of the meetings. Endorsement of the updated SAP (2020-2030) currently under development would be an important example of inter-sectoral cooperation. | | |
| <i>Outcome 1.3: Wider participation in SAP implementation fostered through capacity building and public awareness</i> | | Satisfactory |
| The project has done a good job at engaging an expanded number of and different stakeholder groups, including civil society and private sector. Stakeholder engagement was facilitated through regional and national working groups, training courses, study visits, seminars, demonstration site activities, public awareness campaigns, etc. One of the envisaged results under this outcome was a strengthened Yellow Sea Partnership (YSP); however, at project closure, the durability of the YSP as a stand-alone initiative seems unlikely. | | |

| Criteria | Rating | Comments |
|--|---------------------------------------|----------|
| <p>Outcome 1.4: Improved compliance with regional and international treaties, agreements, and guidelines</p> <p>Over the past 20-30 years, the Government of China has made significant progress in harmonizing national and subnational laws to the conditions of regional and international treaties, agreements, and guidelines they are contracted parties to. The review of implementation of the YSLME national strategic action plan (NSAP) (2009-2020) provides a candid assessment of certain gaps in the current legislative framework, e.g., lack of an ecosystem-based point of view, lack of a national regulation on mariculture and on control of marine litter, lack of implementation rules on control of invasive species, lack of a cross-sectoral implementation mechanism, and a lack of international cooperation in development of laws and policies.</p> <p>Progress in terms of compliance reported by the Government of Korea in recent years include incorporating the Stockholm Convention criteria into the national POPs Control Act and Marine Environment Management Act, creating a management system to implement the IMO conventions on oil and hazardous and noxious substances (HNS), and improving enforcement methods on controlling compliance to conditions in the Ballast Water Management Convention.</p> <p>GEF additionality included delivering technical assistance in the completion of gap analyses, e.g., in terms of compliance with the FAO Code of Conduct for Responsible Fisheries, and in the development of regional guidelines for responsible fisheries in the YSLME; adoption of the guidelines had not occurred by the time of the TE.</p> | <p>Satisfactory</p> | |
| <p>Outcome 1.5: Sustainable financing for regional collaboration on ecosystem-based management secured based on cost-efficient and ecologically effective actions</p> <p>As part of discussions regarding the next steps for advancing towards an agreement on a regional cooperation agreement, the parties are considering building upon existing technical cooperation structures which are jointly funded by the two countries. Sustainable financing options have been assessed under the project, including establishment of an environmental trust fund. Such a modality would provide opportunities for other parties to participate in the financing of a regional governance mechanism.</p> | <p>Moderately Satisfactory</p> | |
| <p>Component 2: Improving Ecosystem Carrying Capacity with Respect to Provisioning Services</p> | | |
| <p>Outcome 2.1: Recovery of depleted fish stocks as shown by increasing mean trophic level</p> <p>The project metric for this outcome was the reduction of fishing vessels. China has reported a 22% reduction in the number of fishing vessels in the three YSLME provinces over the period of 2015-2018, and ROK has reported a 17% reduction from 2011 to 2017. These figures exceed the 10% end target.</p> <p>GEF additionality included assessment of the effectiveness and recommendations for improving the license system in the YSLME provinces in China; assessment of the effectiveness of the buy-back scheme; assessment of seasonal closures in the Yellow Sea; a socioeconomic assessment of the fishing vessel buy-back scheme, fish restocking, mariculture, and climate change adaptation measures in Dalian, Weihai, and Dandong; and reemployment training of displaced fishers.</p> <p>The littoral countries have implemented other actions aimed at recovering fish stocks. In ROK, designated closed areas and seasons for several fisheries have been substantively expanded, fishery resource surveys have expanded, further improvements to fishing gear (including eco-friendly gear), and continued strengthening of fishery resource management systems, including implementation of Total Allowable Catch (TAC) systems (by 2017, TAC systems had been implemented for 18 species).</p> <p>In China there has been significant expansion of seasonal closures, with verifiable improvements. For example, catch per unit effort (CPUE) of demersal species increased from 46% in 2015 to 127.4% in 2017. Trophic levels (TL) are also on an increasing trajectory. Fishing gear regulations have also been stipulated in the YSLME provinces in response to MARA limits stipulated in 2018 for 15 commercial species. China has introduced TAC systems since 2017, with 5 species currently covered. After 2020 the government has stipulated that total catch controls will be based on fisheries status determined from stock assessments.</p> <p>There were no joint stock assessments under the Phase II project.</p> | <p>Satisfactory</p> | |
| <p>Outcome 2.2: Enhanced stocks through restocking and habitat improvement</p> <p>Both countries have made significant investments in stock enhancements, including installation of artificial reefs, release of fry, creation of marine forests, and expansion of marine ranching. In ROK, a cumulative total of 16,107 ha of artificial reefs were installed between 2011 and 2016 (countrywide), 17,987 ha of marine forests were created between 2011 and 2018, and a cumulative total of 45 marine ranching projects were implemented between 2009 and 2017. In China, stock enhancement has increased since 2006 when the government issued the “Action Outline of Aquatic Living Resources Conservation in China”. More than 100 species (including freshwater species) are released each year in the country. Stock enhancement in Shandong Province encompasses 19 marine species. Habitat improvement measures such as artificial reefs and marine ranching continue to be developed, with 62 marine ranching projects implemented nationally by 2017 and a goal to reach 120 by 2025.</p> <p>The metrics under this outcome included measurable improvement (5%) in standing stock and CPUE, and future management decisions on restocking based on effectiveness. GEF funds were allocated for demonstration of seagrass transplanting techniques; an analysis of the effectiveness of the Haiyang Fuhan national marine</p> | <p>Satisfactory</p> | |

| Criteria | Rating | Comments |
|--|----------------------------------|--|
| | | ranching demonstration area; and an analysis of the effectiveness of artificial reefs installed in the Pipakou Waters of Haiyang City. Project progress reports refer to achievement of the 5% improvement in CPUE (the figures reported above under Outcome 2.1 are from the NSAP (2009-2020)review report). There is no information available regarding management decisions on restocking, based on the effectiveness of restocking and habitat protection – which is the second sub-target under the indicator for Outcome 2.2. A rating of satisfactory is applied for this output based on results reported by the national governments. |
| | Satisfactory | Outcome 2.3: Enhanced and sustainable mariculture production by increasing productivity per unit area as a means to ease pressure on capture fisheries IMTA demonstration site activities report productivity improvements at levels exceeding the end targets, and the productivity gains have provided economic benefits to the operators. The pollution reduction figures for the IMTA installations at the demonstration site are better than the 5% end target; however, the results are somewhat anecdotal, i.e., lacking a statistically representative timeframe and sampling regime. Unsustainable mariculture practices remain as significant threats in the YSLME, regarding disruptions to the nutrient dynamics, incidence of harmful algal blooms, and spread of pathogens. Both countries have highlighted the need for further research on the benefits and performance of IMTA installations. |
| Component 3: Improving Ecosystem Carrying Capacity with Respect to Regulating and Cultural Services | | |
| | Moderately satisfactory | Outcome 3.1: Ecosystem health improved through reductions in pollutant (e.g., N) discharge from land-based sources The end target for this outcome, i.e., a 10% reduction in nitrogen discharges in the YSLME tributaries every five years seems somewhat overly ambitious. In ROK, the NSAP progress report provides information regarding significant investments in expansion of sewerage coverage, increased application of measures to reduce non-point source pollution discharges, and a decreasing trend of BOD values in four major rivers. An increase in advanced wastewater treatment, from 56% in 2012 to 74% in 2016, will likely contribute to decreased discharges of land-based nutrients in the coming years. China has also made substantial investments in terms of pollution reduction, but there remain challenges with respect to agricultural non-point sources in some parts of the YSLME provinces. Project progress reports make reference to information in the China Marine Ecology and Environmental Status Bulletin (2018), indicating a 20% increase in total N inputs to the Yellow Sea and Bo Hai Sea from rivers in Liaoning and Shandong provinces from 2016 to 2018, and inputs from rivers in Jiangsu Province remain largely unchanged over that time period. |
| | Moderately Satisfactory | Outcome 3.2: Wider application of pollution-reduction techniques piloted at the demonstration sites Ecological engineering approaches such as construction of artificial wetlands have been increasingly implemented in China and ROK over the past 10 years for control of non-point source nutrient pollution. The GEF additionality included delivery of technical assistance to the wetland restoration in Jiaozhou Bay, Shandong Province, with recommendations on combatting the invasion of <i>Spartina alterniflora</i> vegetation and suggestions for updating the conservation and restoration plan. The work in Jiaozhou Bay involved restoration of a natural coastal wetland, not construction of an artificial wetland. The restored wetland has provided expanded habitat for migratory birds and other species, and also reportedly contributed to improvements to water quality and coastal fishery habitats. The project also produced a review report on the utilizing wetlands as nutrient sinks. During the field mission to Jiaozhou Bay, local stakeholders indicated that similar methods have been applied at sites along the Liao River and Yellow River basins, but documented information was not available on these sites or on wider replication of such ecological engineering approaches during the lifespan of the project. |
| | Moderately Unsatisfactory | Outcome 3.3: Strengthened legal and regulatory process to control pollution Progress reports on achievement of Outcome 3.3 include explanations of the delay in updating or developing new marine environmental laws and regulations at the provincial and local levels, due to ongoing revisions of the national Marine Environmental Protection Law in China. The metric for this outcome, however, is the development of evaluation tools for assisting the harmonization of national and local legislation in the three YSLME provinces in China. There is no evidence of progress made in development of evaluation tools. |
| | Satisfactory | Outcome 3.4: Marine litter controlled at selected locations Awareness on marine litter issues and corrective and preventative actions have been increased in the YSLME littoral countries. In ROK, the Second Basic Plan for Marine Litter Management was implemented between 2014 and 2018, and 200,000 to 400,000 tons of marine litter have been collected annually. Introduction of biodegradable fishing gear has been shared with Chinese counterparts. Although there is not yet specific legislation in China on marine litter, the government has made significant investments in improvements to solid waste management. The updated TDA outlines the increased recognition of microplastics affecting all trophic levels in the YSLME - one of the emerging issues that call for a regional strategy. GEF funds supported interventions led by NGOs in local communities on sustainable solid waste management, introduction of durable buoys, and increased awareness on preventing and controlling marine litter. |

| Criteria | Rating | Comments |
|---|--------------------------------|----------|
| Component 4: Improving Ecosystem Carrying Capacity with Respect to Supporting Services | | |
| <p>Outcome 4.1: Maintenance of current habitats and the monitoring and mitigation of the impacts of reclamation</p> <p>In 2018, the Government of China prohibited any further reclamation, through issuance of Notice No. 24 from the State Council. This notice also stipulates that handling of legacy problems from reclamation projects will be accelerated. The Government of Korea has declared no further reclamation of critical coastal habitats; however, some reclamation developments that were approved prior to this declaration are allowed to continue.</p> <p>There has been a significant increase in the number and coverage of MPAs. From 2011 to 2017, the number of MPAs in ROK went from 15 to 28, covering a cumulative area of 288.624 km² and 586.379 km², respectively. The concept of marine red line designation was first promoted in China by the SOA, and since that time three YSLME provinces have designated more than 10% of their marine ecosystems as red line areas, where development activities are prohibited. The number of MPAs, wetland protected areas, and germplasm resource conservation zones have also increased over the lifespan of the project.</p> <p>The GEF additionality under this outcome also included technical studies on coastal reclamation and impacts to critical coastal habitats, on improving the effectiveness and impacts of ecological restoration, a framework plan for the YSLME biodiversity conservation in the ROK (2018-2030), and a YSLME biodiversity conservation plan (2018-2030). There was no evidence showing the uptake of some of the recommended technical methodologies or of adoption of the biodiversity conservation plans.</p> <p>Under the small grant mechanism on the project, grants were awarded to scientific organizations and NGOs – including the Chinese Academy of Fishery Science, which supported strengthening of the management and monitoring capacities and capabilities of MPAs; the Beijing Chaoyang District Yongxu Global Environmental Institute, which promoted community co-management to strengthen protection of seabirds, ensure sustainable small-scale fishing practices, and promote regional cooperation and exchange among communities along the East Asian-Australian Flyway; the Institute of Geographic Sciences and Natural Resources Research for improving the understanding of migratory bird habitats and ecological connectivity; and the Society of Entrepreneurs and Ecology Foundation, in association with the IUCN, to strengthen regional cooperation on the conservation of the Yellow Sea intertidal and coastal wetlands.</p> | Satisfactory | |
| <p>Outcome 4.2: MPA network strengthened in the Yellow Sea</p> <p>The project has facilitated strengthened knowledge on habitat connectivity in the YSLME and developed tools for integrating connectivity principles into conservation initiatives, e.g., for the spotted seal and spoon-billed sandpiper. Proposed priority conservation areas and opportunities for improving connectivity with existing and new MPAs have been documented and shared with YSLME stakeholders. Moreover, a MPA Network Development Training Toolkit was developed and training was delivered. The project had plans to further socialize the toolkit in 2020, but the COVID-19 pandemic has prohibited moving forward with these activities.</p> | Moderately Satisfactory | |
| <p>Outcome 4.3: Adaptive management mainstreamed to enhance the resilience of the YSLME and reduce the vulnerability of coastal communities to climate change impacts on ecosystem processes & other threats identified in the TDA and SAP</p> <p>ICM has been mainstreamed into local development planning structures in 22 coastal cities, covering about 12% of the coastline of China, including the city of Lianyungang in Jiangsu Province, and in three cities along the coast of Bo Hai Sea. The ICM work in China has been made in cooperation with the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) since 2014. There was limited collaboration between the project and the ICM work in Lianyungang (missed opportunity).</p> <p>ICM in ROK is mandated through the Coastal Management Act, which stipulates that ICM plans need to be formulated every 10 years. The requirements were further elaborated in the Second Plan for Integrated Coastal Management. Among the 74 local governments in coastal areas, 46 (62%) have completed ICM plans.</p> <p>GEF additionality included a stock-taking report on the relationship between sea surface temperature changes of the YS Cold Water Mass (YSCWM) and the structure of plankton communities. Definitive conclusions were precluded due to the lack of taxonomy data from plankton samples and the need to conduct high-resolution biophysical modeling on plankton dynamics. A rating of moderately satisfactory is applied because of limited progress on incorporating climate change adaptation strategies incorporated in regional strategies, and of unspecified number of ICM plans in the end target.</p> <p>Other studies supported by the GEF funds included a vulnerability assessment of sea level rising in Dandong City, an impact assessment of sea level rising on wading birds in Dandong, and the effects of sea ice on the development of the Dandong coastal zone and marine species. These studies fed into the formulation of a model and database on marine vulnerability assessment for Dandong – providing important tools for improving resilience at the local and national levels.</p> | Moderately Satisfactory | |
| <p>Outcome 4.4: Application of Ecosystem-based Community Management (EBCM) in risk management plans to address climate variability and coastal disasters</p> <p>The project has made substantive contributions regarding continued dialogue, scientific exchanges, and development of monitoring programs, a Regional Jellyfish Monitoring Program and a Comprehensive Regional Monitoring System: Monitoring Strategies for Climate Change, N/P/Si Changes, HABs, and Jellyfish Blooms.</p> | Moderately Satisfactory | |

| Criteria | Rating | Comments |
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| | | These two programs have been discussed at the technical level by relevant stakeholders on multiple occasions; however, they have not yet been approved by the two countries, and it is unclear if there are commitments in place to further advocate for approval after the GEF project closes. Agreeing to common regional monitoring and data-sharing protocols is an important aspect of regional cooperation. |
| Efficiency | Moderately Satisfactory | <p>Project efficiency was affected by the 3-year delay in starting the project implementation and the time needed for the second PMO team to build back momentum. Approx. 63% of the GEF project grant has been expended in the last two years of the project, i.e., 2019-2020, and there has been limited time to gain approval of the various guidelines and strategies developed under the project. Updating the TDA and SAP as part of the agreement to grant the project no-cost, time extensions was an opportune decision; however, garnering support of a 10-year SAP takes time (it took 3 years to reach endorsement of the first SAP in the Phase I project). The COVID-19 pandemic has compounded the efforts of the project to deliver during the final year, when projects are often faced with finalizing a number of deliverables.</p> <p>The broad scope included in the project strategy presented implementation and quality challenges, i.e., the GEF resources were spread fairly thin across the thematic subject areas.</p> |
| Overall project outcome rating | Moderately Satisfactory | <p>Significant improvements were made during the second half of the project. The project remains high relevant at closure and the parties have accelerated discussions on reaching an agreement on regional governance arrangements. Shortcomings in project efficiency impact the overall project outcome rating, e.g., many activities were carried out in the last 1-2 years of the project implementation timeframe. There has been limited time to socialize some of the technical deliverables and to advocate for approval of regional conservation and monitoring strategies.</p> |
| 4. Sustainability | | |
| Financial sustainability | Likely | <p>There is a high likelihood that financial resources will continue to be available after GEF funding ends. National and subnational plans and programs for coastal and marine areas in China and ROK have been consistent with the priorities included in the 2009-2020 YSLME SAP. For example, the Government of ROK reported USD 6.89 billion of financing in the period of 2014-2020 for coastal and marine initiatives across the country. There have also been significant investments made by the Government of China, including USD 192 million of co-financing for the project.</p> <p>Sustainable financing options for a regional governance mechanism were assessed under the project and included an environmental trust fund, which was not adopted by the ICC and both countries conclude such a fund was not a suitable approach for the context of the YSLME. Over the short-term, utilizing existing technical cooperation structures for delivering secretariat related functions for the YSLME regional collaboration arrangement is being discussed as an option by the two countries.</p> <p>Other projects and initiatives further enhance the financial dimension of sustainability. For instance, the GEF-7 East Asian-Australian Flyway project (EAAFP) under development would advance regional cooperation on biodiversity conservation in the YSLME (and beyond). The YSLME littoral countries continue their involvement in complementary regional initiatives, including SDS-SEA, NOWPAP, NEAMPAN, etc. Under their Blue Plant fund, WWF China is operating a small grants program focused on coastal and marine issues, including in the YSLME.</p> |
| Socio-political sustainability | Moderately Likely | <p>Country ownership was high throughout the project. The Korean Ministry of Oceans and Fisheries (MOF) and the Ministry of Foreign Affairs have been consistently involved. In China, the main focal point was elevated during the Phase II project to a ministry level, through the establishment of the Ministry of Natural Resources (MNR), which is conducive to the need for integrated management of marine and terrestrial ecosystems.</p> <p>The key stakeholders that were involved in the project were largely from the scientific and technical community focused on fisheries and marine management. There was limited engagement with stakeholders associated with land-based pollution from production sectors or with subnational authorities responsible for coastal zone development.</p> <p>The project was successful in expanding stakeholder participation with involvement of civil society and the private sector. The small grants awarded on the project went only to Chinese NGOs; it would have been advisable to open the calls for proposals to Korean NGOs as well.</p> <p>High quality knowledge products and an active website containing extensive information enhance the likelihood of sustaining the results achieved by the project. There is a degree</p> |

| Criteria | Rating | Comments |
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| | | <p>of uncertainty on the likelihood that some of the guidelines and strategies will be advocated and replicated after project closure.</p> <p>The participation of DPRK, one of the littoral countries of the YSLME, was prohibited during the Phase II project as a result of international sanctions. Overall sustainability is diminished with the lack of involvement of DPRK, but this is beyond the control of the project stakeholders.</p> |
| Institutional framework and governance sustainability | Moderately Likely | <p>Whilst there has been sustained dialogue between the parties over the course of the project on the subject of establishing a regional YSLME governance structure, there remain uncertainties at project closure. The MOU that is under discussion significantly strengthens the prospects for achieving a cooperation arrangement, and the 2020-2030 SAP provides a blueprint for prioritizing regional actions.</p> <p>The functioning of the regional and national working groups on the project facilitated improved interaction and strengthened capacities of institutional partners. IMCCs convened periodically to ensure high level engagement and cross-sectoral cooperation; there is limited information on the results of the IMCC meetings and decisions.</p> <p>In both countries there are several individuals who have had extensive involvement, including engagement during the Phase I project, and are committed and motivated to further advance the processes of regional collaboration. It would be advisable to ensure those individuals remain engaged and encourage them to provide mentoring support to other staff members, including young professionals.</p> |
| Environmental sustainability | Moderately Likely | <p>The countries have made substantive progress towards controlling and reducing pollution to the YSLME, including investments in advanced and expanded wastewater treatment, improved agricultural and mariculture practices, better solid waste management (including marine litter), and adoption of ICM approaches. The Phase II project provided incremental benefits in facilitating dialogue on regional biodiversity conservation, including regional MPA networks, demonstrating reduced pollution through application of IMTA, demonstration of results achieved from restoring reclaimed areas to natural wetlands, supporting initiatives associated with reducing fishing vessels and updating licensing programs, and expanding the knowledge base on the impacts of pollution and climate change to the YSLME.</p> <p>Pollution and climate change related issues remain significant concerns. In fact, three of the emerging issues identified in the updated TDA are associated with pollution, i.e., air pollution from industrial emissions, marine plastics attributed to the overuse of plastics and inadequate control of marine litter, and contaminants of emerging concern that are related to sewage discharge. The findings of the updated TDA also point out worsening trends associated with changes in biomass and species composition, driven by pollution and regional climate change (warming, decreased pH levels).</p> |
| Overall likelihood of sustainability | Moderately Likely | <p>The project helped facilitate progress towards achieving a regional governance mechanism for the ecosystem-based management of the YSLME. The parties have not yet reached a formal agreement, but there has been accelerated dialogue in 2020 on reaching agreement on an MOU that outlines the parameters and next steps for a durable regional cooperation arrangement. The updated regional SAP (2020-2030) developed under the project provides a practical framework for orienting the priorities for regional collaboration over the short to medium term.</p> <p>Increased cooperation among the scientific and technical community was strengthened through the functioning of the national and regional working groups. And the Phase II project helped facilitate expanded stakeholder engagement, particularly among the civil society and private sector. There was limited engagement with stakeholders from production sectors and with stakeholders responsible for controlling and monitoring land-based pollution.</p> <p>Current threats to the YSLME are driven by uncoordinated management and inadequate control of pollution, including industrial emissions, agriculture and mariculture, sewage discharge, solid waste (particularly plastics). Strengthening ecosystem resilience, including improving disaster preparedness and upscaling local ICM plans into regional strategies that address ecosystem vulnerabilities to the predicted climate change scenarios. These aspects are included in the updated SAP that is under development; endorsement of the 2020-2030 SAP would enhance the likelihood that sustainable management of the YSLME will be achieved over the long-term.</p> |

RECOMMENDATIONS:

TE recommendations are presented below in **Table 3**.

Table 3: Recommendations table

| No. | Recommendation | Responsible Entities | Timeframe |
|-----|---|----------------------|-------------------------------------|
| 1. | A sustainability plan should be prepared prior to project closure. It would be advisable to prepare a sustainability plan that outlines the follow-up actions to ensure the durability of the results achieved. For example, endorsement of the updated SAP (2020-2030), approval of the MOU currently under discussion, transfer of project documentation including knowledge products, socialization of the MPA connectivity toolkit, advocacy strategy for engaging DPRK, etc., to the GEF IW:LEARN or other platforms. The sustainability plan should also include an analysis of the risks and opportunities associated with the COVID-19 pandemic. | PMO, UNDP | 2020 Q4 |
| 2. | Identify YSLME champions for sustaining the Yellow Sea Partnership. Specific individuals and/or organizations should be designated as YSLME champions, who agree to voluntarily facilitate and advocate for implementation of the sustainability plan, and to help sustain the YSP. | PMO, ICC | 2020 Q4 |
| 3. | Building upon the existing technical cooperation structures for the YSLME regional governance mechanism is sensible. Instituting the YSLME regional governance mechanism through an expanded mandate of existing technical cooperation arrangements would be a practical approach. There are minimal barriers with respect to cooperation among the scientific and technical communities and joint financing mechanisms are in place and could probably be upscaled fairly easily with limited additional administration. The cooperation could be incrementally expanded to other sectors, including governmental administration, civil society, private sector, etc. | ICC | 2020-2021 |
| 4. | A follow-up GEF project should focus more on regional issues and have a narrower scope. It is clear that the governments of China and ROK continue to invest substantial funds into improving environmental conditions of coastal and marine environments. The GEF additionality on an international waters project should focus more on regional activities that the littoral countries might not be addressing individually or bilaterally, and on emerging issues and innovative approaches. For example, collaborative total allowable catch (TAC) initiatives linked up with joint stock surveys is in line with the priorities outlined in the draft, updated SAP (2020-2030). Atmospheric particulate matter, marine litter, and microplastics are also issues that require more joint effort, as the impacts are increasingly seen across all trophic levels of marine ecosystems. | ICC, UNDP | Upon endorsement of the updated SAP |
| 5. | The Joint Fisheries Committee (JFC), associated with the 2001 Fishery Agreement between ROK and China, should be engaged in the ecosystem-based management of the YSLME. It is important to connect the production based decisions made by the JFC with stakeholders involved in management and conservation of fisheries and the ecosystems supporting them. | ICC | 1-2 years |
| 6. | Regional MPA initiatives offer opportunities for further strengthening joint collaboration. For instance, the members of the East Asian-Australian Flyway Partnership (EAAFP) include the YSLME littoral countries (as well as DPRK) and several international NGOs. There is a GEF-7 project currently under development with support of the UNDP. The YSLME countries are also participating in the North-East Asian Marine Protected Areas Network (NEAMPAN). Socializing the MPA Connectivity Toolkit among these other initiatives could be an effective way to advocate for the priorities highlighted under the Phase II project. | YSP, UNDP | Ongoing |
| 7. | Broaden stakeholder engagement among the agriculture and water resources management sectors. Engagement with these sectors is imperative for developing land-based pollution reduction strategies that consider the complex linkages between terrestrial, and marine ecosystems. | ICC, YSP | 1-2 years |
| 8. | Promote development of a regional integrated coastal management strategy that consolidates or clusters local level ICM plans. This is a viable entry point for cross-sectoral and regional collaboration, e.g., through development of joint early warning systems, sharing lessons learned and approaches. | ICC, YSP | 1-2 years |
| 9. | Strengthen regional NGO collaboration on innovative approaches, training, and public awareness. Regional NGOs can bring innovative knowledges and tools for addressing the challenges facing the YSLME. For example, the approach towards strengthening public awareness on the classification of marine litter could be more explored among regional NGOs, and developing more effective ways to share knowledge under relevant domestic circumstances. Overcoming the language barriers should also be included in the collaboration strategy, e.g., through training, interpretation tools, etc. | YSP | Ongoing |

LESSONS

Good practices and lessons learned on the project are presented below.

Good Practices:

- The mechanism of establishing RWGs across six thematic subjects was good practice for facilitating effective regional cooperation at the technical and political levels.
- Involvement of key stakeholders in the Phase I and Phase II projects helped maintain consistency and coherency on addressing the issues facing the YSLME
- Assigning specific coordination duties (e.g., facilitating review of the updated TDA and SAP) to the National Coordinator of NWG-G in China was a good practice in facilitating strong country ownership.
- Collaboration with other regional initiatives, e.g., SDS-SEA, NOWPAP, NEAMPAN, etc., was a good practice that enhances the likelihood that results achieved by the project will be sustained after project closure.
- The project website was regularly updated with a comprehensive set of information posted, providing a practical platform for knowledge and information transfer.
- Production of high-quality knowledge products, including videos, and utilization of the IW:LEARN platform enhance the effectiveness of knowledge management.
- Expanding stakeholder engagement among civil society organizations and private sector was a good practice at facilitating multi-stakeholder buy-in for conservation and sustainable production initiatives.

Lessons Learned:

- The project scope was too broad, presenting both implementation and quality challenges.
- The 4-year timeframe for project implementation was too short, considering the complex project strategy and the time typically required to facilitate transboundary water governance.
- The demonstration activities under Components 2 and 3 should have been more oriented towards regional cooperation.
- The project indicator framework was not fully validated during project preparation or at project inception, resulting in confusion on interpretation and reporting of some of the results of the project. Developing a detailed monitoring plan would have also benefitted project monitoring and evaluation.
- A stakeholder engagement plan was not prepared for the project. There were shortcomings in stakeholder engagement that might have been addressed through development of a stakeholder engagement plan.
- Interaction across the working groups would have helped facilitate better cross-sectoral, inter-sectoral, and regional coordination.
- Combining the Project Manager and CTA functions into one position was an under-estimation of the workload required for these two roles.
- A gender analysis and action plan should have been prepared at the project preparation phase (or at inception) to orient the gender mainstreaming strategy of the project.
- Social and environmental risks were not assessed in detail, and there were no safeguard plans developed for the project.
- The language barrier between Chinese and Korean stakeholders constrain engagement among some stakeholder groups. It would be advisable to ensure sufficient budget is allocated for adapting and overcoming this barrier.
- Cofinancing allocations should extend beyond project closure to cover follow-up actions. Allocation of cofinancing contributions should extend beyond the date of project closure, e.g., by 2-3 years, to cover the cost and oversight for follow-up actions.

Abbreviations and Acronyms

| | |
|---------|---|
| CBD | Convention on Biological Diversity |
| CI | Conservation International |
| CKJORC | China-Korea Joint Ocean Research Center |
| CN | People’s Republic of China |
| CO | Country Office |
| CPD | Country Programme Document |
| CPAP | Country Programme Action Plan |
| CPUE | Catch per unit effort |
| DPRK | Democratic People’s Republic of Korea |
| EAS | East Asian Seas |
| EBCM | Ecosystem-based community management |
| FAO | Food and Agriculture Organization of the United Nations |
| FIO | First Institute of Oceanography (China) |
| FYP | Five-Year Plan |
| GEF | Global Environment Facility |
| HABs | Harmful Algal Blooms |
| HNS | Hazardous and Noxious Substances |
| ICC | Interim Commission Council |
| ICM | Integrated Coastal Management |
| IMCC | Inter-ministerial Coordination Committee |
| IMTA | Integrated multi-trophic aquaculture |
| IUCN | International Union for Conservation of Nature |
| IW | International waters |
| KIOST | Korea Institute of Ocean Science and Technology |
| LME | Large marine ecosystem |
| M&E | Monitoring and Evaluation |
| MARA | Ministry of Agriculture and Rural Affairs (China) |
| MEE | Ministry of Ecology and Environment (China) |
| MER | Monitoring, Evaluation, and Reporting |
| MNR | Ministry of Natural Resources (China) |
| MOF | Ministry of Oceans and Fisheries (ROK) |
| MOU | Memorandum of Understanding |
| MPA | Marine Protected Area |
| MTR | Midterm Review |
| NCSEMC | North China Sea Environmental Monitoring Center |
| NEAMPAN | North-East Asian Marine Protected Areas Network |
| NGO | Non-Governmental Organization |
| NMEMC | National Marine Environmental Monitoring Center |
| NOWPAP | North West Pacific Action Plan |
| NSAP | National strategic action plan |
| NWG | National working group. NWG-F: Fisheries; NWG-M: Mariculture; NWG-H: Habitats; NWG-P: Pollution; NWG-A: Assessment; NWG-G: Sustainability (Finance and Governance). |
| PCA | Partner Cooperation Agreement |
| PEMSEA | Partnerships in Environmental Management for the Seas of East Asia |
| PIF | Project Identification Form |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
GEF Project ID: 4343; UNDP PIMS: 4552

| | |
|-------------|---|
| PIMS | Project Information Management System |
| PIR | Project Implementation Report |
| PM10, PM2.5 | Particulate matter (atmospheric), 10 micron and 2.5 micron diameter |
| PMO | Project Management Office |
| PMZ | Provisional Measures Zone |
| POPs | Persistent Organic Pollutants |
| PRF | Project Results Framework |
| ROK | Republic of Korea |
| RTA | Regional Technical Advisor |
| RWG | Regional working group. RWG-F: Fisheries; RWG-M: Mariculture; RWG-H: Habitats; RWG-P: Pollution; RWG-A: Assessment; RWG-G: Sustainability (Finance and Governance). |
| SAP | Strategic action programme |
| SDS-SEA | Sustainable Development Strategy for the Seas of East Asia |
| SOA | State Oceanic Administration (China) |
| TAC | Total Allowable Catch |
| TDA | Transboundary diagnostic analysis |
| TE | Terminal evaluation |
| TL | Trophic Level |
| TORs | Terms of References |
| UNCLOS | United Nations Convention on the Law of the Sea |
| UNDAF | United Nations Development Assistance Framework |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNOPS | United Nations Office for Project Services |
| USD | United States Dollar |
| WHO | World Health Organization |
| WWF | World Wide Fund for Nature |
| YS | Yellow Sea |
| YSCWM | Yellow Sea Cold Water Mass |
| YSESP | Yellow Sea Ecoregion Support Project |
| YSFRI | Yellow Sea Fisheries Research Institute (China) |
| YSLME | Yellow Sea large marine ecosystem |
| YSP | Yellow Sea Partnership |

1 Introduction

1.1 Purpose of Evaluation

The TE has the following complementary purposes:

- ✓ To promote accountability and transparency.
- ✓ To synthesize lessons that can help to improve the selection, design, and implementation of future UNDP-supported GEF-financed initiatives; and to improve the sustainability of benefits and aid in overall enhancement of UNDP programming.
- ✓ To assess and document project results, and the contribution of these results towards achieving GEF strategic objectives aimed at global environmental benefits.
- ✓ To gauge the extent of project convergence with other development priorities, including poverty alleviation, strengthening resilience to the impacts of climate change, reducing disaster risk and vulnerability, as well as cross-cutting issues such as gender equality, women's empowerment, and supporting human rights.

1.2 Evaluation Scope and Methodology

The overall approach and methodology of the evaluation follows the guidelines outlined in the following guidance documents:

- UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects, 2020
- Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects, Approved by the GEF IEO Director on 11th of April 2017

The TE was an evidence-based assessment, relying on feedback from individuals who have been involved in the design, implementation, and supervision of the project, review of available documents, findings of online stakeholder surveys, and findings of field visits to a representative number of project demonstration sites.

The timing of the TE coincided with the COVID-19 pandemic. As of 11 March 2020, the WHO declared COVID-19 a global pandemic as the new coronavirus rapidly spread to all regions of the world. International travel to China and ROK was restricted during this timeframe. As an adaptive management measure, stakeholder interviews were made on virtual platforms and an online survey was conducted to obtain direct feedback from YSLME fishers. Domestic travel restrictions were lifted during the timeframe of the TE and, hence, the national TE consultant carried out a field mission in September 2020 to project demonstration sites in Shandong Province.

The evaluation included following activities:

- ✓ As a data collection and analysis guidance tool, the evaluation matrix included as **Annex 1** was used to guide the evaluation. Evidence gathered during the evaluation was cross-checked among as many sources as practicable, to validate the findings.
- ✓ The TE team interviewed key project stakeholders. A list of interviewed people is included in **Annex 2**.
- ✓ A desk review was made of available reports and other documents, listed in **Annex 3**.
- ✓ The national consultant carried out a field mission to project demonstration sites in September 2020. The findings of the field mission are summarized in **Annex 4**.
- ✓ An online questionnaire survey was designed and carried out to obtain feedback from a representative set of participating fisherfolk. A total of 30 out of the 155 invited fisherfolk responded to the online survey; the questions and results of the survey are reported in **Annex 5** and interpreted throughout the main narrative sections of the TE report.
- ✓ The project results framework was used as an evaluation tool, in assessing attainment of the project objective and outcomes against indicators (see **Annex 6**).
- ✓ The TE team reviewed information regarding cofinancing realized throughout the duration of the project; the filled in cofinancing table is compiled in **Annex 7**.

1.3 Structure of the TE report

The TE report starts out with a description of the project, indicating the duration, main stakeholders, and the immediate and development objectives. The findings of the evaluation are broken down into the following three sections:

- Assessment of Project Design
- Assessment of Project Implementation
- Assessment of Project Results and Impacts

The assessment of project design focuses on how clear and practicable the project's objectives and components were formulated, and whether project outcomes were designed according to SMART criteria:

- **S: Specific:** Outcomes must use "change language", i.e., describing a specific end-of-project condition
- **M: Measurable:** Results, whether quantitative or qualitative, must have measurable indicators, making it possible to assess whether they were achieved or not
- **A: Achievable:** Results must be within the capacity of the partners to achieve
- **R: Relevant:** Results must make contributions to selected priorities of the national development framework
- **T: Time-bound:** Results are never open-ended. There should be an expected date of accomplishment.

The project design assessment covers whether capacities of the implementation partners were sufficiently considered when designing the project, and if partnership arrangements were identified and negotiated prior to project approval. An assessment of how assumptions and risks were considered in the development phase is also included.

The quality of project implementation and execution is evaluated and rated. This assessment considers whether there was adequate focus on results, looks at the level of support provided, quality of risk management, and the candor and realism represented in the annual reports.

In GEF terms, project results include direct project outputs, short- to medium-term outcomes, and longer-term impact, including global environmental benefits, replication efforts, and local effects. Project results were evaluated and rated according to effectiveness, relevance, efficiency, sustainability and progress towards impacts. Effectiveness refers to the extent to which the project objective and outcomes have been achieved or how likely it is to be achieved by project closure. The assessment of relevance looks at the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time. Relevance also considers the extent to which the project is in line with GEF operational programs and strategic priorities under which the project was funded. Efficiency is a measure of the extent to which results have been delivered with the least costly resources possible; also called cost effectiveness or efficacy. The efficiency assessment also examines compliance with respect to the incremental cost concept, i.e., the GEF funds were allocated for activities not supported under baseline conditions, with the goal of generating global environmental benefits.

Assessment of the sustainability addresses the likelihood that project results will be sustained after GEF funding ceases, with respect to financial resources, institutional frameworks and governance, socioeconomic considerations and environmental factors. Progress towards impact is an assessment of the project theory of change, i.e., how project results will lead to long-term impact, according to the assumptions made and estimated intermediate states.

The assessment of project M&E systems includes an evaluation of the appropriateness of the M&E plan, as well as a review of how the plan was implemented, e.g., compliance with progress and financial reporting requirements, how were adaptive measures taken in line with M&E findings, and management response to the recommendations from the midterm review.

The report concludes with a set of recommendations for reinforcing and following up on initial project benefits and a discussion of good practices and lessons learned which should be considered for development and implementation of other UNDP supported, GEF financed projects.

1.4 Ethics

The evaluation was conducted in accordance with the United Nations Evaluation Group (UNEG) Ethical Guidelines for Evaluators, and the TE team members have signed the Evaluation Consultant Code of Conduct Agreement form (see **Annex 8**).

1.5 Evaluation Ratings

The findings of the evaluation are compared against the targets set forth in the logical results framework and analyzed according to developments that occurred over the course of the project. The effectiveness and efficiency of project outcomes are rated according to the 6-point GEF scale, ranging from Highly Satisfactory (no shortcomings) to Highly Unsatisfactory (severe shortcomings). Monitoring & evaluation and execution of the implementing and executing agencies were also rated according to this scale. Relevance is evaluated to be either relevant or not relevant. Sustainability is rated according to the 4-point scale, ranging from Likely (negligible risks to the likelihood of continued benefits after the project ends) to Unlikely (severe risks that project outcomes will not be sustained). More detailed descriptions of the rating scales are compiled in **Annex 9**.

1.6 Audit Trail

As an “audit trail” of the evaluation process, review comments to the draft report will be compiled along with responses from the TE team as an annex separate from the TE report. Relevant modifications to the report will be incorporated into the final version of the TE report.

1.7 Limitations

The TE was carried out according to the Terms of Reference (**Annex 10**) and UNDP and GEF guidelines for terminal evaluations of GEF-financed projects. The methodology of the TE was adjusted in response to the international travel restrictions associated with the COVID-19 pandemic.

There were no significant limitations associated with language. The TE team consisted of an international consultant/team leader and a Chinese national consultant. Moreover, independent interpretation was provided to support the interviews with Chinese and Korean stakeholders.

Overall, the TE team concludes that the information and feedback obtained sufficiently captured the results achieved by the project and prospects for sustaining results after GEF funding ceases

2 Project Description

2.1 Project start and duration

Key project dates are listed below:

| | |
|---|------------------|
| Preparation Grant Approved: | 01 April 2013 |
| Project approved for implementation by GEF Secretariat: | 25 February 2014 |
| Project start (project document signed by Government of China): | 11 July 2014 |
| Project inception workshop: | 13 July 2017 |
| Midterm review: | March 2018 |
| Terminal evaluation | October 2020 |
| Project completion (revised): | 31 December 2020 |

The project preparation grant was approved in April 2013, and the project was approved for implementation by the GEF Secretariat less than a year later in February 2014. The Government of China signed the project document on 11 July 2014, which marked the official start of the project. The project inception workshop was held three years later, in July 2017. The midterm review was completed in March 2018 and the terminal evaluation report submitted in October 2020. The project completion date was revised to 31 December 2020, following two no-cost time extensions.

2.2 Development context

Five large coastal cities with tens of millions of inhabitants border the Yellow Sea: Qingdao, Dalian and Shanghai in the People's Republic of China (China); Seoul/Incheon in the Republic of Korea (ROK), and Pyongyang/Nampo in the Democratic People's Republic of Korea (DPRK). This population relies on the Yellow Sea LME's ecosystem carrying capacity" to provide such services as: provision of capture fisheries resources (in excess of two million tons per year) and mariculture (>14 million tons per year), the support of wildlife; provision of bathing beaches and tourism, and its capacity to absorb nutrients and other pollutants.

2.3 Problems that the project sought to address

As described in the Project Document, commercial use of the living marine resources of the Yellow Sea dates back several centuries. The introduction of the bottom trawl in the early twentieth century has intensified capture fisheries. This resulted in the rapid loss of economically important species such as the red sea bream by the 1930s. Fishing effort had increased threefold between the 1960s and early 1980s during which time the proportion of demersal species such as small and large yellow croakers, hair tail, flatfish and cod declined by more than 40% in terms of biomass.

About 100 species including cephalopods and crustaceans were commercially harvested but most species were not abundant. Only 23 species exceeded 10,000 metric tons which account for 40 to 60 percent of the total landings per annum. During the 1950's and early 1960s the dominant species were the small yellow croaker, and hair tail with mean body length of the catch exceeding 20 cm. Pacific herring, chub and Spanish mackerel became dominant in the 1970s and the mean body length of the catch had declined to 12 cm. In the 1980s smaller bodied, fast growing and short lived species such as the anchovy and scaled sardine dominated the catch with a consequent decline in the quality of the fisheries resources. Recently, even catches of anchovy have declined and have been replaced by sand lance species.

In 1978, China used an area of 148,000 ha for mariculture and had expanded to 540,000 ha by 1997. The yield of flesh from bivalves in 1978 was 200,000 metric tons or 44% of the mariculture yield, in 1997 this had risen to 300,000 metric tons. Scallops, sea cucumbers and mussels dominate production in China while the dominant species in ROK were oysters, 20% of production and mussels, 6% of production. A variety of other species including abalone, short-necked clam, hard clam, ark and pen shells and hen calms were cultivated in various areas of both countries.

Seaweeds are an important crop in the Yellow Sea but some of the species such as *Pelvetiasiliquosa* (deer horn seaweed) which was historically exported in large quantities from ROK to China have declined in abundance and been replaced by other species. The most important cultivated seaweed in China is the brown alga, *Laminaria japonica*, introduced from Japan. This is now grown in more than 3,000 ha with a production of 10,000 dry tons per year. Half of this is consumed directly and half is used in the production of alginates.

The semi-enclosed nature of the Yellow Sea and the rapid economic development of the surrounding area have resulted in an increasingly polluted and over-exploited sea. This large marine ecosystem (LME) faces major transboundary problems. These are: 1) a dramatic increase in fisheries landings that has grown from 400,000 metric tons to 2.3 million metric tons in the past 20 years; 2) increasing discharge of pollutants; 3) changes to ecosystem structure and function leading to an increase in jellyfish and harmful algal blooms; and 4) 40% loss of coastal wetlands from reclamation and conversion projects representing a major loss of habitat for many species resulting in a significant degradation of biological diversity. On top of these immediate threats are the potential impacts of climate change and sea level rise, in particular, changes in basin circulation and the extent of the Yellow Sea “warm pool”.

2.4 Immediate and development objectives of the project

The project was designed to build upon the regional cooperation for the sustainable use of the Yellow Sea Large Marine Ecosystem (YSLME) put in place by People’s Republic of China (China) and the Republic of Korea (ROK), supported by the Democratic People’s Republic of Korea (DPRK), the Yellow Sea Partnership, and the Global Environment Facility (GEF). The initial project (Phase I), implemented over the period of 2004-2011, completed a regional Transboundary Diagnostic Analysis (TDA) and finalized a regional Strategic Action Programme (SAP) for the period of 2009-2020.

The project objective was to foster long-term sustainable institutional, policy, and financial arrangements for effective ecosystem-based management of the YSLME. To achieve this objective, the project strategy included supporting the formation of an YSLME Commission that will oversee the implementation of the SAP, and supporting the littoral states’ efforts to reduce the decline in biological resources and to restore depleted fish stocks in this large marine ecosystem.

2.5 Expected results

Critical to the achievement of the long term development and environmental goals is the development of a strong capacity for ecosystem based management of the Yellow Sea and its associated resources. A substantial proportion of the project’s activities are directed towards achieving this capacity.

The expected results under the project were directly tied to the 2009-2020 YSLME SAP, which defined tangible management targets, e.g., reducing up to 30% fishing boats, reducing 10% nutrient discharge every 5 years, and sustainable mariculture. The successful implementation of the management actions to achieve these targets will definitely assist in the recovery of fishery resources, sustainable provision of healthy food and living environment to large population living in the coastal areas of the Yellow Sea.

2.6 Management arrangements

The GEF International Waters focal area project was approved under the GEF-5 replenishment cycle through an agency implementation modality, supported by the UNDP as the GEF implementing agency and UNOPS as the executing agency. Financial management of the GEF grant is the responsibility of UNOPS, which manages the funds in accordance with UNOPS financial rules and regulations, monitor expenditures, and maintains fiscal oversight of all expenditures. Activities in ROK have been financed through the national budget and funds are managed in accordance with the governmental financial rules and regulations.

The Yellow Sea LME Interim Commission Council (ICC) served as the Project Board (with the participating countries, UNDP and UNOPS as members) responsible for making management decisions for the project in particular when guidance is required by the Project Manager. The indicative structure of the ICC presented in the Project Document is shown below in **Figure 1**.

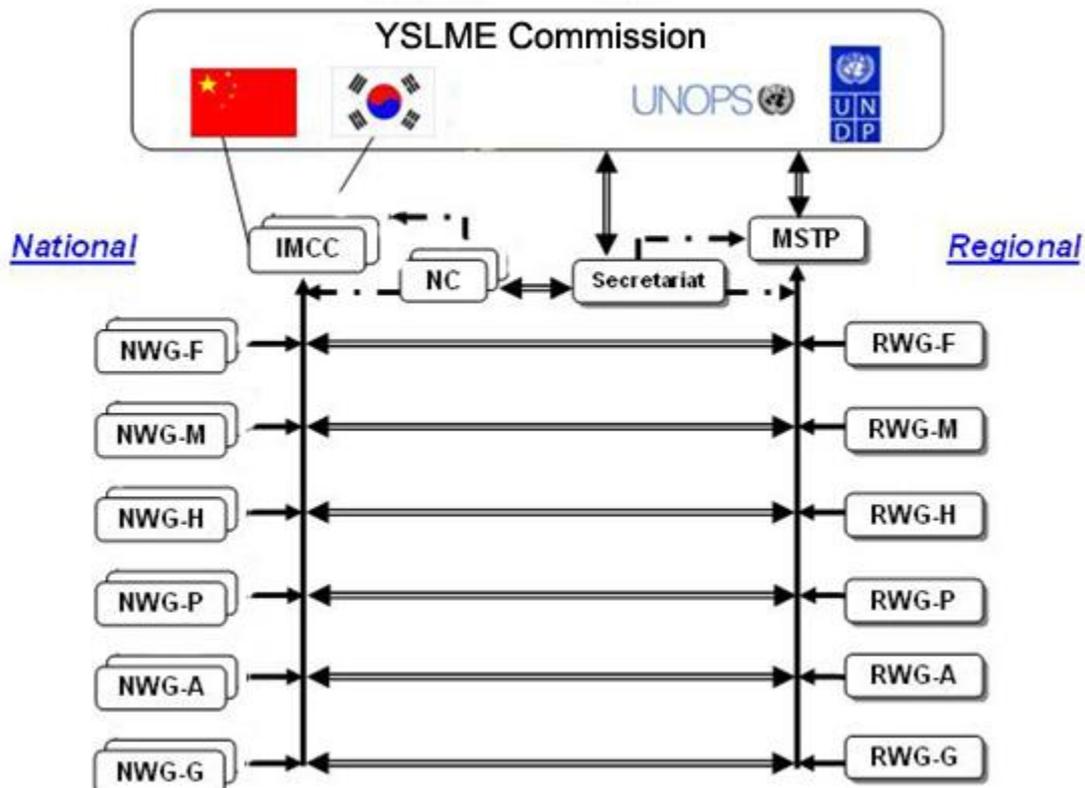


Figure 1: Organizational structure of the Interim Commission Council²

The project strategy indicates that the ICC was expected to meet annually and serve as the supreme body responsible for joint policy development, implementation of the SAP and oversight of the UNDP-GEF project execution. The Management, Science and Technical Panel (MSTP) would meet annually and the Regional Working Groups (RWGs)³ will meet as required to execute their responsibilities as defined by the Commission. The reports of all meetings would be made publicly available through the Yellow Sea LME website. The website would also serve as a repository for regional environmental data and information and will be interactive, allowing partners to up-load data and information as appropriate.

2.7 Main stakeholders

The central governments of the two participating countries are the most important stakeholders since the project sought to establish and strengthen the regional governance regime with respect to the protection and conservation of the Yellow Sea's ecosystem. The role of each of the central governments of the participating countries has been important in the past in promoting regional approaches.

This project marks the second phase of GEF financial support to the Yellow Sea under the International Waters focal area. The Phase II project envisaged a change in focus and a change in the stakeholder mix of the project itself. By focusing on the problems of depleted fisheries and conservation of biodiversity, this project design placed more of an emphasis on sustainable development. The stakeholder analysis also highlighted the critical importance of regional governance where the most important stakeholder groups are the Ministries responsible for foreign affairs, maritime affairs, environmental protection, natural resource management, and fisheries in each country.

2.8 Theory of change

For the purposes of contextualizing and orienting the TE, the TE team constructed a generalized theory of change for the project (see Figure 2) based upon the project strategy, the causal chain analysis included in the 2020 TDA, and the draft updated SAP (2020-2030).

² Source: CEO Endorsement Request

³ RWG's and NWG's were broken down as follows: A: Assessment; G: Governance; H: Habitat; F: Fisheries; M: Mariculture; P: Pollution

The threats facing the YSLME are multiple and complex. As a result of years of overfishing of commercially valuable species and uncontrolled pollution, both from point and non-point sources, there has been changes in biomass and species composition. This has been exacerbated by regional climate change impacts, including increasing sea surface temperatures and acidification. The expansion of mariculture and a lack of consistent management practices influencing the nutrient cycle and the increased eutrophication and contributing towards harmful algal blooms (HABs) and jellyfish blooms. Land-based sources of pollution are also significant stressors to the coastal and marine ecosystems. Significant economic development in China and ROK in the past 20-30 years has been accompanied with increases of industrial emissions, discharges of sewage, runoff from agricultural lands where fertilizer use has intensified, and inadequate solid waste management, particularly related to plastics. Three of the emerging issues identified in the 2020 TDA include air pollution (particulate matter PM10 and PM2.5) from emissions from industry, marine litter and microplastics, and contaminants of emerging concern. Loss of habitat and modification of coastal ecosystems through reclamation and other development activities have resulted in biodiversity loss and reduced resilience to withstand disasters and the impacts of climate change.

The design of the Phase II project addressed the barriers hindering adoption of a regional, ecosystem-based approach towards the sustainable management of the YSLME and was directly aligned with the priorities outlined in the 2009-2020 SAP. Component 1 addressed the need for strengthening regional cooperation and enhancing inter-sectoral coordination to tackle the multi-faceted ecosystem threats. Building upon the momentum gained during the Phase I project, GEF resources were allocated to advance the process of forming a durable regional governance mechanism and strengthen and expand stakeholder involvement. The focus of Component 2 was on improving ecosystem carrying capacity with respect to provisioning services, specifically fisheries. The GEF alternative was rooted in the importance of adopting an ecosystem-based approach to fisheries and the recognition that recovering and sustaining fish stocks requires a joint regional strategy. Promoting sustainable mariculture practices is an integral part of the strategy, as the vast reach of mariculture installations have prompted regional level concerns. Addressing land-based pollution was the aim of the interventions delivered under Component 3, with funds allocated to disseminate innovation into ecological engineering approaches such as constructed wetlands, raise community awareness on marine litter, and enhance regional coordination on reducing and controlling microplastics. Component 4 focused on regional cooperation regarding biodiversity conservation and addressing vulnerability to climate change, including strengthened connectivity of marine protected areas (MPAs) in the YSLME, expanding involvement of the civil society, and enhancing joint monitoring and sharing of information.

GEF funding is meant to be catalytic, feeding into national initiatives, strengthening regional cooperation towards safeguarding and generating global environmental benefits in the YSLME. Achieving sustainable management of the YSLME will require time and there are a number of assumptions and impact drivers that influence further progress towards longer term outcomes, e.g., as outlined in the updated SAP (2020-2030) and eventual, systemic change and impact. An important assumption is that political and financial commitments for regional cooperation are durable and that national policies continue to be consistent with priorities of the YSLME. The project theory of change also includes an assumption that there is sufficient stakeholder buy-in for applying an ecosystem-based approach to fisheries on a regional scale, and the parties support joint surveys and share information to facilitate that process. Achieving certification of fisheries will partly be driven by consumer demand and willingness to pay for sustainable production, and it is important that sustainable options are attractive to fishers and mariculture operators. There needs to be appropriate regulatory and incentive frameworks in place to ensure broader uptake of best management practices. Continued increase in public awareness will also drive demands on controlling pollution and ensuring conservation objectives are fulfilled. The exchange of information is critical in facilitating improvements across the YSLME, e.g., adaptive management measures depend on feedback from regional monitoring efforts. With respect to biodiversity conservation, multi-stakeholder endorsement of regional strategies will facilitate progress, i.e., apart from governmental stakeholders, the civil society and private sector have important roles in terms of community engagement, introducing innovation, and sustainable financing. Strengthening resilience of coastal ecosystems and communities will likely continue at the local level, e.g., through further adoption of integrated coastal management (ICM). Through regional cooperation approaches, such as clustering, these local efforts can lead ecosystem scale management, supported by joint early warning systems and other collaborative mechanisms.

Project Objective: To achieve adaptive ecosystem-based management of the Yellow Sea Large Marine Ecosystem by fostering long-term sustainable institutional, policy, and financial arrangements for effective ecosystem-based management of the Yellow Sea in accordance with the YSLME Strategic Action Programme

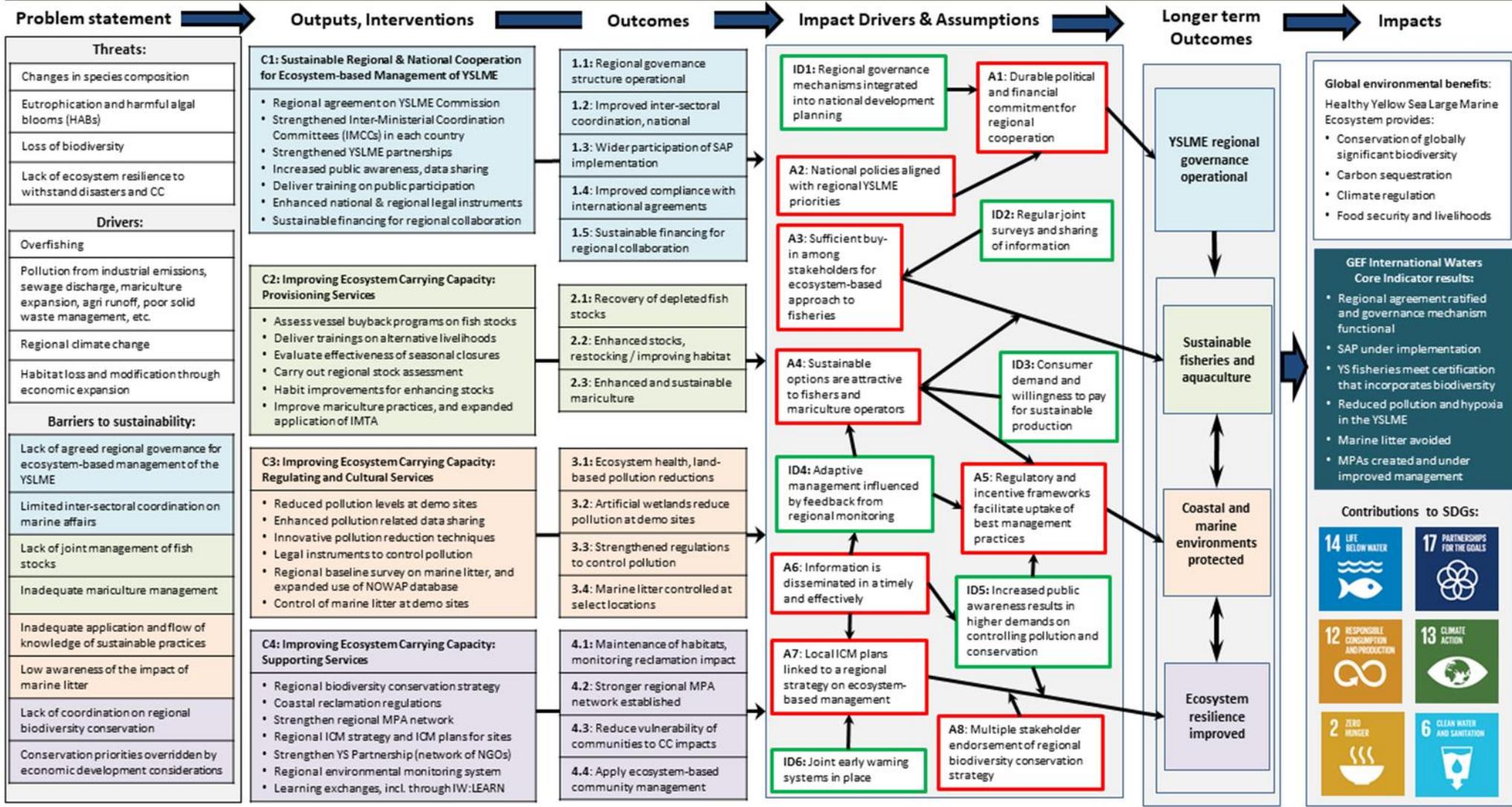


Figure 2: Project theory of change

3 Findings

3.1 Project design / formulation

The project design as aligned to the priorities agreed to in the 2009-2020 SAP, with a focus on facilitating further progress towards establishment of a regional governance mechanism in Component 2, reducing pressures on fisheries in Component 2, addressing the threats associated with pollution in Component 3, and strengthening the conservation of critical coastal and marine habitats in Component 4.

The broad scope of the project presented implementation challenges. The number of planned activities was somewhat reduced in response to one of the midterm review recommendations, but the overall strategy remained extensive, with the GEF resources spread fairly thin across the thematic subject areas. Moreover, the project activities under Components 2 and 3 were primarily centered in China. This is somewhat understandable, as ROK is not a recipient country of GEF funds, but as an IW project, the strategy could have better emphasized issues and activities that promote regional cooperation. The two countries are independently making substantial investments on domestic improvements.

There were a few monitoring and evaluation shortcomings in the project design, including some baseline conditions not being validated, unclear baseline and end targets, and not specifically describing the means of verification for some of the metrics in the project results framework.

With respect to the management arrangements aspects of the project design, combining the functions of Chief Technical Advisor and Project Manager into one position was an under-estimation of the required workload for this complex project, requiring extensive stakeholder engagement and guidance on a wide variety of thematic subjects.

3.1.1 Analysis of results framework

As part of the TE, the project results framework for the project was assessed against “SMART” criteria, to evaluate whether the indicators and targets were sufficiently specific, measurable, achievable, relevant, and time-bound. With respect to the time-bound criterion, all targets are assumed compliant, as they are set as end-of-project performance metrics. The project results framework was found to be generally SMART-compliant, apart from the issues outlined below in **Table 4**.

Table 4: SMART analysis of project results framework

| Indicator | Baseline | End-of-Project target | MTR SMART analysis | | | | | Comments / analysis |
|--|---|---|--------------------|---|---|---|---|---|
| | | | S | M | A | R | T | |
| 1. Status of YSLME Commission and subsidiary bodies at regional level | Ad hoc regional co-ordination through the YSLME Regional Project Board and weak cross sector management at the national level | All the Terms of Reference for the YSLME Commission and Subsidiary Bodies approved by all participating country governments | Y | Y | Y | Y | Y | SMART compliant. |
| | | Functioning YSLME Commission | Y | Y | Y | Y | Y | SMART compliant. |
| 2. Status of Inter-Ministerial Coordinating Committee (IMCC) | Sector management has been the normal arrangements with limited inter-sector or inter-ministerial interactions; where coordination was done, it was on a case by case such as fishery management activities | Participation of Ministries in the IMCC will include but not limited to the following: Ministry of Foreign Affairs, Ministry of Finance, relevant department or Ministry of Ocean & Fishery, and Environment. | Y | Y | Y | Q | Y | This sub-target seems more appropriate for the terms of reference of the IMCC. |
| | | Two meetings of IMCC every year and functioning coordination | Y | Y | Y | Y | Y | SMART compliant. |
| 3. Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities | 20 members of the Yellow Sea Partnership | Number of partnerships: 40 Number of capacity building activities: 25 Number of public awareness initiatives: 15 Number of participants in capacity building activities: about 200 Number of partnerships: 40 | Y | Y | Y | Q | Y | This indicator is more appropriate at the output level rather than the outcome level. A more relevant indicator might have been linked to the sustainability of the Yellow Sea Partnership. |

Terminal Evaluation Report

 EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

| Indicator | Baseline | End-of-Project target | MTR SMART analysis | | | | | Comments / analysis |
|--|--|---|--------------------|---|---|---|---|--|
| | | | S | M | A | R | T | |
| 4. Status of recognition and compliance to regional and international treaties and agreements | Regional and international treaties and agreements are recognized by China, but not fully compliant | Better compliance of the relevant regional and international treaties and agreement e.g. UNCLOS, The1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, CBD, Ramsar, The FAO Code of Conduct for Responsible Fisheries, and the bilateral agreements between China & ROK on environment protection and fisheries | Q | Q | Q | Y | Y | The term "better compliance" is not specific and, therefore difficult to measure, rendering the achievability questionable. |
| 5. Agreement on the financial arrangement for the YSLME Commission | YSLME Commission does not exist at start of project | Financing agreement between and among countries agreed to fully support YSLME for at least 5 years. | Y | Y | Y | Y | Y | SMART compliant. |
| 6. Number of fishing boats decommissioned from the fleet in YSLME waters | About 1.2 million fishing boats | Fishing boat numbers substantially reduced by 10%, in line with the 2020 target of 30% reduction. | Q | Q | Q | Y | Y | Baseline was not validated; unclear if entire YSLME was the focus, or specific provinces. |
| 7. Status of major commercially important fish stock from restocking and habitat improvement | Effectiveness of restocking and habitat protection not evaluated | Measurable improvement (5%) in standing stock and catch per unit effort | Q | Q | Q | Y | Y | Baseline figures not defined. |
| | | Future management decisions on restocking based on effectiveness | Q | Q | Q | Y | Y | The end target is not specific. |
| 8. Type of mariculture production technology Level of pollutant discharge from mariculture operations | Declining quality of mariculture products Declining quantity of production per unit area from mariculture Environmental impacts of mariculture not evaluated | Reduction of contaminants caused by mariculture production (5% reduction in the demo sites) Measurable increase (5% increase in the demo sites) in mariculture production per unit area Discharge of nutrient and other discharges from mariculture installations reduce 5% | Q | Q | Q | Y | Y | The timeframes associated with the end targets were not defined, and baseline conditions were not defined at project start. |
| 9. Level of pollutant discharges particularly Nitrogen in YSLME tributaries | Discharge reductions do not meet the regional target | 10% reductions in N discharges every 5 years | Q | Q | Q | Y | Y | This is an ambitious indicator; the geographic scope of the end target is unclear; baseline year and conditions also unclear. |
| 10. Types of technologies applied for pollution reduction | Some innovations such as man-made wetlands are being undertaken nationally but without regional coordination or dissemination of results | Successful demonstration of use of artificial wetlands in pollution control in 1 sites and replicated in about 2 coastal municipalities and local government units | Y | Y | Y | Q | Y | Wetland restorations at the demo sites mainly improved habitats and strengthened coastal ecosystem resilience. |
| 11. Status of legal and regulatory process to control pollution | Weak legal and regulatory framework to control pollution in provinces bordering in the YSLME | Develop evaluation tools, in the first year, to assist in harmonizing national and provincial legislation to improve coastal water quality in Shandong, Jiangsu and Liaoning provinces | N | Q | Q | Q | Y | The specifics of the envisaged evaluation tools are unclear – and remained unclear throughout the project implementation. Uncertain whether this indicator was a relevant indicator for the project. |
| 12. Status of the control of marine litter at selected locations | Due to a lack of appreciation of the problem little action is currently being undertaken | Regional Guidelines on control of marine litter based on those initiated by NOWPAP produced and adopted for use in the Yellow Sea | Y | Y | Y | Y | Y | The project design was formulated in 2012-2013 and implementation essentially started in 2017. Significant national resources have been invested on marine litter and there was an increased understanding of emerging issues, such as microplastics during this time period. It |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
GEF Project ID: 4343; UNDP PIMS: 4552

| Indicator | Baseline | End-of-Project target | MTR SMART analysis | | | | | Comments / analysis |
|--|--|--|--------------------|---|---|---|---|--|
| | | | S | M | A | R | T | |
| | | | | | | | | would have been advisable to reconsider the end targets for this indicator, based on the circumstances at project inception, i.e., 2017. |
| 13. Areas of critical habitats; Status of mitigation of reclamation impacts | Coastal habitats critical to maintaining ecosystem services continue to be converted or reclaimed unchecked | Areas of critical habitats maintained at current level. Increase 3% total areas as MPAs | Q | Q | Q | Y | Y | Baseline conditions not clearly defined (or updated at project inception). |
| | | Impacts of reclamation prepared in 2 demo sites | Q | Q | Q | Y | Y | The focus of this end target would have been better oriented towards dissemination and uptake of best practices. |
| 14. Level of ecological connectivity in expansion of the Yellow Sea MPA system | The planned expansion of the MPA system currently does not take into account ecological connectivity | The planned expansion of the MPA system currently does take into account ecological connectivity (measured by use of developed connectivity tool kit or other means) | Y | Y | Y | Y | Y | SMART compliant. |
| 15. Inadequate considerations are being given to the impacts of climate change | Inadequate considerations are being given to the impacts of climate change | CC adaptation strategies incorporated in regional strategies such as YSCWM and plankton communities | Q | Q | Q | Y | Y | Phrasing of the end target was unspecific, in terms of numbers of strategies. |
| | | ICM plans in (specify number) coastal communities incorporate CC adaptation to improve climate resilience | N | Q | Q | Y | Y | The number of ICM plans in the end target was not specified. |
| 16. Status of Regional Monitoring Network for application of ECBM | National Monitoring will continue without regional linkages and harmonization making regional analyses difficult or impossible | Agreed number of cruises & parameters for the regional monitoring network established and data shared regionally via the project web site. | Q | Q | Q | Y | Y | End target lacks specifics. |
| | | Regular LME-wide assessments; enhanced information exchange; | Q | Q | Q | Y | Y | End target lacks specifics. |
| | | Periodic scenarios of ecosystem change | Q | Q | Q | Y | Y | End target lacks specifics. |
| SMART: Specific, Measurable, Achievable, Relevant, Time-Bound Green: SMART criteria compliant; Yellow: observation noted regarding SMART criteria; Red: not compliant with SMART criteria | | | | | | | | |

3.1.2 Assumptions and risks

Twelve (12) risks were identified in the project design and assessed for probability of occurrence and potential impact to implementation. A number of the risks were associated with possible unwillingness for stakeholders to participate, to make formal commitments, or to share information. Mitigating measures and management responses to these and the other risks considered were limited in detail, e.g., indicating that the “PMO to encourage stakeholders to participate”. Possible geopolitical risks affecting the participation of one or more of the littoral countries was included in the risk assessment; there were no mitigating measures indicating, stating that “potential countermeasures are beyond the competency of project management”. The same comment was made for the risk of possible government policy changes, making fishing vessel buy-back a low priority.

Other external risks, such as climate change, were not included in the project risk assessment.

3.1.3 Gender responsiveness and social and environmental safeguards

A gender analysis and action plan were not prepared at the project preparation phase or during implementation. Gender mainstreaming was mentioned under the description of one of the outputs, specifically Output 2.1.2 (Provision of alternative livelihoods to fisherfolks taking into account the contribution of women), but there were no targeted metrics established to assess involvement of or benefits to women.

The available version of the social and environmental risk screening (Annex 5 to the project document) was undated and not signed. For Question No. 3 in the screening (Does the proposed project include activities and outputs that support upstream planning processes that potentially pose environmental and social impacts or are vulnerable to

environmental and social change), the response was “No”. The response to potential upstream impacts should have been “Yes”, and social and environmental safeguards should have been more elaborated in the project design.

3.1.4 Planned stakeholder participation

The project design reflected the need to expand stakeholder engagement during the Phase II project. Apart from the central governmental ministries, provincial and municipal governments have jurisdiction over various aspects of coastal land and water use, planning, licensing, and enforcement of local regulations and standards. The stakeholder analysis included in the Project Document discussed the significance of these stakeholders, but there was no specific stakeholder engagement strategy formulated, identifying how they would be involved.

The design also included mention of the need to strengthen partnerships with existing regional cooperative institutions, including bilateral cooperation mechanisms such as the Joint Committee on Environmental Cooperation, the Joint Fisheries Commission, China-Korea Joint Ocean Research Center (CKJORC) and further strengthening the current Yellow Sea Partnership (YSP).

International NGOs such as WWF and local civil society organizations, as well as private sector groups such as mariculture associations were identified as important stakeholder groups, particularly during implementation of the SAP.

The coastal communities are stakeholders and direct beneficiaries, i.e., deriving benefits from the various services of the coastal and marine ecosystems. (e.g., fishing, agriculture, mariculture, tourism, etc.). Local communities were envisaged to be involved in activities associated with the demonstration sites in Components 2, 3, and 4.

The scientific and academic communities were actively involved during the Phase I project, conducting regional analyses and providing scientific and technical advice. It was anticipated that these institutions and individuals would continue to provide such functions in the implementation of the Phase II project, including providing advisory support to the ICC.

3.1.5 Lessons from other relevant projects

The GEF portfolio of International Waters (IW) projects includes a wealth of best practices and lessons that are shared through regular meetings and the IW online knowledge management platform IW:LEARN. The Project Document indicates that the project is designed to incorporate lessons from other GEF IW projects, such as the Benguela Current LME, Environmental Protection of the Rio de la Plata, and the Black Sea LME – but the specific lessons were not described.

3.1.6 Linkages between project and other interventions

The project design clearly articulates linkages with other interventions in the region, including the following:

- The partnerships and MOU between the Phase I project of YSLME and PEMSEA were formulated to develop and facilitate the cooperation and coordination between the two projects in the context of the UNDP/GEF East Asian Seas (EAS) Program Framework Document (PFD), as well as the SDS/SEA.
- UNEP Regional Seas Programme, particularly the North West Pacific Action Plan (NOWPAP).
- WWF’s Yellow Sea Ecoregion Support Project (YSESP).
- Earlier implementation of the ballast water demonstration project in Dalian, as part of the global program implemented by the International Maritime Organization (IMO).

3.1.7 Replication approach

The project design incorporates a strong replication approach. The GEF resources were designed to provide incremental value to national financing commitments, facilitating regional collaboration, sharing of experiences, and uptake of best practices. And implementation of YSLME 2009-2020 SAP was also envisaged to assist the implementation of the “Sustainable Development Strategies for the Seas of the East Asia (SDS-SEA)” at the sub-regional level.

The regional working groups (RWGs) were highlighted as important vehicles for facilitating replication, transferring lessons and sharing experiences among key stakeholders representing the two littoral countries.

3.2 Project implementation

3.2.1 Adaptive management

As part of the agreement to grant two separate, no-cost time extensions for the project, an updated TDA and SAP were completed. These were significant and timely achievements, as the 2009-2020 SAP extended to the last year of the project (2020), thus the updated SAP, covering the period of 2020-2030 provides well-timed support to the MOU under negotiation on regional governance.

The current PMO team did a good job at making up time lost as a result of the delay in initiating the project implementation. Timely adjustments were made in response to the midterm review recommendations, including reducing the number of overall activities and shifting more funding into the small grants mechanism on the project, allowing broader participation of the civil society sector. More frequent project meetings were held with UNDP and UNOPS to increase delivery of project outputs, and the MNR assigned a senior official to serve as team leader in coordinating the update of the TDA and SAP. Project resources were also reallocated to shore up the PMO team, including hiring of interns.

The decision to use PCAs in lieu of contracts with multiple organizations and individuals was a constructive adaptive management measure. The cumulative value of the four PCAs executed with the Yellow Sea Fisheries Research Institute (YSFRI), the First Institute of Oceanography (FIO), the National Marine Environmental Monitoring Center (NMEMC), and the North China Sea Environmental Monitoring Center (NCSEMC) was approx. USD 2 million, which is a bit more than 25% of the USD 7.56 million GEF project grant.

The constraints imposed in response to the COVID-19 pandemic starting in early 2020 presented significant disruptions to the implementation strategy for the remainder of this final year of the project. Adaptive management measures were implemented, including convening virtual meetings and trainings, but restrictions on organizing gatherings of people have impacted the effectiveness of stakeholder engagement and discussions on regional cooperation arrangements.

3.2.2 Actual stakeholder participation and partnership arrangements

Regional stakeholder engagement was further strengthened during Phase II, facilitated by the six RWGs: RWG-F: Fisheries; RWG-M: Mariculture; RWG-H: Habitats; RWG-P: Pollution; RWG-A: Assessment; RWG-G: Sustainability (Finance and Governance). The counterpart national working groups (NWGs) provided platforms for enhancing stakeholder collaboration at the domestic level.

Over the approximate 3-year period from July 2017 until May 2020, the project has organized 57 stakeholder events, including meetings, workshops, seminars, trainings, etc., with a reported cumulative total of 1,845 people participating, of whom 30% were women.

The key stakeholders involved on the project largely carried over from those participating during the Phase I project. Consistent with the GEF IW focal area strategic approach, Phase I projects typically have a strong engagement with the scientific community, leading the collaborative TDA process. The focus of the Phase II project was on implementation of the priority actions in the SAP – often requiring an expanded set of stakeholders. Actual stakeholder engagement had shortcomings in capturing this need for broader stakeholder involvement, including for example MARA, MEE, and provincial authorities in China, and subnational authorities and development agencies in ROK.

Through the small-grants mechanism, the project facilitated meaningful engagement among local Chinese NGOs and research institutions. A total of seven (7) grants were awarded, ranging in value from USD 39,778 to USD 100,000, with a cumulative value of USD 478,767. Some of the activities implemented through these grants were focused in strengthening regional collaboration among civil society organizations. It would have been advisable to have also offered the opportunity to Korean NGOs to participate in the call for proposals.

The project has also engaged the private sector, particularly regarding mariculture. GEF funds allocated to support the analysis of the performance and environmental conditions of integrated multi-trophic aquaculture (IMTA), partnerships were established with individual enterprises and business associations. Such partnerships are important for securing multi-stakeholder buy-in for sustainable production practices.

The project endeavored to strengthen the YSP, an alliance established during the Phase I project and consisting of international and domestic NGOs, complementary regional programmes, such as the UNEP Regional Seas Programme, particularly the NOWPAP, and national institutions. Members of the YSP participated in many of the project meetings and events, and project progress reports indicate that guidelines were developed and that the PMO acted as the

secretariat. The 2018 Communications and Awareness Raising Strategy for the project does not mention the role of the YSP. The sustainability of the YSP is questionable following project closure.

3.2.3 Project finance and co-finance

Project Finance:

Based on information contained in the UNDP combined delivery reports (CDRs), cumulative expenditures against the GEF project grant between the start of the project in 2014 and 10 November 2020 are USD 7,450,419, indicating a balance of USD 611,003 of the USD 7,562,430 grant (see **Table 5**).

Table 5: Actual expenditures, 2014 through 10 November 2020

| Outcome | Actual Expenditures, 2014 through June 2020 (USD) | | | | | | | | Indicative Prodoc Budget |
|--------------------|---|----------------|----------------|----------------|------------------|------------------|------------------|------------------|-----------------------------|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020* | Total | |
| Component 1 | 0 | 202,534 | 75,441 | 31,983 | 377,664 | 1,398,018 | 818,604 | 2,904,243 | 1,970,043 |
| Component 2 | 0 | 1,590 | 4 | 381,135 | 857,271 | 159,978 | 23,716 | 1,423,694 | 1,437,606 |
| Component 3 | 0 | 1,469 | 10,382 | 550 | 0 | 765,785 | 0 | 778,186 | 1,155,411 |
| Component 4 | 0 | 5,072 | 4 | 100,387 | 139,805 | 1,007,544 | 470,403 | 1,723,215 | 2,621,370 |
| Sub-total | 0 | 210,664 | 85,831 | 514,055 | 1,374,740 | 3,331,324 | 1,312,722 | 6,829,337 | 7,184,430 |
| Project Management | 33,392 | 8,620 | 83,605 | 89,854 | 393,836 | 11,775 | 0 | 621,082 | 378,000 |
| TOTAL | 33,392 | 219,284 | 169,436 | 603,909 | 1,768,576 | 3,343,100 | 1,312,722 | 7,450,419 | 7,562,430 |

Figures in USD

Source of budget figures: approved Project Document

Source of expenditures: Combined Delivery Reports (CDR), provided by UNDP

*2020 expenditures reported on a 10 November dated CDR.

Spending across the project components deviate from the indicative budget in the Project Document to varying degrees. Expenditures under Component 1 through 10 November 2020, were USD 2,904,243, or approx. 47% more than the USD 1,970,043 indicative allocation. Component 2 expenditures through 10 November 2020 roughly match the USD 1,437,606 indicative budget. Expenditures under Components 3 and 4 through 10 November 2020 were USD 778,186 and USD 1,723,215, or approx. 67% and 66% of the indicative budgets of 1,155,411 and 2,621,370, respectively. The outstanding balance is mostly contracted out to service providers delivering on activities under Components 2, 3, and 4 and, therefore, the breakdown at project closure will likely converge closer towards the indicative budget for these components.

The CDR expenditure reports show that cumulative project management costs are USD 621,082 through 10 November 2020. The reported project management costs are different in the UNDP and UNOPS expenditure reports. The TE team has been informed that the UNDP will prepare a note-to-file at the end of 2020 to reconcile the actual project management costs, to align with GEF and UNDP guidelines in this regard.

Financial delivery has gradually improved over the course of the project, ranging from 34% in 2017 to 70% in 2019 (see **Figure 3**).

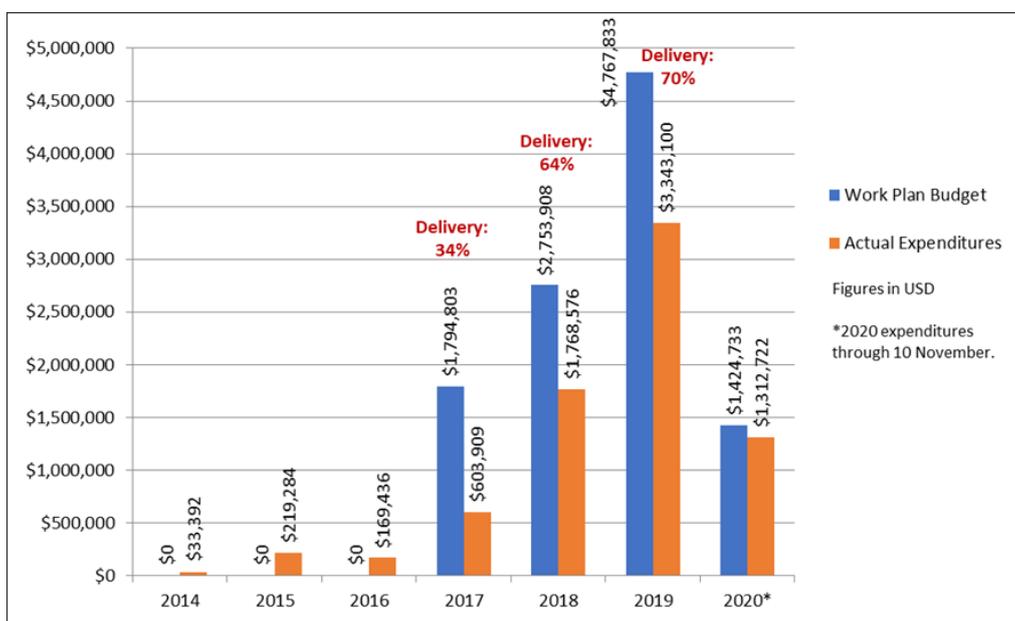


Figure 3: Financial delivery

An internal financial audit was carried out by UNOPS in 2020 (audit report dated 14 May 2020); there were no findings reported in the internal audit.

Co-finance:

Actual project co-financing significantly exceeds the confirmed sums made at project entry (see **Annex 7**). UNDP co-financing is reported at USD 2.967 million, compared to the USD 1.692 million planned amount.

Co-financing (USD 192.7 million) from the Government of China is roughly double the USD 92.66 million at project entry. A detailed breakdown of these contributions is attached to **Annex 7** of this TE report.

The Government of the Republic of Korea also provided a detailed breakdown of project co-financing, broken down across the SAP targets and the provincial and national sources. The total co-financing reported is approx. USD 6.9 billion, which is 50 times more than the USD 129 million confirmed at project entry. With respect to the national government portion of the reported co-financing, the figures represent funding from 2014-2020 on marine and coastal issues nationwide - not only for the YSLME region. The figures reported by the government demonstrate the substantial commitment the country has on achieving sustainable management of coastal and marine ecosystems, consistent with the agreed objectives of the YSLME.

With respect to co-financing contributions from the civil society, the WWF YSESP mentioned in WWF's March 2013 co-financing letter was completed before the Phase II GEF project started implementation. Based on TE interviews with WWF representatives, there were other projects that could be considered project co-financing, but an estimate of the value of this co-financing was not provided to the TE team in response to email inquiries.

The USD 128,085 of civil society co-financing reported in the co-financing table represents the matching funds contributed by the recipient organizations of the project small grants (see breakdown attached to **Annex 7**).

3.2.4 Monitoring & evaluation**M&E design at entry****M&E design at entry is rated as: Moderately Satisfactory**

The M&E plan was developed using the standard UNDP template for GEF-financed projects. The indicative M&E budget was USD 197,000, or 2.6% of the USD 7,562,430 GEF project grant – this is roughly aligned with the current (July 2020) UNDP guidance, which stipulates 3% when the GEF project grant is USD 5-10 million. A rating of moderately satisfactory is applied because some of the baseline conditions, end targets, and means of verification of the project metrics were not fully articulated.

M&E implementation**M&E implementation is rated as: Satisfactory**

The project has consistently produced quality and timely progress reports, having internal ratings consistent with independent evaluation findings and project risks highlighted. Some of the baselines, indicators, and end targets in the project results framework were not clarified during project implementation. Substantive adjustments were made in response to the midterm review recommendations.

Tracking tool:

The terminal version of the IW tracking tool, dated July 2020, was reviewed by the TE team. The tracking tool was filled out thoroughly and the information provided was found to be consistent with the results achieved by the project. The descriptions of the local investments could have been expanded beyond the three that were reported in the tracking tool. With respect to Local investment #3 (Reduced fishing pressure), the project reported on results of an IMTA demonstration in Shandong Province. It would have been more appropriate to report on the reduction in fleet size, which has been significant in both China and ROK during the implementation of the 2009-2020 SAP.

Responses to midterm review recommendations:

The recommendations from the midterm review have been addressed by the project during the second half of the implementation timeframe, as summarized below in **Table 6**, based on findings of the TE and management responses documented by the project team.

Table 6: Summary of management responses to MTR recommendations

| Midterm review recommendation | Status at terminal evaluation |
|--|---|
| <p>1. In order to avoid the limitations experienced with the MTR, it is recommended that for the Terminal Evaluation (TE), UNDP and UNOPS should:</p> <ul style="list-style-type: none"> - Plan well in advance, and commence the contracting process for the TE consultant in ample time to allow award of contract and commencement of work well before (at least 2 months) the relevant ICC meeting and/or other critical TE milestone(s). - Organize detailed meeting schedule with stakeholders well in advance, so as to ensure that consultations are representative of the full range of key project stakeholders (as required by the UNDP TE Guidelines). - Provide private space for TE consultation meetings (as required by the UNDP TE Guidelines). - Provide an 'independent' interpreter when needed (as required by the UNDP TE Guidelines). <p>Desist from recording consultation meetings (as required by the UNDP TE Guidelines).</p> <ul style="list-style-type: none"> - Avoid having any PMO (or UNDP) staff present during consultations (as required by the UNDP TE Guidelines). | <p>The TE was well organized, adapting to the constraints due to the COVID-19 pandemic. Independent interpreters were provided to support the interviews, documentation was made available onto a dedicated Google Drive, the PMO staff provided logistical support, including organizing stakeholder interviews.</p> |
| <p>2. It is recommended that in order to avoid project-threatening major delays to the remainder of the Project, the start of any potential future phases of this Project or any new projects (anywhere), the relevant Implementing and Executing Agencies and the participating countries should always ensure that:</p> <ul style="list-style-type: none"> - all staffing and PMO logistical arrangements are fully agreed by all parties before the ProDoc (<i>Project Document</i>) is signed and the time-line clock starts ticking, - the Executing Agency consults closely with the participating countries on staff recruitment; and - the UNDP standard of a maximum of three months to establish the PMO office, recruit staff etc is complied with by the Executing Agency. | <p>This is an important lessons learned.</p> |
| <p>3. Given the three-year delay to operational start of the Project, if anything is to be salvaged from the Project, it is strongly recommended that the maximum extension available under UNDP-GEF rules should be applied for and approved, ASAP</p> | <p>The project obtained two, no-cost time extensions.</p> |
| <p>4. Given the extreme three-year delay to Project commencement, and the limited time remaining to complete full Project implementation, it is recommended that it would be highly disruptive to propose any significant changes to the Project-design at this stage. It is recommended that despite some issues as identified in section 3.1 of the MTR Report, the Project-design should be generally accepted as it is, and that highest priority should be given to implementing Project activities in order to achieve Project Outcomes and Objectives by the (extended) Project-end.</p> <ul style="list-style-type: none"> • It is further recommended that for the remaining Project duration, absolute highest priority should be given to focusing on completing all Outcomes and Outputs in Component 1 (the most strategically important Component), followed by those that have the highest likelihood of being achieved by Project-end (Outcomes 2.1, 2.2, 2.3, 3.4, 4.1, 4.2 and 4.3). • The other Project Outcomes (3.1, 3.2, 3.3 and 4.4) may well have to be left aside as lower priorities, and picked-up by the YSLME Commission post-Project (refer Tables 8 and 9). | <p>Adjustments were made with respect to prioritization of activities. For example, spending on Component 1 activities through June 2020 were 25% more than the indicative budget included in the Project Document. The number of activities were also reconciled, e.g., reduced and consolidated in some cases.</p> |
| <p>5. It is strongly recommended that UNOPS should urgently review and reform its project-support functions to absolutely ensure that no further delays and blockages occur. Urgent reforms that are specific to accelerating the YSLME Phase II Project should be implemented immediately.</p> | <p>UNOPS reported that a management review was carried out, and project delivery support systems were strengthened in the second half of the project.</p> |
| <p>6. To address the significant imbalance between PMO workload and staff resourcing, it is strongly recommended that the two countries look at seconding a Government officer each to the PMO, at national Government</p> | <p>A manager of the small grants mechanism recruited to oversee the activities under the small grants</p> |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

| Midterm review recommendation | Status at terminal evaluation |
|--|---|
| <p>cost, and at Project Officer level with at last 3 years experience in international projects, to supplement PMO staffing for the remaining duration of the Project.</p> | <p>mechanism. And the chairperson of the NWG-G took on the role of coordinator for the technical review and update of the TDA and SAP.</p> |
| <p>7. It is recommended that:</p> <ul style="list-style-type: none"> • The PMO and UNOPS make greater use of whole-of-project / whole-of-timeline work plans, such as the Gantt charts in Annex 7, to identify and prepare well in advance for all key milestones that require timely action by the PMO / UNOPS, to assist in preventing further Project delays. • The PMO should make greater efforts to: <ul style="list-style-type: none"> • take a more strategic approach to work planning and workload management, • focus on implementation of high priority activities (e.g. Component 1), • stick to and comply with structured workplans; and • avoid going off on tangents and pursuing low-priority activities that may be driven more by personal interest than vital project needs. | <p>PMO staff members received trainings at the UNOPS office in Copenhagen on communications, procurement, work planning and competency-based interviewing.</p> |
| <p>8. It is recommended that given the significant work-tasks required to achieve completion of the Project within the remaining time available, that in order to urgently accelerate technical implementation:</p> <ul style="list-style-type: none"> • Additional opportunities to use accelerated modalities such as PCAs and sub-contracts should be explored urgently (subject to concerns and checks outlined in section 3.2.5). • If budget rules allow, and subject to application of stringent accountability procedures, increasing the Yellow Sea Grants Program (for projects by NGOs) from a total of US\$200K to US\$1M, with individual grants increased from up to \$50K to up to \$250K. | <p>PCAs were expanded during the second half of the project, including with the FIO. And funds allocated for the small grants mechanism was increased to approx. USD 0.5 million.</p> |
| <p>9. • It is recommended that the ICC and MSTP be amalgamated. In line with this simplification it is also recommended that the ICC should meet twice per year rather than just annually – so that delays are not caused in review and approval of proposals put forward by the RWGs and PMO.</p> <p>• It is strongly recommended that the total number of RWGs be reduced to four, by amalgamating RWG-F / RWG-M and RWG-P / RWG-A (as these cover technically related issues).</p> | <p>The ICC and MSTP were combined at the ICC-2 and ICC-3 meetings.</p> <p>The number of RWGs remained at 6 during the second half of the project.</p> |
| <p>10. It is strongly recommended that:</p> <ul style="list-style-type: none"> • a detailed, external, independent audit of overall Project expenditure and financial management, disbursements and flows should be undertaken at an appropriate time, • UNOPS should exercise its contractual right to undertake financial audit of funds disbursement and flows under all three PCAs, at an appropriate time, • every effort should be made to ensure that the costing basis of each sub-contract is fully justified and transparent, that the selection and contract award process is truly competitive and transparent, in accordance with relevant UNOPS procedures, and that the financial disbursements and flows under each sub-contract are externally audited at an appropriate time; and • UNOPS should take urgent action to avoid the non-trivial delays and mistakes in the payment of bills and fees, reimbursement of personal expenditures by PMO staff on Project activities and disbursement of funds as outlined in section 3.2.1. | <p>UNOPS arranged an internal audit (reported dated May 2020); there were no findings reported.</p> |
| <p>11. It is recommended that Project-level MER (<i>monitoring, evaluation, and reporting</i>) be improved for the remainder of the Project duration through the following:</p> <ul style="list-style-type: none"> • Requiring the PMO to focus more on clearly reporting “actual” implementation (and expenditure) against “planned” implementation (and expenditure). • Revising and clarifying the April 2018 version of the GEF-IW Tracking Tool to address the points made in section 3.2.7. • Providing the PMO with formal training in the use of PRFs (<i>project results framework</i>) as a project planning, management and monitoring tool. | <p>This recommendation was agreed to.</p> |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

| Midterm review recommendation | Status at terminal evaluation |
|--|--|
| <ul style="list-style-type: none"> • Requiring the PMO to begin and continue collecting the necessary data to allow the TE to properly assess achievement of Project Objectives, Outcomes and Outputs against the indicators specified in the PRF. | |
| <p>12. It is recommended that the PMO should act to rapidly commence development, followed by implementation, of the Project Communication Plan. This Plan should:</p> <ul style="list-style-type: none"> • Clearly identify the Project’s strategic communication objectives, target audiences and key messages. • Give priority to targeting in-country audiences, with all communication products and mediums, including the permanent Project website, being not only in English but also in Chinese and Korean. • Use the full range of social media platforms, including those that are specific to PRC, to target the younger generation. • Seek partnerships with national television producers and broadcasters in both PRC and ROK, and invite them to produce and broadcast TV news items and also documentaries both about the Project and the Yellow Sea generally (TV is still considered to be the most effective form of mass-media for reaching large audiences). • Seek partnerships with NGOs, including the large international NGOs like WWF, <i>Conservation International</i> (CI) and IUCN, who are already very active on communication activities in the Yellow Sea region, to leverage co-financing for communication efforts. <p>It is also recommended that the PMO, UNOPS Copenhagen Office, UNDP and the two National Coordinators should work towards improved and more regular communication, including a monthly Progress Meeting on Skype.</p> | <p>A Communications and Awareness Raising Strategy was issued in June 2018.</p> |
| <p>13. It is strongly recommended that:</p> <ul style="list-style-type: none"> • Once the current restructure of the PRC Government is complete, that UNDP, PMO and ROK MOFA & MOF seek a ministerial-level meeting with new PRC Minister for Natural Resources, to brief them on the Project and seek high-level support in PRC for the Project, for SAP implementation and for the establishment of a permanent, sustainably financed Yellow Sea Commission. Without this, this Project Objective may not be achieved by end of Project in December 2019. • The MoU on bilateral cooperation on environmental matters signed by the Environment Ministers of both PRC and ROK, be used as a model and template for a similar MoU to be signed between the PRC Minister for Natural Resources and the ROK Minister for Oceans & Fisheries, specifically relating to cooperation in implementing the YSLME-SAP and establishing the Commission. Such MoU might be structured so as to allow for future signing-in by DPRK as a tri-lateral MoU. | <p>Institutional restructuring in China has been completed, and officials from the newly established MNR was actively involved during the second half of the project.</p> <p>A MOU was drafted to provide a framework for continued cooperation between China and ROK after project closure; the MOU was under discussion at the time of the TE and the officials from the two countries reported during the 5th ICC meeting that the text of the MOU had been agreed to.</p> |
| <p>14. It is recommended that in addition to continuing to work through the Hanns Siedel Foundation to try and involve DPRK in the biodiversity and MPA-network planning activities, the Project should also work towards more complete participation of DPRK, including progressively in the regional governance framework.</p> <ul style="list-style-type: none"> • In doing so, given recent diplomatic progress, this effort might be led by ROK MOF and Ministry of Reunification through direct bilateral dealings with DPRK, in consultation with PRC and with support from PMO. • As a UN program, it is also vital to ensure that relevant UN Resolutions and rules, and GEF rules and procedures, are fully complied with. | <p>Various attempts were made to engage DPRK, but without success.</p> |

Overall assessment of M&E

Overall quality of M&E is rated as: Satisfactory

Overall, the quality of M&E on the project is rated as satisfactory. The project board (the ICC) was an important platform for M&E, providing strategic feedback to issues raised through project reporting. A significant level of adaptive management was applied during the second half of the project, to make up lost time and deliver financially and strategically.

The project results framework was reviewed at the inception phase, changes to the results framework were discussed but not encouraged, and uncertainties remained throughout project implementation.

3.2.5 Project implementation and execution

UNDP implementation oversight

Quality of UNDP implementation / oversight is rated: Satisfactory

The UNDP CO has provided consistent administrative and strategic guidance throughout the project development and implementation phase, and played an important role in mediating discussions on recommended changes to the project strategy with Chinese and Korean government officials in 2015, and facilitating an eventual resolution. Project inception, however, occurred in July 2017, three years following the official start date of the project in July 2014.

The UNDP regional technical advisor (RTA) has been actively involved, providing strategic guidance to the project team and sharing best practices and lessons learned from overseeing GEF IW projects throughout Asia and the Pacific.

Implementing Partner execution

Quality of Implementing Partner execution is rated: Satisfactory

The current PMO team, assembled since March 2017, has been able to make up considerable ground after the first PMO team was replaced. There were missteps associated with the recruitment of the first PMO team, but the delay in starting implementation was also due to political issues that were beyond the control of the implementing partner.

The decision to consolidate many of the technical activities under four PCAs was an effective adaptive management measure that saved considerable time.

Having different accounting systems from UNDP creates some challenges in reconciling expenditures.

Overall implementation execution

Overall quality of implementation / execution is rated: Satisfactory

The delay in initiating the project reduced overall effectiveness and likelihood that results will be sustained. There have been upsides to the extended project duration, e.g., completion of the updated TDA and preparation of the SAP 2020-2030, as well as navigating through the institutional restructurings in China that started in 2018.

Overall, the quality of implementation and execution is rated as satisfactory, particularly during the second half of the project.

3.2.6 Risk management

The project did a good job at reporting on risk management (e.g., in the annual project implementation reports – PIRs), indicating mitigation measures proposed and implemented, and identifying and acting upon new risks.

The 2017 PIR mentions mitigation measures considered for engagement of DPRK, e.g., through utilizing diplomatic channels with China. The report also includes discussion on the risk of negotiating joint fisheries stock assessments. This was followed up in the 2018 PIR, explaining that the PMO had identified swimming crab and small yellow croaker as target species for facilitating discussions on joint stock assessment.

The risk of partners being unwilling to make formal commitments was highlighted in the 2018 PIR, and recommended mitigation measures included a planned exchange visit to the Helsinki Commission, the governing body of the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM Convention). The risk was revisited in the 2019 PIR, which discusses the movement towards the concept of a flexible, innovative governance mechanism, in lieu of a formal commission.

The risk management section of the 2019 PIR also pointed out the risk of ensuring ownership of the newly established MNR in China. The description of mitigation measures to this risk mentions that the MNR had agreed to formally establish the IMCC to facilitate cross-sectoral and inter-sectoral cooperation. Moreover, the report states that ministry officials informed the project team that the IMCC would meet quarterly instead of annually to ensure sufficient attention was placed on the YSLME project.

The critical risks associated with the COVID-19 pandemic were discussed in the 2020 PIR. The impacts to the negotiations and eventual institutionalization of the regional governance mechanism and the updated SAP (2020-2030) were described, as convening physical stakeholder gatherings were constrained.

3.3 Project results and impacts

3.3.1 Progress towards objective and expected outcomes (effectiveness)

Significant improvements were made during the second half of the project. The project remains highly relevant at closure and the parties have accelerated discussions on reaching an agreement on regional governance arrangements. Shortcomings in project efficiency impact the overall project outcome rating, e.g., many activities were carried out in the last 1-2 years of the project implementation timeframe, which has extended through two no-cost time extensions. There has been limited time to socialize some of the technical deliverables and to advocate for approval of regional conservation and monitoring strategies.

COMPONENT 1: Ensuring Sustainable Regional and National Cooperation for Ecosystem-Based Management

| | |
|--|--------------------------------|
| Outcome 1.1: Regional governance structure, the YSLME Commission established, operational and sustained | |
| Achievement rating: | Moderately Satisfactory |

The YSLME ICC and the supporting RWGs have facilitated consistent and substantive dialogue between the parties. At the time of the TE and confirmed during the 5th ICC meeting on 19 October 2020, the text of an MOU has been agreed between the countries that reportedly defines the parameters for continued progress towards achieving a durable YSLME regional governance arrangement. The draft, updated SAP provides a framework for prioritizing actions over the next 10 years, 2020-2030. The end target of having a functioning commission is unlikely to be achieved by project closure.

| Indicator No. 1.1: Status of YSLME Commission and subsidiary bodies at regional level | | | | |
|---|---|---|--|---------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Ad hoc regional co-ordination through the YSLME Regional Project Board and weak cross sector management at the national level | All the TORs for the YSLME Commission and Subsidiary Bodies approved by all participating country governments | The ICC has convened 4 times during the project, facilitating constructive dialogue. Parties were discussing a draft MOU at the time of the TE that outlines next steps for strengthening cooperation. | Achieved |
| | | Functioning YSLME Commission | Functioning YSLME Commission was not in place at the time of the TE, and unlikely by closure. | Not achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 1.1.1: Regional agreement to establish the YSLME Commission, Management, Science and Technical Panel (MSTP) and Regional Working Group (RWGs); national and regional policies drafted and implemented

Key Achievements:

- A functioning ICC provided good opportunity to strengthen the international cooperation between China and ROK.
- Six RWGs highlighted key substantive items and provided an interactive platform for technical dialogue between the parties.
- Engagement of various stakeholders, including academic institutions, government, NGOs and private sectors etc., improved the degree of participation on the coastal and marine protection and sustainable development.
- An updated TDA was completed in 2020 through a participatory process with multiple stakeholders.
- An updated SAP (2020-2030) has been drafted and technically cleared during the 5th ICC meeting.

Issues / Challenges:

- The text of an MOU between the two countries to provide a durable YSLME regional cooperation framework was agreed during the 5th ICC meeting in October 2020; however, the timeline of approval of the MOU by two countries have not been decided and the contents of the MOU are unknown to the TE team.
- The function and financing of regional governance mechanism after the closure of the GEF project have not been decided and it seems unlikely that a sustainable financing arrangement will be in place in the short-term.

Outcome 1.2: Improved inter-sector coordination and collaboration at national levelAchievement rating: **Moderately Satisfactory**

IMCC meetings in China and ROK were convened during the course of the project. There is limited information available regarding the details of the meetings. Endorsement of the updated SAP (2020-2030) currently under development would be an important example of inter-sectoral cooperation.

| Indicator No. 1.2: Status of Inter-Ministerial Coordinating Committee (IMCC) | | | | |
|--|---|--|---|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Sector management has been the normal arrangements with limited inter-sector or inter-ministerial interactions; where coordination was done, it was on a case by case such as fishery management activities | Participation of Ministries in the IMCC will include but not limited to the following: Ministry of Foreign Affairs, Ministry of Finance, relevant department or Ministry of Ocean & Fishery and Environment. | Cross-sectoral ministerial level dialogue was facilitated in China and ROK through the IMCCs. | Achieved |
| | | Two meetings of IMCC every year and functioning coordination | Limited records available of IMCC meetings and decisions. | Partially achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 1.2.1: National level agreements regarding ecosystem-based management actions, policies, regulations and standards promulgated, as appropriate**Key Achievements:**

- The mechanism of IMCC attracted relevant ministries to participate actions on key issues of the Phase II project, which was beneficial to enhance the cooperation and collaboration among different sectors at national and local levels.
- The two countries provided detailed summaries of achievements made in response to the National Strategic Action Plans (2009-2020); the information contained in these reports demonstrated substantive commitment to the objectives of the SAP (2009-2020) and provided important background information for the updated TDA and SAP.

Issues / Challenges:

- There is no further workplan for the IMCC after the closure of the Phase II project, which will weaken the continuation of the function of IMCC at national level.
- The Chinese Ministry of Agriculture and Rural Affairs and the Ministry of Water Resources had limited involvement during the course of the Phase II project, which brings a degree of uncertainty to the sustainability of relevant outputs. Officials from MARA did participate in the five ICC meetings and a study visit to a marine ranching site in ROK.

Outcome 1.3: Wider participation in SAP implementation fostered through capacity building and public awarenessAchievement rating: **Satisfactory**

The project has done a good job at engaging an expanded number of and different stakeholder groups, including civil society and private sector. Stakeholder engagement was facilitated through regional and national working groups, training courses, study visits, seminars, demonstration site activities, public awareness campaigns, etc. One of the envisaged results under this outcome was a strengthened YSP; however, at project closure, the durability of the YSP as a stand-alone initiative seems unlikely.

| Indicator No. 1.3: Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities | | | | |
|--|--------------------------|----------------------------|--|-----------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | 20 members of the Yellow | Number of partnerships: 40 | The approach towards partnerships was adapted from | Achieved |

| | | | | |
|-------|-----------------|---|---|----------|
| | Sea Partnership | Number of capacity building activities : 25 | the strategy outlined in the project document. The project has done a good job in facilitating expanded participation and delivering capacity building activities. There is no clear strategy on how the YSP will be sustained after project closure. | Achieved |
| | | Number of public awareness initiatives: 15 | | Achieved |
| | | Number of participants in capacity building activities: about 200 | | Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 1.3.1: Agreements with partners on overall environment co-operation and management, relevant fishery management, marine habitat conservation and pollution reduction, at both national and regional levels; cross sector partnerships established and operational

Key Achievements:

- Significant increase in interest among various stakeholder groups to participate and mobilized their enthusiasm to take actions on the coastal and marine protection.

Issues/Challenges:

- Limited framework on the participation of different stakeholders to specific actions constrained the roles they could play during the course of the Phase II project.
- Lack of a clear strategy on sustaining the YSP after project closure.

Output 1.3.2: National public awareness in support of YSLME SAP achieved; data and information collected; jointly managed databases developed, publicly accessible information for implementing management plans at the regional, national and local levels

Key Achievements:

- Regional workshops with different stakeholders on good practices and experience-sharing facilitated the communication on data and information between China and ROK.
- Civil society groups and private sector enterprises facilitated local coastal communities in classifying and separating communal wastes.

Issues/Challenges:

- Availability of publicly accessible information has been inconsistent so far, and there is a lack of a strategy on continuing the dissemination of information at regional, national, and local levels.
- Limited scale of small grants for domestic NGOs diminished the degree of their interest and participation.

Output 1.3.3. Transfer of lessons, experiences and best practices between the local demonstration sites

Key Achievements:

- The experience of wetland restoration had been widely shared within the 3 YSLME provinces in China, in particular the progress on the research on invasive *Spartina alterniflora*.
- The methodologies of sustainable productive aquaculture technologies, such as IMTA, have been formulated and shared with key stakeholders.
- IMTA included as one of the nine best practices described in the Agriculture and Fishery Policy No. 8 (2020) issued by the Chinese Ministry of Agriculture and Rural Affairs.

Issues/Challenges:

- Standards or norms related to innovative technologies or measures associated with local demonstration sites have not been established and there is no clear further work plan, which reduces the likelihood of sustained learning and dissemination of good practices and experiences.

Output 1.3.4. Training of at least 10 stakeholder groups on public participation on relevant management actions, in particular on fishery management, marine habitat conservation and economic assessment

Key Achievements:

- Training courses for fishermen on advanced aquaculture technologies and knowledge on transformation from fishery to other jobs had positive environmental effects with respect to conservation of offshore and nearshore ecosystems.

Issues/Challenges:

- Lack of development of a strategy for further capacity building activities.

| | |
|--|---------------------|
| Outcome 1.4: Improved compliance with regional and international treaties, agreements, and guidelines | |
| Achievement rating: | Satisfactory |

Over the past 20-30 years, the Government of China has made significant progress in harmonizing national and subnational laws to the conditions of regional and international treaties, agreements, and guidelines they are contracted parties to. The review of implementation of the YSLME NSAP (2009-2020) provides a candid assessment of certain gaps in the current legislative framework, e.g., lack of an ecosystem-based point of view, lack of a national regulation on mariculture and on control of marine litter, lack of implementation rules on control of invasive species, lack of a cross-sectoral implementation mechanism, and a lack of international cooperation in development of laws and policies.

Progress in terms of compliance reported by the Government of ROK in recent years include incorporating the Stockholm Convention criteria into the national POPs Control Act and Marine Environment Management Act, creating a management system to implement the IMO conventions on oil and hazardous and noxious substances (HNS), and improving enforcement methods on controlling compliance to conditions in the Ballast Water Management Convention.

GEF additionality included delivering technical assistance in the completion of gap analyses, e.g., in terms of compliance with the FAO Code of Conduct for Responsible Fisheries, and in the development of regional guidelines for responsible fisheries in the YSLME; adoption of the guidelines had not occurred by the time of the TE.

| Indicator No. 1.4: Status of recognition and compliance to regional and international treaties and agreements | | | | |
|--|---|--|---|------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Regional and international treaties and agreements are recognized by China, but not fully compliant | Better compliance of the relevant regional and international treaties and agreement e.g. UNCLOS, The 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, CBD, Ramsar, The FAO Code of Conduct for Responsible Fisheries, and the bilateral agreements between China & ROK on environment protection and fisheries | Substantive progress has been made in China and ROK in the past 20-30 years with respect to compliance of relevant regional and international treaties. | Mostly Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 1.4.1: Enhanced national and regional legal instruments to comply with regional & global treaties, agreements and guidelines**Key Achievements:**

- Both China and ROK have made significant advances in conservation and sustainable use of marine resources, including developing and improving national policies, strategies, regulations, and programmes; assessing and monitoring ecosystem conditions; carrying out various in-situ and ex-situ conservation measures; carrying out scientific research and training and promoting public awareness and education etc.

Issues/Challenges:

- At the national scale, there are some shortcomings in terms of compliance or application of regional and global guidelines due to technical barriers and need for capacity building. For example, some of the indicators developed under regional or global initiatives for key individual marine species have weak applicability for monitoring and evaluation in specific areas in China, due to inadequate data and information.

Outcome 1.5: Sustainable financing for regional collaboration on ecosystem-based management secured based on cost-efficient and ecologically effective actions

Achievement rating:

Moderately Satisfactory

Sustainable financing options for continued regional collaboration have been assessed under the project, including establishment of an environmental trust fund. Such a modality would provide opportunities for other parties to participate in the financing of a regional governance mechanism.

| Indicator No. 1.5: Agreement on the financial arrangement for the YSLME Commission | | | | |
|--|---|---|--|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | YSLME Commission does not exist at start of project | Financing agreement between and among countries agreed to fully support YSLME for at least 5 years. | Sustainable financing options for the envisaged YSLME Commission have been assessed, but there is no agreement yet on the financing arrangements. In the short-term, the parties seem to be focused on reaching a political cooperation agreement. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 1.5.1: Periodic economic assessments of costs and ecological effectiveness**Key Achievements:**

- This output was removed from the project strategy, in response to one of the MTR recommendations.

Output 1.5.2: Sustainable financing agreed; at least 150% increase in government financing for regional collaboration**Key Achievements:**

- One of the sustainable financing mechanisms considered is establishment of a YSLME trust fund. The envisaged aim of the trust fund is to develop an innovative instrument that could attract and consolidate contributions from multiple financial partners and to allocate such resources to multiple implementing entities in order to support regional and national SAP activities and to help a collective answer to the Yellow Sea environmental problems. The trust fund would promote development and aid effectiveness by reinforcing country capacity and ownership and promoting harmonization and alignment of donor aid modalities.

Issues/Challenges:

- The parties have not yet agreed on the concept of a YSLME trust fund. The timeline and amount for financing such as the trust fund have not been discussed and decided during the TE, which could bring uncertainty for the arrangement and implementation after the closure of the YSLME project.

COMPONENT 2: Improving Ecosystem Carrying Capacity with Respect to Provisioning Services**Outcome 2.1: Recovery of depleted fish stocks as shown by increasing mean trophic level**

Achievement rating:

Satisfactory

The performance metric for this outcome was the reduction of fishing vessels. China has reported a 22% reduction in the number of fishing vessels in the three YSLME provinces over the period of 2015-2018, and ROK reports a 17% reduction from 2011 to 2017. These figures exceed the 10% end target.

GEF additionality included assessment of the effectiveness and recommendations for improving the license system in the YSLME provinces in China; assessment of the effectiveness of the buy-back scheme; assessment of seasonal closures in the Yellow Sea; a socioeconomic assessment of the fishing vessel buy-back scheme, fish restocking, mariculture, and climate change adaptation measures in Dalian, Weihai, and Dandong; and reemployment training of displaced fishers.

The littoral countries have implemented other actions aimed at recovering fish stocks. In ROK, designated closed areas and seasons for several fisheries have been substantively expanded, fishery resource surveys have expanded, further improvements to fishing gear (including eco-friendly gear), and continued strengthening of fishery resource management systems, including implementation of Total Allowable Catch (TAC) systems (by 2017, TAC systems had been implemented for 18 species).

In China there has been significant expansion of seasonal closures, with verifiable improvements. For example, catch per unit effort (CPUE) of demersal species increased from 46% in 2015 to 127.4% in 2017. Trophic levels (TL) are also on an increasing trajectory. Fishing gear regulations have also been stipulated in the YSLME provinces in response to MARA limits stipulated in 2018 for 15 commercial species. China has introduced TAC systems since 2017, with 5 species currently covered. After 2020 the government has stipulated that total catch controls will be based on fisheries status determined from stock assessments.

There were no joint stock assessments under the Phase II project.

| Indicator No. 2.1: Number of fishing boats decommissioned from the fleet in YSLME waters | | | | |
|---|---------------------------------|---|--|----------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | About 1.2 million fishing boats | Fishing boat numbers substantially reduced by 10%, in line with the 2020 target of 30% reduction. | The number of fishing vessels has decreased by more than 10% in both littoral countries. | Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 2.1.1: Reduction of fishing by around 10% in demonstration sites through e.g. boat buy-back scheme over the duration of the project

Key Achievements:

- As one of the primary management measures for protecting marine fishery resources in China, the licensing system has been implemented for decades and has been improved a lot. During the recent 5 years, capture fisheries production has reduced significantly; for example, the coastal capture production had a declining tendency for all coastal provinces from 2014 to 2017.
- The fishing licensing system in China has been further strengthened, the requirements for obtaining fishing licenses have become more stringent. Detailed regulations stipulate fishing operation types, locations, periods, numbers and sizes of gears, and target species. The system also restricts the number of vessels, horsepower of the main engine and the maximum number of fishing nets and other fishing gears. The number of fishing vessels and total horsepower is also controlled by these regulations.

Issues / Challenges:

- Joint monitoring and assessment on fish stock by two countries have not been carried out during the course of the Phase II project, which would support collaborative actions on fish resources management at the regional level.

Output 2.1.2: Provision of alternative livelihoods to fisherfolks taking into account the contribution of women

Key Achievements:

- The policies and regulations have been developed to facilitate and guide fisherfolks to consider alternative livelihoods, including compensation for loss of fishing vessels and licensing, organization of training courses for tourism and technologies of aquatic products and processing. There was a high level of interest among fisherfolks to participate in training courses supported by the Phase II project. Over 70% fisherfolks deemed it was beneficial to increase their incomes through pursuing appropriate alternative livelihoods.

Issues/Challenges:

- There was limited strategic focus on increasing participation by women.

| Outcome 2.2: Enhanced stocks through restocking and habitat improvement | |
|--|---------------------|
| Achievement rating: | Satisfactory |

Both countries have made significant investments in stock enhancements, including installation of artificial reefs, release of fry, creation of marine forests, and expansion of marine ranching. In ROK, a cumulative total of 16,107 ha of artificial reefs were installed between 2011 and 2016 (countrywide), 17,987 ha of marine forests were created between 2011 and 2018, and a cumulative total of 45 marine ranching projects were implemented between 2009 and 2017. In China, stock enhancement has increased since 2006 when the government issued the "Action Outline of Aquatic Living Resources Conservation in China". More than 100 species (including freshwater species) are released each year in the country. Stock enhancement in Shandong Province encompasses 19 marine species. Habitat improvement measures

such as artificial reefs and marine ranching continue to be developed, with 62 marine ranching projects implemented nationally by 2017 and a goal to reach 120 by 2025.

The metrics under this outcome included measurable improvement (5%) in standing stock and CPUE, and future management decisions on restocking based on effectiveness. GEF funds were allocated for demonstration of seagrass transplanting techniques; an analysis of the Haiyang Fuhan national marine ranching demonstration site; and an analysis of artificial reefs installed in the Pipakou Waters of Haiyang City. Project progress reports refer to achievement of the 5% improvement in CPUE (the figures reported above under Outcome 2.1 are from the national action plan (2009-2020) review report). There is no information available regarding management decisions on restocking, based on the effectiveness of restocking and habitat protection – which is the second sub-target under the indicator for Outcome 2.2.

A rating of satisfactory is applied for this output based on results reported by the national governments.

| Indicator No. 2.2: Status of major commercially important fish stock from restocking and habitat improvement | | | | |
|---|--|---|---|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Effectiveness of restocking and habitat protection not evaluated | Measurable improvement (5%) in standing stock and catch per unit effort | Based on monitoring reports of the demonstration sites, improvements in standing stock and CPUE have been achieved. | Mostly Achieved |
| | | Future management decisions on restocking based on effectiveness | Results of habitat improvement measures have been assessed, but there has been limited mainstreaming into management decisions. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 2.2.1: Science-based management of fisheries and mariculture

Key Achievements:

- Restoration and rehabilitation of seagrass beds were supported through establishment of seed sorting technology, seed germination promoting technology, improved transplanting technology, land-based culture technology and culture expansion technology, and delivery of technical assistance.
- The construction of artificial reefs has significantly increased the abundance of nekton and benthos communities in the reef area. Fish cage surveys in 2017 shows that the abundance of fishery resources such as fishes, shrimps, and crabs in the reef area have increased significantly. Compared to observed conditions in October 2012, the abundance of 23 economic species in the reef area increased 2.29 times after construction of the artificial reefs.

Issues/Challenges:

- The technologies developed under this output have not been approved as standards or norms, which would potentially have impact on the value of application and promotion of those technologies.
- The suggestion raised on the restocking research have not been mainstreamed into local or national government actions as official decisions, which needs more efforts to achieve in the future.

| Outcome 2.3: Enhanced and sustainable mariculture production by increasing productivity per unit area as a means to ease pressure on capture fisheries | |
|---|---------------------|
| Achievement rating: | Satisfactory |

IMTA demonstration site activities report productivity improvements at levels exceeding the end targets, and the productivity gains have provided economic benefits to the operators. The pollution reduction figures for the IMTA installations at the demonstration site are better than the 5% end target; however, the results are somewhat anecdotal, i.e., lacking a statistically representative timeframe and sampling regime.

Unsustainable mariculture practices remain a significant threat in the YSLME, regarding disruptions to the nutrient dynamics, incidence of harmful algal blooms, and spread of pathogens. Both countries have highlighted the need for further research on the benefits and performance of IMTA installations.

| Indicator No. 2.3: Type of mariculture production technology Level of pollutant discharge from mariculture operations | | | | |
|---|--|---|---|---------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Declining quality of mariculture products Declining quantity of production per unit area from mariculture Environmental impacts of mariculture not evaluated | Reduction of contaminants caused by mariculture production (5% reduction in the demo sites) Measurable increase (5% increase in the demo sites) in mariculture production per unit area Discharge of nutrient and other discharges from mariculture installations reduce 5% | Technical reports confirm end targets achieved at the demonstration sites. In terms of nutrient and other pollutants from mariculture installations, longer term time series would be necessary for statistically reliable results. | Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 2.3.1: Widespread practice of sustainable mariculture, where appropriate, increasing productivity and reducing pollution

Key Achievements:

- The shellfish-seaweed IMTA demonstration in Sanggou Bay, Shandong Province, was supported by the Phase II project. IMTA has become a popular approach in China for generating comprehensive benefits. Compared with traditional aquaculture approaches, the density of kelp at the IMTA demonstration site decreased by 33.43%, the average wet weight of kelp increased by 47.74%. Dry kelp production improved 3%. The yield rate increased by 14.8%, the labor cost decreased by 10%, and the economic benefit increased by 57.85%. The weight of monomeric oysters has increased. The comprehensive benefit of the IMTA demonstration site was increased by 131.1%.
- For protecting coastal ecosystems in Sanggou Bay, planting seagrass was conducted under this project. A large number of clams (*Ruditapes philippinarum*) have been observed in the seagrass beds. In the past, people collected the clams by hand, a process which seriously damages the seagrass. Sea snails (*Rapana venosa*) can ingest clam and have much higher price (about 30 Yuan/kg) than clams (about 5 Yuan/kg). An innovative mode was developed under the project, as the sea snail-clam IMTA in seagrass bed. By releasing the eggs of sea snails, the value of clams was transferred into sea snail. People just pick up the sea snail and thus obtain a better income and spend less labor. Therefore, the seagrass beds are successfully protecting coastal ecosystems and supporting increased livelihoods for local fisherfolks.
- Dissolved inorganic nitrogen (DIN) is an important pollutant in Sanggou Bay. DIN was significantly reduced after a demonstration of shellfish and seaweed integrated aquaculture (an updated IMTA mode) in 2018-2019. The DIN at the demonstration site was less than 2.27 $\mu\text{mol/l}$ all year round, which was much less than that reported in the base line report (2.5-4.5 $\mu\text{mol/l}$) in November 2017. The target of 5% reduction was reached.
- A new model of ecotourism, including recreational fishery was developed. On the basis of maintaining the main structure of a traditional guest house, the interior will be renovated into a modern hotel for tourists to stay, dine, and relax. People from local communities participated in the development of the fisherfolk's tourism cooperative so that every participating villager, especially women, can benefit from recreational fishery.

Issues/Challenges:

- Strengthening regional cooperation and collaboration on research and development of mariculture technologies is challenged partly because of differences in the focal species.
- Expanding stakeholder engagement in research and development and promotion of best practices requires financial resources.

Output 2.3.2: Adoption of integrated multi-trophic aquaculture (IMTA) where appropriate

Key Achievements:

- The local governments of Weihai City and Rongcheng City, Shandong Province, have reportedly issued policy documents that elaborate the "Chudao method", a local term given to the IMTA approaches applied at the demonstration site. There has also been substantive cooperation with the private sector in developing and commercializing IMTA in this part of the YSLME.

Issues/Challenges:

- Technical standards have not been approved based on the outputs of IMTA at local or national level. The lack of approved technical standards reduces the likelihood for replication.

COMPONENT 3: Improving Ecosystem Carrying Capacity with Respect to Regulating and Cultural Services

| | |
|---|--------------------------------|
| Outcome 3.1: Ecosystem health improved through reductions in pollutant (e.g., N) discharge from land-based sources | |
| Achievement rating: | Moderately Satisfactory |

The end target for this outcome, i.e., a 10% reduction in nitrogen discharges in the YSLME tributaries every five years seems somewhat overly ambitious.

In ROK, progress reports outline significant investments in expansion of sewerage coverage, increased application of measures to reduce non-point source pollution discharges, and a decreasing trend of BOD levels in four major rivers. An increase in advanced wastewater treatment, from 56% in 2012 to 74% in 2016, will likely contribute to decreased discharges of land-based nutrients in the coming years.

China has also made substantial investments in terms of pollution reduction, but there remain challenges with respect to agricultural non-point sources of pollution in some parts of the YSLME provinces. Project progress reports make reference to information in the China Marine Ecology and Environmental Status Bulletin (2018), indicating a 20% increase in total N inputs to the Yellow Sea and the Bo Hai Sea from rivers in Liaoning and Shandong provinces from 2016 to 2018, and inputs from rivers in Jiangsu Province remain largely unchanged over that time period.

| Indicator No. 3.1: Level of pollutant discharges particularly Nitrogen in YSLME tributaries | | | | |
|--|--|--|--|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Discharge reductions do not meet the regional target | 10% reductions in N discharges every 5 years | Both countries have made significant investments for reducing land-based nutrient discharges. Available data show increases in total N inputs to the Yellow Sea and the Bo Hai Sea from rivers in Liaoning and Shandong provinces. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 3.1.1: Reduced pollutant levels by enforcement and control in demonstration sites**Key Achievements:**

- Pollution sources and contributions were monitored and evaluated during the course of the YSLME project. The nutrient load to demonstration sites (Haizhou Bay) mainly from sources near Lianyungang City, account for 66% and 50% for total nitrogen (TN) and total phosphorus (TP), respectively.
- Decreasing trends in pollutant concentrations of atmospheric aerosols, including inorganic nitrogen, copper, and lead over the Yellow Sea coast were observed from 2014 to 2018.

Issues/Challenges:

- Key coefficients were lacking to enable evaluation of pollutant contributions from different land-based sources. These data shortfalls were due to weak participation of key industrial sectors, such as agriculture and water resources management.

Output 3.1.2: Enhanced data and information sharing regarding sources and sinks of contaminants**Key Achievements:**

- The data and information related to various pollution have been comprehensively considered under the Phase II project, including land-based sources of pollution, atmospheric deposition, mariculture pollution, and ship-based pollution. This work launched a good starting point for collaboration among different sectors for investigation on marine pollution sources, sharing data and information, and taking effective corrective actions.

Issues/Challenges:

- The structure of data and information sharing regarding sources and sinks of contaminants among different sectors has not been formally established, which restricts adequate evaluation.

| | |
|--|--------------------------------|
| Outcome 3.2: Wider application of pollution-reduction techniques piloted at the demonstration sites | |
| Achievement rating: | Moderately Satisfactory |

Ecological engineering approaches such as construction of artificial wetlands have been increasingly implemented in China and ROK over the past 10 years for control of non-point source nutrient pollution.

The GEF additionality included delivery of technical assistance to the wetland restoration in Jiaozhou Bay, Shandong Province, with recommendations on combatting the invasion of *Spartina alterniflora* vegetation and suggestions for updating the conservation and restoration plan. The work in Jiaozhou Bay is a restoration of a natural coastal wetland, not construction of an artificial wetland. The restored wetland has provided expanded habitat for migratory birds and other species, and also reportedly contributed to improvements in water quality and coastal fishery habitats.

The project also produced a review report on the utilizing wetlands as nutrient sinks. During the field mission to Jiaozhou Bay, local stakeholders indicated that similar methods have been applied at sites along the Liao River and Yellow River basins, but documented information was not available on these sites or on wider replication of such ecological engineering approaches during the lifespan of the project.

| Indicator No. 3.2: Types of technologies applied for pollution reduction | | | | |
|---|--|--|--|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Some innovations such as man-made wetlands are being undertaken nationally but without regional coordination or dissemination of results | Successful demonstration of use of artificial wetlands in pollution control in 1 sites and replicated in about 2 coastal municipalities and local government units | Recommendations delivered on restoration of natural wetland ecosystems. Long-term integrated monitoring required to enable evaluation of restoration effectiveness. Limited evidence of replication. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 3.2.1: New and innovative techniques for pollution reduction (e.g. artificial wetlands) applied at demonstration sites**Key Achievements:**

- In the demonstration site Jiaozhou Bay, reclamation had been discontinued and restoration of the former natural wetland area has been implemented through planting vegetation to fix coastal sediments, as well as absorb pollutants from land-based runoff near the coastal area.

Issues/Challenges:

- Ecological problems have resulted from the invasion of alien species (such as *Spartina alterniflora*), jellyfish blooms, decline of fishery resources and the pollution in the certain areas.
- Evaluation of the effectiveness of the restoration of Jiaozhou Bay is constrained due to the lack of a long-term integrated monitoring framework for water exchange capacity and tidal influx, ecological function of wetland, and habitat for globally significant biodiversity, including migratory bird species.

| | |
|--|----------------------------------|
| Outcome 3.3: Strengthened legal and regulatory process to control pollution | |
| Achievement rating: | Moderately Unsatisfactory |

Progress reports on achievement of Outcome 3.3 include explanations of the delay in updating or developing new marine environmental laws and regulations at the provincial and local levels, due to ongoing revisions of the national Marine Environmental Protection Law. The metric for this outcome, however, is the development of evaluation tools for assisting the harmonization of national and local legislation in the three YSLME provinces in China. There is no evidence of progress made in development of evaluation tools.

| |
|---|
| Indicator No. 3.3: Status of legal and regulatory process to control pollution |
|---|

| | Baseline | End Target | Status at TE | TE Assessment |
|--------|--|--|--|---------------------|
| Value: | Weak legal and regulatory framework to control pollution in provinces bordering in the YSLME | Develop evaluation tools, in the first year, to assist in harmonizing national and provincial legislation to improve coastal water quality in Shandong, Jiangsu and Liaoning provinces | Evaluation tools have not been developed to assist in harmonizing national and provincial legislation. | Not achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 3.3.1: Strengthened legal instruments and better regulatory processes to control pollution

Key Achievements:

- In 2015 in China, the central authorities successively adopted the Opinions of the Communist Party of China Central Committee and the State Council on Accelerating the Ecological Civilization Construction and the Action Plan for Prevention and Control of Water Pollution, which brought forward stricter and higher-level requirements for marine ecology and environment protection.
- In 2016, the amendments to the Marine Environment Protection Law of PR China include stricter measures on pollution control, which mainly included penalty increase, total quantity control of pollutant discharge and index decomposition, regional approval limitation, and marine ecological protection offset, and red line.
- In 2018, for the prevention of pollution from vessels, the Ministry of Transport in cooperation with relevant ministries and commissions initiated a special supervision of the implementation of the National Major Maritime Oil Spill Response Capacity Building Plan (2015-2020). The fund for compensation for oil pollution damage from ships was established, which levies on the owners of goods or their agents who receive oily materials (including crude oil and fuel oil) from waters under the jurisdiction of China, and is mainly used to compensate the damage arising from oil pollution incident caused by ship but beyond the scope that the ship owner and its insurer are obligatory to cover for the injured party. By the end of 2017, the fund had collected total of 670 million yuan, and accepted 5 cases, with expected compensation of more than 16 million yuan benefitting 11 entities.
- Progress towards other relevant legislation include the following:
 - The Marine Environmental Protection Law is currently under revision in the wake of the restructuring, and prioritizing ecological services is already under consideration.
 - Liaoning Marine Environmental Protection Regulation (amended on July 18 of 2018 and November 8 of 2019).
 - Weihai Coastal Protection Regulations (ratified on June 1 of 2018 and effective as of July 1 of 2018).
 - Lianyungang Sea Island Protection Regulations (ratified on July 26 of 2019 and effective as of October 1 of 2019).
 - Yantai Coastal Area Protection Regulations (ratified on November 29 of 2019 and effective as of March 1 of 2020).
 - Dalian Marine Environment Protection Regulations (ratified on August 5 of 2020 and effective as of January 1 of 2021).

Issues / Challenges:

- There is a need to integrate relevant data and information into a management tool that could serve to provide suggestions on amendment or establishment of legal and regulatory frameworks, through monitoring and evaluating the effect of the implementation of those instrument and processes. However, this tool has not been developed as was envisaged under Outcome 3.3 of the project.

| Outcome 3.4: Marine litter controlled at selected locations | |
|--|---------------------|
| Achievement rating: | Satisfactory |

Awareness on marine litter issues and corrective and preventative actions have increased in the YSLME littoral countries. In ROK, the Second Basic Plan for Marine Litter Management was implemented between 2014 and 2018, and 200,000 to 400,000 tons of marine litter have been collected annually. Introduction of biodegradable fishing gear has been shared with Chinese counterparts. Although there is not yet specific legislation in China on marine litter, the government has made significant investments in improvements to solid waste management. The updated TDA (2020)

outlines the increased recognition of microplastics affecting all trophic levels in the YSLME - one of the emerging issues that call for a regional strategy. GEF funds supported interventions led by NGOs in local communities on sustainable solid waste management, introduction of durable buoys, and increased awareness on preventing and controlling marine litter.

| Indicator No. 3.4: Status of the control of marine litter at selected locations | | | | |
|--|--|---|--|------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Due to a lack of appreciation of the problem little action is currently being undertaken | Regional Guidelines on control of marine litter based on those initiated by NOWPAP produced and adopted for use in the Yellow Sea | Draft regional guideline was developed, but not yet agreed upon. Expanded collaboration with the NOWPAP on marine litter database. | Mostly Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 3.4.1: Procedures in place to control and remove marine litter at demonstration sites

Key Achievements:

- Local NGOs, enterprises, and schools signed a cooperation agreement on coastal and marine environmental protection for Jinghai community, Weihai City, Shandong Province in 2019. These stakeholders have made efforts on developing a classification system for aquaculture waste and safe handling of fishermen's waste to enhance the effective handling of relevant pollution and wastes.
- Local stakeholders organized regular beach cleaning activities to advocate knowledge and improve public awareness on mitigating pollution of coastal ecosystems. A survey was administered to assess the expectation of fishermen regarding marine environmental protection.

Issues/Challenges:

- The co-management approach with villages needs more support from local governments and other stakeholders, to solve the problem of discarded fishing gear and reducing other types of marine litter.
- The regional guidelines on the control of marine litter has not been discussed between China and ROK. The possibility of using this guideline by both countries requires more time to explore.

COMPONENT 4: Improving Ecosystem Carrying Capacity with Respect to Supporting Services

| Outcome 4.1: Maintenance of current habitats and the monitoring and mitigation of the impacts of reclamation | |
|---|---------------------|
| Achievement rating: | Satisfactory |

In 2018, the Government of China prohibited any further reclamation, through issuance of Notice No. 24 from the State Council. This notice also stipulates that handling of legacy problems from reclamation projects will be accelerated. The Government of Korea has declared no further reclamation of critical coastal habitats; however, some reclamation developments that were approved prior to this declaration are allowed to continue.

There has been a significant increase in the number and coverage of MPAs. From 2011 to 2017, the number of MPAs in ROK went from 15 to 28, covering a cumulative area of 288.624 km² and 586.379 km², respectively. The concept of marine red line designation was first promoted in China by the SOA, and since that time the three YSLME provinces have designated more than 10% of their marine ecosystems as red line areas, where development activities are prohibited. The number of MPAs, wetland protected areas, and germplasm resource conservation zones have also increased over the lifespan of the project.

The GEF additionality under this outcome also included technical studies on coastal reclamation and impacts to critical coastal habitats, on improving the effectiveness and impacts of ecological restoration, a framework plan for the YSLME biodiversity conservation in the ROK (2018-2030), and a YSLME biodiversity conservation plan (2018-2030). There was no evidence showing the uptake of some of the recommended technical methodologies or of adoption of the biodiversity conservation plans.

Under the small grant mechanism on the project, grants were awarded to scientific organizations and NGOs – including the Chinese Academy of Fishery Science, which supported strengthening of the management and monitoring capacities and capabilities of MPAs; the Beijing Chaoyang District Yongxu Global Environmental Institute, which promoted community co-management to strengthen protection of seabirds, ensure sustainable small-scale fishing practices, and

promote regional cooperation and exchange among communities along the East Asian-Australian Flyway; the Institute of Geographic Sciences and Natural Resources Research for improving the understanding of migratory bird habitats and ecological connectivity; and the Society of Entrepreneurs and Ecology Foundation, in association with the IUCN, to strengthen regional cooperation on the conservation of Yellow Sea intertidal and coastal wetlands.

| Indicator No. 4.1: Areas of critical habitats; Status of mitigation of reclamation impacts | | | | |
|---|---|--|--|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Coastal habitats critical to maintaining ecosystem services continue to be converted or reclaimed unchecked | Areas of critical habitats maintained at current level. Increase 3% total areas as MPAs | Both littoral countries have instituted prohibitions on reclamation. And MPA coverage has increased by more than 3%. | Mostly Achieved |
| | | Impacts of reclamation prepared in 2 demo sites | Technical studies on the impacts of reclamation. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 4.1.1: Agreement at all levels to implement the relevant management actions to regulate new coastal zone reclamation projects

Key Achievements:

- The achievement list of the Outline of National Territory Planning of China (2016-2030) has mainstreamed coverage of wetlands as an anticipated indicator for protecting marine environment at national level.
- Shandong, Jiangsu and Liaoning provinces have their own Yellow Sea Marine Ecological Red line Plan at local level. For example: the overall targets of Jiangsu Province are 1) Percentage of Marine Ecological Red line area is controlled around 25.4% of the Yellow Sea marine function zone of Jiangsu Province, 2) Yellow Sea mainland coastal line length is 332 km and the retention rate of Yellow Sea mainland natural coastal line is no less than 35%, 3) Island natural coastal line is 456 km and the retention rate of Yellow Sea island natural coastal line is no less than 80%, 4) Up to 2020, the percentage of good sea water quality (class I and II) is around 95% in Yellow Sea coastal areas.

Issues/Challenges:

- Limitation on capacity and measures on strengthening the supervision of pollution from land to sea, which refers to in accordance with the “watershed – nearshore waters – red line region” hierarchical system to strengthen pollution monitoring and management of rivers entering the sea, comprehensively ban the illegal or unreasonable land-based discharges into the marine environment.

| Outcome 4.2: MPA network strengthened in the Yellow Sea | |
|--|--------------------------------|
| Achievement rating: | Moderately Satisfactory |

The project has facilitated strengthened knowledge on habitat connectivity in the YSLME and developed tools for integrating connectivity principles into conservation initiatives, e.g., for the spotted seal and spoon-billed sandpiper. Proposed priority conservation areas and opportunities for improving connectivity with existing and new MPAs have been documented and shared with YSLME stakeholders. Moreover, a MPA Network Development Training Toolkit was developed and training was delivered. The project had plans to further socialize the toolkit in 2020, but the COVID-19 pandemic has prohibited moving forward with these activities.

| Indicator No. 4.2: Level of ecological connectivity in expansion of the Yellow Sea MPA system | | | | |
|--|--|--|---|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | The planned expansion of the MPA system currently does not take into account ecological connectivity | The planned expansion of the MPA system currently does not take into account ecological connectivity (measured by use of developed connectivity tool kit or other means) | A MPA Network Development Training Tool has been developed, but not extensively socialized. Ecological connectivity priorities have not yet been widely adopted for MPA planning. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 4.2.1: MPA networks strengthened in the YSLME**Key Achievements:**

- A calculable index was used for connectivity analyses which cannot only reflect the fragmentation of the protected area network and identify the negative patch, but also better measure the connectivity of the protected area.
- The current situation of wetland reclamation, threats of critical habitats and conservation gaps have been identified through the implementation of this project, providing a good understanding for future directions on conservation in the YSLME area of China.
- The project initiated socialization of the MPA Network Development tool, e.g., a YSLME MAP Networking workshop was held in January 2020, when the latest efforts were reviewed among conservation authorities and practitioners in China and ROK, taking into account connectivity, migration, and monitoring considerations associated with the spotted seal, spoon-billed sandpiper, and other migratory species.

Issues/Challenges:

- The relationship and level of connectivity between the elements and appropriate measures in the MPAs in marine functional zoning have not been studied, which is an important aspect to be considered for formulating action plans on MPAs in the future.
- Although results based on scientific research have been demonstrated, the suggestion on strengthening the function of the MPA network has not been adopted into measures by local or national government.
- Extensive socialization of the MPA Network Development Training Toolkit has been constrained due to travel restrictions associated with the global COVID-19 pandemic.

Outcome 4.3: Adaptive management mainstreamed to enhance the resilience of the YSLME and reduce the vulnerability of coastal communities to climate change impacts on ecosystem processes & other threats identified in the TDA and SAP

Achievement rating:

Moderately Satisfactory

ICM has been mainstreamed into local development planning structures in 22 coastal cities, covering about 12% of the coastline of China, including the city of Lianyungang in Jiangsu Province, and in three cities along the coast of the Bo Hai Sea. The ICM work in China has been made in cooperation with PEMSEA since 2014. There was limited collaboration between the project and the ICM work in Lianyungang (missed opportunity).

ICM in ROK is mandated through the Coastal Management Act, which stipulates that ICM plans need to be formulated every 10 years. The requirements were further elaborated in the Second Plan for Integrated Coastal Management. Among the 74 local governments in coastal areas, 46 (62%) have completed ICM plans.

GEF additionality included a stock-taking report on the relationship between sea surface temperature changes of the Yellow Sea Cold Water Mass (YSCWM) and the structure of plankton communities. Definitive conclusions were precluded due to the lack of taxonomy data from plankton samples and the need to conduct high-resolution biophysical modeling on plankton dynamics. A rating of moderately satisfactory is applied because of limited progress on incorporating climate change adaptation strategies incorporated in regional strategies, and of unspecific number of ICM plans in the end target.

Other studies supported by the GEF funds included a vulnerability assessment of sea level rising in the vicinity of the city of Dandong, an impact assessment of sea level rising on wading birds in Dandong, and the effects of sea ice on the development of the Dandong coastal zone and marine species. These studies fed into the formulation of a model and database on marine vulnerability assessment for Dandong– providing important tools for improving resilience at the local and national levels.

| Indicator No. 4.3: Status of incorporation of adaptive management of climate change regional strategies and in ICM plans for selected coastal communities | | | | |
|--|--|---|---|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | Inadequate considerations are being given to the impacts of climate change | CC adaptation strategies incorporated in regional strategies such as YSCWM and plankton communities | Strategies on adaptation of climate change have not been incorporated into regional strategy. | Partially Achieved |

| | | | | |
|-------|------|---|---|---------------------------|
| | | ICM plans in (specify number) coastal communities incorporate CC adaptation to improve climate resilience | Vulnerability assessment methodologies have been developed. Limited progress with respect to incorporating climate change adaptation issues into ICM plans. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 4.3.1: Regional strategies adopted and goals agreed; site-based Integrated Coastal Management (ICM) plans enhancing climate resilience, in place for selected sites in YSLME; conservation areas and habitats for migratory species identified

Key Achievements:

- Deliverables under this output included development of a vulnerability assessment method, mainly involving the combined weighted sum method and the analytic hierarchy process using a comprehensive index method, integrated into a GIS platform and using a graph stacking method to complete the data processing and the final vulnerability assessment calculation. This provides useful evaluation models and methods for vulnerability assessments of cities along the Yellow Sea.
- Achievements under this output have improved the comprehensive understanding of managers of relevant departments of Dandong government on the vulnerability of coastal zones, and the vulnerability assessment of coastal zones will likely be gradually incorporated into daily work and budgeted in the future regular work plan of the Yalu River Estuary Nature Reserve. The Yalu River Estuary Wetland National Nature Reserve in Dandong has stressed a high level of interest and has promised to spend CNY 2.5 million in their future annual budget for the investigation of the baseline data. (Liaoning Forestry Reform and Development Fund Nature Reserve Subsidy Project)
- The results of vulnerability assessment provide references for local government departments in disaster response and mitigation. During and after Typhoon “Bawi” in Dandong in August 2020, the highly vulnerable areas received high attention from the management departments. The results of vulnerability assessment supported by this project provided valuable tools to mitigate disaster losses and follow-up disasters.

Issues/Challenges:

- The strategies on adaptation of climate change have not been incorporated into regional strategy by the end of TE. The strategies are still under discussion, as a part of the updated SAP between China and ROK.
- There was limited cooperation with the ICM planning work PEMSEA is supporting in coastal cities in China, including the Yellow Sea and Bo Hai Sea.

| | |
|--|--------------------------------|
| Outcome 4.4: Application of Ecosystem-based Community Management (EBCM) in risk management plans to address climate variability and coastal disasters | |
| Achievement rating: | Moderately Satisfactory |

The project has made substantive contributions regarding continued dialogue, scientific exchanges, and development of monitoring programs, a Regional Jellyfish Monitoring Program and a Comprehensive Regional Monitoring system: Monitoring Strategies for Climate Change, N/P/Si Changes, HABs, and Jellyfish Blooms. These two programs have been discussed at the technical level by relevant stakeholders on multiple occasions; however, they have not yet been approved by the two countries, and it is unclear if there are commitments in place to further advocate for approval after the Phase II project closes. Agreeing to common regional monitoring and data-sharing protocols is an important aspect of regional cooperation.

| Indicator No. 4.4: Status of Regional Monitoring Network for application of EBCM | | | | |
|---|--|--|--|---------------------------|
| | Baseline | End Target | Status at TE | TE Assessment |
| Value: | National Monitoring will continue without regional linkages and harmonisation making regional analyses difficult or impossible | Agreed number of cruises & parameters for the regional monitoring network established and data shared regionally via the project web site. | Cruises were not realized. Monitoring programs on jellyfish and HABs have been developed, but not yet approved. Project website provided a useful interim platform for data sharing. | Partially achieved |

| | | | | |
|-------|------|--|--|--------------------|
| | | Regular LME-wide assessments; enhanced information exchange; | Technical and scientific stakeholders had frequent exchanges, e.g., through the RWG-A. Limited progress on data sharing. | Partially achieved |
| | | Periodic scenarios of ecosystem change | Limited progress on periodic scenarios of ecosystem change. | Partially Achieved |
| Date: | 2013 | Dec 2020 | Sep 2020 | |

Output 4.4.1: Public awareness of Yellow Sea environmental problems enhanced; strong local support for and awareness of demonstration activities

Key Achievements:

- Skill trainings of local community groups improved the trainees' independency and enabled the local communities' capacities to continue carrying out activities after project closure. For example, experts were invited to enhance the local villagers' strawberry farming skills, such as disease control and eco-friendly products promotion. The villagers would be able to continue diversified livelihood opportunities rather than turning back to the over-exploited fishing.

Issues/Challenges:

- Protecting marine wildlife, such as rescuing, reproduction, and caring require specialized professional knowledge. Volunteers often lack the relevant knowledge, thus decreasing the effectiveness of the protection activities and of the communication to the general public.
- There is a lack of a platform for the public to access and share data and information related to the Yellow Sea environmental problems.

Output 4.4.2: Established monitoring network; regular basin-wide assessments; enhanced information exchange; periodic scenarios of ecosystem change; allocation of 1% of project budget for IW:LEARN activities

Key Achievements:

- Two monitoring programs have been developed through the support of the Phase II project: jellyfish and harmful algal blooms (HABs) at regional level, as an important technical preparation for joint actions on protecting marine environment between China and ROK.
- Many workshops of the RWG on assessment (RWG-A) and other relevant issues under the Phase II project provided good opportunities to exchange information at the technical level.

Issues/Challenges:

- The jellyfish and HABs monitoring programs have not yet been approved.
- The establishment on the mechanism of data sharing has not achieved consensus between China and ROK due to different national policies. However, the technical communications have facilitated certain progress at regional level.
- Limited information sharing on periodic scenarios of ecosystem change.
- The available breakdown of project expenditures precludes evaluation of the amount spent on IW:LEARN activities.

3.3.2 Relevance

Relevance is rated as: Highly Satisfactory

The project design was directly aligned with the 2009-2020 YSLME regional SAP.

In China, the project objectives are consistent with a number of national and subnational strategies and plans, including the National 13th (2016-2020) Five-Year Plan (FYP) for Marine Economy Development and the 13th FYP's for Liaoning, Jiangsu, and Shandong provinces on Marine and Fisheries Development, Marine Functional Zoning, Marine Ecological Red line Protection Plan, and Marine Environmental Protection Plan.

In ROK, complementary strategies and plans include the Basic Plan for the Restructuring of Inshore and Offshore Fisheries, the Marine Environment Monitoring Network, the Second Comprehensive Plan for the Management of Nonpoint Pollution Sources (2012-2020), the Second Basic Plan for Marine Litter Management (2014-2018), and the First Basic Plan for the Conservation and Management of Marine Ecosystems (2009-2018).

The project was aligned with Objective 2 of the GEF-5 Programming Strategy for the IW focal area: “Catalyze multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LMEs) while considering climatic variability and change”.

The development objectives of the project were aligned with the United Nations Development Assistance Framework (UNDAF) and the UNDP Country Programme Document (CPD) for China for the period of 2016-2020, specifically UNDAF Outcome #2, “More people enjoy a cleaner, healthier environment as a result of improved environmental protection and sustainable green growth”, and CPD Output 2.1 “China’s actions on climate change mitigation, biodiversity, and chemicals across sectors are scaled up, funded, and implemented”.

3.3.3 Efficiency

Efficiency is rated as: Moderately Satisfactory

Project efficiency was affected by the 3-year delay in starting the project implementation and the time needed for the second PMO team to build back momentum. Approx. 63% of the GEF project grant has been expended in the last two years of the project, i.e., 2019-2020, and there has been limited time to gain approval of the various guidelines and strategies developed under the project. Updating the TDA and SAP as part of the agreement to grant the project no-cost time extensions were opportune decisions; however, garnering support of a 10-year SAP takes time (it took 3 years to reach endorsement of the first SAP (2009-2020) in the Phase I project). The COVID-19 pandemic has compounded the efforts of the project to deliver during the final year, when projects are often faced with finalizing a number of deliverables.

The broad scope included in the project strategy presented implementation and quality challenges, i.e., the GEF resources were spread fairly thin across the thematic subject areas.

3.3.4 Sustainability

Sustainability is generally considered to be the likelihood of continued benefits after the GEF funding ends. Under GEF criteria each sustainability dimension is critical, and the overall ranking, therefore, cannot be higher than the lowest one.

Overall:

Likelihood that benefits will continue to be delivered after project closure: Moderately Likely

The project helped facilitate progress towards achieving a regional governance mechanism for the ecosystem-based management of the YSLME. The parties have not yet reached a formal agreement, but there has been accelerated dialogue in 2020 on reaching agreement on an MOU that outlines the parameters and next steps for a durable regional cooperation arrangement. The updated SAP (2020-2030) developed under the project provides a practical framework for orienting the priorities for regional collaboration over the short to medium term.

Increased cooperation among the scientific and technical communities was strengthened through the functioning of the national and regional working groups. And the Phase II project helped facilitate expanded stakeholder engagement, particularly among the NGO and private enterprise sectors. There was limited engagement with stakeholders from production sectors and with stakeholders responsible for controlling and monitoring land-based pollution.

Current threats to the YSLME are driven by uncoordinated management and inadequate control of pollution, including industrial emissions, agriculture and mariculture, sewage discharge, solid waste (particularly plastics). Strengthening ecosystem resilience, including improving disaster preparedness and upscaling local ICM plans into regional strategies that address ecosystem vulnerabilities to the predicted climate change scenarios. These aspects are included in the updated SAP (2020-2030) that is under development; endorsement of the updated SAP (2020-2030) would enhance the likelihood that sustainable management of the YSLME will be achieved over the long-term.

Financial dimension:

Likelihood that benefits will continue to be delivered after project closure: Likely

There is a high likelihood that financial resources will continue to be available after GEF funding ends. National and subnational plans and programs for coastal and marine areas in China and ROK have been consistent with the priorities included in the SAP (2009-2020). For example, the Government of ROK reported USD 6.89 billion of financing in the

period of 2014-2020 for coastal and marine initiatives across the country. There have also been significant investments made by the Government of China, including USD 192 million of co-financing for the project.

Sustainable financing options for a regional governance mechanism were assessed under the project and included an environmental trust fund, which was not adopted by the ICC and both countries conclude such a fund was not a suitable approach for the context of the YSLME. Over the short-term, utilizing existing technical cooperation structures for delivering secretariat related functions for a YSLME regional collaboration arrangement is being discussed as an option by the two countries.

Other projects and initiatives further enhance the financial dimension of sustainability. For instance, the GEF-7 East Asian-Australian Flyway project under development would advance regional cooperation on biodiversity conservation in the YSLME (and beyond). The YSLME littoral countries continue their involvement in complementary regional initiatives, including SDS-SEA, NOWPAP, NEAMPAN, etc. Under their Blue Plant fund, WWF China is operating a small grants program focused on coastal and marine issues, including the YSLME.

Socio-political dimension

Likelihood that benefits will continue to be delivered after project closure: Moderately likely

Country ownership was high throughout the project. The Korean Ministry of Oceans and Fisheries (MOF) and the Ministry of Foreign Affairs have been consistently involved. In China, the main focal point was elevated during Phase II to a ministry level, through the establishment of the Ministry of Natural Resources (MNR), which is conducive to the need for integrated management of marine and terrestrial ecosystems.

The key stakeholders that were involved in the project were largely from the scientific and technical communities focused on fisheries and marine management. There was limited engagement with stakeholders related to land-based pollution from production sectors or with subnational authorities responsible for coastal zone development.

The project was successful in expanding stakeholder participation with involvement of civil society and the private sector. The small grants awarded on the project went only to Chinese NGOs; it would have been advisable to open the calls for proposals to Korean NGOs also.

High quality knowledge products and an active website containing extensive information enhance the likelihood of sustaining the results achieved on the project. There is a degree of uncertainty on the likelihood that some of the guidelines and strategies will be advocated and replicated after project closure.

The participation of DPRK, one of the littoral countries of the YSLME, was prohibited during the Phase II project as a result of international sanctions. Overall sustainability is diminished with the lack of involvement of DPRK, but this is beyond the control of the project stakeholders.

Institutional framework and governance dimension:

Likelihood that benefits will continue to be delivered after project closure: Moderately likely

Whilst there has been sustained dialogue between the parties over the course of the project on the subject of establishing a regional YSLME governance structure, there remain uncertainties at project closure. The MOU that is under discussion significantly strengthens the prospects for achieving a cooperation arrangement, and the updated SAP (2020-2030) provides a blueprint for prioritizing regional actions.

The functioning of the regional and national working groups on the project facilitated improved interaction and strengthened capacities of institutional partners. IMCC meetings were reportedly convened periodically to ensure high level engagement and cross-sectoral cooperation; however, there was limited information on the results of the IMCC meetings and decisions.

In both countries there are several individuals who have had extensive involvement, including engagement during the Phase I project, and are committed and motivated to further advance the processes of regional collaboration. It would be advisable to ensure those individuals remain engaged and encourage them to provide mentoring support to other staff members, including young professionals.

Environmental dimension:

Likelihood that benefits will continue to be delivered after project closure: Moderately likely

The countries have made substantive progress towards controlling and reducing pollution to the YSLME, including investments in advanced and expanded wastewater treatment, improved agricultural and mariculture practices, better solid waste management (including marine litter), and adoption of ICM approaches. The Phase II project provided incremental benefits in facilitating dialogue on regional biodiversity conservation, including regional MPA networks, demonstrating reduced pollution through application of IMTA, demonstration of results achieved from restoring

reclaimed areas to natural wetlands, supporting initiatives associated with reducing fishing vessels and updating licensing programs, and expanding the knowledge base on the impacts of pollution and climate change to the YSLME.

Pollution and climate change related issues remain significant concerns. In fact, three of the emerging issues identified in the updated TDA (2020) are associated with pollution, i.e., air pollution from industrial emissions, marine litter and microplastics attributed to the overuse of plastics and inadequate control of marine litter, and contaminants of emerging concern that are related to sewage discharge. The findings of the updated TDA (2020) also point out worsening trends associated with changes in biomass and species composition, driven by pollution and regional climate change (warming, decreased pH levels).

3.3.5 Country ownership

Both countries have allocated substantial funds towards achieving ecosystem improvements in the YSLME, consistent with the priorities agreed upon in the SAP (2009-2020). Co-financing from the two national governments considerably exceed the figures confirmed at project entry. Moreover, the project preparation costs were fully funded through co-financing contributions; GEF resources were not utilized for the development of the project design.

Major institutional restructuring in China coincided with the project lifespan - this presented challenges to the implementation but also strengthened stakeholder influence in the long-term. The SOA, formerly a stand-alone institution was merged into the newly established MNR. The restructuring has consolidated many marine related functions under the MNR and has elevated the Chinese focal point for the YSLME project to a ministerial level. Cross-sectoral collaboration remains a priority, considering that fisheries fall under the mandate of the MARA and the Ministry of Ecology and Environment (MEE) is responsible for pollution related issues and is the focal agency to the UN Convention on Biological Diversity (CBD), UN Framework Convention on Climate Change (UNFCCC), and other multilateral environmental agreements.

Although a formal regional governance mechanism has not yet been established, the two parties have continued to engage in constructive dialogue through the ICC and separate bilateral channels. A clear message communicated during the TE interviews was that a regional governance arrangement is needed for the YSLME. There are bilateral agreements and various technical cooperation arrangements, and China and ROK are active members on regional platforms, such as Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), North-East Asian Marine Protected Areas Network (NEAMPAN), NOWPAP, etc. But there is an overwhelmingly consistent view among YSLME stakeholders supporting the need for a regional governance mechanism to address ecosystem-wide issues. This is testament to the relevance of the project.

Country ownership was somewhat diminished as a result of activities under Components 2 and 3 being mostly carried out in China, rather than focusing more on regional issues. This resulted in a slight reluctance among some of the Korean stakeholders to engage on the project.

3.3.6 Gender equality and women's empowerment and cross-cutting issues

Limited resources were allocated for integrating gender equality and human rights. The project did a good job tracking participation of women, but there were no specific strategies, e.g., gender action plan, and a limited-scope social and environmental risk screening on the project was made at the project preparation phase.

There were some community development related activities, such as assessing the socioeconomic impacts of the fishing vessel buy-back program in China, delivering training to displaced fishers, and on raising public awareness regarding marine litter and ICM. And the project made substantive contributions towards strengthened knowledge and assessment tools regarding the vulnerability of coastal areas in China to climate hazards.

Cross-cutting issues are incorporated into the draft, updated SAP (2020-2030), including Target 3 (Build social safeguards into development of a sustainable marine food supply), Target 5 (Reduce exposure to pathogens and emerging contaminants in the marine environment), Target 7 (Assess and adapt to long term changes in the marine ecosystem), and Target 9 (Prevent and reduce marine disasters). Moreover, Section 4.1 of the draft SAP (2020-2030) under the "Enabling Conditions for the YSLME SAP" chapter is on mainstreaming gender in management actions.

3.3.7 GEF additionality

China and ROK have made substantial investments in coastal and marine environment improvements in the YSLME over the past 10 years. GEF additionality included facilitating regional dialogue and formulating options for durable regional cooperation and financing arrangements; exchanging knowledge and lessons among the scientific communities; providing added value to innovative approaches and technologies, such as IMTA, ecological engineering approaches like constructed wetlands; providing small grants to civil society organizations and research institutions for promoting

best practice management and raising community awareness; delivering technical assistance in analyzing current and emerging threats, updating the TDA and developing an updated regional SAP for the period of 2020-2030.

3.3.8 Catalytic / replication effort

Knowledge transfer on the project was facilitated on several fronts, particularly through the interactions on the regional and national working groups, capacity building activities, exchange visits, seminars, and production and dissemination of knowledge products, training modules, and communication posts.

The project has produced a number of high quality knowledge products, including several well-made videos on some of the primary thematic areas of the project, e.g., “Saving the critically-endangered spoon-billed sandpiper” (released in May 2020 on Biodiversity Day), “Restoring the ecosystem carrying capacity and enabling the return of fish species in the Yellow Sea” (released in June 2020 on World Oceans Day), “Sealing a new ecological contract with the Yellow Sea through IMTA: the story of Dongchu Island” (released in June 2020 on World Oceans Day), “Cracking down on the tiny but dangerous microplastics: Responding to challenges of marine litter” (released in June 2020 on World Oceans Day), “Saving the remaining intertidal mudflats in the Yellow Sea for the critically-endangered spoon-billed sandpiper” (released in June 2020 on World Oceans Day), “Developing a network of marine protected areas in the Yellow Sea (released in June 2020), and “Restoring the ecosystem carrying capacity of the Yellow Sea” (project video).

An extensive amount of information was uploaded to the project website, which was regularly maintained. The project also had an extensive footprint on social media, including Facebook, Instagram, Twitter, and WeChat Information has also been shared through the IW:LEARN, which is the GEF IW focal area knowledge management platform, and the TE team was informed that most of the content from the project website will be uploaded to the IW:LEARN platform.

Exchange visits involving scientific experts were important in terms of transfer of knowledge and influencing the catalytic effect of the project. For example, sharing information on the use of biodegradable fishing gear in ROK was of interest among the Chinese counterparts, and exchanging approaches used for jellyfish monitoring helped to harmonize the methodologies used in the two countries. Operators in China have considerably more experience in commercial scale implementation of IMTA, and Korean experts shared their research findings on productivity, nutrient dynamics, and disease transfer between organisms.

Another example of a catalytic effect was the construction of a training center by the Dongchu Island Fishery Cooperation. The center has a 120 m² meeting room for training on IMTA techniques. Three training courses for Chinese mariculture managers and academia were conducted in 2018-2019.

A twinning exchange between the YSLME project and the Caribbean Regional Fishery Mechanism (CRFM) was facilitated by IW:LEARN and IOC/UNESCO to share knowledge on IMTA technology with three Caribbean countries. Project partners hosted the Executive Director of CRFM and a senior government official from Jamaica on a week-long visit, as part of CRFM’s efforts to advocate IMTA as a sustainable production approach in line with the blue economy strategies in the region.

There are a number of items requiring follow-up action after project closure. Sustained engagement of high level officials is needed to facilitate agreement to the MOU under discussion and the updated SAP (2020-2030). Several draft strategies, guidelines, and protocols have not yet been approved or widely socialized among relevant stakeholders. A few examples of such strategies and plans include the following: Regional Guidelines for Responsible Fisheries in the YSLME, Framework Plan for the YSLME Biodiversity Conservation in the Republic of Korea (2018-2030), YSLME Biodiversity Conservation Plan (2018-2030), MPA Network Development Training Toolkit, Regional Jellyfish Monitoring Program, and Comprehensive Monitoring System for the YSLME.

The project has not yet developed an exit strategy or sustainability plan for ensuring the outstanding issues are tended to after project closure. The 2018 Communication & Awareness Raising Strategy for the project mentions the concept of identifying individual or organizational level Yellow Sea champions/ambassadors, but there is no evidence that such champions/ambassadors have been designated.

3.3.9 Progress to impact

Global environmental benefits generated

The following global environmental benefits have been generated through the Phase II project:

Substantive progress towards regional agreement and collaborative management to support SAP implementation

Facilitated by ICC and six RWGs, there has been substantive progress towards reaching a clearer understanding on a regional governance mechanism for the YSLME. At the time of the TE and confirmed during the 5th ICC meeting on 19 October 2020, government officials from China and ROK have agreed to the text of a MOU that confirms their

commitment towards regional governance and sets out the next steps for operationalizing an agreed collaborative arrangement.

Advanced level of transboundary diagnostic analysis and strategic action program formulation and implementation

The project funded an updated TDA, with the report issued in June 2020, and an updated SAP covering the period of 2020-2030 has been drafted and was being socialized at the time of the TE in September 2020. The analyses undertaken as part of the updated TDA provided an opportunity to revisit the concerns addressed in the TDA completed during the Phase I project and to consider emerging issues, including air pollution, marine plastics, and contaminants of emerging concern.

The two countries have made significant investments in line with the ecosystem-based management priorities outlined in the 2009-2020 SAP, including monitoring, surveillance, and control of fisheries operations, buy-back of fishing vessels, improving mariculture operations, expanded monitoring of point and non-point sources of pollution, development and operation of environmental information systems, collection and control of marine litter, upgrades and expanded wastewater collection and treatment, restoration of degraded coastal ecosystems, management of MPAs, marine surveys, public awareness campaigns, etc.

Progress towards verifiable changes in environmental stress and environmental status

As described in the 2011 TE of the Phase I project and mentioned in the design of the Phase II project, a non-legally binding governance mechanism was considered the most likely arrangement for some time. As the Phase II project nears closure, there has been accelerated progress with respect to negotiating the terms of a MOU that would reaffirm the two countries commitment and provide further direction on the agreed next steps.

Problems associated with overfishing, i.e., fishing effort exceeding ecosystem carrying capacity, was one of the primary issues identified in the TDA completed during the Phase I project and prominently highlighted in the 2009-2020 SAP. The Phase II project strategy included activities supporting the countries' efforts at reducing pressures on YSLME fisheries, as well as addressing adverse impacts of mariculture on ecosystem health. One of the common management measures between the two countries is a reduction in the number of fishing vessels, through buyback programs and other economic displacement schemes. Significant numbers of vessels have been taken out of the capture fisheries sector. A high proportion of the reductions occurred among small-scale fishers, particularly in China. The importance of small-scale fishers on capture fisheries is substantial, not only in terms of production volumes but also because they are often exempt from regulatory regimes and because the livelihoods and safety of the fishers are regularly in danger, as their economic outputs are often insufficient for investing in better equipment and knowledge.

Fishing pressure has also been reduced by displacing larger vessels to more offshore waters where fishing is controlled through fishery agreements, whereas fisheries in coastal waters are managed by seasonal closures and other management measures. The two countries have established a series of agreements on the production and protection of YSLME fisheries.

Apart from reduction in fishing vessels, other management measures and habitat enhancement initiatives are being implemented in the two countries. ROK continues to expand the application of TAC approaches, with 18 species under TAC systems by the end of 2017. TAC implementation has been gaining traction in China in recent years for some species, with 5 currently under implementation. Seasonal closure of fishing grounds is a management measure widely applied across the region. Evidence of environmental status change has been reported in China, e.g., trophic levels (TL) of dominant capture fishery species in 1998-2000 were 3.46-3.48, whereas the TL of dominant species in 2014-2015 were 3.73-3.84.

Restrictions on further land reclamation instituted in both countries in recent years has been a major achievement in terms of reducing environmental stress across the coastal areas of the YSLME. Restoration of coastal ecosystems, expansion of protected areas, and increased awareness among local communities have facilitated environmental status changes, e.g., increased populations of endangered species, including the spoon-billed sandpiper (*Calidris pygmaea*, IUCN Red List Critically Endangered). Coastal zones also provide protection against storm surges and other expected impacts of climate change, as recognized through the expanded adoption of ICM in the two countries.

Pollution and climate change related issues remain significant concerns. In fact, three of the emerging issues identified in the 2020 TDA are associated with pollution, i.e., air pollution from industrial emissions, marine litter and microplastics attributed to the overuse of plastics and inadequate control of marine litter, and contaminants of emerging concern that are related to sewage discharge. The findings of the updated TDA (2020) also point out worsening trends associated with changes in biomass and species composition, driven by pollution and regional climate change (warming, decreased pH levels). And the challenge of microplastics is increasingly recognized as a significant issue, affecting all tropic levels in marine ecosystems.

Extensive macroalgae blooms have occurred in the Yellow Sea over the past 20 years, influenced by multiple stressors, including land-based pollution discharges, climate change (e.g., warming sea surface temperatures), and expanded mariculture operations, including seaweed cultivation. Results of a remote sensing study⁴ published in 2020 report that there was a 50% increase in chlorophyll concentrations in the Yellow Sea from the 1990s until 2011, followed by a 34% decrease to 2019. There is general consensus that more needs to be done in terms of pollution reduction, adopting sustainable management practices of mariculture installations, and gaining a better understanding of ecosystem dynamics in the Yellow Sea to control macroalgal blooms and other threats to ecosystem health.

3.3.10 Contributions towards achievement of Sustainable Development Goals (SDGs)

The project has made substantive contributions toward achievement of SDG 14, as outlined below in **Table 7**.

Table 7: Project contributions towards achievement of SDGs

| SDG target | Project contribution |
|---|--|
|  | <p>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> |
| <p>Target 14.1. By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.</p> | <p>Component 3 on the project was focused on reducing pollution, including land-based nutrient discharges, excessive nutrient inputs from unsustainable mariculture operations, and marine litter. Emerging issues identified in the updated TDA (2020) include atmospheric particulate matter, marine litter, and microplastics.</p> |
| <p>Target 14.2. By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.</p> | <p>Both China and ROK have instituted policies prohibiting new reclamation of coastal areas. The coverage of MPAs has substantially increased over the past 10 years. GEF resources provided technical assistance and grant support for demonstration projects on restoration of natural wetlands, enhancing public awareness on the value of coastal and marine ecosystems, and cooperating regionally on protecting globally significant biodiversity.</p> |
| <p>Target 14.4. By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.</p> | <p>Overfishing has been one of the main drivers of loss of biodiversity in the YSLME, and the regional SAP (2009-2020) had a strong emphasis on promoting sustainable management of fishery resources. Reduction in the number of fishing vessels has been one of the common management measures in the two countries. The draft updated SAP (2020-2030) promotes joint management of fish stocks, e.g., through Total Allowable Catch (TAC) approaches, developing a sustainable mariculture industry, and building social safeguards into the development of sustainable marine food supply.</p> |
| <p>Target 14.5. By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</p> | <p>The coverage of MPAs, including seasonal closure of fishing grounds, has increased in both China and ROK. The GEF project supported the development of a MPA Network Development Training Toolkit and initiated the socialization of this management tool among regional expert practitioners.</p> |
| <p>Target 14.c. Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want".</p> | <p>The objective of the YSLME regional SAP (2020-2030) and the Phase II project is predicated on enhancing the conservation and sustainable use of the Yellow Sea LME, consistent with the UN Convention on the Law of the Sea (UNCLOS).</p> |

Secondary contributions have been made to **SDG 2** (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), **SDG 6** (Ensure availability and sustainable management of water and sanitation for

⁴ Sidman, G, S. Fuhrig, and G. Batra. 2020. The use of remote sensing analysis for evaluating the impact of development projects in the Yellow Sea Large Marine Ecosystem. Sustainability 2020, 12, 3628.

all), **SDG 12** (Ensure sustainable consumption and production patterns), **SDG 13** (Take urgent action to combat climate change and its impacts), and **SDG 17** (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable development).

4 Conclusions, recommendations, and lessons

Conclusions

Following a highly successful Phase I project that closed in 2011, the Phase II project was developed to support the implementation of the 2009–2020 SAP. The Phase II project obtained endorsement from the GEF CEO in February 2014 and was approved by the Government of China in July of that year, the official start date of the 4-year duration project. Project implementation was significantly delayed, with the project inception workshop held in July 2017, three years after the official July 2014 start date. Two, no-cost time extensions were granted, shifting the closure date to 31 December 2020. As of 30 June 2020, USD 6.95 million of the USD 7.56 million GEF project grant had been expended.

Facilitated by ICC and six RWGs, there has been substantive progress towards reaching a clearer understanding on a regional governance mechanism for the YSLME. At the time of the TE and confirmed during the 5th ICC meeting on 19 October 2020, government officials from China and ROK were discussing the details of a MOU that confirms their commitment towards regional governance and sets out the next steps for operationalizing an agreed collaborative arrangement.

The project funded an updated TDA, with the report issued in June 2020, and an updated SAP covering the period of 2020–2030 has been drafted and was being socialized at the time of the TE in September 2020. The analyses undertaken as part of the updated TDA (2020) provided an opportunity to revisit the concerns addressed in the TDA completed during the Phase I project and to consider emerging issues, including air pollution, marine litter and microplastics, and contaminants of emerging concern.

The two countries have made significant investments in line with the ecosystem-based management priorities outlined in the 2009–2020 SAP, including monitoring, surveillance, and control of fisheries operations, buy-back of fishing vessels, improving mariculture operations, expanded monitoring of point and non-point sources of pollution, development and operation of environmental information systems, collection and control of marine litter, upgrades and expanded wastewater collection and treatment, restoration of degraded coastal ecosystems, management of MPAs, marine surveys, public awareness campaigns, etc.

China and ROK have made substantial investments in coastal and marine environment improvements in the YSLME over the past 10 years. GEF additionality included facilitating regional dialogue and formulating options for durable regional cooperation and financing arrangements; exchanging knowledge and lessons among the scientific communities; providing added value to innovative approaches and technologies, such as IMTA, ecological engineering approaches like constructed wetlands; providing small grants to civil society organizations and research institutions for promoting best practice management and raising community awareness; delivering technical assistance in analyzing current and emerging threats, as well as updating the TDA and developing an updated SAP (2020–2030).

Recommendations

The following recommendations have been formulated based upon the findings of the TE.

| No. | Recommendation | Responsible Entities | Timeframe |
|-----|---|----------------------|-----------|
| 1. | A sustainability plan should be prepared prior to project closure. It would be advisable to prepare a sustainability plan that outlines the follow-up actions to ensure the durability of the results achieved. For example, endorsement of the SAP (2020–2030), approval of the MOU currently under discussion, transfer of project documentation including knowledge products, socialization of the MPA connectivity toolkit, advocacy strategy for engaging DPRK, etc., to the GEF IW:LEARN or other platforms. The sustainability plan should also include an analysis of the risks and opportunities associated with the COVID-19 pandemic. | PMO, UNDP | 2020 Q4 |
| 2. | Identify YSLME champions for sustaining the Yellow Sea Partnership. Specific individuals and/or organizations should be designated as YSLME champions, who agree to voluntarily facilitate and advocate for implementation of the sustainability plan, and to help sustain the YSP. | PMO, ICC | 2020 Q4 |
| 3. | Building upon the existing technical cooperation structures for the YSLME regional governance mechanism is sensible. Instituting the YSLME regional governance mechanism through an expanded mandate of existing technical cooperation arrangements would be a practical approach. There are minimal barriers with respect to cooperation among the scientific | ICC | 2020–2021 |

| | | | |
|----|---|-----------|-------------------------------------|
| | and technical communities and joint financing mechanisms are in place and could probably be upscaled fairly easily with limited additional administration. The cooperation could be incrementally expanded to other sectors, including governmental administration, civil society, private sector, etc. | | |
| 4. | A follow-up GEF project should focus more on regional issues and have a narrower scope. It is clear that the governments of China and ROK continue to invest substantial funds into improving environmental conditions of coastal and marine environments. The GEF additionality on an international waters project should focus more on regional activities that the littoral countries might not be addressing individually or bilaterally, and on emerging issues and innovative approaches. For example, collaborative total allowable catch (TAC) initiatives linked up with joint stock surveys is in line with the priorities outlined in the draft, updated SAP (2020-2030). Atmospheric particulate matter, marine litter, and microplastics are also issues that require more joint effort, as the impacts are increasingly seen across all trophic levels of marine ecosystems. | ICC, UNDP | Upon endorsement of the updated SAP |
| 5. | The Joint Fisheries Committee (JFC), associated with the 2001 Fishery Agreement between ROK and China, should be engaged in the ecosystem-based management of the YSLME. It is important to connect the production based decisions made by the JFC with stakeholders involved in management and conservation of fisheries and the ecosystems supporting them. | ICC | 1-2 years |
| 6. | Regional MPA initiatives offer opportunities for further strengthening joint collaboration. For instance, the members of the East Asian-Australian Flyway Partnership (EAAFP) include the YSLME littoral countries (as well as DPRK) and several international NGOs. The is a GEF-7 project currently under development with support of the UNDP. The YSLME countries are also participating in the North-East Asian Marine Protected Areas Network (NEAMPAN). Socializing the MPA Connectivity Toolkit among these other initiatives could be an effective way to advocate for the priorities highlighted under the Phase II project. | YSP, UNDP | Ongoing |
| 7. | Broaden stakeholder engagement among the agriculture and water resources management sectors. Engagement with these sectors is imperative for developing land-based pollution reduction strategies that consider the complex linkages between terrestrial, and marine ecosystems. | ICC, YSP | 1-2 years |
| 8. | Promote development of a regional ICM strategy that consolidates or clusters local level ICM plans. This is a viable entry point for cross-sectoral and regional collaboration, e.g., through development of joint early warning systems, sharing lessons learned and approaches. | ICC, YSP | 1-2 years |
| 9. | Strengthen regional NGO collaboration on innovative approaches, training, and public awareness. Regional NGOs can bring innovative knowledges and tools for addressing the challenges facing the YSLME. For example, the approach towards strengthening public awareness on the classification of marine litter could be more explored among regional NGOs, and developing more effective ways to share knowledge under relevant domestic circumstances. Overcoming the language barriers should also be included in the collaboration strategy, e.g., through training, interpretation tools, etc. | YSP | Ongoing |

Lessons

Good practices and lessons learned on the project are presented below.

Good Practices:

- The mechanism of establishing RWGs across six thematic subjects was good practice for facilitating effective regional cooperation at the technical and political levels.
- Involvement of key stakeholders in the Phase I and Phase II projects helped maintain consistency and coherency on addressing the issues facing the YSLME.
- Assigning specific coordination duties (e.g., facilitating review of the updated TDA (2020) and SAP (2020-2030)) to the National Coordinator of NWG-G in China was a good practice in facilitating strong country ownership.
- Collaboration with other regional initiatives, e.g., SDS-SEA, NOWPAP, NEAMPAN, etc., was a good practice that enhances the likelihood that results achieved on the project will be sustained after project closure.
- The project website was regularly updated with a comprehensive set of information posted, providing a practical platform for knowledge and information transfer.
- Production of high-quality knowledge products, including videos, and utilization of the IW:LEARN platform enhance the effectiveness of knowledge management.

- Expanding stakeholder engagement among civil society organizations and private sector was a good practice at facilitating multi-stakeholder buy-in for conservation and sustainable production initiatives.

Lessons Learned:

- The project scope was too broad, presenting both implementation and quality challenges.
- The 4-year timeframe for project implementation was too short, considering the complex project strategy and the time typically required to facilitate transboundary water governance.
- The demonstration activities under Components 2 and 3 should have been more oriented towards regional cooperation.
- The project indicator framework was not fully validated during project preparation or at project inception, resulting in confusion on interpretation and reporting of some of the results of the project. Developing a detailed monitoring plan would have also benefitted project monitoring and evaluation.
- A stakeholder engagement plan was not prepared for the project. There were shortcomings in stakeholder engagement that might have been addressed through development of a stakeholder engagement plan.
- Interaction across the working groups would have helped facilitate better cross-sectoral, inter-sectoral, and regional coordination.
- Combining the Project Manager and CTA functions into one position was an under-estimation of the workload required for these two roles.
- A gender analysis and action plan should have been prepared at the project preparation phase (or at inception) to orient the gender mainstreaming strategy of the project.
- Social and environmental risks were not assessed in detail, and there were no safeguard plans developed for the project.
- The language barrier between Chinese and Korean stakeholders constrain engagement among some stakeholder groups. It would be advisable to ensure sufficient budget is allocated for adapting and overcoming this barrier.
- Cofinancing allocations should extend beyond project closure to cover follow-up actions. Allocation of cofinancing contributions should extend beyond the date of project closure, e.g., by 2-3 years, to cover the cost and oversight for follow-up actions.

Annex 1: Evaluation Matrix

| Evaluation Criteria Questions | Indicators | Sources | Methodology |
|--|---|--|---|
| Relevance: Is the project relevant with respect to the environmental and development priorities at the local, regional and national levels? | | | |
| To what extent is the principle of the project in line with regional and national priorities? | Level of participation of the concerned agencies in project activities. Consistency with relevant strategies and policies. | Minutes of meetings, Project progress reports, national and regional strategy and policy documents | Desk review, interviews |
| To what extent is the project aligned to the main objectives of the GEF focal area? | Consistency with GEF strategic objectives | GEF Strategy documents, PIRs, Tracking Tools | Desk review, interview with UNDP-GEF RTA |
| To what extent is the project aligned to the strategic objectives of UNDP? | Consistency with UNDP strategic objectives | UNDP Strategic Plan, Country Programme Document | Desk review, interview |
| Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved? | | | |
| Assessment of progress made toward achieving the indicator targets agreed upon in the logical results framework | | | |
| Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results? | | | |
| What evidence is available showing sufficient funding has been secured to sustain project results? | Financial risks | Progress reports, sectoral plans, budget allocation reports, testimonial evidence | Desk review, interviews |
| How have individual and institutional capacities been strengthened, and are governance structures capacitated and in place to sustain project results? | Institutional and individual capacities | Progress reports, testimonial evidence, training records | Desk review, interviews |
| What social or political risks threaten the sustainability of project results? | Socio-economic risks | Socio-economic studies, macroeconomic information | Desk review, interviews |
| Which ongoing circumstances and/or activities pose threats to the sustainability of project results? | Risks to sustainability | Sectoral plans, progress reports, macroeconomic information | Desk review, interviews, field visits |
| Have delays affected project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages? | Impact of project delays | Progress reports | Desk review, interviews |
| Impact: Are there indications that the project has contributed to, or enabled progress toward long lasting desired changes? | | | |
| What verifiable environmental improvements have been made? | Verifiable environmental improvements | Progress reports, sectoral plans, municipal development plans | Desk review, interviews, theory of change analysis |
| What verifiable reductions in stress on environmental systems have been made? | Verifiable reductions in stress on environmental systems | Progress reports, sectoral plans, municipal development plans | Desk review, interviews, theory of change analysis |
| How has the project demonstrated progress towards these impact achievements? | Progress toward impact achievements | Progress reports, sectoral plans, municipal development plans | Desk review, interviews, theory of change analysis |
| Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards? | | | |
| How was the project efficient with respect to incremental cost criteria? | Incremental cost | National strategies and plans, progress reports | Desk review, interviews |

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| Evaluation Criteria Questions | Indicators | Sources | Methodology |
|---|--|--|---------------------------------------|
| To what extent were the project objective and outcomes realized according to the proposed budget and timeline? | Efficient utilization of project resources | Progress reports, financial records | Desk review, interviews |
| Country Ownership: | | | |
| How are project results contributing to regional, national, and subnational development plans and priorities? | Development planning | Government approved plans and policies | Desk review, interviews |
| Which governments policies or regulatory frameworks were approved in line with the project objective? | Policy reform | Government approved plans and policies | Desk review, interviews |
| How have governmental and other cofinancing partners maintained their financial commitment to the project? | Committed cofinancing realized | Audit reports, project accounting records | Desk review, interviews |
| Stakeholder Involvement and Partnership Arrangements: | | | |
| How has the project consulted with and made use of the skills, experience, and knowledge of the appropriate government entities, NGOs, community groups, private sector entities, local governments, and academic institutions? | Effective stakeholder involvement | Meeting minutes, reports, interview records | Desk review, interviews, field visits |
| How were partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? | Partnership arrangements | Memorandums of understanding, agreements | Desk review, interviews |
| How have partnerships influenced the effectiveness and efficiency of project implementation? | Effective partnerships | Progress reports, interview records | Desk review, interviews, field visits |
| How have relevant vulnerable groups and powerful supporters and opponents of the processes been properly involved? | Inclusive stakeholder involvement | Meeting minutes, reports, interview records | Desk review, interviews, field visits |
| How has the project sought participation from stakeholders in (1) project design, (2) implementation, and (3) monitoring & evaluation? | Stakeholder involvement | Plans, reports | Desk review, interviews, field visits |
| Catalytic Role: | | | |
| How has the project had a catalytic or replication effect in the country? | Catalytic effect | Interview records, municipal development plans | Desk review, interviews |
| Synergy with Other Projects/Programs | | | |
| How were synergies with other projects/programs incorporated in the design and/or implementation of the project? | Collaboration with other projects/programs | Plans, reports, meeting minutes | Desk review, interviews |
| Preparation and Readiness | | | |
| Were project objective and components clear, practicable, and feasible within its time frame? | Project coherence | Logical results framework | Desk review, interviews |

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| Evaluation Criteria Questions | Indicators | Sources | Methodology |
|--|---|---|---------------------------------------|
| How were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? | Execution capacity | Progress reports, audit results | Desk review, interviews |
| Were counterpart resources, enabling legislation, and adequate project management arrangements in place at Project entry? | Readiness | Interview records, progress reports | Desk review, interviews, field visits |
| Financial Planning | | | |
| Did the project have the appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds? | Financial control | Audit reports, project accounting records | Desk review, interviews |
| Has there been due diligence in the management of funds and financial audits? | Financial management | Audit reports, project accounting records | Desk review, interviews, field visits |
| Has promised cofinancing materialized? | Realization of cofinancing | Audit reports, project accounting records | Desk review, interviews |
| Supervision and Backstopping | | | |
| How have GEF agency staff members identified problems in a timely fashion and accurately estimate their seriousness? | Supervision effectiveness | Progress reports | Desk review, interviews |
| How have GEF agency staff members provided quality support, approved modifications in time, and restructured the project when needed? | Project oversight | Progress reports | Desk review, interviews |
| How has the implementing agency provided the right staffing levels, continuity, skill mix, and frequency of field visits for the project? | Project backstopping | Progress reports, back-to-office reports, internal appraisals | Desk review, interviews, field visits |
| Monitoring & Evaluation | | | |
| Were intended results (outputs, outcomes) adequately defined, appropriate and stated in measurable terms, and were the results verifiable? | Monitoring and evaluation plan at entry | Project document, inception report | Desk review, interviews |
| How has the project monitoring & evaluation plan been implemented? | Effective monitoring and evaluation | Progress reports, monitoring reports | Desk review, interviews |
| How has there been focus on results-based management? | Results based management | Progress reports, monitoring reports | Desk review, interviews |
| Cross-cutting issues | | | |
| How were gender issues integrated in project design and implementation? | Greater consideration of gender aspects. | Project document, progress reports, monitoring reports | Desk review, interviews, field visits |
| How were effects on local populations considered in project design and implementation? | Positive or negative effects of the project on local populations. | Project document, progress reports, monitoring reports | Desk review, interviews, field visits |

Annex 2: List of People Interviewed

TE interviews were held between 10 August and 16 September 2020.

| Date | Stakeholders interviewed | Title and Organization | TE team members | Focus |
|-----------|--|---|------------------------|----------------------------------|
| 10 August | Jose Padilla | Regional Technical Advisor, UNDP Bangkok Regional Hub | James Lenoci, Shuo Liu | All |
| 11 August | Chaode Ma | Program Director, UNDP China | James Lenoci, Shuo Liu | All |
| 12 August | Yinfeng Guo, Sangjin Lee, Kathrine Galliado Jiajie Fang, Yanan Cao | YSLME II PMO | James Lenoci, Shuo Liu | - |
| 13 August | Fengkui Liang | Former Associate Counsel Department of International Cooperation, State Ocean Administration (SOA), MNR, former National Coordinator in China | James Lenoci, Shuo Liu | Outcome 1.5 |
| 13 August | Ming Yu | Associate Professor / project legal experts on compliance, School of Law & Political Science Ocean University of China | James Lenoci, Shuo Liu | Outcome 1.4 |
| | Xiujuan Shan | Deputy Director, Yellow Sea Fisheries Research Institute (YSFRI) | James Lenoci, Shuo Liu | Outcome 1.4 |
| 14 August | Ji Young Jang | Principal Researcher, Eco-Horizon Institute, ROK NGO | James Lenoci, Shuo Liu | Outcome 1.3 |
| 17 August | Sarwat Chowdhury (Stephan Klingebiel) | UNDP Seoul Policy Center, host of PMO in RO Korea | James Lenoci, Shuo Liu | Outcome 1.3 |
| 17 August | Zhaohui Zhang | Director, First Institute of Oceanography (FIO), MNR | James Lenoci, Shuo Liu | Outcomes 4.1, 4.2, 4.3, 4.4 |
| | Shouqiang WANG | Chair of NWG-A, First Institute of Oceanography (FIO), State Oceanic Administration, MNR | James Lenoci, Shuo Liu | Outcomes 4.1,4.3, 4.4 |
| | Hao Guo | Principal Researcher, National Marine Environment Monitoring Center (NMEMC) | James Lenoci, Shuo Liu | Outcome 4.4 |
| | Xiujuan Shan | Deputy Director, Yellow Sea Fisheries Research Institute (YSFRI) | James Lenoci, Shuo Liu | Outcome 4.2 |
| 19 August | Gyung Soo PARK | Dean of College, Anyang University, ROK | James Lenoci, Shuo Liu | Outcome 4.1 |
| | Keun Hyung CHOI | Assistant Professor, Chungnam National University, ROK | James Lenoci, Shuo Liu | Outcome 4.2 |
| 19 August | Se-Jong JU | Principal Researcher, KIOST | James Lenoci, Shuo Liu | Outcomes 4.3 and 4.4 |
| | Wonduk YOON | Head Researcher, Human & Marine Ecosystem Research Laboratory | James Lenoci, Shuo Liu | Outcomes 4.3 and 4.4 |
| | Jung Hoon KANG | Principal Research Scientist, South Sea Research Institute, Korea Institute of Ocean Science & Technology (KIOST) | James Lenoci, Shuo Liu | Outcomes 4.3 and 4.4 |
| 20 August | Aimee Gonzales | Executive Director, PEMSEA | James Lenoci, Shuo Liu | Outcome 1.1 |
| 21 August | Xiujuan Shan | Deputy Director, Yellow Sea Fisheries Research Institute (YSFRI) | James Lenoci, Shuo Liu | Outcomes 2.1, 2.2 |
| | Jing Li | Operation Director, Spoon-billed Sandpiper - NGO Partner, China | James Lenoci, Shuo Liu | Outcome 2.2 |
| 21 August | Katrin Lichtenberg | Senior Portfolio Manager, UNOPS | James Lenoci, Shuo Liu | All |
| 24 August | Changsoo Kim | Director, Ministry of Foreign Affairs RO Korea (MOFA), Head of Korean delegation in ICC meetings | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.4, 1.5 |
| | Hyung Won Kim | Deputy Director, Marine Environment Policy Division Marine Policy Office, MOF | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.4, 1.5 |

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| Date | Stakeholders interviewed | Title and Organization | TE team members | Focus |
|--------------|---------------------------------------|---|------------------------|-------------------------------------|
| | Jae Ryoung Oh | Advisor, International Cooperation Dept., KIOST, National Coordinator, NWG-P (Pollution) Chair ROK | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.4, 1.5 |
| | Hyun Hee Ju | Principal Research Specialist, Marine Policy Division of KIOST | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.4, 1.5 |
| 24 August | Jang Kyun KIM | Professor, Department of Marine Science, Incheon National University | James Lenoci, Shuo Liu | Outcome 2.3 |
| 25 August | Juying WANG | Deputy Director General, National Marine Environment Monitoring Center (NMEMC), MEE | James Lenoci, Shuo Liu | outcome 3.1, 3.2, 3.3 |
| | Ziwei Yao | Professor, National Marine Environment Monitoring Centre, Ministry of Natural Resources | James Lenoci, Shuo Liu | outcome 3.1, 3.2, 3.3 |
| 25 August | Jianguang FANG | Professor, Yellow Sea Fisheries Research Institute (YSFRI) | James Lenoci, Shuo Liu | Outcome 2.3 |
| | Junwei WANG | Village Head, Chudao Village, Rongcheng, Shandong Province | James Lenoci, Shuo Liu | Outcome 2.3 |
| 26 August | Jae Ryoung Oh | Advisor, KIOST, National Coordinator, NWG-P (Pollution) Chair ROK - KIOST | James Lenoci, Shuo Liu | Outcomes 3.1, 3.2, 3.3 and 3.4 |
| | Sunwook Hong | President, Our Sea of East Asia Network (OSEAN), ROK NGO | James Lenoci, Shuo Liu | Outcomes 3.1, 3.2, 3.3 and 3.4 |
| | Hong Lae Cho | CEO, HydroCore Ltd., ROK | James Lenoci, Shuo Liu | Outcomes 3.1, 3.2, 3.3 and 3.4 |
| | Bhon Kyung Koo | Director, HydroCore Ltd., ROK | James Lenoci, Shuo Liu | Outcomes 3.1, 3.2, 3.3 and 3.4 |
| 26 August | Jung Hee CHO | Director General, Fisheries Research Division, Korea Maritime Institute (KMI), ROK | James Lenoci, Shuo Liu | Outcome 2.1 and 2.2 |
| 26 August | Patrick Yeung | Program Officer, WWF | James Lenoci, Shuo Liu | Outcome 1.3 |
| 27 August | Dong Yu | Executive Director, Shanghai Rendu Ocean NPO Development Centre | James Lenoci, Shuo Liu | Outcome 3.4 |
| | Xiaofeng | Researcher, Shanghai Rendu Ocean NPO Development Centre | James Lenoci, Shuo Liu | Outcome 3.4 |
| | Liping You (on behalf of Yuanqing Ma) | Shandong Marine Resource and Environment Research Institute | James Lenoci, Shuo Liu | Outcome 3.4 |
| 27 August | Xiaohong Jiang | Ministry of Natural Resource (MNR), China | James Lenoci, Shuo Liu | Outcome 1.3 |
| 28 August | Heyun Xu | Director, Deptt of International Cooperation - MNR, China, current project contact person in China on governance mechanism | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.5 and 1.4 |
| | Bin WANG | Director General, Department of Strategic Planning and Marine Economy, Ministry of Natural Resources, Team Leader of China Expert Team | James Lenoci, Shuo Liu | Outcomes 1.1, 1.2, 1.3, 1.5 |
| | Ting Zhang | Vice Division Director, Division of Marine Disaster Reduction Department of Early Warning and Monitoring, Ministry of Natural Resources | James Lenoci, Shuo Liu | Outcomes 1.3, 1.5 |
| 28 August | Zijun Xu | Director, North China Sea Environment Monitoring Centre, State Oceanic Administration, MNR | James Lenoci, Shuo Liu | Outcome 3.2 |
| 14 September | Zijun Xu | Director, North China Sea Environment Monitoring Centre, State Oceanic Administration, MNR | Shuo Liu | Outcome 3.2 |
| | Liang Qu | Engineer, North China Sea Environment Monitoring Centre, State Oceanic Administration, MNR | Shuo Liu | Outcome 3.2 |
| | Xiaoqi Zeng | Professor, College of fisheries, Ocean University of China | Shuo Liu | Outcome 3.2 |

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| Date | Stakeholders interviewed | Title and Organization | TE team members | Focus |
|--------------|--------------------------|---|-----------------|---------------------------------|
| 15 September | Xuan Miao | Villager, Jinghai community (formerly Jingzi Village) in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Huamin Miao | Villager, Jinghai community (formerly Jingzi Village) in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Fengyu Li | Villager, Jinghai community (formerly Jingzi Village) in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Mai Qi | Villager, Jinghai community (formerly Jingzi Village) in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Xiaoyan Wang | Villager, Jinghai community (formerly Jingzi Village) in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Hongzheng Yang | Manager, Weihai Huayi social work center in Weihai City , Shandong province, China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Zhenzhen Li | Manager, Blue Ribbon Marine Conservation Association (NGO) , China | Shuo Liu | Outcome 3.4 demonstration sites |
| | Tengfei Chu | Director, Blue Ribbon Marine Conservation Association(NGO) , China | Shuo Liu | Outcome 3.4 demonstration sites |
| 16 September | Junwei Wang | General manager, Rongcheng Chudao aquatic products Co., Ltd in Shandong province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Yitao Zhang | Mariculture Engineer, Rongcheng Chudao aquatic products Co., Ltd | Shuo Liu | Outcome 2.3 demonstration sites |
| | Senlin Wang | Shellfish culture technician, Dongchu Island farm, in Shandong province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Yongtang Yu | Head of marine tourism, Rongcheng Dongchu Island Tourism Co., Ltd, in Shandong province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Siting Liu | Guide, Rongcheng Dongchu Island Tourism Co., Ltd, in Shandong province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Mengyu Wang | Operators, Dongchu Island farmhouse homestay, in Shandong province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Hua Yang | Operators, Dongchudao Village, Shandong Province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Xinjun Zhang | General manager, Rongcheng ocean company, Shandong Province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Zhixin Zhang | Vice-principal, Weihai fisheries school, Shandong Province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Mingtao Tao | Deputy director, Rongcheng Marine Development Bureau, Shandong Province, China | Shuo Liu | Outcome 2.3 demonstration sites |
| | Ning Liu | Stationmaster, Rongcheng Fishery Technology Extension Station, Shandong Province, China | Shuo Liu | Outcome 2.3 demonstration sites |

Annex 3: List of Information Reviewed

This annex presents a list of information reviewed by the TE team.

| Outcomes of the project | Output/Deliverable |
|--|--|
| Project documents | 2016-2020 Annual Project Report |
| | 2017-2019 Project Implementation Report |
| | 2017-2020 Annual Workplan |
| | GEF Project Identification Form (PIF) |
| | Log Frame Analysis (LFA) |
| | YSLME-II-Project Document |
| | Project-Inception-Report |
| | Terminal version of the IW tracking tool (July 2020) |
| | Project Brochure |
| | Project Midterm Review Report and Management Response |
| | Project Financial Internal Audit Report (14 May 2020) |
| | Co-financing Table of PR. China |
| | Co-financing Table of ROK |
| ICC documents | Summary report of ad hoc ICC - All Signed 18 October |
| | Final Proceeding of Inception Ceremony of YSLME Phase II Project |
| | Proceedings of the 1st Meeting of the Management, Science and Technical Panel of the UNDP-GEF YSLME Phase II Project |
| | signed ICC summary report |
| | Proceedings of the 1st Meeting of the Interim Commission Council (ICC) of the UNDP-GEF YSLME Phase II Project |
| | Meeting Minutes_2 nd , 3 rd , 4 th MSTP and ICC signed |
| OUTCOME 1.1 Regional governance structure, the YSLME Commission established and functional, based on strengthened partnerships & regional co-ordination; wider stakeholder participation and enhanced public awareness. (Strengthening regional coordination and partnerships) | Architecture of Interim YSLME Commission |
| | Guidelines for Strengthening Yellow Sea Partnership |
| | Basic Instruments for The Establishment of The Yellow Sea LME Commission |
| | Roadmap towards a sustainable regional environmental cooperation framework |
| | 2020 TDA update report |
| | Draft 2020-2030 Strategic Action Programme |
| | Assessment of the Opportunities and Options for a Regional Ocean Governance Mechanism for the YSLME |
| OUTCOME 1.2 Improved inter-sectoral coordination and collaboration at national level based on more effective IMCCs; | NSAP review report (PR China) |
| | NSAP review report (RO Korea) |
| OUTCOME 1.3 Wider participation in SAP implementation fostered through capacity building and public awareness, based on strengthening | Configuration of the YSLME Website |
| | Project videos |
| | 1) YSLME Marine Litter |
| | 2) YSLME Fish Stock |
| | 3) YSLME Marine Protected Areas |
| | 4) YSLME Integrated Multi-trophic Aquaculture |
| | 5) YSLME Spoon-billed Sandpiper |
| | 6) YSLME Spoon-billed sandpiper info vid KOREAN VERSION (short version) |
| | 7) YSLME Spoon-billed sandpiper infor vid Chinese VERSION (short version) |
| | 8) YSLME Spoon-billed sandpiper infor vid English VERSION (short version) |
| | Fact Sheet - Marine Litter |
| Communication Strategy | |
| OUTCOME 1.4 Improved compliance with regional and international treaties, agreements and guidelines | The Assessment Report on China's Legal Framework in Compliance with the International and Regional Legal Instruments for the Implementation of SAP in the YSLME Project II |

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| Outcomes of the project | Output/Deliverable |
|---|---|
| (Improving compliance with international conventions) | The Assessment Report of China's National and Local Capacity for Implementation of International Legal Documents in the YSLME Project II |
| | Improving SAP to synergize the implementation of international conventions on marine protection and sustainable uses of marine resources |
| | Regional guidelines for responsible fisheries in YSLME |
| | Responsible fisheries certification in China Capture fisheries |
| OUTCOME 1.5 Sustainable financing for regional collaboration on ecosystem-based management secured, based on cost-efficient and ecologically-effective actions (sustaining finance for regional coordination) | Proposal on YSLME Trust Fund |
| OUTCOME 2.1 Recovery of depleted fish stocks as shown by increasing mean trophic level (reducing fishing efforts) | Assessment report of effectiveness of license system and recommendations for improvement of licensing system |
| | Governance and Socio-economic Assessment of Fishing Vessel Buy-back Scheme and Fish Restocking, Mariculture and Climate Change Impact Adaptation Measures in Dalian, Weihai and Dandong of PR China |
| | reemployment training report |
| | Report of survey of impact of COVID-19 on re-employment of trained fishermen |
| OUTCOME 2.2 enhanced fish stocks through re-stocking and habitat improvement (Enhancing fish stocks through restocking and habitat improvements) | Seagrass transplanting report and establishment of improved techniques of replanting seagrass |
| | Analysis of the Construction Progress of Haiyang Fuhan National Marine Ranching Demonstration Area |
| | Construction and Effect Analysis of Artificial Reefs in the Pipakou Waters of Haiyang City |
| | Joint assessment report of the effectiveness of closure |
| | Joint assessment report of the effectiveness of buy-back scheme |
| | Implementation of the Fishing Vessel Buyback Program in the Yellow Sea of Korea and its Effectiveness analysis |
| | Limited access by a fishing permit system in RO Korea |
| OUTCOME 2.3: Enhanced and sustainable mariculture production, by increasing production per unit area as means to ease pressure on capture fisheries (scaling up integrated multitrophic aquaculture) | Draft report on Good Aquacultural Practices (GAP) of Integrated multi-trophic aquaculture (IMTA) |
| | Good Aquaculture Practice Integrated multi-trophic aquaculture (IMTA) of fish, bivalve and seaweed in coastal ecosystem |
| | Survey report of coastal areas suitable for operation of IMTA, and economic analysis of benefits from replication of IMTA across Shandong Province, PR China |
| | promotion plan of IMTA in Shandong |
| | Training Module of IMTA in PR China |
| | YSGP CAPPMA Three ASC standards brochures in Chinese (Abalone, Bivalve, Flatfish), Korean (Abalone, Bivalve, Seaweed) and English (Abalone, Bivalve, Flatfish) |
| | Agreements with Jiayuan Group and Nanhuangcheng to purchase seafood from mariculture enterprises alliance members (in Chinese) |
| | Signed responsible mariculture initiative(in Chinese) |
| | Technical report of IMTA demonstration in two sites |
| | OUTCOME 3.1 Ecosystem health improved through a reduction in pollutant discharge (e.g. nutrients) from land-based sources (reducing nutrient loading from land-based sources) |
| Report on the status and trends of marine environments in the Yellow Sea | |
| Final report of nutrient loading in the Haizhou Bay | |
| Assessment of the mariculture pollution and ships pollution in the Yellow Sea | |
| Atmospheric deposition of Nutrients and Heavy Metals over the Yellow Sea | |
| Monitoring and Acquisition Data for Sharing on Fertilizer Use in Yellow Sea coastal provinces of PR China | |
| Estimation of Land-Based Pollution Loads to the Yellow Sea from the Han River | |
| OUTCOME 3.2 Wider application of pollution-reduction techniques piloted | |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management

GEF Project ID: 4343; UNDP PIMS: 4552

| Outcomes of the project | Output/Deliverable |
|---|---|
| at demonstration sites (Offsetting nutrients through constructed wetlands) | Report of demonstration zone of integrated ecosystem-based investigation of wetland of Jiaozhou bay of Qingdao |
| | Atlas of Demonstration zone of Integrated Ecosystem-based Investigation on Wetland of Jiaozhou Bay of Qingdao |
| | Suggestions and Countermeasures for the Protection of the Ecosystem of Jiaozhou Bay |
| OUTCOME 3.3 Strengthened legal and regulatory processes to control pollution (Strengthening legal and regulatory process to control pollution) | Report on the legal review of PR China and RO Korea regarding marine pollution control and compliance assessment with international ocean-related environmental agreements |
| | Annex-Inventory of domestic and international legal documents of the People's Republic of China and the Republic of Korea related to marine environmental protection |
| | Training module for marine microplastics (in Chinese) |
| | Training module for marine microplastics (in English) |
| OUTCOME 3.4 Marine litter controlled at selected locations (Reducing marine litter) | Final report of regional baseline survey of marine litter |
| | Status of Marine Litter Pollution and Management in the Republic of Korea |
| | Research Scheme of Developing Regulatory Measures for Marine Litter Management in Weihai City of PR China |
| | Policies and Regulations regarding solid waste disposal in PR China |
| | Fishery and Aquaculture Marine Debris Survey Report --in the Yellow Sea Area of China |
| | Research Progress Report on Developing Regulatory Measures for Marine Litter Management in Weihai City of PR China—Present Situation and Countermeasures of Marine Litter Treatment in Weihai |
| | Research Progress Report on Developing Regulatory Measures for Marine Litter Management in Weihai City of PR China— Weihai Marine Litter Management Incentive Policies and Suggestions |
| | Status of Marine Litter Pollution and Management in the Republic of Korea |
| | Condominium Program of Fisheries Community (Waste Reduction) in Jingzi Village of Shandong Province Project |
| OUTCOME 4.1 Maintenance of current habitats and the monitoring and mitigation of the impacts of reclamation (maintaining globally significant coastal wetlands) | YSLME Biodiversity Conservation Plan in PR China, 2018-2030 |
| | YSLME MPA Network Concept Paper |
| | MPA connectivity training program and modules |
| | Framework Plan for the Yslme Biodiversity Conservation in Ro Korea (2018-2030) |
| | Coastal Reclamation and Impact to Critical Coastal Habitats of Yellow Sea Large Marine Ecosystem |
| | Evaluation methodologies, standards and guidelines for evaluation of the effectiveness and impact of ecosystem-based restoration projects |
| | YSGP-IGSNRR Progress Reports on Conservation Actions of Endangered Waterbirds and Their Habitats in the Yellow Sea Ecosystem - Phase 1, 2 and 3 |
| | Two management plans including monitoring programs and capacity development program |
| | Final report on implementation of CBD and RAMSAR with recommendations for integration of SDG14, CBD and RAMSAR targets into YSLME SAP |
| OUTCOME 4.2: MPA Network strengthened in the Yellow Sea (Developing a network of regional MPAs with functional connectivity) | Stocktaking report of biological and ecological significance of YSCWM and existing and potential threats using ecological connectivity as key criteria |
| | The map of priority areas for designation as conservation areas in YS and identify opportunities for improvements in connectivity with existing and new MPAs |
| | A zoning plan including coordination mechanism in line with the master plan of local land use and sea use |
| | The feasibility report for designating YSCWM a new MPA |
| | Technical Proposal to establish Xiaoyangkou of Rudong, Jiangsu Province of PR China, as a National Marine Protected Area |
| | Proposals for designating or enlarging new MPAs for endangered mammals or habitats of endangered waterbirds |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

| Outcomes of the project | Output/Deliverable |
|--|--|
| | Survey report with overlays to analyze gaps and conservation needs of critical nursery and spawning sites of priority fish species and make recommendations on new MPAs YSGP-CBCGDF final report on Construction of the Yellow-Bohai Sea Spotted Seals Protected Area Network YSGP-CBCGDF The Spotted Seals on the Broken Ice (pdf version) YSGP CAFS enhancing capacity of NAGRR YSGP CAFS Management Regulations and Index System for Assessing the Performance of NAGRRs YSGP GEI CCCA implementation report in Dandong |
| OUTCOME 4.3: Adaptive Management mainstreamed to enhance the resilience of the YSLME and reduce the vulnerability of coastal communities to climate change impacts on ecosystem processes and other threats identified in the TDA and SAP (Enhancing ecosystem and community resilience to climate change) | Stocktaking report for the relationships between the sea surface temperature changes of YSCWM and structure of plankton communities Dandong Vulnerability Assessment Report of Sea Level Rising Impact Assessment of Sea Level Rising for Wading Birds in Dandong Effects of Sea Ice on the Development of Dandong Coastal Zone and Marine Species Regional strategy for adaptive management Adaptation plans of Dandong for Climate Change |
| OUTCOME 4.4: Application of ecosystem-based community management (EBCM) preparing risk management plans to address climate variability and coastal disasters | Regional Jellyfish Monitoring Program A comprehensive regional monitoring system: monitoring strategies for climate change, N/P/Si changes, HABS (Harmful algal blooms), and jellyfish blooms Overall report of the Yellow Sea Grant Program Interim report on progress of drifting <i>Sargassum horneri</i> in Yellow Sea (Genetic diversity of benthic and floating populations of <i>Sargassum</i> in western Yellow Sea) Manual for investigation of <i>Ulva</i> bloom in southern Yellow Sea Manual for harmful algae blooms monitoring in the Yellow Sea Technique guide of jellyfish monitoring program Assessment of YSLME and policy recommendations |
| Published papers | Sidman G., S. Fuhrig, and G. Batra. 2020. The use of remote sensing analysis for evaluating the impact of development projects in the Yellow Sea Large Marine Ecosystem. <i>Sustainability</i> 2020, 12, 3628, www.mdpi.com/journal/sustainability Qiang Wu, Yiping Ying, Qisheng Tang. Changing states of the food resources in the Yellow Sea large marine ecosystem under multiple stressors. <i>Deep-Sea Research Part II</i> 163 (2019) 29-32. |
| Online reports | Ministry of Agriculture and Rural Affairs of PR. China launched the pilot project of quota fishing in three provinces. July, 2018. http://politics.people.com.cn/n1/2018/0731/c1001-30181789.html Notice of Ministry of Agriculture on Further Strengthening the control of domestic fishing vessels and implementing the total management of marine fishery resources. January, 2017. http://jiuban.moa.gov.cn/zwl/m/tzgg/tz/201701/t20170120_5460583.htm Ecological floating renovation pilot project in Rongcheng City. April, 2019. http://www.hellosea.net/Fishery/1/2019-04-19/61862.html Reply of Weihai Marine Development Bureau on the implementation plan of key projects of Rural Revitalization of marine ranching in 2019. [2020] No.147 of Weihai development published. |
| Others | YSLME, Transboundary Diagnostic Analysis, 2007 YSLME Strategic Action Programme, 2009-2020 YSLME Phase I project terminal evaluation report, 2011 UNDP/GEF 2007. UNDP/GEF Project: Reducing environmental stress in the Yellow Sea Large Marine Ecosystem. Transboundary Diagnostic Analysis. MAP 2020. Analysis: The role of fishing disputes in China-ROK Relations. 23 April 2020, Young Kil Park, Maritime Awareness Project (MAP) Technical report of IMTA demonstration in Shandong province, PR. China |

Annex 4: Summary of TE field mission

This annex presents a summary of a field mission made as part of the TE of a representative set of demonstration sites.

Purpose

The purpose of the field mission is to realize the effect of specific technologies and relevant activities conducted in some key demonstration sites selected in the Phase II project, so as to recognize the reality and assess the role played for putting forward on the progress of the project by setting those demonstration sites.

Principle and methodology on the selection of demonstration sites

Due to the impact of the COVID-19 pandemic, the restriction on travel were strictly conducted at different scale, in particular international across. After cautious assessment with the relevant control requirements associated with the COVID-19 pandemic in China, the field mission was conducted in Shandong province in China by national consultant from 13 September to 16 September 2020.

For time efficiency and mitigating the potential risk of COVID-19, the TE team selected one province of China, which concentrated technologies for demonstration sites at maximum. Under this principle, 3 demonstration sites with relevant outcomes required by the project were selected, which were Qingdao City, Weihai City and Rongcheng City in Shandong province, China. The relevant information on each demonstration sites as following:

| Location of demonstration sites | Focus | Activities and targets required by the project | Date of field mission |
|---|-------------|---|-----------------------|
| Jiaozhou Bay, Qingdao City, Shandong province, China | Outcome 3.2 | Application of artificial wetlands to reduce the pollution discharge at the demonstration sites | 14 September, 2020 |
| Jinghai Community, Weihai City, Shandong province, China | Outcome 3.4 | Marine litter controlled at selected locations Status of the control of marine litter at selected locations | 15 September, 2020 |
| Rongcheng Chudao Aquatic roducts Co., Ltd, Rongcheng City, Shandong province, China | Outcome 2.3 | Enhanced and sustainable mariculture production by increasing productivity per unit area as a means to ease pressure on capture fisheries | 16 September, 2020 |

Results of the field mission

Result 1 on Outcome 3.2: Application of artificial wetlands to reduce the pollution discharge at the demonstration sites

Wetland restoration effect. In the offshore area, the project of returning reclaimed land to natural wetland was adopted, and the reclamation had been removed. There was high density of *Spartina* grew naturally, which had a significant effect on beach consolidation and restoration (Fig. 1 - Fig. 3);

Problems faced by constructed wetlands. The excessive growth of *Spartina* caused serious threat to the ecological niche of *Suaeda salsa*, and affected the exchange of nutrients and the food supply of water birds by tides.

The number of birds has increased. The world's endangered birds appear in marine wetlands, such as the Chinese crested tern (Fig. 4).



Fig. 1 Abandoned reclamation area in Jiaozhou Bay



Fig. 2 Spartina grows in the wetland and tidal flat area of Jiaozhou Bay after reclamation



Fig.3 Wetland environment improvement and dam consolidation



Fig. 4 Chinese crested terns observed in Dagukou, Qingdao, Shandong province, China

Result 2 on Outcome 3.4: Marine litter controlled at selected locations Status of the control of marine litter at selected locations

Local NGO, enterprises and schools signed the cooperation agreement on coastal and marine environmental protection for Jinghai community, Weihai City, Shandong province, China in 2019. They made efforts on classifying of wastes generated by aquaculture operations and the treatment system of fisherfolk's waste to enhance the effective management of wastes (Fig. 5 and Fig. 6).

The stakeholders organized the activities of cleaning beach regularly to advocate knowledge and to improve public awareness on mitigating pollution of coastal areas (Fig. 7). A relevant survey was conducted to realize the expectation of fisherfolk to marine environmental protection (Fig. 8).

Most of women mainly participate in fishing net weaving.

The cooperation agreement on fishery community co management have been conducted almost 2 years during the project. The NGO expected that Jinghai community could continue to carry out community co management (marine waste reduction) project. Under this co-management, it promotes the sustainable, rare and endangered species friendly operation mode of fishery resources (such as the trial and promotion of cetacean friendly fishing gear, etc.), and popularize more people and improve their awareness on marine waste reduction. The NGOs have a further aim to continue to pay attention to the treatment of marine garbage, promote the community and government to solve the problem of transparent fishing nets, and reduce the input of marine garbage by more than 50 tons.

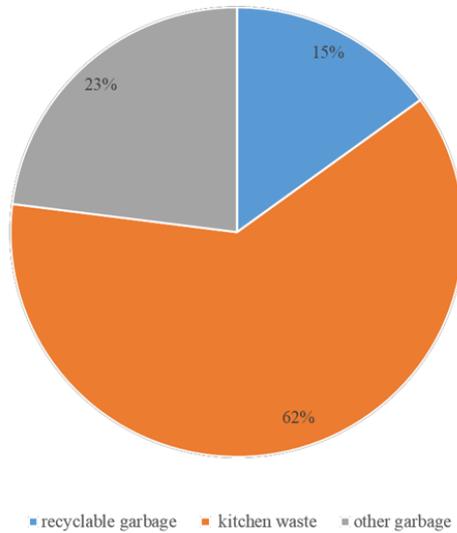


Fig. 5 Baseline situation of garbage in Jinghai community, Weihai City

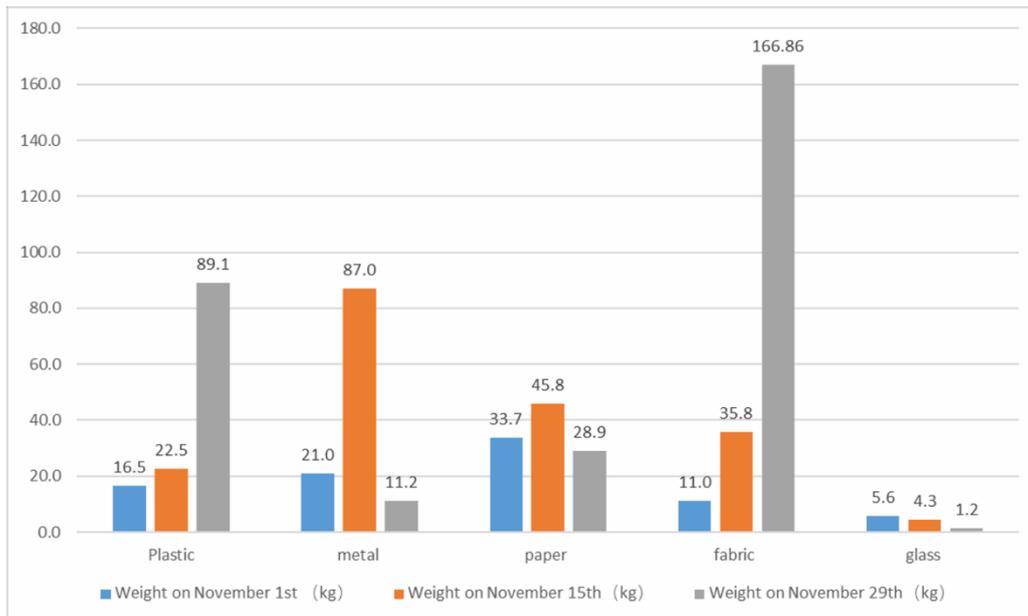


Fig. 6 Change of waste recovery quantity in Jinghai community, Weihai City



Fig.7 Beach cleaning activities with students and villagers at coastal areas the in Jinghai community, Weihai City, Shandong Province, China

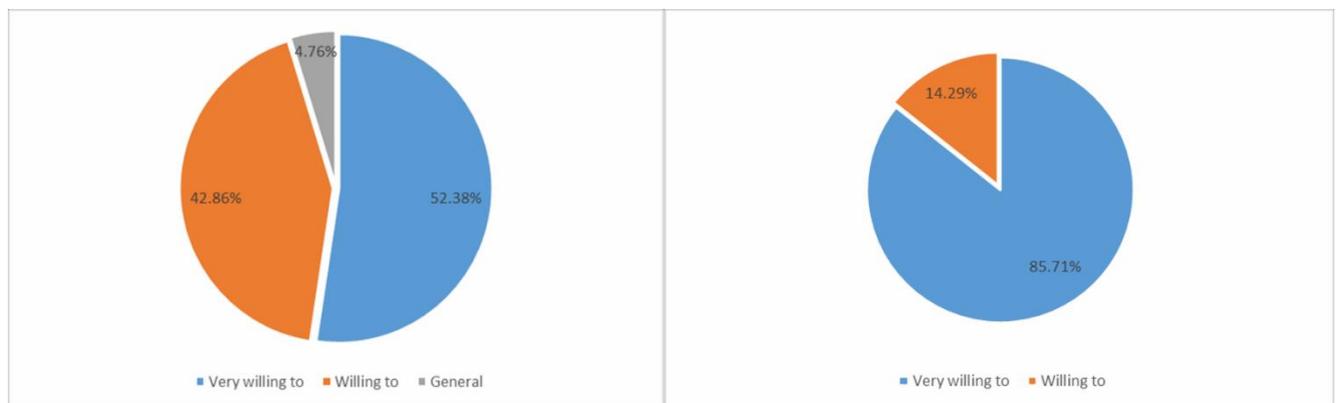


Fig. 8 Survey conducted by the stakeholders to realize the expectation of fishermen on marine protection (Left chart: are you willing to continue to participate in the activity; Right chart: are you willing to comply with the 5R (reuse, reduce, reuse, recycle, rot) principle)

Result 3 on Outcome 2.3: Enhanced and sustainable mariculture production by increasing productivity per unit area as a means to ease pressure on capture fisheries

IMTA was established and improved by the project throughout the facilitation of Rongcheng Chudao Aquatic Products Co., Ltd. In cooperation with the Yellow Sea Fisheries Research Institute of China, a set of green, efficient and sustainable model was constructed in Sanggou Bay. In this IMTA model, the wastes excreted by some organisms into the water body become the source of nutrients for other mariculture organisms, and become the nutrients and energy in the aquaculture system, so as to minimize the nutrient pollution and potential economic loss, so that the system has a high capacity and sustainable product output. Later, the company rearranged the aquaculture layout, updated the ecological and environmental protection breeding facilities, formulated standardized breeding procedures, created a standardized comprehensive aquaculture demonstration area of shallow sea shellfish and algae, and implemented the ecological optimization breeding mode and technology of scallop and kelp, oyster and kelp intercropping. The upgrades to the IMTA technology were carried out over three consecutive years from 2015 to 2018. The demonstration results showed that the combination of several aquaculture species can make full use of aquaculture waters and facilities, and realize the coordinated upgraded environmental protection and economic benefits.

In recent years, the local government and fishery authorities have attached great importance to IMTA model, which has the characteristics of improving quality, increasing efficiency, reducing production and increasing income, green environmental protection, replicable and popularized. The people's governments of Weihai City and Rongcheng City have successively issued policy documents to systematically elaborate the "Chudao mode". Through the introduction of management policies, technical training and on-the-spot visits to core demonstration areas, it has been extended to the surrounding sea areas. With support of the YSLME Phase II project and the Department of Ocean and Fisheries of Shandong Province, they jointly held a IMTA (healthy aquaculture) policy and technology training course. "Chudao mode" began to be replicated to near area. Only in several Bays in Rongcheng City, the radiation promotion area

reached 10700 hectares, and the industrial support effect was very significant. It had significance to the structural reform of the supply side of Marine Fisheries and the transformation and upgrading of marine fisheries to improve quality and efficiency.

Currently, Dongchu Island Aquaculture Co., Ltd. has obtained CNY 20 million from local government, which will continue to be used for IMTA and transformation to environmental friendly aquaculture hardware, such as durable floats.

The local government will establish a protecting belt, which required that no aquaculture was allowed to be set within the sea area of 1.5 kilometers, to reduce the impact of offshore mariculture and maintain the nutrient exchange along with normal seawater flow near that marine area, as well as to protect the environment on the coastline.



Fig.9 IMTA breeding base of national marine ranch of Dongchu Island aquaculture company



Fig. 10 Traditional floating culture in Dongchu Island (not durable, annual replacement rate up to 30%)



Fig. 11 Schematic diagram of IMTA



Fig. 12 Real time monitoring screen of marine Ranch



Fig. 13 Diversified business mode of Dongchu Island

Conclusions

From the field mission, we could find that (1)the treatment system of fishing waste and marine litter for community have been explored and established throughout activities of classification, recycling and reused by the project; (2) NGO and private enterprises have a great efforts and role for implementation of specific demonstrative activities on pollution control and reduction ;(3)IMTA mode was improved through the project, which would have a profound impact on sustainable marine protection and economic transformation on marine area; (4) A large effort had been made to return reclamation to wetland by local government, however, it brought another risk of species of *Spartina* invasion near the demonstration site, which have been drawn great attention by local government and research institutes.

Annex 5: Summary of online survey of YSLME small-scale fishers

This annex presents a summary of an online survey made as part of the TE of a representative set of small-scale fishers.

Purpose

The purpose of the online survey is to realize the impact of measures on reduction of fishing vessels in the area of Yellow Sea within China through a quantitative assessment, so as to recognize the roles of the policies of reduction on fishing vessels have been played on local fisherfolk in China.

Methodology

The online survey was conducted by sending questionnaire to fisherfolk in Shandong Province, which was involved in the Phase II project, through an online survey tool named Wen Juan Xing⁵. The survey was conducted from 25th September to 27th September 2020. The questionnaire was composed of nine questions described below:

- 1. In your opinion, what are the main threats to the fish stocks of the Yellow Sea? Rank from 1 (most important) to 4 (least important)**
 - a. Overfishing
 - b. Habitat destruction (e.g., development, infrastructure, reclamation, destructive fishing practices)
 - c. Pollution
 - d. Other
- 2. How were you affected by the fishing vessel and licensing reduction programme implemented by the government?**
 - a. Local government compensated me for not using my fishing vessel
 - b. I was unable to renew my fishing license
 - c. Other (please indicate): _____
 - d. I was unaffected
- 3. What constraints/challenges are faced by fisherfolk who are no longer permitted to fish? Rank from 1 (most important) to 5 (least important)**
 - a. Limited government retraining programmes
 - b. Lack of incentives for starting an alternative income-generating activity
 - c. Lack of interest in learning a new income-generating activity
 - d. Decreasing my family income
 - e. Other: _____
- 4. What have been the benefits of participating in fishing vessel buyback / retraining programme? Select all that apply.**
 - a. Obtained knowledge of the problems facing the marine ecosystem.
 - b. Acquired skills for an alternative income-generating activity.
 - c. Linked up with local government officials.
 - d. Linked up with private sector partners.
 - e. I did not participate in the demonstration activity.
- 5. What proportion of your household income was sourced from capture fisheries before the fishing vessel and licensing restrictions were put in place?**
 - a. Nearly 100%
 - b. >50%; I have some other income sources
 - c. <50%; I have other income sources
 - d. Negligible, or none
- 6. What proportion of your household income is sourced from capture fisheries currently, after the fishing vessel and licensing restrictions were put in place?**
 - a. Nearly 100%
 - b. >50%; I have some other income sources
 - c. <50%; I have other income sources
 - d. Negligible, or none
- 7. What alternative income sources do you have to replace capture fisheries?**
 - a. Inland aquaculture
 - b. Offshore or nearshore mariculture
 - c. Agriculture (such as cropping or livestock and poultry breeding)

⁵ The link to the survey: <https://www.wjx.cn/newwjx/manage/myquestionnaires.aspx?randomt=1601004359>

- d. Trading, non-fishery based (such as wholesale of vegetables)
- e. Aquatic products processing
- f. Tourism(such as home stay near the sea)
- g. Other

8. What changes happened on the catch before and after implementation of the fishing vessel and licensing reduction programs?

- a. Increasing
- b. Decreasing
- c. No change
- d. other

9. Has the quality of fish improved after the implementation of the programme, such as the variety or flesh quality?

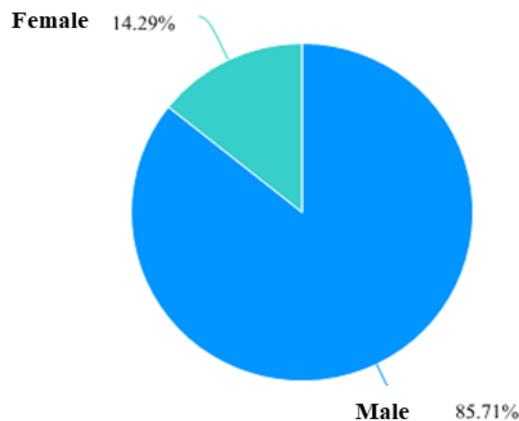
- a. Yes
- b. No
- c. No attention
- d. Additional information for the survey

Number of fisherfolk invited to participate in the survey and number of responses received

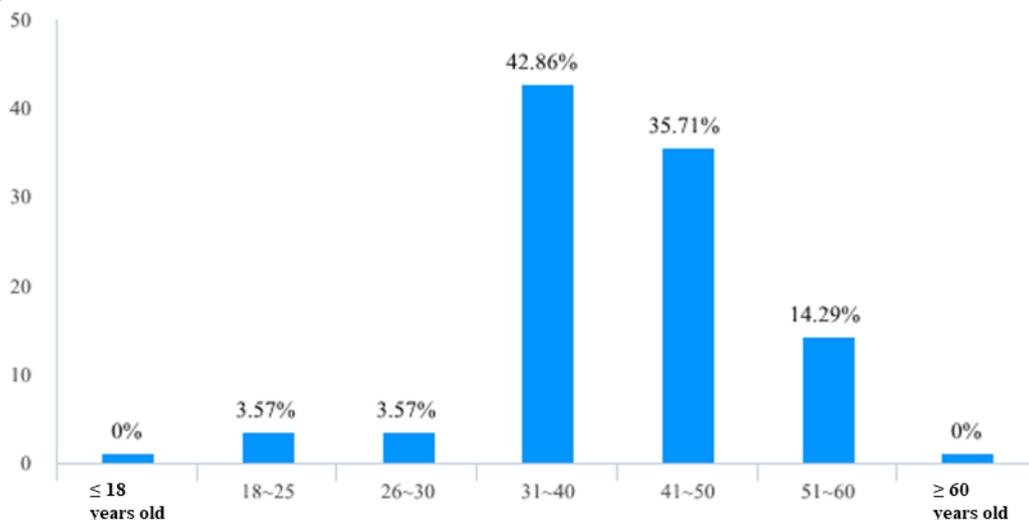
There were 155 fisherfolk invited to participate the survey, who attended training activities sponsored by the Phase II project. Finally, 30 valid responses were received totally.

There is some additional information on the participants of the survey, which included gender ratio and age distribution. 86% of objects was male, 14% was female. 43% and 36% of people were in the age from 31 to 40, and 41 to 50, respectively.

● **Gender ratio**



● **Age distribution**



Results of the survey

For the question 1, the order of main threats to the fish stocks of the Yellow Sea from the high to the low were overfishing, pollution, and habitat destruction. The threat that received the highest average score was overfishing (3.25), followed by pollution and habitat destruction which scored 2.54 and 2.32, respectively (Fig. 1).

1. In your opinion, what are the main threats to the fish stocks of the Yellow Sea? Rank from 1 (most important) to 4 (least important)

- a. Over-fishing
- b. Habitat destruction (e.g., development, infrastructure, reclamation, destructive fishing practices)
- c. Pollution
- d. Other

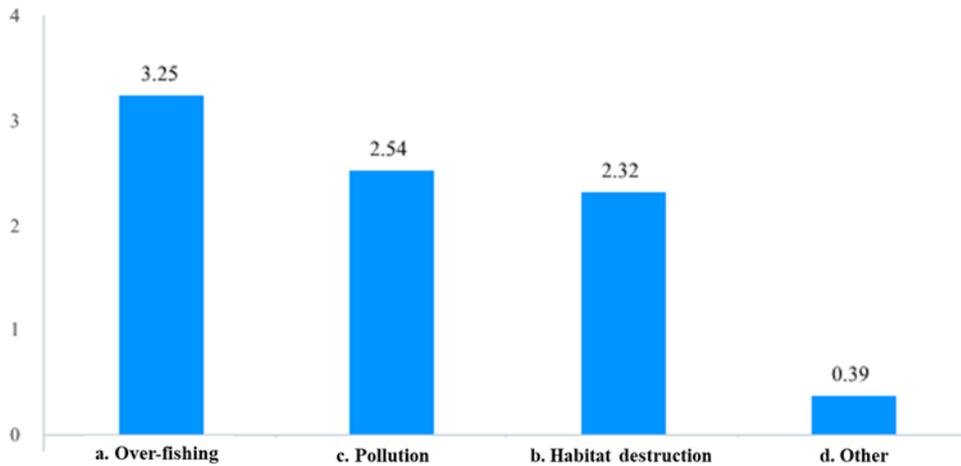


Fig.1 The average score of main threats to the fish stocks of the Yellow Sea

For the question 2, impacts of the fishing vessel and licensing reduction programmes implemented by the government were most relevant according to the surveyed fisherfolk. 61% of the responses indicated that local government compensated fishermen for not using their fishing vessels, only 7% of the responses showed that they could not renew their fishing license and no compensation (Fig. 2).

2. How were you affected by the fishing vessel and licensing reduction programme implemented by the government?

- a. Local government compensated me for not using my fishing vessel
- b. I was unable to renew my fishing license and no compensation
- c. Other (please indicate): _____
- d. I was unaffected

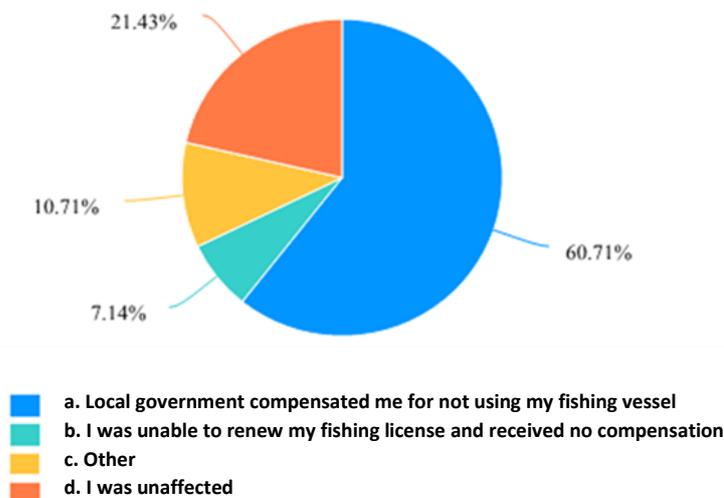


Fig.2 The impact of fishing vessel and licensing reduction programme implemented by the government

For the question 3, the survey assessed how significant were the challenges faced by fisherfolk when they were not allowed to fish. The result showed that the biggest challenge was limited government retraining programme that received an average score of 3.5, followed by the lack of incentives for starting an alternative income-generating activity

(average score of 2.75). Lack of interest in learning a new income-generating activity was the third challenge scored 2.5. The second lowest challenge was the decrease in income of the family scored which scored 2.07 (Fig. 3).

3. What constraints/challenges are facing fishers who are no longer permitted to fish? Rank from 1 (most important) to 5 (least important)

- a. Limited government retraining programmes
- b. Lack of incentives for starting an alternative income-generating activity
- c. Lack of interest in learning a new income-generating activity
- d. Decrease in family income
- e. Other: _____

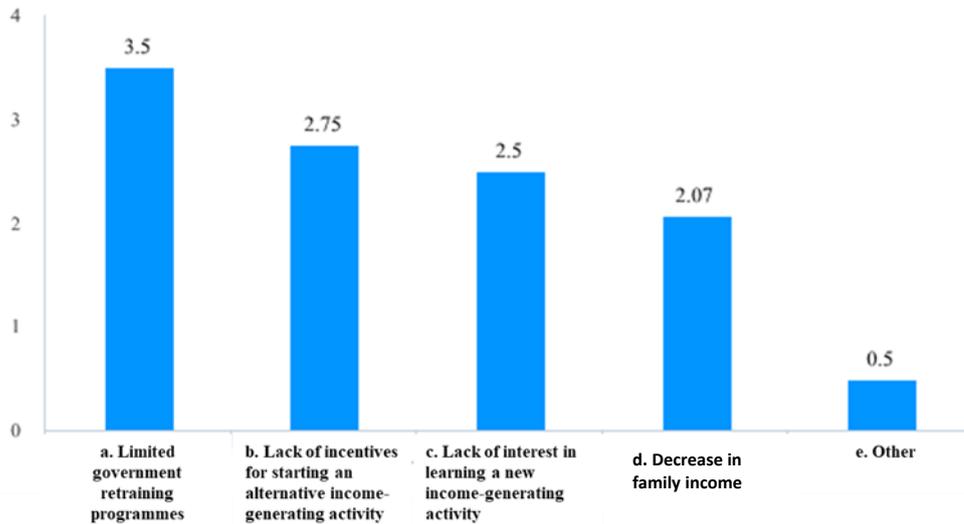
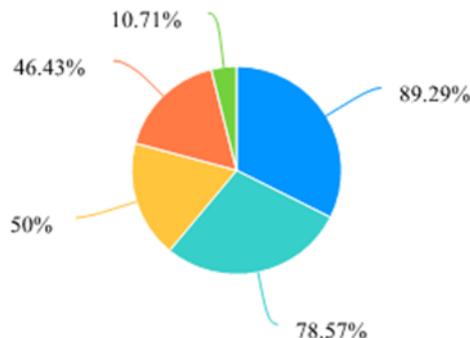


Fig.3 The challenges faced by fisherfolk when they were not allowed to fish

For the question 4, it indicated how the benefits of fisherfolk achieved through participating in fishing vessel buyback and retraining programmes. The result showed that the biggest benefit was that they could obtain knowledge of the problems facing the marine ecosystem, which had 89% people chosen. Acquiring skills for an alternative income-generating activity was considered to be the second benefit as 79% of people chose. The two benefit of Linking up with local government officials and private sector partners had similar percentage with around 50% of people chose (Fig. 4).

4. What have been the benefits of participating in fishing vessel buyback / retraining programme? Select all that apply.

- a. Obtained knowledge of the problems facing the marine ecosystem.
- b. Acquired skills for an alternative income-generating activity.
- c. Linked up with local government officials.
- d. Linked up with private sector partners.
- e. I did not participate in the demonstration activity.



- a. Obtained knowledge of the problems facing the marine ecosystem
- b. Acquired skills for an alternative income-generating activity
- c. Linked up with local government officials
- d. Linked up with private sector
- e. I did not participate in the demonstration activity

Fig.4 The benefits of participating in fishing vessel buyback / retraining programme

For the question 5, it indicated how large proportion of fisherfolk’s household income was sourced from capture fisheries before the fishing vessel and licensing restrictions were put in place. The result showed that 46% of people had more than a half income sourced from fishery. 29% of people’s income came from fishery completely. Only 11% of people earned less than half of their income from fishing (Fig. 5).

5. What proportion of your household income was sourced from capture fisheries before the fishing vessel and licensing restrictions were put in place?

- a. Nearly 100%
- b. >50%; I have some other income sources
- c. <50%; I have other income sources
- d. Negligible, or none

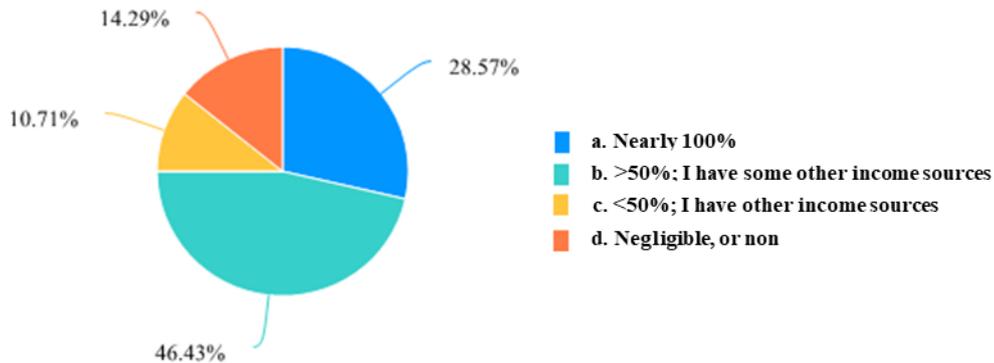


Fig. 5 How large of the proportion of fisherfolk’s household income was sourced from capture fisheries before the fishing vessel and licensing restrictions were put in place

For the question 6, it indicated how large proportion of fisherfolk’s household income was sourced from capture fisheries after the fishing vessel and licensing restrictions were put in place. The result shown that 43% of people had less than a half income sourced from fishery. 25% of people had more than a half of their income sourced from fishery. Only 7% of people’s income sourced from fishery completely (Fig. 6).

6. What proportion of your household income is sourced from capture fisheries currently, after the fishing vessel and licensing restrictions were put in place?

- a. Nearly 100%
- b. >50%; I have some other income sources
- c. <50%; I have other income sources
- d. Negligible, or non

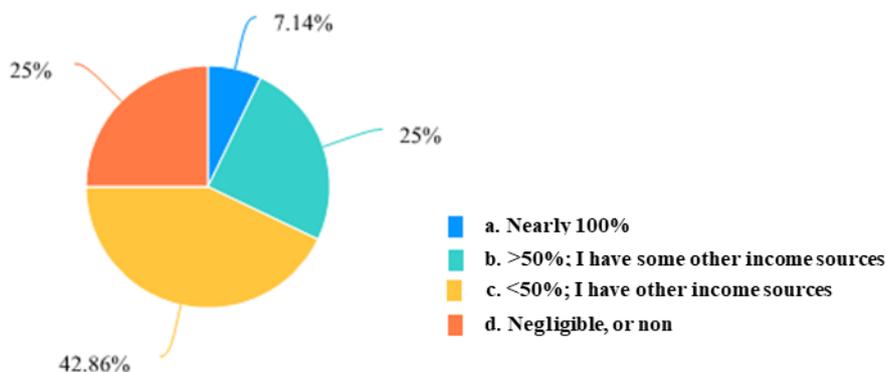


Fig. 6 How large of the proportion of fisherfolk’s household income was sourced from capture fisheries after the fishing vessel and licensing restrictions were put in place

For the question 7, it indicated what kind of alternative income sources to replace fisheries that fishermen to choose. The result shown that 68% of people chosen offshore or nearshore mariculture. Aquatic products processing, agriculture, trading with non-fishery were chose by a proportion of 36%, 32% and 32%, respectively. Tourism was chosen by 29% of people (Fig. 7).

7. What alternative income sources do you have to replace capture fisheries? (Multiple choice)

- a. Inland aquaculture
- b. Offshore or nearshore mariculture
- c. Agriculture (such as cropping or Livestock and poultry breeding)
- d. Trading with non-fishery (such as Wholesale of vegetables)
- e. Aquatic products processing
- f. Tourism(such as home stay near the sea)
- g. Other

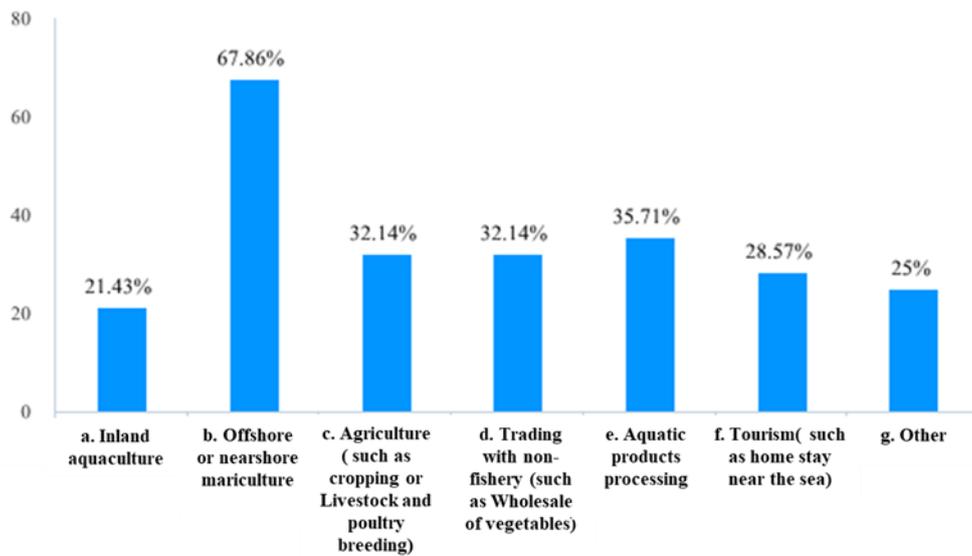


Fig. 7 The proportion of alternative income sources to replace capture fisheries

For the question 8, it indicated the change on the catch before and after implementation of the fishing vessel and licensing reduction programs. The result showed that 36% of people thought the capture of fish increased after the implementation of policy on fishing vessel and licensing reduction programs. 28% of people felt no significant change on the catch. 21% of people had an opinion that the catch decreased after the implementation of the programs (Fig. 8).

8. What changes happened on the catch before and after implementation of the fishing vessel and licensing reduction programs?

- a. Increasing
- b. Decreasing
- c. No change
- d. other

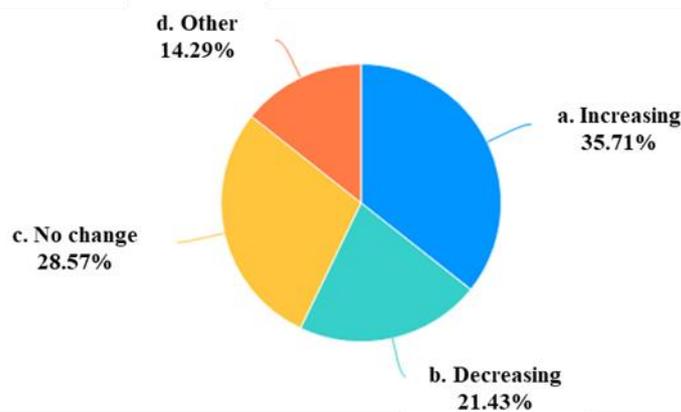


Fig. 8 The change on the catch before and after implementation of the fishing vessel and licensing reduction programs

For the question 9, it indicated the change of quality of fish after the implementation of the program. The result shown that 57% of people thought the quality of fish increased after the implementation of the program. 25% of people felt no significant change on the quality (Fig. 9).

9. Has the quality of fish improved after the implementation of the programme, such as the variety and flesh quality?

- a. Yes
- b. No
- c. No attention

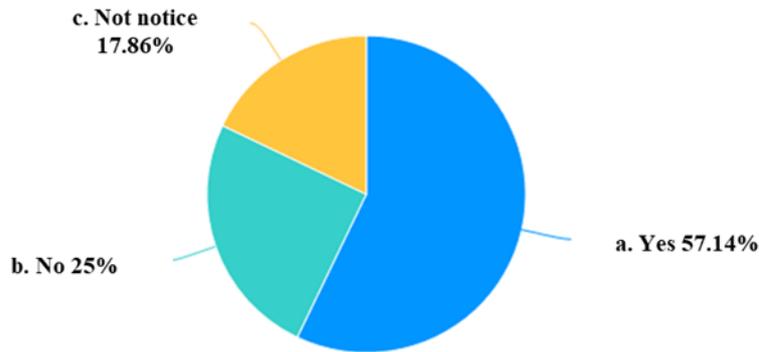


Fig. 9 The change of quality of fish after the implementation of the fishing vessel and licensing reduction program

Conclusions

From the survey of the online questionnaire to the fisherfolk, we could find that (1) the awareness of marine protection of the fisherfolk have been increased through the implementation of the fishing vessel and licensing reduction program in the Yellow Sea, in particular to the over-fishing and marine pollution; (2) Through this project, the fisherfolk had increased linkages with local government and private sector to achieve relevant knowledge and cooperation opportunities; there were significant improvements in the quality of on the fish variety and flesh quality; (4) The proportion of fisherfolk’s income sources had a change from mainly capture fisheries to various sources, such as offshore or nearshore mariculture, aquatic products processing, agriculture, trading with non-fishery products and tourism; (5) Most of fisherfolk had compensation from the local government for reducing fishing vessel and licensing, and were trained to get relevant skill for transferring to other business, however, there still have a space to be improved for the incentive mechanism to mobilize their activities to engage into this measure further.

Annex 6: Matrix of Rating Achievement of Project Objective and Outcomes

| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|---|---|--|--|---|---------------------------|
| COMPONENT 1: Ensuring Sustainable Regional and National Cooperation for Ecosystem-Based Management | | | | | |
| Outcome 1 (1.1): Regional governance structure, the YSLME Commission established, operational and sustained | | | | Rating: Moderately Satisfactory | |
| 1. Status of YSLME Commission and subsidiary bodies at regional level | Ad hoc regional co-ordination through the YSLME Regional Project Board and weak cross sector management at the national level | All the Terms of Reference for the YSLME Commission and Subsidiary Bodies approved by all participating country governments | Achieved. End of project target is highly likely to be achieved during the remaining period of the project. The interim YSLME Commission and its subsidiary bodies were institutionalized with agreed TORs and rules of procedures to successfully coordinate the implementation of the SAP facilitated by the YSLME Phase II Project. The mechanisms have been operationalized in the past three years through conduct of 5 meetings of the interim YSLME Commission Council (ICC), 11 meetings of the six Regional Working Group (RWGs), and a series of technical workshops and exchange visits including the 3rd YSLME Science Conference. This update of the TDA in 2020 reflects the strong commitments of PR China and RO Korea and other partners in sustaining the science-based LME approach. Both countries also committed to use the concrete scientific findings of the TDA to inform their discussions towards the ongoing update of the SAP that will outline joint management and governance efforts towards achieving the sustainable management of the YSLME. There is a strong likelihood that the project will provide a tangible example of the utility of this science-based strategic planning approach to LME management and governance as supported by the Global Environment Facility. | Interim Commission Council has convened 4 times during the project, facilitating constructive dialogue. Parties were discussing a draft MOU at the time of the TE that outlines next steps for strengthening cooperation. | Achieved |
| | | Functioning YSLME Commission | | Functioning YSLME Commission was not in place at the time of the TE, and unlikely by closure. | Not achieved |
| Outcome 2 (1.2): Improved inter-sector coordination and collaboration at national level | | | | Rating: Moderately Satisfactory | |
| 2. Status of Inter-Ministerial Coordinating Committee (IMCC) | Sector management has been the normal arrangements with limited inter-sector or inter-ministerial interactions; where coordination was done, it was on a case by case such as fishery management activities | Participation of Ministries in the IMCC will include but not limited to the following: Ministry of Foreign Affairs, Ministry of Finance, relevant department or ministry of ocean & Fishery. | Partially achieved. Both PR China and RO Korea has operationalized and strengthened the IMCC in the implementation of the project. The future of the IMCC under the new governance mechanism remains to be clarified after the regional coordination mechanism is established but the likelihood of having the IMCC or similar national coordination mechanism is high given the active participation in TDA and SAP update and participation in the YSLME II Project implementation. | Cross-sectoral ministerial level dialogue was facilitated in China and ROK through the IMCCs. | Achieved |
| | | Two meetings of IMCC every year and functioning coordination | | Limited records available of IMCC meetings and decisions. | Partially achieved |
| Outcome 3 (1.3): Wider participation in SAP implementation fostered through capacity building and public awareness | | | | Rating: Satisfactory | |

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| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|---|---|---|--|---|-----------------|
| 3. Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities | 20 members of the Yellow Sea Partnership | Number of partnerships: 40 | Achieved. Number of partnerships: 50 Number of capacity building activities: 57 Number of public awareness initiatives: 15 Number of participants in capacity building activities: about 1,845 (30% women) The Project collaborated with more than 50 global, regional and national organizations from PR China and RO Korea in implementation of the YSLME Phase II Project. MOUs, Project Cooperation Agreements (PCAs), Grant Agreement Agreements (GSAs) and other agreements were signed with 15 organizations in PR China, RO Korea and USA to enable operation of the project office in RO Korea and PR China, implement the project with project cooperation and grant modality and use of audio and visual materials in the production of project videos. The Project organized 57 events, including technical workshops (21), ICC and RWG meetings (22), training courses (8) and study visits (6) benefitting a total of 1,845 participants with 30% women. The project also organized 15 public awareness-raising activities in collaboration with its partners | The approach towards partnerships was adapted from the strategy outlined in the project document. The project has done a good job in facilitating expanded participation and delivering capacity building activities. There is no clear strategy on how the Yellow Sea Partnership will be sustained after project closure. | Achieved |
| | | Number of capacity building activities : 25 | | | Achieved |
| | | Number of public awareness initiatives: 15 | | | Achieved |
| | | Number of participants in capacity building activities: about 200 | | | Achieved |
| | | Number of partnerships: 40 | | | Achieved |
| Outcome 4 (1.4): Improved compliance with regional and international treaties, agreements, and guidelines | | | | Rating: Satisfactory | |
| 4. Status of recognition and compliance to regional and international treaties and agreements | Regional and international treaties and agreements are recognized by China, but not fully compliant | Better compliance of the relevant regional and international treaties and agreement e.g. UNCLOS, The1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, CBD, Ramsar, The FAQ Code of Conduct for Responsible Fisheries, and the bilateral agreements between China & ROK on environment protection and fisheries | Achieved. The Project approach to achieving compliance of international ocean-related treaties and agreements is through review of the gaps in compliance with international instruments, in particular the FAO Code of Conduct for Responsible Fisheries and implementation of suites of compliance activities. Development and adoption of national responsible fisheries certification standards in PR China and regional guidelines on responsible fisheries in YSLME are two deliverables in this regard. The national responsible fisheries certification standards are in the process of review by Ministry of Agriculture and Rural Affairs, and there is already a consensus on the regional guidelines for responsible fisheries in YSLME for adoption by the two countries. Capacity gaps in compliance with FAO CCRF have been addressed through various project activities contributing to awareness and capacity development and level of compliance. Achieving this target is fully anticipated within the project duration | Substantive progress has been made in China and ROK in the past 20-30 years with respect to compliance of relevant regional and international treaties. | Mostly achieved |
| Outcome 5 (1.5): Sustainable financing for regional collaboration on ecosystem-based management secured based on cost-efficient and ecologically effective actions | | | | Rating: Moderately Satisfactory | |

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| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|---|--|---|---|---|---------------------------|
| 5. Agreement on the financial arrangement for the YSLME Commission | YSLME Commission does not exist at start of project | Financing agreement between and among countries agreed to fully support YSLME for at least 5 years. | Partially achieved. Financing agreement for operation of the YSLME mechanism after project closure and secretariat staffing is included in the bilateral discussion on the MOU and post-YSLME Project coordination mechanism. It is likely that the financing mechanism will be finalized within the project duration but the financing arrangement is uncertain due to the COVID-19 pandemic. | Sustainable financing options for the envisaged YSLME Commission have been assessed, but there is no agreement yet on the financing arrangements. In the short-term, the parties seem to be focused on reaching a political cooperation agreement. | Partially achieved |
| COMPONENT 2: Improving Ecosystem Carrying Capacity with Respect to Provisioning Services | | | | | |
| Outcome 6 (2.1): Recovery of depleted fish stocks as shown by increasing mean trophic level | | | | Rating: Satisfactory | |
| 6. Number of fishing boats decommissioned from the fleet in YSLME waters | About 1.2 million fishing boats | Fishing boat numbers substantially reduced by 10%, in line with the 2020 target of 30% reduction. | The project has achieved the end of the project target. There is 22% reduction of fishing vessels in three provinces of PR China from 2015-2018 based on statistics of vessel reduction in China Fisheries Yearbook, and 17% reduction of the fishing vessels operating in Yellow Sea in RO Korea from 2011 to 2017. | Number of fishing vessels have decreased by more than 10% in both littoral countries. | Achieved |
| Outcome 7 (2.2): Enhanced stocks through restocking and habitat improvement | | | | Rating: Satisfactory | |
| 7. Status of major commercially important fish stock from restocking and habitat improvement | Effectiveness of restocking and habitat protection not evaluated | Measurable improvement (5%) in standing stock and catch per unit effort | The Target is achieved. Based on the results of demonstration of restocking in one site in PR China and assessment of effectiveness of fishing closure, the commercial fish stock from restocking and habitat improvement has achieved the project target of 5% improvement in CPUE. | Based on monitoring reports of the demonstration sites, improvements in standing stock and CPUE have been achieved. Results of habitat improvement measures have been assessed, but there has been limited mainstreaming into management decisions. | Mostly achieved |
| | | Future management decisions on restocking based on effectiveness | | | Partially achieved |
| Outcome 8 (2.3): Enhanced and sustainable mariculture production by increasing productivity per unit area as a means to ease pressure on capture fisheries | | | | Rating: Satisfactory | |
| 8. Type of mariculture production technology Level of pollutant discharge from mariculture operations | Declining quality of mariculture products Declining quantity of production per unit area from mariculture Environmental impacts of mariculture not evaluated | Reduction of contaminants caused by mariculture production (5% reduction in the demo sites) Measurable increase (5% increase in the demo sites) in mariculture production per unit area Discharge of nutrient and other discharges from mariculture installations reduce 5% | In the two demonstration areas supported by the Project, the Project has achieved the target of 5% increase in mariculture production per unit area and reduction of nutrients and contaminants by 5%. In addition, there is also successful scaling up of IMTA in the city of Rongcheng, and promotion through government circular of carrying capacity and IMTA for replication nationwide. The project targets are fully achieved. | Technical reports confirm end targets achieved at the demonstration sites. In terms of nutrient and other pollutants from mariculture installations, longer term time series would be necessary for statistically reliable results. | Achieved |
| COMPONENT 3: Improving Ecosystem Carrying Capacity with Respect to Regulating and Cultural Services | | | | | |
| Outcome 9 (3.1): Ecosystem health improved through reductions in pollutant (e.g., N) discharge from land-based sources | | | | Rating: Moderately Satisfactory | |

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| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|---|--|--|---|--|--------------------|
| 9. Level of pollutant discharges particularly Nitrogen in YSLME tributaries | Discharge reductions do not meet the regional target | 10% reductions in N discharges every 5 years | <p>Concentration of total nitrogen inputs to Yellow Sea and Bohai Sea from rivers in Liaoning and Shandong Province increased by 20% from 2016 to 2018, while inputs to Yellow Sea from rivers in Jiangsu Province remain unchanged, according to China Marine Ecology and Environmental Status Bulletin (2018).</p> <p>The project supported a number of studies and assessment of the nutrient loadings in the Yellow Sea including demonstration of nutrient loading and watershed modelling. Through the areas of eutrophication have a trend of marked decrease from 2015 to 2017 according to Marine Environment Quality Bulletin issued by State Oceanic Administration (2018), the considerable nitrogen inputs from atmospheric disposition at a magnitude similar to that from land-based source and limited improvements in fertilizer use efficiency in the same acreage of farmland in the three provinces of the Yellow Sea in PR China suggest that meeting the project targets is unlikely within the project duration.</p> | Both countries have made significant investments for reducing land-based nutrient discharges. Available data show increases in total N inputs to the Yellow Sea and the Bo Hai Sea from rivers in Liaoning and Shandong provinces. | Partially achieved |
| Outcome 10 (3.2): Wider application of pollution-reduction techniques piloted at the demonstration sites | | | | Rating: Moderately Satisfactory | |
| 10. Types of technologies applied for pollution reduction | Some innovations such as man-made wetlands are being undertaken nationally but without regional coordination or dissemination of results | Successful demonstration of use of artificial wetlands in pollution control in 1 sites and replicated in about 2 coastal municipalities and local government units | The consultancy on use of constructed wetland as nutrient sinks clearly indicates the progress being made in the use of constructed wetland as nutrient sinks in both countries. Similarly, the demonstration of integrated monitoring of wetland in Jiaozhou Bay shows diverse wetland vegetation types though with rapid expansion of <i>Spartina alterniflora</i> , increasing use of the areas by migratory birds as staging sites including the rediscovered critically endangered Chinese crested tern (<i>Sterna bernsteini</i>) and improved water quality in the bay area. These achievements have shown that the two countries have accomplished the project targets but with indirect contribution by the YSLME Project. | Recommendations delivered on restoration of natural wetland ecosystems. Long-term integrated monitoring required to enable evaluation of restoration effectiveness. Limited evidence of replication. | Partially achieved |
| Outcome 11 (3.3): Strengthened legal and regulatory process to control pollution | | | | Rating: Moderately unsatisfactory | |
| 11. Status of legal and regulatory process to control pollution | Weak legal and regulatory framework to control pollution in provinces bordering in the YSLME | Develop evaluation tools, in the first year, to assist in harmonizing national and provincial legislation to improve coastal water quality in Shandong, Jiangsu and Liaoning provinces | Target is yet to be achieved. The ongoing revision of the marine environmental protection law (MEPL) in PR China initiated in 2019 provides a timely opportunity to transform the results and recommendation of project-supported assessment into legal and policy recommendation for consideration in the revision process. Yet the process of update or development of any marine-environment related laws and regulations at provincial and local levels is | Evaluation tools have not been developed to assist in harmonizing national and provincial legislation. | Not achieved |

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| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|--|---|--|---|---|---------------------------|
| | | | postponed due to the ongoing revision of MEPL at national level. | | |
| Outcome 12 (3.4): Marine litter controlled at selected locations | | | | Rating: Satisfactory | |
| 12. Status of the control of marine litter at selected locations | Due to a lack of appreciation of the problem little action is currently being undertaken | Regional Guidelines on control of marine litter based on those initiated by NOWPAP produced and adopted for use in the Yellow Sea | The target of the project has been achieved. The project interventions to reduce marine litter in the Yellow Sea region covered legal studies, monitoring and policy advice at local level, and demonstration with engagement of citizen science and NGO actions to understand the status of marine litter from the fishery and aquaculture sector and concrete reduction of wastes and garbage at village level through partnership development with private sector. In the past decade, there is also observed decline of marine litter on beaches covered in the national monitoring programs in both countries. | Draft regional guideline was developed, but not yet agreed upon. Expanded collaboration with the NOWPAP on marine litter database. | Mostly achieved |
| COMPONENT 4: Improving Ecosystem Carrying Capacity with Respect to Supporting Services | | | | | |
| Outcome 13 (4.1): Maintenance of current habitats and the monitoring and mitigation of the impacts of reclamation | | | | Rating: Satisfactory | |
| 13. Areas of critical habitats; Status of mitigation of reclamation impacts | Coastal habitats critical to maintaining ecosystem services continue to be converted or reclaimed unchecked | Areas of critical habitats maintained at current level. Increase 3% total areas as MPAs | Unlikely to be achieved. Project interventions to maintain the areas of critical habitats at the baseline level were unsuccessful due to continued reclamation and the fast economic development. But the coastal reclamation trend was significantly checked with the introduction of moratorium on coastal reclamation in PR China in Yellow Sea and Bohai Sea in 2018. Lessons learnt were reviewed and fed into the development of YSLME Biodiversity Conservation Plan pending endorsement by both countries. Engagement of NGOs and demonstration of community co-management in conservation of coastal wetland helped local stakeholders and MPAs find alternative solutions to conflicts of coastal fisheries and migratory bird protection. Considering the time needed to save the remaining coastal intertidal flats and restore the degraded coastal wetland, the project target is unlikely to be achieved within the project timeframe. | Both littoral countries have instituted prohibitions on reclamation. And MPA coverage has increased by more than 3%. | Mostly achieved |
| | | Impacts of reclamation prepared in 2 demo sites | | Technical studies on the impacts of reclamation. | Partially achieved |
| Outcome 14 (4.2): MPA network strengthened in the Yellow Sea | | | | Rating: Moderately Satisfactory | |
| 14. Level of ecological connectivity in expansion of the Yellow Sea MPA system | The planned expansion of the MPA system currently does not take into account ecological connectivity | The planned expansion of the MPA system currently does take into account ecological connectivity (measured by use of developed connectivity tool kit or other means) | Achieved. The project has achieved the target of expanding the coverage of MPA of the marine and coastal areas by 3 percent. As of 2019, the MPAs including fish spawning and nursery ground account for more than 5 percent of the areas of the Yellow Sea. There are two newly established MPAs by partners in an area of 218 km ² and a potential designation of 42 km ² as a new MPA with direct project support. The stakeholders of the two countries was fully | A MPA Network Development Training Tool has been developed, but not extensively socialized. Ecological connectivity priorities have not yet been widely adopted for MPA planning. | Partially achieved |

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| Indicator | Baseline | End of Project target | Self-assessment (2020 PIR) | TE Comments | TE Assessment |
|---|--|--|--|--|---------------------------|
| | | | capacitated through training and discussion in building biophysical connectivity of the MPAs in the region focusing on Spotted Seal and Spoon-billed Sandpiper and the initial establishment of the YSLME MPA Network for communication for Spotted Seal and Spoon-billed Sandpiper. | | |
| Outcome 15 (4.3): Adaptive management mainstreamed to enhance the resilience of the YSLME and reduce the vulnerability of coastal communities to climate change impacts on ecosystem processes & other threats identified in the TDA and SAP | | | | Rating: Moderately Satisfactory | |
| 15. Inadequate considerations are being given to the impacts of climate change | Inadequate considerations are being given to the impacts of climate change | CC adaptation strategies incorporated in regional strategies such as YSCWM and plankton communities | Unclear. In Project has failed to understand the relationships between the changes of the YSCWM and structure of the plankton communities due to lack of quantitative analysis and the need for in situ observations at multiple scales and the high resolution biological-physical modelling. The regional adaptive management strategy to climate change lack data-supported vulnerability analysis to base adaption strategies. In the Dandong adaption plan, local governments have not been actively involved to address local needs and subsequent buy-in. Overall, the likelihood of project intervention in achieving this outcome is unclear. | Strategies on adaptation of climate change have not been incorporated into regional strategy. | Partially achieved |
| | | ICM plans in (specify number) coastal communities incorporate CC adaptation to improve climate resilience | | Vulnerability assessment methodologies have been developed. Limited progress with respect to incorporating climate change adaptation issues into ICM plans. | Partially achieved |
| Outcome 16 (4.4): Application of Ecosystem-based Community Management (EBCM) in risk management plans to address climate variability and coastal disasters | | | | Rating: Moderately Satisfactory | |
| 16. Status of Regional Monitoring Network for application of ECBM | National Monitoring will continue without regional linkages and harmonisation making regional analyses difficult or impossible | Agreed number of cruises & parameters for the regional monitoring network established and data shared regionally via the project web site. | Partially achieved. The project facilitated the development and consensus building among the two countries on the Regional Jellyfish Monitoring Program, and A Comprehensive Regional Monitoring System: Monitoring Strategies for Climate Change, N/P/Si Changes, HABs (Harmful algal blooms), and Jellyfish Blooms. Data from the two countries are also shared in the development of the monitoring programs and harmful marine organism workshops. With implementation of the two programs, data sharing will become more regular using agreed methodologies to collect data from the agreed monitoring network. In this sense, the target is partially achieved but the implementation of the two regional programs are yet to be fully implemented. | Cruises were not realized. Monitoring programs on jellyfish and HABs have been developed, but not yet approved. Project website provided a useful interim platform for data sharing. | Partially achieved |
| | | Regular LME-wide assessments; enhanced information exchange; | | Technical and scientific stakeholders had frequent exchanges, e.g., through the RWG-A. Limited progress on data sharing. | Partially achieved |
| | | Periodic scenarios of ecosystem change | | Limited progress on periodic scenarios of ecosystem change. | Partially achieved |

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Annex 7: Cofinancing Table

| Cofinancing Source | Type | GEF Agency | | Recipient Government | | National Government ROK | | Civil Society Organization | | Total Cofinancing | |
|---|---------|------------------|------------------|----------------------|--------------------|-------------------------|----------------------|----------------------------|----------------|--------------------|----------------------|
| | | Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual |
| GEF Agency: | | | | | | | | | | | |
| | Grant | 1,692,000 | 2,967,000 | | | | | | | 1,692,000 | 2,967,000 |
| Sub-total, UNDP | | 1,692,000 | 2,967,000 | | | | | | | 1,692,000 | 2,967,000 |
| Recipient Country Government | | | | | | | | | | | |
| Government of the People's Republic of China | Grant | | | 9,812,480 | 3,250,500 | | | | | 9,812,480 | 3,250,500 |
| | In-kind | | | 82,842,580 | 189,344,600 | | | | | 82,842,580 | 189,344,600 |
| Chinese Academy of Fishery Science (CAFS) | Grant | | | | 27,203 | | | | | 0 | 27,203 |
| Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences | Grant | | | | 86,800 | | | | | 0 | 86,800 |
| Sub-total, Recipient Country Government | | | | 92,655,060 | 192,709,103 | | | | | 92,655,060 | 192,709,103 |
| Other (National Government) | | | | | | | | | | | |
| Government of the Republic of Korea | Grant | | | | | 16,973,332 | 2,834,682 | | | 16,973,332 | 2,834,682 |
| | In-kind | | | | | 112,361,374 | 6,888,492,542 | | | 112,361,374 | 6,888,492,542 |
| Sub-total, National Government ROK | | | | | | 129,334,706 | 6,891,327,224 | | | 129,334,706 | 6,891,327,224 |
| Civil Society Organization | | | | | | | | | | | |
| WWF | Grant | | | | | | | 1,800,000 | 0 | 1,800,000 | 0 |
| Beijing Chaoyang District Yongxu Global Environmental | Grant | | | | | | | | 49,000 | | 49,000 |
| Blue Ribbon Ocean Conservation Association (BROCA) | Grant | | | | | | | | 24,630 | | 24,630 |
| China Aquatic Products Processing and Marketing Alliance (CAPPMA) | Grant | | | | | | | | 50,000 | | 50,000 |
| China Biodiversity Conservation and Green Development Foundation (CBCGDF) | Grant | | | | | | | | 4,455 | | 4,455 |
| Shanghai Rendu Ocean NPO Development Center (RENDU) | Grant | | | | | | | | 0 | | 0 |
| Sub-total, Civil Society Organization | | | | | | | | 1,800,000 | 128,085 | 1,800,000 | 128,085 |
| Total cofinancing for project implementation: | | 1,692,000 | 2,967,000 | 92,655,060 | 192,709,103 | 129,334,706 | 6,891,327,224 | 1,800,000 | 128,085 | 225,481,766 | 7,087,131,412 |
| Notes: All figures in United States dollars (USD) Details are listed in the attached breakdowns. | | | | | | | | | | | |

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Breakdown of UNDP co-financing to the YSLME Phase II project, 2014-2020:

| Year and titles of individual project | Relevance of subprojects/activities | Assessment | Budgets (USD) |
|---|--|---|---------------------|
| 2014-Supplementary to the UNDP-Coca-Cola Water Replenish Programme in China | No relevant subproject/activities | The 3 sub projects supported on flood resources management through reservoir, high value-added crops planting technologies to reduce water-soil losses, and capacity building for sugar cane farmers. There is no any specific purpose or activities related to coastal and marine ecosystem and habitat protection, aquaculture technology enhancement, pollution control, fishery management, which were main focuses of YSLME project. | 0 |
| 2015-Conservation and sustainable use of water resources in the middle and lower reaches of the Yellow River Basin and the Haihe River Basin in China | Activity 3 of subproject 1, which aimed to build artificial wetland for rural domestic waste treatment | The demonstration of artificial wetland was an important task for pollution control of the YSLME project. These two activities under UNDP cofinancing subprojects focused on the reduction of waste near watersheds in China through artificial wetland construction and enhancement of key stakeholder awareness on the role of artificial wetland, which had close relevant goals with the YSLME project. However, the goals of the rest 5 activities of subproject 1 were very separated, and focused on cropping and livestock breeding technologies, saving-water irrigation technologies, all of which had no direct relationship with the YSLME project. | 100,000 |
| | Activity 7 of subproject 1, which aimed to conduct training for farmers to realize knowledge , including artificial wetlands regularly | | 20,000 |
| | All activities of subproject 2 | the two activities under this subproject focused on technologies of setting up and protecting wetland | 50,000 |
| | Not relevant with subproject 3 | This subproject mainly aimed at utilization of flood, which was not involved in the targets of YSLME project. | 0 |
| 2016-Farmhouse sewage treatment project | Not relevant with subproject 1 | This subproject mainly aimed at the technology of treatment of sewage from farmhouse tourism boom in China, which was more relevant with the rural environmental construction and not the key target of YSLME project. | 0 |
| | All activities of subproject 2 | This subproject was to improve usage of wetland near the lake, develop green aquaculture industry management model, establish water quality monitoring and ecological benefit evaluation analysis. Those activities have high relevance with the aims and tasks of fishery and pollution control the YSLME project. | 200,000 |
| 2017-Sustainable Agricultural Development in the Yellow River Basin and Sustainable Rural Tourism in China | All activities of subproject 1 | The purpose of the subproject was to reduce the non-point pollution sources from farming affecting the lake water quality, and implemented lots of activities on promoting the fertilizer to reduce the pollutants to water, enhancing the function of artificial wetland on pollution reduction. These activities are relevant with the purpose of YSLME. | 200,000 |
| | Not relevant with subproject 2 | This subproject highlighted the promotion of technologies on water-saving and high-value crops planting near watershed. | 0 |
| | All activities of subproject 3 | This subproject aimed at the promotion of technologies on sewage discharge from restaurants along river in rural area of China and improvement of river water quality. It is quite relevant with the purpose of land-based source pollution reduction of the YSLME project | 400,000 |
| 2018-Water Governance Programme: Sustainable Water Resources Management in Yunnan, Guangdong of China and the Lancang-Mekong Countries | All activities under Output 1 | The activities under Output 1 concentrated on the good practices in water resource management with sewage from rural restaurants. The waste from restaurants is an important land-based source pollution to watershed. The purpose of this Output have similar direction on land-based pollution reduction of the YSLME project. | 407,000 |
| | All activities under Output 2 | The Output enhanced sustainability on water management throughout enhancing the involvement of various stakeholders, such as local governments and NGOs. The modality of this Output have similar character with the direction of YSLME project on encouraging more stakeholders to be engaged into water management system. | 100,000 |
| | All activities under Output 3 | The activities under Output 3 focused on the study of baseline research and need assessment on water resources management technologies, and replicated the advanced experience of China to the other countries along Lancang-Mekong River. Those activities provided good practices on the water protection and enhanced international cooperation on this matter, whose contribution have relevance with the purpose of YSLME project. | 200,000 |
| 2019-Water Governance Programme: Sustainable Water Resources Management | All activities of subproject 1 | This subproject focused on rural wastewater treatment technology, which was relevant with land-based source pollution reduction as one of purpose of the YSLME project | 500,000 |
| | Not relevant with subproject 2 | This subproject aimed at improving the drinking water safety of preliminary school students and teachers and kids in kindergartens in the extreme poor areas in Xinjiang, Yunnan and Gansu provinces in China. These activities were not allocated near the coastal and marine area. Therefore, no relevance with the YSLME project could be identified. | 0 |
| | All activities of subproject 3 | This subproject expected to enhance capacity building thought establishing Automatic Monitoring Network for the surface water and groundwater and developing a set of software for rational allocation of water resources in the Aral Sea Basin. Those activities had positive impact on the monitoring and evaluation on water quality, which had similar effects made under the YSLME project. | 60,000 |
| | All activities of subproject 4 | This subproject made efforts on establishing the SDG evaluation system to improve the drinking water safety, water resource protection, conservation and recycling, etc. These efforts have similarity and relevance on pollutant control sourced from land-based area under the YSLME project. | 30,000 |
| | All activities of subproject 5 | The subproject aimed to promote aquatic biodiversity and ecological water conservation in Lake Region through Lake health assessment, water resources allocation, and natural wetland restoration. These activities have high relevance with the activities implemented under YSLME project, including biodiversity conservation near the coastal and marine environment, and restoration for wetland. | 170,000 |
| 2020-Water Governance Programme: Sustainable Water Resources Management | All activities of subproject 1 | This work focused on rural sewage treatment, belonging to land-based pollution control, which have similar direction of YSLME. | 250,000 |
| | All activities of subproject 2 | This subproject aimed to promote the cooperation between China and developing countries in the Lancang-Mekong Region, in the field of water resources management through information sharing and joint baseline research. Those efforts have high relevance with ICC and RWGs mechanism to enhance international cooperation by providing experiences. | 60,000 |
| | All activities of subproject 3 | This subproject intended to build capacity of water resources management and water ecological restoration relying on ecological governance strategy of typical lakes and watersheds in China. Those efforts will contribute to the protection on habitat near watershed for biodiversity and connectivity, which also have been mentioned under the YSLME project. | 220,000 |
| | Not relevant with subproject 4 | This subproject set up the goal on improving capacity of the communities in gender-responsive water resources management after the COVID-19 pandemic. This purpose have not been raised formally during the implementation of YSLME project, however, it is important for the | 0 |
| Total relevant co-financing budgets | | | 2,967,000.00 |

Breakdown of Co-financing from the Government of China and Civil Society Organizations:**1. PRC Investments in YSLME-related activities between July 2014 and August 2020**

| Activity name | Dates (from / to) | Description of activity | Location(s) | Funded by (Ministry or agency name) | Total investment (USD) |
|---|-------------------|---|---|--|------------------------|
| Marine resources and environment carrying capacity monitoring and pre-warning. | 2016-2017 | Development of marine resources and environment carrying capacity monitoring and pre-warning system and guideline, including carrying capacity on marine space resources, marine biological resources, marine ecological and environmental resources, and islands resources. Assessment and pre-warning of marine resources and environment carrying capacity in different pilot sites. | County-level regions of Jiangsu Province | National Development and Reform Commission, State Oceanic Administration | 300,000 |
| Subsidy to fishing vessel buyback. | 2015-2018 | A total of 622 fishing Boats and 31268 kilowatts of power were scrapped. | Weihai | Ministry of Agriculture, Ministry of Finance and Shandong Provincial Government | 40,733,000 |
| Special Project for protection of islands and sea areas. | 2017-2018 | Vegetation planting and restoration of coastal wetlands. Marine pollution prevention and control. Coastal rehabilitation. Improvement ability of marine ecological monitoring. | Weihai | State Oceanic Administration, Ministry of Finance, Shandong Provincial Government, Weihai Municipal Government | 117,600,000 |
| Blue Bay Remediation Action (Yellow Sea area). | 2016-2018 | In order to improve the environmental quality of coastal waters, restore and upgrade the ecological functions of coastal waters, SOA carry out remediation and restoration activities in damaged areas such as bays and coastal wetlands. | Dalian | State Oceanic Administration, Ministry of finance | 27,000,000 |
| The national marine special public welfare industry research. | 2015-2018 | Evaluation technology and demonstration application of biological and ecological effect of microplastic in offshore area. | Yellow Sea | State Oceanic Administration | 257,600 |
| Regional baseline survey of marine litter. | 2014-2018 | Routine baseline survey of marine litter (2014-2018) and microplastics (2016-2018). | 11 hot spots | State Oceanic Administration, Local governments | 200,000 |
| Atmospheric deposition monitoring. | 2014-2018 | Monitoring of nutrients and heavy metals. | Laohutan, Dalian, Liaoning Province Xiaomaidao, Qingdao, Shandong Province Beishuang, Lianyungang, Jinagsu Province | State Oceanic Administration | 100,000 |
| Monitoring of land-based input of nutrients and heavy metals | 2014-2018 | Baseline survey of land-based outlets and input of nutrient and HM through rivers. | Coastal zone of Liaoning, Shandong, Jiangsu Province\142 outlets, 23 rivers | State Oceanic Administration, Local governments | 200,000 |
| Organise bi-annual meetings of the IMCC to coordinate implementation of YSLME SAP | 2014-2018 | Inter-sessional coordination. | Beijing | State Oceanic Administration | 50,000 |
| Travel costs for participation of IMCC meetings for inter-sector coordination and demonstration sties selection | 2014-2018 | Coordination with 3 provinces. | Beijing, Dalian, Qingdao, Jinan | State Oceanic Administration | 30,000 |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management

GEF Project ID: 4343; UNDP PIMS: 4552

| Activity name | Dates (from / to) | Description of activity | Location(s) | Funded by (Ministry or agency name) | Total investment (USD) |
|---|-------------------|---|--------------------------------------|--|------------------------|
| Analysis of country coastal management guidelines and identification of conservation areas according to planning zones | 2016 | Marine ecological red line. | Shandong, Jiangsu, Liaoning | State Oceanic Administration | 80,000 |
| Survey to analyze gaps and conservation needs of critical species and habitats in YS region | 2014-2018 | Survey for baseline. | Shandong, Jiangsu, Liaoning | State Oceanic Administration | 200,000 |
| Conduct regional training seminars focusing on enhancing connectivity in MPA network | 2014-2018 | Annual training workshop for MPAs (more than 400 MPA managers and officers were trained). | Nanjing; Nan'ao, Zhoushan | State Oceanic Administration | 120,000 |
| Develop regional strategy for adaptive management | 2014-2015 | Provincial strategy and plans for climate change. | Shandong, Jiangsu, Liaoning | Shandong, Jiangsu, Liaoning Provincial Governments | 50,000 |
| climate change adaptation and adaptive management training in collaboration with Asia Disaster Preparedness Center (ADPC) and PEMSEA to enhance regional, national, provincial and local capacity under site-based ICM plan | 2014-2018 | ICM implementation. | Qingdao, Lianyungang | Qingdao, Lianyungang Municipal Governments | 50,000 |
| Climate change assessment and adaptation strategizing | 2014-2018 | Provincial adaptation strategy and ICM plans. | Shandong, Jiangsu, Liaoning | Shandong, Jiangsu, Liaoning Provincial Governments | 100,000 |
| Routine jellyfish monitoring | 2014-2018 | Jellyfish monitoring. | Yellow Sea | State Oceanic Administration | 500,000 |
| Routine HAB monitoring | 2014-2018 | HAB (including macro-algae) monitoring. | Yellow Sea | State Oceanic Administration | 500,000 |
| Meetings and travel. | 2014-2018 | Workshop and meetings for technical support and coordination. | Beijing, Qingdao, Dalian, Jinan | State Oceanic Administration | 200,000 |
| Seminar of spotted seal networking and conservation. | March 29, 2018 | Marine protected area seminar, more than 70 persons joined the seminar and networking building. | Dalian | Ministry of Agriculture, and Liaoning Marine and fishery institution | 4,000 |
| Implementation of conservation action plan of spotted seal. | 2017 - 2018 | MOA granted 150,000 USD dollars every year to Liaoning institute of marine and fishery science for research work. | Dalian | Ministry of Agriculture | 300,000 |
| Key technologies on the conservation and ecological restoration of marine living resources in coastal waters of | 2018-2020 | Health assessment of spawning ground of major fishery species; Adaptability of fishery species; Assessment of carrying capacity of sea ranching; Ecological restoration of the habitat of fishery species | Coastal waters of Shandong Provinces | Shandong Province | 640, 000 |

Terminal Evaluation Report

 EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

| Activity name | Dates (from / to) | Description of activity | Location(s) | Funded by (Ministry or agency name) | Total investment (USD) |
|---|-------------------|---|--------------------------------|---|------------------------|
| Shandong Province | | | | | |
| Assessment of the effectiveness of sea ranching in China | 2019-2021 | Biomass, environment, commercial and social benefits of several sea ranching | Several sea ranching in the YS | Ministry of Agriculture and Rural Affairs | 100,000 |
| Assessment of the effectiveness of closed season in China | 2018-2019 | The changes in fishery species composition, biomass dynamics and distribution | Bohai Sea and YS | | 30,000 |
| Total Govt: | | | | | 189,344,600 |

2. Co-financing table from PCA partners agreed in the ICC-3 meeting

| Activity/Project name | Dates undertaken | Description of activity | Funded by (Ministry or agency name) | Total investment (USD) |
|---|-----------------------------------|--|-------------------------------------|------------------------|
| | (from / to) | | | |
| Demonstration zone of Integrated Ecosystem-based Investigation on Wetland of Jiao Zhou Bay of Qingdao (ICC-3) | 2018 | Expert consultation and labor fee (Laboratory staff fee) | NCSEMC | 1,730,000 |
| | | Experiment Materials (Experiment Materials) | | 1,050,000 |
| | | Qingdao environmental monitoring fee | | 220,000 |
| Activity 3 of Output 4.3.1.: Develop climate change adaptation ICM model framework plan or strategic framework plan for 1 coastal city or province | April 1, 2019 to October 31, 2019 | Development of climate change adaptation ICM model framework plan or strategic framework plan for 1 coastal city or province | FIO, SOA | 100,000 |
| Activity 4 of Output 4.3.1. Seasonality and inter-annual variability of the floating Sargassum horneri in western Yellow Sea | March 1, 2019 to October 31, 2019 | Technical Proposal for Seasonality and inter-annual variability of the floating Sargassum horneri in western Yellow Sea | FIO/MNR | 100,000 |
| Activity 5 of Output 4.2.1.: Spotted seals connectivity satellite tracking monitoring and environmental DNA analysis for strengthening MPAs network | March 1, 2019 to October 31, 2019 | Spotted seals connectivity satellite tracking monitoring and environmental DNA analysis for strengthening MPAs network | FIO and local governments. | 50,500 |
| total | | | | 3,250,500 |

3. Co-financing table for the Seven Awarded Proposals for YSGP

| No | Grantee | Type | Grant Amount (in USD) | Matching Funds (in USD) Cofinancing | Total Project Budget (in USD) |
|----|---|----------------|-----------------------|-------------------------------------|-------------------------------|
| 1 | Beijing Chaoyang District Yongxu Global Environmental Institute (GEI) | Civil Society | 100,000 | 49,000 | 149,000 |
| 2 | Blue Ribbon Ocean Conservation Association (BROCA) | Civil Society | 46,950 | 24,630 | 71,580 |
| 3 | China Aquatic Products Processing and Marketing Alliance (CAPPMA) | Civil Society | 99,969 | 50,000 | 149,969 |
| 4 | China Biodiversity Conservation and Green Development Foundation (CBCGEF) | Civil Society | 39,778 | 4,455 | 44,233 |
| 5 | Chinese Academy of Fishery Science (CAFS) | National Gov't | 71,439 | 27,203 | 98,642 |
| 6 | Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR) | National Gov't | 80,000 | 86,800 | 166,800 |
| 7 | Shanghai Rendu Ocean NPO Development Center (RENDU) | Civil Society | 46,312 | - | 46,312 |
| | total | | 484,448 | 242,088 | 726,536 |

Terminal Evaluation Report

EAS: Implementation of the Yellow Sea LME Strategic Action Programme for Adaptive Ecosystem-Based Management
 GEF Project ID: 4343; UNDP PIMS: 4552

Breakdown of Co-financing from the Government of the Republic of Korea:

| | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
|---------------------------|--------|-------------|-------------|-------------|---------------|---------------|-------------|---------------|---------------|
| Gyeonggi Province | M KRW | 26,868 | 35,595 | 28,005 | 51,630 | 102,875 | 86,441 | 341,898 | |
| | M US\$ | 22.7 | 30.0 | 23.6 | 43.5 | 86.7 | 72.9 | 288.2 | |
| Chungnam Province | M KRW | 79,467 | 76,639 | 90,848 | 87,535 | 67,444 | 73,463 | 84,720 | |
| | M US\$ | 67.0 | 64.6 | 76.6 | 73.8 | 56.9 | 61.9 | 71.4 | |
| Jeonbuk Province | M KRW | 68,331 | 247,860 | 193,708 | 204,599 | 184,974 | 167,410 | 164,886 | |
| | M US\$ | 57.6 | 209.0 | 163.3 | 172.5 | 155.9 | 141.1 | 139.0 | |
| Jeonnam Province | M KRW | 116,311 | 150,802 | 149,886 | 312,183 | 143,672 | 202,526 | 270,439 | |
| | M US\$ | 98.1 | 127.1 | 126.4 | 263.2 | 121.1 | 170.7 | 228.0 | |
| Incheon Metropolitan City | M KRW | 43,529 | 63,680 | 102,868 | 39,788 | 49,474 | 28,341 | 58,354 | |
| | M US\$ | 36.7 | 53.7 | 86.7 | 33.5 | 41.7 | 23.9 | 49.2 | |
| Province Total | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
| | M KRW | 334,505 | 574,577 | 565,315 | 695,735 | 548,438 | 558,180 | 920,297 | |
| | M US\$ | 282.0 | 484.4 | 476.6 | 586.5 | 462.3 | 470.6 | 775.8 | |
| | US\$ | 281,997,471 | 484,384,168 | 476,576,125 | 586,524,364 | 462,348,975 | 470,561,794 | 775,836,621 | |
| MOF | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
| | M KRW | 444,671 | 483,696 | 530,212 | 686,660 | 686,660 | 572,718 | 572,828 | |
| | M US\$ | 374.9 | 407.8 | 447.0 | 578.9 | 578.9 | 482.8 | 482.9 | |
| | US\$ | 374,870,174 | 407,769,347 | 446,983,645 | 578,873,714 | 578,873,714 | 482,817,400 | 482,909,712 | |
| Total | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
| | M KRW | 779,176 | 1,058,273 | 1,095,527 | 1,382,395 | 1,235,098 | 1,130,898 | 1,493,125 | 8,174,492 |
| | M US\$ | 656.9 | 892.2 | 923.6 | 1165.4 | 1041.2 | 953.4 | 1258.7 | 6,891 |
| | US\$ | 656,867,645 | 892,153,515 | 923,559,771 | 1,165,398,078 | 1,041,222,689 | 953,379,194 | 1,258,746,333 | 6,891,327,224 |
| Grant | | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
| | M KRW | 194 | 240 | 240 | 240 | 890 | 890 | 669 | 3,363 |
| | M US\$ | 0.2 | 0.2 | 0.2 | 0.2 | 0.8 | 0.8 | 0.6 | 2.8 |
| | US\$ | 163,547 | 202,327 | 202,327 | 202,327 | 750,295 | 750,295 | 563,564 | 2,834,682 |
| In kind | M KRW | 778,982 | 1,058,033 | 1,095,287 | 1,382,155 | 1,234,208 | 1,130,008 | 1,492,456 | 8,171,130 |
| | M US\$ | 656.7 | 892.0 | 923.4 | 1165.2 | 1040.5 | 952.6 | 1258.2 | 6,888 |
| | US\$ | 656,704,097 | 891,951,189 | 923,357,444 | 1,165,195,751 | 1,040,472,394 | 952,628,899 | 1,258,182,769 | 6,888,492,542 |

Annex 8: Evaluation Consultant Code of Conduct Agreement Form

Evaluators / Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and: respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/ or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

TE Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultants: James Lenoci, Dr. Liu Shuo

We confirm that we have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signature:

Budapest, 27 July 2020



James Lenoci, International Consultant / Team Leader

Beijing, 27 July 2020



Dr. Liu Shuo, National Consultant

Annex 9: Rating Scales

Outcome Ratings

The overall ratings on the outcomes of the project are based on performance on the following criteria:

- a. Relevance
- b. Effectiveness
- c. Efficiency

Project outcomes are rated based on the extent to which project objectives were achieved. A six-point rating scale is used to assess overall outcomes:

- Highly satisfactory (HS): Level of outcomes achieved clearly exceeds expectations and/or there were no short comings.
- Satisfactory (S): Level of outcomes achieved was as expected and/or there were no or minor short comings.
- Moderately Satisfactory (MS): Level of outcomes achieved more or less as expected and/or there were moderate short comings.
- Moderately Unsatisfactory (MU): Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings.
- Unsatisfactory (U): Level of outcomes achieved substantially lower than expected and/or there were major short comings.
- Highly Unsatisfactory (HU): Only a negligible level of outcomes achieved and/or there were severe short comings.
- Unable to Assess (UA): The available information does not allow an assessment of the level of outcome achievements.

The calculation of the overall outcomes rating of projects considers all the three criteria, of which relevance and effectiveness are critical. The rating on relevance determines whether the overall outcome rating will be in the unsatisfactory range (MU to HU = unsatisfactory range). If the relevance rating is in the unsatisfactory range then the overall outcome is in the unsatisfactory range as well. However, where the relevance rating is in the satisfactory range (HS to MS), the overall outcome rating could, depending on its effectiveness and efficiency rating, be either in the satisfactory range or in the unsatisfactory range.

The second constraint applied is that the overall outcome achievement rating may not be higher than the effectiveness rating.

During project implementation, the results framework of some projects may have been modified. In cases where modifications in the project impact, outcomes and outputs have not scaled down their overall scope, the evaluator should assess outcome achievements based on the revised results framework. In instances where the scope of the project objectives and outcomes has been scaled down, the magnitude of and necessity for downscaling is taken into account and despite achievement of results as per the revised results framework, where appropriate, a lower outcome effectiveness rating may be given.

Sustainability Ratings

The sustainability is assessed taking into account the risks related to financial, sociopolitical, institutional, and environmental sustainability of project outcomes. The evaluator may also take other risks into account that may affect sustainability. The overall sustainability is assessed using a four-point scale.

- Likely (L). There is little or no risks to sustainability.
- Moderately Likely (ML). There are moderate risks to sustainability.
- Moderately Unlikely (MU). There are significant risks to sustainability.
- Unlikely (U). There are severe risks to sustainability.
- Unable to Assess (UA). Unable to assess the expected incidence and magnitude of risks to sustainability.

Project M&E Ratings

Quality of project M&E is assessed in terms of:

- Design
- Implementation

Quality of M&E on these two dimensions is assessed on a six point scale:

- Highly satisfactory (HS): There were no short comings and quality of M&E design / implementation exceeded expectations.
- Satisfactory (S): There were no or minor short comings and quality of M&E design / implementation meets expectations.
- Moderately Satisfactory (MS): There were some short comings and quality of M&E design/implementation more or less meets expectations.
- Moderately Unsatisfactory (MU): There were significant shortcomings and quality of M&E design / implementation somewhat lower than expected.
- Unsatisfactory (U): There were major short comings and quality of M&E design/implementation substantially lower than expected.
- Highly Unsatisfactory (HU): There were severe short comings in M&E design/ implementation.
- Unable to Assess (UA): The available information does not allow an assessment of the quality of M&E design / implementation.

Implementation and Execution Rating

Quality of implementation and of execution is rated separately. Quality of implementation pertains to the role and responsibilities discharged by the GEF Agencies that have direct access to GEF resources. Quality of Execution pertains to the roles and responsibilities discharged by the country or regional counterparts that received GEF funds from the GEF Agencies and executed the funded activities on ground. The performance is rated on a six-point scale.

- Highly satisfactory (HS): There were no short comings and quality of implementation / execution exceeded expectations.
- Satisfactory (S): There were no or minor short comings and quality of implementation / execution meets expectations.
- Moderately Satisfactory (MS): There were some short comings and quality of implementation / execution more or less meets expectations.
- Moderately Unsatisfactory (MU): There were significant shortcomings and quality of implementation / execution somewhat lower than expected.
- Unsatisfactory (U): There were major short comings and quality of implementation / execution substantially lower than expected.
- Highly Unsatisfactory (HU): There were severe short comings in quality of implementation / execution.
- Unable to Assess (UA): The available information does not allow an assessment of the quality of implementation / execution.

Annex 10: Terms of Reference for Terminal Evaluation

Background

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the *Implementing the Strategic Action Programme for the Yellow Sea Large Marine Ecosystem: Restoring Ecosystem Goods and Services and Consolidation of a Long-term Regional Environmental Governance Framework* (PIMS 4552.)

The essentials of the project to be evaluated are as follows:

Project Summary Table

| | | | | |
|--------------------------|--|--|-------------------------------|------------------------------|
| Project Title: | Implementing the Strategic Action Programme for the Yellow Sea Large Marine Ecosystem: Restoring Ecosystem Goods and Services and Consolidation of a Long-term Regional Environmental Governance Framework | | | |
| GEF Project ID: | 00087001 | | at endorsement (Million US\$) | at completion (Million US\$) |
| UNDP Project ID: | 4552 | GEF financing: | 7,562,430 | |
| Country: | China and RO Korea | IA/EA own: | 1,692,000 | 1,692,000 |
| Region: | Asia Pacific | Government: | 221,989,766 | |
| Focal Area: | International Waters (IW) | Other: | 1,800,000 | |
| FA Objectives, (OP/SP): | | Total co-financing: | 225,418,766 | |
| Executing Agency: | UNOPS | Total Project Cost: | 233,044,196 | |
| Other Partners involved: | Ministry of Natural Resources, PR China; Ministry of Foreign Affairs, RO Korea | ProDoc Signature (date project began): | | 11 July 2014 |
| | | (Operational) Closing Date: | Proposed: Dec. 2020 | Actual: |

Objective and Scope

The project was designed to:

The project's objective is to foster a long-term sustainable institutional, policy, and financial arrangements for effective ecosystem-based management of the Yellow Sea (YS). To achieve this objective, the project will support the formation of an YSLME Commission that will oversee the implementation of the SAP; and will support the states' efforts to reduce the decline in biological resources and to restore depleted fish stocks in the Yellow Sea.

Outcome 1: Ensuring Sustainable Regional and National Cooperation for Ecosystem-Based Management;

Outcome 2: Improving Ecosystem Carrying Capacity with Respect to Provisioning Services;

Outcome 3: Improving Ecosystem Carrying Capacity with respect to Regulating and Cultural Services;

Outcome 4: Improving Ecosystem Carrying Capacity with respect to Supporting Services.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

Evaluation approach and method.

An overall approach and method[1] for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact**, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR (*fill in Annex C*) The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to (*both China and RO Korea*), including the following project sites (*TBC by PMO soon*). Interviews will be held with the following organizations and individuals at a minimum: (Ministry of Natural Resources (MNR), PR China; Fisheries Administration of Ministry of Agriculture and Rural Affairs (MARA), PR China; National Forestry and Grassland Administration (NFGA) of PR China, and Ministry of Foreign Affairs, RO Korea, and stakeholders involved in implementation of project cooperation agreements (PCAs), grant support agreements (GSAs), etc.).

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in [Annex B](#) of this Terms of Reference.

[1] For additional information on methods, see the [Handbook on Planning, Monitoring and Evaluating for Development Results](#), Chapter 7, pg. 163

Duties and Responsibilities

Evaluation Criteria & Rating

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see [Annex A](#)), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact**. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in [Annex D](#).

| Evaluation Ratings: | | | |
|--------------------------------|--------|---|--------|
| 1. Monitoring and Evaluation | rating | 2. IA& EA Execution | rating |
| M&E design at entry | | Quality of UNDP Implementation | |
| M&E Plan Implementation | | Quality of Execution - Executing Agency | |
| Overall quality of M&E | | Overall quality of Implementation / Execution | |
| 3. Assessment of Outcomes | rating | 4. Sustainability | rating |
| Relevance | | Financial resources: | |
| Effectiveness | | Socio-political: | |
| Efficiency | | Institutional framework and governance: | |
| Overall Project Outcome Rating | | Environmental: | |
| | | Overall likelihood of sustainability: | |

Project finance / Cofinance

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

| Co-financing (type/source) | UNDP own financing (mill. US\$) | | Government (mill. US\$) | | Partner Agency (mill. US\$) | | Total (mill. US\$) | |
|----------------------------|---------------------------------|--------|-------------------------|--------|-----------------------------|--------|--------------------|--------|
| | Planned | Actual | Planned | Actual | Planned | Actual | Actual | Actual |
| Grants | | | | | | | | |
| Loans/Concessions | | | | | | | | |
| • In-kind support | | | | | | | | |
| • Other | | | | | | | | |
| Totals | | | | | | | | |

Mainstreaming

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

Impact

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.[1]

Conclusions, recommendations & lessons

The evaluation report must include a chapter providing a set of **conclusions, recommendations** and **lessons**. Implementation arrangements.

The principal responsibility for managing this evaluation resides with the UNDP CO in China. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

Evaluation timeframe

The total duration of the evaluation will be 35 days according to the following plan:

| Activity | Timing | Completion Date |
|-------------------------|---------|-----------------|
| Preparation | 4 days | May 31, 2020 |
| Evaluation Mission | 15 days | Late June, 2020 |
| Draft Evaluation Report | 12 days | July 15, 2020 |
| Final Report | 4 days | July 31, 2020 |

Evaluation deliverables

The evaluation team is expected to deliver the following:

| Deliverable | Content | Timing | Responsibilities |
|--------------------|--|--|--|
| Inception Report | Evaluator provides clarifications on timing and method | No later than 2 weeks before the evaluation mission. | Evaluator submits to UNDP CO |
| Presentation | Initial Findings | End of evaluation mission | To project management, UNDP CO |
| Draft Final Report | Full report, (per annexed template) with annexes | Within 3 weeks of the evaluation mission | Sent to CO, reviewed by RTA, PCU, GEF OFPs |
| Final Report* | Revised report | Within 1 week of receiving UNDP comments on draft | Sent to CO for uploading to UNDP ERC. |

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

[1] A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: [ROtI Handbook 2009](#)

Competencies

Team Composition

The evaluation team will be composed of (1 international act as team leader, 1 national evaluator and 1 interpreter). The consultants shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The international consultant will be designated as the team leader and will be responsible for finalizing the report. The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The Team members must present the following qualifications:

International Consultant (Team Leader):

- Strategic technical and intellectual skills in the substantive area with global dynamic perspectives;
- Work experience in the field of ocean governance, or ecosystem-based management, preferably at the LME level for at least 10 years;
- Ability to manage technical teams, work in an independent manner with good relationship management skills;
- Project evaluation/review experiences with results-based monitoring and evaluation and methodologies within United Nations system will be considered an asset
- Demonstrated ability to operate effectively in a highly complex organizational context;
- Ability to maintain high standards despite pressing deadlines;
- Excellent communication (both oral and written) and partnership building skills with multi-dimension partners and people, skill for conflict resolution and negotiation;
- Excellent writing skills, especially in the preparation of official documents and reports;
- Good knowledge of environmental and socio-economic context of PR China and RO Korea;
- Knowledge of UNDP and GEF, such as GEF policy and practices, GEF project requirements;
- Previous experience with results-based monitoring and evaluation methodologies;
- Demonstrated understanding of issues related to gender; experience in gender sensitive evaluation and analysis;
- A Master’s degree in environmental science, marine science, fisheries management, or other closely related field.

Required Skills and Experience

Evaluator Ethics

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#)

Payment modalities and specifications

| % | Milestone |
|-----|--|
| 10% | At contract signing |
| 40% | Following submission and approval of the 1ST draft terminal evaluation report |
| 50% | Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report |

Application process

Applicants are requested to apply online (<http://jobs.undp.org>, etc.) by (31 Jan. 2020). Individual consultants are invited to submit applications together with their CV for these positions. The application should contain a current and complete C.V. in English with indication of the e-mail and phone contact. Shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs).

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

Annex A: Project Logical Framework

(will be provided after contract signed)

Annex B: List of Documents to be reviewed by the evaluators

A list of suggested key documents to include is as follows:

1. Project documents

- 1) GEF Project Identification Form (PIF), Project Document and Log Frame Analysis (LFA)
- 2) Project Inception report
- 3) Implementing/executing partner arrangements
- 4) List and contact details for project staff, key project stakeholders, including Project Boards, and other partners to be consulted
- 5) Project sites, highlighting suggested visits
- 6) Midterm evaluation (MTE) and other relevant evaluations and assessments
- 7) Annual Project Implementation Reports (PIR), APR, QPR
- 8) Project budget, broken out by outcomes and outputs
- 9) Project GEF IW Tracking Tool

- 10) Financial Data including Combined Delivery Reports (CDR)
- 11) Sample of project communications materials, i.e. press releases, brochures, documentaries, etc.
- 12) Comprehensive report of subcontracts (even in Chinese for national evaluator's reference).

2. UNDP documents

- 1) Development Assistance Framework (UNDAF)
- 2) Country Programme Document (CPD)
- 3) Country Programme Action Plan (CPAP)

3. GEF documents

- 1) GEF focal area strategic Programme Objectives

Annex C: Evaluation Questions

This is a generic list, to be further detailed with more specific questions by CO and UNDP GEF Technical Adviser based on the particulars of the project.

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|------------|---------|-------------|
| Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels? | | | |
| Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved? | | | |
| Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards? | | | |
| Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results? | | | |
| Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status? | | | |

Annex D: Rating Scales

| Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution | Sustainability ratings: | Relevance ratings |
|---|---|---|
| 6: Highly Satisfactory (HS): no shortcomings | 4. Likely (L): negligible risks to sustainability | 2. Relevant (R) |
| 5: Satisfactory (S): minor shortcomings | 3. Moderately Likely (ML): moderate risks | 1.. Not relevant (NR) |
| 4: Moderately Satisfactory (MS) | 2. Moderately Unlikely (MU): significant risks | Impact Ratings: 3. Significant (S) 2. Minimal (M) 1. Negligible (N) |
| 3: Moderately Unsatisfactory (MU): significant shortcomings | 1. Unlikely (U): severe risks | |
| 2: Unsatisfactory (U): major problems | | |
| 1: Highly Unsatisfactory (HU): severe problems | | |
| Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A) | | |

Annex E: Evaluation Consultant Code of Conduct and Agreement Form

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.

2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: _____

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at *place on date*

Signature: _____

Annex F: Evaluation Report Outline

- i. Opening page:
 - Title of UNDP supported GEF financed project
 - UNDP and GEF project ID#s.
 - Evaluation time frame and date of evaluation report
 - Region and countries included in the project
 - GEF Operational Program/Strategic Program
 - Implementing Partner and other project partners
 - Evaluation team members
 - Acknowledgements
- ii. Executive Summary
 - Project Summary Table
 - Project Description (brief)
 - Evaluation Rating Table
 - Summary of conclusions, recommendations and lessons
- iii. Acronyms and Abbreviations
(See: UNDP Editorial Manual)
1. Introduction
 - Purpose of the evaluation
 - Scope & Methodology
 - Structure of the evaluation report
2. Project description and development context
 - Project start and duration
 - Problems that the project sought to address
 - Immediate and development objectives of the project
 - Baseline Indicators established
 - Main stakeholders
 - Expected Results
3. Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated)

- 3.1 Project Design / Formulation
 - Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
 - Assumptions and Risks
 - Lessons from other relevant projects (e.g., same focal area) incorporated into project design
 - Planned stakeholder participation
 - Replication approach
 - UNDP comparative advantage
 - Linkages between project and other interventions within the sector
 - Management arrangements
- 3.2 Project Implementation
 - Adaptive management (changes to the project design and project outputs during implementation)
 - Partnership arrangements (with relevant stakeholders involved in the country/region)
 - Feedback from M&E activities used for adaptive management
 - Project Finance:
 - Monitoring and evaluation: design at entry and implementation (*)
 - UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues
- 3.3 Project Results
 - Overall results (attainment of objectives) (*)
 - Relevance(*)
 - Effectiveness & Efficiency (*)
 - Country ownership
 - Mainstreaming
 - Sustainability (*)
 - Impact
- 4. Conclusions, Recommendations & Lessons
 - Corrective actions for the design, implementation, monitoring and evaluation of the project
 - Actions to follow up or reinforce initial benefits from the project
 - Proposals for future directions underlining main objectives
 - Best and worst practices in addressing issues relating to relevance, performance and success
- 5. Annexes
 - ToR
 - Itinerary
 - List of persons interviewed
 - Summary of field visits
 - List of documents reviewed
 - Evaluation Question Matrix
 - Questionnaire used and summary of results
 - Evaluation Consultant Agreement Form

Annex G: Evaluation Report Clearance Form

Evaluation Report Reviewed and Cleared by

UNDP Country Office

Name: _____

Signature: _____ Date: _____

UNDP GEF RTA

Name: _____

Signature: _____ Date: _____

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

www.unevaluation.org/unegcodeofconduct

The Report length should not exceed 40 pages in total (not including annexes).

UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008

Using a six-point rating scale: 6: Highly Satisfactory, 5: Satisfactory, 4: Marginally Satisfactory, 3: Marginally Unsatisfactory, 2: Unsatisfactory and 1: Highly Unsatisfactory, see section 3.5, page 37 for ratings explanations.

Application procedures

Qualified candidates are requested to apply by 31 Jan 2020 by sending their application packages through UNDP China website.

The application should contain:

Offeror's Letter explaining why the applicant is the most suitable candidate for the advertised position and a **brief methodology** on how the applicant will approach and conduct the work (if applicable). [Download offeror's letter and Financial proposal here](#)

Filled P11 form including experience in similar projects and contact details of referees, please upload the P11 or your CV. [Download here](#)

Financial Proposal* - specifying a total lump sum amount for the tasks specified in this announcement. The financial proposal shall include a breakdown of this lump sum amount (number of anticipated working days – in home office and on mission, travel – international and local, per diems and any other possible costs).

*Please note that the **financial proposal is all-inclusive** and shall consider various expenses incurred by the consultant/contractor during the contract period (e.g. relevant expenses related to the performance of services...). All envisaged **travel costs** must be included in the financial proposal. This includes all travel to join duty station/repatriation travel.*

Payments will be made only upon confirmation of UNDP on delivering on the contract obligations in a satisfactory manner.

General Terms and conditions as well as other related documents can be found under: <http://intranet.undp.org>

Qualified **women** and members of **minorities** are encouraged to apply.

Due to many applications we receive, we can inform only the successful candidates about the outcome or status of the selection process.

Incomplete applications will not be considered. Please make sure you have provided all requested materials.

Annex 11: Signed TE Final Report Clearance Form

| | |
|--|-------|
| Terminal Evaluation Report Reviewed and Cleared By: | |
| UNDP Country Office | |
| Name: | |
| Signature: | Date: |
| UNDP GEF Regional Technical Advisor | |
| Name: | |
| Signature: | Date: |