Annual Project Report

UNDP/GEF 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

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Contents

Basic Project Information

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	
UNDP Award ID	00074724
UNDP Project ID	00087001
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Total Approved Project Budget	US$1,794,803.10
Participating UN agencies	UNOPS
Implementing Partners/ National collaborating agencies	State Oceanic Administration of PR China, and Ministry of Oceans and Fisheries of RO Korea
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Project website	www.yellowseapartnership.org

Project Implementation Status and Progress Report (Report against AWP)

Outcome & Output Progress Report

Indicator Description	Cumulative progress since project start
Component 1: Ensuring Sustainable Regional and National Cooperation for Ecosystem-Based Management	
Indicator 1.1: Status of YSLME Commission and subsidiary bodies at regional level Baseline: Ad hoc regional co-ordination through the YSLME Regional Project Board and weak cross sector management at the national level End of the project targets: 1) All the Terms of Reference for the YSLME Commission and Subsidiary Bodies approved by all participating country Governments; and 2) Functioning YSLME Commission	• In YSLME Phase II Project, the Project Steering Committee in the first phase of YSLME Project was replaced with the Interim YSLME Commission Council (ICC) serving as the provisional decision-making body of the Project. The roadmap for a sustainable regional environmental governance framework developed by the project consultant is being implemented. The ICC and its Subsidiary Bodies were established with approval of the TORs and Rules of Procedures for ICC, TORs of the Management, Science and Technical Panel (MSTP) and six Regional Working Groups (RWGs) and Secretariat Staff by the first meeting of the ICC held on July 13, 2017. • The interim regional ocean governance mechanism is functioning well since its inception in the second phase. In accordance with the approved organizational structure of the regional ocean governance mechanism, PR China and RO Korea nominated a National Project Coordinator (NPC), members of the Inter-Ministerial Coordinating Committee (IMCC), members to Regional Working Groups (RWGs) and National Working Groups (NWGs) by July 2017. Facilitated by the PMO, the first and second meetings of ICC and MSPT were held in July, 2017 in Seoul, RO Korea, and in March 2018 in Dalian, PR China. The first meetings of the six RWGs were held respectively: RWG-A (Incheon, ROK, November 21-22, 2017); RWG-F (Yantai, PRC, October 17-18, 2017); RWG-G (Seoul, ROK, Dec 14-15, 2017); RWG-H (Incheon, ROK, Sept 4-5, 2017); RWG-M (Weihai, PRC, Oct 26-27, 2017); RWG-P (Dalian, PRC, Oct 10-12, 2017). The second meetings of three RWGs were held in 2018: RWG-A (Kunming, PR China, June 25-26, 2019), RWG-F (Jeju, ROK, October 10-11) and RWG-M (Jeju, ROK, Dec 8-9). The organizational arrangement of the regional ocean governance mechanism of YSLME is documented in the publication entitled Architecture of Interim YSLME Commission. • ICC-2 held on March 28, 2018, approved the plan for establishing the

	Yellow Commission and the TORs of Task Force on Rules and Governance (TF-RoG) and TF on Financing Mechanism (TF-FM). The Ocean Governance Specialist has submitted legal documents to set up the YSLME Commission and the Sustainable Financing Specialist submitted the YSLME Trust Fund for review by the third meeting of the ICC. The Task Force for Sustainable Financing and Rules of Governance are yet to established by the two countries. • The mid-term review (MTR) consultant recommended to the ICC-1 to combine MSTP and ICC, RWG-F and RWG-M, and RWG-A and RWG-P based on the close linkage between the themes and practicality for the Secretariat to organize RWG events on an annual basis. The performance of the RWGs will be reviewed against the objectives and deliverables specified in their respective TORs by the Ocean Governance Specialist. Given that the regional ocean governance mechanism is interim in nature, the functionalities of the ICC, MSTP, RWGs, NWGs and NCs will be revisited and finalized on the basis of lessons learnt and contribution to the implementation of the project activities in line with the SAP targets. • The Secretariat is serviced by a project management office (PMO) in Songdo of Incheon City of RO Korea and a branch in Dalian, PR China. On April 2, 2015, UNOPS signed an MOU with Incheon Metropolitan City (IMC) to enable PMO to secure working space in G-Tower of Songdo, Incheon City of RO Korea. This MOU was amended to allow PMO to use its current working space up until December 31, 2019. On March 1, 2017, UNOPS signed an MOU with NMEMC/SOA to acquire a two-room office for PMO Dalian Branch up to November 22, 2019 for Environment Officer. The PMO can legally operate in RO Korea through an amended MOU between UNDP and RO Korea on the establishment of the UNDP Seoul Policy Center (USPC). This amendment allows the PMO to enjoy the benefits of USPC granted by RO Korea to operate in the country. The Ocean Governance Specialist already prepared the headquarter agreement to establish the YSLME Commission subject to review by the TF-RoG yet the location of the Secretariat of the proposed YSLME Commission has not been formally discussed between PR China and RO Korea. There also voices from RWG1-G (December 14-15, Seoul) to set up only one Secretariat to improve the efficiency and effectiveness of its operation, but no consensus has been reached.

Indicator 1.2: Status of Inter-Ministerial Coordinating Committee (IMCC) Baseline: 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 End of the project target: 1) 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. 2) Two meetings of IMCC every year and functioning	• In RO Korea, IMCC has been established with the following membership: Ministry of Foreign Affairs(MOFA) as GEF National Focal Agency; Ministry of Oceans and Fisheries(MOF) as GEF National Implementing Agency; Other relevant Ministries including Ministry of Environment, Ministry of Unification etc. In PR China, the existing IMCC includes Ministry of Finance (MOF), State Oceanic Administration (now known as Ministry of Natural Resources, MNR), Ministry of Agriculture (now known as Ministry of Agriculture and Rural Affairs, MARA), Ministry of Foreign Affairs(MOFA); and provincial governments of Liaoning, Shandong and Jiangsu. Both PR China and the RO Korea held the first meetings of the IMCC right before the MSTP-1 and ICC-1. • With the reorganization of the SOA into the Ministry of Natural Resources (MNR), the management of marine ecology and environment and marine protected areas previously under the mandates of the SOA is now shared by Ministry of Ecology and Environment (MEE) and National Forestry and Grassland Administration (NFGA). Under this circumstance, there is a clear need to include the MNR and NFGA in the IMCC in line with the new institutional settings for ocean management in PR China and to strengthen Inter-ministerial Coordinating Committee (IMCC) with streamlined horizontal (among MNR, MEE, MARA and NFGA) and vertical coordination (between MNR and provincial governments in Shandong, Lianing and Jiangsu). In additional, the IMCC may need to meet more often than annually to give oversight of the project implementation. The quality control mechanism of National Working Groups should be fully operationalized to appraise the deliverables of

Indicator 1.3: Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities Baseline: 20 members of the Yellow Sea Partnership End of project target: 1) Number of partnerships: 40; 2) Number of capacity building activities: 25; 3) Number of public awareness initiatives: 15; 4) Number of participants in capacity building activities: about 200	• Yellow Sea Partnership (YSP), which is meant to support the implementation of the YSLME SAP, is strengthened in YSLME Phase II with the adoption at the ICC-1 of the Guidelines for Strengthening the YSP. It is envisaged to be a multi-stakeholder initiative with members from global, regional, national and local scales provisionally facilitated by the UNDP/GEF YSLME Phase II Project. • By the end of 2018, more than 40 national and local governments, regional organizations and regional seas programmes, academia, NGOs and private sector participated in YSLME events. Among these, 14 partners collaborated with YSLME Phase II Project in the conduct of workshops, seminars and training courses. Dates, partners and activities of some of these partnership events include: o On July 14, 2017, a MPA Seminar was organized in **Ganghwa Tidal Flat Center** with **NEAMPAN** of UNESCAP and **KOEM** of RO Korea. o On September 14-15, 2017, the Project sponsored the organization of the International Symposium on IMTA with **NIFS**/MOF of RO Korea. o On June 25-26, 2018, PMO organized the China-Korea Workshop on Harmful Marine Organisms in Yellow Sea was held in Kunming in collaboration with SOA/PRC, MOF/ROK, KOEM/ROK, **IOCAS/PRC** and **NMEMC/PRC**. o On July 23-27, 2018, Workshop on designing a network of MPAs for the YSLME based on biophysical connectivity was jointly organized by PMO with KOEM and **MABIK** of RO Korea. o On July 30-31, 2018, the Fish Stock Assessment Workshop was held in Tongyeong of RO Korea in collaboration with NIFS. o On September 17-18, International Training Course of Physiological Energy Measurement Technique of Bivalves was jointly organized by PMO and **YSFRI/PRC**. o On November 17-18, Seminar on the Law and Policy to Promote Regional Ocean Governance was held with **Marine Development Studies Institute of Ocean University of China**, **Center for Global Climate and marine Governance of Korea University** and NMEMC. o On December 1-2, Integrated Multitrophic Aquaculture (IMTA) Responsibly Farming Waters by Taking Advantage of Ecosystem Services was jointly organized with Asian Institute of Technology (**AIT**); o In 2017 and 2018, The Project staff participated in 21st and 22nd

Indicator 1.4: Status of recognition and compliance to regional and international treaties and agreements Baseline: Regional and international treaties and agreements are recognized by China, but not fully compliant. End of project targets: 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	• Compliance of international ocean-related treaties and agreements will be improved through desk review, training, preparation of training modules to synergize implementation of treaties and agreements at LME scale and development of national standards and management measures in both countries. The Legal Expert submitted two reports: 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 and the assessment report of China's national and local capacity for implementation of international legal documents in the YSLME Phase II Project. The findings and recommendations of the first report will be reviewed by the NWG of PR China for consideration by relevant ministries. The second report provides a review of the national and local capacity in implementation of UNCLOS, CBD, RAMSAR, UNFCCC and FAO Code of Conduct for Responsible Fisheries. Based on the review, capacity building priorities and training workshops are suggested for review and discussion in the RWG-Governance meeting scheduled in the first quarter of 2019. • The preparation of regional guidelines for incorporating FAO Code of Conduct for Responsible Fisheries (CCRF) in YSLME context is being undertaken by YSFRI. Review of the 10 requirements has been completed and the two countries will descope the 10 requirements for further in-depth analysis of the regulatory framework and management practices. Technical assistance to develop national standards and management measures in line with the regional guidelines of CCRF has not been initiated. • Hosted by Ocean University of China, Korea University and KOEM from ROK and the Project, the International Seminar on the Law and Policy to Promote Regional Ocean Governance in the YSLME Region was organized in 17-18 November 2018 in Qingdao, PRC to enhance the understanding of regional ocean governance (ROG) theory, share information on good ROG practices, and discuss about how to improve the law and policy framework to achieve a more effective governance with more than 50 experts. • A monograph on regional ocean governance for the YSLME will be prepared under the coordination of two legal experts with voluntary participation of researchers, ocean managers. The process of

Indicator 1.5: Agreement on the financial arrangement for the YSLME Commission Baseline: YSLME Commission does not exist at start of project End of project target: Financing agreement between and among countries agreed to fully support YSLME for at least 5 years.	• Initial discussion on financial arrangement of the regional marine environmental cooperation mechanism took place in the first meeting of the RWG-G (December 14-15, Seoul). The meeting decided to continue to seek external grant such as GEF and GCF to support the operation of the YSLME Commission if established within the project timeframe. The Financing Specialist was contracted by UNOPS to develop the YSLME Trust Fund and financial rules. TOR of the Task Force of Sustainable Financing was approved at the Second Meeting of the Interim Commission Council (March 27-28, Dalian). The Financing Specialist has already submitted the YSLME Partnership Trust Fund for review by the ICC-3 in the first quarter of 2019 along with a discussion on financing for YSLME beyond project timeframe.

Component 2: Improving Ecosystem Carrying Capacity with Respect to Provisioning Services

Indicator 2.1: Number of fishing boats decommissioned from the fleet in YSLME waters End of project targets: Fishing boat numbers substantially reduced by 10%, in line with the 2020 target of 30% reduction	• PR China has set the national targets to reduce 20,000 fishing vessels with a total capacity of 1.5 million KW and reduce fishing landings by 15 percent during the 13th FYP (2016-2020). In addition, fishing closure in Yellow Sea from May 1 to September 16 has been introduced in 2017 by Ministry of Agriculture of China (now known as Ministry of Agriculture and Rural Affairs to restore the declining fish stocks. Based on information provided by PR China in the review of SAP implementation (June 2018), the number of fishing vessels will be reduced from the baseline of 21,713 (Liaoning: 7,084; Shandong: 10,355; and Jinagsu: 4,274) in 2015 to 18,797 (Liaoning: 6,177; Shandong: 8,976; and Jiangsu: 3,644) by 2020. If fully implemented in PR China, a 13.4 percent reduction of fishing vessels by 2020 would be achieved together. • There is a continued reduction in fisheries outputs in the two countries, evidenced by a significant reduction in RO Korea up to 2017 and a decrease of annual total allowable catch from 13 million tons to 10 million tons from inshore and offshore capture fisheries, or 25 percent reduction to be achieved in 2018 in PR China. • A study on the social and economic implication of the implementation of the fishing vessel buy-back scheme in PR China is ongoing, and the results will serve as the basis for livelihood support and vocational skills training to enhance the employment of displaced fishermen.

Indicator 2.2: Status of major commercially important fish stock from restocking and habitat improvement Baseline: Effectiveness of restocking and habitat protection not evaluated End of project target: 1) Measurable improvement (5%) in standing stock and catch per unit effort; 2) Future management decisions on restocking based on effectiveness	• Total allowable catch (TAC), marine ranching involving artificial reef, fish fry release and marine forests plantations and license system are the key measures in the PR China and RO Korea to recover fish stocks and support fishermen's revenue. • Both PR China and RO Korea have introduced total allowable catch (TAC) system in fishery management. Currently RO Korea applies TAC system to 11 species with 70 TAC observers, while PR China piloted the system in 2017 starting with two species. Swimming Crab (*Portunus trituberculatus*) is under TAC in both countries, providing an ideal example for learning in application of TAC to improve management effectiveness of fish stocks. In line with targets of the UNDP/GEF YSLME Phase II Project to recover depleted fish stocks by taking a combination of measures ranging from reducing fishing efforts to restocking, the YSLME Project Management Office (PMO) organized the Korea-China Workshop on Stock Assessment in Tongyeong, RO Korea on 30-31 July 2018 co-hosted by MOF of RO Korea, SOA and Ministry of Agricultural and Rural Affairs of PR China (MARA). Attended by more than 20 fisheries experts and researchers from 9 research institutes, universities, public agencies of PR China, RO Korea and United States of America, the workshop facilitated the exchange of experiences among participating countries in stock assessment methodologies and processes using Swimming Crab and small yellow croaker as two case species. Use of TAC as a conservation and management measure for joint stock management in Yellow Sea is still at infantry stage. • Marine ranching through artificial reef, is common approach to adopted by both countries to restore depleted fish stocks. In PR China, three groups of national marine ranches are piloted and supported by Ministry of Agriculture and Rural Affairs with a total of 64 operations in Yellow Sea, East China Sea and South China Sea in 2017. In RO Korea, a total of 36 marine ranches are established to restock the fish population including in the Yellow Sea. Initial study by Shandong Ocean and Fisheries Department indicate positive results of marine ranching in restocking fish population. According to FIRA of ROK, efforts to establish marine forests in ROK was made at 21 and 24 sites respectively in 2015 and 2016, creating areas of 3,236 ha and 3,064 ha with support of project funding 35.7 million USD and 34.7 million USD respectively. This initiative is encouraged nationally

	through a national Act enforced since 2012 by designating 10th May every year as Marine Gardening Day. Projects on Marine Ranches have also been implemented by applying at 19 sites in 2015 and 2016 with support of project funding 19 million USD in 2015 and 2016 respectively. Marine ranching has produced some tangible results in project demonstration sites. In Shandong Province, the restocking of fish through artificial reef has been monitored and evaluated in coastal areas of Haiyang City, with an investment of CNY 37 million from 2013 to 2017 in a sea area of 57 ha. Stones, tubular concrete reef, rectangular concrete reef, steel frame reef, square concrete reef, waste fishing vessels were deployed following technical advice from the project-recruited consultants. Seabed algae field in the artificial reef areas has been formed, and algae and shellfish start to stick to the reefs after one year of deployment, dominated by *Ulva pertusa*, Sea mustard, *Ostrea plicatula*, reaching 50% coverage of reef area. Fish, shrimps and crabs are also increasing significantly. Based on the assessment in October of 2012, the abundance of 23 economic species in the reef area have increased 2.29 times. The number of fish caught per net is 90, 3.5 times increase. Catch per unit time is 7,154 g per net, an increase of 2.82 times than in 2012. In 2017, Shandong Fushan Marine Science and Technology Co. Ltd won the bidding to build and deploy 1,800 square steel-integrated monolithic reefs (3m X 3m X3m) and establish marine ranching observation system in a sea area of 7.8 ha in Haiyang Fuhan National Marine Ranching Demonstration Area in the external waters of Pipakou located in the east of Haiyang City, Shandong Province. With a total funding of CNY26 million, the project was approved in 2017 and is now being implemented in 2018 for completion in 12 months. The YSLME Project will continue to use the monitoring indicator system of marine ranching construction of Shandong Province to assess r the results of fish stock enhancement of the artificial reefs before and after construction. Monitoring of enhancement results will continue and be reported to ICC in December 2018. • With project support, effectiveness of license system was assessed in PR China by YSFRI and recommendations were proposed. The study indicates that: (1) license system has already restricted the quantity of marine fishing vessel numbers that had fishing activities in the Yellow Sea. However, the total tonnage and horsepower increased, which means management still needs to be strengthened to control the fishing vessel quantity, tonnage and horsepower in a reasonable

	range, so that the fishery resources in the Yellow Sea can be utilized in a reasonable and sustainable manner; (2) although China has taken a series of measures to restrict fisherman getting into fishery, it has positive effect on fisherman's income, which is the best feedback for the future implementation of various fishery systems. The study recommends that: (1) to completely control fishing intensity and protect marine fishery resources, China should implement input control management together with output control, improving the existing input control management system and introducing advanced output control management system; (2) conduct comprehensive surveys and stock assessment of fishery resources to serve scientific management and decision-making for fishery management.
Indicator 2.3: 1) Type of mariculture production technology; 2) Level of pollutant discharge from mariculture operations Baseline: 1) Declining quality of mariculture products; 2) Declining quantity of production per unit area from mariculture End of project targets: Reduction of contaminants caused by mariculture production (5% reduction in the demo sites)	1. In PR China, mariculture ecosystem services through IMTA is practiced for at least two decades and results have been well documented in Sungo Bay of Rongcheng, Shandong Province. Based on the experiences of IMTA in Sungo Bay, IMTA proves to be highly energy-efficient, increasing production and social acceptability of culturing systems, optimizing the carrying capacity of coastal embayments, improving water quality, increasing protein yields, and through carbon capture contributing to mitigation of the effects of climate change. 2. In RO Korea, IMTA was demonstrated from 2011 onwards in coastal areas beyond YSLME by NIFS of RO Korea on IMTA of sea tangle, Gulfweed, Korean rockfish, Pacific Oyster and sea cucumber indicating that sea cucumber grew 2.7 times faster; survival rate of Korean rockfish increased by 33.4% (from 56.8% to 90.5%); no fish disease occurred in IMTA (40% of Rockfish farmed in monoculture infected with disease). In the IMTA in Namhae of Korean rockfish, sea cucumber, Pacific Oyster, Undaria and *Saccharina japanoca*, studies found no significant difference in growth of body length and weight of Korean rockfish; no disease found in rockfish (36.7% under monoculture); Pacific Oyster grow faster by >20% in shell height and whole and meat weight, and 22.5% higher fatness; and sea cucumber grew >40% faster. 3. The project explored to use various approaches in replicating IMTA through further demonstration in land-based aquaculture, scaling up carrying capacity assessment in mariculture, training module development and organization of training courses in project impact

	areas. In scaling up the IMTA, eminent experts from PR China have proposed to national government to adopt carrying capacity as the key management measures to align aquaculture development on a sustainable path. The Project will support the replication of IMTA across coastal areas of Shandong Province, a leading mariculture producer in PR China, through assessment of the opportunities for application of IMTA, development of a promotion plan, and conduct of ecosystem services valuation from potential IMTA operations and establishment of IMTA enterprise alliance. 4. To help transfer the knowledge of IMTA, the project has published a 170-page training module for IMTA in Chinese and English for use in training courses. A 120 m^2 meeting room for use in training on IMTA has been constructed by Dongchu Fishery Cooperation, a community-based enterprise specializing in aquaculture of kelp, abalone, scallop, sea urchin and sea cucumber with technical assistance from YSFRI/PRC. Two training courses for Chinese mariculture managers and academia were conducted in 2018. 5. In one replication site in PR China, baseline indicators of temperature, salinity, DIN, phosphorus, pCO_2, DIC, Chl-a (total), Chl-a (size classes of phytoplankton), sediment, production situation, general chemistry and carbon are monitored in a land-based aquaculture area in Haiyang, one oyster monoculture farm in Sungo Bay and one kelp monoculture area and one shellfish-seaweed IMTA area in Sungo Bay, Rongcheng. In earlier monitoring it was found that 1) water quality and sediment of monoculture areas were high; 2) oyster monoculture was a source of CO_2; 3) monoculture of shellfish has reduced the primary production of the sea; and 4) kelp monoculture has resulted in higher Chl-a concentration along the coast and reduction of nutrient. Restocking of farmed species will continuously be monitored in three sites in 2019 and results of nutrient reduction will be reported periodically.
Component 3: Improving Ecosystem Carrying Capacity with respect to Regulating and Cultural Services	
Indicator 3.1: Level of pollutant discharges particularly Nitrogen in YSLME tributaries	Context of PR China: • The related actions implemented in PR China include 1) conduct intensive monitoring and assessment; 2) control contaminants

Baseline: Discharge reductions do not meet the regional target End of project target: 10% reductions in N discharges every 5 years	discharge; 3) Implement MARPOL 1973/78. • During the project implementation period, the following actions at national level have been adopted and implemented in PR China that will lead to reduction of N during the 13th FYP period (2016-2020) o In 2015, China issued "Water Pollution Control Action Plan", which has strengthened pollution control in industrial agglomeration areas. The Plan requires that by the end of 2017, the industrial agglomeration area should be built into a centralized sewage treatment facility, and an automatic online monitoring device was installed, and that the urban sewage treatment facilities in the sensitive areas would meet the grade I-level A emission standards. Results of implementation of the Plan were not reported. Considering the action plan proposed that by 2020, the national water environmental quality must make staged-based improvements and the urgency, complexity, toughness, and long-term nature of water pollution control efforts requires full implementation of the Plan, the CPC Central Committee and the State Council have emphasized great importance to the prevention and control of water pollution and published a new notification on the battle of pollution prevention and control in June of 2018. The new notification and opinion from The CPC central committee highlights the Action Plan for Prevention and Control of Water Pollution must be fully implemented and the targets raised in the "Water Pollution Control Action Plan" need to be fulfilled based on time schedule. The responsibilities of local governments for protection of water environment was also highlighted in the notification from The CPC Central Committee. Progress report on implementation of "Water Pollution Control Action Plan" has not yet been published by the ministry of Ecology and Environment. o On July 11, 2016, State Council of China issued the Action Plan for Soil Pollution Prevention and Control. It clearly points out that a coordination mechanism among government, community, enterprises, and residents will be established. o On November, 2016, the General Office of the CPC Central

	Committee and the General Office of the State Council issued the Opinions on Full Implementation of River Chief System; it has been made clear that the major leaders of Party and government organizations need to shoulder the posts as river chiefs. o The Ministry of Transport issued the Special Action Plan for Ship and Port Pollution Prevention and Control (2015-2020) in 2015 to explore and establish a new mechanism for the reception and disposal of ship pollutants, and promote the construction of receiving facilities for pollutants and improve receiving and disposing capabilities to meet the demand for receiving and disposing pollutants from ships o As imported solid waste, China banned imports of 24 types of solid waste since 2017 in a fresh move to reduce environmental pollution, which covers waste plastics, unsorted scrap paper, discarded textiles, and other kinds of waste. o On March 26, 2018, the Ministry of Ecology and Environment reviewed and adopted in principle the "Action Plan for the Implementation of the Proposal for the Reform of the Import Management System for the Prohibition of the Importation of Solid Waste into the Prohibition of Foreign Garbage for the 2018-2020". <u>Context in RO Korea:</u> • According to the Marine Environment Comprehensive Plan (2011-2020), more efforts by setting up strict law are being addressed to prevent pollutants from marine-based sources of pollution by strengthening legal framework, which is in line with recent trends globally. Strict restriction of ship-based pollutants (SOx and NOx), and ballast water as well initiated by International Maritime Organization (IMO). • To understand characteristics of discharge of pollutants along coastal areas, comprehensive survey has been carried out since 2011. Valuable information on sources, water and sediment quality and transporting routes has being collected. Results of this survey provides insight of status of coastal environment especially

	ecosystems. • To enhance efforts to reduce pollution, national action plan for the management of land-based sources of pollutants was established in 2013. This national plan has a goal to manage water quality in 50 out of 65 coastal areas planned to be managed in national scale which accounts for 75% achievement until 2020. Additional attempt to reduce non-point sources of pollution is also being made by setting up guidelines to follow. The funding for these activities especially contaminated sediment removal was allocated 10 million USD in 2017 and 12 million USD in 2018. Monitoring activities at sites completed are also being carried with financial support of 0.23 million USD in 2017 and 0.35 million USD in 2018. Distribution of contaminated sediment in designated areas is being conducted with financial support of 0.4 million USD in 2017 and 0.5 million USD in 2018. • In ROK, a project on nutrition reduction and eutrophication phenomenon causing from land-based sources is being implemented in Han river watershed as a target site using data available. Outcomes of the project will be available in January 2019 which will contribute to the development of national strategy. <u>Project intervention:</u> • at regional level, through consultancy the regional marine environment monitoring network is being developed together with the water quality standards which is already in good share for review at the ICC-3 scheduled in the first quarter of 2019. Sources and sinks of pollutants, environmental status and trends in the Yellow Sea are reviewed by the project to improve understanding of the environmental capacity and level of reduction of total loading of nutrients from baseline level. • Nutrients from sea-based (mariculture and shipping) and atmospheric sources from PR China and RO Korea are being studied. By the year 2015, the total mariculture area and the yield reached 2,317,760 hectares and 18,756,1277 tons respectively in PR China (MAO, 2016). Along with the development of the scale of aquaculture, especially in China, the negative effects of the mariculture waste both on the culture system and on the ambient aquatic ecosystem are being studied. Method for assessment of sea-based and deposition fluxes of nutrients and heavy metals from atmosphere-based sources have

	been developed by NMEMC for endorsement by the RWG-P. • For 10% reductions in N discharge, with project support NMEMEC has been undertaking studies to calculate nutrients using exports coefficient model in Haizhou Bay, Jiangsu Province of PR China. Haizhou Bay lies on the western margin of the South Yellow Sea, near the city of Lianyungang, and receives water inflow mainly from the Linhong River, Qingkou River, Longwang River and Xiuzhen River. The bay has an area of approximately 876.39 km^2, has a major fishery base, with aquaculture industries boosting economic growth in Lianyungang by 4.3 times from 1995 to 2005 (OFBL, 2011). According to the recent reports, the Linhong River carried 2.26×10^8 t of domestic sewage and industrial wastewater in 2010 (EPAL, 2011; OFBL, 2011). And according to the record in the sea area of Jiangsu from 1997 to 2014, red tides hit Jiangsu Province 33 times, and the Haizhou Bay was frequented as well.
Indicator 3.2: Types of technologies applied for pollution reduction <u>Baseline</u>: Some innovations such as man-made wetlands are being undertaken nationally but without regional coordination or dissemination of results <u>End of project targets:</u> Successful demonstration of use of artificial wetlands in pollution control in 1 site and replicated in about 2 coastal municipalities and local government units	• In 2016, PR China has initiated "Blue Bay Action Plan" incentivizing local governments to adopt integrated approaches to address coastal and marine challenges through innovative investment modalities to leverage knowledge and knowhow and financing from private sector through public private partnership in sewage treatment, beach management, sea water desalination, etc. In YSLME, Rizhao, Dalian, Qingdao, Weihai, Yantai are selected as demonstration sites. • In addition to enhancing sewage treatment capacity and sewage collection system, developing a regional strategy to use wetland as nutrient sinks is under support by the Project. The draft regional strategy submitted by the consultant contains the following sections: reviews the roles of wetland in nutrient removal for the Yellow Sea Coastal area and the mechanisms of nutrient retention; the status and changes of coastal wetland in the Yellow Sea in both PR China and RO Korea; nutrient loads from river discharges and atmosphere, wastewater treatment and nutrient removal in the Yellow Sea wetland; and the mechanisms of using natural and artificial wetland as nutrient sinks for wastewater treatment. • In the YSLME demonstration city of Dalian, reduction of nutrient inputs from an upstream river into vulnerable Linshui Bay and restoration of bay area are prioritized by national and local

	governments with earmarking of 320,000,000 yuan (equivalent to 48 million US dollars) from the two sources. In 2017, the central government support focused on strengthening the coastal embankment, restoration of sand beach, restoration of estuarine wetland while local investment of Dalian City upgraded the sewage treatment capacity of existing facilities. In Linshui Bay of Dalian, the technologies of restoration of coastal wetland in estuarine areas and upgrading the sewage treatment capacity of existing treatment facilities are used by the subcontractors. Level of reduction will be calculated by NMEMC with support of YSLME Phase II Project. • To better understand the cost-effectiveness of artificial wetland as nutrient sink, Muzhu River wetland restoration project is selected as a case study under a cooperation with Wendeng City of Shandong Province, PR China. Consultancy will be provided to Wending Environmental Protection Bureau to conduct a post-project assessment of the efficiency and effectiveness of the wetland constructed on the Muzhu River in Wendeng District, summarize good practices in a case study, and provide recommendations for improvement in future nutrient reduction investments. The MOU between Wendeng City and UNOPS is under preparation for singing in the first quarter of 2019.
Indicator 3.3: Status of legal and regulatory process to control pollution <u>Baseline</u>: Weak legal and regulatory framework to control pollution in provinces bordering in the YSLME <u>End of project targets:</u> Develop evaluation tools, in the first year, to assist in harmonizing national and provincial legislation to improve coastal water quality in Shandong,	• Based on the review of the project consultant, there are no laws or regulations specifically issued to address marine litter in PR China. Yet a series of relative laws and regulations have been enacted to prevent and control of marine litter pollution, including Marine Environmental Protection Law; Law on the prevention and control of environmental pollution by solid waste (1996); Regulations on the prevention and control of pollution by land-based pollutants (1990); Regulations of the people's republic of china on control over dumping of wastes in the ocean; Regulations of the People's Republic of China Concerning Environmental Protection in Offshore Oil Exploration and Exploitation; Administrative Regulations on the Prevention and Treatment of the Pollution and Damage to the Marine Environment by Marine Engineering Construction Projects; and Regulation on the Prevention and Control of Vessel-induced Pollution to the Marine Environment. Programs to prevent and mitigate marine litter in PR China are also reviewed. • In ROK, Marine Environment Management Act took effect since 2007 and was revised in 2011. By following the Act, Marine Environment

Jiangsu and Liaoning provinces	Comprehensive Plan (2011-2020) was developed in collaboration with relevant stakeholders with a goal of sustainable use and management of marine environment. Plans with goals were well addressed to control pollution being occurred in coastal areas. • Efforts are to be made by the project to identify the approach to harmonizing national and provincial legislation to improve the coastal water quality in the three provinces of the two countries.
Indicator 3.4: Status of the control of marine litter at selected locations Baseline: Due to a lack of appreciation of the problem little action is currently being undertaken End of project targets: 1) Regional Guidelines on control of marine litter based on those initiated by NOWPAP produced and adopted for use in the Yellow Sea; 2) Established regional data base in the first year, and significant reduction in the quantities of marine litter at selected beach locations	• In the 1st RWG meeting on Pollution Reduction, it was agreed that the project would use the NOWPAP marine litter monitoring guidelines to conduct the baseline survey. In China, Weihai was selected as the demonstration site for reducing marine litter. A subcontract is being implemented to monitor the status of marine litter in two sites in Weihai, assess the legal and regulatory framework gaps, and propose incentive policies in recycling economies. A consultation meeting in Jinan was held to determine the scope of demonstration with initial interest from local government to support the collection of abandoned fish cages in aquaculture, collection of garbage from fishing boats before closure season, and support to establish a coastal city partnership to integrate marine litter into overarching environmental agenda of local governments. TOR of demonstration project is under preparation. • In ROK, beach litter survey along the coastline has been conducted 6 times per year at 382 sites to monitor and observe types of litters and their abundance. The sampling sites were selected in every 10km. An intensive survey was carried out in Jeolla-Namdo province to make an inventory of litter in land, river, coast and estuary by OSEAN (Our Sea of East Asia Network) to estimate marine litters in this province in November 2017. Beach litter survey methodology of the CSIRO (Commonwealth Science and Industrial Research Organization) was used for this survey. KIOST and OSEAN have carried out the abundance and accumulation patterns of plastic marine debris on 6 beaches in the Korean YS since 2016. At Provincial level, starting from year of 2015, Chungnam Province developed comprehensive plan for the conservation of marine environment. In line with approach described in the plan, 43 projects for the conservation of marine environment with funding of 18 million USD is being implemented in areas of building infrastructure, collection and

	disposal of marine litter. In particular, around 9,000 tonnes of marine litter are being collected with a help of financial support of 4.2 million USD.
Component 4: Improving Ecosystem Carrying Capacity with respect to Supporting Services	
Indicator 4.1: Areas of critical habitats; Status of mitigation of reclamation impacts Baseline: Coastal habitats critical to maintaining ecosystem services continue to be converted or reclaimed unchecked End of project targets: Areas of critical habitats maintained at current level.	• According to report of a project-hired consultant, until now, approximately 880,000 ha of YS mudflat areas have been reclaimed. This comprises 37% of the inter-tidal areas of the Chinese portion of the YS, which have been reclaimed since 1950, and 43% of the mudflats on the ROK coast, which has been reclaimed since 1917. In 2018, Ministry of Natural Resource of PR China requested suspension of all reclamation projects in coastal areas, and this new order will place much hope to protect remaining but critically important intertidal of YS. In RO Korea, a 7 million US dollar project was completed in Ganghwa to restore the ecosystem connectivity of intertidal mudflats through replacing a causeway connecting two islands with a newly built bridge. In addition, a new monitoring project, "Fisheries Resources Changes based on Yellow Sea Ecosystem" will be implemented from 2018. The budget is in total 17.2 billion KRW for 5 years. The project is an expansion of the comprehensive ecosystem monitoring in coastal area to open sea. • The project will support the development of YSLME Biodiversity Conservation Plan 2018-2030. The Korean consultant has completed the review the conservation status in RO Korea of 23 potential priority sites identified by WWF, KMI and KIOST in 2007, and the review is ongoing in PR China by a Chinese consultant. A regional biodiversity forum to be held in May 2019 in PR China will discuss status of biodiversity, positive achievements, gaps, underlying causes to base objectives, targets and actions to be proposed in the conservation plan up to 2030. • Eight key coastal wetland habitats critical for migratory water birds in Yellow Sea and Bohai Sea areas yet to put under effective protection are identified and defined by Paulson Institute, China Wetland Center and Institute of Geographic Sciences and Natural Resources Research of Chinese Academy of Sciences (CAS). In response, the Project supported a study of biological and ecological significance of Xiaoyangkou intertidal mudflat of Rudong County, Jiangsu Province, one of the 8 critical wetlands. Based on the results of the survey, a technical proposal has been prepared to include an area of 42.88 KM^2

	as a special MPA at national level to protect the Spoon-billed Sandpiper (*Calidris pygmaea*), a critically endangered species with nearly 40% of its population wintering in Xiaoyangkou and the habitats for many other migratory waterbird species. The proposal has been submitted to local and provincial governments in support of their efforts to protect the intertidal mudflat of global significance. A similar initiative to expand MPA coverage of marine and coastal areas is under consideration in Ganghwa Island of RO Korea, one of tidal flats of the Han River estuary in Yellow Sea, the larger of the only two known breeding sites globally for the critically endangered Black-faced Spoonbill (*Platalea minor*). • In order to better understand the implication of reclamation projects to PPAs, a consultant was hired to review the past and future reclamation to the critical coastal habitats identified by RAMSAR and Birdlife International. A draft report for maintenance of the existing critical habitats to improve the ecosystem carrying capacity of supporting services of YSLME were submitted and currently in revision. Detailed information on conservation status and gaps and also recommended management measures will be provided in 1st quarter of 2019.
Indicator 4.2: level of ecological connectivity in expansion of the Yellow Sea MPA system. Baseline: the planned expansion of the MPA system currently does not take into account ecological connectivity End of project targets: 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)	• To date, 31 national MPAs in PRC (8,056 km^2) and 16 national MPA in ROK (386 km^2) are designated to protect marine mammals, birds, fishes, mollusks, plants and algae in YS. The national MPAs of the PRC and ROK only represent 2.1% of Yellow Sea, far below the 10% Aichi Target. • Surveys and production of overlays to analyze gaps and conservation needs of critical species and habitats, i.e. seal, endangered migratory birds, fish spawning and nursery grounds, cold water mass, etc. are being conducted by FIO, NMEMC and YSFRI in PR China through PCAs. Results of the technical assistance will lead to development of marine biodiversity protected area development plan in PR China. • The 1st Institute of Oceanography of State Oceanic Administration of PR China completed a study to support the government of Rudong in Jiangsu Province of PR China to establish Xiaoyangkou wetland as a National Marine Protected Area for consideration by the State Oceanic Administration of PR China. This site is selected as the critical stopover habitat for critically endangered spoon-billed sandpiper along the East Asia and Australian flyway with highest irreplaceability index. A proposal to set a total of 42.88 km2 as MPA was reviewed

	and discussed by SOA and results of the review was not announced due to reorganization of SOA. National Forestry and Grassland Administration of PR China who assumes the management responsibility of MPA is suggested to approve the gazettement of this MPA. • Another example of MPA expansion taking into account ecological connectivity during the project period is the Garorim Bay Marine Species Protected Area in RO Korea. It was designated as MPA site in July 2016 covering areas of 91.237km^2 with a goal of protection of habitat and breeding grounds of protected marine species including spotted seal, and systematic conservation and protection of key habitats of marine and pelagic species. • A MPA connectivity training was held in 23-27 July, 2018, in Seocheon, RO Korea to further expand the coverage of coastal areas as MPA in an effectively managed network. The training toolkit on MPA networking is being prepared by an international consultant for use in future training. Under the concept of MPA networking to improve management effectiveness of transboundary species and MPA expansion, FIO and Liaoning Marine and Fisheries Research Institute will collaborate with NIFS of RO Korea in conducting spotted seal migration through satellite tracking supported by the project. Environment DNA of the species will also be studied to understand better the scientific soundness of MPA network for the species.
Indicator 4.3: Status of incorporation of adaptive management of climate change regional strategies and in ICM plans for selected coastal communities Baseline: Inadequate considerations are being given to the impacts of climate change End of project target: CC adaptation strategies incorporated in regional strategies such as YSCWM	• TOR for a study on relationships between the changes of Yellow Sea Cold Water Mass (YSCWM) and structure of plankton communities and develop a regional strategy for adaptive management was cleared by the RWG-A. The project will deliver a synthesis report along with regional strategy for developing adaptive management be undertaken by FIO/SOA under a PCA with UNOPS and in collaboration with KIOST of RO Korea. Thus far no report has been submitted by FIO. • FIO proposed to develop climate change adaptation ICM model framework plan. The impact of climate change in YS is mainly reflected in the rising sea level, higher frequency and severity of various marine disasters, such as storm surge and sea ice. The objective of this consultancy is to develop adaptation strategy of climate change of Dandong via vulnerability assessment of coastal communities and impact assessment of sea level rising. Dandong city locates the north coast of YS, facing DPR Korea across the Yalu river which is also critical spot for migratory birds. Through this study, it is

and plankton communities	expected to have results on 1) vulnerability assessment of sea level rising for coastal communities; 2) impact assessment of sea ice distribution on coastal zone development and marine species; 3) impact assessment of sea level rising for the mudflat habitat and wading birds and 4) adaptation strategy for climate change of Dandong city. This project is expected to be completed in December, 2019.
Indicator 4.4: Status of Regional Monitoring Network for application of ECBM Baseline: National Monitoring will continue without regional linkages and harmonisation making regional analyses difficult or impossible End of project target: 1) Agreed number of cruises & parameters for the regional monitoring network established and data shared regionally via the project web site. 2) Regular LME-wide assessments; enhanced information exchange; periodic scenarios of ecosystem change	• The National Marine Environmental Monitoring Center (NMEMC) of PR China prepared and submitted the draft monitoring programs of jellyfish, HAB and drifting macroalgal blooms and N/P/Si which were reviewed and recommended for adoption by RWG-A meeting held on June 29, 2018. In the plan, surveys are suggested to conduct 3 times at sampling locations, Donggang and Haizhou Bay. Detailed methodologies on sampling and analysis are described for clarification at the meeting. Additional discussion on sampling station, monitoring frequency and key elements of HAB, monitoring is expected to be discussed between both countries. As for Jellyfish monitoring study, detailed methodologies with sampling and stations are described. As for monitoring, it was suggested to set 3 sections with 5 sections for each section. It was recommended to have monitoring from July to August every year. • To improve effectiveness of monitoring, assessment and data sharing on jellyfish and HAB, both countries recommended to establish scientific committee as an advisory group, expecting contribution not only on better coordination of national efforts especially on data sharing but also enhancing effectiveness of regional efforts by maintaining and operating monitoring program in a systematic way. The scientific committee is expected to be considered of 6 members, 3 from each country. • In addition, the 1st Institute of Oceanography and State Oceanic Administration of PR China proposed to conduct series of scientific research on the ecological mechanism for the blooms of floating *Sargassum horneri* in western YS, which was identified to increasingly occur and impact the coastal ecosystems in recent years. Floating *S. horneri* has been increasingly observed in the western YS and caused detrimental impacts on the coastal aquaculture in recent years. It remained unclear about the dynamic biological and physical process for the bloom of theses invasive brown seaweeds. This activity is to clarify seasonality, distribution and environmental drivers for the

	recent blooming and to provide the fundamental and consultative information for managing and controlling the floating biomass and reducing impairment to coastal ecosystem. Until the October 2019, findings on seasonality and inter-annual variability of the floating *Sargassum horneri* in western YS and environmental drivers for the increasing blooms in recent years will be available.

Project Management and Oversight

- **Implementation status**

Project cooperation agreements were signed in March and April of 2018 with First Institute of Oceanography (FIO) of SOA (now known as the Ministry of Natural Resources), National Marine Environmental Monitoring Center (NMEMC) of SOA (now affiliated with the Ministry of Ecology and Environment) and Yellow Sea Fisheries Research Institute (YSFRI) of Chinese Academy of Fishery Sciences (SCFS) of the Ministry of Agriculture (now known as the Ministry of Agriculture and Rural Affairs, MARA) of PR China.

After the project was extended on September 3, 2018, the PCA with NMEMC was amended on September 17, 2018. The PCA with YSFRI was amended on December 14, 2018. In accordance with the recommendations of the MTR mission to encourage the use of PCA to speed up implementation of project activities, FIO proposed to include three new activities in the amended PCA with UNOPS. To date, TORs of climate change adaption study in Dandong and Sargassum study were reviewed and cleared at the 2nd Meeting of the RWG-A (June 27, Kunming), and the proposal of the spotted seal research prepared by FIO received inputs from experts of RO Korea on December 27, 2018 for joint implementation by the two countries. Meanwhile, three evaluation committees have evaluated the technical and financial proposals of the three new activities to support to request for approval of inclusion in the amended PCA by the MSTP-3/ICC-3.

Of the 16 reports to be submitted under the UNOPS-NMEMC PCA (**Table 1**), 9 were submitted by December 10, 2018, with seven reports submitted ahead of the submission dates and two submitted two months after the submission dates. YSFRI submitted 8 of the 11 reports on December 19 (**Table 2**) well ahead of the submission dates, new submission dates of pending reports were agreed. While the PCA between UNOPS and FIO (**Table 3**) was not yet extended, all 3 reports were submitted by

December 16, 2019, with 2 submitted within the schedule and 1 submitted several weeks behind the schedule.

Table 1: Status of report submission in implementation of the PCA between NMEMC and UNOPS

Deliverables	status of implementation		
	Planned date of submission in PCA	**Actual date of submission**	**remarks**
Deliverable 1: method of calculation of nutrients loading in the hot spots using watershed model	September 30 2018	December 10, 2018	Interim report, subject to initial review by PMO and then by RWG-P
Deliverable 2: methods for assessing 1) deposition flux of nitrogen and phosphate in various forms from atmosphere-based source; 2) monitoring and acquisition data of fertilizer use; and 3) sea-based mariculture pollution and ship-based pollution in coastal areas of Yellow Seas	September 30 2018	December 10, 2018	Interim report, drafts for deliverable 1), subject to initial review by PMO and then by RWG-P
Deliverable 3: interim review report on progress of implementation of NSAP targets related with marine pollution reduction	September 30 2018	June 30, 2018	interim report, reviewed and accepted by PMO, subject to review by RWG-P
Deliverable 4: interim regional baseline survey report of marine litter	September 30 2018	December 10, 2018	interim report, subject to initial review by PMO and then by RWG-P
Deliverable 5: final report regional baseline survey report of marine litter	Jan 31, 2019	December 10, 2018	final report, subject to initial review by the PMO and then by RWG-P

Deliverable 6: update of objectives and actions of SAP for 2018-2020 in relation to pollution reduction	Jan 31, 2019		
Deliverable 7: Interim report of nutrient loading in the hotspot	Jan 31, 2019		
Deliverable 8: assessment reports of 1) nutrients from atmosphere-based sources; 2) fertilizer use; and 3) pollutants from sea-based sources in Chinese coastal areas in Yellow Sea	Jan 31, 2019		
Deliverable 9: interim proposal for designating new MPAs for endangered mammals or waterbirds.	Jan 31, 2019		
Deliverable 10: review report of policies and regulations regarding solid waste disposal as well as technologies for reducing production including recycling opportunities in PR China	November 16, 2019	Submitted on December 10, 2018	Interim report, subject to initial review by PMO and then by RWG-P
Deliverable 11: final report of nutrient loading in the hot spot	November 16, 2019		
Deliverable 12: final assessment reports of 1) nutrients from atmosphere-based sources; 2) fertilizer use; and 3) pollutants from sea-based sources in Chinese coastal areas in Yellow Sea	November 16, 2019		
Deliverable 13: final proposals for designating or enlarging new MPAs for endangered mammals or for habitats of endangered waterbirds.	November 16, 2019		
Deliverable 14: program of YSLME jellyfish monitoring network.	November 16, 2019	December 10, 2018	Interim report, comments from RWG members received, pending approval by ICC
Deliverable 15: final program for strengthening	November 16,	December 10,	Interim report,

the YSLME HAB and drifting macroalgae monitoring network.	2019	2018	comments from RWG members received, pending approval by ICC
Deliverable 16: regional monitoring strategies for N/P/Si changes, climate change, jellyfish blooms, and HAB to establish a comprehensive regional monitoring system.	November 16, 2019	December 10, 2018	Interim report, subject to initial review by PMO and then by RWG-A
First two payments: US$160,000			

Table 2: Status of implementation of the PCA between YSFRI and UNOPS

Deliverable Description	**Status of delivery**		
	Planned date of submission	**Actual Date of submission**	**remarks**
Deliverable 1: Baseline reports of two demonstration sites on artificial reef, seaweed transplantation (habitat enhancement) and marine ranching	December 31, 2018	June 10, 2018	Fuhan Marine ranching progress report, reviewed at RWG2-M and accepted
Deliverable 2: scoping study report and key elements of GAP of IMTA		December 8-9, 2018	Draft report, reviewed by RWG2-M and further improvements requested
Deliverable 3: baseline reports of three IMTA demonstration sites		December 12, 2018	Sungo Bay and land-based IMTA baselines received, reviewed by PMO and RWG-M and accepted

Deliverable 4: interim review report on progress of implementation of NSAP targets related with fish stocks and mariculture		June 10, 2018	Draft report, reviewed by PMO and RWG2-M, accepted
Deliverable 5: Draft regional guidelines for incorporating Code of Conduct for Responsible Fisheries in YSLME context			
Deliverable 7: Assessment report of effectiveness of license system and recommendations for improvement of licensing system		December 12, 2018	Interim report, subject to initial review by PMO and then RWG-F
Deliverable 8: draft seagrass transplanting report in application of improved techniques of replanting seagrass and macroalgae		December 12, 2018	Interim report, accepted at RWG2-F
Deliverable 9: report of stock enhancement of two demonstration sites		December 12, 2018	Interim report on Fuhan Marine Ranching, accepted at RWG2-F
Deliverable 13: Survey report of coastal areas suitable for operation of IMTA, and economic analysis of benefits from replication of IMTA across Shandong Province, PR China		December 8-9, 2018	Reviewed by RWG2-M, accepted
Deliverable 14: plan to promote IMTA in Shandong Province			
Deliverable 16: 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			
Deliverable 6: Draft national standards and management measures to comply with regional guidelines of Code of Conduct for Responsible Fisheries	March 31, 2019		

Deliverable 10: Joint assessment report of the effectiveness of closure	June 30, 2019		
Deliverable 11: Joint assessment report of the effectiveness of buy-back scheme			
Deliverable 12: final draft of GAP of IMTA	August 31, 2019		
Deliverable 15: technical report of IMTA demonstration in two sites	November 1, 2019		
First two payments: US$219,400			

Table 3: Status of implementation of the PCA between FIO/MNR and UNOPS

Deliverables	**Status of implementation**		
	Planned date of submission in PCA to be signed	**Actual date of submission**	**remarks**
Deliverable 1: interim review report on progress of implementation of NSAP related with SAP targets 8-11	30 November 2018	14 June 2018	Submitted and reviewed by PMO, subject to review by RWG2-G
Deliverable 4: stocktaking report for the relationships between the sea surface temperature changes of YSCWM and structure of plankton communities		17 Dec 2018	Submitted, pending initial review by PMO and RWG2-G
Deliverable 5: interim report on implementation of CBD and RAMSAR		29 Nov 2018	Submitted and reviewed by PMO and RWG2-G
Deliverable 2: draft report on assessment of the relevance of existing zoning schemes to connectivity of existing MPAs and/or potential MPAs	30 August 2019		
Deliverable 3: stocktaking report of biological and ecological significance of YSCWM and existing and potential threats using ecological			

connectivity as key criteria			
Deliverable 6: the map of priority areas for designation as conservation areas in YS and identify opportunities for improvements in connectivity with existing and new MPAs			
Deliverable 7: • draft reports of assessment of ecosystem services of Rudong Mudflat and another intertidal mudflat or coastal areas subject to reclaimation; • a zoning plan including coordination mechasm in line with the master plan of local land use and sea use; • two managemnt plans including monitoring programs and capacity development program		**December 30, 2018**	**Ecosystem assessment reports submitted and pending review by PMO and RWG2-H**
Deliverable 8: final report on implementation of CBD and RAMSAR with recommendations for integration of SDG14, CBD and RAMSAR targets into YSLME SAP			
Deliverable 9: the feasibility report for designating YSCWM a new MPA			
Deliverable 11: regional assessment report and policy recommendations on ecosystem change			
Deliverable 10: draft regional strategy for adaptive management	1 November 2019		
First payments: US$87,400			

By December 31 of 2018, two payments in the amount of US$160,000 were paid to NMEMC, two payments in the amount of US$219,400 were made to YSFRI, and two payments worth of US$131,000 was made to FIO. **Table 4** illustrate the total budget for each of the three PCA, payment status and balance at the end of December 31, 2018.

Table 4: Payment status of the three PCAs

Institution	Total (A) (USD)	1st payment (B) (USD)	2nd payment (C) (USD)	Sum of payment (D) =(B+C) (USD)	Balance (A-D) (USD)
FIO	437,000	87,400	44,000	131,000	305,600
YSFRI	446,700	90,000	129,400	219,400	227,300
NMEMC	407,500	80,000	80,000	160,000	247,500
Subtotal	1,291,200	257,400	253,400	510400	780,800

The meetings of the RWGs typically serve as the quality assurance mechanism of the PCA implementation. As there is only one RWG meeting annually, webinars or other practical means of quality review will be established and scheduled by the Secretariat to ensure the interim and final reports submitted under PCAs and co-financed projects by RO Korea are reviewed.

Implementation status of the Procurement & Grants Plan

The procurement (and grants) plan submitted for review by MSTP-3/ICC-3 was significantly revised in line the decision of the Meeting to prioritize, condense or even cancel some activities which are not covered in PCAs or without prior clearance of TORs by RWGs after the Meeting. In the extension plan or the workplan 2018-2019, a total of 8 procurement activities and 1 grant with a total of US$861,085.00 are included in the plan for 2018. To date, 4 subcontracts have been issued with a total contract amount of US$162,731.00, and US$34,714 have been paid to these four contracts. For the remaining four procurement activities, the request for proposal for video production is published, while bidding has not been initiated for the remaining three procurement activities in the 2018 plan. For grants, the call for proposal for Yellow Sea Grant Program was launched in January, 2019. Please refer to **Table 5** in the Annex for details of the procurement and grants plan implementation status.

Subcontract for video production: This subcontract was designed following the recommendation in the MTR and supports the YSLME Partnership Communication Strategy through the production of a series of short videos. Posted on the United Nations Global Market place (UN GM) on August 17 and

closed September 09, 2018, this tender as an open international competition was rated with high regulatory risks in PR China which requires licensed foreign companies to film in China including conducting interviews with the local Chinese people. Since the licence application process takes between 6 months and 2 years with significant risk of rejection, the PMO decided to cancel the RFP (Ref No: 2018_91007_02_Subcontract) and relaunched with the modification that allows licensed bidders to apply.

Yellow Sea Grant Program: The 2nd MSPT/ICC meeting (Dalian, March 27-28) approved the establishment of the Yellow Sea Grant Program under the Project within the project duration to be implemented by UNOPS in accordance its regulations and rules while encouraging the active participation of NGOs/CSOs from two countries to apply. The draft call for proposal guidelines were shared with PR China, RO Korea and UNOPS on July 18, 2018, and the revised guidelines were sent to partners again on August 13, 2018 to ensure that comments from the partners were substantially met in the new draft. The matrix below summarized the comments received from PR China, RO Korea, UNDP and UNOPS, and how these comments were considered in the revised guidelines. Realizing that in accordance with the guidelines the applicants are restricted to those who can "legally operate in mainland PR China" and project activities must be implemented in geographical locations inside mainland PR China, a situation that limits NGOs of the other countries to participate, the PMO allowed countries to conduct further national consultation with NGOs and experts and give feedback to PMO on the guidelines within reasonable period of time. Meanwhile, the PMO agreed to 1) prepare the Yellow Sea Grant Program (GSGP) applicable to NGOs in both PRC and ROK supported by diversified funding sources including the GEF (included in the agenda of the MSTP-3/ICC-3); 2) design and establish the YSLME Partnership Trust Fund to allow the YSLME Partnership to receive donations and contribution to support NGO initiatives under the YSGP (included in the agenda of the MSTP-3/ICC-3; and 3) implement the revised guidelines while allowing participation of NGOs from interested countries who can legally operate in recipient countries to use GEF grants. In further consultations with UNDP and UNOPS, the PMO was advised to conduct two calls for proposals with the first call focusing on activities in mainland China, and the second call to prioritize transboundary cooperation initiatives which requires more time in the development of proposals. Having not received any further comments from participating countries, the UNOPS launched the call for proposals in January, 2019.

Livelihood support and education to increase re-employment for displaced fishermen: This activity is contingent upon the findings and recommendations of an existing grant to Nanjing University. TORs of the consultancy will be prepared by the subcontractor to enable UNOPS to initiate the call for proposal.

Technical support to design wetland habitats to achieve blue bay in one pilot site in China and application of clean production technologies and relevant technology transfer: The PMO conducted one mission to Lianyungang and project consultants conducted a mission to Rudong to explore the opportunities of support to a demonstration project to use artificial wetland to absorb nutrients but was unsuccessful. In the scoping of areas of the demonstration and collaborative partners, an ongoing study which aims to develop the regional strategy to use wetland as nutrient sink supported by the YSLME II Project could serve as a useful reference.

Endangered migratory birds and MPA network strengthening for increased connectivity and effectiveness in selected MPAs: This work is delayed due to the reorganization of SOA. Consultation with the Department of Protected Areas of National Forestry and Grassland Administration is prerequisite for this activity to contribute to protecting endangered migratory species through MPA networks and regional cooperation. Mitigation actions will be supported by Yellow Sea Grant Program by research institutes and NGOs through the Yellow Sea Grant Program.

Implementation of the Recruitment Plan

In 2018, the PMO and UNOPS team in Copenhagen have managed a total of 25 consultants and interns, including hiring, extending contracts and monitoring implementation of contracts. The engagement of 5 consultants are still in the process. **Table 6** lists all consultants and interns managed by PMO and UNOPS in 2018. Extending valid contracts with consultants due to project extension has become an important task for the project.

Implementation status of the Planned Events and Activities

Of the 18 events planned in 2018, 15 were conducted as planned, while 3 activities were postponed due to re-organization of SOA and project extension. The PMO was able to organize key activities planned at the beginning of the year, such as the 2nd Meetings of the MSTP and ICC, RWG-A, RWG-F and RWG-M, MPA connectivity training, IMTA training, fish stock assessment workshop, and the Seminar on the Law and Policy to Promote Regional Ocean Governance. The re-organization of SOA specifically caused the postponement of the HELCOM visit, the RWG-P and back to back activities, RWG-G, RWG-H and the Biodiversity Forum. **Table 7** illustrates the details of the planned activities, dates, number of participants, gender representation, venue, organizers, etc.

In summary, a total of 445 participants attended the events organized by YSLME, including 301 (67.6%) males and 144 (32.4%) females. It is apparent that male participants are far more represented than females.

With postponement of a number of activities, the Project instead was able to facilitate and support the visit of a group of 8 officials and experts from Chungcheongnam-do of RO Korea to visit Shandong Ocean Bureau in Shandong Province of PR China with support of UNOPS and KOEM, resulting in the signing of an MOU on collaboration on marine environment implementing in the areas of marine new technology and industries, fisheries and mariculture, marine leisure and tourism, and marine environment protection. Other examples of the adaptive management are the support to the conduct of two international trainings on IMTA.

Project Expenditure in 2018

A total of US$1,523,884.61 has been disbursed in 2018, representing 100 percent of the revised delivery for 2018. Breakdown of the project expenditure by Activity (Components) and by Account generated from oneUNOPS is presented in the **Table 8** of this report. Delayed project extension and re-organization of the State Oceanic Administration of PR China primarily account for the revision of annual delivery target.

A Strengthened YSLME Partnership

UNOPS originally entered into an MOU with Incheon Metropolitan City, which will end by December 22, 2018. With the extension of the project up until December 31, 2019, the MOU was generously amended in accordance with the new project end date to allow the PMO to continuously use the premises of G-Tower in Songdo of Incheon City.

In 2018, the YSLME Phase II Project was able to reach out to wider stakeholders for experience and knowledge sharing and awareness raising through a strengthened partnership. Partners that make contributions to organizing joint events under YSLME Partnership include: Yellow Sea Fisheries Research Institute of Chinese Academy of Fishery Sciences (YSFRI) in the conduct of YSLME Training IMTA for mariculture operators in Rongcheng City of Shandong Province (May 20, 2018, Rongcheng) and International Training Course of Physiological Energy Measurement Technique of Bivalves (September 17-18, 2018, Rongcheng); Korea Marine Management Corporation (KOEM) and Institute of Oceanology of Chinese Academy of Sciences (IOCAS) in the conduct of the China-Korea Workshop on Harmful Marine Organisms in Yellow Sea (June 25-26, 2018, Kunming); Southeast Asian Fisheries Development Center (SEAFDEC) and UNDP/GEF Refugia Project to receive a delegation from Shandong Province of PR China to exchange experiences in conservation of spawning and nursery sites (July 17-18, 2018, Bongkok); Marine Biodiversity Institute of Korea (MABIK) in the conduct of Workshop on designing a network of MPAs for the YSLME based on biophysical connectivity (July

29-31, 2018, Secheon); Marine Development Studies Institute of Ocean University of China and Center for Global Climate and Marine Governance of Korea University in joint organization of the Seminar on the Law and Policy to Promote Regional Ocean Governance (November 17-18, 2018, Qingdao), and the Asian Institute of Technology (AIT) in the conduct of Integrated Multitrophic Aquaculture (IMTA) Responsibly Farming Waters by Taking Advantage of Ecosystem Services (December 1-2, 2018, Bangkok).

Engaging the participation of DPR Korea represents the continuous efforts of the YSLME Phase II Project in developing an inclusive YSLME Partnership. This year the YSLME Phase II Project has received tremendous support from UNESCAP North and Northeast Asia Office to have secured exemption from UN Sanction Committee for two representatives of the DPR Korea and committed to provide financial support to their travels to participate in the YSLME Biodiversity Forum scheduled in September 2018 in PR China. YSLME Phase II Project also wishes to extend its appreciation to EAAFP and Hanns Seidel Foundation for facilitating the participation of representatives of DPR Korea to participate in Project activities.

Communication

With the assistance of Communication Specialist, YSLME Phase II Project has extended its reaches to the International Waters and Large Marine Ecosystem communities to visualize its impact and progress in meeting the SDGs by the YSLME Phase II Project. The story of **Improving livelihoods of communities sharing the Yellow Sea** was featured in the IOC-UNESCO newsletter this June 2018 (https://mailchi.mp/unesco.org/ioc-news-june-2018). The Project also hosted a booth to introduce the portfolio of YSLME Partnership efforts to participants at the 2018 EAS Congress in Iloilo, the Philippines.

Issues, Risks and Lessons Learnt

In 2018, four risks are found persistent in the project, classified as low to medium risk levels. Risks and management measures adopted by the project are summarized in the Project Implementation Report (PIR 2018) and presented below.

Table 9: Risk register and management measures

Current Types of Critical Risks	Critical risk management measures undertaken this reporting period

Regulatory	1.1 National, Provincial and Local Governments continue to encourage land reclamation. Mitigation Measure: In Bohai Sea reclamation is banned, and there are more restrictions to land reclamation from Yellow Sea in China. There are also local voices requesting the governments to reconsider the coastal reclamation plan in RO Korea. YSLME approach is to identify the coastal habitats with international and reginal significance, and integrate these areas under various means of protection and restrictions within legal and policy framework of both countries through marine spatial planning, land use plan, redline system, etc. Working with IUCN, EAAFP, RAMSAR and CBD Secretariat to profile the significance of the intertidal mudflats is another approach the project is currently taking. This will be achieved through support to participation of government officials in workshops organized by other partners, and invitation of collaborators such as EAAFP in MPA networking and biodiversity forum, etc.
Strategic	2.1 Difficulties in negotiating the joint fisheries stock assessment, causes delay or cancellation Mitigation Measure: PMO has identified swimming crab and small yellow croaker as two target species for stock assessment training and sharing of stock assessment experiences between the two countries. Results of assessment using the agreed methodologies will be shared at the reginal working group meeting on Fish Stock to be held in October 10-12 this year. 2.2 Mariculture enterprises unwilling to adopt integrated multi-trophic aquaculture (IMTA) in place of monoculture Mitigation Measure: While studies in China have proved the increased productivity in IMTA operations than in monoculture, studies in RO Korea by National

	Institute of Fisheries Science indicate 2.7 times faster of sea cucumber growth, 40% increase in survival rate of rockfish, no report of disease in IMTA system and 5.5 times stronger in pollution mitigation. A training course to mariculture mangers held on May 20, 2018, was well participated to showcase that IMTA is the real sustainable mariculture practices that saves costs, increases productivity per unit area and generate more income. The project is planning to establish IMTA enterprise league in Shandong Province to help build the community of practice of IMTA. The project will also support to develop and implement an IMTA Promotion Plan.
Political	3.1 Potential partners unwilling to make formal commitments Mitigation Measures: Based on the agreement between PR China and RO Korea, the YSLME SAP specifies a target to establish YSLME Commission as the non-legally binding cooperation framework between the two countries. As a matter of fact, both PR China and RO Korea have made tremendous efforts in reducing fishing pressures, reducing nutrient inputs and protection of coastal wetlands and mandatory targets have been integrated into their social and economic development plans. However current restructuring of the SOA has major impact on the implementation of the project including making any new commitment to the establishment of the YSLME Commission. The study visit to HELCOM, postponed in 2018, is planned again in 2019 by the project to enable decision makers from the two countries to learn the experiences of countries in HELCOM in translate national agenda into regional agreements and the pros and cons of having regional binding targets. A regional ocean governance workshop held in Qingdao PR China on November 17-18 facilitated discussion on national laws and policies to enable good regional ocean governance.
Institutional	4.1 The reorganized Ministry of Natural Resources (MNR) may lack ownership of the project results due to the shift of mandate in management of marine ecology and environment and marine protected

	areas to other line ministries. Mitigation measures: The risk is classified as medium to high. With reduced responsibilities of MNR in marine ecology and environment, UNDP should support the intention of Department of International Cooperation to hand over the project to Ministry of Ecology and Environment (MEE) who also coordinate China programs under NOWPAP and UNDP/GEF South China Sea SAP implementation. If the hand-over is not endorsed by the MNR, UNDP and UNOPS should request to establish a strong Inter-ministerial Coordinating Committee (IMCC) to clarify and streamline the horizontal (among MNR, MEE, MARA and NFGA) and vertical coordination (between MNR and provincial governments in Shandong, Lianing and Jiangsu). In additional, the IMCC should meet quarterly instead of annually to give oversight of the project implementation. The quality control mechanism of National Working Groups should be fully operationalized to appraise the deliverables of PCAs, subcontracts and consultants.
Operational	5.1 heavy workload under the project to PMO Mitigation measures: The workload under the project is extremely high given the complexity of the project and shortage of staff in the PMO as identified by the MTR mission. PMO may request for approval by the ICC to mobilize a higher level Operations Associate to speed up the procurement and operations of the project activities. At the mean time task level workplan should be prepared to enable tight control of interrelated activities.

Table 5: Status of Implementation of Procurement & Grants Plan in 2018

	Output	Activity	Budget	Contract value	Payments in 2018	Status
1	Output 1.3.1	Activity 3. design, establish, maintain and support an interactive YSLME Partnership portal with functionalities of helpdesk, search, partner website linkage, component integration, virtual EBM-LME academy in English, Chinese and Korean languages	40,000	46,150	11,538	Contract issued. Website developed and in use, last payment pending until end of 2019 for maintenance service
2	Output 1.3.2	Activity 2: video production to lead to raising awareness of YSLME status and actions/behavior change among target stakeholders and visibility of YSLME	100,000	-	-	Re-advertised on December 20
3	Output 2.1.1	Activity 2. Assess socio-economic implications of buy-back schemes at two demonstration sites	82,265	43,881	8,776	Contract in CNY302,782 issued to Nanjing University in September 2018. first payment made in the amount of 60,557 (rate=1:6.9).
4	Output 2.1.1	Activity 2. Livelihood support and education to increase re-employment for displaced fishermen.	260,108	-		TOR to be prepared by January 31, 2019
5	Output 2.3.2	procurement of Chlorophyll and Turbidity sensors (2 sets) and Onset HOBO Dissolved Oxygen Logger (1 set)	27,400	24,700	-	Contract issued. to be delivered in January
6	Output 3.2.1	Activity 2: technical support to design wetland habitats to achieve blue bay in one pilot site in China and application of clean production technologies and relevant technology transfer	273,577	-	-	TOR yet to be prepared by January 31, 2019
7	Output 3.3.1	Activity 3. support to develop regulatory measures for marine litter monitoring, disposal, handling, reuse, recycle in Weihai to enable investment on recycling economies.	53,760	48,000	14,400	Contract issued in July and marine litter monitoring results of Weihai was reported.
8	Output 4.2.1	Activity 5: endangered migratory birds and MPA network strengthening for increased connectivity and	105,200	-	-	TOR to be prepared by January 31, 2019

		effectiveness in selected MPAs				
			561,085	**162,731**	**34,714**	**-**
1	Output 4.4.1	Activity 2: implement the SGP and conduct M&E, communication and other management activities.	**300,000**	-	-	Call for proposal launched in December 2018
	TOTAL		**861,085**	**162,731**	**34,714**	**-**

Table 6: Status of implementation of recruitment plan 2018

Component (AWP)	Activity (AWP)	Supplier Name	Functional Title	Date From	Date To	Extended to	Status	Payment Type	Deliverables	Status
Output 1.5.1	Act 1	Steve Raaymakers	mid-term evaluation	1-Mar-18	1-May-18	N/A	Completed on 10-May-18		Mid-term evaluation report	Sub mitted and accepted
Output 1.3.1	Act 5	Mariz Puyo	intern for communication			N/A	Completed on 01-May-18	allowance	Preparation of meeting proceedings and news report	Completed and accepted
Output 1.3.1	Act 5	Xiaoxuan CHEN	intern for environment law			N/A	Completed on 22-Apr-18	allowance	Legal clearing house	Texts of 50 international laws collected, ready for uploading on website
Output 4.1.1	Act 1	Rocio LOZANO-KNOWLTON	Marine Protected Area Planning Specialist	26-Oct-17	30-Jun-18	N/A	completed on 30-Jun-18	home-based, lumpsum	1) YSLME MPA Network Concept Paper 2) MPA connectivity training program and modules	submitted and accepted

Output 1.4.1	Act 1	Ming YU	Legal Expert	11-Oct-17	30-Jun-18		ongoing	home-based, lumpsum	1) 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 2) The Assessment Report of China's National and Local Capacity for Implementation of International Legal Documents in the YSLME Project II 3) training module on synergizing implementation of international environmental treaties and conventions	first two reports submitted and accepted, third report pending
Output 4.1.1	Act 1	Won Tae SHIN	Biodiversity Specialist	19-Jan-18	30-Jun-18		ongoing	home-based, lumpsum	Framework plan for YSLME biodiversity conservation (2018-2030) in RO Korea	submitted for review
Output 4.1.1	Act 2	Yu LIU	Natural Resource Specialist-reclamation	19-Jan-18	30-Jun-18		ongoing	home-based, lumpsum	Coastal Reclamation and Impact to Critical Coastal Habitats of Yellow Sea Large Marine Ecosystem	submitted for review
Output 1.3.2	Act 1	Lisa BENEDETTI	Communications Strategy Consultant/ Development of Communication Strategy	11-Apr-18	30-Jun-18		ongoing	Home-based Retainer	1) communication and awareness raising strategy and implementation plan; 2) Website content: 3) panels of YSLME booth at 2018 EAS Congress	submitted and accepted

Output 4.1.1	Act 3	Chaolun LI	Natural resource specialist - Restoration		30-Jun-18		ongoing	home-based, Retainer, CNY 3,227 per day, 16 working days	valuation methodologies, standards and guidelines for evaluation of the effectiveness and impact of ecosystem-based restoration projects	work plan submitted, draft report pending
Output 3.3.1	Act 1	Ruijun SUN	Legal expert to review country compliance		30-Jun-18		ongoing	Home-based Lumpsum		
Output 3.2.1	Act 1	Guoxiang LIAO	Natural resource specialist - Wetland	14-Jun-18	30-Jun-18		ongoing	Home-based Lumpsum		
Output ~~1.4.1~~ (4.4.2)	Act 6	Rocio LOZANO-KNOWLTON	Marine Protected Area Planning Specialist				ongoing		1) Facilitating MPA training workshop; 2) Training kits and summary report on training workshop; 3) Consolidated MPA connectivity training tool kit	
Output 1.1.1	Act 2	Chris HEDLEY	Ocean Governance Specialist on the Development of Rules of Governance	07-Jun-18	30-Jun-18		ongoing	Home-based, Retainer	1) "Assessment report" covering current status of legal and institutional framework considering results of TDA; 2) "Analytical report" with suggested actions that need to be made on institutional actions, legal instruments and partnerships and national governance in the SAP, and recommendations	

Output 1.5.1	Act 1	Elisabeth Carrio					ongoing	home-hased, Retainner	1) Assessment report of the current financial status and suggested requirements with identification of relevant financial resources; 2) Plan for sustainable financing for the implementation of SAP as well as YSLME Commission as an implementing mechanism	
Output 4.4.2	Act 4		Legal expert on ocean governance & capacity building					Home-based Lumpsum		
Output 4.3.1	Act 1	Shouqiang WANG	Community Impact Assessment Consultant					Home-based Lumpsum	1) A stock-taking report on vulnerabilities assessment and management measures of coastal communities and ecosystem services in YSLME to impact of climate change; 2) Management measures and further research recommended for consideration and integration into the YSLME Biodiversity Conservation Planning Workshop by both countries (China and RO Korea)	
Output 4.4.2	Act 6		Mariculture Capacity Development Specialist					Home-based, Retainer		

Output 3.1.2 Output 3.3.1 Output 4.4.1	Act 1 Act 2		Marine Environment Monitoring Specialist					Home-based, Retainer		
Output 1.3.1	Act 5	Weijia Chen	Intern - Communication					Songdo, Intern		
Output 1.3.1	Act 5	Yifei Li	Intern - Operations					Songdo, Intern		

Table 7: Planned Events in 2018 and Implementation Status

No.	Events and activities	Planned dates	Actual Dates	Venue	Number of participants & gender	Organizers	remark
1	MSTP-2/ICC-2	March 27-29	March 27-29	Dalian, PRC	Total 43 (26/17)	PMO, hosted by SOA, with generous support from Fisheries Bureau of MARA	
2	Mid-Term Review	March–May	March-May	Dalian, Weihai, Seoul, Incheon	N/A	UNDP China Office, PMO, SOA/PRC, MOF/ROK	Consultant was contracted by UNDP
3	YSLME Training IMTA for mariculture operators in Rongcheng City of Shandong	May 20	May 20	Rongcheng, PRC	32 (M:27/F:5)	PMO, Rongcheng Ocean and Fishery Bureau, Shandong Ocean and Fishery Bureau and	

	Province					YSFRI	
4	China-Korea Workshop on Harmful Marine Organisms in Yellow Sea	June 25-26	June 25-26	Kunming, PRC	50 (M:35/F:15)	SOA, MOF, KOEM, IOCAS, NMEMC, etc	
	RWG-Assessment and Monitoring	June 27	June 27	Kunming, PRC	25 (M:18/ F:7)	PMO	
5	Exchange visit of Marine Environment Monitoring	July 11		Busan, ROK		KIOST, PMO, NMEMC	postponed
	Workshop on Nutrients	July 12-13		Busan, ROK		KIOST, PMO, NMEMC	postponed
	RWG on Pollution Reduction	July 14		Busan, ROK		PMO, KIOST	postponed
6	Visit of SEAFDEC on Refugia Project by Shandong Province	N/A	July 17-18	Bangkok	6 (M:5/ F:1)	UNEP/UNDP Refugia Project, SEAFDEC	
7	Workshop on designing a network of MPAs for the YSLME based on biophysical connectivity	July 23-27	July 23-27	Seochon, ROK	29 (M:14/ F:15)	PMO, MNR, KOEM, MOF	
8	Fish stock assessment workshop	July 30-31	July 30-31	Tongyeong, ROK	24 (M:16/ F:8)	PMO, NIFS	
9	HELCOM visit	August 12		Helsinkii, Stockholm		PMO, HELCOM Secretariat	postponed
10	RWG-Habitat	September 4		Suzhou, PRC		PMO	postponed

	YSLME Biodiversity Forum	September 5-7		Suzhou, PRC		FIO/MNR, YSOLME PMO, KOEM, etc	postponed
11	International Training Course of Physiological Energy Measurement Technique of Bivalves	September 17-18	September 17-18	Rongcheng, PRC	119 (M:70/ F:49)	YSFRI, YSLME PMO	
12	RWG-Fish Stocks	October 10-11	October 10-11	Jeju, ROK	24 (M:18/ F:6)	YSLME PMO, NIFS	
13	RWG-Sustainable Mariculture	November 8-9, 2018	November 8-9, 2018	Jeju, ROK	22 (M:15/ F:7)	YSLME PMO	
14	RWG-Governance	November 16	7-8 January 2019	Beijing, PRC		MNR/PRC, YSLME PMO	
15	Seminar on the Law and Policy to Promote Regional Ocean Governance	November 17-18	November 17-18, 2018	Qingdao, PRC	50 (M:40/ F:10)	Marine Development Studies Institute of Ocean University of China, Center for Global Climate and marine Governance of Korea University, PMO, NMEMC	
16	Integrated Multitrophic Aquaculture (IMTA) Responsibly Farming Waters by Taking Advantage of Ecosystem Services	N/A	December 1-2	Bangkok	>3 (M:3/ F:0)	AIT, FIO, Incheon National University	Two RWG members from PRC and 1 RWG member from ROK lectured.
17	Visit of Chungcheongnam-do officials to Shandong Ocean Bureau	N/A	December 12-14, 2018	Jinan, PRC	18 (M:14/ F:4)	PMO	MOU signed on future cooperation

18	2nd Seminar of spotted seal	N/A	December 18-19, 2018, cancelled	Dalian, PRC		PMO	
	Overall				445 (M:301/ F:144)		

Table 8: UNOPS PDR January – December 2018 YSLME II (91007) (to be added after December 31, 2018)

UNOPS ACCOUNT	UNOPS_ACC_DESCR	FUND CODE	ACTIVITY_ID	DONOR CODE	FEE_PCT	EXP_AMOUNT	EXP FEE	TOTAL_EXP AMOUNT
71105	UNOPS ICA Fee	62000	91007-ACTIVITY 1	10003	0.10	244,877.29	0.00	244,877.29
71115	ICA Annual Leave Accrual	62000	91007-ACTIVITY 1	10003	0.10	-12,633.56	0.00	-12,633.56
71210	CMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 1	10003	0.10	6,849.68	0.00	6,849.68
71220	LICA PF Org Contribution	62000	91007-ACTIVITY 1	10003	0.10	3,163.34	0.00	3,163.34
71225	ICA Insurance UNOPS	62000	91007-ACTIVITY 1	10003	0.10	838.61	0.00	838.61
71305	UNOPS Internship stipend	62000	91007-ACTIVITY 1	10003	0.10	4,378.95	0.00	4,378.95
71215	LMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 1	10003	0.10	14,467.84	0.00	14,467.84
71405	Service Contracts-Individuals	62000	91007-ACTIVITY 1	10003	0.10	-0.06	0.00	-0.06

71605	Travel Tickets-International	62000	91007-ACTIVITY 1	10003	0.10	27,160.71	0.00	27,160.71
71610	Travel Tickets-Local	62000	91007-ACTIVITY 1	10003	0.10	-20,794.64	0.00	-20,794.64
71615	Daily Subsistence Allow-Intl	62000	91007-ACTIVITY 1	10003	0.10	32,929.45	0.00	32,929.45
71620	Daily Subsistence Allow-Local	62000	91007-ACTIVITY 1	10003	0.10	2,869.36	0.00	2,869.36
71625	Travel Tickets Mtng Partic	62000	91007-ACTIVITY 1	10003	0.10	11,122.65	0.00	11,122.65
71630	Travel DSA Mtng Partic	62000	91007-ACTIVITY 1	10003	0.10	14,051.44	0.00	14,051.44
71640	Travel Other - Mtng Partic	62000	91007-ACTIVITY 1	10003	0.10	7,047.23	0.00	7,047.23
71635	Travel - Other	62000	91007-ACTIVITY 1	10003	0.10	12,719.68	0.00	12,719.68
72105	Svc Co-Construction & Engineer	62000	91007-ACTIVITY 1	10003	0.10	1,338.06	0.00	1,338.06
72115	Svc Co-Natural Resources & Env	62000	91007-ACTIVITY 1	10003	0.10	22,750.00	0.00	22,750.00
72120	Svc Co-Trade and Business Serv	62000	91007-ACTIVITY 1	10003	0.10	20,489.90	0.00	20,489.90
72140	Svc Co-Information Technology	62000	91007-ACTIVITY 1	10003	0.10	11,537.50	0.00	11,537.50
72210	Minerals,Mining & Metal Prdcts	62000	91007-ACTIVITY 1	10003	0.10	23,481.25	0.00	23,481.25
75220	Postage and Pouch	62000	91007-ACTIVITY 1	10003	0.10	18.04	0.00	18.04
75315	Print Media	62000	91007-ACTIVITY 1	10003	0.10	213.03	0.00	213.03
73120	Rent - Meeting Rooms	62000	91007-ACTIVITY 1	10003	0.10	1,212.46	0.00	1,212.46

76005	Reimb to UNDP for Supp Srvs	62000	91007-ACTIVITY 1	10003	0.10	1,085.52	0.00	1,085.52
77005	CMDC non- person related (Engagement Services)	62000	91007-ACTIVITY 1	10003	0.10	1,567.50	0.00	1,567.50
77006	CMDC non- person related (IPAS Services)	62000	91007-ACTIVITY 1	10003	0.10	778.91	0.00	778.91
75435	Printing and Publications	62000	91007-ACTIVITY 1	10003	0.10	6,085.89	0.00	6,085.89
75445	Translation Costs	62000	91007-ACTIVITY 1	10003	0.10	15,357.10	0.00	15,357.10
72310	PCA Disbursements	62000	91007-ACTIVITY 1	10003	0.10	14,425.03	0.00	14,425.03
79005	Facilities&Admin-Implement	62000	91007-ACTIVITY 1	10003	0.00	0.00	41,669.95	41,669.95
75335	Hospitality Catering	62000	91007-ACTIVITY 1	10003	0.10	3,073.99	0.00	3,073.99
78010	Agresso differences	62000	91007-ACTIVITY 1	10003	0.00	0.00	0.00	0.00
78015	Foreign Exch Transaction Loss	62000	91007-ACTIVITY 1	10003	0.00	592.19	0.00	592.19
78020	Foreign Exch Translation Loss	62000	91007-ACTIVITY 1	10003	0.00	0.00	0.00	0.00
78030	Unrealized Loss	62000	91007-ACTIVITY 1	10003	0.00	0.00	0.00	0.00
78035	Realized Loss	62000	91007-ACTIVITY 1	10003	0.00	470.28	0.00	470.28
58005	Foreign ExchTransaction Gain	62000	91007-ACTIVITY 1	10003	0.00	-295.58	0.00	-295.58
58010	Foreign Exch Translation Gain	62000	91007-ACTIVITY 1	10003	0.00	8.39	0.00	8.39

78045	Realized Gain	62000	91007-ACTIVITY 1	10003	0.00	-619.94	0.00	-619.94
			91007-ACTIVITY 1			**472,617.49**	**41,669.95**	**514,287.44**
71105	UNOPS ICA Fee	62000	91007-ACTIVITY 2	10003	0.10	61,601.99	0.00	61,601.99
71115	ICA Annual Leave Accrual	62000	91007-ACTIVITY 2	10003	0.10	-3,897.93	0.00	-3,897.93
71210	CMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 2	10003	0.10	2,337.44	0.00	2,337.44
71220	LICA PF Org Contribution	62000	91007-ACTIVITY 2	10003	0.10	1,173.91	0.00	1,173.91
71225	ICA Insurance UNOPS	62000	91007-ACTIVITY 2	10003	0.10	304.73	0.00	304.73
71215	LMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 2	10003	0.10	14,840.00	0.00	14,840.00
71405	Service Contracts-Individuals	62000	91007-ACTIVITY 2	10003	0.10	-0.02	0.00	-0.02
71605	Travel Tickets-International	62000	91007-ACTIVITY 2	10003	0.10	10,050.65	0.00	10,050.65
71610	Travel Tickets-Local	62000	91007-ACTIVITY 2	10003	0.10	311.78	0.00	311.78
71615	Daily Subsistence Allow-Intl	62000	91007-ACTIVITY 2	10003	0.10	7,417.32	0.00	7,417.32
71625	Travel Tickets Mtng Partic	62000	91007-ACTIVITY 2	10003	0.10	1,437.19	0.00	1,437.19
71630	Travel DSA Mtng Partic	62000	91007-ACTIVITY 2	10003	0.10	5,830.20	0.00	5,830.20
71640	Travel Other - Mtng Partic	62000	91007-ACTIVITY 2	10003	0.10	2,068.00	0.00	2,068.00

71635	Travel - Other	62000	91007-ACTIVITY 2	10003	0.10	9,408.30	0.00	9,408.30
72115	Svc Co-Natural Resources & Env	62000	91007-ACTIVITY 2	10003	0.10	8,694.40	0.00	8,694.40
72120	Svc Co-Trade and Business Serv	62000	91007-ACTIVITY 2	10003	0.10	5,738.37	0.00	5,738.37
72210	Minerals,Mining & Metal Prdcts	62000	91007-ACTIVITY 2	10003	0.10	68,300.87	0.00	68,300.87
76005	Reimb to UNDP for Supp Srvs	62000	91007-ACTIVITY 2	10003	0.10	167.03	0.00	167.03
77005	CMDC non- person related (Engagement Services)	62000	91007-ACTIVITY 2	10003	0.10	1,567.50	0.00	1,567.50
77006	CMDC non- person related (IPAS Services)	62000	91007-ACTIVITY 2	10003	0.10	778.91	0.00	778.91
75445	Translation Costs	62000	91007-ACTIVITY 2	10003	0.10	4,581.00	0.00	4,581.00
79005	Facilities&Admin-Implement	62000	91007-ACTIVITY 2	10003	0.00	0.00	18,563.31	18,563.31
78015	Foreign Exch Transaction Loss	62000	91007-ACTIVITY 2	10003	0.00	15.51	0.00	15.51
78020	Foreign Exch Translation Loss	62000	91007-ACTIVITY 2	10003	0.00	0.00	0.00	0.00
78035	Realized Loss	62000	91007-ACTIVITY 2	10003	0.00	85.74	0.00	85.74
58005	Foreign ExchTransaction Gain	62000	91007-ACTIVITY 2	10003	0.00	-33.61	0.00	-33.61
78045	Realized Gain	62000	91007-ACTIVITY 2	10003	0.00	-12.34	0.00	-12.34
			91007-ACTIVITY 2			**202,766.94**	**18,563.31**	**221,330.25**

71105	UNOPS ICA Fee	62000	91007-ACTIVITY 3	10003	0.10	69,847.03	0.00	69,847.03
71115	ICA Annual Leave Accrual	62000	91007-ACTIVITY 3	10003	0.10	-4,039.45	0.00	-4,039.45
71210	CMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 3	10003	0.10	2,374.02	0.00	2,374.02
71220	LICA PF Org Contribution	62000	91007-ACTIVITY 3	10003	0.10	1,173.91	0.00	1,173.91
71225	ICA Insurance UNOPS	62000	91007-ACTIVITY 3	10003	0.10	308.56	0.00	308.56
71215	LMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 3	10003	0.10	14,840.00	0.00	14,840.00
71605	Travel Tickets-International	62000	91007-ACTIVITY 3	10003	0.10	704.07	0.00	704.07
71610	Travel Tickets-Local	62000	91007-ACTIVITY 3	10003	0.10	316.68	0.00	316.68
71615	Daily Subsistence Allow-Intl	62000	91007-ACTIVITY 3	10003	0.10	1,410.12	0.00	1,410.12
71635	Travel - Other	62000	91007-ACTIVITY 3	10003	0.10	1,128.00	0.00	1,128.00
72115	Svc Co-Natural Resources & Env	62000	91007-ACTIVITY 3	10003	0.10	14,400.00	0.00	14,400.00
72135	Svc Co-Communications Service	62000	91007-ACTIVITY 3	10003	0.10	-484.08	0.00	-484.08
72210	Minerals,Mining & Metal Prdcts	62000	91007-ACTIVITY 3	10003	0.10	41,520.00	0.00	41,520.00
73120	Rent - Meeting Rooms	62000	91007-ACTIVITY 3	10003	0.10	1,662.68	0.00	1,662.68
77005	CMDC non- person related	62000	91007-ACTIVITY 3	10003	0.10	1,567.50	0.00	1,567.50

	(Engagement Services)							
77006	CMDC non- person related (IPAS Services)	62000	91007-ACTIVITY 3	10003	0.10	778.91	0.00	778.91
75445	Translation Costs	62000	91007-ACTIVITY 3	10003	0.10	864.18	0.00	864.18
72310	PCA Disbursements	62000	91007-ACTIVITY 3	10003	0.10	76,238.22	0.00	76,238.22
79005	Facilities&Admin-Implement	62000	91007-ACTIVITY 3	10003	0.00	0.00	20,406.92	20,406.92
78015	Foreign Exch Transaction Loss	62000	91007-ACTIVITY 3	10003	0.00	177.84	0.00	177.84
78030	Unrealized Loss	62000	91007-ACTIVITY 3	10003	0.00	0.00	0.00	0.00
78035	Realized Loss	62000	91007-ACTIVITY 3	10003	0.00	0.00	0.00	0.00
78045	Realized Gain	62000	91007-ACTIVITY 3	10003	0.00	-484.08	0.00	-484.08
			91007-ACTIVITY 3			**224,304.11**	**20,406.92**	**244,711.03**
71105	UNOPS ICA Fee	62000	91007-ACTIVITY 4	10003	0.10	128,702.94	0.00	128,702.94
71115	ICA Annual Leave Accrual	62000	91007-ACTIVITY 4	10003	0.10	-5,424.83	0.00	-5,424.83
71210	CMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 4	10003	0.10	4,052.31	0.00	4,052.31
71220	LICA PF Org Contribution	62000	91007-ACTIVITY 4	10003	0.10	1,273.91	0.00	1,273.91

71225	ICA Insurance UNOPS	62000	91007-ACTIVITY 4	10003	0.10	372.10	0.00	372.10
71305	UNOPS Internship stipend	62000	91007-ACTIVITY 4	10003	0.10	6,589.64	0.00	6,589.64
71215	LMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 4	10003	0.10	14,896.68	0.00	14,896.68
71405	Service Contracts-Individuals	62000	91007-ACTIVITY 4	10003	0.10	290.79	0.00	290.79
71605	Travel Tickets-International	62000	91007-ACTIVITY 4	10003	0.10	15,371.08	0.00	15,371.08
71610	Travel Tickets-Local	62000	91007-ACTIVITY 4	10003	0.10	8,978.04	0.00	8,978.04
71615	Daily Subsistence Allow-Intl	62000	91007-ACTIVITY 4	10003	0.10	30,785.76	0.00	30,785.76
71620	Daily Subsistence Allow-Local	62000	91007-ACTIVITY 4	10003	0.10	764.86	0.00	764.86
71625	Travel Tickets Mtng Partic	62000	91007-ACTIVITY 4	10003	0.10	404.91	0.00	404.91
71630	Travel DSA Mtng Partic	62000	91007-ACTIVITY 4	10003	0.10	717.00	0.00	717.00
71640	Travel Other - Mtng Partic	62000	91007-ACTIVITY 4	10003	0.10	188.00	0.00	188.00
71635	Travel - Other	62000	91007-ACTIVITY 4	10003	0.10	9,548.85	0.00	9,548.85
72105	Svc Co-Construction & Engineer	62000	91007-ACTIVITY 4	10003	0.10	3,819.63	0.00	3,819.63
72120	Svc Co-Trade and Business Serv	62000	91007-ACTIVITY 4	10003	0.10	5,022.93	0.00	5,022.93
72205	Agri & Forestry Products	62000	91007-ACTIVITY 4	10003	0.10	468.17	0.00	468.17
72210	Minerals,Mining & Metal Prdcts	62000	91007-ACTIVITY 4	10003	0.10	124,097.88	0.00	124,097.88

75305	Stationery & other Office Supp	62000	91007-ACTIVITY 4	10003	0.10	1,445.80	0.00	1,445.80
73120	Rent - Meeting Rooms	62000	91007-ACTIVITY 4	10003	0.10	-2,402.39	0.00	-2,402.39
76005	Reimb to UNDP for Supp Srvs	62000	91007-ACTIVITY 4	10003	0.10	379.55	0.00	379.55
77005	CMDC non- person related (Engagement Services)	62000	91007-ACTIVITY 4	10003	0.10	1,567.50	0.00	1,567.50
77006	CMDC non- person related (IPAS Services)	62000	91007-ACTIVITY 4	10003	0.10	778.91	0.00	778.91
75435	Printing and Publications	62000	91007-ACTIVITY 4	10003	0.10	1,897.89	0.00	1,897.89
75445	Translation Costs	62000	91007-ACTIVITY 4	10003	0.10	4,121.09	0.00	4,121.09
75450	Other Media Costs	62000	91007-ACTIVITY 4	10003	0.10	138.90	0.00	138.90
72310	PCA Disbursements	62000	91007-ACTIVITY 4	10003	0.10	56,231.19	0.00	56,231.19
79005	Facilities&Admin-Implement	62000	91007-ACTIVITY 4	10003	0.00	0.00	38,583.00	38,583.00
78010	Agresso differences	62000	91007-ACTIVITY 4	10003	0.00	0.00	0.00	0.00
78015	Foreign Exch Transaction Loss	62000	91007-ACTIVITY 4	10003	0.00	336.48	0.00	336.48
78020	Foreign Exch Translation Loss	62000	91007-ACTIVITY 4	10003	0.00	0.00	0.00	0.00
78030	Unrealized Loss	62000	91007-ACTIVITY 4	10003	0.00	0.00	0.00	0.00
78035	Realized Loss	62000	91007-ACTIVITY 4	10003	0.00	62.58	0.00	62.58

58005	Foreign ExchTransaction Gain	62000	91007-ACTIVITY 4	10003	0.00	-37.82	0.00	-37.82
78045	Realized Gain	62000	91007-ACTIVITY 4	10003	0.00	-201.13	0.00	-201.13
			91007-ACTIVITY 4			**415,239.20**	**38,583.00**	**453,822.20**
71105	UNOPS ICA Fee	62000	91007-ACTIVITY 5	10003	0.10	46,763.19	0.00	46,763.19
71115	ICA Annual Leave Accrual	62000	91007-ACTIVITY 5	10003	0.10	-367.45	0.00	-367.45
71210	CMDC_UNOPS Supervised ICA	62000	91007-ACTIVITY 5	10003	0.10	3,399.72	0.00	3,399.72
71220	LICA PF Org Contribution	62000	91007-ACTIVITY 5	10003	0.10	6,296.27	0.00	6,296.27
71225	ICA Insurance UNOPS	62000	91007-ACTIVITY 5	10003	0.10	763.97	0.00	763.97
75210	Land Telephone Charges	62000	91007-ACTIVITY 5	10003	0.10	1,196.57	0.00	1,196.57
75215	Mobile Telephone Charges	62000	91007-ACTIVITY 5	10003	0.10	708.66	0.00	708.66
75230	Connectivity Charges	62000	91007-ACTIVITY 5	10003	0.10	198.53	0.00	198.53
75305	Stationery & other Office Supp	62000	91007-ACTIVITY 5	10003	0.10	611.28	0.00	611.28
72625	Acquis of Computer Software	62000	91007-ACTIVITY 5	10003	0.10	1,611.40	0.00	1,611.40
72825	Dep Exp - ITC	62000	91007-ACTIVITY 5	10003	0.10	1,145.99	0.00	1,145.99
73125	Leased office equip and furnit	62000	91007-ACTIVITY 5	10003	0.10	962.03	0.00	962.03

75115	Utilities	62000	91007-ACTIVITY 5	10003	0.10	18,695.83	0.00	18,695.83
79005	Facilities&Admin-Implement	62000	91007-ACTIVITY 5	10003	0.00	0.00	7,384.98	7,384.98
75710	Transportation charges	62000	91007-ACTIVITY 5	10003	0.10	91.04	0.00	91.04
78010	Agresso differences	62000	91007-ACTIVITY 5	10003	0.00	0.01	0.00	0.01
78015	Foreign Exch Transaction Loss	62000	91007-ACTIVITY 5	10003	0.00	592.16	0.00	592.16
78020	Foreign Exch Translation Loss	62000	91007-ACTIVITY 5	10003	0.00	-1.61	0.00	-1.61
78035	Realized Loss	62000	91007-ACTIVITY 5	10003	0.00	210.98	0.00	210.98
58005	Foreign ExchTransaction Gain	62000	91007-ACTIVITY 5	10003	0.00	-54.99	0.00	-54.99
58010	Foreign Exch Translation Gain	62000	91007-ACTIVITY 5	10003	0.00	-376.09	0.00	-376.09
78045	Realized Gain	62000	91007-ACTIVITY 5	10003	0.00	-98.78	0.00	-98.78
			91007-ACTIVITY 5			**82,348.71**	**7,384.98**	**89,733.69**
						1,397,276.45	**126,608.16**	**1,523,884.61**