



YSLME

UNDP/GEF Yellow Sea
Large Marine Ecosystem

4th Interim Commission Council Meeting

28-29 NOVEMBER 2019 • JEJU, RO KOREA

Project Implementation Report

YSLME II PMO





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- **Project Progress in delivery of outputs and resources, and events**
- **Project Progress in achieving project targets and follow-up activities**

Project funding snapshot



Programme Period	2014-2019 (extension anticipated)
Total allocated resources:	US\$ 233,044,196
GEF	US\$ 7,562,430
UNDP	US\$ 1,692,000
Other:	
◦ Government in cash	US\$ 26,785,812
◦ Government in-kind	US\$ 195,203,954
◦ Other	US\$ 1,800,000
Executing Entity	UNOPS

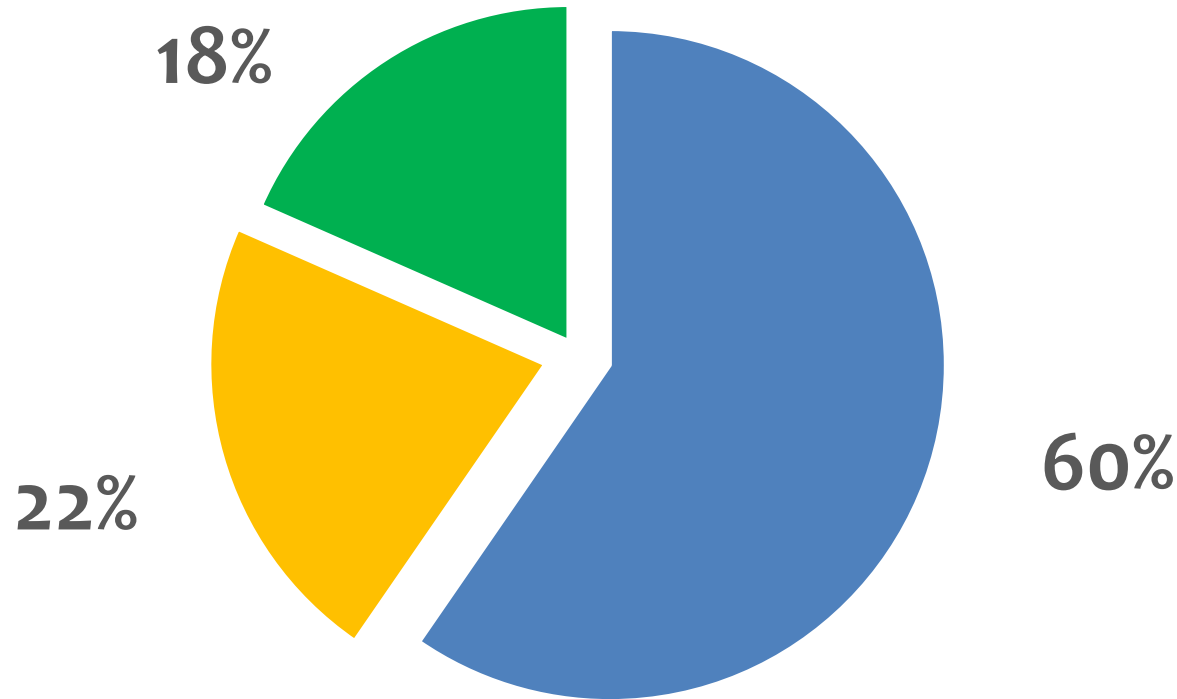
Project Expenditure as at September 30, 2019 and Revised Budget for 2019 Q4 and 2020 (US\$)



Component/ Atlas Activity	expenditure (2014- 30/09/2019)	2019 Quarter 4 budget	2020 budget	Total Revised Budget	ProDoc budget	Variance of budget revision	change in percentage
Component 1	1,496,593	142,294	336,734	1,975,621	1,970,043	5,578	0.28
Component 2	892,840	338,661	121,319	1,352,820	1,437,606	- 84,786	-5.90
Component 3	627,022	417,957	149,345	1,194,324	1,155,411	38,913	3.37
Component 4	1,254,530	696,816	784,017	2,735,363	2,621,370	113,993	4.35
Project Management	304,302	-	-	304,302	378,000	- 73,698	-19.50
Total	4,575,287	1,595,729	1,391,415	7,562,430	7,562,430	0	0.00

Component/ Atlas Activity	expenditure (2014- 09/30/2019)	2019 Quarter 4 budget	2020 budget	Total Revised Budget	ProDoc budget	Variance of budget revision	change in percentage
Component 1	1,496,593	142,294	336,734	1,975,621	1,970,043	5,578	0.28
Component 2	892,840	338,661	121,319	1,352,820	1,437,606	- 84,786	-5.90
Component 3	627,022	417,957	149,345	1,194,324	1,155,411	38,913	3.37
Component 4	1,186,529	764,816	784,017	2,735,362	2,621,370	113,992	4.35
Project Management	304,302	-	-	304,302	378,000	- 73,698	-19.50
Total	4,507,286	1,663,729	1,391,415	7,562,430	7,562,430	- 0	0.00

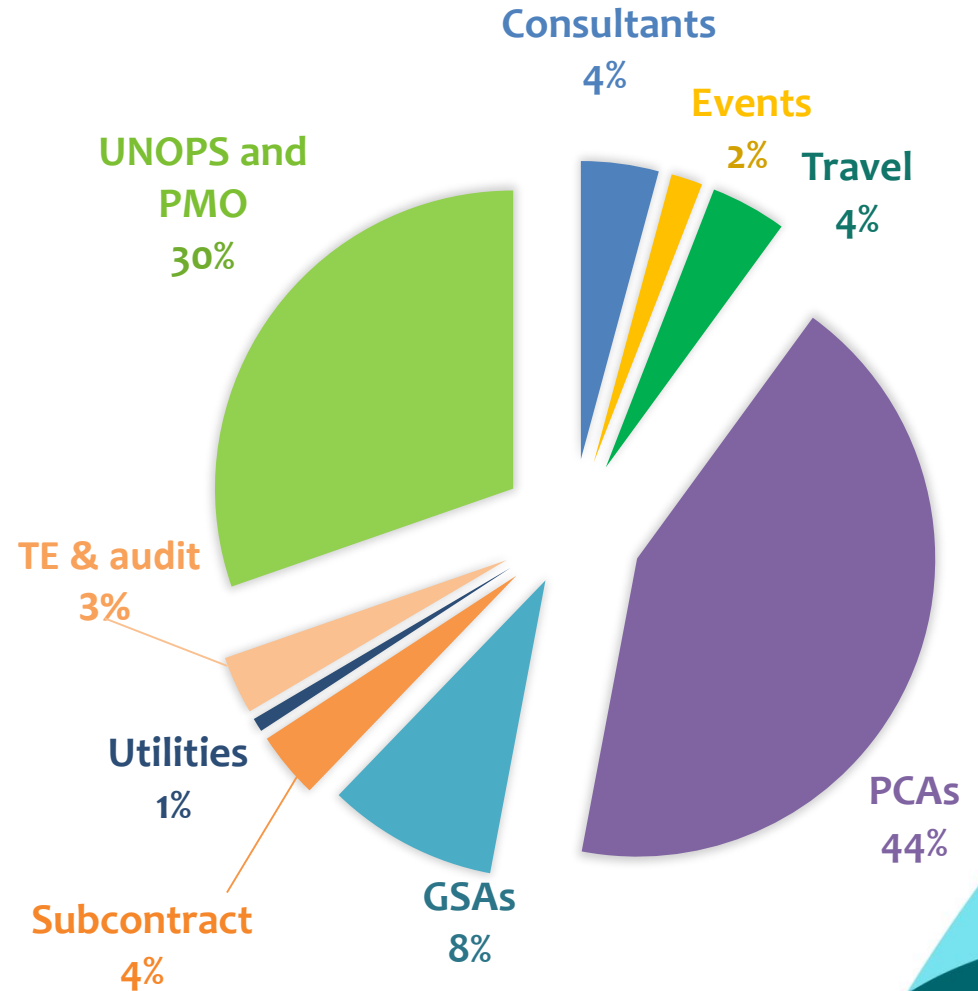
The Project Expenditure and Planned Budget (total budget: \$7,562,430)



■ Expenditure as of 30/09 ■ 2019 Quarter 4 Budget ■ 2020 Budget

INDICATIVE PERCENTAGE OF BUDGET CATEGORIES OF Q4 2019 AND 2020

Categories	Amount	Percentage
PCAs	1,301,136.34	44
GSAs	245,206.00	8
Subcontract	108,666.35	4
Consultants	127,480.71	4
Utilities	22,488.14	1
Travel	124,909.31	4
TE & audit	95,129.65	3
Events	51,649.26	2
PMO staff and interns	413,060.00	14
UNOPS fee and LMDC/CMDC	497,418.14	16
subtotal	2,987,143.90	100

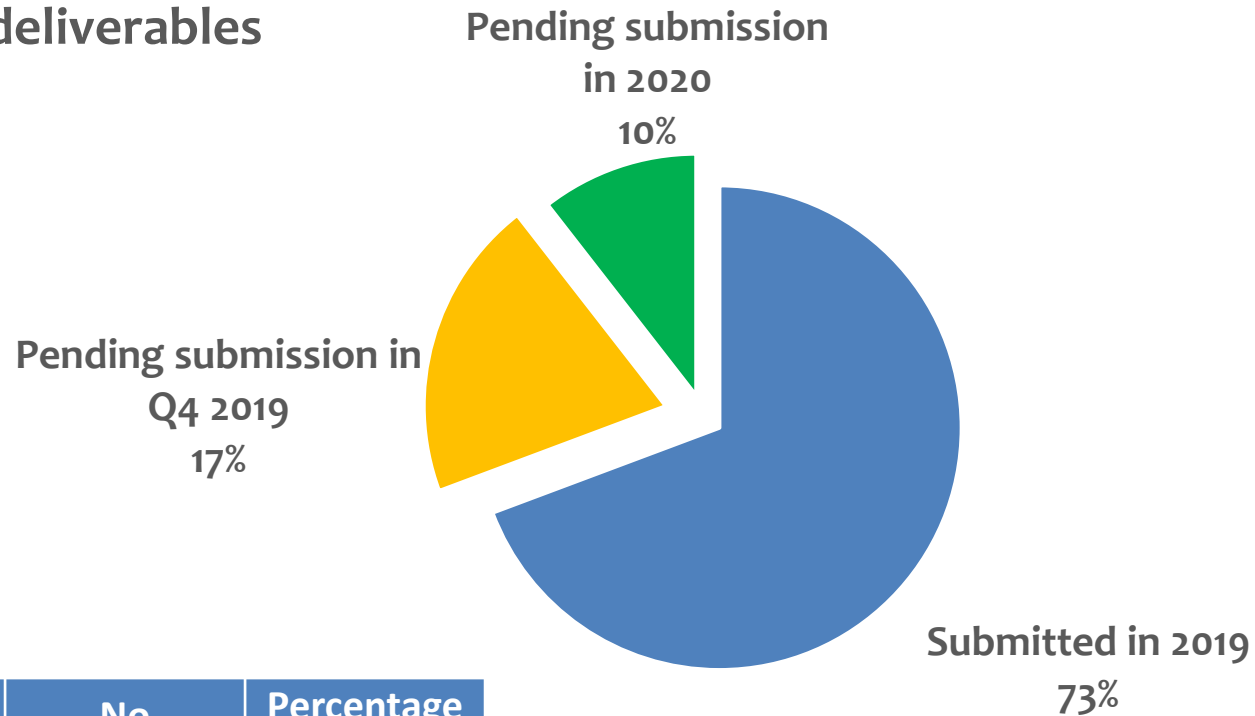


Status of Implementation of PCAs, GSAs and Subcontracts (as of November 27, 2019)



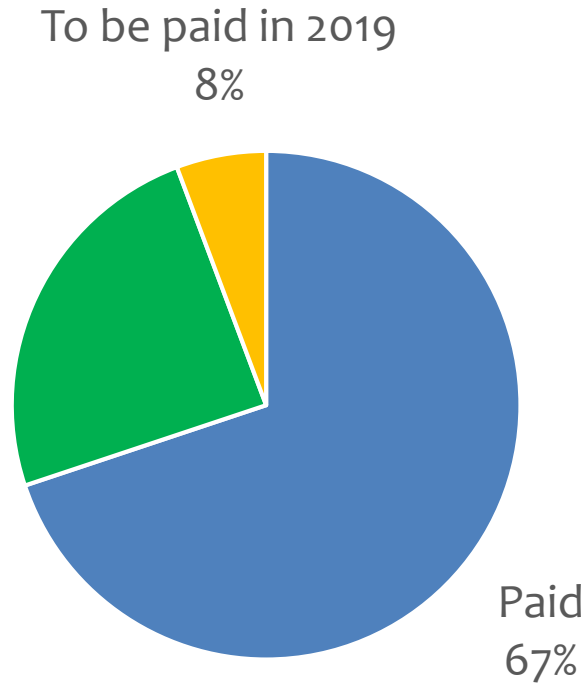
Name of the Implementing Partner	Total Deliverables Agreed	No. of Deliverables Submitted	No. of Deliverables Pending	No. of Deliverables Submitted Late	Amount Committed	Amount Paid	% Paid	% Verified & in-review	% Remaining
GSA_GEI	3	2	1	2	\$ 100,000.00	\$ 80,000.00	80%	0%	20%
GSA_BROCA	4	2	2	2	\$ 46,949.34	\$ 41,408.00	88%	0%	12%
GSA_CAPPMA	7	7	0	7	\$ 94,288.97	\$ 47,144.55	50%	50%	0%
GSA_CAFS	5	5	0	5	\$ 71,438.57	\$ 42,863.14	60%	40%	0%
GSA_IGSNRR	10	5	5	5	\$ 80,000.00	\$ 56,000.00	70%	0%	30%
GSA_ShanghaiRendu	2	2	0	2	\$ 46,312.00	\$ 46,312.00	100%	0%	0%
GSA_ChinaBio-Div	4	0	4	0	\$ 39,778.00	\$ 7,955.00	20%	0%	80%
PCA_YSFRI	19	15	4	13	\$ 670,290.00	\$ 430,773.00	64%	9%	26%
PCA_FIO	23	20	3	12	\$ 747,000.00	\$ 476,000.00	64%	6%	30%
PCA_NMEMC	15	15	0	9	\$ 407,500.00	\$ 407,500.00	100%	0%	0%
PCA_NCSEMC	5	-	5	0	\$ 300,000.00	\$ 60,000.00	20%	0%	80%
Sub-Cont_ShandongMarine	4	3	1	1	\$ 48,000.00	\$ 28,800.00	60%	0%	40%
Sub-Cont_Nanjing	3	2	1	0	\$ 42,714.20	\$ 34,210.00	80%	0%	20%
Sub-Cont_CGTae	3	3	0	0	\$ 46,150.00	\$ 46,150.50	100%	0%	0%
Sub-Cont_BBMovie	7	2	5	0	\$ 152,178.54	\$ 122,688.30	81%	0%	19%
Total	114	83	31	58	\$ 2,892,599.62	\$ 1,927,804.49	67%	6%	27%
		73%	27%	70%				73%	27%

Status of submission of deliverables as of November 27, 2019



Description	No	Percentage
Submitted in 2019	83	73%
Pending submission in Q4 2019	18	16%
Pending submission in 2020	13	11%
Total	114	100%

Payments Status to PCAs, GSAs and subcontractors as of Nov 27, 2019



Description	Amount
Paid as of Nov 27	\$ 1,927,804.49
To be paid in Q4 of 2019	\$ 228,336.89
To be paid in 2020	\$ 736,458.24

Reports to be delivered by 31 December 2019



Implementing Partner	Output/ Deliverable
GSA_BROCA	MOU with garbage recycling company
	Final report on waste reduction and plastic waste management in Jingzi village focusing on art product from marine debris, waste reduction in weight through the purchase and operation of two sets of environmental protection facilities, training and communication and use of app for dynamic monitoring of garbage reduction, and benefits of partnership with recycling companies and cooperation with Korean partners
GSA_IGSNRR	NGO training report
	Databases on waterbirds and their habitats in Hangu Coastal Wetlands
	Smart phone-based APP client on waterbird recognition in Hangu Coastal Wetlands
	Databases on waterbirds and their habitats in Hangu Coastal Wetlands
	A report on the Win-win Solution of Sustainable Fisheries and Waterbird Conservation in Fish ponds
GSA_ChinaBio-Div	Report on the registration and operation of social media platforms for spotted seals protection in Wechat, Weibo, and Tiktok (Douyin)
	Publication of 3,000 copies of spotted seal book "The Spotted Seals on the Broken Ice" for use in outreach and education purposes
	Procurement of 5,000 spotted seal plush dolls for distribution at outreach and education activities
	Report of 4 CCAfas on Spotted Seal Science activity, photos, news articles, etc.
Sub Total	11

Reports to be delivered by 31 December 2019



Implementing Partner	Output/ Deliverable
Sub-Cont_ShandongMarine	Proposals for regulatory and financial policies to incentivise investment by private
Sub-Cont_Nanjing	Assessment report of sample households one year after joining the fishing boat buy-back schem and implementation of the demonstration sites
Sub-Cont_BBMovie	Video 1: Partnership
	Video 2: Recovery of Fish Stock
	Video 4: Marine litter
	Video 5: Ocean Governance
	Video 6: MPA and MPA Network
Total	7

Reports to be delivered by March

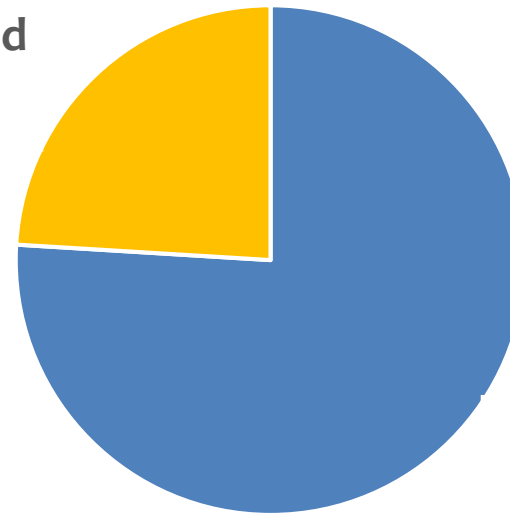
2020



Implementing Partner	Output/ Deliverable
GSA_GEI	CCCA implementation report including operation report of the community fund and lessons learnt, community training summary and achievements
PCA_YSFRI	Draft regional guidelines for incorporating Code of Conduct for Responsible Fisheries in YSLME context
	Joint assessment report of the effectiveness of buy-back scheme
	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
	Full re-employment training report
PCA_FIO	Draft regional strategy for adaptive management
	Report on the migratory route of spotted seals based on satellite tracking in the Yellow Sea; ;
	Report on the assessment of genetic diversity, population structure and effective population size based on environmental DNA of spotted seals in the Yellow Sea
PCA_NCSEMC	Interim review report on implementation of the project on Demonstration zone of Integrated Ecosystem-based Investigation on Wetland of Jiaozhou Bay of Qingdao
	Final report on the status of the wetland ecosystem of Jiaozhou Bay
	Atlas of the integrated investigation on wetland of Jiaozhou bay
	Suggestion and countermeasures for the protection of the ecosystem of Jiaozhou Bay
	Establishment of the integrated ecosystem-based monitoring system of Jiaozhou Bay: discussion on the mode of public participation
Total	13

Delivery Status of 4th Quarter of 2019 as of November 27, 2019

Uncommitted
11%

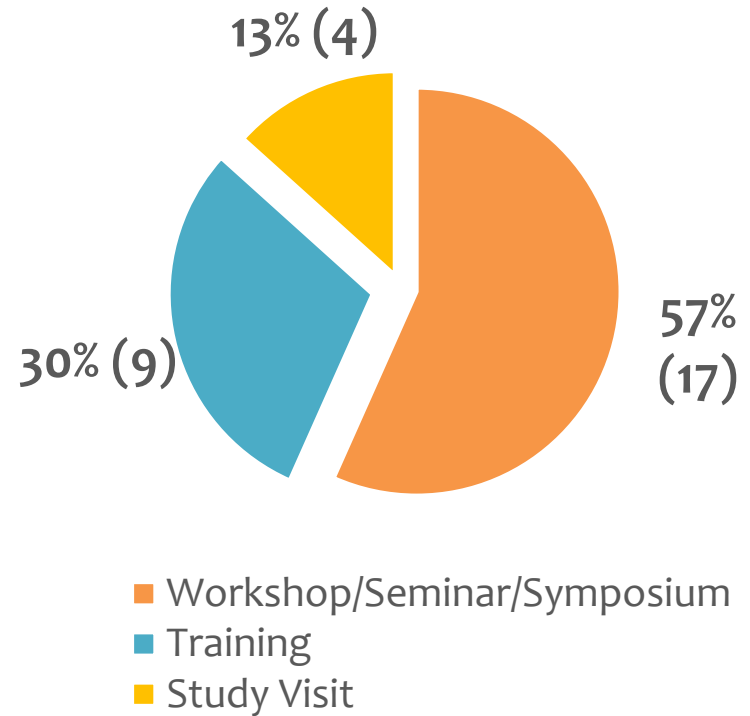


Expenditure
89%

Description	Amount
Total planned budget in Q4 of 2019	\$ 1,595,729
Uncommitted	\$ 164,303.4
Expenditure	\$ 1,431,425.6

969 persons (male: 76%; female: 24%) attended YSLME trainings, workshops and study visits

EVENT	NO
Governance	1
Habitat/MPA	5
IMTA	4
Fish Stock/Responsible Fishing/Marine Ranching	5
Marine Monitoring/Micro Plastic/Mariculture	6
Ecosystem Monitoring/Jelly Fish/YSCWM	4
Training targeted for community and fishermen	5
Total	30



29 Collaborating partners in scientific exchanges, capacity building and information sharing (07/2017 - 11/2019)



NEAMPAN/UNESCAP	Fuhan Ocean Science and Technology Co. Ltd/PRC
NOWPAP	China Aquatic Products Processing and Marketing Alliance (CAPPMA)
EAAFP	IGSNRR/PRC
IUCN	BROCA/PRC
Asian Institute of Technology (AIT)	Qingdao Marine Conservation Society
CKJORC	KOEM/ROK
YSFRI/PRC	NIFS/ROK
FIO/PRC	KIOST/ROK
NMEMC/PRC	FIRA/ROK
IOCAS/PRC	MABIK/ROK
Ocean University/PRC	Anyang University/ROK
NCSEMC/PRC	OSEAN/ROK
GEI/PRC	Ganghwa County/ROK
RENDU/PRC	Center for Global Climate and Marine Governance of Korea University
Yantai University (PRC)	

4 ICCs and 11 RWGs organized (07/2017 – 11/2019)



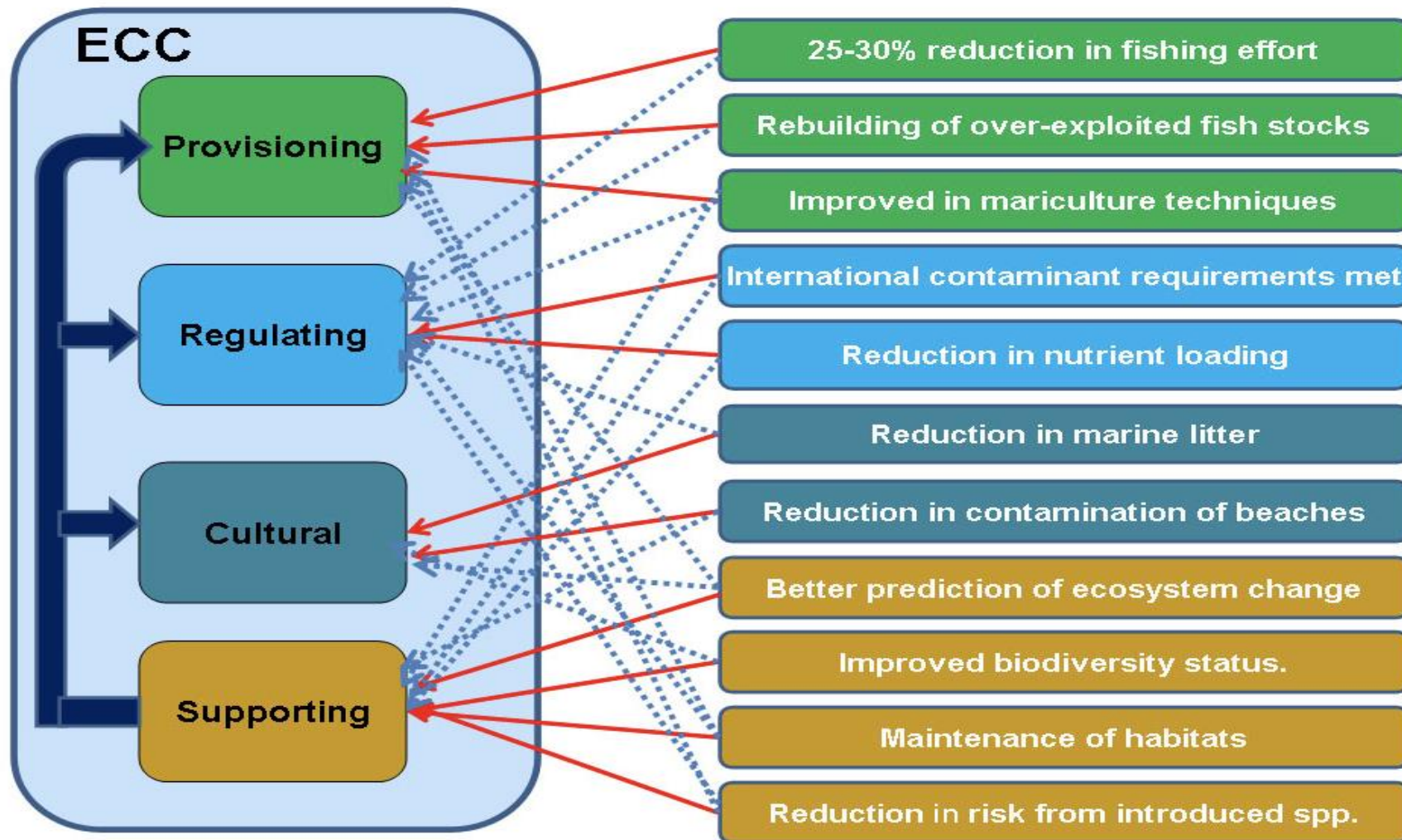
Year	Dates	Events	No. of Participants		
			Male	Female	Total
2017	13-July	MSTP/ICC-1	30	18	48
	4-5 September	RWG-H Meeting in Incheon, ROK	8	5	13
	10-12 October	RWG-P Meeting in Dalian, PRC	15	4	19
	17-18 October	RWG-F Meeting in Yantai, PRC	14	7	21
	26-27 October	RWG-M Meeting in Weihai, PRC	10	4	14
	21-22 November	RWG-A in Incheon ROC	11	3	14
	14-15 December	RWG-G Meeting in Seoul, ROK	9	9	18
2018	27-29 March	MSTP/ICC-2 in Dalian PRC	26	17	43
	27-June	RWG-A in Kunming PRC	18	7	25
	11-October	RWG-F Meeting in Jeju, ROK	18	6	24
	8-9 November	RWG-M Meeting in Jeju, ROK	15	7	22
2019	12-14 March	MSTP/ICC-3 in Qingdao PRC	29	29	58
	4-5 June	RWG-P Meeting in Busan, ROK	15	5	20
	15-16 July	1st Ad-hoc ICC Meeting	16	10	26
	28-29 December	ICC-4	22	15	37
TOTAL		16	256	146	402
Gender			64%	36%	



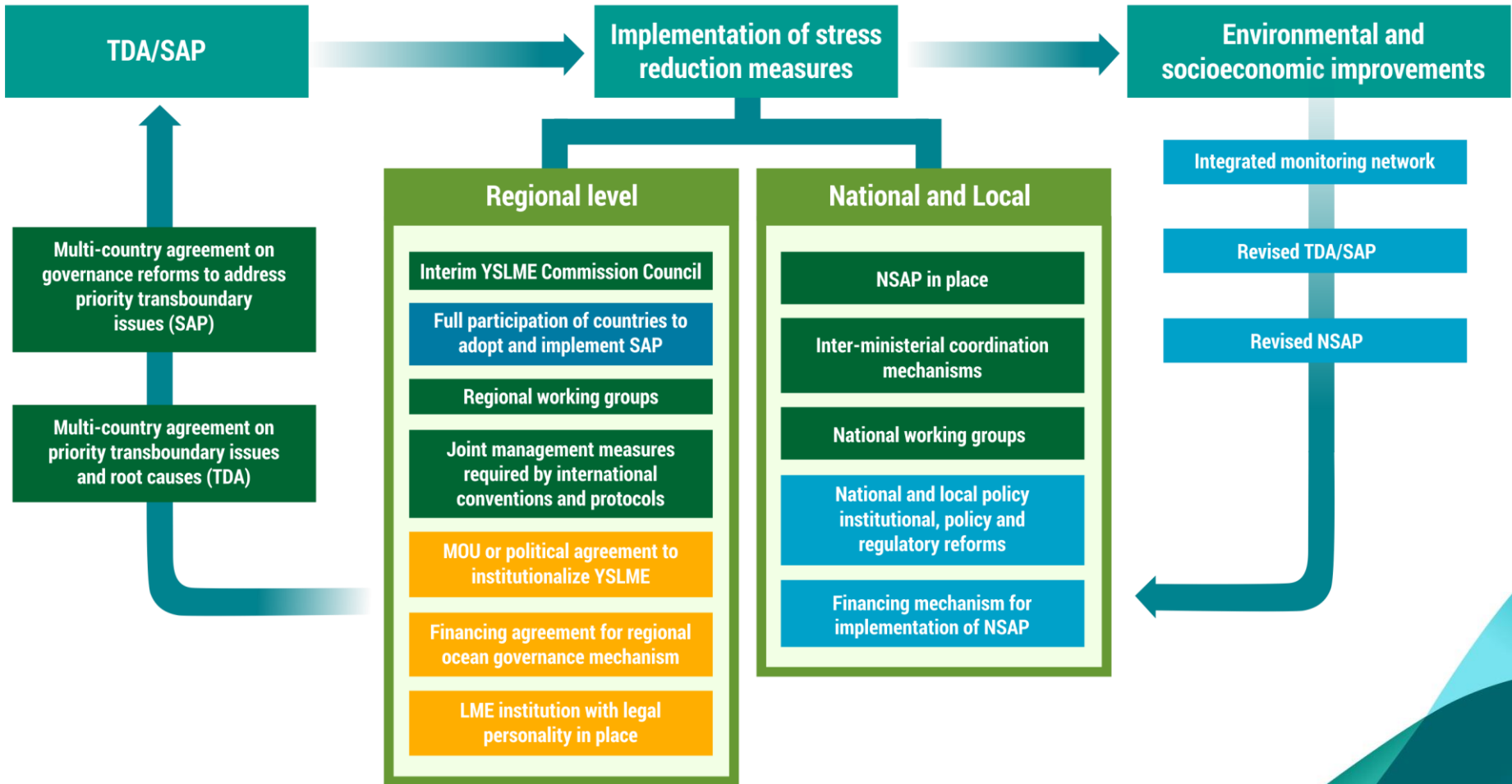
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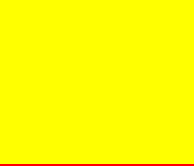
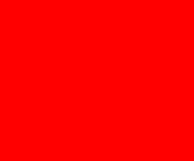
Restoring Ecosystem Carrying Capacity by achieving 11 YSLME SAP Targets



Strategic Planning and Governance Mechanism to Implement and Review the YSLME SAP



Legends

	Targets achieved or project on-track to achieving at closure
	Targets partially achieved, or its achievement is at risk, or unclear
	Targets not achieved or project off-track to achieving at closure

Performance Assessment in Achieving Targets

Component 1				
1.1 governance	1.2 IMCC	1.3 Participation	1.4 compliance	1.5 financing

Component 2		
2.1 Reduced fishing	2.2 restocking	2.3 mariculture

Component 1

- Uncertainty around the Regional Cooperation mechanisms and its financial arrangements, and improved compliance with regional and global ocean-related treaties

Component 2

- Policy recommendations to be adopted; better monitoring and availability of data for reduction in fishing efforts and sustainable mariculture practices

Performance Assessment in Achieving Targets



Component 3

3.1 N discharge	3.2 Wetland	3.3 Regulation	3.4 ML reduction
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Component 4

4.1 habitat	4.2 MPA network	4.3 Resilience	4.4 monitoring
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Component 3

- Policy recommendations to be adopted; better monitoring and availability of data for pollution discharge from land-based sources and marine litter; improving regulatory framework

Component 4

- Increased focus on improving MPA network target – YSCWM,
- Limited efforts on impact assessment of climate change and application of ecosystem-based community management
- Yet to agree on monitoring of Jelly fish, HAB and ecosystem and adoption for implementation

Indicator 1: Status of YSLME Commission and subsidiary bodies at regional level

1.1 governance

End of project targets:

1. All the Terms of Reference for the YSLME Commission and Subsidiary Bodies approved by all participating country Governments
2. Functioning YSLME Commission

Means of verification: 1) ICC meeting documents and summary reports; 2) MOU; 3) IMCC meeting minutes; 4) interview with focal point

Status:

1. Terms of reference of the ICC and its Subsidiary Bodies, Rules of Procedures for the ICC, TORs of the six Regional Working Groups (RWGs) and Secretariat Staff available;
2. 5 ICC meetings and 11 RWG meetings held in line with rules of procedures;
3. Legal documents for establishing the YSLME governance mechanism available;
4. Draft TDA prepared and consensus on the need for an updated SAP 2020-2030

Indicator 1: Status of YSLME Commission and subsidiary bodies at regional level

1.1 governance

Gaps, risks and issues:

- 1. Uncertainty in continued engagement of stakeholders and SAP implementation with ecosystem-based approach.**
- 2. Failure to achieve project targets without revising “establishing YSLME Commission” in the results framework.**

Indicator 1: Status of YSLME Commission and subsidiary bodies at regional level

1.1 governance

Activities planned in Q4 and 2020:

- 1. TDA: Finalize the TDA update and adoption by communication (International consultant and two countries)**
- 2. SAP:**
 - National consultations on SAP management actions; (self-funded)
 - Regional meeting to review and consolidate into the SAP 2020-2030 (GEF);
- 3. Regional Ocean Governance Mechanism:**
 - Consultation and consensus-building, self-funded, on: 1) the TOR of the decision-making body, scientific support groups and national coordination mechanism; 2) staffing of the Secretariat; 3) financial arrangements for operation and staffing of the Secretariat
 - prepare the MOU and necessary documents (GEF-supported consultant);
- 4. Wrap-up of the Project:**
 - Organize the 5th ICC to sign the MOU and subsidiary documents and endorse the SAP (GEF grant)

Indicator 2: Status of Inter-Ministerial Coordinating Committee (IMCC)

End of project targets:

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 & Fisheries.
2. Two meetings of IMCC every year and functioning coordination

Means of verification: 1) Review of documents of ICC and summary reports; 2) IMCC document and meeting minutes; 3) interview with focal points

Status:

1. IMCCs are established in both countries and operational;
2. inter-ministerial coordination committee, expert committee, and membership of the NWGs and National Coordinator adjusted in PR China after institutional restructuring

Indicator 2: Status of Inter-Ministerial Coordinating Committee (IMCC)

End of project targets:

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 & Fisheries.
2. Two meetings of IMCC every year and functioning coordination

Gaps, risks and issues:

1. The future of the IMCC under the new governance mechanism remains to be clarified.

Activities planned in Q4 and 2020:

1. Review and adopt the updated TDA, SAP 2020-2030 and regional governance mechanism

Indicator 3: Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities

End of project targets: 1) Number of partnerships: 40; Number of capacity building activities: 25; Number of public awareness initiatives: 15; Number of participants in capacity building activities: about 200

Means of verification: 1) Partner website news report check and verification; 2) Document review; 3) Follow-up survey of trainees; 4) Partner feedback report

Status:

1. 30 workshops, symposium, seminar and events, training and study visits organized
2. Nearly **1,000 persons** participated in YSLME events, and over **200 persons** attended trainings;
3. **24 percent** female participants
4. **#** of website reports, partner reports, videos showcasing YSLME activities and increasing education and awareness of YS challenges and roles of various stakeholders to reserve the situation

Indicator 3: Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities

1.3 Participation

Communication efforts

- Reached out to the IW and LME 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, Philippines.



Indicator 3: Number of the YS Partnerships; Number of activities on capacity building and public awareness; Number of participants in capacity building activities

End of project targets: 1) Number of partnerships: 40; Number of capacity building activities: 25; Number of public awareness initiatives: 15; Number of participants in capacity building activities: about 200

Gaps, risks and issues:

1. The partnership become YSLME's responsibility and strategy for SAP implementation,
2. Partner activities are well coordinated to avoid overlapping and are regularly updated of YSLME progress of activities.

Activities planned in Q4 and 2020:

1. 7 videos in Chinese, English and Korean ready for review and use;
2. Produce a brochure of YSLME SAP contribution to SDG14

Indicator 4: Status of recognition and compliance to regional and international treaties and agreements

1.4 compliance

End of project targets: 1) 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, FAO Code of Conduct for Responsible Fisheries, and the bilateral agreements between China & ROK on environment protection and fisheries

Means of verification: 1) Compliance review reports; 2) ICC meeting documents and reports, and convention implementation reports; 3) legal recommendations submitted to relevant authorities; 4) news report on progress of legislative and regulatory measures

Indicator 4: Status of recognition and compliance to regional and international treaties and agreements

1.4 compliance

Status:

- 1. Responsible fisheries certification for capture fisheries in PR China developed (PCA-YSFRI);**
- 2. Compliance of international treaties by PR China and capacity development needs identified (Legal Expert);**
- 3. Proposal submitted for integration in SAP contributing to synergizing the implementation of international conventions on marine protection and sustainable uses of marine resources**
- 4. Progress of PR China in implementation of CBD and RAMSAR reviewed and recommendations for integration of CBD and RAMSAR targets into YSLME targets made**
- 5. Criteria and regulation for assessment of performance of conservation areas for aquatic genetic resources developed (Chinese Academy of Fisheries Sciences)**

Indicator 4: Status of recognition and compliance to regional and international treaties and agreements

1.4 compliance

Gaps, risks and issues:

- Results of the review and assessment are yet to be developed into policy and legal recommendation for consideration by relevant authorities and integration into YSLME SAP 2020-2030
- Efforts should be made to initiate discussion with MARA/NFGA leading to the adoption of the responsible fisheries certification and the criteria and regulation for assessment of performance of conservation areas for aquatic genetic resources in PR China.

Activities planned in Q4 and 2020:

- Develop the regional guidelines for Code of Conduct for responsible fisheries (YSFRI)
- Organize consultation meetings with MARA/NGFA on the adoption of
 - responsible fisheries certification in capture fisheries in PR China;
 - the criteria, regulation for assessment of performance of conservation areas for aquatic genetic resources
 - Integration targets for implementation of CBD and RAMSAR into SAP targets in PR China.
- Initiate discussion and integration of proposed actions to synergize ocean-related MEA implementation into the SAP 2020-2030

Indicator 5: Agreement on the financial arrangement for the YSLME Commission

1.5 financing

End of project targets: 1) Financing agreement between and among countries agreed to fully support YSLME for at least 5 years.

Means of verification: 1) financial arrangement for YSLME coordination mechanism with respect to operation and staffing in the MOU or political declaration; 2) Interview with YSLME national focal points; 3) Summary reports of ICCs

Status:

- The proposed trust fund was rejected by the countries for not being contextualized to the YSLME.
- Bilateral consultation on financial mechanism initiated in July 2019 between PR China and RO Korea

Indicator 5: Agreement on the financial arrangement for the YSLME Commission

1.5 financing

Assumptions, risks and issues:

- The budgeting cycles of both countries allow timely earmarking of fund for operation of YSLME mechanism immediately after project closure.
- Secretariat staffing is agreed in advance, allowing timely budgeting for staffing

Activities planned in Q4 and 2020:

- One regional meeting scheduled in 2020 for discussion of regional ocean governance mechanism including governance mechanism
- Two interns are budgeted for PMO China branch under dual supervision of PM and Chair of NWG Governance in PR China for continued contracting in post-YSLME Project phase

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

End of project targets: 1) In line with the 2020 target of 30%, reduction of fishing boat numbers by 10%, or 18,797 by 2020 in PR China (Liaoning: 6,177; Shandong: 8,976; and Jiangsu: 3,644) and # by 2020 in RO Korea

Means of verification:

- 1) project assessment reports;
- 2) government fisheries statistics

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters**Status:**

- A total of 2,916 **fishing vessels** to be reduced from the baseline level of 21,713 (Liaoning: 7,084; Shandong: 10,355; and Jiangsu: 4,274) in 2015 to 18,797 by 2020 in PR China (Liaoning: 6,177; Shandong: 8,976; and Jiangsu: 3,644) (YSLME SAP review report, PR China)
- 12,561 fishing vessels have been reduced from 2004 to 2016, representing 24% reduction (Source: Statistics Korea, Fisheries Production)
- From 2017 on, Yellow Sea is **closed** to fishing for 135 days (May 1 to September 16) (news report, PR China).
- The 2,916 fishing vessels reduction in YS provinces will led to reduction of **323,000 kW** in fishing capacity implementation of buy-back scheme (YSLME SAP review report, PR China).
- In 2018, decrease of **annual total allowable catch** from 13 million tons to 10 million tons from inshore and offshore capture fisheries in PR China, or 23 percent reduction shall be achieved (summary report of 2nd meeting of RWG-F).
- From 1986 to 2017, capture fishery in RO Korea in YS decreased by 58% (Source: Statistics Korea, Fisheries Production)

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Status

- 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. Blue Crab and Small Yellow Croaker are piloted for stock assessment following a training in May, 2018
- Three employment **trainings** to 150 fishermen joining fishing vessel buy-back scheme to be delivered by November 29, 2019

Local newspaper report of project-supported fishermen training



Notification of participating in fishing vessel buy-back scheme in a local newspaper in Dalian, PR China



Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

2.1 Reduced fishing

Status

- Sales and catch size control in both countries
- Fishing gear control

5月8日—8月1日，禁止销售以下8种海洋捕捞冰鲜或者活体水产品。



全年禁止销售小于最小可捕过渡性规格的重点保护品种。(2020年12月31日废止)

大黄鱼：体重125克



小黄鱼：体重30克



带鱼：体重60克



银鲳：体重60克



鲐鱼(青占鱼)：体重65克



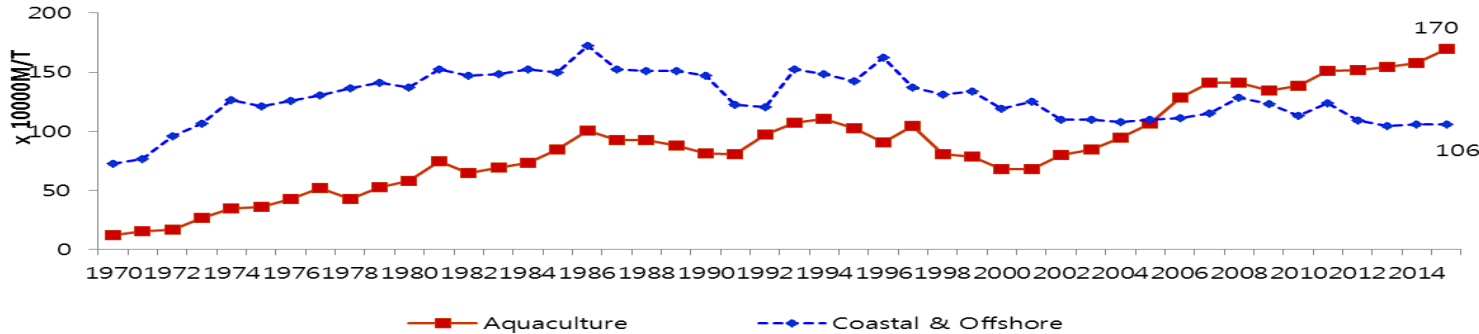
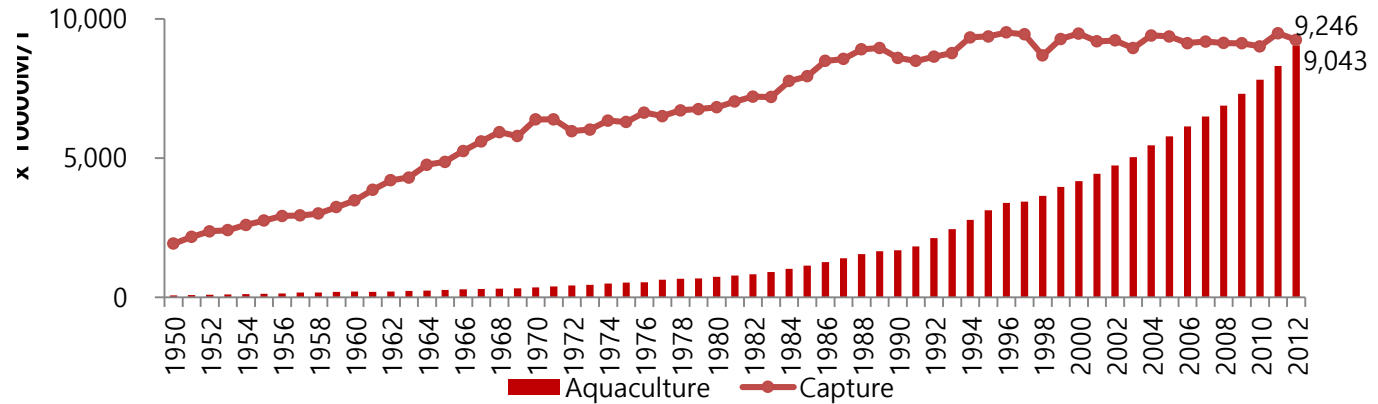
梭子蟹：体重70克



Status: effectiveness of closure, buy-back scheme and license system assessed

2.1
Reduced fishing

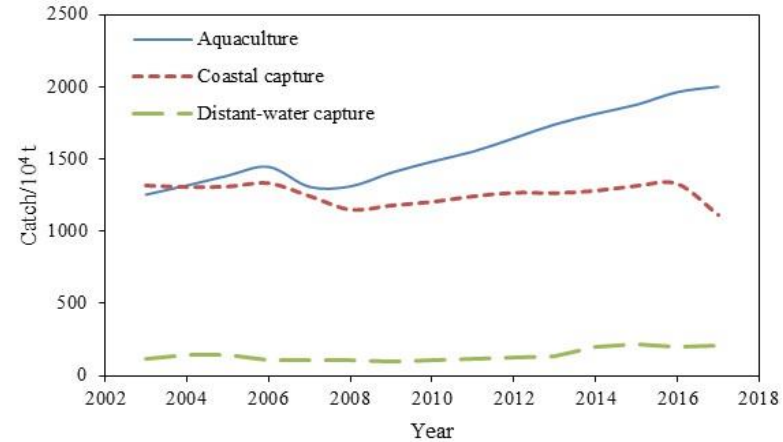
World (FAO)



RO Korea, Choi

Coastal capture fisheries is declining in both PRC and ROK in its coastal waters, demand increasingly met by aquaculture

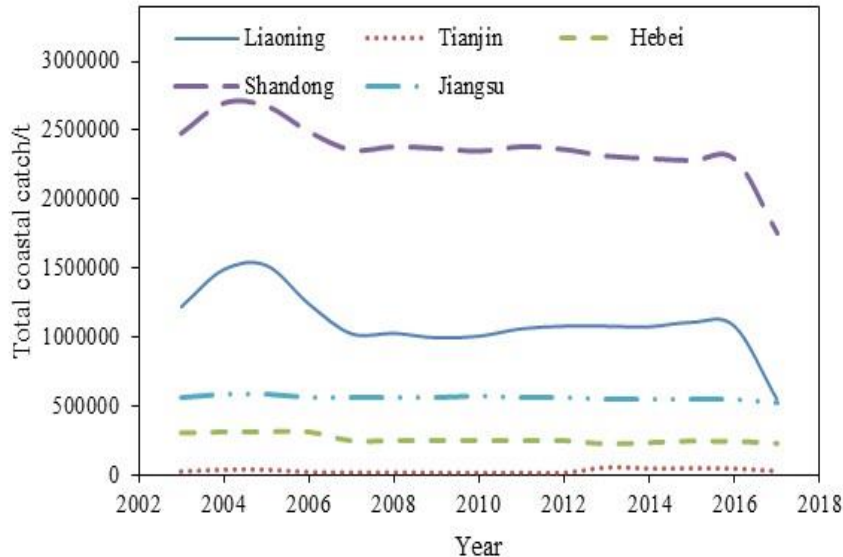
YSLME, 2019



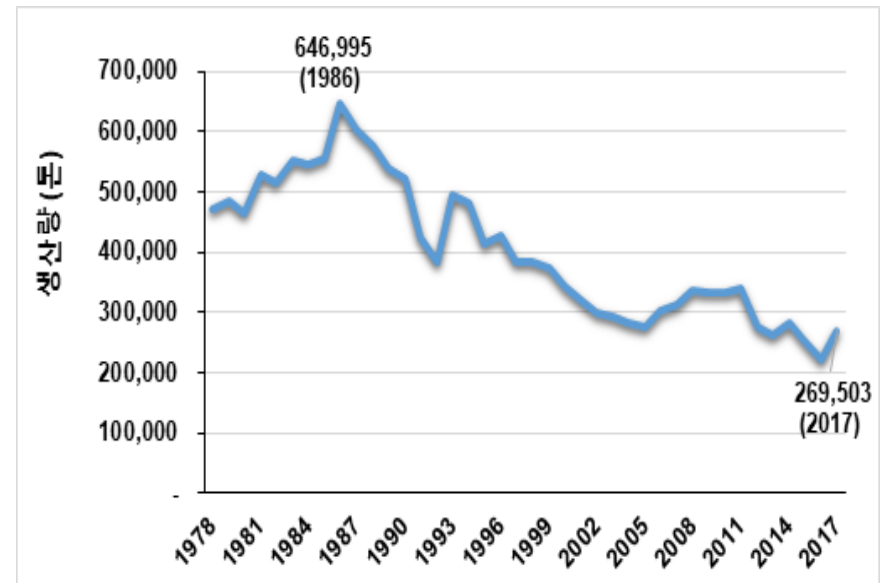
Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Status

- UNDP/GEF YSLME Project studies and research by RO Korean experts show that coastal **capture production** had declining tendency in 5 coastal provinces of YS in PR China from 2003 to 2017 and in YS in RO Korea from 1978-2017.



YSLME, 2019

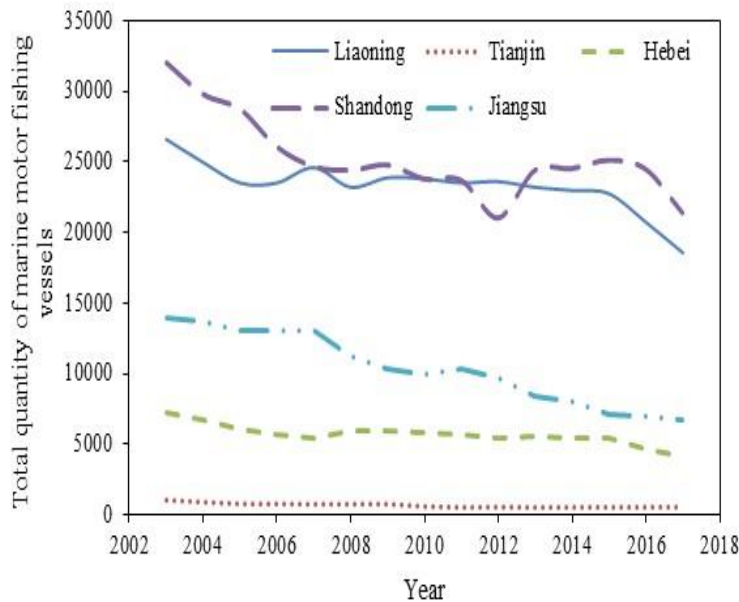


Dohoon Kim, 2019

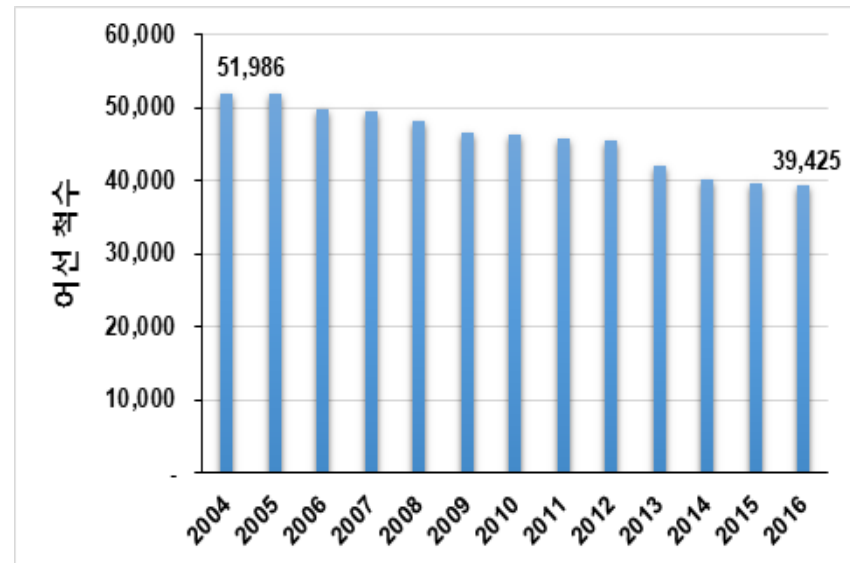
Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Status

- The total number of marine motor **fishing vessels** in each YS coastal province has a declining tendency in both China and RO Korea. In RO Korea, The number of fishing vessels operating in the coastal and offshore waters in the YS decreased from 51,986 in 2004 to 39,425 in 2016, a reduction of 12,000 during the 12-year period, falling down to about 75% of the 2004 level.



YSLME, 2019

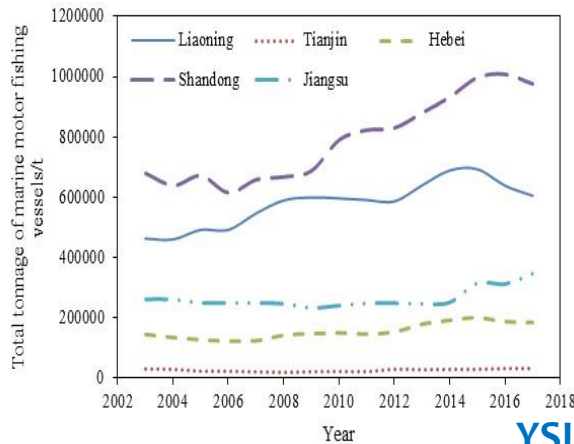


Dohoon Kim, 2019

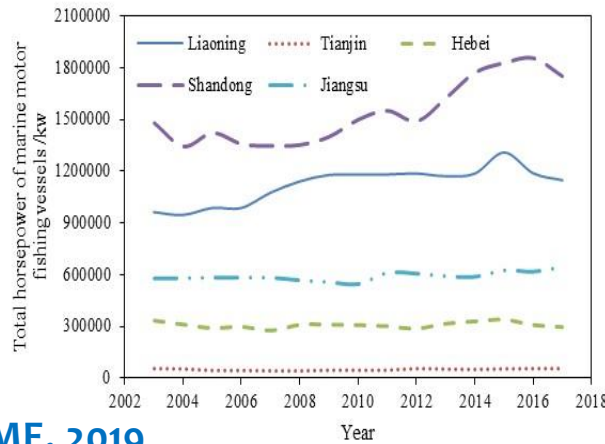
Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Status

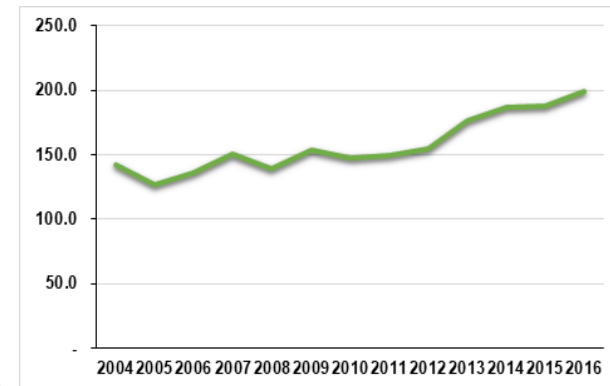
- The total **tonnage** of marine motor fishing vessels has an increasing tendency for each province in PR China
- The total **horsepower** of marine motor fishing vessels increased in Liaoning and Shandong. In RO Korea, horsepower per vessel in 2016 is about 40% higher than that in 2004.



YSLME, 2019



Dohoon Kim, 2019

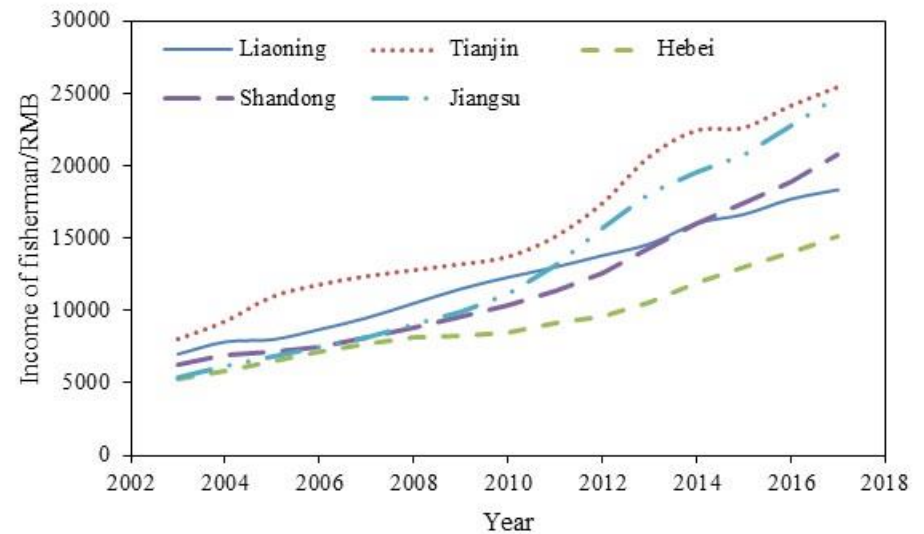
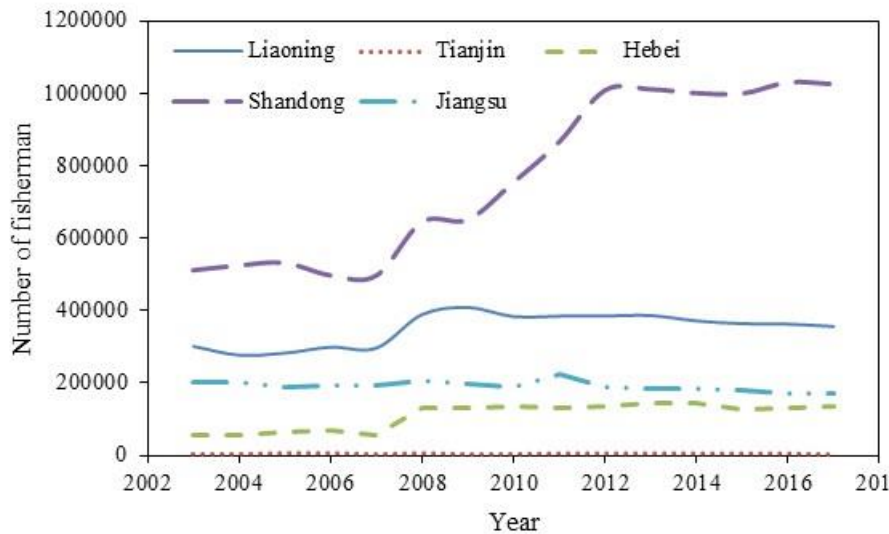


- **Fishing vessel buy-back scheme has to address quantity, tonnage and horsepower at the same time for fishery resources in the Yellow Sea to be utilized reasonably and sustainably.**

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Status

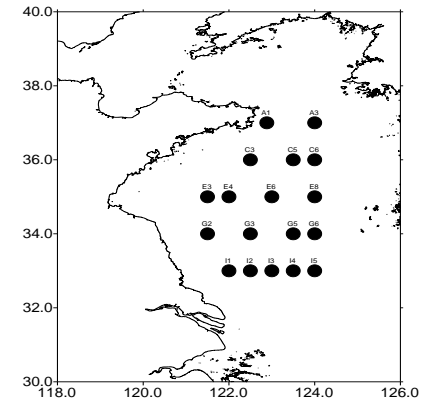
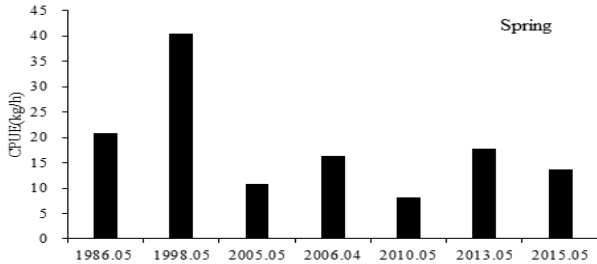
- Fishery sector **employment** is increasing sharply in Shandong between 2007 and 2012
- **Income** of fisherman has increased gradually for all provinces



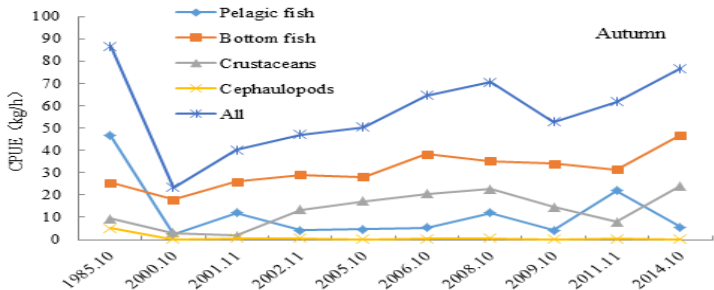
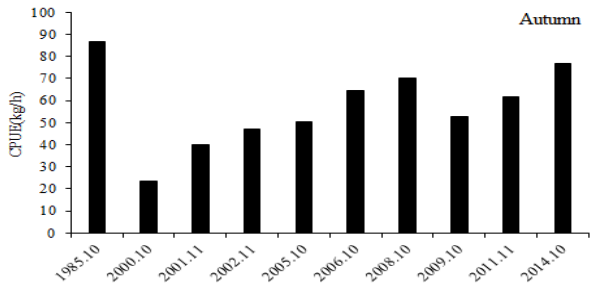
YSLME, 2019

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

2.1 Reduced fishing



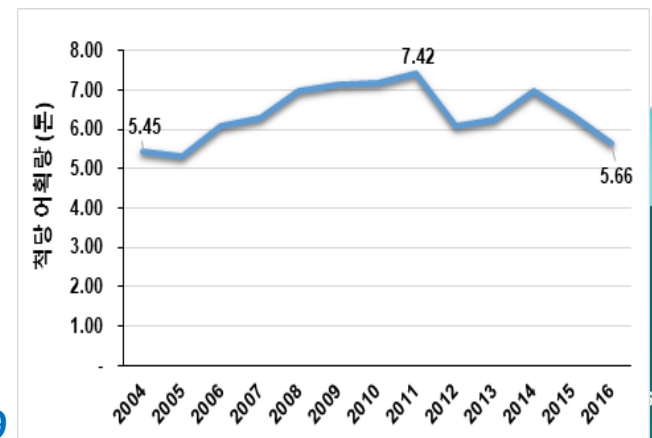
(Survey data by R/V BeiDou of YSFRI)



YSFYI, 2019

The total biomass of fishery species fluctuated in last 30 years; trophic level remains stable

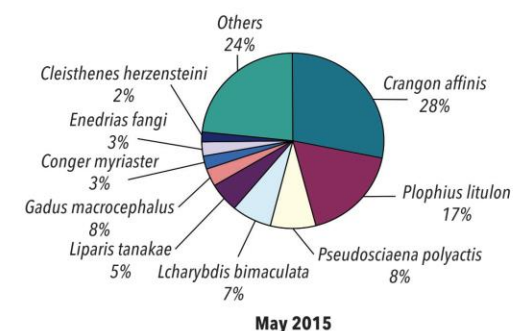
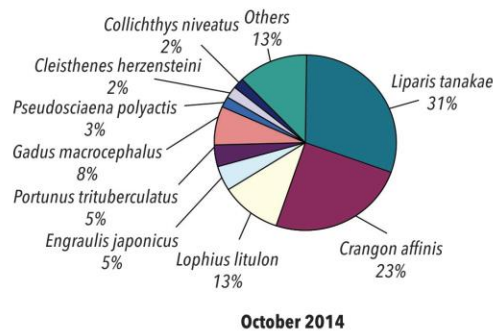
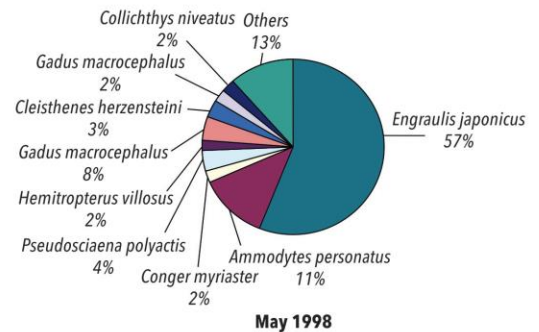
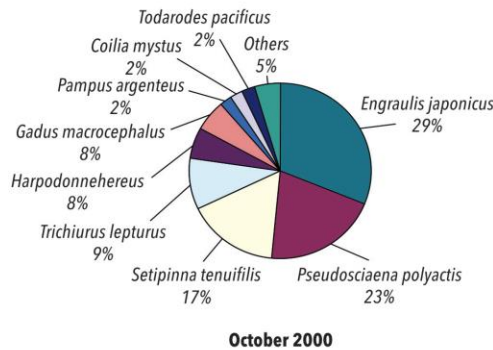
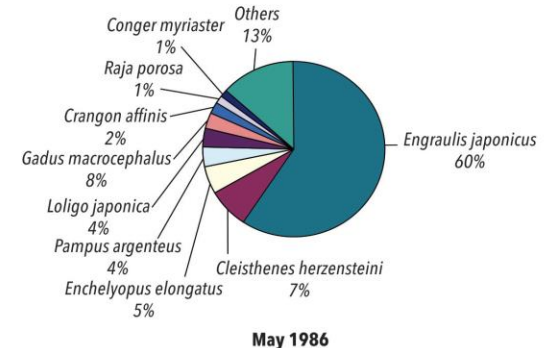
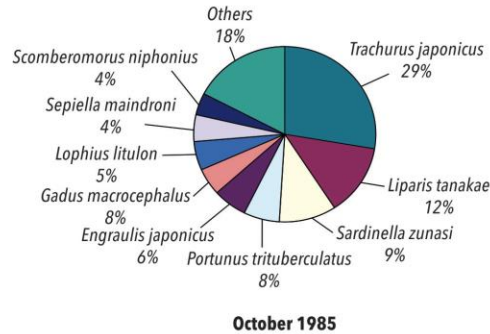
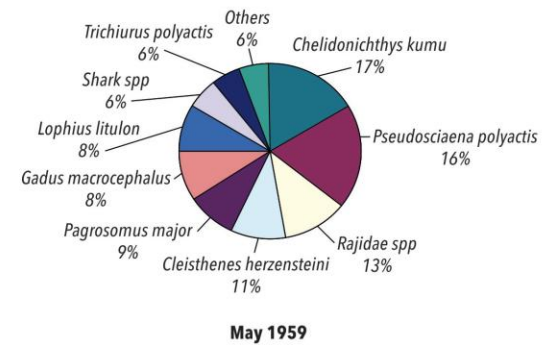
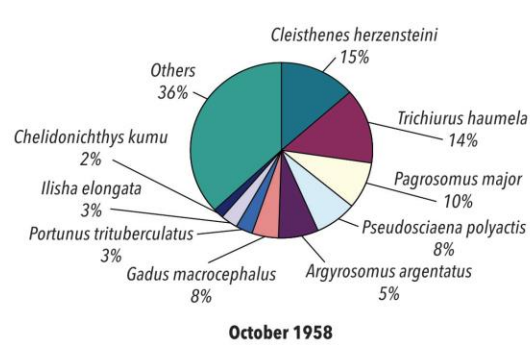
Dohoon Kim, 2019



Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Species shift in dominance:

- From demersal, high value species to pelagic, low valued species during 1958-1959 to 1998-2000
- From pelagic, low valued species to demersal, low-valued species during 1998-2000 to 2015-2015.



Qiang Wu, YP Ying & QS Tang.
2018

Indicator 6: number of fishing boats decommissioned from the fleet in YSLME waters

Recommendations (YSFYI):

- 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;
- Conduct comprehensive surveys and stock assessment of fishery resources to serve scientific management and decision-making for fishery

Activities planned in Q4 and 2020:

- Training of 150 displaced fishermen on alternate employment and assurance of employment rate of 90% as agreed; (Yantai University)
- Consolidate a synthesis report on effectiveness of application of ecosystem-based management measures of closure, buyback scheme, license system, social safeguards based on the report submitted by PCA and contribution from ROK
- Organize consultation meetings with MARA on the adoption of management recommendations of the license system in PR China in future fishery policy making

Indicator 7: Status of major commercially important fish stock from restocking and habitat improvement

End of project targets: Measurable improvement (5%) in standing stock and catch per unit effort; and 2) Future management decisions on restocking based on effectiveness

Means of verification:

- 1) Project demonstration reports;
- 2) Field visit report;

Status:

1. Studies in selected locations in China indicate an increase of CPUE by 2.8-3.5 times and high cost-benefit from investment in RO Korea.
2. Two exchange visits for marine experts and officials organized with project support for cross-site learning and improvements in 2019
3. Korea-China Workshop on Stock Assessment in Tongyeong, RO Korea on 30-31 July 2018
4. 64 national marine ranches are piloted and supported by MARA in 2017 and 36 marine ranches are supported by MOF in RO Korea

2.2 Restocking

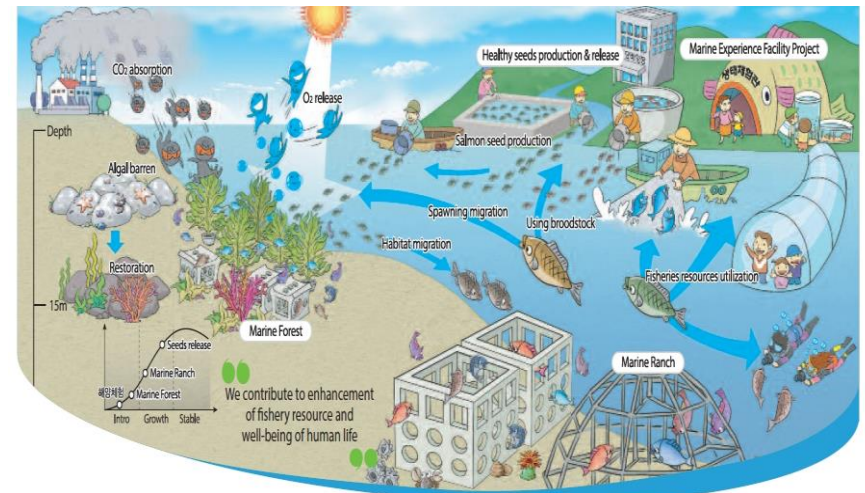
Indicator 7: Status of major commercially important fish stock from restocking and habitat improvement

Enhance fish stocks through re-stocking and habitat improvement



- ✓ Leisure sea fishing
- ✓ Yacht sea sightseeing
- ✓ Fishing experiencing
- ✓ Sea wedding photography
- ✓ Island fishermen experiencing
- ✓ Fish-fry releasing public service activities

KEY MAP of Fisheries Resources Enhancement Projects



Indicator 7: Status of major commercially important fish stock from restocking and habitat improvement

Gaps, risks and issues:

- Impact of marine ranching operations need to be assessed

Activities planned in Q4 and 2020:

- transform these studies and recommendations into knowledge products for awareness raising and consideration by the MARA in its future planning and investment for fish stock enhancement

Indicator 8: Type of mariculture production technology; Level of pollutant discharge from mariculture operations

End of project targets: 1) Reduction of contaminants caused by mariculture production (5% reduction in the demo sites); 2) Measurable increase (5% increase in the demo sites) in mariculture production per unit area; 3) Discharge of nutrient and other discharges from mariculture installations reduced by 5%

Means of verification: 1) Project demonstration reports; 2) Administrative circular or other documents accepting IMTA replicating recommendation

Status:

1. Demonstrated in Sungo Bay with stocking of kelp and oyster IMTA indicate positive results.
 - yield increased by 14.8 percent
 - labour costs reduced by 10 percent
 - economic benefits increased by 57.85 percent
 - The comprehensive benefit of the IMTA demonstration area increased by 131.1 percent.
 - DO, total inorganic nitrogen concentration, chlorophyll-*a* concentration in the surface, phytoplankton and POM can meet the high standard established in the national sea water quality standards.

Indicator 8: Type of mariculture production technology; Level of pollutant discharge from mariculture operations

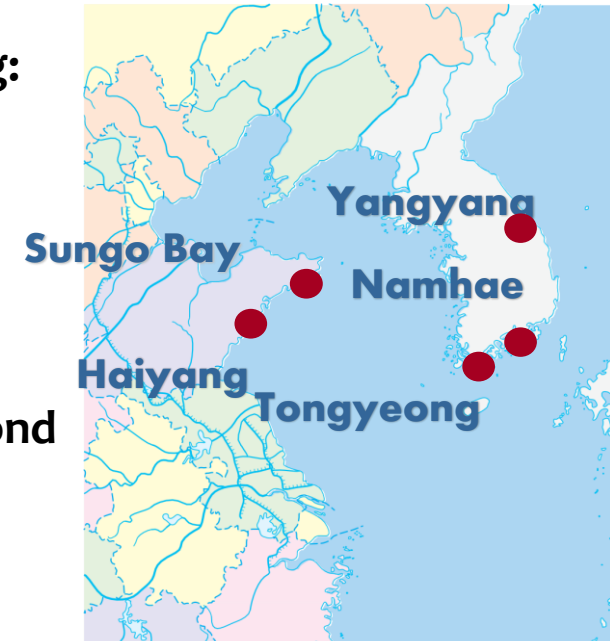
Status:

2. In the land-based pond IMTA demonstration in Haiyang:
 - the nitrogen and phosphorus in the seawater is significantly reduced in the IMTA pond
 - with a total of CNY193,000 net profit in the 1 ha outdoor pond stocked with sea cucumber and scallop
3. Studies by NIFS of ROK on IMTA of Sea Tangle, Gulfweed, Korean Rockfish, Pacific Oyster and Sea Cucumber indicates 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)
4. In the IMTA in Namhae of Korean Rockfish, Sea Cucumber, Pacific Oyster, Undaria and *Saccharina japonoca*, studies found that:
 - 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
 - Sea Cucumber grew >40% faster

Indicator 8: Type of mariculture production technology; Level of pollutant discharge from mariculture operations

Status:

5. In the land-based pond IMTA demonstration in Haiyang:
 - the nitrogen and phosphorus in the seawater is significantly reduced in the IMTA pond
 - with a total of CNY193,000 net profit in the 1 ha outdoor pond stocked with sea cucumber and scallop.
6. Scaling up IMTA in coastal areas of Shandong and beyond through preparation of training modules and training center in Chudao, 3 training, study on areas suitable to operate IMTA, and preparation of promotion plan.
7. Support to establish responsible mariculture initiative joined by 31 mariculture enterprises, retailers and distributors through partnership with CAPPMA.
8. Adoption of IMTA was recommended to all fishery enterprises in Rongcheng
9. IMTA GAP is developed



Indicator 8: Type of mariculture production technology; Level of pollutant discharge from mariculture operations

Gaps, risks and issues:

- absence or inadequate enforcement of water quality standards in sea areas used for mariculture provide leeway for non-compliance and unwillingness to accept IMTA

Activities planned in Q4 and 2020:

- Twinning exchange with Caribbean Regional Fishery Mechanism in December 2019 and February 2020
- Consultation with MARA on IMTA GAP;
- Consultation with Shandong Fishery Bureau on IMTA promotion planning

Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

End of project targets: 10% reductions in N discharges every 5 years

Means of verification: 1) trends of pollutant discharge in tributaries of Haizhou Bay from marine environment quality bulletin; 2) marine environmental quality bulletins

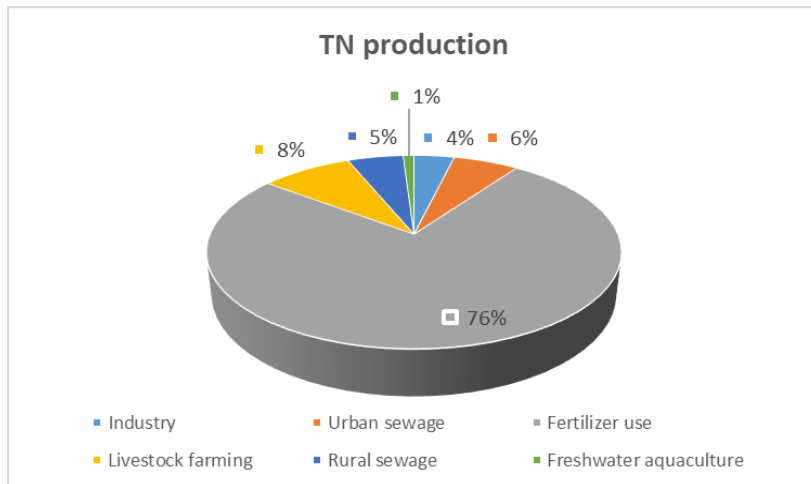
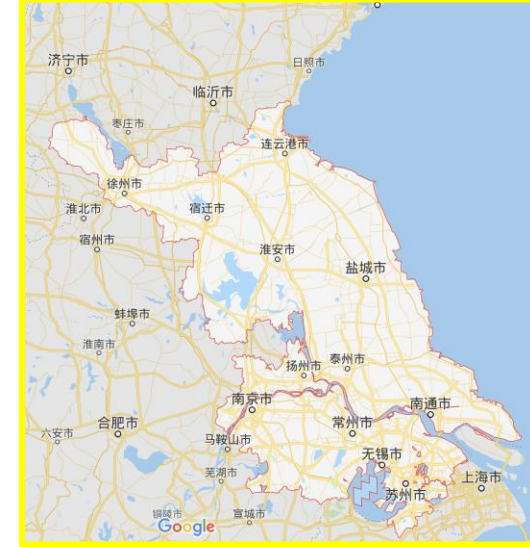
Status:

1. In 2016, the highest polluted areas were reduced by 14,000 square meters compared with 2012. The main pollutants of the seawater in the Yellow Sea were inorganic nitrogen, active phosphate and oil.
2. Final loading report of Haizhou Bay of Jiangsu Province suggested nutrient and phosphate reduction targets for 23 watersheds emptying into Haizhou Bay
3. marine environment monitoring from sources of atmosphere, fertilizer use and sea submitted
4. regional marine environment monitoring program was proposed

Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

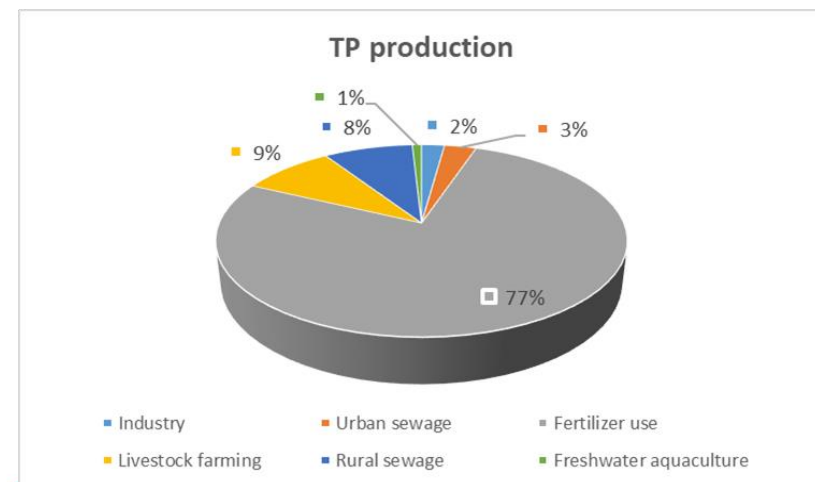
Watershed modelling and nutrient loadings in Haizhou Bay of Jiangsu Province, PR China

Watershed area: 820 km²; No of rivers: 19



TN production in Lianyungang city was about 118,156 tons/year, fertilizer use was the major source for production of TN, accounting for 76%.

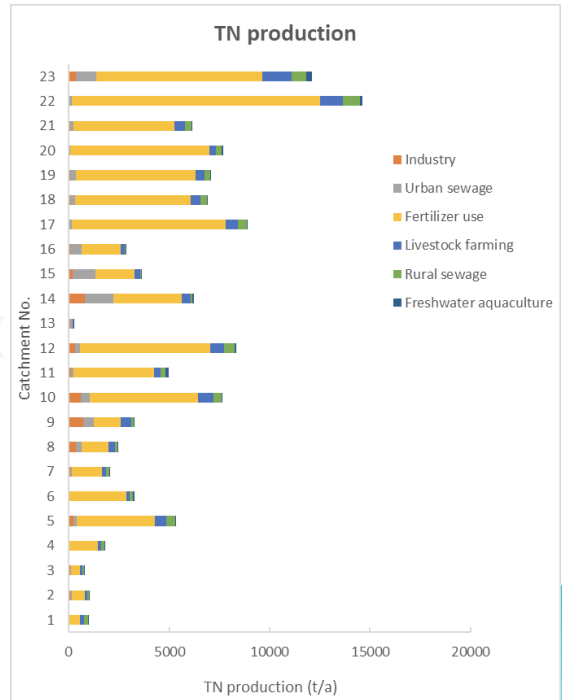
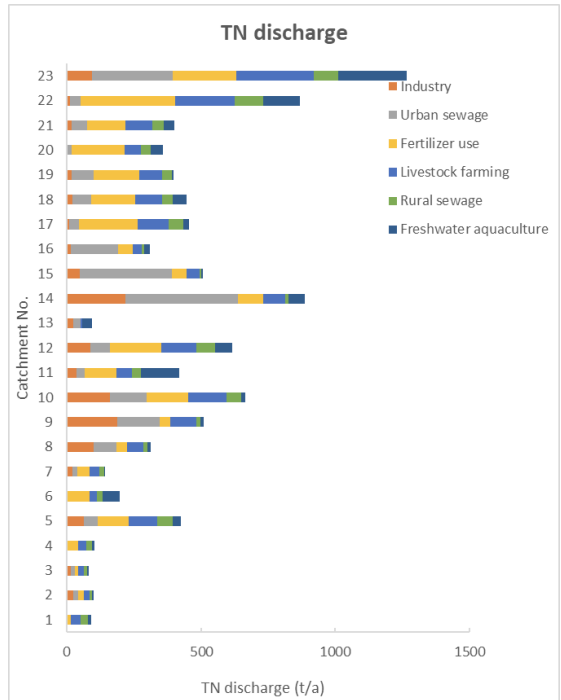
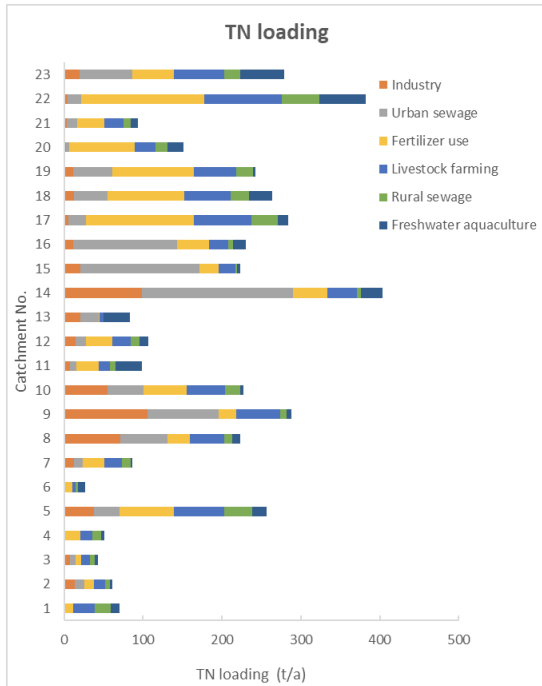
magnitude of TP production in Lianyungang city was about 20,842 tons/year, the fertilizer use was also the major source for production of TP, accounting for 77%



Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

3.1 N Discharge

TN and TP production, discharge and loading in each catchment cell were also studied



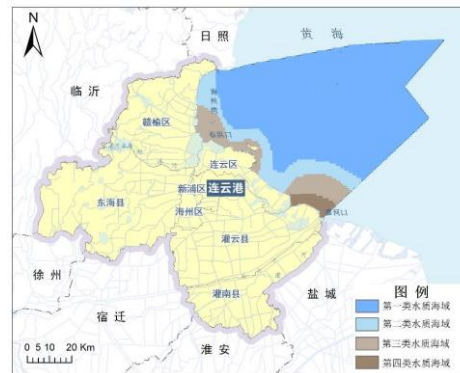
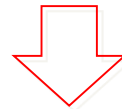
Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

Allocation of Allowable Loads of TN

No	River	Discharge/T	Allowable Load/T	Discharge Reduction/T
1	绣针河	551	232	319
2	柘汪河	60	22	38
3	石桥河	42	15	27
4	韩口河	52	24	28
5	龙王河	176	132	44
6	官庄河	110	83	27
7	兴庄河	103	22	81
8	沙汪河	252	211	41
9	青口河	296	34	262
10	朱稽河	227	26	201
11	大浦临洪河	3602	1673	1929
12	排淡河	357	46	311
13	烧香河	685	262	423
14	善后河	2045	1057	988
15	车轴河	209	108	101
16	烧香支河	130	67	63
17	新沂河	1151	1007	144
18	五灌河	1634	1429	205
19	灌河	10410	9108	1302



Seawater Quality Baseline



Seawater Quality Targets



Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

3.1 N Discharge

Research findings

- Linhong river was the major nutrient pollutant source to Haizhou Bay.
- The nutrient load to Haizhou Bay mainly from the production in Lianyungang city itself, account for 66% and 50% for TN and TP respectively.
- The agricultural sources were the dominated sources to Haizhou Bay
- Although the fertilizer use, livestock farming, urban sewage had the same contribution on TN and TP loading, the potential loading from the fertilizer use might be underestimated. Large amount of the nutrients reserved in the farmland might discharge into the water body in the wet year or in the flood season, resulting in dramatic increase in nutrient loading

recommendations

- Source reduction. Reducing fertilizer input, improving nutrient utilization efficiency, and implementing water-saving irrigation and runoff control
- Process blocking through ecological ditches, buffer zones, ecological ponds and constructed wetlands.
- Nutrient reuse through the paddy field wetland system.

Indicator 9: Level of pollutant discharges particularly Nitrogen in YSLME tributaries

Gaps, risks and issues:

- targets will be met mostly through national efforts to address land-based pollution.
- For the loading study results to lead to nutrient reduction, there should be strong and effective coordination in translating the results of loading study into fertilizer use reduction targets in upstream areas with regular monitoring at watershed level

Activities planned in Q4 and 2020:

- Consultation with Lianyungang City to ensure government buy-in of the loading study results;
- Consultation between PR China and RO Korea on mutually acceptable YSLME marine environmental monitoring program based on the review of individual consultant

Indicator 10: Types of technologies applied for pollution reduction

End of project targets: Successful demonstration of use of artificial wetlands in pollution control in 1 sites and replicated in about 2 coastal municipalities and local government units

Means of verification: 1) Project implementation reports; 2) ICC meeting documents and summary reports

Status:

- a regional strategy to use wetland as nutrient sinks reviewed the status and changes of coastal wetland in the Yellow Sea in both PR China and RO Korea, and proposed mechanisms of using natural and artificial wetland as nutrient sinks for wastewater treatment.
- monitoring of the coastal wetlands of Jiaozhou Bay completed and report is under preparation. The consultancy has assessed the status of biological and environmental factors of the bay for consideration and integration into the planning for restoring the ecological services of the Bay.
- 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 applied with government co-financing.

Indicator 10: Types of technologies applied for pollution reduction

3.2 Wetland

Gaps, risks and issues:

- The demonstration project started very late due to difficulties in identifying local government to demonstrate the concept of using wetland as nutrient sink. For the monitoring of wetland of Jiaozhou Bay to be meaningful, there needs to be frequent consultation and coordination with Jiaozhou Bay management committee to allow early engagement and government buy-in of the results of the study to ensure integration of the results into future bay-wide environmental planning.

Activities planned in Q4 and 2020:

- Prepare an integrated survey report of the Jiaozhou Bay for consideration by Qingdao Government in Jiaozhou Bay marine environment restoration and improvement investment planning
- Transform the regional strategy into a policy brief to reach out wider audience in the use of nature-based solutions to nutrient reduction through artificial wetland

Indicator 11: Status of legal and regulatory process to control pollution

End of project targets: Develop evaluation tools, in the first year, to assist in harmonizing national and provincial legislation to improve coastal water quality in Shandong, Jiangsu and Liaoning provinces

Means of verification: 1) compliance review report; 2) government circular or regional document integrating policy recommendations into SAP 2020-2030

Status:

- Report on the legal review of PR China and RO Korea regarding marine pollution control and compliance assessment with international ocean-related environmental agreements submitted;
- Training module for microplastics monitoring and conduct of a training to improve the capacity of coastal provinces.
- Workshop organized to facilitate understanding and discussion of regional ocean governance

Indicator 11: Status of legal and regulatory process to control pollution

Gaps, risks and issues:

- The targets are ambitious as harmonization of legislation may take longer time than the project period allows. Opportunities can be explored to embed legal recommendations in marine environmental protection law revision process
- Scaling up the microplastics monitoring methodologies as a provisional monitoring protocols

Activities planned in Q4 and 2020:

- Prepare a policy brief on improving legal framework for pollution reduction including marine litter

Indicator 12: Status of the control of marine litter at selected locations

End of project targets: Regional Guidelines on control of marine litter based on those initiated by NOWPAP produced and adopted for use in the Yellow Sea; Established regional data base in the first year, and significant reduction in the quantities of marine litter at selected beach locations

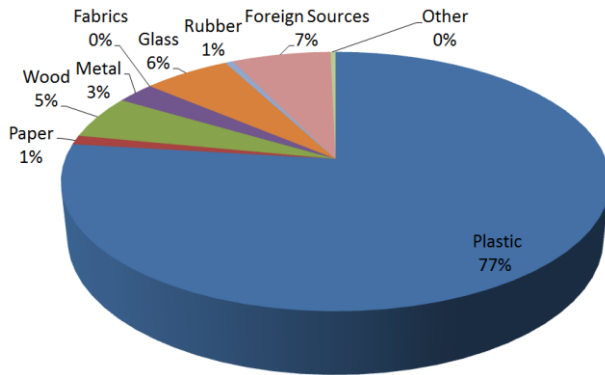
Means of verification: 1) baseline reports and partner reports; 2) Field visit and interviews with stakeholders; 4) annual marine environment monitoring reports

Status:

- Report on the legal review of PR China and RO Korea regarding marine pollution control and compliance assessment with international ocean-related
- Two ongoing GSAs with Shanghai Rendu Ocean NPO Development Center and BlueRibbon Ocean Conservation Association (BROCA) on marine litter monitoring and reduction in fishing village in Weihai City
- Baseline report of the marine litter in YSLME completed
- regulatory measures for marine litter management in Weihai city of PR China under development
- In Chungcheongnamdo of RO Korea, around 9,000 tonnes of marine litter are being collected with a help of financial support of 4.2 million USD.
- Marine microplastics monitoring toolkit prepared and one training organized

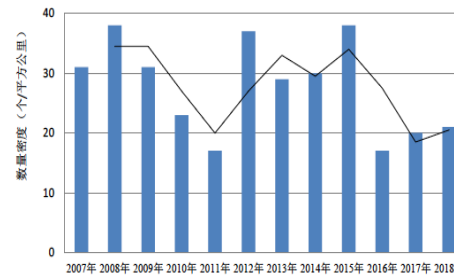
Indicator 12: Status of the control of marine litter at selected locations

ML composition of the Yellow sea area in RO Korea

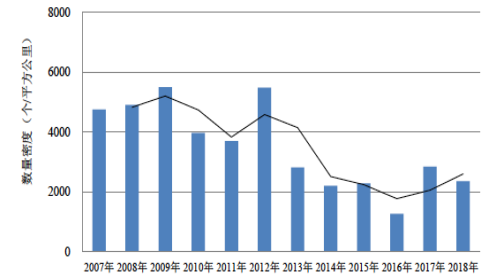


Trend of marine litter in PR China (2007-2018)

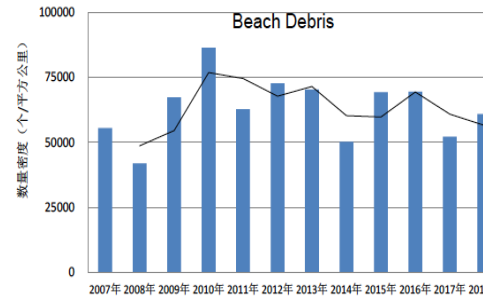
Macro Floating Debris



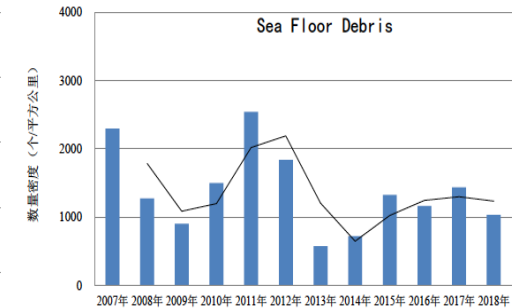
Meso Floating Debris



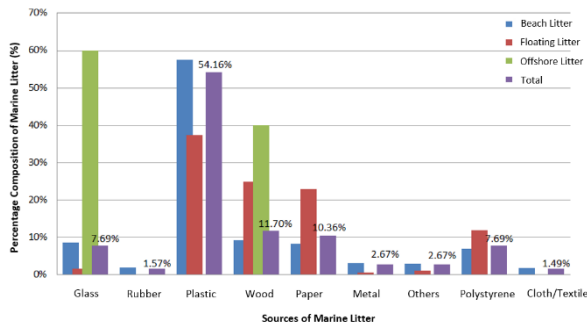
Beach Debris



Sea Floor Debris



ML composition in weihai, PR China

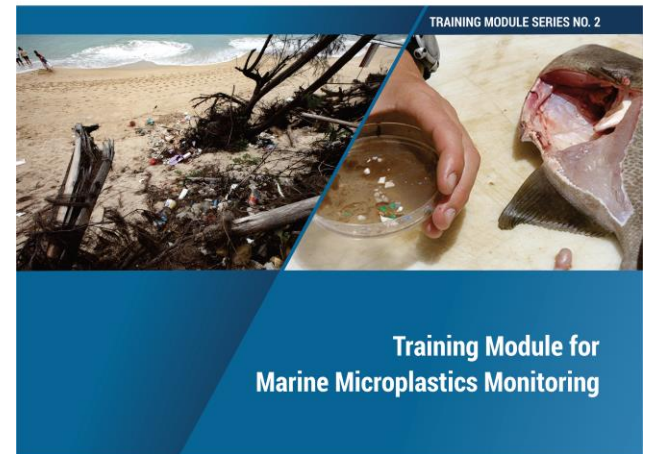
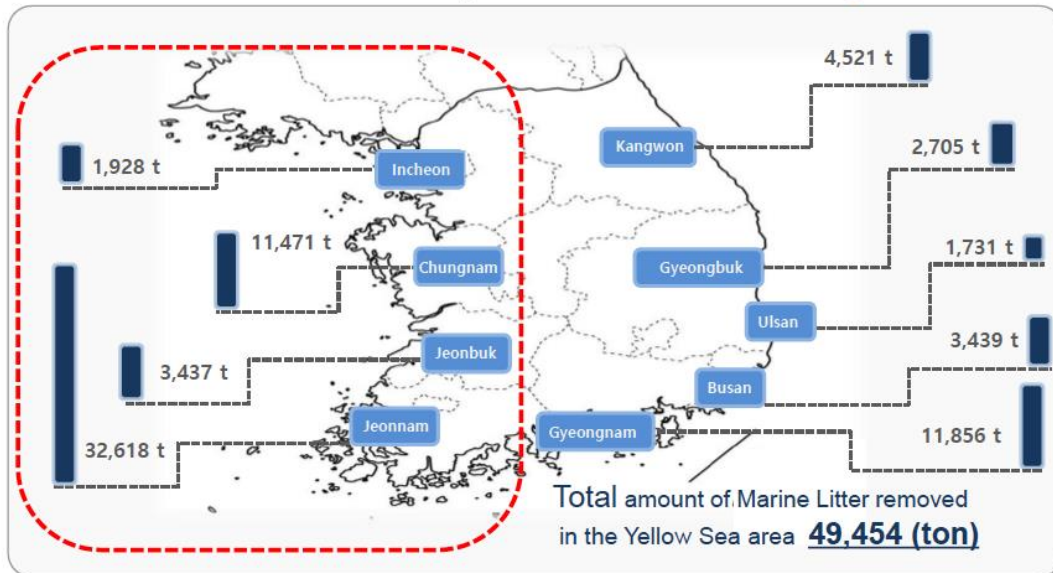


Indicator 12: Status of the control of marine litter at selected locations

Marine litter removal by local government in the Yellow Sea

(Data from Marine Litter Information System / www.malic.or.kr)

32,618 ton of marine litter was removed in Jeonnam Province in 2018



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/GEF YSLME Phase II Project)

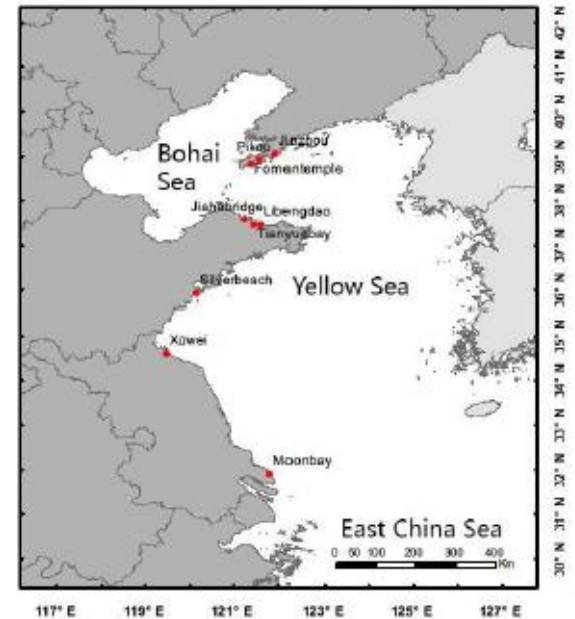
Fisheries/Aquaculture based marine debris survey

3.4 ML reduction

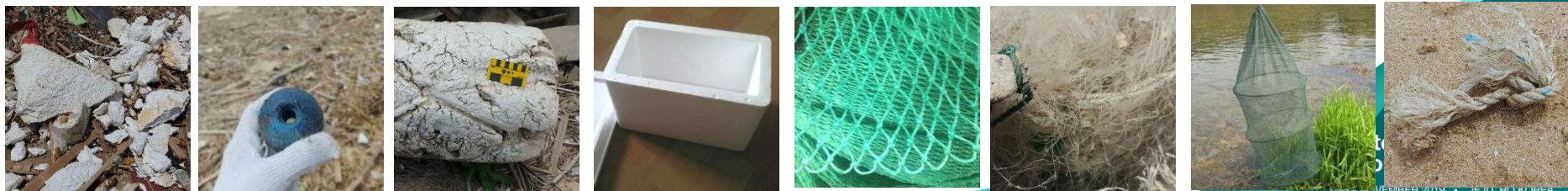
- 3 replications at 9 sites, May-Sept 2019
- In count and weight, foam fragments from aquaculture buoys (48.3%), (36.0%) & fishing net (18.2%) & (31.9%).
- Future solutions:
 - Alternative to use of foam plastic
 - recollecting system of EPS buoys or foam boxes

Item	Count (pieces/300m)	%
Foam fragment	603	48.3%
Fishing net	227	18.2%
Fishing rope	142	11.3%
Hard plastic buoy	118	9.4%
EPS buoy	99	7.9%
Fishing line	40	3.2%
Foam box	12	0.9%
Cage	9	0.7%
Total	1249	100.00%

Item	Weight (g/300m)	%
Foam fragment	11053	36.0%
Fishing net	9790	31.9%
Fishing rope	4948	16.1%
EPS buoy	2605	8.5%
Hard plastic buoy	1205	3.9%
Fishing line	793	2.6%
Cage	155	0.5%
Foam box	120	0.4%
Total	30668	100.00%



Fishing debris by count and weight



Indicator 12: Status of the control of marine litter at selected locations

Gaps, risks and issues:

- Consultation needs to be scheduled by PMO with Weihai municipal government for consideration in improving their management measures to address marine litter including mariculture-derived marine litter

Activities planned in Q4 and 2020:

- Organize a review meeting of the marine litter management options in Weihai and policy options and regulatory measures to incentivize investment in recycling
- Prepare a policy brief on ways to address marine litter from fisheries sectors in relation to alternatives to foam plastics and recollecting system of EPS buoys or foam boxes
- Prepare a factsheet on marine litter in YSLME to raise awareness of the issues and call for actions

Indicator 13: Areas of critical habitats and status of mitigation of reclamation impacts

Based on “Monitoring and Evaluation Plan”

End of project targets:

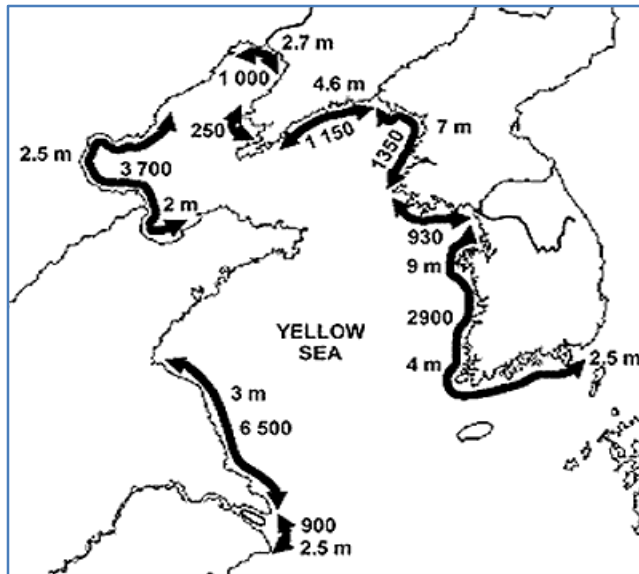
1. Areas of critical habitats maintained at baseline level
2. increase 3% total areas as MPAs
3. Impacts of reclamation prepared in 2 demo sites

Means of verification: Contents of technical reports, PIR and website - 1) YSLME Biodiversity conservation plan (2020-2030); 2) technical reports on reclamation and designation of MPAs

Status (major ones):

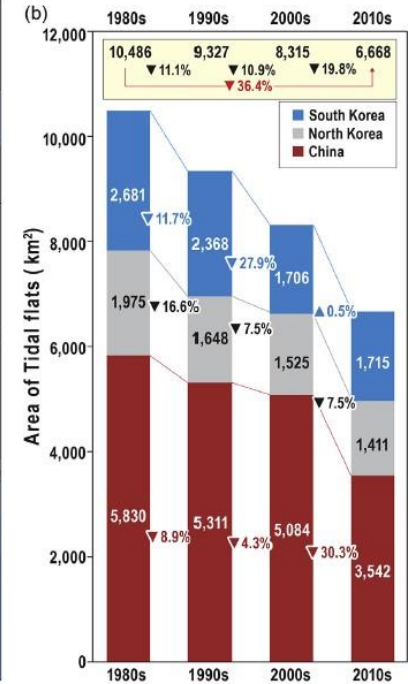
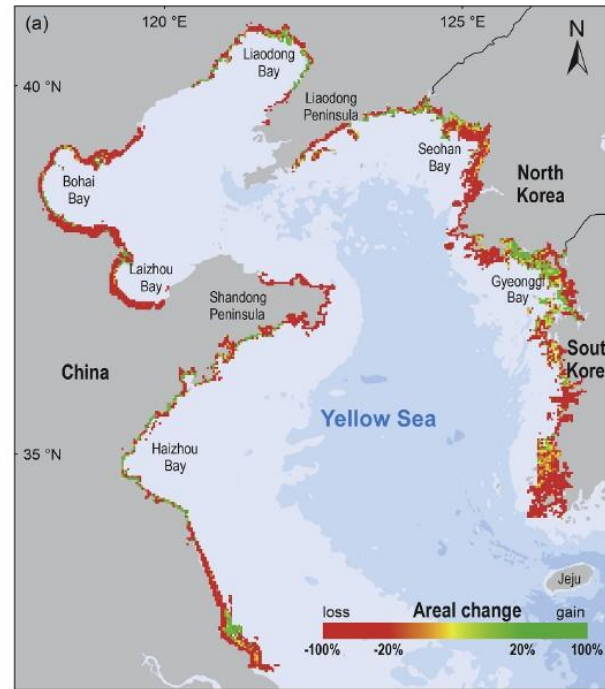
1. YSLME Biodiversity Conservation Plan for both PRC and ROK prepared to serve for consolidating the YSLME Biodiversity Conservation Plan (2020-2030);
2. Assessment of ecosystem services of Rudong Mudflat and another intertidal mudflat or coastal areas subject to reclamation (FIO)
3. A zoning plan including coordination mechanism in line with the master plan of local land use and sea use (FIO)
4. Implementation of CBD and RAMSAR with recommendations for integration of SDG14, CBD and RAMSAR targets into YSLME SAP (FIO)

Indicator 13: Areas of critical habitats and status of mitigation of reclamation impacts



Tidal Mudflats on the Periphery of the Yellow Sea

(Source: Jongseo Yim et al, 2018)



(Source: Y. Liu et al, 2019)

Indicator 13: Areas of critical habitats and status of mitigation of reclamation impacts

Gaps, risks and issues:

- **Management measures needed** - still conflict issue on reclamation (coastal marshes and wetland vs. ocean utilization and livelihood of local communities)

Activities planned in Q4 and 2020:

- **4 activities being implemented by FIO via PCA:** will be completed on Jan. 2020
- YSLME Biodiversity Conservation Plan (2020-2030)

Indicator 14: Level of ecological connectivity in expansion of the YS MPA system

End of project targets:

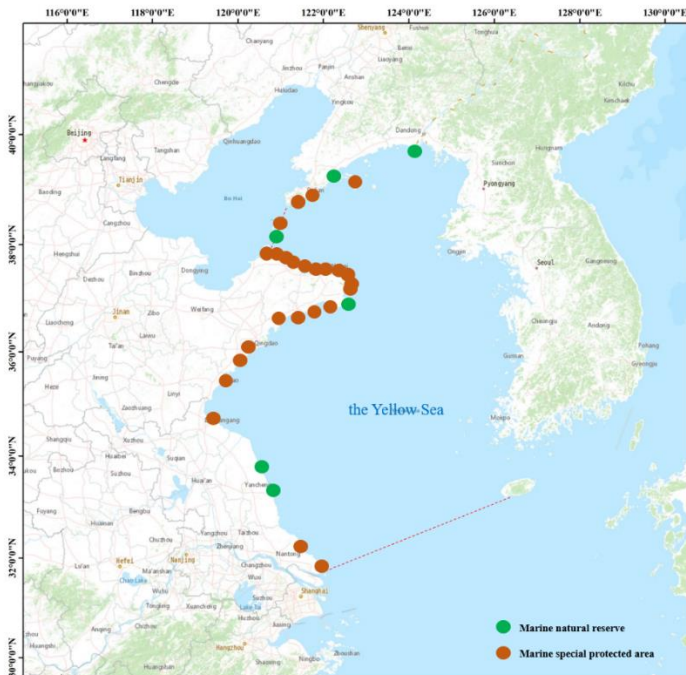
The planned expansion of the MPA system currently does take into account ecological connectivity

- Means of verification:**
- 1) Technical soundness of reports, PIR and website;
 - 2) Latest zoning plan and coverage of identified ecologically and biologically important areas identified by partners

Status (major ones):

1. A MPA network development training toolkit called “Designing a network of MPAs for the YS based on principles of biophysical connectivity” (completed);
2. Feasibility study to designate Xiaoyangkou of Rudong of Jiangsu as a MPA (completed)
3. A series of studies being implemented by FIO via PCA:
 - Relevance of existing zoning schemes to connectivity of existing MPAs and potential MPAs
 - Map of priority areas for designation as conservation areas in YS and identify opportunities for improvements in connectivity with existing and new MPAs
 - Spotted seal study: migratory route, genetic diversity, and management plan
4. A series of studies being implemented by NMEMC via PCA:
 - Designating or enlarging new MPAs for endangered mammals or for habitats of endangered waterbirds

23 potential priority areas in YS are defined by WWF in 2007. To date, 58 MPAs in PRC and 28 MPAs in ROK are designated to protect marine mammals, birds, fishes, mollusks, plants and algae in YS.



The MPAs of the PRC and ROK only represent 2.1% of YS, far below the 10% Aichi Target!

Indicator 14: Level of ecological connectivity in expansion of the YS MPA system

Gaps, risks and issues:

Provincial and local governments may not agree to the establishment of new MPAs

- Strengthened management actions and increase public awareness

Activities planned in Q4 and 2020:

- **Sharing knowledge and relevant information on expansion of MPA:**
 - MPA network meeting on Jan. 2020 with participation of site managers from both countries (focus on the theme of expansion of MPA with connectivity)
- **Outcome of feasibility study: Xiaoyangkou to be designated as a MPA**

Indicator 15: Status of incorporation of adaptive management of climate change regional strategies and ICM plans for selected coastal communities

End of project targets:

1. Climate change adaptation strategies incorporated in regional strategies such as YSCWM and plankton communities;
2. ICM plans in coastal communities incorporate climate change adaptation to improve climate resilience

- Means of verification:**
- 1) Technical reports; and
 - 2) Field visit to check adaptation measures to climate change and extreme weather conditions

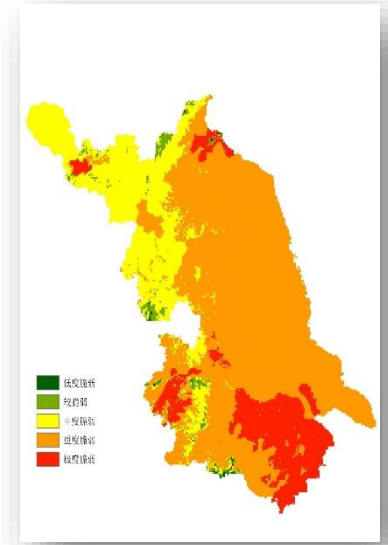
Status (major ones):

1. A series of studies are in process by FIO via PCA
 - A study for the **relationships between the SST changes of YSCWM and structure of plankton communities**
 - A study of biological and ecological significance of the YSCWM and existing and potential threats using ecological connectivity as key criteria
 - **Vulnerability assessment of sea level rising for coastal communities**
 - **Impact assessment of sea ice distribution** on coastal zone development

Indicator 15: Status of incorporation of adaptive management of climate change regional strategies and in ICM plans for selected coastal communities

Gaps, risks and issues:

- **Lack of scientific understanding** of the impacts of CC on marine ecosystems due to short period of project intervention;
- **Unavailable best technologies and practices and lack of private sector engagement** make the adaptation strategy unrealistic and unimplementable



Spatial distribution map of Jiangsu

Activities planned in Q4 and 2020:

- **Regional strategy for adaptive management:**
 - Develop the strategy and organize a meeting with a local stakeholder (e.g., Dandong, PR China) to share ideas
- Vulnerability assessment and management measures of coastal communities and ecosystem services in YSLME to impact of climate change (by FIO)
 - **Most of Jiangsu province was turned out to be extremely vulnerable**
 - Management actions:** 1) mitigation of human impact and 2) increased capability for adaptation to climate change

Indicator 16: Status of regional monitoring network for application of Ecosystem-based Community Management (EBCM)

End of project targets:

1. Agreed number of cruises and parameters for the regional monitoring network established and data shared regionally via the project web site;
2. Regular LME-wide assessments; and
3. Enhanced information exchange; periodic scenarios of ecosystem change

Means of verification: Technical reports reviewed; Review of data products out of review; and partner feedback or visit to website - 1) Agreed number of cruises for regional monitoring; and 2) Regional monitoring program developed by two countries

Status:

1. A series of studies are in process by FIO and NMEMC via PCA
 - **Distribution of benthic populations of *Sargassum horneri*** along the coasts of Shandong and Jiangsu Provinces and seasonal variations of drifting *S. horneri* in western YS (by FIO);
 - **Regional jellyfish and HAB monitoring program** (by NMEMC)
 - Comprehensive **regional monitoring program** for N/P/Si changes, climate change, jellyfish blooms and HAB (by NMEMC)

Indicator 16: Status of regional monitoring network for application of EBCM

Gaps, risks and issues:

- **Data and information** on the relevant monitoring and research not fully opened and shared
- Agreed monitoring programs for HAB, jellyfish and changes in YSLME ecosystem services won't be implemented without earmarked **funding**.

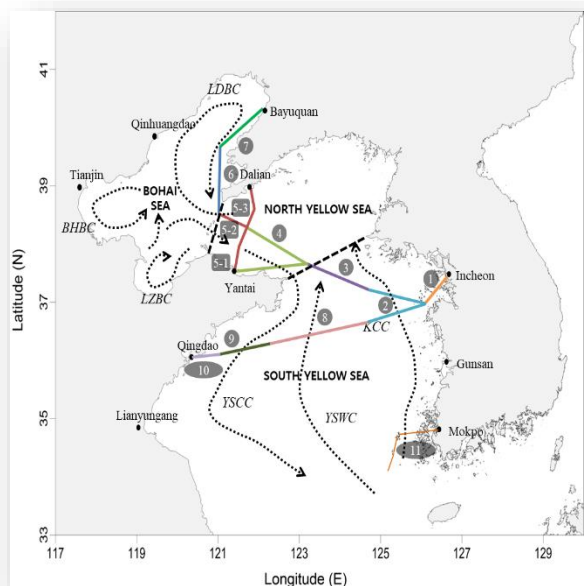
Activities planned in Q4 and 2020:

- **Regional monitoring program to be completed**
 - Jellyfish (received 18 Nov. '19), HAB (by NMEMC)
- **Regional strategy for adaptive management (by FIO)**

Indicator 16: Status of regional monitoring network for application of ECBD

Recommendations:

- PR China:
 - Emphasized on the necessity of joint research between two countries (with or even without YSLME)
- RO Korea:
 1. Share data/information and conduct joint jellyfish monitoring cruise;
 2. Develop a joint report and develop countermeasure plan and adopt (emphasize the role of YSLME as a mechanism)



Jellyfish monitoring areas

Recommendations:

- The Secretariat recommends that:

the 4th Meeting of the ICC:

1. **Adopt the project progress report;**
2. **Review and provide guidance to responsible parties** for effective result-based implementation of the project PCAs, subcontractors and consultancies for transformation of project deliverables into management actions and regional policy;
3. **Request the Secretariat to make necessary arrangement** to integrate directions and guidance of the ICC into work planning for 2020.