Hsin-Kang Mahi Mahi FIP
Workplan Tracking

Updated June 2018

Green=expected progress being made (i.e., activity has begun, and expected milestones, deliverables and specified timeline are being met as planned).

Yellow=progress is below expectation (i.e., activity has begun, but expected milestones and deliverables have been delayed by 6 - 12 months, and specifed timeline is not being met

Red= inadequate progress (activity has begun, but expected milestones and deliverables have been delayed by > 12 months, and specified timeline is not being met.)

X：Milestone / Deliverable Due
/：Activity not started
U：Unknown

Legend for Quarterly Activity Tracking

MSC Performance Indicators		Estimated PI Score (Initial)	Estimated PI Score (Current)	FIP Stage	Deficiency identified by pre-assessment at indicator level	Scale/Scope of improvements	Activity #	Activities/Tasks	Participants responsible for carrying out activity	Other PIs impacted by this activity	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4	FIP Process Underway (FIP workplan is being implemented) Details of Progress: first half year of 2016	last half year of 2016	first half year of 2017	last half year of 2017	first half year of 2018	last half year of 2018	first half year of 2019	
Principle 1	1.2.1 Harvest Strategy	<60			See pre-assessment		1.2.1.	Development and implementation of conservation and management measures		1.2.2	/	/																							
	1.2.1 Harvest Strategy	<60					1.2.2.	Development and implementation of Harvest control rules		1.2.2	/	/							X										Harvest control rules will be considered to be listed into work plan when current analyses of population dynamics, including stock structure, life history parameters and stock assessment, are completed.		We have completed a preliminary study on the analyses of population dynamics, which including stock structure and life parameters.		The development of harvest control rules was formally proposed in the meeting of *Steering Committe*ein on *May*, 2019 and the members of FIP basically agreed to establish the harvest control rules to achieve a management objective in the near future when the reference points related to target levels of abundance of the stock and the fishing intensity can be specified based on the results of the full assessment which is planned to be completed by the end of 2019.	
	1.2.2 Harvest control rules and tools	<60					1.1.2.1.	Collection of fisheries-dependent data			/																The format of fishing logbook has been agreed by Steering Committee on April, 2016. The Vessel Owner Assembly will be held on August, to update the progress and to promote the use of fishing logbook.	A number of fishing logbooks are submitted from fishermen. However, the coverage is not sufficient and improvement is still needed. Fishermen are informed about this for further improvement. .	The fishing logbooks reporting rate is better than last year, but there is still room to be improved . Besides, the information of the bycatch data gathered is poorer than expectation, and propaganda has been made to rectified.	The fishing logbooks reporting rate is better than last year. By the end of 2017, 800 logbooks have been recived. But, the information of the bycatch data gathered is still not as expectation.	In order to obtain sufficient fisheries data for Hsin-Kang Mahi Mahi fisheries, we already designed the fishing logbooks and landing declarations, and provided those documents to the boat owners of Hsin-Kang Mahi Mahi FIP in 2016 (as attachments).	The work of data collection is ongoing.	*The quality of reporting has benn improved. Some bycatch data of sea turtle has been already collected through logbook. This action is currently on track.*	

																												The information in the logbook was including fishing operation data, catch data and loss of fishing gear…etc. The fishing logbooks reporting rate is much better than last year.			
	1.2.2 Harvest control rules and tools	<60					1.1.2.2.	Collection of fisheries-independent data			/	/						X										Eastern Marine Biology Research Center of Fisheries Research Institute had been invited to doing Mark-recapture research to collect the fisheries-independent data. It will collect more fisheries-independent data as appropriate in the future.	Fisheries Research Institute has arranged the research vessel to conduct quarterly cruises to collect water temperature, salinity, nutrients, chlorophyll-a and zooplankton measurements data in the surrounding waters of Taiwan.	*The research in ongoing*	
	1.2.2 Harvest control rules and tools	<60					1.1.2.3.	Development of fisheries data collection and verification mechanism			X								X						The data collection procedure was adopt by the Steering Committee on March 25,2016.	Data has been collected in accordance with the agreed procedures. The establishment of database is still construction.	Data has been collected continuously and input into the database.	The data collection procedure was adopted by the Steering Committee on March 25,2016.Data has been collected continuously and input into the database.	The data collection procedure has been established in 2016. The fishing logbooks and landing declarations now were collected by Hsin-Kang Fishermen Association, Dong-Kang Fishermen Association and Su-Ao Fishermen Association, and then be provided to the Fisheries Agency to establish a systematical data retrieving and maintain the system.	completed	completed	
	1.2.2 Harvest control rules and tools	<60					1.1.2.4.	Establishment of port inspection and reporting mechanism			/	/						X		X								The development of port inspection and reporting scheme has been finished.The scheme will be implemented in 2018 once it is adopted by the Steering Committee working group.	Fisheries Agency of Taiwan has commissioned Taiwan Fisheries Sustainable Development Association to recruit 10 additional inspectors. The inspectors are now carrying out the duties on port inspection and catch verification at the port of Dong-Kang, Hsin-Kang and Su-Ao respectively. Up to June, 120 vessels had already been inspected.	completed	completed	
	1.2.3 Information and monitoring	60~80					1.1.1.1.	Definition of stocks: Genetic factors analysis			X														153 Gonad and muscle samples were collected from Suao, Hsin-kang and Tong kang for genetic factors analysis. Cooperation with the other countries has been established to collect the samples of mahi mahi from east Pacific Ocean	A total of 303 gonad samples were collected in the second half of 2016 and preliminary analysis of gonadosomatic index was also conducted based on these samples. The genetic population structure of dolphinfish in the western Pacific Ocean	The biological sampling collection are processed by Eastern Marine Biology Research Center Fisheries Research Institute this year. Total sampling localities includes Hsin-kang, Suao, and Tong-kang for analyzing the genetic	In this study, a total of 225 muscle samples were collected from PonHu, SuAu, TungKang and Hsinkang in Taiwan and other waters including Nagasaki in Japan. Majority of samples from Shingkang in 2013 and 2014 were preliminary	Biological samples such as fin clip and muscle of mahi mahi were collected in the main fishing ports for mahi mahi landings including Dong-Kang, Suao and Hsin-Kang. Currently, additional samples collected from Dong-Kang,	Biological samples such as finclip and muscle of mahi mahi were collected from Tungkang, Suao, and Taitung in the waters of Taiwan. Also, the additional samples collected from others waters such as Manta, Ecuador in the eastern Pacific	In this year, the biological sample collection of mahi mahi was continued from the major mahi mahi landings ports including Dong-Kang, Su-Ao and Hsin-Kang in different spatial-temporal scales. Additional samples collected from	

																											and sea area around Japan.	especially between Taiwan and Japan is not fully understood. In this study, we surveyed the pattern of genetic differentiation in the western North Pacific Ocean using mtDNA ND1 sequence for 309 dolphinfish representing three North Pacific localities including Ponhu, Suao, Shingkang in Taiwan and Nakasaki and Kagoshima in Japan and Manta in Ecuador. We report significant genetic differentiation between the collection from Taitung in 2013 and the collections from PonHu and Nagasaki. These results show genetic heterogeneity between Taitung (2013) and Nagasaki, Japan. However, Taitung 2014 didn't show the similar differentiation pattern. Therefore, in future studies, sample sizes and geographic coverage should be increased to resolve the population structure of dolphinfish throughout the entire Pacific Ocean.	population structure. Also, international cooperation will be established for further studying of the mahi mahi in the western Pacific Ocean, especially between Taiwan and Japan.	analyzed using sequencing data. In addition, samples collected from others waters such as Japanese area and eastern Pacific Ocean are desired for the further investigation of genetic population structure. For the preliminary results, we focus on the comparison the genetic differentiation of the mahi-mahi samples collected from Taiwan and Japan waters. We surveyed the pattern of genetic differentiation using 766 bp of sequence of the mtDNA ND1 for 225 individuals. We report significant genetic differentiation between the collection from Taitung 2013 (spring season, n= 42) and the collections from PonHu (n= 13), and Nagasaki (n= 29). These results show genetic heterogeneity between Taitung 2013 and Nagasaki, Japan. However, the rest of samples collected from Taitung didn' t show the similar differentiation pattern. Therefore, in future studies, sample sizes and geographic coverage should be increased to resolve the population structure of mahi-mahi.	and Suao will be included for the sequencing analysis. Also, the collection of mahi mahi samples from others waters are continued for this study. In addition, we also collected the samples from Manta, Ecuador in the eastern Pacific Ocean and from the set net located in Nagasaki and Kagoshima, Japan. All the samples collected from Japanese area and in the eastern Pacific Ocean will be included for the comparison with samples collected in Taiwan. MtDNA are extracted from muscle samples for further molecular experiments and analyses.	Ocean and from the Nagasaki and Kagoshima, Japan were included for the sequencing analysis. Total of 440 biological samples were analyzed from the waters of Taiwan, Japan and Ecuador. For the preliminary results, we investigated the pattern of genetic differentiation with 766 bp of the mtDNA ND1 from 440 individuals. We report that the localities from PonHu showed significant genetic differentiation with Taitung 13a (spring in 2013), Taitung 14b (autumn in 2014) in Taiwan and Kagoshima in Japan. In additional, Taitung 13a showed significant genetic differentiation with Tungkang18b (summer in 2018) and Nagasaki14a (spring in 2014). Moreover, the samples from Kagoshima revealed the genetic differentiation with Nagasaki14a. These results show genetic heterogeneity among the localities of Taiwan and Japan. However, the AMOVA results of multiple groupings didn' t show the similar differentiation pattern. Therefore, we suggest that the genetic loci, sample sizes and geographic coverage should be increased to improve the power of bioinformatics analyses. It is essential and helpful to resolve the genetic population structure of mahi mahi in the Pacific Ocean.	Dong-Kang and Su-Ao were included for the molecular analysis. All the sequences of samples in this study will be used for establishing the genetic database of mahi mahi. Base on the preliminary results, there is slight but significant difference between Peng-Hu and others localities of Taiwan. Therefore, we plan to increase the sample sizes from the others waters such as Peng-Hu for further investigation. Additionally, we desired the samples collection from Manta, Ecuador in the eastern Pacific Ocean and also from the set net located in Nagasaki and Kagoshima, Japan. All the samples collected from Japanese waters will be included for the comparison with samples collected in Taiwanese waters. Crude mtDNA are extracted from muscle samples for further molecular experiments and sequencing analyses. All the sequence data of this study will be alignment for the further analyses of population structure in the northwestern Pacific Ocean.	
	1.2.3 Information and monitoring	60~80					1.1.1.2.	Definition of stocks: Mark-recapture research (tagging program)			/	/						X												For the tagging experiments, one mahi-mahi was tracked for periods of 30 days reaching depths 0-70 m, and experiencing temperatures ranging from 21.4-30.1˚C.	Taiwan Fisheries Research Institute and National Taiwan Ocean University from Taiwan formed a collaboration with Nagasaki University and Hokkaido	To gauge the effectiveness in supplementing native populations, we compared farm-raised and wild mahi mahi in terms of their horizontal and vertical	The committee of Taiwan Hsing-Kang mahi mahi FIP invited Fisheries Research Institute, COA to conducted in the research of mark-recapture in 2017. Fisheries	

																														This fish spent >50% of their time near the surface and made more extensive vertical movements during nighttime than daytime, but vertical movements were largely confined to the mixed layer and did not cross the thermocline. The depth distributions of the tagged fish appeared to be limited by a 6 ˚C (i.e., >90% of movements were within 6 ˚C of the warmest water) change relative to sea surface temperature. Overall, tagged mahi-mahi primarily inhabited near-surface habitat and vertical movements are limited by the depth of the mixed layer. This study found that mahi-mahi dove deeper and for longer durations at nighttime, rather than daytime. Diel dive pattern may relation feeding opportunities when prey are aggregated and (or) may have evolved to avoid predators.	University from Japan; to initiate cooperative tagging experiments for mahi mahi. From 2016 to the present, 18 mahi mahi were tagged with conventional tags and three mahi mahi were tagged with pop-up satellite archival tags (PSATs) at Kagoshima Bay at Japan. Totally, conventional tags were affixed to 124 dolphfinfish and 4 were tagged with PSATs off eastern Taiwan. For the PSAT studies, tagged mahi mahies were tracked for periods of 7 to 40 days reaching depths more than 100 m, and experiencing temperatures ranging from 15-30 ˚C in Taiwan, and 20-23 ˚C in Kagoshima Bay. Mahi mahi tagged in Taiwan made primarily northward movements during early summer but changed to a southward course in early winter. In Kagoshima Bay, tagged fish undertook southward excursions along the coast and movements but were confined to the bay. Tagged fish exhibited pronounced diel oscillations in their vertical diving behavior, particularly during crepuscular transitions. Mahi mahi spent more than 50% of their time near the surface and made more extensive vertical movements during nighttime than daytime, but vertical movements were largely confined to the mixed layer and did not cross the thermocline. The depth distributions appeared to be limited by a 6 ˚C change relative to sea surface temperature (i.e., nore than 90% of	movement patterns, habitat preferences and thermal niche using pop-up satellite archival tags (PSATs) deployed in two disparate locations: the southeastern coast of Taiwan (wild, n=4) which is characterized as sub-tropical and in temperate Kagoshima Bay, Japan (farm-raised, n=3). Fish were tagged during different times of the year and tagged fish were tracked for periods of 7 to 40 days, reaching depths >100 m, and experiencing temperatures ranging from 15-30 ˚C in Taiwan, and 20-23 ˚C in Kagoshima Bay. Fish tagged in Taiwan made primarily northward movements during early summer but changed to a southward course in early winter. In Kagoshima Bay, tagged fish undertook southward excursions along the coast and movements were confined to the bay. Mahi mahi spent >50% of their time near the surface and made more extensive vertical movements during nighttime than daytime, but vertical movements were largely confined to the mixed layer. The depth distributions of the tagged fish appeared to be limited by a Δ6 ˚C change relative to sea surface temperature (i.e., >90% of movements were within 6 ˚C of the warmest water available).	Research Institute collaborated with Nagasaki University to study the seasonal movement pattern and behavioral characteristics of mahi mahi by using pop-up satellite archival tags. The research results (as attachment) have been reviewed and approved by Fisheries Science and will published in September.	

																												movements were within 6 ˚C of the warmest water). Overall, tagged mahi mahi primarily inhabited near-surface habitat and vertical movements are limited by the depth of the mixed layer. Quite unexpectedly, this study found that mahi mahi dove deeper and for longer durations at nighttime, rather than daytime, which is the opposite diel pattern of many apex predatory pelagic fishes and sharks. The deep nighttime/shallow daytime pattern may increase feeding opportunities when preys are aggregated and (or) may have evolved to avoid predators.			
	1.2.4 Assessment of stock status	60~80					1.1.3.1.	Stock assessment: Analysis on standardization of relative stock abundance indicators																		Preliminary assessment of fishing effort by daily auction data of Hsin-Kang Fishermen's Association and Voyage Data Recorder (VDR).	According to the data analysis, the CPUE trend of the Eastern Taiwan's mahi mahi was present increased in 2000 to 2007, and then present increased or decreased each year between 2007 to 2012. After 2012, the CPUE trend present increased every year. There is a significant correlation between the CPUE of the Eastern Taiwan's mahi mahi and the surface temperature of ocean, depth of the mixed layer and the salinity of the seawater.	Identification of fishing operation and data selection, as well as yearly spatial-temporal analysis of the CPUE distribution , have been conducted based on data collected from fish market from 2000 to 2016.		CPUE standardizations were conducted based on the selected data from the mahi mahi longline fishery. The standardized CPUE series indicated that it increased during 2000 to 2007, substantially decreased until 2009 and still revealed a decreasing trend in recent years.	The cluster analysis method was used to analyze the fishing method for the trips of the auction data and the results indicated that the cluster analysis can successfully identify the fishing methods for each fishing trip. CPUE standardizations were further conducted based on the selected data from the mahi mahi longline fishery. The standardized CPUE series indicated that CPUE slightly increased during 2000 to 2007, substantially decreased until 2009, slightly increased again during 2009 to 2012, and revealed a decreasing trend in recent years.	The preliminary stock assessment was conducted in 2018 using a surplus production model based on the historical catch and CPUE data. In 2019, the full stock assessment is conducting using an integrated approach (Stock Synthesis, SS). So far the model is developing and testing by incorporating the historical catches, CPUE series, length-frequency data and biological parameters.	
	1.2.4 Assessment of stock status	60~80					1.1.3.2.	Stock assessment: Analysis on length frequency and age structure																		There were 200 samples collected by Dr. Wang Sheng-Pin from NTOU, which include length, weight and sexual data, as well as sampling date and sampling locations.	Samples are continually collected as required.	The study of the growth of the mahi mahi in the waters around eastern Taiwan, is conducted this year based on the length-frequency analysis approach. Based on the results, the length distributions can be divided into 4 mode groups and the models fit to observed length-	In this study, the growth of the dolphinfish in the waters around eastern Taiwan is conducted based on the length-frequency analysis approach. Based on the results, the length distributions can be divided into 4 mode groups and the models fit to observed length-	The analysis on growth of the mahi mahi in the waters around eastern Taiwan is conducted based on the length-frequency analysis approach. Based on the results, the length distributions can be divided into 4 mode groups and the models fit to observed length-	To analyze the historical growth pattern of dolphin fish in the eastern waters of Taiwan, the growth parameters were estimated using length frequency analysis approach with von Bertalanffy growth curve based on the length frequency data (fork lengths) sampled in	The preliminary stock assessment was conducted in 2018 using a surplus production model based on the historical catch and CPUE data. In 2019, the full stock assessment is conducting using an integrated approach (Stock Synthesis, SS). So far the	

																											frequency data well. The growth parameters will be further estimated based on the model-predicted mean lengths of modes and the growth patterns will be further explored.	frequency data well. Based on the analyses of estimation of growth parameters, growth curves are significantly different before and after 2008 or 2009. In addition, the growth curve of females and males are also significantly different that is mainly resulted from the parameters of asymptotic lengths.	frequency data well. Based on the analyses of estimation of growth parameters, growth curves are significantly different before and after 2008 or 2009. In addition, the growth curve of females and males are also significantly different that is mainly resulted from the parameters of asymptotic lengths.	Hsinkang fish market, Taitung County from 2003 to 2016. Comparing the growth parameters between males and females, asymptotic length of males is much larger than that of the females, and there is no significant difference in the growth coefficient. According to the estimation of the growth parameters over the years, the results indicated that the asymptotic lengths of the males and females decreased significantly in 2009, when the catch and relative abundance index of the mahi mahi also decreased in the meantime. In addition, the growth curve of females and males are also significantly different that is mainly resulted from the parameters of asymptotic lengths.	model is developing and testing by incorporating the historical catches, CPUE series, length-frequency data and biological parameters.	
	1.2.4 Assessment of stock status	60~80					1.1.3.3.	Stock assessment: Preliminary assessment of stock status			/	/						X										It is essential to develop the precautionary strategy and catch control measures based on the scientific information. Also, the marine resources can be exploited sustainably and conservationally by improving the fishery statistics system, enhancing the data collection of bycatch species and promoting current management and decision-making processes. For the implementation of the FIP, the research group conduct a long-term research program for developing the stock assessment of mahi-mahi in the Taiwan waters, including (1) the collection of biological samples for estimating the life-history parameters, such as growth and reproductive biology; (2) the analysis on the population structure of mahi-mahi in the Pacific	Stock assessment and stock status of mahi mahi in the Taiwan waters is conducted based on the information aggregated from fishery statistics data, length frequency data, life history parameters and relative abundance index using age-structured surplus production model (ASPM).		The preliminary stock assessment was conducted in 2018 using a surplus production model based on the historical catch and CPUE data. In 2019, the full stock assessment is conducting using an integrated approach (Stock Synthesis, SS). So far the model is developing and testing by incorporating the historical catches, CPUE series, length-frequency data and biological parameters.	

																															Ocean using molecular methods; (3) the analysis on exploitation and probable population dynamics of mahi-mahi based on the fishery indicators and size composition aggregated from historical fishery statistics and body length measurements; (4) CPUE standardization for analyzing the trend of the relative abundance index; (5) preliminary stock assessment based on the historical catch data and relative abundance index; (6) comprehensive stock assessment based on the integrated assessment model with life-history parameters, catch data, size composition data and relative abundance index. Based on the outcomes of this research project, we aim to provide scientific references for the future fishery management of mahi-mahi in the Taiwan waters.				
	1.2.4 Assessment of stock status	60~80					1.1.3.3.	Stock assessment: Full assessment of stock status		1.2.4	/	/																						
Principle 2	2.1.2 Primary species management strategy	<60					2.2.1.	Establishment of management strategy		2.2.2,2.3.2, 2.5.2	/	/																				The management strategy will be established by the result of the stock assessment. But now the stock assessment is not yet completed.	The appropriate management advice will be provided when the result of preliminary analysis in 2019 is completed.	The preliminary analysis of 2019 is in progress and is expected to have results by the end of the year.	
	2.2.3 Secondary species information	<60					2.1.1.	Improvement on relevant data collection: Reporting on relevant data of primary species, secondary species, ETP species and ecosystem		2.3.3, 2.5.3	/	/						X												ETP species and ecosystem information has not been collected yet. But, the primary and secondary species have been collected from logbooks.	The format of fishing logbook has been completed in 2016. The information of primary, secondary species and ETP species have been requested to be collected through logbooks. But, up to now, no information on ETP species has not been received yet.	The data of primary and secondary species have been collected by logbook. In addition, some ETP species data (such as number of discard of silky shark) has been collected.	After the sea turtle identification and conservation workshop was held, the reporting rate of sea turtle bycatch was increased. And according the record, the sea turtles bycatch were all released unharmed.	
	2.3.2 EPT species management strategy	60~80					2.3.1.	Propaganda seminars on sea turtles, seabirds and sharks			/	/													The Manta Ray management measure promotional workshop was held on the 5th August 2016.	The 2nd meeting of Steering Committee, which was held on 20th of December 2016, agreed to hold an educational	The 1st meeting of Steering Committee, which was held on 30th of March 2017, agreed to postpone the educational	A Sea turtle identification and conservation workshop was held on 18 July 2017, in which mitigation measures and approaches to	A shark identification and conservation workshop was held on 13 July 2018, in which the relevant shark conservation	A shark identification and conservation workshop and A Sea turtle identification and conservation were held in	*According to the resolution of 1st meeting of Steering Committee which was held on 2nd May,2019 in Su-Ao, Yilan. Assistant*	

																											seminar of sharks and turtles before April, 2017.	seminar of sharks and turtles to July or August this year, so that more fishermen can participate in at non-fishing season.	facilitate the recovery of incidental catch of sea turtle were introduced.	and management measures and sharks identification were introduced.	Dong-Kang on 15 August 2018 and in Su-Ao on 7 September 2018, in which the relevant shark and turtle conservation and management measures and identification were introduced. Three sea bird conservation workshops will be held in 2019.	*Professor Kuo Ting-Chun from National Taiwan Ocean University will be invited as the lecturer of the Seabird identification and Conservation workshop. The date of workshop is determined by each fishery associations. As the result, seabird identification and Conservation workshops will be hold in Dong-Kang, Su-Ao and Hsin-Kang on August separately.*	
	2.3.3 EPT species information	<60					2.1.2.	Improvement on relevant data collection: Establishment and implementation of observe program			/	/																	Under planning.	The steering committee will be held in February, in which the detail of observer arrangement and task will be discussed.	*The meeting of Steering Committee in 2019 was held on 2nd May in Su-Ao, Yilan. During the meeting, the Fishery Agency of Taiwan declared its support to the observer program for Taiwan Hsin-Kang mahi mahi FIP. The Fishery Agency of Taiwan will coordinate with the existing coastal scientific observer program for some specific fisheries, to extend the scope to cover mahi mahi fishery. Hsin-Kang, Su-Ao and Dong-Kang Fishermen Association were requested to provide a vessel list for observer deployment to the Fishery Agency of Taiwan for follow-up deployment arrangement.*	
	2.5.3 Ecosystem information	<60					2.1.3.	Improvement on relevant data collection: Collection and recording information of lost fishing gear			/	/								X									There was the column about lost fishing gear in logbooks, however no lost fishinig gear was recorded so far.	The column of lost fishing gear was already in logbooks and provided to fishermen for a few years, but no information has been received up to now. In order to understand the reason for lack of information, we interviewed several fishermen and ask the reason about the vacancies in the column of lost fishing gear. The interviewees said, they didn't lose fishing gear in operations, because they will find the broken line through buoys	completed	completed	

																												and floats and reconnect to the boat when the main line was broken at sea. Therefore, the probability of lost of fishing gear was very low. Having said so, after the discussion with scientists, we decided to keep the column of lost fishing gear in logbooks to record relevant information, in case of any loss of fishing gear in the future.			
Principle 3	3.1.2 Consultation, roles, and responsibilities	60~80					3.1.1.	Establishment of organizational structure		3.2.2	/	/		X												The 2nd Steering Committee which held on 20th of December 2016 adopted the roles, and responsibilities of Hsin-Kang Mahi Mahi FIP.	Completed by last year.	Completed by last year.	completed	completed	completed	
	3.2.1 Fishery-specific objectives	60~80					3.2.1.	Establishment of clear long-term and short-term objectives			/	/		X												The 2nd Steering Committee in 2016 has adopted the long term objectives, which is to use the basis of the best available scientific information to develop the precautionary approach and Harvest Control Rules, as well as the short term objectives, which is to complete the items of Action Plan in five years.	Completed by last year.	Completed by last year.	completed	completed	completed	
	3.2.2 Decision-making processes	60~80					3.2.2.	Establishment and implementation of external audit mechanism			/	/																Not yet started.	The steering committee will be held in February, in which the detail of establishment of external audit mechanism will be discussed.	The meeting of Steering Committee was held on 2nd May 2019, in which the committee agreed to invite external organization to review our management system. But the organization to be invited needs further consideration.	