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Action Plan for Honduras Lobster Fishery Improvement Project (FIP)

FINAL REPORT



**By
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LIST OF ACRONYMS AND ABBREVIATIONS

AGRRA	Atlantic and Gulf Rapid Reef Assessment
CEM	Center for Marine Ecology
CI	Conservation International
CLME	Caribbean Large Marine Ecosystem
CORAL	Coral Reef Alliance
ETP	Endangered, Threatened, or Protected Species
DIGEPESCA	General Directorate for Fishing and Aquaculture (Honduras)
FAO	Food and Agriculture Organization of the United Nations
FIINPESCA	Strengthening of Interdisciplinary Research for Responsible Fisheries in Central American countries (FIINPESCA/OSPESCA/FAO)
FMP	Fishery Management Plan
INPESCA	National Fisheries Institute (Nicaragua)
IUU	Illegal, Unregulated, Unreported
MAREA	Project for the “Management of Aquatic Resources and Economic Alternatives”
MASPLESCA	Project for the “Subregional Management of Caribbean Spiny Lobster (<i>Panulirus argus</i>) Fisheries”
MCS	Monitoring, Control, and Surveillance
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NGO	Non-Governmental Organization
OSPESCA	Fishery and Aquaculture Sector Organization of the Central-American Isthmus
SAG	Ministry of Agriculture and Livestock, Honduras
SENASA	National Service of Agricultural Health, Honduras
SERNA	Ministry of Natural Resources, Honduras
SICA	Central-American Integration System
VMS	Vessel Monitoring System
TNC	The Nature Conservancy
WWF	World Wildlife Fund
WWFCA	World Wildlife Fund Central America

INTRODUCTION

An MSC pre-assessment of the Honduras Spiny Lobster fishery was conducted in 2010-2011, and completed in April 2011 (MRAG Americas, April 2011). The scope of the pre-assessment was the Caribbean spiny lobster trap fishery. The pre-assessment identified the strengths of the fishery in relation to MSC sustainability standards, as well as important issues that need to be addressed and improved before the fishery can be a candidate for certification. In order to move the fishery forward towards the MSC standard, a Fishery Improvement Project (FIP) was initiated at the end of 2011 by the lobster industry, WWF and other stakeholders.

As the first step of the FIP, a Scoping Analysis was performed to identify and prioritize the MSC performance indicator (PI) categories under each of three MSC principles such that relevant tasks, or actions, may be developed as part of the FIP. The Scoping document (MRAG Americas, October 2011) provided information about each performance indicator that might cause the fishery to either fail an assessment (high priority) or pass with conditions (medium priority). Actions to improve the score of each PI may require a short, medium, or long-term timeframe to accomplish. The scoping document is designed to assist in the planning phase of a FIP and provided guidance to the likely range of activities or steps that may be considered to reach the MSC standard. That document was provided to stakeholders, and a FIP planning workshop was held in Roatán, Honduras in early December 2011 to present the challenges encountered in the fishery and to discuss possible solutions and activities to undertake as part of the FIP. This Action Plan represents the main output from that meeting.

The purpose of this document is to provide general background information on the number of ongoing and new projects/ tasks that were proposed during the December 2011 FIP planning workshop. This includes information on the level of priority (high or medium), current status (ongoing or new) and expected timeframe to complete the initial task.

It is anticipated that a new Spiny Lobster Working Group (in close coordination with the Spiny Lobster Initiative), with representatives from all sectors, will lead the FIP Action Plan and co-ordinate the development of each task. It is recognized that several tasks are currently ongoing, and are therefore not described in detail here. This document comprises the activities that need to be completed as part of the FIP for performance indicators to reach the MSC standard. The Plan itself must be further developed to include timings and associated budgets in addition to developing detailed terms of reference/ memorandum of understanding for participating institutions/ stakeholders. The results generated from the Action Plan should have periodic internal and external reviews to ensure they will meet the MSC standard.

A summary of all tasks is provided in Appendix 1.

1 CATCH-EFFORT INFORMATION & MONITORING

A formal fishery data-collection system is being developed in Honduras, and there is currently limited knowledge of catches, biomass levels or true stock status. While fishery removals are monitored through landing forms and at processing plants and the number of licensed vessels is known, there is not sufficient catch (both legal and illegal) or (effective) fishing effort information to assess productivity, define control rules, or support the harvest strategy in Honduras. Thus, the FIP scoping document identified the need to improve the fishery data collection system to monitor effort and removals from all sectors and on a regular basis, aimed at building a solid fishery database that can support the harvest strategy in the long term. This information should be collected from all sources and sectors: the commercial and artisanal fleets, fishery-independent surveys, observer programs, and include estimates of illegal fishing activities.

The activities described in this section (Task 1) are focused in the compilation and analysis of existing information and in the development of a comprehensive data collection program that can satisfy the needs of a precautionary and sustainable management strategy. Task 2 is intricately linked to Task 1, but it is centered on adapting, improving or developing new forms to collect all the necessary data to inform the stock assessment and the harvest strategy.

1.1 Develop a comprehensive monitoring program.

The Fisheries Law requires that all boats report their catch on a monthly basis, and are charged a fine if they don't. Currently DIGEPESCA collects sale/purchase forms from commercial vessels and processing plants every month. Processing plants also keep landings records in their files. Other ongoing efforts are those conducted by OSPESCA (MASPLESCA) in coordination with DIGEPESCA, who are currently monitoring catch and effort at sea.

In regard to the artisanal sector, Roatan NGOs have sent a proposal to DIGEPESCA to start a catch reporting system for this sector. This activity intends to revisit this effort and consolidate commercial and artisanal monitoring programs. NGOs can assist DIGEPESCA in the collection and analysis of artisanal information.

It is necessary to coordinate and combine the above activities to develop a permanent monitoring program that addresses removals from all sectors, provides sufficient data for stock assessment and informs the harvest strategy. This program should develop, enhance, and adopt an integrated commercial and artisanal data collection system. It should also be in tune with regional efforts including the data-consolidation and training programs led by OSPESCA (MASPLESCA) and the MAREA project.

Working Group	Data Integration: DIGEPESCA in coordination with OSPESCA (MASPLESCA) and contribution from NGOs that have collected artisanal information. Preliminary Analysis: Centro de Ecología Marina (CEM)
Priority	High
Status	Ongoing- New
Time Frame	1 year
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring 1.2.4. Assessment of stock status

1.2 Integrate and analyze commercial catch information.

Commercial catch data needs to be fully assembled and systematized before any analyses can be performed. DIGEPESCA and the main processing plants already have some data, but some gaps exist.

Additional efforts in this direction have been led by OSPESCA (MASPLESCA) that has recently integrated some commercial catch information and has trained people to analyze it.

The present activity will assemble all available commercial catch data including data from DIGEPESCA, processing plants, export data, and observer data. It is recommended that the consolidated database be made available to all interested parties (e.g., NGOs such as TNC, WWF) so additional analyses can be performed.

All this information will be consolidated in a new, comprehensive database that will be developed under Activity 1.7.

Working Group	1) Processing plants and DIGEPESCA: catch data 2) SENASA: export data 3) NGOs (WWF): observer data 4) Data Analysis: OSPESCA (MASPLESCA) and Centro de Ecología Marina (CEM)
Priority	High
Status	Ongoing- New
Time Frame	Data Assemblage: 6 Months Analysis: 6 Months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring

1.3 Integrate and analyze artisanal catch information.

The artisanal lobster fishery does not occur throughout the whole coast of Honduras. There are a few pockets of artisanal fishing in the south, but not much in the north and over most of the coast. Artisanal catch data is collected only in the south by DIGEPESCA. Some artisanal fishermen sell their product to processing plants, who also keep records of this information. In some protected areas they monitor the number of boats operating, number of traps, etc., but not the actual catch of lobsters. The temporal and spatial coverage of this artisanal data thus is limited, as has resulted mainly from capacity-building efforts. Given their experience with this sector, NGOs can assist DIGEPESCA in the collection and analysis of artisanal information.

This activity will consist in the integration and analysis of the available artisanal data.

Working Group	Roatan Marine Park & Cayos Cochinos (NGOs) with the help of OSPESCA and any others that are collecting this information.
Priority	High
Status	Ongoing- New
Time Frame	Cayos Cochinos: 1 month; Roatan: 2 months; TOTAL: 6 months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy

1.4 Integrate and document IUU information

One of the main causes of overfishing in Honduras is the prevalence of unsustainable and illegal fishing practices, including the excess removal of undersized lobsters and poaching. A precise estimate of the percentage of IUU catch (unlicensed vessels, foreign vessels, unreported catch, undersized lobsters or females with eggs) is not available. A robust strategy to document and evaluate the magnitude of illegal fishing should be designed. The strategy may begin with a review of existing studies that covers the methods and results, and is expected to form the baseline for further monitoring of IUU catch levels.

This activity will consist in integrating and documenting the data that DIGEPESCA and NGOs currently have to assess illegal activities from markets, restaurants, and the vessel monitoring system.

Working Group	DIGEPESCA, in coordination with NGOs: Cayos Cochinos, Roatan Marine Park, Coral Reef Alliance (CORAL)
Priority	High
Status	Ongoing- New
Time Frame	6 months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring

1.5 Analysis of IUU information

Under this activity, a country-wide IUU study will be conducted, quantifying the amount of (illegal) lobster consumed in the country through the analysis of the information assembled under Activity 1.4 (above) and the collection of new data from other areas.

Working Group	Centro de Ecologia Marina in coordination with DIGEPESCA
Priority	High
Status	New
Time Frame	1 year
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring

1.6 Develop a formal long-term IUU monitoring program.

In addition to the initial assessment of illegal fishing, it will be important to establish a permanent IUU fishing monitoring and prevention plan. This activity will consist in formalizing the current data collection system that DIGEPESCA and various NGOs have to monitor IUU activities (e.g., markets,

restaurants, VMS system). The tasks performed under Activities 1.4 and 1.5 will serve as a platform to configure a long-term IUU monitoring program.

Working Group	DIGEPESCA (in coordination with NGOs that have collected and analyzed IUU information)
Priority	High
Status	New
Time Frame	6 months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring

1.7 Build a comprehensive database system.

This activity will consist in building a database system that can integrate and manage data from various sources. The system should work for the fishermen, processing plants and DIGEPESCA, and should also be compatible with the new regional data collection form being developed by OSPESCA.

Working Group	Centro de Ecología Marina
Priority	High
Status	New
Time Frame	6 months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and Monitoring

2 CATCH REPORTING SYSTEM

The current fishery information collected by DIGEPESCA, the processing plants, and various NGOs has to be updated and consolidated. It is necessary to develop landing forms and or sale/purchase tickets that include all the information required to conduct quantitative stock assessments and that is consistent with the information needs of management and with the pursuit of a sustainable fishery.

The new forms should include detailed catch and effort data, basic biological information on the target species (spiny lobster), other incidental catch (retained, bycatch, or endangered-threatened or protected –ETP- species), and information on the location fished (e.g., type of habitat, depth, etc.). It is possible that different sectors will require different landing forms that are suitable to the characteristics of the type of operation (e.g., commercial fleet, artisanal fleet, processing plants, etc.).

This section follows the compilation, review, and analysis of existing data, and the conceptualization of a comprehensive monitoring program (Task 1 Activities). The activities described in this section (Task 2) are focused in adapting, improving or developing new forms to collect all the necessary data to inform stock assessments, ecosystem-based indicators (i.e., non-target species, habitat, ecosystem), and the harvest strategy.

2.1 Review and development of commercial landings form

In addition to data consolidation activities (see 1.2, 1.3 and 1.4), OSPESCA (MASPLESCA) is also working on the development of a data collection form format that will need to be incorporated into DIGEPESCA's fishery database.

This activity will consist in the design and/or adoption of a commercial landings form that is compatible with that being developed by OSPESCA. Complementary to this will be the development of a catch template for processing plants that could feed into the database system (Activity 1.7) which will be used by processing plants and DIGEPESCA. This catch template should also be compatible with the regional data collection form being developed by OSPESCA.

Working Group	OSPESCA (MASPLESCA), DIGEPESCA, Centro de Ecología Marina
Priority	High
Status	Ongoing-New
Time Frame	6 months
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and monitoring

2.2 Development of artisanal landings form

Artisanal information is only collected sporadically in some parts of Honduran coast by different institutions (DIGEPESCA, NGOs, and processing plants) (see Activity 1.3). All efforts to document artisanal lobster activities must become part of a permanent monitoring process (see Activity 1.1).

Thus, Activity 1.1 will incorporate the artisanal sector in a comprehensive catch reporting system, Activity 1.3 will integrate and analyze existing data, and this activity will develop a catch reporting form for this sector.

Working Group	DIGEPESCA and NGOs that have collected artisanal data (e.g., Roatan & Cayos Cochinos)
Priority	High
Status	Ongoing-New
Time Frame	N/A
MSC Performance Indicator(s)	1.1.1 Stock Status 1.2.1 Harvest Strategy 1.2.3 Information and monitoring

*N/A= not available, not discussed at FIP meeting, or not provided by stakeholders.

2.3 Incorporation of non-target species in landings forms

The scoping document identified the need to document the amounts of non-target retained, bycatch, and ETP species. Observer program forms include incidental catch: other species captured by traps, type of organism, and amount trapped.

This activity will focus on maximizing the form being developed by OSPESCA and the new landing forms for the industrial and artisanal sectors. The landing forms will be revised to ensure they allow for reporting of non-target species (retained, bycatch and ETP species and Lionfish). New fields in the forms should include the composition (e.g., list types of possible species with a check box next to them) and quantity of associated species. Lionfish observations should be recorded in a separate box.

Working Group	OSPESCA, DIGEPESCA, NGOs
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	2.1.3 Retained Species Information and Monitoring 2.2.3 Bycatch Species Information and Monitoring 2.3.3 ETP Species Information and Monitoring

3 STOCK ASSESSMENT & MANAGEMENT

There is uncertainty regarding stock boundaries for all Caribbean lobster stocks, including the Honduran stock. However, scientists have generally agreed that Nicaragua and Honduras share the same platform, and therefore exploit the same stock. Other analyses (e.g., Sian Ka'an and Banco Chinchorro Spiny Lobster Assessment, MRAG Americas, *in prep.*) have discussed a bank-by-bank approach as a more precautionary way to manage lobster stocks. It is recommended that this issue continues to be explored and researched, both between countries and within Honduras, as a bank-by-bank management scheme may be warranted if insufficient information exists to demonstrate that the adult stock(s) are independent; the bank by bank concept provides a precautionary approach when separate stocks cannot be identified. Exploration of physical, biological, and/or operational boundaries among lobster banks is recommended.

3.1 Definition of Unit Stock

The hypothesis that the Honduras spiny lobster stock may be shared with Nicaragua, was considered since the beginning, as well as that the stock may be subdivided into different banks, between and within these countries. Although it was decided during the FIP workshop to conduct the FIP at the national level, further work will be necessary to provide a robust definition of the unit stock.

If evidence is presented to support a shared stock with Nicaragua, joint assessments should incorporate more robust fishery data from Honduras. Sub-stocks, or banks, within Honduras should be identified to facilitate local management. Overall, defining the unit stock will help determine what level of management is most appropriate (joint Honduras-Nicaragua, national, or local). In the future, the scope can move to a bank-by-bank approach if it is determined that it could be a more precautionary method.

Working Group	DIGEPESCA and NGOs
Priority	Medium
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	1.1.1. Stock status 1.2.1. Performance of the harvest strategy 1.2.4. Stock assessment

3.2 Develop stock assessment model

Previous assessment efforts have not been able to reach conclusions on stock abundance or status for the Honduran fishery alone. Better time-series of catch and effort data are needed from Honduras to conduct future assessments.

After the consolidated fishery database is thoroughly reviewed and assembled (Activity 1.7), and sufficient information becomes available (Activities 1.1-1.6), assessment methods can evolve from data-limited to data-rich. Under this activity a stock assessment model that is consistent with the data sources will be selected. Modeling options that are also suitable for the species, the fishery, and the management needs will be evaluated.

Working Group	OSPESCA, DIGEPESCA
Priority	High
Status	New

Time Frame	2 weeks
MSC Performance Indicator(s)	1.2.4 Assessment of Stock Status

3.3 Perform stock assessment

Joint analyses of the Honduras-Nicaragua stock have not been able to reach solid conclusions on stock status but suggest that overfishing may be occurring. A stock assessment for Honduras alone is not available, but indicators such as declining trends in total landings, fluctuating catch per unit effort (CPUE), disruption of the age/size structure, and low abundances also suggest that the Honduran stock is overfished.

More reliable estimates of current stock biomass and fishing mortality should be available through the development of an appropriate stock assessment and the results compared with target and limit reference points. These should demonstrate whether the stock is around target biomass levels and above the point where recruitment would be impaired. Reference points consistent with Maximum Sustainable Yield (MSY) or proxy are needed and will be developed under this activity.

Working Group	OSPESCA, NGOs, (Consultants), DIGEPESCA
Priority	High
Status	New
Time Frame	1 year
MSC Performance Indicator(s)	1.2.1. Stock Status 1.1.2. Reference Points 1.2.4 Assessment of Stock Status

3.4 Develop harvest control rules and integrate to harvest strategy

The harvest strategy has precautionary procedures in place including access controls, seasonal and area closures, effort controls, gear restrictions, and size limits, but there is no evidence that it is achieving its objectives, that any form of harvest controls rules are applied to reduce the exploitation rate if reference levels are exceeded, or that actions are implemented to rebuild the stock if it is overfished.

A method to modulate the capture of lobster that is responsive to the status of the stock will be developed under this activity. If fishing mortality is increasing and biomass is below the acceptable reproductive rate, defined actions (i.e., Harvest Control Rules - HCRs) will be defined to limit fishing effort (e.g., no more licenses, limit effort, setting quotas, etc.) and stop the decline in abundance. These rules must be integrated to the harvest strategy, as part of the fishery management plan (Task 7). Funding options for this activity will have to be explored.

Working Group	DIGEPESCA
Priority	High
Status	New
Time Frame	6 months
MSC Performance Indicator(s)	1.1.1 Stock status 1.1.2 Reference points 1.1.3 Stock rebuilding 1.2.1 Performance of the harvest strategy

	<p>1.2.2. Harvest control rules and tools</p> <p>3.2.1 Fishery-specific objectives</p>
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4 EFFECTS ON RETAINED, BYCATCH AND ETP SPECIES

Although no adverse impacts from the lobster trap fishery were noted for retained, bycatch, and ETP species, there was limited documented information to support the conclusion in the pre-assessment of the fishery. Such documentation as management plans and ecosystem studies, if available, would improve the performance of the fishery in regard to ecosystem impacts. The lack of information was based largely on perceptions that minor impacts occur that do not warrant further research. It seems likely that an expert consultation, consisting of scientists, managers, industry, and NGOS, combined with some research on these topics based on studies conducted elsewhere, could assist in meeting the information requirements and in developing a precautionary management approach.

Managers and scientists are encouraged to begin a program to explicitly collect retained, bycatch and ETP species data or to retrieve it from already existing catch, survey, or observer program records at DIGEPESCA and NGOs. Evaluation of fishery impacts from other, well studied fisheries could provide inferences on potential impacts, which could lead to precautionary management approaches. In addition to collecting baseline data, information about associated species should be incorporated into the regular monitoring studies conducted by DIGEPESCA. These studies should document the magnitude of the impact on species, determine their population status, and evaluate the management strategy in light of new information.

4.1 Review research on impacts on non-target species in other areas

Research from other areas could provide some insight on the composition and proportion of retained and bycatch species associated with lobster fisheries, and on the frequency or lack of interactions with ETP species. Related studies could also help to evaluate the level of risk posed by active and lost traps to non-target species.

Information from existing studies on retained, bycatch, and ETP species associated with lobster fisheries in other areas needs to be reviewed. This activity will consist in consulting with OSPESCA to find out if there have been studies of bycatch, retained, and ETP species in lobster traps done in the region, and if so, a literature review of those studies will be conducted. The information can later be compared to the results of regular monitoring studies in Honduras that will be performed under Activity 4.2.

Working Group	NGOs
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	<p>2.1.3 Retained Species Information and Monitoring</p> <p>2.2.3 Bycatch Species Information and Monitoring</p> <p>2.3.3 ETP Species Information and Monitoring</p>

4.2 Develop observer program for long-term monitoring of non-target species

Data on the species composition and quantities of retained and discarded catch are necessary to confirm that retained species remain classified as minor species and to evaluate bycatch status and to determine if bycatch management is necessary. Evidence is also required to confirm that interaction with ETP species does not occur and that the current strategy is sufficient. Permanent monitoring and documentation of retained, bycatch, ETP species, and lionfish interactions is encouraged.

This activity will consist of the development of an observer program in Honduras to document retained, bycatch, and ETP species caught in lobster traps. Additionally, modification to the new landings forms to ensure it allows for reporting of non-target species (retained, bycatch and ETP species) is recommended under Activity 2.3.

Working Group	WWF in coordination with DIGEPESCA, OSPESCA (MASPLESCA), and industry (fishermen)
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	2.1.3 Retained Species Information and Monitoring 2.2.3 Bycatch Species Information and Monitoring 2.3.3 ETP Species Information and Monitoring

5. EFFECTS ON HABITAT & ECOSYSTEM

The potential habitat impacts of lobster traps and lack of information to properly evaluate habitat and ecosystem indicators are serious problems that the fishery must improve to become more sustainable. Two main potential risks to ecosystem health must be evaluated: the decline in lobster abundance from overfishing, and the damage to essential habitats from traps. The scale, intensity, and effects of traps on habitat structure have to be evaluated, or documentation must be presented to demonstrate that lobster fishing gears (active and discarded) do not cause serious or irreversible harm to corals, seagrass beds, and other sensitive habitats.

There is no information on the nature, scale, or intensity of the impacts of lobster gears on benthic habitats or on gear loss or disposal on fishing grounds. No systematic studies of fishery impacts on ecosystem structure and function have been conducted in Honduras. Managers and scientists are encouraged to begin a program to explicitly collect data or retrieve it from existing surveys or scientific studies. Evaluation of fishery impacts from other, well studied fisheries could provide inferences on potential impacts, which could lead to precautionary management approaches if necessary. Information from (full) assessments in other locations can be collected as part of the review, and could be sufficient to improve the performance of the fishery in relation to habitat and ecosystem impacts.

5.1 Review research on habitat impacts from other areas

Evaluation of habitat and ecosystem impacts from other, well-studied fisheries is the first step in developing a precautionary ecosystem-wide strategy for the Honduras lobster trap fishery. Data from studies in, for example, Florida, Puerto Rico, and the Virgin Islands should be compiled to develop

inferences of the effects of traps on habitats in Honduras¹. This information can later be compared with local data, as it becomes available (Activities 5.2 to 5.6).

Working Group	WWF
Priority	Medium
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	2.4.3 Habitat Information and Monitoring 2.5.3 Ecosystem Information and Monitoring

5.2 Conduct study to evaluate habitat impacts in Honduras

Traps are expected to pose some risk to coral reefs habitats from direct contact. Information is needed to determine the level of risk the fishery poses on the nature, distribution and vulnerability of the main lobster habitats. The scale, intensity, and effects of traps on habitat must be evaluated and a management strategy designed to address unknown impacts to habitat.

OSPESCA has a project to look for and document where lobster traps are discarded. Following the review of habitat impacts in other areas and the results of this OSPESCA project, it may be necessary to conduct a study to evaluate the effects of lobster traps on habitat in Honduras, specifically since much of the lobster trap fishing is fairly deep compared to other parts of the region. This study could be done in the seagrass beds (where most traps are placed) and on coral reefs. It could also include interviews with fishermen to find out where they discard their traps and focus in those areas too.

Working Group	NGOs (Centro de Ecología Marina) in coordination with industry
Priority	High
Status	Ongoing-New
Time Frame	N/A
MSC Performance Indicator(s)	2.4.1. Habitat status 2.4.2. Habitat management strategy 2.4.3. Habitat information & monitoring

5.3 Expand Critical Habitat and Ecosystem studies to other areas

The lobster fishery retains only a few species, and discard, bycatch or ETP species may be negligible. Thus, the potential impact of the fishery on the ecosystem structure and function is likely to come directly from changes in the abundance of lobster or from habitat loss or damage. Also lost lobster traps could lead to ghost fishing of adult lobster and bycatch species. Specific management actions are needed to address unknown impacts to the ecosystem from excess gear, gear loss, ghost gear, lobster depletion and habitat damage.

There have been no systematic studies of ecosystem impacts from the lobster fishery in Honduras, but a few independent studies in the Mesoamerican Reef (including Honduras and Nicaragua) have addressed

¹ Relevant studies noted in the FIP workshop include: the research of Ron Hill on the effects of fish traps on habitats in the USVI and Puerto Rico; studies done in Florida on the effects of wooden traps; a 1992 study by the University of Miami that may be available from the South Florida Fishing Council.

different aspects of ecosystem issues. WWF (2008, 2010) has conducted a number of studies² as part of a program to promote sustainable fishing practices in the lobster fisheries of the Mesoamerican Reef. These studies applied an ecosystem monitoring approach and include maps of the areas. In 2010, WWF also conducted study in Cayos Miskitos after Hurricane Felix to evaluate the impact of the hurricane on habitat (seagrass beds). The working group also reports that there are previous studies of important nursing grounds for lobster and other species, so new research can be done comparing lobster populations in those areas to populations in fished areas.

There is a need to continue, replicate and expand the geographical range of the habitat and ecosystem studies done in the region to other areas in the Honduras-Nicaragua shelf. This activity would be led by WWF, DIGEPESCA, the industry, and possibly TNC (if studies are ecosystem-focused and areas studied include important habitats for several species, not just lobster).

Working Group	WWF, DIGEPESCA, Industry, TNC
Priority	High
Status	Ongoing-New
Time Frame	1 year (to expand Critical Habitat study), plus ? (N/A)
MSC Performance Indicator(s)	2.4.1. Habitat status 2.4.2. Habitat management strategy 2.4.3. Habitat information & monitoring 2.5.1. Ecosystem status 2.5.2 Ecosystem management strategy 2.5.3. Ecosystem Information and Monitoring

5.4 Publish TNC assessment on Gaps in Marine Conservation

In 2010 TNC did an assessment of Gaps in Marine Conservation (not published), which contains georeferenced habitat layers. TNC's study prioritizes 36 sites, classified as singular habitats that are not represented in MPAs at the national level. The prioritization criteria should be described.

² WWF-DARDEN. 2008. Análisis de datos generados por el programa de observadores a bordo de barcos de la flota industrial langostera, basada en nasas, de Honduras en la temporada 2007-2008. Proyecto: Promoción de las buenas prácticas para la pesquería de langosta en Centroamérica: Construyendo vínculos para una comercialización responsable. Informe final. Por F.E. Sosa-Cordero, A. Castaneda, A. Hernandez-Sanchez y J. Olivares-Escobedo. Chetumal, México. 47 pp.

WWF-USAID. 2010¹. Evaluación de los hábitats arrecifales coralinos en el Arrecife de Media Luna, Honduras. Proyecto "Promover el manejo para la Pesquería de la Langosta, con el cumplimiento ambiental y conservación de la biodiversidad marina en la Ecoregión del Arrecife Mesoamericano, en apoyo al acuerdo de Cooperación Ambiental (ECA) bajo el CAFTA-DR Proyecto". Reporte Tecnico. Por F. Rodriguez-Zaragoza, A. Cupul-Magaña. Universidad de Guadalajara, México. 49 pp.

WWF-USAID. 2010². Evaluación de los hábitats arrecifales coralinos en los Cayos Misquitos, Nicaragua. Proyecto "Promover el manejo para la Pesquería de la Langosta, con el cumplimiento ambiental y conservación de la biodiversidad marina en la Ecoregión del Arrecife Mesoamericano, en apoyo al acuerdo de Cooperación Ambiental (ECA) bajo el CAFTA-DR Proyecto". Reporte Tecnico. Por F. Rodriguez-Zaragoza, A. Cupul-Magaña. Universidad de Guadalajara, México. 59 pp.

WWF-USAID. 2010³. Evaluación del recurso langosta *Panulirus argus* en la plataforma de Honduras y Nicaragua, a partir de datos del programa de observadores colectados en dos temporadas 2007-2008; 2009- 2010. Proyecto "Promover el manejo para la Pesquería de la Langosta, con el cumplimiento ambiental y conservación de la biodiversidad marina en la Ecoregión del Arrecife Mesoamericano, en apoyo al acuerdo de Cooperación Ambiental (ECA) bajo el CAFTA-DR Proyecto". Reporte Tecnico. Por E. Sosa-Cordero, A. Ramirez-Gonzalez. El Colegio de la Frontera Sur-Unidad Chetumal, México. 51 pp.

This activity consists in the publication of TNC’s data and report. This habitat information could then be included as a georeferenced layer in the VMS system (managed by DIGEPESCA/OSPESCA) to determine if industrial vessels go across MPAs or sensitive habitats.

Working Group	TNC, DIGEPESCA, OSPESCA
Priority	High
Status	Ongoing-New
Time Frame	1 year
MSC Performance Indicator(s)	2.4.1. Habitat status 2.4.2. Habitat management strategy 2.4.3. Habitat information & monitoring 2.5.1. Ecosystem status 2.5.2. Ecosystem management strategy 2.5.3. Ecosystem Information and Monitoring 3.2.3. Compliance and enforcement

5.5 Establish a system to detect vessel incursions in Protected Areas

Given the large potentials of the VMS system at DIGEPESCA/OSPESCA and that vulnerable habitats are being georeferenced by various projects (see Activity 5.4), it will be possible to add more layers to the VMS, to provide a real-time assessment of vessel activities over specific areas.

This activity will consist in establishing an "Early Warning System" to detect incursions of vessels into vulnerable habitats and marine protected areas (MPAs) through VMS. The working group suggested using Swan Islands (declared as an MPA by Presidential decree) as a pilot project to test an early warning system in remote islands. It is important to evaluate the response of the Navy to this warning system. If this pilot project works in remote islands, it can be implemented in other MPAs.

Working Group	DIGEPESCA, OSPESCA, TNC, WWF, Navy
Priority	High
Status	New
MSC Performance Indicator(s)	2.4.2 Habitat Management Strategy 2.5.2. Ecosystem management strategy 3.2.3.Compliance and Enforcement

6. LEGAL FRAMEWORK

The legal and customary framework in Honduras has some components for sustainable management, particularly since its incorporation in 2009 into the SICA/OSPESCA regional structure and the adoption of a unified fishery policy. The Honduran Fisheries Law and Regulations have provisions to prevent overexploitation, but need to establish clear management objectives; define key concepts such as overfishing, critical stock levels or how to calculate them; describe a process to recover a fishery from overfishing, and stipulate mechanisms to avoid fleet overcapacity or to establish a true limited entry process. The legal management framework has to be modernized and strengthened, such that sustainable fisheries and sustainable livelihoods of fishermen can be achieved.

A multi-agency approach (e.g. DIGEPESCA, SERNA, the Navy, the Industry, etc.) is used to manage the fisheries sector, but their functions, roles and responsibilities are not completely defined and other interest groups and the broader community may not be well represented. The system must be open to and encourage participation of interested or affected parties, such that a formal procedure for stakeholder consultation and information-sharing can be developed. The management system needs a structure that would lead to clear management objectives and defined strategies to meet these objectives. Formalizing the decision making procedures, providing the best available information, addressing of concerns, applying the precautionary approach, and providing for explanations of decisions, would satisfy this requirement.

Updating fisheries laws and regulations, strengthening and/or restructuring the fisheries department (DIGEPESCA) and integrating stakeholder consultation into the decision-making process are important measures for improving the legal framework for fisheries in Honduras.

6.1 Update fisheries law

A new fisheries law has been finalized and will soon proceed to the President and National Congress for approval and for issuing the corresponding decree. The first step in improving the legal framework will be to approve the new law, and the government should be encouraged to commit to adopting the new law immediately after approval. OSPESCA led a public consultation process which resulted in approval from all sectors for the new law. The new law includes provisions for the strengthening /restructuring of DIGEPESCA (see section 6.3.).

Working Group	President, National Congress
Priority	Medium
Status	Ongoing
Time Frame	6 months
MSC Performance Indicator(s)	3.1.1. Legal framework

6.2 Update fisheries regulations

Detailed regulations must be developed through a process of stakeholder consultation, documentation, and international communication via OSPESCA. The three-year process of developing detailed regulations for the lobster fishery should begin with a series of stakeholder consultation workshops by DIGEPESCA. Sharing information will empower stakeholders, who are likely to promote multi-stakeholder meetings. The consultation should include discussion of restructuring DIGEPESCA. Then, FAO/OSPESCA should contract an expert consultant to facilitate development and documentation of the new regulations. Finally, OSPESCA should facilitate information exchange between DIGEPESCA and the

regulators in other countries to learn about other experiences implementing regulations. Particular attention should be paid to which regulations have been implemented and what degree of success they have had in other countries.

Working Group	DIGEPESCA, FAO, OSPESCA
Priority	Medium
Status	New
Time Frame	3 years
MSC Performance Indicator(s)	3.1.1. Legal framework

6.3 Restructure Fisheries Department (DIGEPESCA)

DIGEPESCA needs to be strengthened and institutionalized. OSPESCA has an ongoing project to evaluate DIGEPESCA's reinforcement needs and allocate international funds to strengthen the department based on this evaluation. The new fisheries laws and regulations should include provisions to restructure DIGEPESCA. SAG and DIGEPESCA, with cooperation from OSPESCA, should implement the necessary structural changes to DIGEPESCA based on the OSPESCA evaluation, stakeholder consultations and new fisheries law.

Working Group	SAG, DIGEPESCA, OSPESCA
Priority	High
Status	Ongoing - New
Time Frame	N/A
MSC Performance Indicator(s)	3.1.2. Consultation, roles and responsibilities 3.2.2. Fishery-specific decision-making process

6.4 Develop a stakeholder consultation process

DIGEPESCA needs to establish a stakeholder consultation process for the lobster fishery and other fisheries. It will be important to ensure stakeholders are consulted when adopting any new regulations, laws, or other management measures. The consultation process needs to be transparent, so it will be important to ensure stakeholders are provided the relevant information to increase their empowerment.

Working Group	DIGEPESCA
Priority	High
Status	New
Time Frame	2 years
MSC Performance Indicator(s)	3.1.2. Consultation, roles and responsibilities 3.2.2. Fishery-specific decision-making process

7. FISHERY MANAGEMENT PLAN

There is a need to develop a formal management plan for the fishery with explicit objectives. Development of a fishery management plan, based on the OSPESCA regional guidelines, would provide guidance for managing the fishery. The management system needs a structure that would lead to clear management objectives and defined strategies to meet these objectives; as well as to allow for a performance evaluation. A system is required for timely review on a regular basis. An on-going procedure to prepare a review of the management system would help to improve the performance of the fishery. It will be important to assess compliance with regulations (i.e., size limits, closed seasons, closed areas) as part of the performance evaluation.

A Lobster Fishery Management Plan (FMP) should establish clear objectives for the management system, define key concepts such as overfishing and critical stock levels, describe explicit harvest control rules that are responsive to stock status (Activity 3.4), and establish a transparent decision-making process based on the precautionary principle to achieve the objectives. OSPESCA is currently developing a regional FMP, so this effort will aim to make that FMP relevant at the national level. The process of developing the FMP must ensure that all stakeholder interests are represented and consensus is reached from all parties through a transparent and equitable decision-making process. It is also important to develop a system to monitor and evaluate the performance of the management system.

7.1 Stakeholder consultation

It will be important to develop a consultation process for local communities and other stakeholders at the national level to be involved in the development and adoption of a lobster fishery management plan. The consultation process developed must be documented. The consultation process should be implemented by OSPESCA (MASPLESCA) in coordination with WWF, and DIGEPESCA would participate in the consultation meetings to provide input. The fishery management plan should be developed based on these stakeholder consultations.

Working Group	OSPESCA (MASPLESCA) in coordination with WWF and DIGEPESCA
Priority	High
Status	New
Time Frame	1 year
MSC Performance Indicator(s)	3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process

7.2 Adapt CLME regional lobster FMP

The Caribbean Large Marine Ecosystem (CLME) governance project includes a Lobster Fishery Management Plan (FMP) that has been developed by MASPLESCA/OSPESCA. This regional FMP should be adapted and adopted for lobster and other species of commercial importance at the national level. The initiative for the reformed fishery law promotes the development of guidelines for the use of fishery resources, or Management Plans.

Working Group	OSPESCA (MASPLESCA) and DIGEPESCA
Priority	High
Status	Ongoing
Time Frame	N/A

MSC Performance Indicator(s)	3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process
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7.3 Adapt OSPESCA precautionary technical criteria

OSPESCA has defined “Precautionary Technical Criteria” for the FMP and how to calculate maximum harvest levels. OSPESCA and DIGEPESCA should adapt and implement the criteria to define critical stock levels in Honduras.

Working Group	OSPESCA and DIGEPESCA
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	1.1.2. Reference points 1.2.2. Harvest control rules and tools 3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process

7.4 National lobster stakeholder committee

There is currently a Spiny Lobster Initiative Working Group consisting of 18 members from all sectors: industry, government, non-profit organizations, etc. The Working Group should establish and select members of a National Multi-sector Lobster Stakeholder Committee with representation from all sectors that is smaller than the current Working Group. The new Committee should then establish a transparent decision-making process based on the precautionary principle.

An alternative activity proposed by the Spiny Lobster Initiative is to strengthen the inter-sectorial working group (formed in 2009) rather than create a new one.

Working Group	Spiny Lobster Working Group, The Spiny Lobster Initiative
Priority	High
Status	New
Time Frame	3 months
MSC Performance Indicator(s)	3.1.2. Consultation, roles and responsibilities 3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process

7.5 National-level council

A national-level council to develop the Lobster FMP should be formed. This council should include representatives from the main stakeholder groups in Honduras, so that diverse opinions and interests may be discussed and captured in the FMP. The main function of this group would be to provide multi-stakeholder input for the adaptation or development of a comprehensive FMP that addresses the concerns of multiple groups, in addition to the main sustainability objective. This group may be comparable to those that exist at the international level, such as OSPESCA’s Advisory Council (“*Consejo Consultivo*”).

Working Group	OSPESCA (MASPLESCA) and DIGEPESCA
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Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.1.2. Consultation, roles and responsibilities 3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process

7.6 Management system evaluation

Once in place, the new management system must be evaluated to determine effectiveness and improvement actions needed, and to document the decisions made. The new regional lobster stakeholder committee (see task 7.4) will be responsible for the management system evaluation.

Working Group	Regional lobster stakeholder committee
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.1. Fishery-specific objectives 3.2.2. Fishery-specific decision-making process 3.2.5. Monitoring and evaluation

8. RESEARCH PLAN

A systematic and strategic approach to address the management needs for the fishery via an active fishery-specific research plan at DIGEPESCA, would improve the score compared to the ad hoc nature of the current research. There is a need to obtain funding for research and to build capacity at DIGEPESCA. Future research plans should include assessments of ecosystem impacts. All research results should be made available and disseminated to all interested parties through participation at regional workshops or via the internet, for example.

The FIP workshop proposed a number of steps, carried out by different organizations, to develop the research plan. TNC, WWF, other NGOs, and Universities with relevant experience should work together to create the research plan. A research fund should be created to fund the research so that the plan can be implemented by DIGEPESCA in coordination with the NGOs.

8.1 Review of research and gap analysis

A researcher should be contracted to evaluate existing research for the region and identify gaps to present to the Spiny Lobster Initiative Working Group.

Working Group	WWF
Priority	Medium
Status	New
Time Frame	3 months
MSC Performance Indicator(s)	3.2.4. Research plan

8.2 Workshop to develop research plan

A one-day workshop should be planned to assist in the development of the research plan. The workshop content should be based on the results of the research study conducted in task 8.1, and should be carried out by the Spiny Lobster Initiative Working Group.

Working Group	Spiny Lobster Working Group
Priority	Medium
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.4. Research plan

8.3 Legal framework and funding

The reformed fishery law (under approval) prescribes a research fund to restructure DIGEPESCA's research plan and a technical and technological conversion fund. DIGEPESCA should apply law reforms and funds to restructure, develop and implement a fishery research plan, and ensure that financial resources are allocated to the necessary research projects.

Working Group	DIGEPESCA
Priority	Medium
Status	Ongoing
Time Frame	N/A
MSC Performance Indicator(s)	3.2.4. Research plan

8.4 Document research plan

TNC, WWF, CEM and OSPESCA engage in projects to promote research and monitoring protocols. These organizations should work to adapt and develop a fishery research plan based on the research and monitoring protocols and on advice from OSPESCA.

Working Group	TNC, WWF, CEM, OSPESCA
Priority	Medium
Status	Ongoing
Time Frame	N/A
MSC Performance Indicator(s)	3.2.4. Research plan

9. ENFORCEMENT

There are limited resources to support a strong monitoring, control, and surveillance (MCS) system in Honduras. The main problems include the lack of means of the government and the industry to control excess capacity and overcapitalization of the fishery, to control fishing and commercialization of undersized lobsters and gravid females, to control fishing during the closed season, poaching from other countries, and illegal fishing activities in general. IUU fishing is suspected to represent a high risk to sustainability of the resource. Compliance and enforcement are perhaps the issues that need most attention to improve the performance of the fishery.

The MCS system needs to be reinforced to improve compliance with regulations and to reduce the high incidence of illegal fishing activities. A review of the current MCS system, including a revision of fines and penalties, would help to identify gaps in knowledge, human capacity, and sectors where financial aid is most needed. This may result in numerous recommendations including, for example, capacity strengthening via training of fisheries officers, increased surveillance patrols, and/ or higher fines for violations.

It is also necessary to improve the fishery data collection system to make more informed decisions about the status of the fishery and the performance of the management system. Compliance with regulations (i.e., size limits, closed seasons, closed areas) should be assessed as part of the fishery and management performance evaluation.

9.1 Review current MCS strategy

The starting point for improving the MCS system is a review of the current strategy and activities. The review will analyze the existing program's strengths, weaknesses, opportunities and threats based on data compiled on current MCS activities (such as surveillance patrols, infringements, etc.). DIGEPESCA will work with the Navy and NGOs that monitor protected areas to compile data on current activities, and DIGEPESCA, OPESCA or WWF will coordinate a consultant-researcher to carry out the review.

Working Group	Consultant, DIGEPESCA (in coordination with OSPESCA, Navy and NGOs)
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement 3.2.5. Monitoring and evaluation

9.2 Fishery enforcement officers

Increasing the number and building capacity of fishery enforcement officers will be an important component of strengthening the MCS system. DIGEPESCA and OSPESCA should work to implement the task, and the Finance Ministry will be involved to determine the budget.

Working Group	DIGEPESCA, Finance Ministry, OSPESCA
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

9.3 Navy involvement

DIGEPESCA should propose to the Navy that it become involved in monitoring and enforcement of the lobster fishery regulations.

Working Group	DIGEPESCA, Navy
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

9.4 Satellite MCS

A satellite monitoring system was implemented in July 2010 to track fishing vessel routes. This ongoing satellite monitoring and surveillance system should be strengthened through new activities that a) develop a protocol for the chain of action in satellite surveillance, and b) incorporate geo-referenced habitat layers to map incursions into protected areas or susceptible habitats. The activities would be implemented by DIGEPESCA with technical assistance from OSPESCA, WWF and TNC on gaps in marine conservation and critical habitats.

Working Group	DIGEPESCA, OSPESCA, TNC, WWF
Priority	High
Status	Ongoing - New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

9.5 Inter-institutional cooperation

Inter-institutional cooperation should be strengthened to reinforce monitoring and surveillance activities. The Civil Society is made up of fishermen that oversee compliance with regulations and can coordinate with government entities to enforce them and ensure sanctions are applied to violators.

Working Group	DIGEPESCA, Navy, Merchant Navy, Port Prosecutors, the Attorney General's office with observers from the Civil Society
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

9.6 Closed season monitoring

DIGEPESCA should monitor lobster fishing during the closed season to ensure no lobsters are being sold, bought or exported during this time.

Working Group	DIGEPESCA
Priority	High
Status	New

Time Frame	N/A
MSC Performance Indicator(s)	1.2.3. Information and monitoring 3.2.3. Compliance and enforcement 3.2.5. Monitoring and evaluation

10. CAPACITY-BUILDING, EDUCATION & OUTREACH

10.1 Technical capacity-building for staff at DIGEPESCA

Fishery data collection in Honduras has been sparse in the past few decades. Some proportion of historical data has not been digitized, and some hard copies of landing forms may have been lost over time. There are only a few agents from DIGEPESCA that collect the forms from vessels and fishing plants, and very limited personnel to digitize and analyze the data.

With the development of a new data collection system, technical capacity-building will be needed for staff at DIGEPESCA to collect the data and conduct the analyses required (under Tasks 1, 2, and 3). Training programs in Central America, led by OSPESCA have already started. It is important that lessons learned in data collection, analysis, and capacity-building are shared among Central American Countries, with exchanges facilitated by regional organizations (OSPESCA/ MASPLESCEA).

MAREA can provide technical assistance to develop structured databases and conduct analyses.

Working Group	OSPESCA (MASPLESCEA), MAREA, WWF
Priority	High
Status	Ongoing-New
Time Frame	2 years
MSC Performance Indicator(s)	1.2.3 Target Species Information and Monitoring 2.1.3 Retained Species Information and Monitoring 2.2.3 Bycatch species Information and Monitoring 2.3.3 ETP Species Information and Monitoring

10.2 Capacity-building for Fishermen (Catch forms)

A new project to train fishermen to complete the new catch forms is recommended, particularly with the new and more detailed information required as part of the enhanced data collection system proposed under various Activities in Tasks 1 and 3. The new forms will allow for reporting of target and non-target species (retained, bycatch, ETP species, and Lionfish) (see Activity 3.3).

This activity will consist of training fishermen to complete the new form and to identify and report any retained, bycatch, ETP species and Lionfish caught. The working group noted that this activity could possibly be independent from an observer program, since fishermen could be trained to identify and document retained, bycatch, and ETP species themselves. In this case, an observer program doesn't need to be in place. An alternative is that after the initial observer program has collected essential information to assess non-target species status, fishermen could keep an ongoing monitoring program of target and non-target species simultaneously.

Working Group	WWF (as part of observer program), in coordination with DIGEPESCA
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Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	1.2.3 Target species Information and Monitoring 2.1.3 Retained Species Information and Monitoring 2.2.3 Bycatch Species Information and Monitoring 2.3.3 ETP Species Information and Monitoring

10.3 Capacity-building for Fishermen (IUU Training)

An outreach campaign should educate fishermen about the lobster fishery regulations in order to promote compliance and reduce the incidences of IUU fishing.

Working Group	NGOs
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

10.4 Schools and children (IUU)

NGOs should work with the schools to implement a school outreach program to educate children about the lobster fishery regulations.

Working Group	NGOs, Schools
Priority	High
Status	New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

10.5 Restaurants (IUU)

NGOs have ongoing work to educate restaurants about the lobster fishery regulations through the voluntary sustainable seafood commitment program. This program should be continued to ensure restaurants are educated about the lobster fishery regulations.

Working Group	Roatan Marine Park, Healthy Reef
Priority	High
Status	Ongoing - New
Time Frame	N/A
MSC Performance Indicator(s)	3.2.3. Compliance and enforcement

APPENDIX 1: Outline of proposed tasks for Honduras lobster FIP Action Plan

TASK	ROLE	TIMEFRAME	Ongoing	Additional 'NEW' work	Links to MSC Performance Indicators																						
					P1. Stock Status					P2. Environmental impacts					P3. Management												
					1.1.1 Stock Status	1.1.2 Reference Points	1.1.3 Stock rebuilding	1.2.1 Harvest Strategy	1.2.2 Harvest Control Rules and Tools	1.2.3 Information and monitoring	1.2.4 Assessment of Stock Status	2.1.3 Retained Spp Information/Monitoring	2.2.3 Bycatch Information/Monitoring	2.3.3 ETP Information/Monitoring	2.4.1 Habitat Status	2.4.2 Habitat Management Strategy	2.4.3 Habitat Information/Monitoring	2.5.1 Ecosystem Status	2.5.2 Ecosystem Management Strategy	2.5.3 Ecosystem Information/Monitoring	3.1.1 Legal/ Customary Framework	3.1.2 Consultation, Roles & Responsibilities	3.2.1 Fishery-Specific Objectives	3.2.2 Decision-making process	3.2.3 Compliance and Enforcement	3.2.4 Research Plan	3.2.5 Management Performance Evaluation
Note: H = high priority and M = Medium priority according to scoping document																											
1. Catch-Effort Information and Monitoring																											
1.1 Develop a comprehensive monitoring program	DIGEPESCA, OSPESCA, CEM	1 year	✓	✓	H			M	H	H																	
1.2 Integrate and analyze commercial catch information	DIGEPESCA, SENASA, WWF, OSPESCA, CEM	1 year	✓	✓	H			M	H																		
1.3. Integrate and analyze artisanal catch information	OSPESCA, Roatan Marine Park & Cayos Cochinos	6 months	✓	✓	H			M	H																		
1.4. Integrate and document IUU information	DIGEPESCA, Roatan Marine Park, Cayos Cochinos, CORAL	6 months	✓	✓	H			M	H														H				
1.5 Analysis of IUU information	CEM, DIGEPESCA	1 year	✓	✓	H			M	H																		
1.6 Long-term IUU monitoring plan	DIGEPESCA	6 months	✓	✓	H			M	H														H				
1.7 Develop a comprehensive database system	CEM, MAREA	6 months	✓	✓	H			M	H	H																	
2. Catch Reporting System																											
2.1. Review and development of commercial landings form	OSPESCA, DIGEPESCA, CEM	6 months	✓	✓	H			M	H																		
2.2. Development of artisanal landings form	DIGEPESCA, NGOs	N/A	✓	✓	H			M	H																		
2.3 Incorporation of non-target species in landing forms	OSPESCA, DIGEPESCA, NGOs	N/A	✓	✓							H	H	M														
3. Stock Assessment and Management																											
3.1 Definition of Unit Stock	DIGEPESCA, NGOs	N/A	✓	✓	M			M			M																
3.2 Develop stock assessment model	OSPESCA	2 weeks	✓	✓							H																
3.3. Perform stock assessment	OSPESCA, NGOs, Consultant	1 year	✓	✓	H	H					H																
3.4 Develop harvest control rules and integrate to harvest strategy	DIGEPESCA	6 months	✓	✓	H	H	H	M	H													M					
4. Effects on Retained, Bycatch, and ETP Species																											
4.1 Review research on impacts on non-target species in other areas	NGOs	N/A	✓	✓							H	H	M														
4.2 Develop observer program for long-term monitoring of non-target species	WWF, DIGEPESCA, OSPESCA, Industry	N/A	✓	✓							H	H	M														
5. Effects on Habitat and Ecosystem																											
5.1 Review research on habitat impacts from other areas	WWF	N/A	✓	✓													M				M						
5.2 Conduct study to evaluate habitat impacts in Honduras	NGOs, Industry	N/A	✓	✓								H	H	M													
5.3 Expand critical habitat and ecosystem studies to other areas	WWF, DIGEPESCA, Industry, TNC	>1 year	✓	✓								H	H	M	M	M	M										
5.4 Publish TNC assessment on Gaps in Marine Conservation	TNC, DIGEPESCA, OSPESCA	1 year	✓	✓								H	H	M	M	M	M						H				
5.5 Establish a system to detect vessel incursions in protected areas	DIGEPESCA, OSPESCA, TNC, WWF	N/A	✓	✓									H				M						H				

APPENDIX 1 (Cont.)

TASK	ROLE	TIMEFRAME	Ongoing	Additional 'NEW' work	Links to MSC Performance Indicators																						
					P1. Stock Status						P2. Environmental impacts						P3. Management										
					1.1.1 Stock Status	1.1.2 Reference Points	1.1.3 Stock rebuilding	1.2.1 Harvest Strategy	1.2.2 Harvest Control Rules and Tools	1.2.3 Information and monitoring	1.2.4 Assessment of Stock Status	2.1.3 Retained Spp Information/Monitoring	2.2.3 Bycatch Information/ Monitoring	2.3.3 ETP Information/ Monitoring	2.4.1 Habitat Status	2.4.2 Habitat Management Strategy	2.4.3 Habitat Information/ Monitoring	2.5.1 Ecosystem Status	2.5.2 Ecosystem Management Strategy	2.5.3 Ecosystem Information/ Monitoring	3.1.1 Legal/ Customary Framework	3.1.2 Consultation, Roles & Responsibilities	3.2.1 Fishery-Specific Objectives	3.2.2 Decision-making process	3.2.3 Compliance and Enforcement	3.2.4 Research Plan	3.2.5 Management Performance Evaluation
6. Legal Framework																											
6.1 Update fisheries law	President, National Congress	6 months	✓																								
6.2 Update fisheries regulations	DIGEPESCA, FAO, OSPESCA	3 years		✓																							
6.2 Restructure Fisheries Department (DIGEPESCA)	SAG, DIGEPESCA, OSPESCA	N/A	✓	✓																							
6.3 Develop a stakeholder consultation process	DIGEPESCA	2 years		✓																							
7. Fishery Management Plan																											
7.1 Stakeholder consultation	OSPESCA, WWF, DIGEPESCA	1 year		✓																							
7.2 Adapt CLME regional lobster FMP	OSPESCA, DIGEPESCA	N/A	✓																								
7.3 Adapt OPESCA Precautionary Technical Criteria	OSPESCA, DIGEPESCA	N/A		✓				H																			
7.4 Regional lobster stakeholder committee	Spiny Lobster Working Group & Initiative	3 months		✓																							
7.5 National-level council	OSPESCA, DIGEPESCA	N/A		✓																							
7.6 Management system evaluation	Regional Lobster Stakeholder Committee	N/A		✓																							
8. Research Plan																											
8.1 Review of research and gap analysis	WWF	3 months		✓																							
8.2 Workshop to develop research plan	Spiny Lobster Working Group	N/A		✓																							
8.3 Legal framework and funding	DIGEPESCA	N/A		✓																							
8.4 Finalize and document research plan	TNC, WWF, CME, OSPESCA	N/A		✓																							
9. Enforcement																											
9.1 Review current MCS strategy and activities	Consultant, DIGEPESCA, OSPESCA, Navy and NGOs	N/A		✓																							
9.2 Fishery enforcement officers	DIGEPESCA, Finance Ministry, OSPESCA	N/A		✓																							
9.3 Navy involvement	DIGEPESCA, Navy	N/A		✓																							
9.4 Satellite MCS	DIGEPESCA, OSPESCA, TNC, WWF	N/A		✓																							
9.5 Inter-institutional cooperation	DIGEPESCA, Navy, Merchant Navy, Fiscalia de Puerto, Ministerio Publico with observers from the Civil Society	N/A		✓																							
9.6 Closed season monitoring	DIGEPESCA	N/A		✓																							
10. Capacity Building, Education & Outreach																											
10.1 Technical capacity building for staff at DIGEPESCA	OSPESCA, MAREA	2 years		✓																							
10.2 Fishermen (Catch Forms)	WWF, DIGEPESCA	N/A		✓																							
10.3 Fishermen (IUU)	NGOs	N/A		✓																							
10.4 Schools and children (IUU)	NGOs, Schools	N/A		✓																							
10.5 Restaurants (IUU)	Roatan Marine Park, Healthy Reef	N/A		✓																							