



**ASEAN Regional Plan of Action
for the Management of Fishing Capacity
(RPOA-Capacity)**



Southeast Asian Fisheries Development Center



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Preparation and distribution of this document

The ASEAN Regional Plan of Action for the Management of Fishing Capacity (RPOA-Capacity) was prepared by the Secretariat of Southeast Asian Fisheries Development Center (SEAFDEC) in collaboration with the Association of Southeast Asian Nations (ASEAN) and the ASEAN Member States. The publication was distributed to the ASEAN Member States, SEAFDEC Departments and concerned institutions.

Bibliographic citation

SEAFDEC. 2017. ASEAN Regional Plan of Action for the Management of Fishing Capacity (RPOA-Capacity), Southeast Asian Fisheries Development Center. Bangkok, Thailand, 34 pp.

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The preparation of this document is supported by the
Government of Sweden
and
the Government of Japan.

Preface

Management of fishing capacity is the key element that ensures sustainable utilization of the fishery resources. Therefore, effective fisheries management scheme should not only focus on the management of the “fish” but also on regulating the fishing effort by developing schemes that give direction on where and how to fish, total allowable number of vessels and types of gear, special restrictions on protected areas and species, and seasonal restrictions. The importance of managing the fishing capacity for the sustainability of fisheries was one of the central themes during the **ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security towards 2020** in June 2011 in Bangkok, Thailand, with its Sub-Theme 1.2: Management of Fishing Capacity reflected in the **2011 Resolution and Plan of Action** adopted at the Conference.

Meanwhile, through the ASEAN Fisheries Consultative Forum (AFCF), the Department of Fisheries (DOF) Malaysia as lead country for the cluster “Promoting Sustainable Fisheries Practices: Fishing Capacity and Responsible Fisheries Practices” worked with SEAFDEC to develop an approach to support regional cooperation on the management of fishing capacity for the ASEAN Region. In line with this initiative, the First Regional Technical Consultation (RTC) was organized in February 2015 in Malaysia. Co-hosted by SEAFDEC and DOF Malaysia with funding support from Japanese Trust Fund (JTF) and the SEAFDEC-Sweden Project, the RTC reviewed the practices of the ASEAN Member States (AMSs) with regards to the management of fishing capacity. The RTC identified the issues, problems and opportunities, and key information items to be included in drafting the Regional Plan of Action for the Management of Fishing Capacity (RPOA-Capacity). Later on, the Experts Group Meeting on the RPOA-Capacity was convened by SEAFDEC in August 2015 in Songkhla Province, Thailand with support from the JTF and the SEAFDEC-Sweden Project. Based on the experiences and lessons drawn from the management of fishing capacity of each AMS, the Experts Group developed the first draft RPOA-Capacity to serve as guide for the management of fishing capacity in the region. This first draft was thoroughly discussed at the Second RTC held in December 2015 in Phuket Province, Thailand. The resulting final draft of the RPOA-Capacity was reviewed and endorsed during the 48th Meeting of SEAFDEC Council in April 2016, then submitted for endorsement to the 24th Meeting of the ASEAN Sectoral Working Group on Fisheries (ASWGFi) in June 2016, and adoption by the 38th Meeting of the ASEAN Ministers on Agriculture and Forestry (AMAF) in October 2016 in Singapore. Taking all these aspects into consideration, the RPOA-Capacity is therefore published to serve as guide for the AMSs in their efforts towards the sustainable utilization of fishery resources in their respective waters.

List of Acronyms

AFCF	ASEAN Fisheries Consultative Forum
AMSS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
CCRF	Code of Conduct for Responsible Fisheries
CPUE	Catch Per Unit Effort
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
IPOA	International Plan of Action
IUCN	International Union for Conservation of Nature
IUU fishing	Illegal, Unreported, and unregulated, fishing
NPOA	National Plan of Action
MCS	Monitoring, Control and Surveillance
MSY	Maximum Sustainable Yield
RFMO	Regional Fisheries Management Organization
RFVR	Regional Fishing Vessels Record
RPOA	Regional Plan of Action
RTC	Regional Technical Consultation
SEAFDEC	Southeast Asian Fisheries Development Center
UNCLOS	United Nations Convention on the Law of the Sea
WTO	World Trade Organization

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ASEAN Regional Plan of Action for the Management of Fishing Capacity (RPOA-Capacity)

PART 1 INTRODUCTION

During the last three to four decades, many Southeast Asian countries including Indonesia, Thailand, Philippines, Myanmar, Viet Nam, and Malaysia ranked among the top ten countries with the largest fisheries industries in the world. The ASEAN fisheries sector has played very important role in providing fish for food security, generating livelihood and employment, alleviating poverty, and increasing national revenues. In 2013, the total fishery production by two sub-sectors: inland and marine capture fisheries, was about 19.1 million metric tons (MT) valued at about 23.5 billion US\$ (SEAFDEC, 2015¹). The introduction of new fishing gear technologies as well as post-harvest and processing equipment had since 1960s led to the rapid and intensive development of fisheries industry in the region, particularly in Thailand, Indonesia, Philippines and Viet Nam.

The growing fishing fleets throughout the region coupled with rapid increases in harvesting capacity, has not been matched with the development of national capacities and regional/sub-regional cooperation to manage the fishing effort with due consideration given to the sustainability of fishery resources. Limited management, or regulation and control, of the active fishing capacity has allowed fisheries to operate in an “open-access regime” leading to continued increase in number of vessels and people engaged in fisheries. Therefore, there is a need to improve and implement licensing schemes and other capacity management measures that effectively limit entry into the fisheries, replacing the present inadequately designed systems.

¹ SEAFDEC, 2015. Fishery Statistical Bulletin of Southeast Asia 2013. Southeast Asian Fisheries Development Center, Bangkok, Thailand, 153 pp.

As reported, the estimated total number of fishing vessels in the ASEAN Member States (AMSs) in 2014 was 1.86 million vessels of which almost 99% are fishing vessels less than 24 meters in length. Indonesia, Philippines and Viet Nam have the largest numbers of fishing vessels with about 1,183,000, 478,500, and 124,600 vessels, respectively, although such numbers are believed to be only underestimations (Countries' reports during RTC-RFVR, June 2015). Since 1980s, most of the near shore fishing areas in Southeast Asia are overfished (Silvestre, G.T., 2003²). In many coastal areas however, the catch per unit efforts and other biological parameters and/or reference target points indicate declining status of fish stocks. Even though management instruments had been introduced to protect vulnerable fish stocks (e.g. closed areas and seasons, gear restrictions) together with efforts to contain the growth of the numbers of fishing fleets, the impact of such efforts still could not be seen in terms of securing sustainability of available resources.

In order to meet the demand for fish by the growing populations, and to maintain or increase the supply of raw materials for the processing industries considering that the region's fishery resources are facing heavy exploitation, fishing activities have been expanded from the coastal areas to offshore waters and even outside of the national Exclusive Economic Zones (EEZs). Such expansion takes place both with and without proper authorization and licensing – causing widespread illegal, unreported and unregulated (IUU) fishing, including encroachment into other countries' EEZs. The depletion of fishery resources in the region by excessive fleet capacity and harvesting effort needs to be considered in the perspective of related trans-boundary management issues together with expected losses in the generation of national economic revenues. Illegal and unsustainable fisheries that end up with trade restrictions would have direct implications on the trade of fish and fishery products not only to world markets but also within the ASEAN region.

² Silvestre, G.T. *et al.*, 2003. South and Southeast Asian Coastal Fisheries: Their Status and Directions for Improved Management – Conference Synopsis and Recommendation. WorldFish Center Conference Proceedings 67 (2003)

It is well recognized that there is an urgent need for countries to cooperate in order to improve fisheries management, especially, with regards to the management of fishing capacity at national, sub-regional and regional levels. In order to match fishing effort with available resources, management of fishing capacity is one of the most basic tools available in support of sustainable fisheries. Moreover, fishing effort should be controlled to protect important habitats while regulations should be enforced to safeguard the interest of, specifically the vulnerable groups of people.

It is in responding to requests of the AMSs that SEAFDEC had organized since 2006 experts consultation and regional technical consultations highlighting on the critical importance of addressing the management of fishing capacity in Southeast Asia. This is meant to reduce pressure on available stocks, mitigate conflicts over resources and promote sustainability for people dependent on fishery resources. Unregulated (and/or un-enforced) fisheries and over-capacity, relative to available resources, also tend to increase incidences of illegal fishing within countries, as well as across boundaries resulting in increased difficulties faced by smaller communities. To improve the levels of sustainability and promote equal sharing of the benefits from fisheries, it is necessary that immediate efforts are called for to reduce over-capacity, improve (implementation of) regulatory measures and combat illegal fishing throughout the ASEAN region. It should be noted that the importance of management of fishing capacity to the sustainability of fisheries and food security was one of the central themes raised during the ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security Towards 2020, held in Bangkok, Thailand, 13-17 June 2011 under Sub-theme 1.2 that fully focused on the “Management of Fishing Capacity” and subsequently reflected in the adopted 2011 Resolution and Plan of Action.

Referring to the FAO Code of Conduct for Responsible Fisheries (1995), several recommendations on the need to improve fisheries management have been included. Furthermore, the FAO Member States subsequently adopted the International Plan of Action on the Management of Fishing Capacity 1999 (IPOA-Capacity). The IPOA-Capacity specified a number of steps to be taken

including: a) assessment and monitoring of fishing capacity; b) preparation and implementation of national plans of action (NPOA-Capacity); and c) international (regional) considerations and recommendations for immediate steps to address the management of fishing capacity.

In general, the fisheries management schemes that are being developed should aim to regulate the active fishing effort by developing schemes and management plans to give directions on where, how, when and by whom to fish. The management directions can include information on total number of vessels allowed at a given time and area; the type of gear to be used (and not to be used); special restrictions on protected areas, protected species and defined seasonal restrictions; traditional rights³ to fish, exclusive rights and other specified rights , as well as other additional aspects that should be considered and respected when regulating the actual fishing effort. A number of countries in the region had developed or are in the process of developing their respective NPOA-Capacity. Some countries that had not yet developed the NPOA-Capacity have indicated that the necessary laws and regulations are in place and are supportive to the management of fishing capacity.

Recognizing the importance of management of fishing capacity, the ASEAN sought the collaboration of SEAFDEC to develop the Regional Plan of Action for Management of Fishing Capacity (RPOA-Capacity) during the Fourth Meeting of the ASEAN Fisheries Consultative Forum (AFCF) in 2012 in Indonesia. The development of such activity was considered and supported by the SEAFDEC Member Countries during the 47th Meeting of the SEAFDEC Council in 2014.

The overall objective of the RPOA-Capacity would be to serve as guide for the management of fishing capacity in an ASEAN perspective and also to **support the ASEAN Member States in the development and implementation of**

³ As stipulated in respective countries' national laws and regulations

their respective NPOA-Capacity (SEAFDEC, 2006⁴). The RPOA-Capacity is also meant to support the need to enhance regional cooperation on fisheries management and/or management of fishing capacity in sub-regional areas such as the Andaman Sea, Gulf of Thailand, South China Sea⁵ and Sulu-Sulawesi Seas. Strengthened regional and sub-regional cooperation on the management and control of fishing capacity would provide an effective platform for the AMSs to support efforts to combat IUU fishing.

The **RPOA-Capacity** has been developed through dialogue with ASEAN-SEAFDEC Member Countries such as the regional technical consultations and expert meeting (1st RTC in February 2015 in Malaysia, Experts meeting in August 2015 in Thailand and 2nd RTC in December 2015 in Thailand) organized by SEAFDEC with the funding support from the Government of Japan through SEAFDEC-Japanese Trust Fund and the Government of Sweden through the SEAFDEC-Sweden Project. The RPOA-Capacity contain four (4) parts: Part 1 as an introduction part includes rationale, problems on the sustainable fisheries management, and the needs for RPOA-Capacity; Part 2 include the goals and objectives of the RPOA-Capacity; Part 3 refers to the guiding principle in developing the RPOA-Capacity. Part 4 is the main part of the Plan of Action for Managing Fishing Capacity and this part comprises of 5 Sessions as follows: 1) Assessment of Fishing Capacity; 2) Preparation and Implementation of National Plans; 3) International Consideration; 4) Required Urgent Measures for Regional Fisheries Management; and 5) Mechanisms to Promote of the Implementation.

Thus, it is expected that the RPOA-Capacity could also serve as basis for the AMSs in formulating relevant policies and provide an enabling environment

⁴ SEAFDEC. 2006. Report of the Experts Meeting on Management of Fishing Capacity in Southeast Asia, 27-29 July 2006, Sihanouk Ville, Cambodia. Southeast Asian Fisheries Development Center. 141 p.

⁵ The term "South China Sea" is used in its geographical sense and does not imply recognition of any territorial claims within the area (UNEP/GEF/SCS Project Document on "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand")

for clear direction and understanding of the need to effectively manage the fishing capacity at national level. In addition, the RPOA-Capacity is intended to respond to the need for AMSs to strengthen regional cooperation in managing fishing capacity in sub-regional areas such as the Gulf of Thailand, South China Sea⁵, Andaman Sea, Sulu-Sulawesi Seas, and other sub-regional areas where the fisheries need to be managed by concerned AMSs.

PART 2

GOALS AND OBJECTIVES

The RPOA-Capacity is intended to serve as guide for the AMSs in developing their respective National Plans of Action for Managing Fishing Capacity (NPOA-Capacity) as well as in enhancing regional cooperation on sustainable fisheries management and improving regulations on fishing effort at sub-regional/regional level. Thus, the ultimate goal of the RPOA-Capacity is to facilitate development of appropriate fishing capacity management to ensure that levels of fishing effort are commensurate with sustainable use of available fishery resources.

The specific objectives of the RPOA-Capacity are to:

- a) enhance the effective, efficient, equitable and transparent management of fishing capacity for long-term sustainability;
- b) ensure that fishery managers should endeavor to initially limit fishing capacity at the present level and progressively reduce the fishing effort applied to affected fisheries;
- c) avoid growth in fishing capacity that undermines the long-term sustainability objectives; and
- d) enhance sub-regional cooperation in managing fishing capacity, specifically with regards to trans-boundary species or shared species.

⁵ The term "South China Sea" is used in its geographical sense and does not imply recognition of any territorial claims within the area (UNEP/GEF/SCS Project Document on "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand")

PART 3

GUIDING PRINCIPLES

The RPOA-Capacity is developed based on the principles stipulated in international and regional instruments, such as the FAO Code of Conduct for Responsible Fisheries (CCRF), International Plan of Action for Managing Fishing Capacity (IPOA-Capacity), the relevant rules of international laws that are reflected in the United Nations Convention on the Law of the Sea of 10 December 1982 (UNCLOS), and the ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region (2001, 2011).

The RPOA-Capacity is developed through consultation processes with experts and officials from the ASEAN-SEAFDEC Member Countries in February, August and December of 2015.

PART 4

PLAN OF ACTION FOR MANAGING FISHING CAPACITY

Section I: Assessment of Fishing Capacity

Diagnosis and identification of fisheries and fishing capacity

- 1) States should assess and regularly update the availability of active fishing capacity at local, national, trans-boundary, sub-regional and regional levels as basis for cooperation on the management of fishing capacity.
- 2) States should improve collection system for catch and effort data to include all types of fisheries such as large-scale or commercial fisheries and small-scale or artisanal fisheries.
- 3) States should regularly conduct national assessments of fishery resources to estimate appropriate reference points and compare with the actual fishing efforts at given times as well as with the aggregated fishing effort in defined sub-region.

- 4) States should adopt national measurements and definitions of fishing capacity including vessels, gears, people engaged in fisheries.

Section II: Preparation and Implementation of National Plan of Action for the Management of Fishing Capacity

2.1 Development of national plans and policies

- 1) States should establish system(s)/mechanism(s) to develop NPOA-Capacity and to monitor, evaluate, review its effectiveness and revise (if necessary).
- 2) States should not make insufficient information on fisheries resources as the reason to delay the implementation of policies to control fishing capacity and reduce its level where appropriate, and in accordance with the precautionary principle using currently available information.
- 3) States should develop measures to be undertaken to address overcapacity:
 - a. Implement schemes to limit the number of fishing vessels and fishing licenses;
 - b. Put into place management systems that would prevent fishing capacity from expanding beyond the optimum level which the available resources can support in the long run or related target levels, even though the current status does not indicate any overcapacity;
 - c. Develop measures and encourage the use of supporting tools to prevent or eliminate excess fishing capacity to ensure that the levels of fishing effort are commensurate with the sustainable use of fishery resources to secure the effectiveness of conservation and management measures;
 - d. Consider the application of fishing zones as a robust approach to manage and restrict fishing capacity in certain fisheries, especially for coastal and relatively stationary fisheries, in areas reserved for traditional and smaller-scale fisheries supported by co-management arrangements;

- e. Consider the use of appropriate reference points e.g. Maximum Sustainable Yield (MSY), Catch Per Unit Effort (CPUE) as indicators of resource status for the management of fishing capacity at national and/or regional/sub-regional levels;
 - f. Encourage industry-based capacity adjustments and implement input and output control, and other management measures;
 - g. Consider the development of fishing vessel construction and importation control measures as a proactive approach for controlling fishing capacity; and
 - h. Consider the introduction or development of fishing fees scheme such as economic rent of the fishery resources referred to as 'resource rent', as basis for fishing vessel registration and fishing licenses.
- 4) States should establish records of fishing vessels registration/licensing, fishing gear licensing system, and
 - a. improve the national procedures for fishing vessel registration and fishing licensing systems (vessels, gears, fishers);
 - b. share information on registered vessels and issued fishing licenses within sub-regions and/or the region as a whole (if needed); and
 - c. establish national database for fishing vessels registration and fishing licenses.
 - 5) States should conduct a systematic assessment of the consequences of overcapacity from production and economic perspective together with its impact on major stakeholders at local, national and sub-regional levels.
 - 6) States should strengthen, consistent with national fishery laws/regulations and other related domestic laws, domestic mechanisms to deter nationals and beneficial owners from engaging in illegal, unreported and unregulated fishing activities, and States should facilitate the implementation of such mechanisms and ensure that enforcement actions are carried out.
 - 7) States should consider, in the perspective of continued high pressure on available fisheries resources (due to overfishing, habitat and environmental degradation and/or climate variability/change), to,

at national and sub-regional level, develop and implement fishery resources enhancement programs and/or recovery plans. The plans should have the multiple objectives of increasing the fish stocks, providing breeding grounds of some target species, protecting and restore important habitats, increasing fish shelter areas including artificial habitats to replace the deteriorated natural habitats. The following actions are among the key approaches to ensure that the status of fishery resources are maintained and/or enhanced:

- a. Coordinate with relevant agencies to regularly compile information on the status and availability of important fish stocks, including information on areas of importance for different stages of their life cycle;
 - b. Enhance understanding of the importance of stock enhancement including habitat conservation in order to conserve the early life cycle stage of fishes such as spawning, nursery grounds, and protect the migratory paths (that might be trans-boundary); and
 - c. Develop fishery management tools, including fisheries refugia, closed areas, protected areas and aquatic reserves for both inland and marine areas for implementation at national level and in trans-boundary areas to effectively conserve and manage fish stocks, trans-boundary fish stock and to protect habitats, on a case-by-case basis in accordance with the best available scientific information and precautionary approach.
- 8) States should strengthen their respective fisheries related institutions and provide adequate support to research on issues related to the management of fishing capacity. Coordinated international research is also recommended, especially with regard to the development of tools and policy instruments which could be more appropriate at country/ sub-regional/regional levels.
- 9) States should harmonize and coordinate the implementation of the NPOA-Capacity with other related NPOAs/Policies and Programs to achieve effective control of fishing capacity.

- 10) States should consider the socio-economic requirements, including alternative sources of employment and livelihood to fishing communities which bear the burden of reductions in fishing capacity.
- 11) States should develop and promote awareness-raising campaigns and programs to all relevant stakeholders in order to increase the effective implementation of NPOA-Capacity.
- 12) States should work closely with stakeholders in developing and adopting policy framework that would improve the suitability of input-output technical control levels that will be used in the formulation and implementation of the NPOA-Capacity.

2.2 *Subsidies and economic incentives*

- 1) States should assess the effect that some economic incentives, including subsidies, may have on the development and implementation of efforts to control fishing capacity.
- 2) States should undertake a national/sub-regional review of the various subsidies and other economic incentives being provided to their respective fishing industries, together with qualitative assessments of their likely impact on fishing capacity, expected investment decisions, and sustainability. It should be noted that not all subsidies and economic incentives are necessarily faulty such as incentives related, for example, to safety, fish quality, infrastructures, buy-back program.
- 3) States should reduce and progressively eliminate fisheries subsidies and/or incentives that contribute to overfishing, overcapacity and over-investment.

2.3 *Regional Considerations and Cooperation*

- 1) States should provide mutually agreed data on vessels, gears and people engaged in fisheries as well as other fisheries-related information with regards to catches, landing and available stocks to provide a complete, accurate and timely way to support efforts to manage fishing capacity at sub-regional areas.

- 2) States and sub-regions should, inter alia, adopt appropriate measures, based on the best scientific evidence available, which are designed to maintain or restore stocks at sustainable levels, as qualified by relevant environmental and economic factors, including the special requirements of some developing countries in the region.
- 3) States should consider the establishment of sub-regional/regional fisheries management arrangements/bodies for the purpose of managing the resources as well as fishing capacity on a cooperative basis. Such cooperation is essential for the sub-regional/regional managements of trans-boundary fish stocks.
- 4) States should support co-operation and exchange of information with regional and sub-regional fisheries organizations.

Section III: International Considerations and Fishing in High Seas or RFMO Competent Areas

- 1) States should collaborate with RFMOs by sharing information, participating in and developing harmonized systems of data collection, and supporting the actions of the respective RFMOs to limit fishing capacity in the international waters.
- 2) States are encouraged to comply with international agreements which are related to the management of fishing capacity, and in particular, the 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas known as the Compliance Agreement and the Agreement of the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks known as the 1995 UN Fish Stocks Agreement.
- 3) States should ensure that no transfer of capacity to the jurisdiction of another State should be carried out without the expressed consent and formal authorization of that State.

- 4) States should, in compliance with their duties as Flag States, avoid approving the transfer of vessels flying their flag to high sea areas where such transfers are inconsistent with responsible fishing under the Code of Conduct.

Section IV: Required Urgent Measures for Regional Fisheries Management

- 1) States should develop policy frameworks for the sub-regional/regional management of fishing capacity. To be effective it is required that policies are developed simultaneously by relevant authorities (in accordance with national laws and regulations) in each of the countries and with national and sub-regional coordination of implementation and enforcement to ensure that fishing capacity is limited to agreed target levels.
- 2) States, in collaboration with other States, should assess the extent of overcapacity in defined fishing areas (trans-boundary, sub-regional and/or regional). Choose either an input or output basis as a reference point together with a range of indicators for the purpose of measuring active over-capacity.
- 3) States should develop sub-regional/regional conservation and management measures for fish stocks that are currently unmanaged regionally, in accordance with the best available scientific information on the status of such stocks.
- 4) States should conduct fishers/stakeholders fora at sub-regional/regional levels to build awareness on the need for conservation and management of fisheries resources and that in the management context, the effective management of fishing capacity is a requirement for effective conservation and management.
- 5) States should enhance the political will and awareness towards sub-regional/regional fisheries management and conservation.
- 6) States should strengthen sub-regional/regional Monitoring, Control and Surveillance (MCS) networks.

Section V: Mechanisms to Promote Implementation

- 1) States should develop information programs to increase awareness on the need for the management of fishing capacity, and the cost and benefits resulting from adjustments in fishing capacity.
- 2) States should support the sharing/exchange of scientific and technical information on issues related to the management of fishing capacity and promote its regional availability using existing national and sub-regional fora.
- 3) States should support capacity building as well as institutional strengthening and consider providing financial, technical and other assistance to some developing countries in the region to address issues related to the management of fishing capacity.
- 4) States should report to the ASEAN and SEAFDEC on the progress of assessment, development and implementation of their respective plans for the management of fishing capacity as part of their efforts in implementing the 2011 ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region towards 2020.
- 5) SEAFDEC will, as directed by the Council Directors, support the development and implementation of National Plans of Action (NPOAs)⁶ for the management of fishing capacity through specific, in-country technical assistance projects.

⁶ Based on the Recommended Template agreed upon during the Second Regional Technical Consultation on Regional Plan of Action for Management of Fishing Capacity in December 2015 in Thailand

DEFINITION OF TERMINOLOGIES

1. **Beneficial Owner:** This is a legal term where specific property rights (“use and title”) in equity belong to a person even though legal title of the property belongs to another person (Black's Law Dictionary (2nd Pocket ed. 2001 pg. 508)). This often relates where the legal title owner has implied trustee duties to the beneficial owner.
2. **Buy-back Program:** This is a program usually government sponsored, for buying vessels or licenses from fishers and removing the vessels from the fishery
(<https://stats.oecd.org/glossary/detail.asp?ID=248>;
<http://www.fao.org/3/a-a1338e/a1338e14.pdf>)
3. **Catch Per Unit Effort (CPUE):** also called catch rate - is frequently the single most useful index for long-term monitoring of a fishery. Declines in CPUE may mean that the fish population cannot support the level of harvesting. Increases in CPUE may mean that a fish stock is recovering and more fishing effort can be applied. CPUE can therefore be used as an index of stock abundance, where some relationship is assumed between that index and the stock size. Catch rates by boat and gear categories, often combined with data on fish size at capture, permit a large number of analyses relating to gear selectivity, indices of exploitation and monitoring of economic efficiency.
(<http://www.fao.org/docrep/004/Y2790E/y2790e02.htm#TopOfPage>)
4. **Commercial Fisheries:** Fisheries undertaken for profit and with the objective to sell the harvest on the market, through auction halls, direct contracts, or other forms of trade. (FAO definition)
5. **Community-based Management:** The core feature of locally developed, decentralized resource management is that user communities are ceded the rights and have the responsibilities for managing their own resources, typically using a mix of traditional or more formalized mechanisms of contract and enforcement to define access, exploitation methods and intensity. This is increasingly being applied in fisheries, though in many cases, the management structure

- is widened to include public sector agencies and other partners, in co-management. (<http://www.fao.org/fishery/topic/16626/en>)
6. **Co-management:** This is typically defined as a partnership arrangement between government and the local community of resource users, sometimes also connected with agents such as NGOs and research institutions, and other resource stakeholders, to share the responsibility and authority for management of a resource. There are no standardized approaches, but rather a range of arrangements, levels of sharing of responsibility and power, and ways of integration of local management mechanisms and more formalized government systems. In addition, the term is referred to the approach that is gaining particular importance in small-scale fisheries, for which local management capacity and responsibility, combined with the support of formal legal frameworks and information/decision making systems may offer particular advantages. However, their potential depends on the existing policy and legal environment, local and national support for community-based initiatives, and the capacities of various partners. (<http://www.fao.org/fishery/topic/16625/en>).
 7. **Economic Rent:** Economic rent can be defined as the surplus value created during the production of a good or service, due to the ownership of a factor of production that is in fixed or limited supply (<http://www.fao.org/docrep/003/x6827e/X6827E02.htm>)
 8. **Excess Capacity:** The existence of underutilized capacity is an indication that excess capacity exists in a fishery, and that fewer boats, if fully utilized, could potentially have caught the same total catch. Excess capacity is a short run phenomenon and depends on the state of the resource and the environment (natural, social and economic) in which the fishers operate. A fishery with a fluctuating stock may exhibit excess capacity in some years and full capacity in others. Similarly, if market conditions are unfavorable, a fleet may exhibit excess capacity that disappears once prices return to their normal level (FAO Technical Guidelines For Responsible Fisheries).

9. **Exclusive Rights:** This is the right or privilege that can only be used by the person who it is granted to (<http://thelawdictionary.org/exclusive-right/>)
10. **Fisheries Refugia:** Spatially and geographically defined marine or coastal areas in which specific management measures are applied to sustain important species (fisheries resources) during critical stages of their life cycle, for their sustainable use. (<http://www.fao.org/docrep/017/i3147e/i3147e.pdf>)
11. **Fishing Capacity:** Fishing capacity is, for a given resource condition, the amount of fish (or fishing effort) that can be produced over a period of time (e.g. a year) by a vessel or a fleet if fully utilized, that is if effort and catch were not constrained by restrictive management measures (FAO Technical Guidelines For Responsible Fisheries).
12. **Fishing Effort:** The amount of fishing gear of a specific type used on the fishing grounds over a given unit of time for example hours trawled per day, number of hooks set per day or number of hauls of a beach seine per day. When two or more kinds of gear are used, the respective efforts must be adjusted to some standard type before being added (FAO, 1997).
13. **Incentives:** An incentive is anything that motivates or stimulates people to act (Giger 1996; cited in FAO 1999). Sargent (1994; cited in Tomforde 1995) defines incentives as signals that motivate action. Other definitions refer to the “incitement and inducement of action” (Enters 2001). Within the context of development projects, incentives have also been described as “bribes” and “sweeteners” (Smith 1998). To be of interest and to have an impact, incentives need to affect the cost-benefit structure of economic activities such as plantation management. Hence, in the context of the regional study, incentives can be defined as policy instruments that increase the comparative advantage of forest plantations and thus stimulate investments in plantation establishment and management (<http://www.fao.org/3/a-ad524e/ad524e05.htm>)

14. **Information Program:** A program to disseminate information pertaining to a particular subject or issue related to fisheries management with the objective of improving the understanding of target audience on that subject.
15. **Input/output Controls:**
 - **Input Controls** are restrictions put on the intensity of use of gear that fishers use to catch fish. Most commonly these refer to restrictions on the number and size of fishing vessels (fishing capacity controls), the amount of time fishing vessels are allowed to fish (vessel usage controls) or the product of capacity and usage (fishing effort controls). Often fishing effort is a useful measure of the ability of a fleet to catch a given proportion of the fish stock each year. When fishing effort increases, all else being equal, we would expect the proportion of fish caught to increase (<http://www.fao.org/docrep/005/y3427e/y3427e06.htm>)
 - **Output Controls** are direct limits on the amount of fish coming out of a fishery (fish is used here to include shellfish and other harvested living aquatic animals). Obvious forms of output control are limits placed upon the tonnage of fish or the number of fish that may be caught from a fishery in a period of time (e.g. total allowable catches; in reality, usually total allowable landings) (<http://www.fao.org/docrep/005/y3427e/y3427e06.htm>)
16. **Protected Areas:** This is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values (IUCN Definition 2008) (https://www.iucn.org/about/work/programmes/gpap_home/pas_gpap/)
17. **Protected Species:** a species of animal or plant which it is forbidden by law to harm or destroy (<http://www.collinsdictionary.com/dictionary/english/protected-species>)
18. **Monitoring, Control and Surveillance (MCS):**
 - Monitoring: the collection, measurement and analysis of fishing activity including, but not limited to: catch, species composition, fishing effort, bycatch, discards, area of operations, etc. This

information is primary data that fisheries managers use to arrive at management decisions. If this information is unavailable, inaccurate or incomplete, managers will be handicapped in developing and implementing management measures.

- **Control:** involves the specification of the terms and conditions under which resources can be harvested. These specifications are normally contained in national fisheries legislation and other arrangements that might be nationally, sub-regionally, or regionally agreed. The legislation provides the basis for which fisheries management arrangements, via MCS, are implemented.
- **Surveillance:** involves the regulation and supervision of fishing activity to ensure that national legislation and terms, conditions of access, and management measures are observed. This activity is critical to ensure that resources are not over exploited, poaching is minimized and management arrangements are implemented. (<http://www.fao.org/fishery/topic/3021/en>)

19. **Maximum Sustainable Yield (MSY):** The highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing (average) environmental conditions without affecting significantly the reproduction process. Also referred to sometimes as Potential yield. (<http://www.fao.org/faoterm/en/?defaultCollId=21>)
20. **Open Access:** is the condition where access to the fishery (for the purpose of harvesting fish) is unrestricted; *i.e.*, the right to catch fish is free and open to all. (<https://stats.oecd.org/glossary/detail.asp?ID=3084>)
21. **Overfishing:** Overfishing is a generic term used to refer to the state of a stock subject to a level of fishing effort or fishing mortality such that a reduction of effort would, in the medium term, lead to an increase in the total catch. Often referred to as overexploitation and equated to biological overfishing, it results from a combination of growth overfishing and recruitment overfishing and occurs often together with ecosystem overfishing and economic overfishing. (<http://www.fao.org/faoterm/en/?defaultCollId=21>)

22. **Overcapacity:** is a longer-term problem and reflects a divergence between the resources used to harvest the resource (and the resultant current level of output) and the resources needed (and corresponding output) to harvest the resource at an “optimal” level. Optimal, in this sense, will largely be driven by the objectives of fisheries management, be they economic, social or conservation based (or some combination of all three. If the fishery is severely overexploited, this optimal yield may be higher than the current catch level, but associated with a large biomass. The existence of underutilized capacity may be indicative of overcapacity, but it does not necessarily convey information about the extent of overcapacity. Conversely, with an overexploited stock, little excess capacity may exist even though considerable overcapacity exists (FAO Technical Guidelines For Responsible Fisheries).
23. **Precautionary Principle:** A set of agreed cost-effective measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risk to the resources, the environment, and the people, to the extent possible, taking explicitly into account existing uncertainties and the potential consequences of being wrong. (<http://www.fao.org/docrep/003/w1238e/W1238E01.htm>)
24. **Reference Point:** An estimated value derived from an agreed scientific procedure and/or model, which corresponds to a specific state of the resource and of the fishery, and that can be used as a guide for fisheries management. Reference points may be general (applicable to many stocks) or stock-specific. (<http://www.fao.org/faoterm/en/?defaultCollId=21>)
25. **Regional Fisheries Management Organizations (RFMO):** an intergovernmental organization, established by international agreement, with the competence to adopt conservation and management measures. (<http://www.fao.org/in-action/vulnerable-marine-ecosystems/key-concepts/en/>).
26. **Resource Rent:** This is a key concept in fisheries exploitation and management which is the total revenue that can be generated from the extraction of natural resources less the cost of extracting such resources (WTO definition)

27. **Sub-regions:** This refers to any region or areas whereas more than one country are concerned or the areas that are related to the trans-boundary issues and/or fish stock that needed to be managed together through the collaboration and cooperation. In Southeast Asian region, the sub-regions are referred to the specific sea areas such as Gulf of Thailand, Andaman Sea, Sulu-Sulawesi Seas, etc.
28. **Stock Enhancement:**
- The release of cultured juveniles into wild population(s) to augment the natural supply of juveniles and optimize harvests by overcoming recruitment limitation. (<http://www.stockenhancement.org/about/history.html>)
 - Stock enhancement of wild fisheries - The enhancement of stocks of an existing wild, open-access fishery with species that may or may not be self-recruiting. This category includes the stocking of relatively large inland water-bodies where there are no property rights to the stock. Generally the recapture rate of stocked fish is low and repeated enhancement is not always necessary to maintain the fishery.
 - Culture-based fisheries - The stocking of small water-bodies is a form of enhancement that is typically undertaken on a regular basis and the stocking activity is the only means of sustaining the fishery. Typically, a person or a group of persons and/or an organization will have property rights to the stock. The source of stock for the enhancement may be derived from capture, but more typically is obtained from a hatchery operation. These features collectively amount to a form of aquaculture that according to the FAO definition (FAO 1997), is referred to as culture-based fishery. (<http://www.fao.org/docrep/008/ae932e/ae932e05.htm>)
29. **Fisheries Subsidies:** Fisheries subsidies are government actions or inactions that are specific to the fisheries industry and that modifies - by increasing or decreasing - the potential profits by the industry in the short-, medium- or long-term. (<http://www.fao.org/docrep/005/y4446e/y4446e0k.htm>)

30. **Total Allowable Catch (TAC):** The TAC is the total catch allowed to be taken from a resource in a specified period (usually a year), as defined in the management plan. The TAC may be allocated to the stakeholders in the form of quotas as specific quantities or proportions. (<http://www.fao.org/faoterm/en/?defaultCollId=21>)
31. **Traditional Fisheries:** This involves fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, mainly for local consumption. In practice, definition varies between countries, e.g. from gleaning or a one-man canoe in poor developing countries, to more than 20-m. trawlers, seiners, or long-liners in developed ones. Artisanal fisheries can be subsistence or commercial fisheries, providing for local consumption or export. They are sometimes referred to as small-scale fisheries". (<http://www.fao.org/fishery/topic/14753/en>)
32. **Trans-boundary Stock:** a group of commercially exploitable organisms/fish, distributed over, or migrating across, the maritime boundary between two or more national jurisdictions, or the maritime boundary of a national jurisdiction and the adjacent high seas, whose exploitation can only be managed effectively by cooperation between the States concerned. (<http://www.fao.org/docrep/006/y4652e/y4652e03.htm>)

**RECOMMENDED TEMPLATE
FOR THE DEVELOPMENT OF NATIONAL PLAN OF ACTION FOR
MANAGING FISHING CAPACITY (NPOA-CAPACITY)**

I. INTRODUCTION

- General problems and challenges on managing fishing capacity
- Importance of NPOA-Capacity

II. NATIONAL PROFILE ON FISHERIES

2.1. Fishing Capacity Assessment

- By types of fishing vessels
- By types of fishing gear
- By number of people engaged in capture fisheries
- By management area
- Fishing efforts

2.2. Resources Assessment

- Status and trends of fisheries
- Total production: including by Species, gears
- Fisheries management indicators *e.g.* MSYs or other indicators
- Biomass estimation from past surveys
- Others

2.3. Identification Main Issues and Challenges

- Overfishing
- Habitat degradation
- Encroachment into coastal waters
- Illegal fishing vessel including use of destructive fishing practices
- Inadequate enforcement capacity and capability
- Lack of public awareness and participation
- Conflicts in policies objectives

- 2.4. Basic legal aspects, including institutional frameworks and responsibilities

III. GOAL, OVERALL OBJECTIVES AND SPECIFIC OBJECTIVES

IV. PLAN OF ACTION FOR MANAGING FISHING CAPACITY

- 4.1. Improve Management Policy
 - Update and endorse policy level decision
- 4.2. Conduct Research and Assessment
 - Promote research and effective utilization of regular data collection
 - Research on impact assessment on the change of fish population
 - Periodic, stratified biomass estimation (by scientific surveys)
 - By resources type: demersal, pelagic, prawn, etc.
 - By area/zone/depth of water (depending on the management regime)
 - Conduct assessment to identify overcapacity by fleet segment and gear used in order to better adjust the strategies
- 4.3. Improve Fishing Capacity Management/Measures
 - Define total allowable fishing capacity based on resource assessment, and further develop quota system for provinces
 - Limit fishing capacity in coastal and inshore areas
 - Prohibit fully or partially specific fishing gears in particular fishing grounds
 - Encourage the utilization of traditional and local knowledge to support the management of fisheries and fishing capacity
- 4.4. Improve Legal and Institutional Frameworks, with Responsibilities and Coordination Defined

- 4.5. Improve Enforcement and MCS
- Establish database and analysis tools
 - Continue development of VMS for fishing vessels
 - Strengthen and build capacity for relevant fisheries officers: inspection and surveillance
 - Establish coordination mechanism among monitoring and surveillance forces at the seas involving relevant institutions as defined in national laws
 - Establish functioning national MCS-network(s)
- 4.6. Promote Participation of Relevant Stakeholders
- Define specific roles of stakeholders in NPOA-Capacity implementation
 - Formulate and strengthen central and local institutional framework for co-management
 - Support effective participation of fisheries associations and private sector
 - Cooperate with community organizations and individuals in the development and implementation of NPOA-capacity at provincial and district levels
- 4.7. Responsibilities/Implementation
- Fisheries Administration
 - Other Departments as applicable to each country (responsible for vessel registration, inspection and enforcement)
 - Legal and Organization Departments (need to be better defined)
 - Accounting and Planning Departments (need to be better defined)
 - Research Institute for Marine Fisheries
 - Local Governance, (province and district administration as applicable)
 - Social and professional associations and/or fishing community, including private sector and community fisheries organizations)

V. STRATEGIES

Strategy 1: Improve Management Policy

No.	Issues and Challenges	Key Actions	Time Frame

Strategy 2: Conduct Research and Assessment

No.	Issues and Challenges	Key Actions	Time Frame

Strategy 3: Improve Fishing Capacity management/ Measures

No.	Issues and Challenges	Key Actions	Time Frame

Strategy 4: Improve Legal and Institutional Frameworks, with Responsibilities and Coordination Defined

No.	Issues and Challenges	Key Actions	Time Frame

Strategy 5: Improve Enforcement and MCS

No.	Issues and Challenges	Key Actions	Time Frame

Strategy 6: Promote Participation of Relevant Stakeholders

No.	Issues and Challenges	Key Actions	Time Frame

VI. MONITORING AND EVALUTAION

VII. GLOSSARY

VIII. REFERENCE

Appendix 1.

Identified Key Issues and Feasible Measures as a Basis Reference for Development of the RPOA-Capacity

Issues	Feasible Measures	Technical Assistances
Policy and Legal Framework in Managing Fishing Capacity		
1) Ineffective policies, legal framework in managing fishing capacity <ul style="list-style-type: none"> • Decisions inconsistent with current policies • Lack of political will and awareness towards conservation and fisheries management • Subsidies vs incentives 	<ul style="list-style-type: none"> • Strengthen good governance • Voice out in ASEAN platform • Identify gaps and issues in legal framework • Consistency in policy and implementation (both national and regional levels) 	<ul style="list-style-type: none"> • Consultations to improve understanding by politicians/policy makers using recommendations based on scientific evidence • Capacity building
Information for Fishing Capacity Management (vessels, gears, and fishers)		
2) Insufficient information for fishing capacity management <ul style="list-style-type: none"> • Data on concerned fishing capacity (e.g. no. of fishing boat, gears, fishers) • Incomplete information of gear specification and documentation (e.g. length of fishing gear) 	<ul style="list-style-type: none"> • Identify gaps • Develop common database • Economic and financial studies on the impacts of capacity management 	<ul style="list-style-type: none"> • Review works • Organize trainings/workshops/consultations • Develop appropriate gear specification and design for sustainability of resources • Provide guidance technology systems including VMS, Automated Identification System (AIS) databases, GRMS (mobile telephone system), etc. • Information sharing on active fishing capacity

Issues	Feasible Measures	Technical Assistancess
Information for Fishing Capacity Management (fishery resources)		
3) Inadequate data and information on fisheries resources <ul style="list-style-type: none"> • Lack of policies/ systems to deal with fisheries management in data poor situation • Lack of expertise to assess fishing capacity 	<ul style="list-style-type: none"> • Identify gaps • Develop common SOP (feasible and effective method) for data collection • Capacity building program 	<ul style="list-style-type: none"> • Reviews • Organize trainings/ workshops/ consultations • Stock assessment, improve data collection and methodologies for both marine and inland fisheries
4) Lack of research and assessment of migratory shared stocks	<ul style="list-style-type: none"> • Capacity building • Conduct research and assessment of migratory shared stocks • Information dissemination 	<ul style="list-style-type: none"> • Organize the regional fora • Conduct trainings/ workshops/ consultations
Capacity and Capability to Manage Fishing Capacity		
5) Inadequate capacity and capability for monitoring, control and surveillance <ul style="list-style-type: none"> • Encroachment of local fishing vessel into prohibited area • Encroachment of foreign fishing vessels 	<ul style="list-style-type: none"> • Strengthening MCS • Inter-agencies and inter-countries coordination • Utilization of “Fishermen eyes” (co-management) • Improve law enforcement • Information sharing on MCS • Capacity building program • Promote co-management, decentralization, EAFM • Input control (vessels, licenses, gears, days at sea) 	<ul style="list-style-type: none"> • Organize trainings/ workshops/ consultations • Flag and Port State Measures trainings and inspections • Safety inspections • Legal and regulatory technical assistance • Development of NPOA-capacity and determination of target fishing capacity

Issues	Feasible Measures	Technical Assistances
	<ul style="list-style-type: none"> • Output control (TAC, quota, MPA, zoning, spatial and temporal measures, minimize discards) • Increase license fees (for commercial scale fisheries) Cooperation with relevant authorities to ensure safety of fishing vessels (inspection and certification as part of fishing license requirements) • Promote alternative livelihood (other than fishing) • Reduce low cost labors on fishing fleets 	
Public Awareness		
<p>6) Insufficient public awareness and participation</p> <ul style="list-style-type: none"> • Fishers • General public (exclude fishers e.g. consumers) 	<ul style="list-style-type: none"> • Fishers/stakeholders forum (at local, national and regional levels) • Media and awareness campaign • Information, education and communication program (IEC) 	<ul style="list-style-type: none"> • Organize the regional fora • Conduct trainings/ workshops/consultations
<p>7) Market-driven pressure</p> <ul style="list-style-type: none"> • Demand for fish promoting unsustainable fishing practices (e.g. high price fish, endanger fish, trash fish) 	<ul style="list-style-type: none"> • Promote EAFM • Public awareness to consume fish from sustainable fisheries • Requirements for aqua feeds and raw materials for export causes pressure to the fishing capacity 	<ul style="list-style-type: none"> • Support training courses

