

Report of the

**FAO WORKSHOP ON PUTTING INTO PRACTICE THE FAO
TECHNICAL GUIDELINES ON MARINE PROTECTED AREAS (MPAS)
AND FISHERIES: MPAS AS A POTENTIAL MANAGEMENT TOOL FOR
SUSTAINABLE FISHERIES IN SOUTH AND SOUTHEAST ASIA**

Bangkok, Kingdom of Thailand, 30 January–1 February 2012



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Preparation of this document

This document provides a summary of the workshop presentations, discussions, conclusions and recommendations. It also briefly refers to the outcomes of subsequent BOBLME MPA Working Group workshop. The report was drafted by Ms Lena Westlund (FAO consultant) based on important contributions by Ms Virgilia Sulit and Ms Sawitree Chamsai (Southeast Asian Fisheries Development Center (SEAFDEC) staff and rapporteurs of the workshop).

The financial support by the Government of Japan to the development of the guidelines as well as to the workshop is gratefully acknowledged (GCP/INT/253/JPN “Fisheries Management and Marine Conservation within a Changing Ecosystem Context”).

KEY DOCUMENTS

The FAO guidelines on MPAs and fisheries (full reference: FAO. 2011. Fisheries management. 4. Marine protected areas and fisheries. FAO Technical Guidelines for Responsible Fisheries. No.4 , suppl. 4. Rome, FAO. 198p) can be downloaded from the FAO Web site: www.fao.org/docrep/015/i2090e/i2090e.pdf.

Other relevant documents include:

- SEAFDEC Fish Refugia Guidelines (http://news.seafdec.or.th/index.php/seafdec-download/cat_view/42-regional-guideline-for-responsible-fisheries) (http://news.seafdec.or.th/index.php/seafdec-download/doc_download/35-supplementary-guidelines-on-co-management-using-group-user-rights-fishery-statistics-indicators)
- BOBLME Status of Marine Protected Areas and Fish Refugia in the Bay of Bengal Large Marine Ecosystem. BOBLME-2011-Ecology-10 (www.boblme.org/documentRepository/BOBLME-2011-Ecology-10.pdf).
- BOBLME Marine Managed Areas workshop report, 18—19 January 2011, Penang, Malaysia (www.boblme.org/documentRepository/BOBLME-2011-Ecology-06.pdf).

FAO. 2013.

Report of the FAO workshop on putting into practice the FAO technical guidelines on marine protected areas (MPAs) and fisheries: MPAs as a potential management tool for sustainable fisheries in South and South East Asia. Bangkok, Kingdom of Thailand, 30 January – 1 February 2012.

FAO Fisheries and Aquaculture Report. No. 1009. Rome. 35 pp.

ABSTRACT

This document provides a summary of the workshop presentations, discussions, conclusions and recommendations of the workshop on *Putting into practice the FAO Technical Guidelines on Marine Protected Areas (MPAs) and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and South East Asia* which took place in Bangkok, Thailand, on 30 January – 1 February 2012. It was jointly organized by FAO, SEAFDEC and the BOBLME project.

The workshop was organized in response to the recent publication of the *FAO Technical Guidelines for Responsible Fisheries on MPAs and Fisheries* with the purpose of disseminating these Guidelines, supporting existing initiatives promoting effective MPA management and promoting cross-sectoral coordination and collaboration. Accordingly, the workshop objectives included:

- (i) to introduce the recently published *FAO MPA and fisheries guidelines*,
- (ii) to contribute to successful MPA management in the countries of South and South East Asia, and
- (iii) to identify issues, best practices and critical processes and institutional/planning/implementation elements for implementing MPAs in the context of fisheries.

EXECUTIVE SUMMARY

The workshop on Putting into practice the *FAO Technical Guidelines on Marine Protected Areas (MPAs) and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and Southeast Asia* took place in Bangkok, Thailand, on 30 January – 1 February 2012. It was jointly organized by the Food and Agriculture Organization of the United Nations (FAO), Southeast Asian Fisheries Development Center (SEAFDEC) and the Bay of Bengal Large Marine Ecosystem (BOBLME) Project and was attended by some 60 participants including government representatives from fisheries departments, environmental agencies and park authorities from SEAFDEC and BOBLME member countries, and from a number of international organisations and non-governmental organizations (NGOs).

The workshop was organized in response to the recent publication of the *FAO Technical Guidelines for Responsible Fisheries on MPAs and Fisheries* with the purpose of disseminating these Guidelines, supporting existing initiatives promoting effective MPA management and promoting cross-sectoral coordination and collaboration. Accordingly, the workshop objectives included:

- (i) to introduce the recently published *FAO MPA and fisheries guidelines*;
- (ii) to contribute to successful MPA management in the countries of South and South East Asia; and
- (iii) to identify issues, best practices and critical processes and institutional/planning/implementation elements for implementing MPAs in the context of fisheries.

The workshop was organized around plenary presentations and discussions as well as a session of working groups. The workshop findings included the following:

- There is a wide variety of MPAs in region – but very few with explicit fisheries objectives although sometimes implicitly referred to under a biodiversity objective.
- There is a legal basis for establishing MPAs in all countries but this rarely covers fisheries management.
- While there appears to be a common understanding of the need for different line agencies to coordinate and collaborate on MPA planning and implementation, there is still insufficient cross-sectoral communication.
- There is recognition of the importance of community involvement and engagement in MPA planning and management – still many MPAs do not sufficiently include local communities in management.
- Information is important but complete data may not be necessary. Better use of data from different sources could be made – combining scientific data, local wisdom and traditional knowledge – as well as of multi-disciplinary (social/economic and ecological/biological) analysis.
- Fisheries information is generally not included in MPA planning and hence MPAs may not yield fisheries management benefits.

With regard to recommendations, the workshop recognised the validity of the *FAO Technical Guidelines on MPAs and fisheries* and appreciated the guidance they provide. The workshop highlighted the following key points to be considered by governments, regional organisations and projects involved in MPA s in the region:

- Ensure that when new MPAs are designated, fisheries are taken into consideration and fisheries objectives incorporated when appropriate, and make sure that fisheries spatial management measures are also considered MPAs.
- Review how the legal basis and institutional arrangements for MPA management can be changed to allow integration of fisheries management objectives as well as more equitable benefit sharing, including to local and indigenous communities.
- Increase collaboration and coordination between different line agencies but avoiding unclear responsibilities or overlapping mandates (one agency to lead).
- Stakeholder (community)—in particular small-scale fisheries—involvement has to be ensured throughout MPA planning and implementation and the most effective local level of

management should be sought. Tenure and customary rights of small-scale fisheries need to be recognised in this respect.

- Take a step-by-step and precautionary approach, especially in data poor situations – start with something and adjust as new knowledge becomes available (adaptive management). Still, good baseline data are required in order to allow for monitoring of effectiveness.
- Fisheries data and information should be included with all other sources of data and information when establishing MPAs in order to enhance the fisheries management benefits.

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ABBREVIATIONS AND ACRONYMS

| | |
|---------|---|
| BANCA | Biodiversity and Nature Conservation Association |
| BIMSTEC | Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation |
| BOBLME | Bay of Bengal Large Marine Ecosystem (project) |
| BOBP | Bay of Bengal Programme |
| CBD | Convention on Biological Diversity |
| CCRF | Code of Conduct for Responsible Fisheries (FAO) |
| COFI | Committee on Fisheries (FAO) |
| SocMon | socioeconomic monitoring |
| COP | Conference of Parties (CBD) |
| CTA | Chief Technical Advisor |
| DMCR | Department of Marine and Coastal Resources (Thailand) |
| DNP | Department of National Park, Wildlife and Plan Conservation (Thailand) |
| EAF | ecosystem approach to fisheries |
| EEC | Environmental Clearance Certificate (Philippines) |
| FAO | Food and Agriculture Organization of the United Nations |
| FCA | Fisheries Cooperative Associations (Japan) |
| GEF | Global Environment Facility |
| GOT | Gulf of Thailand |
| ICSF | International Collective in Support of Fishworkers |
| IMPAACT | Improving Marine Protected Areas on the Andaman Coast of Thailand under a Climate Change Regime |
| IUCN | International Union for Conservation of Nature |
| LME | Large Marine Ecosystem |
| MMA | managed marine area |
| MMAF | Ministry of Marine Affairs and Fisheries (Indonesia) |
| MP | Mariculture Parks (Philippines) |
| MPA | marine protected area |
| NGO | non-governmental organization |
| NIPAS | national integrated protected areas |
| PA | protected area |
| PAMB | Protected Area Management Board (Philippines) |
| PES | payment for ecosystem services |
| RAP | Regional Office for Asia and the Pacific (FAO) |
| SCS | South China Sea |
| SEAFDEC | Southeast Asian Fisheries Development Centre |
| Sida | Swedish International Development Cooperation Agency |
| SSF | small-scale fisheries |
| UNEP | United Nations Environment Programme |

INTRODUCTION

Background

The need to safeguard our marine environment better and promote the sustainable use of existing aquatic resources is increasingly being recognized worldwide. In this context, the use of MPAs has lately taken on greater importance in discussions on how to protect marine ecosystems and reverse the degradation of aquatic habitats. They are commonly described as a key tool for biodiversity conservation and sustainable use of its components, and as part of ecosystem approaches. Good fisheries management requires a holistic approach, including biodiversity conservation and protection of habitats, in addition to more direct target stock management, to ensure the long-term productivity of fishery resources. While having been an implicit consideration in conventional fisheries management, this perspective has become more explicit through the promotion of the ecosystem approach to fisheries (EAF). When effectively implementing fisheries management (through EAF), conservation objectives should also be attained in conjunction with sustainable fisheries objectives.

There are many initiatives worldwide with the objective to further the knowledge on how to use MPAs as a biodiversity conservation and fisheries management tool. The recent *FAO Technical Guidelines for Responsible Fisheries on MPAs and Fisheries* aspire to enhancing the understanding of how fisheries management and biodiversity conservation are linked and what the opportunities and challenges are of implementing MPAs within broader management frameworks taking both bio-ecological and human aspects into consideration.

In order to disseminate the Guidelines and to support existing initiatives promoting effective MPA management, to identify best practices and bring the discussion on MPAs with multiple objectives forward as well as to encourage cross-sectoral coordination and collaboration, FAO is planning – in close collaboration with its partners – a number of regional workshops. As part of this process, the workshop on *Putting into practice the FAO Technical Guidelines on MPAs and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and Southeast Asia* was held in Bangkok, Thailand, on 30 January – 1 February 2012¹. The event was organized jointly by the Southeast Asian Fisheries Development Centre (SEAFDEC), the Bay of Bengal Large Marine Ecosystem (BOBLME) project and FAO.

WORKSHOP ARRANGEMENTS AND OPENING SESSION

Venue and participation

The workshop took place at the Jasmine Executive Suites Hotel in Bangkok, Thailand, on 30 January–1 February 2012. It was attended by some 60 participants – invited by FAO, SEAFDEC and BOBLME – and including government representatives from fisheries departments, environmental agencies and park authorities from SEAFDEC and BOBLME member countries². The United Nations Environment Programme (UNEP), the International Collective in Support of Fishworkers (ICSF), the International Union for the Conservation of Nature (IUCN) and Conservation International were also represented together with staff from the organisers (FAO, SEAFDEC and BOBLME), as well as additional resource persons. The list of participants can be found in APPENDIX 1.

Opening session

The opening session included welcoming remarks by FAO, BOBLME and SEAFDEC. SEAFDEC also formally opened the workshop.

¹ The workshop was followed by a meeting of the BOBLME project MPA Working Group on 1–2 February 2012 – see also the section on *BOBLME MPA WORKING GROUP MEETING* below.

² Participants from the following countries attended the workshop: Bangladesh, Cambodia, India, **Indonesia**, Japan, Lao People's Democratic Republic, **Malaysia**, Maldives, **Myanmar**, Philippines, Sri Lanka, **Thailand**, Vietnam and Japan [countries in bold are members of both SEAFDEC and BOBLME].

Mr Simon Funge-Smith (Senior Fisheries Officer, FAO Regional Office for Asia and the Pacific [RAP]) welcomed the participants to the workshop, which had been organized on the occasion of the recent publication of the *FAO MPA and fisheries guidelines*. He explained that the workshop would seek to identify best practices in the Asian region and look into the issue of MPAs with multiple objectives. Importantly, the workshop would attempt to promote greater cross-sectoral understanding, coordination and collaboration in the establishment and management of MPAs.

Mr Rudolf Hermes (Chief Technical Advisor, [CTA] BOBLME) joined Mr Funge-Smith in welcoming participants to this workshop and to Bangkok. He explained the main thrusts of the BOBLME project, an FAO project implementing the EAF, and emphasised the need for collaboration and communication between fisheries departments and environment agencies in order to implement the EAF and to effectively implement MPAs.

Mr Chumnarn Pongsri (Secretary General, SEAFDEC) referred to work by SEAFDEC on developing fisheries refugia, which are of direct relevance to the discussion on MPAs. Fisheries refugia are considered important for protecting critical phases of fish life cycles in order to sustain fish stocks and hence secure livelihoods depending on fisheries and promote food security in the region. Mr Pongsri called on participants to actively participate in the workshop on this important subject of MPAs and he declared the workshop opened.

Workshop objectives and structure

Mr Hideki Moronuki (Project Operations and Coordination Officer, FAO Fisheries and Aquaculture Department) reminded participants of the background and the main reasons behind the organization of the workshop and explained its objectives and expected outputs.

The workshop objectives included:

- (iv) to introduce the recently published *FAO MPA and fisheries guidelines*,
- (v) to contribute to successful MPA management in the countries of South and South East Asia, and
- (vi) to identify issues, best practices and critical processes and institutional/planning/implementation elements for implementing MPAs in the context of fisheries.

Accordingly, the expected outputs included to familiarise participants with the new guidelines and to agree on actions – based on the identification of best practices – that can be taken by governments, FAO, SEAFDEC, BOBLME and other projects/programmes, in order to increase the awareness on MPAs and fisheries, to influence policies and to promote cross-sectoral collaboration and policy coherence.

Mr Moronuki also explained the structure of the workshop that would consist of plenary presentations and discussions, as well as a session of working groups. The *plenary presentations* consisted of an introduction to the contents of the *FAO MPA and fisheries guidelines* as well as overviews of work undertaken by FAO, SEAFDEC and BOBLME with relevance to the workshop. Several case studies, illustrating MPA planning and implementation processes in the region were presented. During the *working group session*, participants were divided into three groups. Each group was given a set of questions to be discussed under the three topics of (i) *Legal, institutional and policy framework for MPAs* (chapter 5 of the guidelines); (ii) *The MPA planning process* (chapter 6); and (iii) *MPA implementation* (chapter 7, and 8 with regard to information for MPAs).

At the end of his intervention, Mr Moronuki proposed Mr Yuttana Theparoonrat (Head of Coastal Fisheries Management Division, SEAFDEC) as Chair of the first day of the workshop. Mr Soombon

Siriraksophon (Policy and Program Coordinator, SEAFDEC) subsequently chaired the second day and Mr Moronuki day three.

The workshop concept note and agenda are included in Appendix 2.

PLENARY PRESENTATIONS

Setting the scene

FAO MPA and fisheries guidelines

Ms Westlund introduced the *FAO MPA and fisheries guidelines*. She explained that it had been a long preparation process. The need for this type of guidance, i.e. focusing on the fisheries aspects of MPAs, had been recognised by the FAO Committee on Fisheries (COFI) that recommended the development of the technical guidelines at its twenty-sixth Session in 2005. In 2006, an FAO Expert Workshop was held after which the work on the guidelines document was started.

The guidelines are part of the FAO Technical Guidelines series supporting the Code of Conduct for Responsible Fisheries (CCRF, 1995) and should be read as a complement to other documents on fisheries management in this series, in particular *The ecosystem approach to fisheries* (FAO 2003) and *The human dimensions of the ecosystem approach to fisheries* (FAO 2009).

The FAO MPA and fisheries guidelines contain a discussion on what MPAs are and how they fit within the context of fisheries management and EAF. They include a review of the likely biological and ecological effects of MPAs as well as their social and economic implications. The guidelines also address various aspects of MPA planning and implementation, including their institutional, legal and policy context and information needs.

With regard to defining MPAs, there is a wide range of views on what constitutes an MPA. The guidelines refrain from providing a definite definition and take an inclusive approach by considering any marine geographical areas that is afforded greater protection than the surrounding waters for biodiversity conservation or fisheries management purposes to be an MPA. However, the understanding is that the term is usually applied to areas specifically designated to protect a certain ecosystem and not necessarily very large areas zoned for different purposes (eg the entire EEZ of a country). Spatial-temporal-gear closures are historically some of the most common fisheries management measures. In the broadened context of EAF, it is likely that spatial management measures and MPAs with multiple objectives will increase in importance. However, it should be remembered that an MPA is one management tool among many others and not always the preferred one.

Among the key messages conveyed by the guidelines is that MPAs and MPA networks are a potentially powerful tool with both biodiversity conservation and fisheries management outcomes but to gain the most benefits, the two types of usages need to be bridged. Process – i.e. how MPAs are planned and implemented – is key for successful results. Only meaningful public and stakeholder participation can ensure compliance, long-term sustainable support and equitable results. There is hence a need to create awareness and support good practices.

Ms Westlund also informed the workshop about a related important initiative coordinated by FAO. In the last COFI session in 2011, it was recommended that an international instrument for small-scale fisheries (SSF) be developed. The process of developing *SSF Guidelines* is underway through extensive stakeholder consultations. Ms Westlund invited the workshop to consider providing recommendations on MPAs and small-scale fisheries for SSF Guidelines.

THE SSF GUIDELINES PROCESS

The initiative to develop an international instrument for small-scale fisheries – *SSF Guidelines* – stems from the increased recognition of small-scale fisheries during in particular the last decade. Small-scale fisheries have been a standalone item on FAO COFI agenda since 2003 and in 2008 a global conference was organized in Bangkok, Thailand, on *Securing Sustainable Small-scale Fisheries: Bringing together responsible fisheries and social development*. This was followed by a global and several regional consultations in 2009 and 2010. The SSF guidelines are now in the process of being developed through continued consultations that will be followed by negotiations. The aim is to present a negotiated draft of the SSF Guidelines to COFI 2014 for approval.

More information on the SSF Guidelines is available at www.fao.org/fishery/ssf/guidelines/en

SEAFDEC initiatives on MPAs and promotion their guidelines on fisheries refugia

Mr Somboon presented SEAFDEC's experience and work on fisheries refugia. With reference to the CCRF, SEAFDEC has developed regional guidelines for responsible fishing and management including for the use of fisheries refugia in capture fisheries. This work was based on the recognition of the particular situation in the Southeast Asia region where multi-species and small-scale fisheries are of great importance to the livelihoods and food security of most coastal populations.

The concept of fisheries refugia stems from the UNEP/GEF South China Sea (SCS) project *Reversing environmental degradation trends in the SCS and Gulf of Thailand (GOT)* that was implemented with the technical collaboration of SEAFDEC. The refugia concept focuses on the development of a mechanism for integrated fisheries and habitat management that maximises the benefit-cost ration of actions for fishing communities, promotes sustainable use rather than prohibition of fishing, focuses on life-cycle and critical habitat linkages and is relevant at the fishery level (i.e. is easily understood by fishing communities, local government officials, and provincial level fisheries managers). It was realised that the fisheries refugia concept was generally accepted by local coastal communities as opposed to the MPA concept since the latter was often interpreted as no-take zones with little consideration for the needs of fishers and fishing communities.

The definition of a fisheries refugia adopted by the SEAFDEC guidelines is: *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*. The management measures that can be applied within a fisheries refugia draw on conventional fisheries management measures such as: exclusion of a certain fishing method and gear restrictions or prohibitions, rules for vessel size or engine capacity, seasonal closures or restrictions, and access limitations and use of rights-based approaches in small-scale fisheries. The SEAFDEC guidelines include, in addition to more general information on fisheries refugia in the context of fisheries management, guidance on how to identify, select and establish MPAs.

The case study presentation by Mr John Pernetta on *Establishment of a regional network of fisheries refugia in the South China Sea, with case studies from Phu Quoc, Viet Nam, and the Visayan Sea in the Philippines* provided further information on the fisheries refugia experiences of the SCS project and a summary of this work is included in APPENDIX 3 (see also the section on *Case studies* below).

MPAs as fisheries management tools in the BOBLME

Mr Hermes gave a talk on the BOBLME project and its MPA related activities. The BOBLME project spans the eight countries around the Bay of Bengal and aims at addressing transboundary issues related to natural resource management and the environment. Among its many components, there is one dealing specifically with MPAs as a fisheries management tool in the project area. One of the planned activities of the component is to promote the use of MPAs (or fisheries refugia) to conserve regional fish stocks. Recently, a study of BOBLME MPAs and their effectiveness was carried out in

collaboration with the University of Washington, USA (Mr Patrick Christie and Ms Katarina ole Moi-Yoi). A report was produced including profiles of existing MPAs in all eight BOBLME countries giving information on their objectives, legislation, governance, effectiveness and threats, using the IUCN social-ecological framework³ to assess the system status. The report gives a comprehensive set of recommendations for how the BOBLME project can support MPA implementation in the region. The priority actions include:

- Field assessments of MPA status to validate the study results and to identify priority steps;
- Identification of a series of MPA pilot sites in which MPA best practices can be field tested;
- Establishment of a BOBLME learning network to facilitate communication among MPA practitioners and help the diffusion of innovative practices;
- Establishment of a BOBLME working group – consisting of leaders from government, non-government and resource sector organisations – for MPA assessment and implementation;
- Organization of a high profile meeting with government officials to launch the BOBLME MPA system and to foster political will.

With regard to implementing the recommendations, progress to-date include the setting up of the working group and the holding of a BOBLME MPA workshop (in Penang, Malaysia, in January 2011) – and of the meeting held after the this workshop – bringing together officials from fisheries departments, environment agencies and park authorities. The identification of MPA pilot sites is in process and a series of national policy briefs is under development. BOBLME has also initiated collaboration with Conservation International within the framework of the Science-to-Action approach⁴.

Institute of Marine Research MPA workshop (Bergen, Norway, March 2011)

Mr Moronuki made a brief presentation of the results of the international workshop *Exploring the Role of MPAs in Reconciling Fisheries Management with Conservation*, hosted by the Institute of Marine Research, in Bergen, Norway, on 29—31 March 2011. The initiative for organizing this event had been taken by the Nordic Council of Ministers aiming at (i) bridging the understanding on MPAs of both fisheries and conservation practitioners and (ii) translating this experience into more practical guidance for the effective utilization of MPAs.

The workshop, which brought together a total of 95 persons from 31 different countries including representatives of FAO and UNEP, reviewed sectoral and cross-sectoral policy and institutional frameworks that enable MPAs as one of the tools to reconcile fisheries management and ecosystem conservation. It looked at and attempted to synthesise experiences serving to advise implementation of MPAs within this context as well as to provide practical advice on effective sectoral and cross-sectoral management frameworks.

The participants were fully aware that there is a variety of criteria for and definitions of MPAs, including the broad concept described in the *FAO MPA and fisheries guidelines*. The workshop thus intentionally decided not to attempt to agree on a “definition” of MPAs in order to avoid lengthy debates on this issue. Instead, the workshop – in particular through the working group discussions – identified various common goals of MPAs and noted the necessity of effective reconciliation of fisheries management and ecosystem conservation objectives.

Although the workshop was unable to define a set of recommended actions to be taken by states and relevant organizations, it came up with a set of practical advice for examining MPAs and for planning and implementing MPAs:

- Shift the debate to the desired outcomes, not overly focusing on the tools to use;
- Use EAF as the main framework, and let MPAs be one of tools;
- Apply proper consultative processes for defining the MPA management area to make it beneficial to communities;

³ See <http://data.iucn.org/dbtw-wpd/edocs/2010-022.pdf>.

⁴ See www.science2action.org and www.conservation.org.

- Reduce the negative impact on biodiversity of MPAs by requiring multiple sectors to limit their activities;
- Promote conflict resolution among competing sectors (aquaculture, tourism, mining, oil, shipping etc);
- Improve public perception of traditional management methods.

Discussions

In their comments and remarks to the plenary presentations, workshop participants congratulated FAO on the publication of the *MPA and fisheries guidelines*. It was felt that this document would be an important reference for future work on MPAs in the region. It was pointed out that considerable work is already being done in this area and a large number of MPAs in the region exist. It was hoped that this experience was reflected in the guidelines. The suggestion that the document could have been published as a multi-agency/organization report (together with, for example, UNEP and/or IUCN) was also made. In response, it was explained that a large group of experts and stakeholders had been involved in the preparation and drafting of the guidelines. The guidelines also draw on many examples, from the South and Southeast Asia region as well as others, through case studies that had been commissioned. These case studies are also in the process of being published by FAO.

It was noted that the process of enhancing the understanding of the potential role and effects of MPAs in fisheries management and of improving MPA management in general is ongoing. The *FAO MPA and fisheries guidelines* constitute an input into this process but should not be considered an 'end product'. The organization of regional workshops – such as the current one – is an example of this need to continue the efforts and work together. Participants noted and agreed with the key statements made in the guidelines, for example, the need to combine MPAs with other fisheries management measures in order to achieve the intended management results, the importance of stakeholder involvement in MPA planning and implementation, and the need to bridge fisheries management and biodiversity conservation objectives.

The need for increased integration of conservation and fisheries management considerations and objectives was also raised in the comments on the SEAFDEC fisheries refugia presentation. Moreover, a wide range of data and information tends to be required when planning and implementing fisheries refugia (as well as other types of MPAs) was mentioned with the concern that this could constitute an important constraint. It was suggested that information sources that may not currently be used for fisheries management, including local and traditional knowledge, academia etc, should be explored. It was noted that the SCS project included efforts to set up both regional and national mechanisms for cross-sectoral coordination. However, unfortunately, there has to date been no follow-up on the SCS project (which closed in 2009) and hence many aspects of fisheries refugia implementation remain unexplored.

With regard to the BOBLME project, a question with regard to its longer term sustainability as a platform for regional collaboration was raised. It was explained that the main thrust of the project is to promote improved governance and regional collaboration and that there are several already existing institutional arrangements within which such efforts are anchored, including SEAFDEC, the Bay of Bengal Programme (BOBP) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). Additional structures may be required in specific subregions to ensure sustainable fisheries management, e.g. in the Andaman Sea and the Gulf of Myanmar.

The presentation on the Bergen MPA workshop brought up the question of how to define fisheries relevant criteria in the context of MPAs. It was argued that in order to reconcile ecosystem conservation and fisheries management objectives, fisheries managers need to make it clear what the fisheries management needs are. These could be site specific and depend on the overall fisheries management objectives. Potential fisheries management objectives, and hence reasons for establishing MPAs from a fisheries management view point, are given in the *FAO MPA and fisheries guidelines*. It was also pointed out that MPAs should be considered one possible tool within a large portfolio of

management measures (including input and output controls, technical measures and spatial-temporal closures/MPAs).

Case studies

A variety of case studies were presented to the workshop during its first two days. These provided valuable information on experiences and lessons learnt and hence also provided important inputs into the working group discussions that were held subsequently.

The following case study presentations were made (*presenter in italics*)⁵:

- Efforts to establish MPAs in Vietnam
*Ms Nguyen Thi Trang Nhung (Fisheries Administration, Vietnam)*⁶
- Development of fisheries refugia and closed seasons and areas in the Gulf of Thailand
Mr Pirochana Saikliang (Senior Expert on Marine Fisheries, Department of Fisheries, Thailand)
– see APPENDIX 4.
- Improving Marine Protected Areas on the Andaman Coast of Thailand under a Climate Change Regime (project IMPAACT)
Mr Petch Manopawitr (BOBLME MPA Coordinator) – see APPENDIX 5.
- Science-to-Action: Influencing decision-making for conservation
*Ms Giselle Samonte (Director Social Science Research and Outreach, Conservation International)*⁷
- Building upon existing management areas (MPAs, Ramsar sites, refugia, etc) in the development of "larger fisheries resources conservation areas"
Mr Magnus Torell (Senior Advisor SEAFDEC-Sida project)
- Establishment of a regional network of fisheries refugia in the South China Sea, with case studies from Phu Quoc, Viet Nam, and the Visayan Sea in the Philippines
Mr John Pernetta (former director SCS project) – see APPENDIX 3.
- MPAs in Japan
Mr Mitsutaku Makino (Fisheries Research Agency, Japan)

In addition to the case studies, there were a few interventions by participating countries and organizations. This included statements by:

- *Malaysia* on the importance of organizational development for effective MPA management.
- *Japan* with regard to the need to recognise a wide range of fisheries management tools in addition to MPAs and the importance of selecting suitable combinations of these measures depending on the situation of ocean use, economies, etc.
- *ICSF* regarding the importance of the human dimensions of fisheries and MPA management.
- *UNEP* on their organisational changes, including their efforts to safeguard coral reef habitats (the UNEP Coral Reef Unit⁸).

The case studies highlighted a number of issues and discussion points. It was noted that many different terms are being used for similar management tools (or the same term is used meaning different things). For example, the term *fisheries refugia* was used by the SCS project and SEAFDEC as something different from MPAs whereas the *FAO MPA and fisheries guidelines* would consider this a subset of MPAs. Thus, the broad characterisation of MPAs – meaning all areas “afforded greater protection” – that is used in the FAO guidelines may not be understood and agreed by others. In many countries, there are legal and institutional implications of using a certain terminology – e.g.,

⁵ Some of the presentations are available in summarized form – see references to Appendices.

⁶ See http://news.seafdec.or.th/index.php/seafdec-download/cat_view/46-fisheries-articles?limit=5&order=hits&dir=DESC&start=75 for a related article.

⁷ See footnote 4 for links to more information.

⁸ See <http://coral.unep.ch/>

if called one thing, the managed area may fall under the ministry of environment while another term would place it under the responsibility of the fisheries department.

This potential risk for misunderstandings needs to be taken into account. In some cases, the terminology used can also influence the support that MPAs receive – the SCS project learnt that fishing communities were unwilling to engage in discussions on MPAs but would be interested in collaborating on introducing fisheries refugias. This attitude was often related to earlier experiences and the perception that MPAs mean no-take zones with very limited possibilities for fishing communities to influence their design and management. The SCS project based its interventions on the understanding that protected areas should focus on maximising benefits for fishing communities and ensure sustainable use of resources.

Another aspect of terminology use that was noted is that, in some cases, managed areas are not counted as MPAs unless formally labelled MPAs. In a recent CBD workshop on governance in protected areas for South Asia and South-east Asia, countries identified the lack of legal recognition for diverse forms of governance in protected areas and also of many community conserved/managed areas as an issue. This situation may influence how countries act to achieve internationally set targets for establishing MPA and could put local communities at a disadvantage.⁹ There is a need to recognize community conservation initiatives as conservation initiatives in their own right. It was noted that traditional social institutions and the traditional knowledge of local fishing communities are not always recognised but that the participation of communities in MPA planning and implementation is essential. MPAs are often seen from a biological perspective and the human dimension is hence not sufficiently considered. However, fishing should be considered an integral part of socioecological systems and there is a need to integrate a wider range of existing values in MPA management.

In Japan, there are – as in many countries – different types of MPAs. Coastal spatial-temporal closures for fisheries purposes are managed by fishing communities as part of fisheries management through Fisheries Cooperative Associations (FCAs). The basic principle underpinning this system is that fisheries management should be the responsibility of the resource users themselves (co-management). Fishers are hence engaged not only in fishing operations but also in resource and ecosystem management. This requires, among other things, attending meetings and actively participating in decision making. Such systems require that the necessary capacity is available – at the level of the communities and with regard to institutions.

The need for adequate institutional arrangements and capacity building were identified as key challenges for MPA management in Vietnam. It was noted that there were overlaps and unclear roles and responsibilities of different ministries and a lack of legal recognition of local management models. In general in the countries of the region, it would appear that there is a need for better communication between different sectoral agencies and more clearly defined objectives by each sector (for biodiversity conservation, fisheries management and other). This also includes ensuring coordination between landbased sectors and the marine area and avoiding coastal developments that are contradictory to the objectives of an MPA.

During the 60 years that closures have been part of fisheries management in the Gulf of Thailand, revisions to their design have been made from time to time as the status of fish stocks has changed. This experience highlights the importance of information – for MPA designation and management. Information is also essential for monitoring and communication. The Science-to-Action initiative was established to assess the progress of MPAs towards management objectives and to determine the

⁹ This issue was brought up by ICSF. With regard to international commitments, the Tenth Conference of Parties (COP) to the Convention of Biological Diversity (CBD), include Target 11: By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

characteristics that lead to successful outcomes. The approach includes identifying the most critical information for management and communicating and sharing this information. Both natural and social science aspects are covered. A related initiative is *SocMon* (socioeconomic monitoring). SocMon is an initiative “aimed at helping coastal managers better understand and incorporate the socioeconomic context into coastal management programs”¹⁰.

The goal of the IMPAACT project (*Improving Marine Protected Areas on the Andaman Coast of Thailand under a Climate Change Regime*) is to provide further understanding of climate change induced changes in coastal ecosystems and communities and suggest interventions that can increase the resilience of ecosystem conservation and the adaptive capacity of livelihood dependent communities in the future. Also in the context of this project, the importance of information, effective communication, involvement of local communities and capacity building is confirmed. Moreover, its approach includes exploring policy mechanisms combined with on-the-ground actions with the aim to achieve both conservation objectives and socio-economic outcomes.

WORKING GROUP SESSION

Working group arrangements and terms of reference

The purpose of the working groups was to provide inputs into the plenary discussion and contribute to the overall workshop objectives. Three different groups were discussing three different topics and, within the context of each topic, best practices, future actions and considerations were identified. The group discussions were led by a facilitator, and a rapporteur and a presenter ensured that the results were captured and subsequently presented to plenary.

| <i>Group</i> | <i>Facilitator</i> | <i>Rapporteurs</i> | <i>Presenter</i> |
|---|-----------------------|---|------------------|
| 1. Legal, institutional and policy frameworks | Somboon Siriraksophon | Virgilia Sulit Ruolf Hermes | Aiza Azman |
| 2. The MPA planning process | Mitsutaku Makino | Yuttana Theparoonrat Hideki Moronuki | D V Rao |
| 3. MPA implementation | Petch Manopawitr | Sawitree Chamsai Lena Westlund | Aung Naing Oo |

Group 1: Legal, institutional and policy frameworks for MPAs

Group 1 was asked to consider the need for legal, institutional and policy frameworks for MPAs. Chapter 5 of the *FAO MPAs and fisheries guidelines* deals with this topic.

Background and terms of reference

To be successful, MPAs and MPA networks require supporting legal, institutional and policy frameworks, as well as long-term political commitment. MPAs are tools for achieving defined objectives and are most effective when embedded within integrated marine governance and spatial management frameworks. MPAs will have multisectoral effects whether they have been designed with multiple objectives or not and better results can be achieved if these effects are considered from the outset. This integration requires intersectoral coordination. Good governance, including stakeholder participation, is key to successful and equitable management outcomes.

Within this context, the group discussed the following points:

¹⁰ See www.socmon.org/.

1. *Are there examples of MPAs where there have been multi-sectoral effects (either MPAs that were intentionally multisectoral or where multisectoral effects have been noted although not planned) that were and these have been managed by cross-sectoral coordination and collaboration? If not - why not?*
2. *What are the key fundamental legal, institutional and policy arrangements that are needed for good MPA management? Give examples of situations where these have been in place and supported MPA management, and of situations where there are been legal, institutional or policy deficiencies.*
3. *What good practices, including practical solutions (formal and informal arrangements), for coordination and collaboration between different sectoral line ministries and agencies that have supported successful MPA management with regard to fisheries management and biodiversity objectives can be identified?*

The group first made an inventory of MPAs in the region, specifying the types and scales of the different areas as well as identifying key characteristics and issues:

- Thailand National Park (at Laem Son, Rayong)
 - Declared in 7 villages but problem of illegal fishing occurred.
 - Park advisory committee established which include local stakeholders.
 - To provide advice on park management.
 - Came up with agreement for local regulation allowing villagers to fish based on agreed conditions.
- Similan Islands National Park
 - Declared in large water area (Andaman Sea) covering fishing areas.
 - Objective was really to protect corals.
 - Fishing does not affect corals but undertaken in buffer zone of the park as enforcement is insufficient.
- Chumphon National Park, Thailand
 - Fishery utilization in park.
 - Department of Fisheries and Department of Marine and Coastal Resources (DMCR) work together well, create awareness, positive approach.
 - Department of National Park, Wildlife and Plan Conservation (DNP) only upholds the law, DMCR to set up local regulations.
 - Although DNP does not accept but compromise is needed to alleviate conflict.
 - DMCR takes leading role in community involvement and setting up of management system by community.
- Philippine Protected Areas
 - Initiated by national government, managed by local government units, people's organizations, and small group organizations.
 - Positive results: awareness of people on concept of protected areas, participation of communities.
 - Local government units pursued the concept with financial support and local regulations.
 - Expansion of existing mangrove areas into protected areas (PAs), but some segments of community opposed establishment of PAs.
 - Interesting to local and international tourists to observe migratory birds.
 - In this connection, community-friendly term may be introduced instead of PA, i.e. using Managed Marine Areas (MMAs).
- Naujan Lake National Park, Mindoro, Philippines
 - Large lake declared as protected area to protect wild birds and biodiversity.
 - Declared fishing zone in certain area far away from local village with no adequate consultation.
 - Fisheries not taken into consideration.
- Bangrin Marine Protected Area, Bani, Pangasinan, Philippines
 - Started as mangrove rehabilitation project.
 - Later marine protected area put into force.

- Masinloc Fish Sanctuary, Zambales, Philippines
 - Established by local government unit.
 - Problem of poaching by outsiders.
 - Established boat and crew group from local community to protect the area.
 - Neighbouring community without similar policy create conflict.
 - Mayor shot poacher (cautionary tale).
- Mariculture Parks (MP), Philippines
 - Flagship program for food security.
 - MP sometimes within MPAs (National Integrated Protected Areas [NIPAS] law).
 - Difficulty in locating production areas within MPAs with the Protected Area Management Board (PAMB).
 - Activity by outsider needs Environmental Clearance Certificate (EEC) from Department of Environment and Natural Resources.
 - Members of Board free to utilize area for economic activities.
 - While no-take for outsiders, free access for insiders.
- Bangladesh
 - No formal MPA but Hilsa Fisheries Protection Areas and Jatka Protection Zones (fish sanctuaries).
 - Temporal banning of fishing in protected zone in 5 coastal and inland areas.
 - Affecting livelihood so government initiated food and income generating activities.
 - Hilsa catch has since then been increasing.
- Gahirmatha Turtle Sanctuary, India
 - Declared in 1997 with fishing regulations.
 - Turtle population moved to other areas.
 - Need to redraw boundaries, negotiations going on between fishery and forestry agencies to review regulations.
- Protected Areas in Indonesia (including MPAs)
 - Started under Ministry of Forestry.
 - Since 1999 with establishment of Ministry of Marine Affairs and Fisheries (MMAF), process of collaboration going on.
 - Eight National Parks handed by Forestry to Fisheries, some still remain with Forestry, as they also include terrestrial areas.
 - Decentralization encourages local government to manage protected areas.
 - Out of 96 protected areas, 54 managed by local government (average 20 ha).
- Bunaken National Park, Indonesia
 - Formally established in 1991, among the first system of marine parks in Indonesia, for marine biodiversity conservation but under Ministry of Forestry.
 - Managed by Bunaken National Park Authority and Advisory Board (multi-sectoral).
 - Income from entrance fees managed by Board, benefits go to local communities.
 - No benefits yet to fisheries (not yet valued).
- Komodo National Park, Indonesia
 - Includes island and sea.
 - Due to complexity, Forestry will not turn-over management to MMAF.
 - Main purpose is biodiversity protection, which is expected to give benefits and impacts to fisheries.
 - Criteria still not discussed.
- Lampi Island Marine National Park, Myeik Archipelago, Myanmar
 - Demarcated marine national park to protect biodiversity ecosystem and natural habitats.
 - Managed by the Nature and Wildlife Conservation Division.
 - 1995 committee formed (multi-sectoral).
 - Since 1996, many studies conducted.
 - Cross-sectoral cooperation between environment and fisheries agencies (including NGO Oikos / Biodiversity and Natural Conservation Association [BANCA]).
- Marine Park Islands, Malaysia

- Established under Department of Marine Parks under the Fisheries Act to protect, conserve and manage marine ecosystems.
- 22 Marine Parks and protected islands established.
- Department of Environment monitor marine water quality standards based on structure of water standards which should be complied with.
- It is essential to have only one Department to report to.

The group then identified common concerns and issues by main subject matter:

Fundamental legal basis of MPAs

- MPAs are often initiated by departments of forestry or ministries of environment, rarely by a fishery authority (except to some extent MMAF of Indonesia).
- Some countries have an oceans authority that covers fishing and environment, while in some countries fisheries is with an environment agency.
- There is a need to review the legal basis for establishing MPAs and see how fishery perspectives can be introduced using existing legislation or ordinances.

Vague goals and objectives of MPAs

- Most MPAs have been initiated as mangrove, coral or coastal reserves.
- In many cases, they do not cover fisheries explicitly and/or their fisheries objectives are unclear. Hence, most MPAs do not have a fishery management objective (although may have some fish conservation/biodiversity objective).
- Fisheries considerations are often added into existing MPAs (including recognition of traditional use, allowing fishing) after they have already been established and are under implementation.
- Many large MPAs have different zones (core zone, sustainable fisheries zone, other zones, e.g. tourism), resulting in difficulty in deciding what to allow and for what purpose.

Financing Aspects

- Economic viability, cost recovery and sustainable core funding are all issues.
- National recognition may result in more secure funding for a local initiative, but local support at start-up is fundamental.
- Project based initiatives may not be sustainable.
- Tenure systems are needed to give rights and responsibilities as well as clear distribution of costs (e.g. for fisheries when loss of fishing grounds) and benefits.
- Ecosystem Service Markets/payment of ecosystem services (PES) can be an alternative source of funding (especially in tourism sector).

Coordination of lead agencies and arrangements

- Arrangement for management among multi-sectoral agencies are necessary but preferably one agency should lead and be responsible for the designated area.
- MPA boards should be multi-sectoral and include all relevant stakeholders interested in particular area.
- Legal institutions and policy frameworks should be appropriate to the geographic scale of MPAs (authority to be based on subsidiarity principle recognising that management is generally most effective if at local level).
- Locally-managed MPAs need appropriate legal recognition .
- When MPAs cut across different (administrative) scales, coordination and interaction among stakeholders and authorities may be a challenge.

Inclusion and participation of stakeholders in decision making

- There is an assumption that all stakeholders are organized and can access management dialogues. This is often not the case with small scale groups especially fishers. Hence, there may be a need for greater guidance for stakeholder identification and engagements.

- There is a need for awareness raising (e.g. among stakeholders on excess fishing capacity) And capacity building (on management) at local authorities supplementary guidelines, incorporating relevant issues and advice to the governments, could be required (e.g. SEAFDEC guidelines).

Limited effectiveness for fisheries

- Often the MPA is not developed with fishery functions as part of the decision (i.e little biological basis from fishery management perspective) but is, for example, an area of outstanding beauty, habitat value or potential for tourism – fisheries are almost always a secondary consideration in the design.
- Many MPAs are in the nearshore coastal areas, far fewer are built around islands and offshore areas (and apparent lack of MPAs in the open sea).
- Since MPAs rarely address the issue of fishing overcapacity, their reduction of fishing area can reduce fishing benefits. This failure to manage fishing capacity threatens or compromises the MPAs (at least from the fish perspective).
- There is a need to subzone MPAs for use or protection of critical areas. This is particularly important with the larger MPAs, less so for small areas or sanctuaries.
- Cost benefit analyses would assist decision making for some MPAs (especially regarding allocation of benefits and tradeoffs).

Weaknesses of MPAs

- Monitoring, control and surveillance as well as enforcement are important to MPA management to ensure compliance of laws and regulations (and avoid, for example, poaching).
- Artisanal fishing could be allowed in many MPAs.
- MPA management/users may allow themselves to use the resource while excluding outsiders.

Transboundary implications

- MPAs tend to be national projects (the group did not identify joint bi/multi-management examples).

In summary, the group made the following main observations.

- There is a wide variety of MPAs in the region.
- Many MPAs have vague goals and objectives and do not include fisheries objectives (lack of legal basis) – fisheries are often secondary consideration when establishing MPAs.
- The institutional arrangements need to be appropriate to the geographic scale of the MPA and the principle of subsidiarity should be applied (management responsibilities decentralized to the most effective local level).
- Enforcement of the MPA regulations is often weak.

Group 2: The MPA planning process

Group 2 discussed the MPA planning process. The reference material for the group discussion is found in chapter 6 of the *FAO MPAs and fisheries guidelines*.

Background and terms of reference

The purpose of MPAs and MPA networks is to help solve problems and achieve goals and objectives within the policy frameworks and management systems of which they are an integral part. These policy goals and overarching objectives do not necessarily refer explicitly to MPAs but to sustainable fisheries, biodiversity conservation and socio-economic targets. Against this background, the process of setting up an MPA involves a number of choices and decisions: the first would be to define the need for an MPA and the goals it is expected to achieve. An MPA planning process can be iterative but tends to include a certain number of important steps, i.e. Identification of stakeholders and scoping; Situation assessment and identification of issues; Development of a vision and overall goals and objectives; Definition of operational objectives; Design of MPA; and Preparation of management plan. The process itself is important for the end results and it should be based on participation, transparency and equity.

Within this context, the group discussed the following points:

1. *What examples are there of MPA objectives? Are there examples of MPAs with explicit multi-sectoral objectives?*
2. *What examples are there of MPA planning processes? Is the planning process described in the guidelines valid or are there examples of different processes?*
3. *What best practices for ensuring community participation and stakeholder buy-in in planning processes can be identified?*

The group started by noting that although there is a legal basis for designating and planning MPAs in all countries in the region, legislation tends not to allow for explicitly including fisheries management objectives. It would appear that since MPAs initially were introduced for conservation and non-exploitation purposes, fisheries was excluded and has remained so in most cases. It was also noted that, if including fisheries objectives among the MPA objectives, there could be a risk of overlapping responsibilities between line ministries and authorities. In Malaysia, this has been addressed by (implicitly) including fisheries management objectives under biodiversity conservation (and keeping the responsibility for MPAs under the ministry of environment). In Thailand, there are MPAs with fisheries objectives¹¹ but the overall policy goals are generally based around conservation (of specific habitats, species) – for recreational or eco-tourism purposes – as well as sometimes for research.

The group identified several different approaches and frameworks for planning MPAs:

- Participatory approaches (involving local communities, NGOs, academia). Some examples include:
 - Establishment of advisory committees (Malaysia and Thailand);
 - Recognition of local wisdom (Indonesia);
 - Use of public hearings/consultation processes (Thailand).
- In some cases, a top-down approach can facilitate the obtaining of acceptance of and agreement by local communities on the establishment of the MPAs (if sceptical to start with, communities may change their minds when they see the benefits generated over time) (Malaysia).
- Fisheries co-management approaches (Sri Lanka, India, Maldives, Thailand).
- A legal instrument prescribing collaboration between different ministries including fishery, forestry, environment, etc (e.g. an Ocean Act or a Fauna and Flora Act).
- Translation of MPA management measures into a language that is easy to understand (India).

¹¹ See also reference to the Gulf of Thailand in the case study section above and APPENDIX 4.

- Identification of “key stakeholders” by balancing the benefits for “resource users” in the MPA.
- Establishment of MPAs at the federal level in accordance with the Code of Conduct for Responsible Fisheries (India).

A number of best practices for community participation were identified:

- There need to be participatory MPA planning arrangements in place.
- Stakeholder analysis is important (the process is likely to be different from one country to another).
- Stakeholder consultations should be carried out throughout the process of planning and implementation.
- All processes should be clear and transparent.

Key challenges relating to the planning of MPAs that were identified by the group include:

- There are often limited human resources and capacity.
- There is often inadequate financial support (at the national level).

In order to operationalize the *FAO MPAs and fisheries guidelines*, the group felt more guidance would be needed with regard to:

- How to make use of SMART (p. 97 in the *FAO MPAs and fisheries guidelines*) as a concept in the process of developing operational objectives.
- The level of coverage of MPAs to achieve certain objectives within EEZs should be clarified.
- How “effective control/monitoring” can be ensured once the MPA has been established.
- How to plan the development/implementation of MPAs in disputed or transboundary areas and what could the role of MPA networks be in the context. How to ensure that the objectives are clear and that there is no confusion with regard to the MPA definition).

Group 3: MPA implementation

Group 3 was given the task to consider MPA implementation. In addition to referring to chapter 7 of the *FAO MPAs and fisheries guidelines*, dealing with this subject matter, the group also discussed information needs for MPAs (chapter 8).

Background and terms of reference

The MPA or MPA network planning process establishes the framework for MPA implementation. This framework is documented in the management plan, and complemented by the details of implementation, administrative arrangements and responsibilities. An implementation start-up period will probably be needed, as well as continuous monitoring and the flexibility to adjust plans and decisions if outcomes are not satisfactory. In order to plan and implement an MPA or MPA network, relevant information is needed. Considering the holistic and integrated approach that should be taken to MPA planning and implementation – and the cross-sectoral outcomes and desirable multiple objectives characteristic of MPAs – a wide range of data and information sources must be considered.

Within this context, the group discussed the following points:

- 1. What examples are there of MPA administrative and management arrangements (what rules and regulations are there, how is enforcement carried out, is there a management board or similar – how and by whom are management decisions taken)?*
- 2. What are the information needs for MPA management and monitoring? Are there examples of specific data/information collection systems set up for MPA monitoring?*
- 3. What good practices for monitoring MPA effectiveness can be identified – in particular with regard to fisheries objectives (systems, processes, indicators)?*

The group identified different attributes and elements of implementation arrangements that exist in the region:

Management regimes

- MPAs can be categorised and designated by ‘top-down’ or ‘bottom-up’ approaches (though there is a trend towards more consultations and ‘bottom-up’).
- Different government bodies are involved in different types of MPAs and there is a need for consultations and coordination.
- Management/implementation responsibility can also lie at the higher level, e.g. as in Malaysia where the same rules and regulations apply for all marine parks and terms of reference are agreed at national level or in Japan where management of autonomous MPAs rests with communities).

Enforcement

- Community-based managed MPAs and/or where communities see benefits from the MPA may be self-enforced or enjoy higher level of compliance.
- Collaboration is required across all relevant agencies, such as the coast guard, and local communities (‘enforcement groups’ and networking).
- Appropriate penalty levels are needed to discourage encroachments.
- Practical manuals and guidance to facilitate enforcement activities should be produced.
- Enforcement mechanisms are dependent on the size of the MPA (smaller coastal MPAs may be self-enforced while larger offshore MPAs may need more formal enforcement).

Need for information

- Information and data are needed to assess the effectiveness of MPAs. Such information needs to be communicated to those affected to promote compliance and plan their involvement/activities.
- Information and data on MPA implementation should be shared among countries in the region and among agencies at the national level.
- Information should be conveyed also to consumers to promote sustainable management.
- Information in the form of socio-economic assessments and economic valuations of fisheries are needed to gather political support and resourcing.

Information sources and analyses

- Examples of information sources include:
 - Local knowledge (from fishers, dive operators, etc)
 - NGOs
 - Local academies and universities
 - Logbook system
 - SocMon (socioeconomic monitoring) guidelines¹²
- Information sources are site specific.
- Information needs to be communicated in a way that is appropriate for the target group (easy to understand).
- Collected data can be compiled in GIS to ensure availability and to make it easy to demonstrate.
- It would be useful to have standardised methodologies for data analysis to facilitate comparisons (between sites, over time). Different methodologies may be needed for different types of MPAs.
- Need to define minimum requirements for data collection – it is not possible to collect all.

Adaptive management

- When – as often - not enough data, a precautionary step-by-step approach needs to be applied, i.e. starting with something and adjusting as new knowledge becomes available.

¹² See footnote 10.

The findings and conclusions of the group included:

- There is a need to define minimum requirements for data collection according to site specific conditions.
- Means of sustainable funding/incentives to sustain MPAs in marine park areas (user fees, voluntary contribution thanks to mutual understanding, etc) should be identified.
- More capacity building is needed for those that are going to implement MPAs.
- Increased communication between different agencies should be promoted.
- Both conservation management and fisheries management need to be taken into account for effective MPA implementation.
- There is a need to ensure mutual understanding among stakeholders for implementing MPAs.

WORKSHOP CONCLUSIONS AND RECOMMENDATIONS

Key findings

Based on the experiences shared and discussions held during the workshop, the following key observations were made:

- There is a wide variety of MPAs in region. However, only a very limited number have explicit fisheries objectives. Sometimes fisheries management is implicitly referred to under a biodiversity objective but more often fisheries objectives are not considered.
- In line with this state of affairs, it was noted that there is a legal basis for establishing MPAs in all countries in the region but this rarely covers fisheries management.
- While there appears to be a common understanding of the need for different line agencies to coordinate and collaborate on MPA planning and implementation, there is still insufficient cross-sectoral communication.
- There is recognition – on behalf of governments, MPA managers and other stakeholders – of the importance of community involvement and engagement in MPA planning and management. Still many MPAs do not sufficiently include local communities in management.
- Information is important but complete data may not be necessary. Better use of data from different sources could be made – combining scientific data, local wisdom and traditional knowledge – as well as of multi-disciplinary (social/economic and ecological/biological) analysis.
- Fisheries information is generally not included in MPA planning and hence MPAs may not yield fisheries management benefits.

Recommendations

Recognising the validity of the FAO Technical Guidelines on MPAs and fisheries and appreciating the guidance they provide, the workshop highlighted the following key points to be considered by governments, regional organisations and projects involved in MPA s in the region:

- Ensure that when new MPAs are designated, fisheries are taken into consideration and fisheries objectives incorporated when appropriate, and make sure that fisheries spatial management measures are also considered MPAs.
- Review how the legal basis and institutional arrangements for MPA management can be changed to allow integration of fisheries management objectives as well as more equitable benefit sharing, including to local and indigenous communities
- Increase collaboration and coordination between different line agencies but avoiding unclear responsibilities or overlapping mandates (one agency to lead)
- Stakeholder (community) – in particular small-scale fisheries – involvement has to be ensured throughout MPA planning and implementation and the most effective local level of management should be sought (the subsidiarity principle). Tenure and customary rights of small-scale fisheries need to be recognised in this respect.

- Take a step-by-step and precautionary approach, especially in data poor situations – start with something and adjust as new knowledge becomes available (adaptive management). Still, good baseline data are required in order to allow for monitoring of effectiveness.
- Fisheries data and information should be included with all other sources of data and information when establishing MPAs in order to enhance the fisheries management benefits.

BOBLME MPA WORKING GROUP MEETING

Directly after the SEAFEDEC-BOBLME-FAO MPA workshop, a one and a half day meeting of the recently established BOBLME MPA working group was held (on 1–2 February 2012). The participants in this meeting had all also attended the first workshop and the discussions served to, among other things, link the outcomes of the first event with BOBLME project implementation. Hence, in addition to discussing the project’s ongoing MPA activities and addressing the recommendations given to the BOBLME project earlier – with regard to advancing the work on MPAs in the project countries (see the section on *MPAs as fisheries management tools in the BOBLME* above) – the meeting also discussed how the *FAO MPA and fisheries guidelines* should be disseminated in the region and effectively used by the project.

There was great appreciation of and support for the FAO guidelines by the working group. The observations, conclusions and recommendations of the meeting were summarized as:

1. FAO MPA guidelines are a very good and useful document, providing valuable guidance on key concerns in establishing MPAs.
2. These Guidelines should be disseminated / circulated by FAO and BOBLME, and translation (in part) would be useful.
3. Efforts to communicate on MPAs are very good; it would be advantageous also if individual countries would come up with own specific communication plans (on MPAs).
4. Spatial and temporal fisheries management areas should also be covered by the Policy Guidelines [documents currently being developed by the BOBLME for each member country].
5. There should also be MPA Working Groups at national level (with BOBLME recognition or support), giving due consideration also on socio-economic concerns.
6. The BOBLME MPA Working Group should also include Member(s) from NGO and IUCN, as appropriate and originally envisaged.
7. National MPA Working Group should become advisory body to National Agencies.
8. BOBLME should support a review/comparison of “management effectiveness” assessment tools available (including review of existing effectiveness assessment studies).
9. Capacity Development on MPA Management using or considering the existing NOAA-MMAF Training Course on MPAs. [it was noted that consistency of course contents with FAO guidelines may need to be verified, in particular with regard to the need to reconcile biodiversity conservation and fisheries management objectives and ensuring stakeholder (fishing/local community) participation]
10. The WG MPA expresses its hope that “pilot sites” activities will be fully developed and implemented in near future.
11. MPA mailing list, sharing access to MPA information and news.
12. Key agencies with MPA responsibilities are sometimes renamed or assigned to different ministries, and this information should be updated regularly.

FINAL REMARKS

Publishing guidelines on the need to reconcile biodiversity conservation and fisheries management objectives in the context of MPAs and organizing a regional workshop will not necessarily immediately change the way policy and decision-makers and practitioners go about business or lead to improved MPA effectiveness. However, the reception of the FAO guidelines and the discussions

held in this SEAFDEC-BOBLME-FAO workshop indicated that there is much to gain from continuing providing opportunities for officials and other stakeholders from different sectors to meet, exchange experiences and discuss. Organizing such workshops with partner organizations and linking them to existing projects – in this case SEAFDEC and the BOBLME project – would appear to be a powerful approach for disseminating the guidelines and the concepts they promote as well as for encouraging communication among stakeholders.

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APPENDIX 2

Workshop concept note and agenda

Putting into practice the FAO Technical Guidelines on MPAs and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and South East Asia

Background

The use of MPAs has lately taken on greater importance in discussions on how to protect marine ecosystems and reverse the degradation of aquatic habitats and they are commonly described as a key tool for biodiversity conservation and sustainable use of its components, and as part of ecosystem approaches. The need to safeguard our marine environment better and promote the sustainable use of existing aquatic resources is increasingly being recognized worldwide. Good fisheries management requires a holistic approach, including biodiversity conservation and protection of habitats, in addition to more direct target stock management, to ensure the long-term productivity of fishery resources. While having been an implicit consideration in conventional fisheries management, this perspective has become more explicit through the promotion of the ecosystem approach to fisheries (EAF). When effectively implementing fisheries management (through EAF), conservation objectives should also be attained in conjunction with sustainable fisheries objectives.

There are many initiatives worldwide with the objective to further the knowledge on how to use MPAs as a biodiversity conservation and fisheries management tool. The recent *FAO Technical Guidelines for Responsible Fisheries on MPAs and Fisheries* aspire to enhancing the understanding of how fisheries management and biodiversity conservation are linked and what the opportunities and challenges are of implementing MPAs within broader management frameworks taking both bioecological and human aspects into consideration.

In order to disseminate the Guidelines and to support existing initiatives promoting effective MPA management, identify best practices and further the discussion on MPAs with multiple objectives and promote cross-sectoral coordination and collaboration, FAO in close collaboration with its partners is planning a number of regional workshops. As part of this process, a workshop on *Putting into practice the FAO Technical Guidelines on MPAs and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and South East Asia* will be convened in Bangkok, Thailand, on 30 January – 1 February 2012¹³. The event will be organized jointly by the Southeast Asian Fisheries Development Center (SEAFDEC), the Bay of Bengal Large Marine Ecosystem (BOBLME) project and FAO.

Participation

Expected workshop participants include representatives from the 15 SEAFDEC and BOBLME member countries¹⁴. Participants will include officials – both policy makers and practitioners – from fisheries departments, environment agencies and parks administrations (with social or natural science background). Staff from actual and potential regionally active government partner organizations, representatives of CSOs and (small-scale fishing) communities affected by and/or managing MPAs, and other relevant programmes and projects will also be invited. Together with resource persons, it is expected that the workshop will bring together some 50 participants.

¹³ The workshop will be followed by a meeting of the BOBLME project MPA Working Group on 1-2 February 2012.

¹⁴ Bangladesh, Brunei Darussalam, Cambodia, India, **Indonesia**, **Malaysia**, Maldives, **Myanmar**, Philippines, Singapore, Sri Lanka, **Thailand**, Lao People's Democratic Republic, Vietnam and Japan [countries in bold are members of both organisations].

Objective and expected outputs

Based on the contents of the *FAO MPA and Fisheries Guidelines* and experiences in the region, the purpose of the workshop is contribute to successful MPA management in the countries of South and South East Asia. The workshop will attempt to identify issues, best practices and critical processes and institutional/planning/implementation elements for implementing MPAs in the context of fisheries, including reviewing their potential contribution to existing fisheries management/EAF regimes and the need for cross-sectoral linkages. The expected outputs include:

- Familiarity with the *FAO Technical Guidelines on MPAs and Fisheries* on behalf of participants and their institutions/organisations.
- Based on the identification of best practices, agreed recommendations on actions that could be taken by governments, FAO, SEAFDEC, BOBLME and other projects/programmes with regard to further increasing the awareness on MPAs and fisheries, influencing policies and promoting cross-sectoral collaboration and policy coherence.

Workshop organization

The workshop will have a duration of two and half days (see also footnote 1). It will be structured around plenary presentations and discussions, and working group sessions:

Initial plenary presentations and discussions:

- Setting the scene – presentation of the *FAO Technical Guidelines on MPAs and Fisheries* management and other recent and current work by relevant organizations on MPAs, i.e. SEAFDEC's initiatives on MPAs and use of Fisheries Refugia for capture fisheries management, the outcomes of the BOBLME Penang, Malayisa, MPA workshop (January 2011) and other initiatives by the programme, and the Institute of Marine Research, Bergen, Norway, MPA workshop (March 2011).
- Presentations of case studies, i.e. on MPAs under implementation (or at the planning stage) or regional examples, including challenges and lessons learned.

In addition to the case studies, there will also be time allocated for additional country statements and comments, e.g. with regard to current policies, level of MPA development and related institutional aspects, or any other relevant issue representatives may want to bring to the workshop's attention.

- Presentation of proposed areas for further discussion by the workshop, focusing on chapters 5-7 of the Guidelines:
 - Legal, institutional and policy frameworks
 - The MPA planning process
 - MPA implementation

Discussion and agreement on key issues/questions within these areas that will be addressed by the workshop, e.g. practical solutions for coordination and collaboration between different sectoral line ministries and agencies for effective spatial management; best practices for ensuring community participation and buy-in in planning; how to monitor MPA effectiveness; etc.

Working group discussions (3 groups):

- Review of and discussion on topics as presented in the Guidelines (chapters 5-7; *Legal, institutional and policy frameworks*; *The MPA planning process*; and *MPA implementation*) focusing on the key issues/questions identified in plenary (see above). Group participants will be encouraged to draw on their own experiences and knowledge (and from the case studies presented in plenary) to illustrate best (bad) practices and lessons learnt.
- Identification of best practices and formulating recommendations for policy makers and practitioners (to be presented to plenary for further discussion).

Continued plenary presentations and discussions:

- Presentation of working group findings and recommendations for comments and discussion.
- Discussion and agreement on workshop findings and recommendations with regard to:
 - Best practices, in particular with regard to *Legal, institutional and policy frameworks; The MPA planning process; and MPA implementation.*
 - Recommendations for actions to be taken by FAO, SEAFDEC, BOBLME and other projects/programmes or MPAs

Agenda**Day 1: Monday 30 January 2012****09:00 Plenary:**

- Opening session including welcome and opening addresses [FAO, BOBLME, SEAFDEC]
- Overview of workshop objectives and expected outputs [FAO]
- Adoption of agenda and election of chair

11:00 Plenary:

- Presentation of the *FAO Technical Guidelines on MPAs and Fisheries* [L. Westlund/FAO]
- Presentation of the outcomes of other relevant initiatives and events:
- SEAFDEC's initiatives on MPAs and use of Fisheries Refugia for capture fisheries management [S. Somboon/SEAFDEC]

*Questions and discussion***14:00 Plenary:**

- Presentation of the outcomes of other relevant initiatives and events (*cont.*):
 - BOBLME MPA workshop (Penang, Malaysia, January 2011) and other related work [R. Hermes/BOBLME]
 - Institute of Marine Research MPA workshop (Bergen, Norway, March 2011) [H. Moronuki/FAO]

Questions and discussion

- Case studies: Presentations of MPAs under implementation (or at the planning stage) or regional examples, including key challenges and lessons learned:
 - MPA Establishment and Implementation in Vietnam [N.N. Thi Trang]

16:00 Plenary:

- Case studies (*cont.*):
 - Thailand/SEAFDEC [P. Saikling]
 - Thailand/BOBLME [P. Manopawitri]
 - SEAFDEC-SIDA project [M. Torell]

18:00 *Day closure***Day 2: Tuesday 31 March 2012****09:00 Plenary:**

- Case studies (*cont.*):
 - Establishment of a regional network of fisheries refugia in the South China Sea with case studies from Phu Quoc, Vietnam, and Visayas Sea in the Philippines [J. Pernetta]
 - MPAs in Japan [M. Makino]
- Additional country statements and comments
- Discussion on key issues/questions to be addressed by the workshop

11:30 Plenary:

- Brief summary of the discussions and outcomes so far (including of key issues/questions) [Workshop Secretariat]
- Explanation of the TORs and organisation of working groups session [FAO]

14:00 **Working group session:**

Three parallel working groups discussing one topic each:

1. Legal, institutional and policy frameworks
2. The MPA planning process
3. MPA implementation

16:00 **Working group session:**

Three parallel working groups (cont.)

17:30 *Day closure*

Day 3: Wednesday 1 February 2012

09:00 **Plenary:**

- Reports from working group session and discussion

11:30 **Plenary:**

- Brief summary of workshop findings [*Workshop Secretariat*]
- Discussion on conclusions and recommendations
- Workshop summing up and adoption of conclusions and recommendations

12:45 **Plenary:**

- Closing ceremony

13:00 *Workshop closure*

APPENDIX 3

Establishment of a regional network of fisheries refugia in the South China Sea, with case studies from Phu Quoc, Viet Nam, and the Visayan Sea in the Philippines

*John C. Pernetta,
MA, D.Phil.*

*Former Director, UNEP/GEF South China
Sea Project*

The work reported in this presentation was conducted by the Regional Working Group on Fisheries (RWG-F) established under the UNEP/GEF Project entitled “Reversing environmental degradation trends in the South China Sea” (SCS Project), which became operational in January 2002 and was completed in December 2008. The working group contained national representatives from the fisheries departments of all SCS countries except China and Brunei; and worked for seven years with assistance of SEADEC to review transboundary fish stocks, life cycle data and identify potential *refugia* sites nationally and regionally including 10 meetings over the period 2002 to 2008. Five national reviews of fisheries were produced and potential *refugia* sites evaluated both nationally and regionally.

Many demersal and some pelagic species of fisheries significance use shallow water habitats as nursery and spawning grounds; loss of such habitats decreases spawning success, juvenile survival and adversely affects recruitment to fish stocks. Some species of coral reef grouper for example use other habitats such as mangroves for juvenile nursery areas. Coastal habitats of significance to fisheries are under severe threat in the region, for example loss of 80% of mangrove on the Gulf of Thailand coast of Thailand has had major impact on wild caught penaeid shrimp catch. The SCS project reviewed the state of coastal habitats around the margins of the South China Sea and evaluated 143 areas of coastal habitat that were characterized and ranked according to their biodiversity, threats and present status. Fishing has been identified as a significant threat to soft bottom habitats in particular seagrass and the decadal rate of loss has been assessed as: seagrass 30%; mangroves 16%; coral reefs 16%; and coastal wetlands including estuaries and lagoons 30%.

The RWG-F identified the following as significant barriers to action:

- Limited knowledge of fish life-cycles and critical fish-habitat linkages;
- Low level community-level acceptance of “marine protected” area-based approaches;
- Limited practical experience in the integration of fisheries and environment considerations;
- Past use of zoning approaches focused on resolving conflicts in nearshore areas and for coral reef tourism promotion; and
- Widespread use of destructive fishing gears and practices throughout the region

The challenge for sustainable management of both fisheries and environment was seen as being “*How to effectively integrate fisheries and habitat management*”. The UNEP/GEF South China Sea Project and SEAFDEC have worked to develop regional capacity to meet this challenge by: improving the understanding amongst fishing communities, managers, and policy makers of habitat and fish stock linkages; and, building the capacity of both fisheries and environment ministries and departments to ensure effective integration of fish stock and habitat management

The RWG-F was concerned about the purported benefits of MPAs to fisheries since the “perceived truth” appears to be that marine “protected” areas can simultaneously achieve improvements to biodiversity conservation and enhance fish catches outside the protected area. It was considered critical that any spatial management “sold” to fishing communities in terms of improving the state of fisheries should achieve just that, but was concerned that scientific evidence that MPAs result in

improvements to fish catch across the geographical range of a fishery is limited. There is only limited evidence of the magnitude and extent of the contribution of larvae produced within reserves to recruitment outside reserves; some studies indicate that catch and CPUE may increase in areas immediately adjacent to MPAs but few have looked at effects of displaced fishing effort across the fishery. Criteria for MPA site selection typically relate to concepts such as ecological uniqueness, representativeness and comprehensiveness. Selection of MPA sites focuses on biodiversity conservation rather than fisheries and MPAs widely understood by key stakeholders (fishing communities, provincial fisheries officers, local government officials) to be “no-take” areas in which fishing is “prohibited”. Regional experience indicates that prohibition of fishing is a difficult if not futile task. Due to high density of fishers and community dependence on fish, prohibition of fishing typically leads to displacement of fishing effort to adjacent areas – localised depletions? The UNEP/GEF SCS Project and SEAFDEC recommended that any mechanism developed should:

- Focus on maximising the benefit-cost ratio of management interventions for fishing communities; Promote sustainable use rather than prohibition of fishing;
- Focus on links between fish life-cycles and critical habitats; and be,
- Relevant at the fishery level, i.e., should be easily understood by fishing communities, local government officials, and provincial level fisheries managers

The concept of fisheries *refugia* was developed to meet these criteria: Fisheries *Refugia* are “Spatially and geographically defined, marine or coastal areas in which specific management measures are applied to sustain important species [fisheries resources] during critical phases of their life-cycle, for their sustainable use.” This concept was promoted by the SCS project and SEAFDEC through conduct of training, national and regional workshops, production of regional guidelines on *refugia* establishment; production of popular articles, establishment of a *refugia* portal on the SCS project website; stakeholder consultations and review of regional data on the distribution of fish eggs and larvae. National and regional reviews of data and information resulted in the identification of: 14 sites for inclusion in an initial system of *refugia*; 9 sites accorded high priority for action once initial set established; and an additional 29 spawning and nursery areas for which further information are required. The recommendations of the regional working group were incorporated into the regional Strategic Action Programme approved by all seven governments and the general longer-term objectives of the fisheries component of the SAP are to:

- Build the resilience of Southeast Asian fisheries to the effects of high and increasing levels of fishing effort;
- Improve the understanding amongst stakeholders, including fisher folk, scientists, policy-makers, and fisheries managers, of ecosystem and fishery linkages, as a basis for integrated fisheries and ecosystem/habitat management; and,
- Build the capacity of fisheries departments/ministries to engage in meaningful dialogue with the environment sector regarding the improvement of co-ordinated interactions between fisheries and critical marine habitat management.

Specific objectives are: the establishment of a regional system of a minimum of twenty *refugia* for the management of priority, transboundary, fish stocks and endangered species; and preparation and implementation of fisheries management systems in the identified *refugia* based on, and consistent with, the ASEAN SEAFDEC Regional Guidelines for Responsible Fisheries in Southeast Asia. Activities have been defined at the regional, national and local levels to meet these objectives.

Pilot activities concerning the establishment of fisheries *refugia* were undertaken at a number of locations including the Visayan Sea in the Philippines and at Phu Quoc Island in southern Vietnam. In the Philippines the concept was successfully introduced to resolve conflict between the fishing community which depends upon fisheries both for subsistence and for income and academic and NGO groups that were pressing for a closure of the Visayan Sea fishery as a consequence of over exploitation. The use of the *refugia* concept involved identification of spawning and nursery areas

and the implementation of fisheries management rules based on these findings. In summary achievements in the Philippines included:

- Successful use of refugia concept in conflict resolution
- Community acceptance high along SCS coast and other areas
- Fisheries refugia concept recently included in the Philippines' Comprehensive National Fisheries Industry Development Plan
- Activities initiated to include refugia management as part of the Annual Investment Plans of Local Government Units and to formally establish refugia sites under Administrative Ordinances
- Refugia concept being considered for use by tuna industry as a tool for management of juvenile tuna in the Western Pacific Ocean

The Phu Quoc Archipelago is composed of 14 islands located in transboundary waters with Cambodia. The island supports a significant seagrass area \approx 10,000 ha; a coral reef area \approx 470 ha and is surrounded by highly productive fishing grounds. It has been designated by the Provincial Government as a priority tourism development zone and was identified on the basis of its biodiversity as a SCS Project demonstration site. Threats to the sustainability of the islands ecosystems include the facts that: the communes of Phu Quoc Island are almost entirely dependent on fisheries resources associated with seagrass and coral reefs; intensive inshore fishing is causing loss of seagrass and coral reefs and over-exploitation of coastal fish stocks; rapid tourism development has greatly increased local demand for seafood; and prior to the intervention there was little integration of fisheries and habitat management – particularly in seagrass area. Partners in this activity included: The institutions and individuals involved in the habitat demonstration site activities; the national fisheries agency; the provincial and district fisheries and environment departments; the Provincial Department of Science and Technology fishermen and fish traders from Ham Ninh Commune; Phu Quoc Parks authority and the Border Army. Initial activities included preparation of a fisheries profile for Ham Ninh coastal area; conduct of consultations on the refugia concept; and mapping of known spawning and nursery areas that resulted in an agreed map as the basis of a spatial management plan and implementation of fisheries rules and regulations. In summary achievements in Viet Nam include:

- Critical spawning and nursery areas identified using fisher knowledge
- Map now used in consultations to identify specific fisheries issues and appropriate management measures
- First time such work in Viet Nam has involved the local community and fishermen
- High level of local community ownership of process
- Activity has built strong partnerships between habitat managers, fishermen, and local government officials

APPENDIX 4**Development of Fishery Refugia on Closed Season and Areas in the Gulf of Thailand**

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Marine capture fisheries of Thailand had been placed in the top ten fisheries production countries. Indo-Pacific mackerel is one of the most important pelagic species among Thai people, particularly those caught from the Inner Gulf of Thailand. However, increasing demand of the protein sources together with the rapid development and improvement of fishing techniques was the major cause to stock reduction of the Indo-Pacific mackerel and some others commercially important pelagic species in the Gulf of Thailand (GoT). Department of Fisheries Thailand (Thai-DOF) had monitored the changes in status of aquatic species and also the fishing methods with the aim at determining appropriate measures from time to time for sustainable use of these pelagic species. Over the past 50 years, the “Gulf Closing” was one of the most important measures among various measures. Focus of the “Gulf Closing” was given to conserve/manage stock of the Indo-Pacific mackerel. Development of the management measures implementing in the GoT can be summarized as follows:

Period I (before 1953): There was no establishment of any measures before 1953 for conservation and management of marine resources (H.M. Smith 1923~1924) due to the rich of natural biological diversity in the Gulf of Thailand. The Indo-Pacific mackerel was considered as the economically important species during those days.

Period II (1954~1967): As the resulted from improved/developed fishing gear and methods, it showed increased catch production of pelagic resources in GoT, particularly Indo-Pacific mackerel. Since then, Thai-DOF started to establish an appropriate measure to the Indo-Pacific mackerel stock by prohibiting the use of some fishing gear and methods (such as large-scale Chinese purse seine, Thai purse seine etc.) during their spawning period through the Notification of the Ministry of Agriculture and Cooperatives (MOA-N) dated 25 August, 1953. In 1957, Thai-DOF was firstly established a Technical Study Committee for Indo-Pacific mackerel Investigation in responding to the request/complain from fishers on the increased number of fishing gears including bamboo stake trap, Chinese/Thai purse seines that may caused the declination of the Indo-Pacific mackerel fish stock. MOA-N dated 18 March, 1959 was issued regarding determination of fish spawning and to prohibit the use of some fishing gears and practices. Consequently, the use of logbook was introduced to fishers for obtaining catch data of Indo-Pacific mackerel. At the same time, the use of purse seine and enmesh gillnet were prohibited in the restricted area where identified as the spawning ground of Indo-Pacific mackerel. MOA-N dated 8 March, 1962 was issued to conserve Indo-Pacific mackerel during spawning season, and the use of mesh size in some fishing gear was prohibited for catching small size Indo-Pacific mackerel. The first closed areas and life cycle of the Indo-Pacific mackerel in the Gulf of Thailand are shown in figure 1.

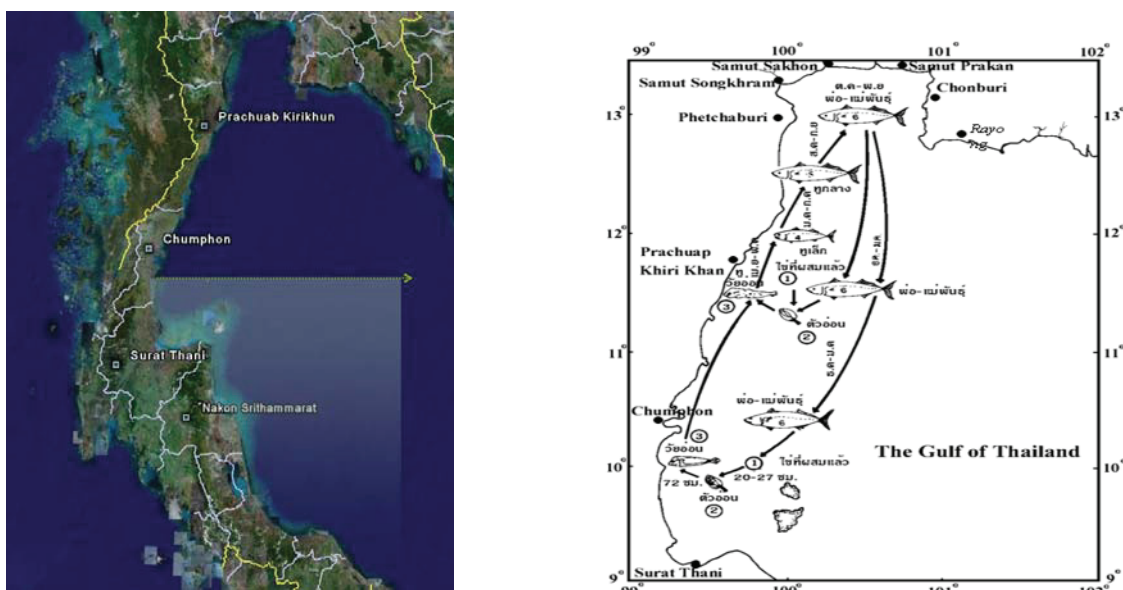


Figure 1 Closed areas and life cycle of the Indo-Pacific mackerel in the Gulf of Thailand

Period III (1968~1982): Over fishing capacity in the GoT became the serious problem, particularly from the development of the bottom trawlers introduced from German in 1960. Modified trawlers for catching Indo-Pacific mackerel had made and resulted in increasing quantity of fish caught for many years. MOA-N dated 13 October, 1972 was issued to prohibit trawlers' operation in Prachuab Khiri Khan, Chumphon, Surat Thani, and Nakhon Si Thammarat provinces. Oil crisis in 1973 was the major cause to the modification of the pelagic fishing gears. In addition, fish aggregating devices using a bunch of coconut leaves and with using luring lamp were initially equipped in the fishing operation to increase the fishing efficiency. MOA-N dated 7 November, 1975 was issued to prohibit the use of some fishing gears, and to regulate mesh size for catching young juvenile of Indo-Pacific mackerel. Under MOA-N dated 8 March 1962, the gear prohibition was also given to luring purse seine using coconut shelter with/without lamp. The Gulf Closing period was then extended by starting from 15 April to 14 July annually. In late 70s, trend of fishing gear modification aimed to be unable to identified under the existing MOA-Ns, e.g. the MOA-N October 1972 and November 1975. From 1977~1983, Thai-DOF attempted to revise the MOA-N/1975 for effectively manage marine capture fisheries by prohibiting all types of fishing boats.

Period IV (1983~1997): MOA-N dated 3 March 1983 was issued by revising the MOA-N October 1972 and November 1986. To utilize the resources together with the attempt to reduce the pressure of trawling and purse seining – the trawl net equipped with motorized engine; purse seiners equipped with purse lines; and enmesh gillnet, the use of these gears in specific areas during the specific periods/areas are prohibited. Subsequently, MOA-N dated 28 November 1984 was issued to prohibit the use of other fishing gear and methods during spawning and nursery period in some specific areas, by extending the closing period from 2 months to 3 months and dividing into 2 periods: the first phase, spawning period from 15 February to 31 March; the second phase, nursery and juvenile period from 1 April to 15 May of each year. Since 1980, anchovy purse seine fishing fleets was rapidly expanded due to market driven demand. And the fishing ground had moved from Andaman Sea into the GoT. Anchovy fishers who were affected from the existing measures requested Thai-DOF to allow them to fish during spawning period and quoted that their fishing practices targeted mainly anchovies and no any effect to other economical species. Thai-DOF issued the Order. 7/2533 January 1990 to appointment of the members of the committee to study

and resolve problems and complaint concerning anchovy fishing. Subsequently, Thai-DOF issued Notification dated 12 February 1994 based on the results that distribution of anchovy eggs and its larvae were extensively found in the area from 1~40 nautical miles from shore during January to March. The prohibition of daytime anchovy fishing operation during 15 February to 15 May was included under this Notification. By this way, it was found that Indo-Pacific mackerel production in the GoT was maintained about 90,000 metric tons annually over the 6 years continuously.

Period V (from 1998 to date): Regarding the problem related to anchovy fishing activities, fishing gear/methods were modified to be unable to enforce under the existing MOA-Ns, as well as to increase fishing efficiency. Moreover, efficiency of push netters was improved either by increasing length of the push-stick or constructing the bigger boat. Push netters and anchovy purse seiners were installed with light generator for operating cast net, falling net, and lift net that targeting to catch anchovy. Consequently, MOA-N dated 24 September 1999 was issued to prohibit the use of some fishing gear activities during 15 February to 15 May in the important spawning areas and nursery period of Indo-Pacific mackerel. However, due to the fact that they could not suddenly respond to the Notification, rescheduling for the use of the measures was prolonged for a year later. During that prolonged period, the Notification issued in 1984 was temporally used, and consented to seek for resolution through multi-stakeholders committee (representatives from each group of fishing gear, and relevant governmental officials) established in each province. The 2 Edition of the Gulf Closing was issued in the year 2000 to prohibit the use of some type of fishing gear during spawning and nursery period in the area of Prachaup Khiri Khan, Chumphon, and Surat Thani. The major point was to temporary stop implementing the Notification dated 24 September 1999, and will be effective from 15 February to 15 May 2000. Consequently, Fishers of Lang-soun district protested the Notification. Through the consultation process with fishers on 22 February 2001, permission was given, including: (i) during the first 45 days (15 February to 31 March 2001), permission only for: beam trawl or bottom otter board beam trawl (small trawl) that use only one single motorized boat and fish during the night; push net; anchovy purse seine operate during day time; lift net; anchovy cast net equipped with electronic generator; (ii) during the last 45 days (1 April to 15 May 2001), permission given only for encircling gill net that use together with motorized boat and use similar fishing method with Indo-Pacific mackerel purse seine. Subsequent to that, 23 fishers from Paknam Lang-soun submitted accusation to the Central Administrative Court for revision of the Notification dated 24 September 1999, Minister of Agriculture and Cooperatives as the 1 Accuser, and Thai-DOF as the 2 Accuser being the Undecided Case number 1284/2544 under consideration of Administrative Court (Undecided Case number A. 12/2546) and Highest Administrative Court (Decided Case number A.51/2547) dated 26 July 2004, and finally the Courts acquitted the case. Figure 2 was shown the present closed areas and new challenge issue.



Figure 2 Closed areas and new challenge issue

Points to be considered in relation to the measures for conservation of aquatic resources in the areas of three provinces for the future, and conclusion

According to the prohibition on the use of mackerel encircling gillnet, it caused to increase in numbers of Indo-Pacific mackerel drift gill net significantly from 2002~2005. Fishers modified their prohibited fishing gears (trawl net, and mackerel encircling gill net) to be identified as legal gears (fish drift gillnet) as identified under this Notification dated 24 September 1999. In addition, various demersal fish (e.g. red snapper, big eyes, lizard fishes, and wolf herring) was also caught by this drift gillnet. At the same time, some of fisher groups improved drift gillnet fishing gear and techniques (also targeting at Indo-Pacific mackerel) by adding the net depth from 50~80 to 200~300 meshes depth. Fishing method was also changed from strait set up the net to set the net in circle, zigzag, or something similar. This type of gillnet was called “Auon-short”. In 2005, results of the following-up study indicated that the catch rate of this gillnet consisted of 80~85% Indo-Pacific mackerel. It was also found that 75~98% of male and female were full completely mature.

In conclusion, during the past 60 years (1953~2012), Thai-DOF issued totally 13 management measures involving with the “Gulf Closing” with the aim at conserving spawning and nursery stage of aquatic resources in the GoT. It was clearly observed that the measures for conserving Indo-Pacific mackerel were used as a basis for formulation and development of the other conservation measures. Cancellation and revision of these measures were made from time to time in according to the change of status of fisheries resources, and due to effectively management of aquatic resources for the sustainable exploitation.

APPENDIX 5:

Project IMPAACT: Improving Marine Protected Areas on the Andaman Coast of Thailand under a Climate Change Regime

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The Andaman Bioregion of Thailand is one of the most abundant and diverse marine ecosystems in the world and is home to at least 18 marine protected areas. The region is a centre of tropical marine biodiversity, but the reefs and other key ecosystems are deteriorating due to a wide range of pressures. In 2010, the region witnessed the most severe coral reef bleaching ever and climate change will have an increasing impact on marine ecosystems in the future. At the same time there are many communities that are dependent upon marine and coastal resources for their livelihoods. These dependencies range from traditional and commercial fishing activities through to more recent dependence on coastal tourism. These activities will also see significant changes as coastal ecosystems change. The goal of Project IMPAACT is to provide further understanding of likely climate-change induced changes in coastal ecosystems and communities and suggest interventions that can increase the resilience of ecosystem conservation and the adaptive capacity of livelihood dependent communities in the future. IMPAACT is a project of the Marine Protected Areas Research Group at the University of Victoria, Canada.

Project IMPAACT is currently made up of two components which are outlined below. Several additional sub-projects are envisaged which will be incorporated into the larger project as resources become available.

1. Building Ecosystem Resilience

The Andaman Coast of Thailand contains important areas of coral reefs, sea grass, and mangrove forests. Climate change will have significant impacts for these marine ecosystems across the region. The objective of this component is to examine the current MPA system through a climate-change lens to determine the interventions necessary to develop the most resilient system possible. This will be accomplished through 1) conducting environmental susceptibility assessments, 2) locating critical habitats, and 3) identifying candidate MPA network sites. The final resilient MPA network design will be produced using GIS and Marxan decision support software. This study will also explore management options for MPAs to address the impact of climate change by improving their effectiveness and enhancing ecological resiliency. It will serve as a platform for long-term marine spatial planning and help ensure effective management strategies across the Andaman bioregion.

2. Building Community Adaptive Capacity

Marine conservation is very much influenced by the activities of local communities. In times of stress, communities tend to respond by over harvesting and placing greater pressure on local resources that, in turn, will further compromise conservation values and the adaptive capacity of marine ecosystems in the long term. Community resilience to potential climate change stresses can however be enhanced and planned for. This aspect of the study will spotlight three MPAs in order to explore how conservation outcomes and community livelihoods and adaptive capacity can be enhanced on the Andaman Coast of Thailand in consideration of a changing climate. This multiple case study will : 1) explore the relationship between climate change, MPAs, and local livelihoods; 2) examine the current level of adaptive capacity of the MPA communities; and, 3) explore policy mechanisms and on-the-ground actions to achieve future scenarios that will uphold conservation objectives and community socio-economic outcomes.

The document contains the report from Putting into practice the FAO Technical Guidelines on Marine Protected Areas (MPAs) and Fisheries: MPAs as a potential management tool for sustainable fisheries in South and Southeast Asia which took place in Bangkok, Thailand, on 30 January–1 February 2012. It was jointly organized by FAO, SEAFDEC and the BOBLME project. The workshop was organized in response to the recent publication of the FAO Technical Guidelines for Responsible Fisheries on MPAs and Fisheries with the purpose of disseminating these Guidelines, supporting existing initiatives promoting effective MPA management and promoting cross-sectoral coordination and collaboration.



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