



**Establishment and Operation of a Regional System of
Fisheries *Refugia* in the South China Sea and Gulf of Thailand**

NATIONAL PLAN OF ACTION FOR ESTABLISHMENT AND OPERATION OF FISHERIES *REFUGIA* IN PHILIPPINES

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I. BACKGROUND

The total area of the Philippine coastal waters is about 266,000 km². The total length of coastline is about 17,460 km. The shelf area (water depth < 200 m) is about 184,600 km² which includes the coral reef areas. The geographic extent of the coastal area may include areas within a landward limit of 1 km from the shoreline to include mangrove swamps, brackish-water ponds, nipa swamps, estuarine rivers, sandy beaches, and other areas reached by tides, as well as those areas within a seaward limit of the 200-meter isobaths to include coral reefs, algal flats, sea grass beds and soft-bottom trawlable areas. In the Philippines, major aquatic ecosystems are located at the coastal areas and in inland waters.

Some of the natural ecosystems that can be found in a coastal area are mangrove forests, seagrass beds, algal flats, coral reefs, soft bottom communities, sandy beaches, estuaries, watersheds and coastal forests. Infrastructure such as cultural heritage sites, archeological sites, and other man-made structures are also found in the coastal areas. A coastal area contains a number of ecosystems with particular biophysical properties and processes, including renewable and non-renewable resources. These vast aquatic resources are the major source of protein for the Filipinos.

The coastal areas of Masinloc in Zambales, Coron in Palawan and Bolinao in Pangasinan are examples of coastal municipalities that are beset with a number of issues that affect the productivity of the marine and coastal habitats. The degradation has to be arrested in order to improve the living conditions of the coastal population and other stakeholders who are dependent on improved resources. Hence, there is the need for the establishment of Fisheries Refugia in these municipalities.

II. THREAT TO FISHERIES AND COASTAL RESOURCES

Issues may be defined as "...issues are the matters in dispute and the opportunities that motivate the creation and implementation of a coastal resources management program." Issues identified that affect the coastal resources and fisheries are the following:

1. Bio-physical issues

1.1 Declining fish production

- Overfishing
- Over gleaning
- Illegal, unreported and unregulated fishing
- Environmental degradation
- Unabated pollution
- Natural calamities

1.2 Sedimentation

- Forest denudation
 - Coastal construction
 - Reclamation
 - Massive erosion
- 1.3 Endangered coastal habitats
- Coral reefs
 - Mangrove forests
 - Seagrass meadows
 - Riverine
 - Estuaries
 - Lagoons
- 1.4 Degraded water quality
- Pollution
 - Run-offs
- 1.5 Diminished biodiversity
- Loss of species
 - Succession of species resulting to dominance of low quality species
- 1.6 Diminished natural productivity
- Degraded habitats
 - Poor water quality

2. Socioeconomic issues

2.1 Poverty/poor quality of life

- Lack of viable livelihood options
- Lack of basic services and facilities, including health, water and electricity
- Inequitable access to coastal resources
- Non-implementation of agrarian reform

2.2 Lack of awareness and participation/lack of access to information

- Little or absence of environmental education
- Inadequate information on the coastal area and its resources
- Poor participation in resource management
- Poor appreciation of the importance of coastal resources

2.3 Resource use conflict

- Open access issue
- Encroachment and poaching
- Zonation related issues

2.4 Limitation of fishing effort

- Displacement of fishers
- Limited access to resources

2.5 Use of destructive fishing techniques

- Unabated use of explosives and toxic substances in fishing
- Demographic and jurisdictional problems

3. Institutional issues

- 3.1 Law enforcement is weak
- 3.2 Judicial support to enforcement is weak
- 3.3 Laws and ordinances for management are inconsistent
- 3.4 Lack of workers capable and knowledgeable in planning and implementation of laws relevant to coastal environment
- 3.5 Lack of political will of government in implementing ICM programs
- 3.6 Non-integration of ICM into their local and national government plans
- 3.7 Sectoral approach to coastal management
- 3.8 Lack of access to resources by LGUs (financial, information)

III. THE FISHERIES REFUGIA NATIONAL PLAN OF ACTION

Fisheries Refugia in the ASEAN context is defined as: “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 lifecycle, for their sustainable use.”

The Fisheries Refugia is a no take zone. Fishing activity of any kind is not allowed within the area. It is a designated area where fishing or other forms of activities which may damage the ecosystem of the area and human access may be restricted (RA 8550). In order to have a sustainable management of the FR, there is a need to formulate a Fisheries Refugia National Plan of Action.

The FR National Plan of Action is a document that details the concerted efforts and action of the different stakeholders in the protection and rehabilitation of degraded coastal habitats through the implementation of tools, strategies and approaches that were developed through the years of Ecosystem Approach to Fisheries Management (EAFM) implementation.

IV. VISION STATEMENT

A sustainable fisheries and coastal resources that will provide better human and socio-economic benefits to the coastal population through coordination and adaption of management across political and cultural considerations

V. MISSION STATEMENT

To reduce degradation of the coastal and marine environment to ensure food security, biodiversity and improve human well-being through strong national and local governance.

VI. GOALS AND OBJECTIVES

Goal - Fisheries refugia established and effectively managed by various stakeholders through the EAFM with the aim of the sustainability of the resources therein.

Objectives –

- The FR will provide areas for critical species to populate and complete their life cycles undisturbed. This will also provide areas where degraded coastal habitats recover.
- The FR will serve as spawning area, nursery for a species or group of species. It must be noted, however, that different species have different characteristics. Hence, plans should be species specific.

VII. PRINCIPLES IN THE ESTABLISHMENT OF FISHERIES REFUGIA

Principle 1: The marine and coastal habitats are interconnected and interrelated. The protection and rehabilitation of such habitats must consider such relationships. It is vital to have the knowledge on how these habitats as well their environment affect each other.

Principle 2: The establishment of FR is highly participative and should ensure the engagement of multiple stakeholders.

Principle 3: Research/science-based FR management should govern the establishment and eventual management.

Principle 4: The FR implementation plan should be in consonance with the existing local and national policies, laws, and regulations. It should also adhere to the international agreements and covenants related to fisheries and marine resources protection and conservation where Philippines is an active participant.

VIII. FRAMEWORK

The FR is a type of a marine protected area (MPA) which is defined as any area of intertidal or subtidal terrain, together with its underlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment. MPA is a generic term used to refer to fish sanctuary, fish reserve, fish refugia, marine park, marine reserve, etc. They are designated portions of land and water set aside by reason of their unique physical and biological significance. They are managed to enhance biological diversity and protected against destructive human exploitation. MPAs are important in maintaining the ecological processes and life support systems of the marine ecosystem. They promote the preservation of genetic diversity; provide for sustainable use of the resources; maintain natural areas for education and research; and provide social and economic benefits to the stakeholders, especially the fishers.

The establishment of FR considers several processes of planning and decision-making exercise that involves the participation of stakeholders. It considers the research/science-based decision options in fisheries and environmental management adapting the EAFM, among others, as a major approach.

The fisheries *refugia* site is either use as nursery and/or spawning ground of economically important fish species. The pelagic species use the area as nursery ground and move out

of the area upon reaching certain length class.

The development of FR plan involves the following:

1. Community consultation, workshop, and meetings
2. Development of the FR plan
3. Approval of the RF plan by the LGU as a Municipal Ordinance
4. Creation of the Fisheries Refugia Site Management Committee

IX. ACTIONS AND TARGETS

The actions to be undertaken in RF should be coupled with corresponding targets. In the long term, this will determine if the goals and objectives in the establishment of RF are realized. Some the actions that can be considered are the following:

1. Identification of important species that need protection
2. Establishment of critical and ecologically significant areas for species protection and conservation
3. Strengthening of law enforcement capacities with local support
4. Development of a Monitoring and Evaluation System that will ensure that targets are attained in the long-term
5. Provision of adequate skills training to all local implementers as well as national agencies mandated to implement fisheries management
6. Development of knowledge management and sharing mechanisms
7. Establishment of linkage with other agencies, research institutions, the academe, NGOs, etc.

X. OVERARCHING ACTIONS

- Research-based decision-making processes
- Relevant enabling policies
- Comprehensive planning
- Capacity-building
 - manpower and institutions
 - adaption of EAFM
 - development of sustainable livelihoods
 - enforcement of fisheries and environmental laws

XI. KNOWLEDGEMENT MANAGEMENT

- Lessons learned
- Best practices
- Innovations
- IEC campaigns
- Networking
- Linkage with the academe, financing institutions

XII. COORDINATION MECHANISMS FOR THE IMPLEMENTATION OF THE PLAN

The roles and functions of all stakeholders who are part of the whole RF processes must be detailed in the FR plan. The convergence of the national and local governments, fishermen's associations/organizations, the private sector, among others, must be in place for the FR to succeed. There will be clearer delineation of roles and responsibilities among them.

The local government units (LGUs) are vital in the establishment of the RF and the implementation of the plan. The support of the LGUs include the provision of supplies and materials and equipment and manpower. Most of the coastal LGUs have existing Bantay Dagat teams, Fisheries Law Enforcement Teams or similar organizations tasked to protect the coastal areas within their jurisdiction. These are usually funded from the municipal budget.

The national government as well as some academic institutions will provide the necessary research-based data information to have stronger basis in implementing management measures. The academes are active participants in the establishment of FRs. They have the capacity to monitor the FRs on a long-term basis.

XIII. SUSTAINABLE FINANCIAL SUPPORT

The local government units are mandated to provide financial and manpower support to the FR. The budgetary requirements should be included in the FR plan of the local government unit. However, there are some NGOs and private organizations that also support the establishment of FRs financially.

XIV. MONITORING AND EVALUATION

The local government units, in partnership with the local academic/research institutions can conduct regular M and E of the existing FR. This should be based on the science/research-based collection of baseline data.

The national research institutions or the local academe, in coordination with the LGUs, can provide assistance in the conduct of M and E.

The regular conduct of M&E should be undertaken to determine changes in sizes and species composition based on the data collected at the start and the benchmark. The M and E should also include the monitoring of the coastal habitats and biophysical attributes of the marine environment. This will indicate the impacts of the marine environment in the changes of the fish population. The same and consistent M and E sampling methodologies should be used all throughout to be able to establish reliable data.

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RELATED DOCUMENTS

- Annex A [Country Policies on Fisheries, Coastal Resources and Environmental Management](#)
- Annex B [Bolinao Fisheries Refugia Management Plan](#)
- Annex C [Masinloc Fisheries Refugia Management Plan](#)
- Annex D [Coron Fisheries Refugia Management Plan](#)