

ECOSYSTEM APPROACH TO REEF FISHERIES MANAGEMENT IN WEH ISLAND, NANGROE ACEH DARUSSALAM

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ABSTRACT

Fisheries management has been traditionally governed to maximize economic benefit with little concern on its ecological impacts. Food and Agriculture Organization with its Code of Conduct for Responsible Fisheries has played an important role to a fundamental change in the new paradigm of fisheries management, which include ecosystem aspect. The Food and Agriculture Organization has mandated that every country in the world should use this approach. Weh Island is located in Aceh Province that has good coral reef condition and rich in reef fishes, therefore reef fishery is prominent. The objectives of this study are (1) to study the ecological status of reef fish, and (2) to formulate the priority areas as candidates of marine protected areas in Weh Island. Fish catch survey, underwater visual census, and focus group discussion were conducted to collect data. Data analysis used fish biomass, financial analysis, linear goal programming, and marxan analysis. Results of this study successfully identified eight fishing gears operated in Weh Island in artisanal reef fisheries. These fishing gears are gillnet, bottom gillnet, handline, muroami, trolline, speargun, longline, and purse seine. There were 84 species identified as high economic value species and were modelled in this study. Gillnet and bottom gillnet were identified as optimum fishing gears. I.e. Meulee, Anoi Itam, Iboih, Jaboi, and Klah Island were identified as priority areas.

KEYWORDS: fisheries management, ecosystem approach to fisheries management, maximum sustainability yield, fishing gear

INTRODUCTION

Fisheries management approach has been using the conventional approach since the 1940s where more sectoral approaches were used disregard the rules of ecology. Since the Food and Agricultural Organization published a Code of Conduct for Responsible Fisheries in 1995, then paradigms shift of approach to fisheries management. In addition, with the publication of the Declaration of Reykjavik in 2001 that explicitly gave the task to Food and Agricultural Organization to create a guidance document that provides ecosystem considerations in fisheries management, the Food and Agricultural Organization technical guidelines for fisheries management issue which is the mandate of the Code of Conduct for Responsible Fisheries concerning the ecosystem approach in fisheries management. Ecosystem approach to fisheries is defined by Ward *et al.* (2002) as an extension of conventional fisheries management recognizing more explicitly the interdependence between human well being and ecosystem health and the need to maintain ecosystems productivity for present and future generations, e.g. conserving critical habitats, reducing pollution, and degradation, minimizing waste, protecting endangered species (Food and Agricultural Organization, 2003).

Weh Island, located at the northwestern tip of Sumatera Island, the Province of Nangroe Aceh

Darussalam. Sixteen of eighteen villages in Pulau Weh, located in coastal areas, thus dependency on coastal resources is very high, especially coral reefs, and reef fish. Traditionally, Pulau Weh is currently divided into ten Lhok, which is an area that is managed by customary institutions led by one commander (Panglima Laot).

Currently, the ecosystem approach in fisheries management has been implemented in several regions of the world such as fisheries management in the Benguela region (Petersen *et al.*, 2007), Mediterranean Sea (General Fisheries Commission for the Mediterranean, 2005) and so forth. But until now this approach has not been formally implemented in Indonesia. Food and Agricultural Organization (2005) mentions that although the ecosystem approach is not a new thing in fisheries management, but still not a lot of learning in this approach, for it was felt necessary to conduct research in the ecosystem approach to fisheries management both conceptually and technically.

Objectives of this study are:

1. Assessing the ecological status of reef fisheries resources on the island of Weh.
2. Formulating priority areas for sustainable fisheries management based on ecosystem approach in Pulau Weh.