KM 4 CTI Learning Notes
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ADB Regional Technical Assistance (RETA) 7307:
Regional Cooperation on Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative

## DSS 101. REEF GAME AND FISH-BE

*March 2011*

# ReefGame:

## Exploring options for coral reef conservation and alternative livelihoods in fishing communities

### What is ReefGame?

ReefGame is a linked board game and computer model that can be used to explore alternative and supplemental livelihoods and options for coral reef conservation in fishing communities. Game-boards represent the coastal area and habitats of the modeled area. While fishers and other stakeholders play the game, a computer model calculates fish catches and the impacts of the players' decisions on marine habitats.

Game-boards represent the coastal area and habitats representative of a particular locality. The game is played by several fisher-pairs deciding where to fish. While fishers and other stakeholders play the game, a computer model calculates fish catches and the impacts of the players' decisions on marine habitats. ReefGame helps fishing communities and other stakeholders engage in lively discussions and reflect on options to secure their daily needs and work for the sustainability of coastal fisheries and coral reefs.

### Who can use ReefGame?

Resource-users (fishing communities), academic institutions with functional relationship with NCC, LGUs, government and non-government agencies can use the tool to facilitate discussions with the coastal community and other stakeholders. To play ReefGame, one to two computer literate persons with moderate computer knowledge and comfortable with running programming software and spreadsheet are needed. One to two facilitators who are knowledgeable on fisheries and coastal resource management that can interpret fisheries-related scenarios are also required.

### What outcomes can users expect?

ReefGame users can expect potential institutionalization of supplemental and alternative livelihood programs. It also promotes strengthened control, access, monitoring, stewardship, and compliance of the community and potential marine protected (MPA) establishment and strong inter-sectoral collaborations between the community and the local industry.

### How can organizations avail of ReefGame?

ReefGame toolkit is available upon request at the UP Marine Science Institute. Contact Dr. Porfirio M. Aliño, Decision Support Specialist, at pmalino2002@yahoo.com.

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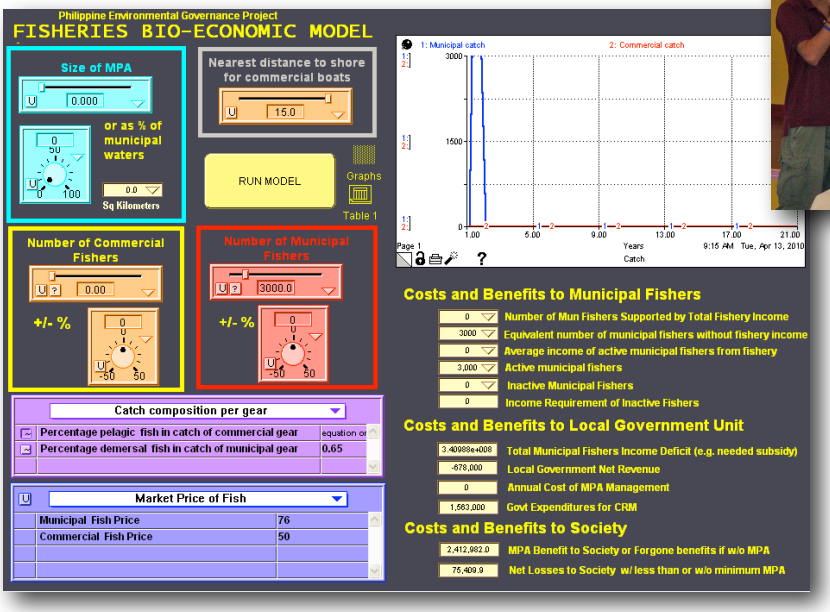
# FISH-BE:




## Determining crucial management options for sustainable fisheries utilization

### What is the FISH-BE Model?

The Fisheries Information for Sustainable Harvests Bio-Economic (FISH-BE) Model is a communication tool and decision support program. It is designed to facilitate interactive examination of major decision options available to local stakeholders for MPA and fishery management.

This tool allows scenario-building based on changes in MPA size, number of fishers, number of fishing days, and catch per fisher. It also provides estimates on costs and returns of MPA management, both to fishers and to the local government.

A free version of FISH-BE is available and it is called Fishing Industries' Support in Handling Decision Applications (FISHDA). It is an easy-to-use program with a simpler interface than that of FISH-BE.

### How has FISH-BE been applied in the Philippines?

FISH-BE is used in the decision-making process among local stakeholders (e.g. local government units) for coastal resource management (CRM) plans, especially in MPA implementation. Fourteen municipalities (e.g. Philippine Environmental Governance Project sites) have considered this model.

A peer-reviewed journal article (Licuanan et al. 2008) has also used FISH-BE to provide scenarios for MPA and fisheries regulation measures in Calauag Bay and Tayabas Bay which are both sites of the fisheries resource management program (FRMP) in Quezon province, Philippines.

### What does FISH-BE require?

To provide outputs, the program requires assessing bio-physical, fisheries and socio-economic information of the sites. FISH-Be's resource person can teach this method to the LGU staff. A series of trainings will include data collection and analysis. This can be done by resource persons from the university or trained staff members who are computer literate, able to work on spreadsheets and databases, and are comfortable with running programming software.

### What can users expect from using FISH-BE?

The program can help local stakeholders or LGU gain more appreciation of the mechanisms towards sustainable fisheries from the options generated from FISH-BE.

### How can organizations avail of FISH-BE?

The software and the tool demonstration guide* are available upon request at the UP Marine Science Institute Contact Dr. Porfirio M. Aliño, Decision Support Specialist, at pmalino2002@yahoo.com.


*References:*

*Licuanan, W.Y., Alino, P.M., Campos, W.L., Castillo, G.B., Juinio-Menez, M.A., 2006.A decision support model for determining sizes of marine protected areas: biophysical considerations. Philipp. Agric. Sci. 89, 507–519.*

*Licuanan, W.Y., Mamauag, S.S., Gonzales, R.O.M., Alino, P.M., 2008. The Minimum sizes of fish sanctuaries and fishing effort reductions needed to achieve sustainable coastal fisheries in Calauag and Tayabas bays. Philipp. Agric. Sci. 91,51–60.*



RETA 7307 supports ongoing CTI efforts via knowledge management in the preparation of a State of the Coral Triangle Report, sustainable financing, and environmental economics and payment of environmental services for the CTI.
http://www.primexinc.org/cti_km