COMPONENT I
Quantifying the value and market potential of coral reef and mangrove ecosystem services

ACTIVITY
Marine spatial planning and marine reserve network design activities

OBJECTIVE
To expand the FISH-BE model to consider the health of mangrove, seagrass, and coral reef habitats, tourism and coastal land use changes in a spatially explicit form, to inform fisheries management, marine reserve network design, and marine spatial planning.

Overview
The Fisheries Information for Sustainable Harvests Bio-Economic (FISH-BE) model was a decision-support tool designed to facilitate examination of different fisheries management options to alleviate the effects of high fishing pressure. This tool, originally developed by researchers from the University of the Philippines Marine Science Institute (UP MSI) and De La Salle University (DLSU), was designed for decision-makers and natural resource managers to help them with planning and management. Scenarios can be created to determine suitable management options, based on changes in reserve size, numbers of fishers, number of fishing days and catch per fisher. The tool can also provide estimates on costs and returns of MPA management, both to fishers and to the local government (Licuanan, 2006).

The spatially explicit version of FISH-BE being developed by CCRES aims to guide marine reserve network design and marine spatial planning by demonstrating potential fisheries productivity given varying levels of habitat quality, fishing pressure and protection. This new version also considers the effect of larval connectivity (the connection of marine populations through larval dispersal), and land-based threats on fish population growth. It will allow more informed decisions to be made by planners and natural resource managers when considering questions related to marine and coastal ecosystem protection and fishing regulations.

Progress
The goal of CCRES is to develop a tool that could be used by planners and natural resource managers to help them decide on different management options by using different scenarios. By using the spatially explicit FISH-BE model, planners and managers will be able to experiment with different features, such as habitat quality, fishing pressure and protection, to be able to describe changes in fisheries productivity.

Other optional features of the tool include the effects of connectivity and sedimentation on fisheries. The connectivity feature built into the tool could support the growth parameters in FISH-BE. Sedimentation on the other
Capturing Coral Reef and Related Ecosystem Services (CCRES) is a regional technical support project that seeks to unlock new, sustainable income streams for coastal communities in the East Asia-Pacific region. CCRES will develop knowledge products — which inform the design of global, regional and national projects, plans and policies — and technical models and planning tools which assist with preparation of community-based coastal resource management plans.