

# PROGRESS UPDATE

## COMPONENT II

Generating robust local economies that capture and sustain marine ecosystem services

### ACTIVITY

Systems analysis

### OBJECTIVE

To understand systems that generate socio-ecological problems in the coastal zone and assess the potential for interventions to overcome these

PSU team members Marissa Pontillas, Eva Marie Ponce de Leon, and Gianina Decano facilitate focus group discussion among fishers of Brgy. Bucan, Philippines.

Photo: K. Follosco



Suryo Kusumo (standing), Center for Coastal and Marine Resources Studies, facilitates a discussion with the Bontomatene community, Selayar, Indonesia.

Photo: M. King

## OVERCOMING COASTAL ZONE PROBLEMS BY UNDERSTANDING SOCIO-ECOLOGICAL SYSTEMS

### Overview

Many communities living along the coastlines of developing countries in the tropics depend on fisheries for their food and livelihoods. How these communities use and interact with ecosystem services, together with external factors, have led to problems such as fish catch decline, mangrove loss, water pollution and food insecurity.

To better understand these issues, the Systems Analysis group has led a series of focus group discussions with communities and stakeholders in the pilot sites of El Nido in the Philippines and Selayar in Indonesia. In the Philippines, researchers have explored the issues of food insecurity, mangrove loss, fish catch decline and water pollution. In Indonesia, coral reef fisheries decline has been the focus.

The focus group discussions have been run with the aid of SESAMME (Socio-Ecological Systems App for Mental Model Elicitation), an iPad app designed by CCRES researchers. SESAMME allows activities, resources, pressures, trends, interactions, decisions and the state of resources identified by focus

group participants to be captured visually using icons that are dragged and dropped onto a map. Participants can then visualise how system components interact to cause coastal zone problems.

The information captured enables researchers to build dynamic simulation models of socio-ecological systems. These models can then be used to identify leverage points within the systems where interventions that target resources, activities or pressures can lead to system-wide ecological, economic and social benefits. These interventions represent policy, program and business opportunities. The models can also be used to assess intervention trade-offs and the potential unintended consequences of interventions.

The project is led by the University of Queensland and involves Palawan State University (PSU), Palawan Council for Sustainable Development (PCSD) and the El Nido Foundation (ENF) in the Philippines, and Bogor Agricultural University (IPB) in Indonesia.



## Progress

Approximately 1100 people have participated in the focus group discussions in the Philippines including community members, local government and provincial government representatives. In Indonesia, 300 participants have been engaged through focus group discussions.

Reports from the focus groups have now been completed, together with conceptual system models for food insecurity, mangrove loss, fish catch decline and water pollution in El Nido, and coral reef fisheries decline in Selayar.

## SESAMME

Five local partner teams (four in the Philippines and one in Indonesia) have been trained in systems thinking, the focus group discussion process and the SESAMME App. The app is now being used beyond the CCRES project by ENF, PSCD, PSU and IPB in projects, research and teaching.

There has also been interest in the application of SESAMME and the focus group discussion process beyond the CCRES project universities from other World Bank projects, government agencies and NGOs.

**Pattie Lumbania, Gelei dela Cruz and Dong Alferez, El Nido Foundation, lead a focus group discussion about food security at Beleladan Barangay, El Nido, Philippines.**

Photo M. King

SESAMME was publically previewed at the East Asian Seas 2015 Congress at Da Nang, Vietnam and is expected to be available via iTunes in 2016.

## CONTACT

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### Visit

[www.ccrs.net](http://www.ccrs.net)

**Dr Russell Richards, The University of Queensland, displays the CCRES product, SESAMME, an iPad app, which enables users to build interactive pictures of socio-ecological systems.**

Photo: M. Paterson



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.

