

Southeast Asian Centre of Excellence



Local governments critical to effective management and protection of coral reefs - Lingayen Gulf, The Philippines

The Coral Reef Targeted Research & Capacity Building for Management Program (CRTR) is a leading international coral reef research initiative that provides a coordinated approach to credible, factual and scientifically-proven knowledge for improved coral reef management.

The CRTR Program is a proactive research and capacity building partnership that aims to lay the foundation in filling crucial knowledge gaps in the core research areas of Coral Bleaching, Connectivity, Coral Diseases, Coral Restoration and Remediation, Remote Sensing and Modeling and Decision Support.

Each of these research areas are facilitated by Working Groups underpinned by the skills of many of the world's leading coral reef researchers. The CRTR also supports four Centres of Excellence in priority regions, serving as important regional centres for building confidence and skills in research, training and capacity building.

The CRTR Program is a partnership between the Global Environment Facility, the World Bank, The University of Queensland (Australia), the United States National Oceanic and Atmospheric Administration (NOAA) and approximately 50 research institutes and other third parties around the world.

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Coral reef protection – supporting local government

Local governments play a critical role in the management of coral reefs under their jurisdiction. In developing countries, they often face significant challenges including:

- Unsustainable fishing and coastal management practices;
- A lack of public awareness, limited acceptance of rules and low levels of compliance;
- Lax enforcement of laws and regulations;
- A lack of plans/ordinance for coral reef management;
- A lack of alternative income-generating activities to reduce human impacts on marine ecosystems;
- A lack of funding to implement and sustain management strategies.

The Coral Reef Targeted Research & Capacity Building for Management (CRTR) Program's Southeast Asian Centre of Excellence (CoE) worked with coastal municipalities surrounding the Lingayen Gulf to improve management and protection of coral reefs.

This project, implemented under the CRTR's Local Government Initiative (LGI), aimed to:

1. Reach out to local governments and communities to share new knowledge on the threats to coral reefs.
2. Discuss and implement measures which could be taken locally to address these threats.
3. Facilitate informed decisions and appropriate actions by local governments and communities to conserve the marine ecosystem in their locality.



CoE Chair, Professor Ed Gomez, talks with local government representatives and others at the Coastal Resources Management Forum, Bolinao 2008.

Status of reef resources & management

Coral reefs provide food, employment and export income to the people of the Philippines, contributing more than \$1 billion annually to the economy. The coral reefs in the Lingayen Gulf are some of the most endangered in the Philippines and Southeast Asia. Thousands of people directly depend upon the Gulf's coral reefs for food, but the catch is typically low due to overfishing and persistent destructive fishing practices.

Poor coastal zoning and negligent coastal development have resulted in siltation and contribute to the pollution of reefs. The degradation persists because governance institutions have limited capacity to implement and sustain measures to manage their coral reefs or coastal resources in general. Local government authorities responsible for coastal management

often do not have access to critical information, or technology to mitigate threats to their resources. Many laws to protect the viability of coral reef resources have been created, but LGUs have insufficient capacity to enforce these laws.

The downward spiral endures in many areas because of a lack of awareness on the part of stakeholders, particularly the resource users themselves, of the limitations of coral reef resources.

It should be noted that the municipality of Bolinao has made more progress in coastal resources management than other towns due to the successful citizens' movement to prevent the environmental threat of a proposed cement factory on the coast some years ago.

Satellite image of the Bolinao reef complex. Source: Quickbird Satellite Image



Shellfish catch, The Philippines



Horned seastar on fragments of dead coral, Lingayen Gulf
Photo: Dexter dela Cruz

Working with local governments

The LGI focused on the coastal municipalities surrounding the Lingayen Gulf in northwestern Philippines, including Alaminos, Bani, Bolinao and Anda and eventually expanded its technical assistance to neighboring municipalities including Burgos, Infanta, Dasol and Agno.

The LGI had three important elements:

1. Prioritization and assessment: Building on the learnings and outcomes of previous coastal resource management initiatives in the Lingayen Gulf, consultations with different audiences ranging from community leaders to municipal mayors were carried out to identify the most prominent issues for coral reef management that still need to be addressed. The major issues identified by stakeholders were:

- Destructive and illegal fishing practices,
- Pollution, primarily from intensive mariculture,
- Sewage,
- Siltation,
- Ineffective enforcement of laws.



Mayors and other local government officials, Second Stakeholder workshop, Alaminos City 2006

2. Science-based decision support: A series of seminars and workshops facilitated knowledge exchanges between LGUs, managers, stakeholders and scientists on key issues. These forums were designed to engage stakeholders to work towards common goals, and to enhance local knowledge with science.

3. Enhancing capacity: Targeting a range of local stakeholders from resource users, managers and decision-makers and the general public, IEC (information, education, communication) activities and packages were developed, disseminated and used as inputs for various local and national forums.



Fishing village, Siliqui Island, Lingayan Gulf Photo: M King

LGI outcomes

The LGI has contributed to cultural and practice change amongst LGUs in the Lingayan Gulf, including the provision of opportunities and inputs to sustain, replicate and advance efforts in coastal resources management. It has been successful in bringing the science of coral reef management into the consciousness of local stakeholders.



Knowledge gained by CoE scientists is shared with local governments to assist in policy and management decisions

Capitalizing on the scientific expertise of the CRTR's CoE, and pertinent development experiences in the Philippines, science-based information was mainstreamed to raise awareness of coastal management issues and to support management decisions and actions. Active engagement of scientists with resource managers at the local and the national level helped to change values and behaviour which has, in turn, led to a reduction of unsustainable exploitation of coral reef resources.

Specific outcomes include:

- **Participation and collaboration of stakeholders** - Technical experts, LGUs, communities, and other entities (government institutions, non-governmental organisations, media, people's organisations), have been engaged in collaborations on coastal management issues through the various capacity-building activities undertaken in Western Pangasinan. This engagement is an important step in institutionalizing the principle of participatory process in coastal management. Forums held included the Stakeholders Consultation (August 2006); Coastal Resources Management Forum (August 2008); Establishing Resilient Networks in the Face of Climate Change videoconference (October 2008); and the Workshop on Sustainable Mariculture (January 2009). These activities aimed to enhance the capacity of stakeholders to understand, initiate and support current and future programs for the conservation and protection of coral reef resources.
- **Inter-LGU and multi-agency cooperation** - Through workshops and seminars, the LGI provided opportunities to broaden the inter-LGU and multi-agency cooperation as a viable and cost-effective means to address coastal and fisheries problems.
- **Combining local knowledge with science for improved reef management** - Capacity building activities played a key role in enhancing local knowledge and practices with science-based information on coastal management and governance. This helped to identify strategies to implement effective reef management in the municipalities.
- **Educational materials developed** - For local government leaders and mid-level managers, short, clear-cut presentations on basic marine ecological concepts, and manuals on best practice for coral reef management created interest in coral reef management issues, and a better appreciation of coral reef dynamics. For members of local communities that have more limited educational experience, simplified lectures and posters were provided. The focus was on raising the communities' awareness of the importance of coral reefs in their daily lives; the vulnerability of reefs to various types of stresses (both natural and man-made); and what they can do to improve the health of coral reefs in their area. Where appropriate, traditional local knowledge was incorporated into the educational packages.
- **Enhanced knowledge and skills of the stakeholders** encouraged them to address issues affecting their communities. The activities encouraged the LGUs to maximise the use of all the available legal tools to effectively improve coastal governance in their respective localities.
- **Promotion of good governance** - Transparency, accountability and participatory decision-making processes were promoted as basic standards in good coastal governance.
- **Technical advice** - The provision of technical advice has led to the development of standard operating procedures for law enforcement activities within Marine Protected Areas. In Bolinao, the LGU and the local resource managers formulated protocols covering the eight MPAs in their locality. The MPA Enforcement Protocol Guide (*Gabay Hinggil Sa Pagpapatupad ng mga Batas ng Sanktwaryo sa Bolinao, Pangasinan*) assists enforcers to discharge their duties and functions effectively.
- **Hands-on experience** - Community-based reef restoration training workshops held at the Bolinao Marine Laboratory for local officials, fisherfolk, teachers and students has led to an increased understanding of coral reefs and their importance, and the link between human activities and the health of marine ecosystems. Field activities involved transplantation of thousands of fragments of coral to dead areas of reef to promote regeneration.

Recommendations for working effectively with local government

Engaging with LGUs under the LGI provided lessons that may be useful for other areas in the region including:

1. Close working partnerships with the decision-makers is important in advancing efforts on the protection of coral reefs. The active participation of the core LGU personnel is crucial for implementing the key action points agreed upon. They are the ones who implement projects and serve as mediators/facilitators between the local chief executives, communities and the project.
2. Reporting to the LGUs on relevant research results is a very effective way to deliver messages.
3. Participation of the community leaders is important in coastal resources management. Through participation of the Barangay Council Chairperson, the Barangay Council of Tupa in Agno passed a resolution declaring a 20-hectare MPA for fisheries conservation and management in their locality. The initiative aims to encourage the new administration to implement coastal resource management in the entire municipality. Such village-level initiatives could be easily replicated at a municipal level.
4. Alliance building strengthens multi-sectoral stakeholder partnerships. This also facilitates technical and logistical support for the project.
5. At the national and international level, advocacy for, and promotion of, coral reef conservation was fostered through the participation and co-sponsorship in strategic national and regional events, such as the Coral Triangle Initiative.



Community seminar on marine biodiversity, Bolinao 2008

Further Information

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About the Centre of Excellence

Based at the Marine Science Institute at the University of the Philippines in Manila, and at the Bolinao Marine Laboratory in northwestern Philippines, the CRTR Program's Southeast Asian Centre of Excellence (CoE) is a hub for coral reef studies in the region. The Bolinao Marine Laboratory is situated 275km northwest of Manila at Cape Bolinao, Pangasinan Province, on the western side of the mouth of the Lingayen Gulf in Luzon Island.

The CoE comprises a number of leading, internationally recognised researchers and scholars who are working in the CRTR's scientific Working Groups for Coral Remediation & Restoration, Coral Disease, and Remote Sensing and in local research projects within the Philippines.



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