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Case Studies: From Ridge to Reef

International Coral Reef Initiative

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Case Studies:
From Ridge to Reef

Implementing coral reef conservation and management through a community-based approach emphasizing land-sea connectivity

Ministry of the Environment Government of Japan

ICRI
International Coral Reef Initiative

WWF
WORKING WITH ICRI TO SAVE CORAL REEFS

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Purpose of this report

Recognizing the importance of engaging sectors and stakeholders throughout a watershed in order for coral reef conservation and management to be most effective, the ICRI Assembly adopted a resolution on promoting an integrated approach to community-based coral reef conservation and management emphasizing land-sea connectivity at its 29th General Meeting in Okinawa. In this resolution, it was noted that model case studies would be compiled and shared at the 30th General Meeting, and that the final output would be published on the ICRI official website and through various media.

Following this resolution, the ICRI Secretariat reviewed and selected community-based coral reef conservation and management projects emphasizing land-sea connectivity from the annual reports that are submitted from the Members. The Secretariat then collected further information about specific activities using a survey form which was completed by those involved in the projects.

This report presents an overview of eight projects, their main achievements to date, and lessons learned. In addition, through an analysis of the common factors that appeared across the different projects, key enabling conditions at each stage of a project cycle were identified and summarized in the form of a flow chart. We hope that the diagram could serve as a reference for those involved in the designing, launching or reviewing of similar conservation projects.

The main point of contact for each project is listed at the end of this booklet. We would like to take this opportunity to express our appreciation for the time and help these individuals have provided in putting this report together.

While bearing in mind that no two projects are the same and that each project occurs within a unique context with different natural environments, cultural backgrounds, and economic circumstances, it is our hope that this report would help connect the people involved in the effort for coral reef conservation and help contribute to the further expansion of coral reef conservation activities across the globe.

奥主喜美

Yoshimi Okunushi
Director General, Nature Conservation Bureau
Ministry of the Environment, Japan
Joint Secretariat hosts of the International Coral Reef Initiative
Japan-Thailand 2014-2016

Case Study Project Site Map

Japan

Establishment of Community Based Management (CBM) in Nansei Shoto Ecoregion Region and Reinforcement of Eco-Friendly Village at Shiraho Community

Thailand

Assessing the Conditions of Coral Reefs and Seagrass Communities in the Gulf of Thailand and the Andaman Sea

USA

West Maui Ridge to Reef Initiative, Hawaii

Grenada

Reef Guardian Stewardship Program in Grenada

Maldives

Project REGENERATE: Reefs Generate Environmental and Economic Resiliency for Atoll Ecosystems

Australia

Reef Guardian Stewardship Program

Fiji

Community-Based Integrated Land-Sea Management in Kubulau District: Fiji's First District-Level Ridge-to-Reef Management Plan

Indonesia

Integrated Waste Management (IWM): Building Partnership for Effective Management of Komodo National Park

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Sediment run off following rain is a key stressor on coral reefs

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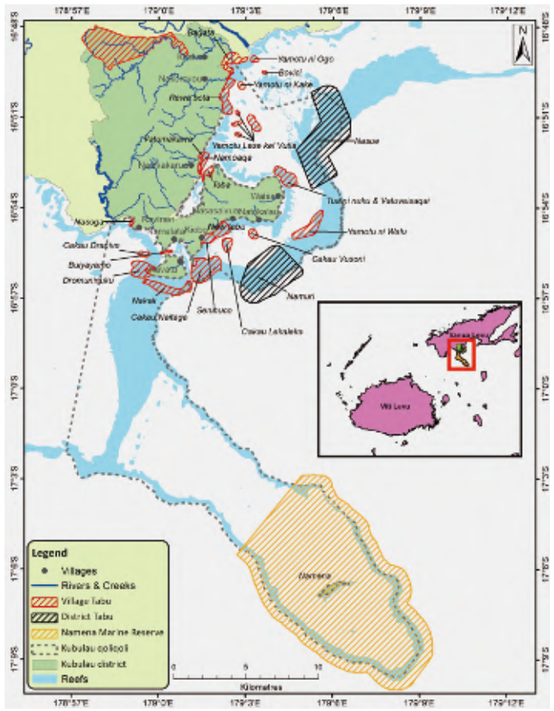
Coral Reef at Kubulau Ditrict, Fiji

Fiji

Community-Based Integrated Land-Sea Management in Kubulau District:
Fiji's First District-Level Ridge-to-Reef Management Plan (2005~ongoing)



Project Location: Kubulau District, Bua Province, Fiji

How the project began

Increasing levels of exploitation of coastal resources and land cover changes were threatening Kubulau coral reefs and causing concern among coastal communities. In particular, in 1998, a massive fish and coral kill downstream from the Yanawai River may have resulted from runoff from a breached mine tailings dam. There is also growing concern about increasing fishing pressure causing declines in fish catches and other marine resources as economic markets grow and expand.

In the early 2000, Kubulau chiefs approached the provincial government with concerns about the declining state of natural resources. In 2005, the Wildlife Conservation Society, through the invitation of the provincial government and village chiefs, began providing assistance to the 10 villages of the Kubulau District to develop locally appropriate integrated management.

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Goal(s)

Ecosystem-based management in Kubulau is community-driven and centers around a shared vision of healthy people, processes, and systems. The overarching goal of ecosystem-based management in Kubulau is the preservation of the functional integrity of Kubulau's ecosystems, from the ridge to the reef, through community-based management.

Description of the project

The Kubulau ecosystem-based management framework combines the most successful elements of the Locally Managed Marine Area (LMMA) network with broad protected area design principles for biodiversity conservation that take advantage of both traditional and Western approaches to marine coastal fisheries management. Management rules for a network of three permanently closed marine reserves, twenty-one periodically harvested fisheries closures, one community-managed forest area, and various restrictions of activities within and adjacent to freshwater habitats are outlined in a comprehensive ridge-to-reef management plan that was endorsed by all village chiefs in 2009. The planning process was informed by extensive scientific and socioeconomic research, as well as local and traditional ecological knowledge. Each rule, which is sourced from national legislation or community consensus, is coupled to a list of management actions for terrestrial, freshwater, coastal, and marine ecosystems with responsible parties designated for carrying out each action. The plan also contains different options for enforcement, as well as a framework for changing rules in response to environmental change in order to flexibly manage Kubulau's coastal and marine resources. The plan was adapted in 2012 based on an evaluation of monitoring data collected between 2007 and 2010.

What has been achieved

From 2005 to 2009, household surveys showed that people have an increasingly positive outlook on the status of their fishery in terms of catch size, fish size, fish diversity, and reef state. Total average fish biomass increased both inside and outside the MPAs. With revenue generated from diver entry fees into the Namena Marine Reserve, over 143 scholarships have been granted to students from Kubulau. The Kubulau management scheme was one of the top 10 finalists in the Rareplanet solution search for "Turning the Tides for Coastal Fisheries." And the Prince's Charities International Sustainability Unit selected Kubulau as one of 50 case studies to feature in a report on fisheries transitioning to sustainability. The Wildlife Conservation Society has been able to leverage the success from the marine protected area network to harness new resources in 2015 to develop a conservation lease for the upstream Kilaka Forest Conservation Area, which the landowners have informally protected for almost 10 years to maintain water quality and provide other forest ecosystem services.

Lessons learned

The project learned lessons and reasons as follows:

- Management of coastal resources should always commence with an understanding of traditional practices and open communication with communities via contact with their leaders;
- Ecosystem management processes should respect the needs, interests, rights and aspirations of local communities and contribute to local and national goals;
- Protected areas need to be placed in a broader ecosystem management framework to reduce disturbance from outside the boundaries;
- Ecosystem-based management (EBM) requires close collaboration between upland and lowland communities, as well as active, participatory engagement of stakeholders from all relevant sectors, which can include fisheries, forestry, agriculture, tourism and culture;
- EBM should be adaptive and iterative as new information becomes available; and
- EBM provides a cost-effective approach for reducing vulnerability to climate change impacts.

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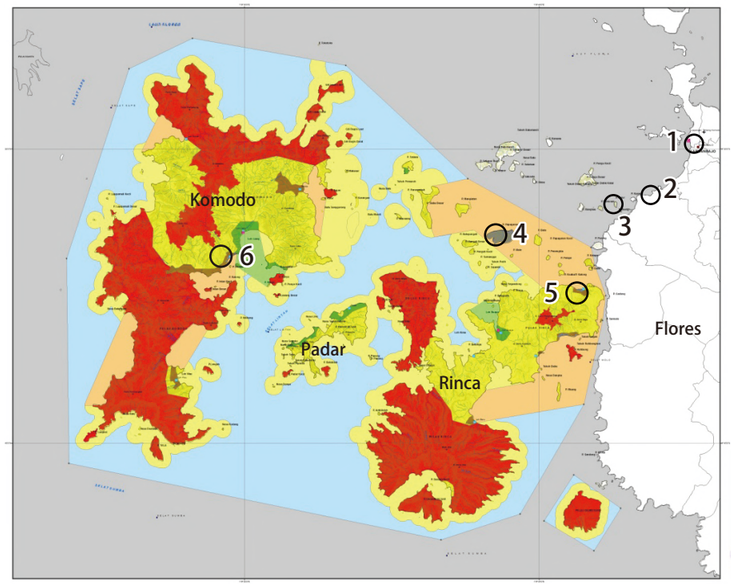
Main organizer(s) and stakeholder(s) of the project

Wildlife Conservation Society Fiji Program
Kubulau Resource Management Committee
Kubulau Business and Development Committee

Kubulau Resource Management Committee (KRMC): Composed of a representative from each of the 10 villages plus a chair
Kubulau hierarchy council: A council of chiefs
Kubulau Business and Development Committee (KBDC): Composed of Kubulau natives who now reside in Suva (Fiji's capital)

Indonesia

Integrated Waste Management (IWM): Building Partnerships for Effective Management of Komodo National Park (Apr. 2014~2019)



Project Location:
Manggarai Barat District
(Nusa Tenggara Timur Province),
Komodo Subdistrict

Picture 1: Zonation Map of the Komodo National Park. The black circles are the study areas: 1) Labuan Bajo, 2) Menjaga Village, 3) Kukusan sub-village, 4) Papa Garang Village, 5) Pasir Panjang Village, 6) Komodo Village

How the project began

Along with the increase in the number of visitors to Komodo National Park (KNP), this region has been generating substantial amounts of waste. In addition, the poorly managed tourism activities and development of tourism infrastructure, such as boats, hotels, resorts, and restaurants have a direct or indirect impact on the local coral reef ecosystem in the KNP.

The WWF, KNP, and the local government set up a memorandum of understanding (MOU) to effectively address national park management and to develop sustainable tourism standards and strengthen the capacity of community marine tourism.

Goal(s)

The Integrated Waste Management (IWM) Project is aimed at creating a model of sustainable waste management in KNP and its periphery through the promotion of public awareness and action, improved collaboration among stakeholders, improved waste regulations, and increased waste and recycling businesses.

Description of the project

This project is a response to the call for improved solid waste management inside and outside KNP after unremoved temporary dumpsites and areas with improper waste management apparently became problematic to tourism and the ecosystem of the KNP. It, thus, serves as a preventive action to any serious impact of the development that may deteriorate the quality of the KNP. The growth of visitor volume in the KNP has created some threats for the environment such as waste.
Through this project, the WWF, local governments, the park, and the local community implemented two strategies for the Waste Management Program of Labuan Bajo: 1) increasing opportunities for the community and the private sector to manage waste and acquire benefits from waste management, and 2) advocating local government to produce policy support for a waste reduction program in Manggarai Barat.
Improving the capacity of women groups through waste recycling training is another effort to help develop arts and craft skills. Some education and awareness programs such as beach clean-ups are also planned by local members. The environmental department agreeing to work with dive operators and community in waste program is one of the significant results of the ongoing project.

What has been achieved

Through this project, the WWF, local government, KNP, and the local community implemented activities for the Waste Management Program of Labuan Bajo:

1. Improving community opportunities and the private sector to manage waste and acquire benefits from waste management.
   -Koperasi Serba Usaha (KSU) Sampah Komodo, an independent small community business, was founded by 27 members. The KSU combines environmental welfare and conservation tasks with community empowerment, employment, and alternative income generation. The income is generated from plastic collecting and other recycled material.
   -Improving the capacity of women groups through waste recycling training to help develop arts and craft skills for products that will be sold in the village of Labuan Bajo. Some education and awareness programs are also conducted through activities such as beach cleanups .
2. Advocating local government to produce policy support for a waste reduction program in Manggarai Barat.
   -The WWF educates personnel from the government in shaping regulations that ensures that the waste management program encourages the community and government to pursue the achievement of their target of reducing waste volume.

Lessons learned

In order for the effort to be effective, the following guiding principles may be considered in the implementation of an IWM Project:

- Integration: Waste management should incorporate four pillars: behavior change and communication, regulation, business, and management. The four pillars are interconnected.
- Decentralization: It will allow community groups or village government to engage in waste management efforts, thereby improving ownership of this endeavor.
- Collaboration: Waste management is complex in nature. In order to be effective, it requires collaborative efforts from all stakeholders ranging from government, the community, civil society organization (CSO), and private business.
- Inclusion: Waste management should target and include all components of community members on the land and on the sea. The public behavior of disposing of waste into rivers and on the beaches has an effect on the quality of marine resources.
- Participatory approaches: It is important to engage all stakeholders in planning, budgeting, implementing, and monitoring the effort.
- Sustainability: The project should promote and maintain the community's independence in following areas of finance, human resources, system, regulation, and social and cultural resources.

Main organizer(s) and stakeholder(s) of the project

WWF Indonesia and Komodo National Park

Local governments, civil society organization (CSO), community groups, business organizations

A pile of garbage in Jl. Soekarno Hatta and on the coastal area of Kampung Air, Labuan Bajo

Japan

Establishment of Community Based Management (CBM) in the Nansei Shoto Ecoregion and Reinforcement of Eco-Friendly Village at Shiraho Community (2011~2016)

Project Location:

1 Gima community, Kumejima island
2 Ohgimi vil. & Higashi vil. in Yanbaru District
3 Shiraho community, Ishigaki island

How the project began

The national government shifted its policy to promote the cultivation of potatoes and rice to the promotion of sugarcane production in the 1970s in the ecoregion of Nansei Shoto Archipelago, which consists of many islands distributed across a vast area in the southwestern-most region of Japan. This change caused an outflow of large amounts of sediment, especially red soil, from farmlands and is still affecting the coastal coral reef ecosystem. The national government and municipal governments, as well as various private organizations, have attempted to address this issue. Yet, the sediment outflow from farmlands remains today.

Prior to the start of this project, in 2000, WWF Japan installed the WWF Coral Reef Conservation and Research Centre in Shiraho Village on the island of Ishigaki to investigate the surrounding coral reef ecosystems, including the blue coral, *Heliopora coerulea* colonies, found in its coastal areas. Recognizing the need for the local community to be involved in protecting this rich biodiversity, WWF Japan started this project in Shiraho Village to establish autonomous conservation by local residents. WWF Japan also started creating a Biodiversity Priority Area (BPA)-based conservation system model in the Kumejima island and Yanbaru area. Unlike the model in Shiraho where the project staff members are actually residing in the community, the model in Kumejima and Yanbaru is run by nonresidents who are commuting from other areas.

Goal(s)

The project aims to establish a system run by local residents through which they can empower their own communities and simultaneously contribute to the long-term conservation and sustainable use of the coral reef ecosystems. The Nansei Shoto Ecoregion has three regions interacting with the initial model of CBM project established by WWF. These regions are working on the conservation and sustainable use of the biodiversity independently. The WWF Coral Reef Conservation and Research Centre serves to provide CBM training opportunities to local people involved in conservation as well as external researchers. A local conservation and management NPO was launched from WWF in Shiraho, and environmental conservation activities have been incorporated into the purpose of its establishment.

Description of the project

The project has established a CBM model for local communities in Shiraho Village and Kumejima island as well as other stakeholders to cooperate in the conservation and sustainable use of the biodiversity and to prevent sediment outflow, a common phenomenon in subtropical regions. There are currently three regions within the Nansei Shoto Ecoregion interacting with the initial model areas in Shiraho and Kumejima island that are working on the conservation and sustainable use of the biodiversity.
The WWF Coral Reef Conservation and Research Centre has served to reinforce the local organizational

Environmental study program at primary school, Kumejima

Conservation work with local high school

foundation to work on the conservation and sustainable use of the biodiversity in Shiraho Village.
In Kumejima island, the project set scientific conservation targets with external researchers and implemented activities to reach the targets with the local people. The project thereby established a local conservation system, and WWF Japan is in the middle of applying this model to Yanbaru as a shorter project model spanning 18 months.

What has been achieved

The project built a system to utilize portion of the profits of community business from green belt plants as brand products by Shiraho Sunday Market. A local NPO, Natsupana, was launched independently from WWF with the aim of raising capable individuals from among the local residents and enabling the local community to conduct conservation activities autonomously. The NPO represented 12 local tourism operators in the village and signed an agreement with a nation-wide travel agency, to start a study tour. Part of the income from this tour will be used towards local environmental conservation purposes.
At the end of the Kumejima island project, a local NPO established an agreement with the local government to work cooperatively on the issue of soil spills. The cooperation has been ongoing, and they have started a fund with the local fishery sector for conservation in 2014. In the Yanbaru district, a local stakeholder analysis was conducted in order to plan and focus an effective local network. The local high school joined in the scientific monitoring research of the amount of soil sediment at the project targeted site as a part of their curriculum.

Lessons learned

The project learned effective schemes and approaches, such as the following:

- Involving local residents in conservation action should being with an understanding of the traditional relationship with nature instead of enforcing top-down action.
- The participation of an expert as catalyst to stimulate and support local activities is essential to push forward the conservation activities and local development.
- Especially when a project is initiated by an ‘outsider,’ sharing project goals that are based on scientific measurement is effective in gaining approval from local residents.
- Results of stakeholder analysis and relationship with local residents may possibly change during the project duration depending on the local situation or project transition and should be readily revised and adapted as necessary.
- Approaching children is effective in order to gain trust and obtain cooperation from the local communities, especially in the case of engaging the older generations in a closed, tightly-knit community.
- Local-based coral reef conservation must be promoted hand-in-hand with the development of community businesses.

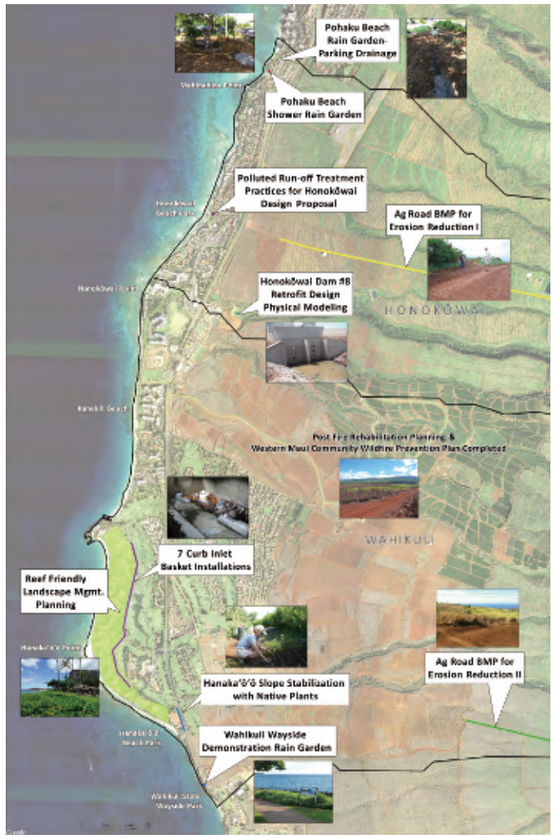
Main organizer(s) and stakeholder(s) of the project

WWF Japan, public and private research facilities, and universities (Activities of Siraho community project were mainly organized by WWF Japan)

Local and prefectural government, local NPOs, local fishery, tourism, and agriculture industries. Residents and board members of Shiraho community council

USA

West Maui Ridge to Reef Initiative, Hawaii (Aug. 2012~ongoing)



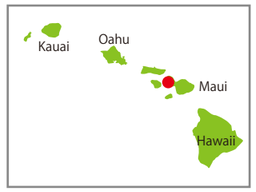
How the project began

In West Maui, nearly one-fourth of all living corals have been lost in the last thirteen years alone due to stressors and impacts of land-based pollutants, including sediment, nutrients, and other pollutants. The source from land needed to be addressed in order to effectively address the declining health of the coral reefs.

The Hawaii Coral Reef Strategy identified the coral reef ecosystem along the West Maui region as a priority management area. The US Coral Reef Task Force also designated the West Maui Watershed as a priority partnership in the Pacific in 2011 when the US Army Corps of Engineers (USACE) began a reconnaissance study with community input to determine whether there was public support for the effort.

Goal(s)

To restore and enhance the health and resiliency of West Maui coral reefs and near-shore waters through the reduction of land-based pollution threats from the summit of Pu`u Kukui to the outer reef.
These efforts will be guided by the values and traditions of West Maui.



Project Location:
West Maui, Hawaii, USA.
Specifically, the watersheds of Wahikuli, Honokowai, Kahana, Honokahua and Honolua

Description of the project

Each implementation activity of the project is funded separately in partnership with contractors, NGOs, and local landowners, which makes it an inherently collaborative process. All activities are based on priorities laid out in the watershed plan, where the land-based source of pollution is connected to an action that will help to mitigate degradation of the marine environment. For example, the project completed the Ocean Friendly Landscape program with local resorts, where we worked with staff to reevaluate the chemical inputs and practices they were using and suggested improvements that would reduce the impact on the ocean. This meant listening to ideas from local staff, facilitating a learning exchange, and providing recommendations where needed.

What has been achieved

The project has achieved some milestones such as the following:

- Formalization of an agency-based leadership and funding team and local advisory working group representing diverse stakeholders.
- Wrapping up the fourth of five phases* of the watershed evaluation processes to determine land uses and activities that potentially have adverse impacts on the watersheds' ecosystem in the watershed planning process. Our last phase will be a comprehensive analysis of the optimal suite of actions across all 5 watersheds.
- Social marketing campaign launched to engage the community in actions they can take.
- Several projects to address land-based pollution have been completed across the landscape with various stakeholders addressing key stressors, such as sediment and nutrients.
- Research partners from agencies and the university have several projects to address key data gaps needed for better management decisions and monitoring of impacts.

Lessons learned

The following are examples of lessons learned:

- Engage with implementers early on
- Maintenance is a key consideration in all infrastructure projects
- Understanding landowner concerns and limitations are central to success
- A broad, thorough investigation is needed to inform the watershed management plan
- Support from a local fiscal agent or nonprofit is critical for accessing select grants
- Constant engagement and follow up is critical to maintaining momentum
- Engage the community in projects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Community volunteers at an annual event marking the designation of a section of the ocean as an herbivore replenishment area

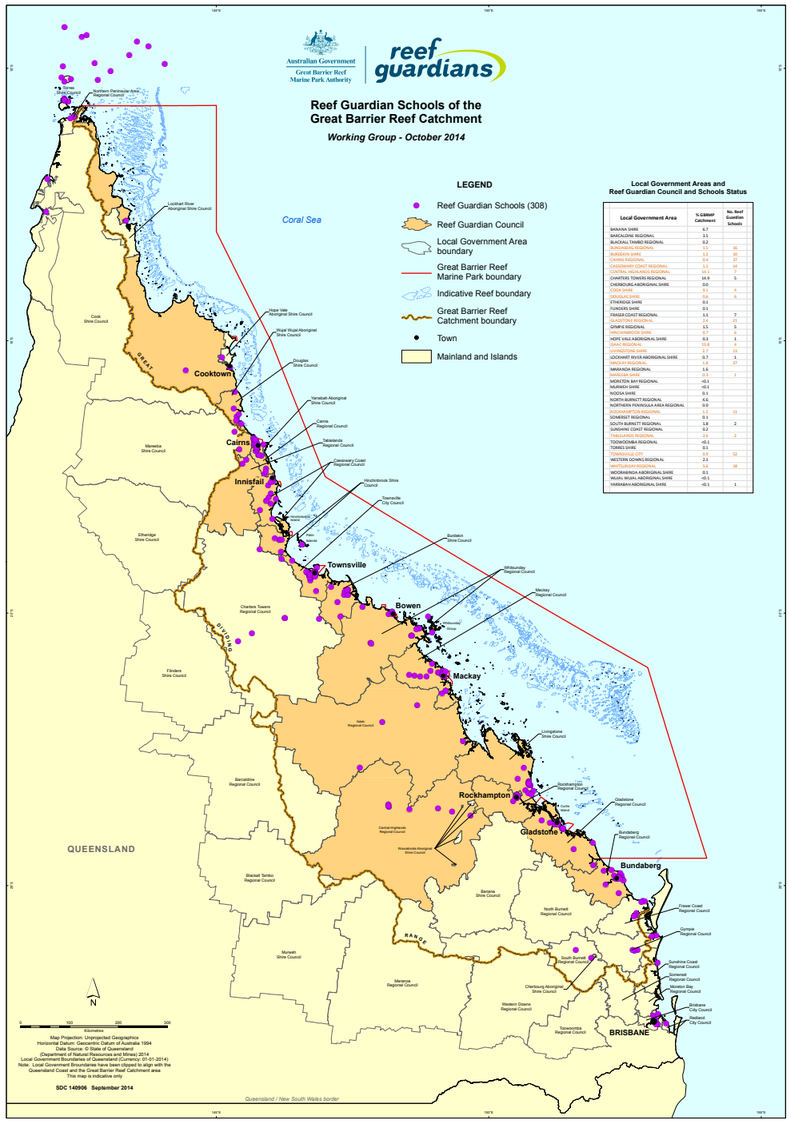
Main organizer(s) and stakeholder(s) of the project

Coral Reef Alliance: Multiple agency collaboration, but Watershed Coordinator can serve as a point of contact.

Decision-makers: USACE, USEPA, DLNR-DAR, NOAA, USGS, NRCS, State Dept. of Health, FWS
Project implementation affects: County government, landowners, coastal resort businesses, landscaping companies, ocean-using public

Australia

Reef Guardian Stewardship Program (2003~ongoing)



Project Location:
The Great Barrier Reef and its catchments, Queensland, Australia

Main organizer(s) and stakeholder(s) of the project

Great Barrier Reef Marine Park Authority

Schools, local government councils, commercial fishers, farmers and graziers

©GBRMPA

Children are encouraged to reduce their ecological footprint by composting, gardening and using produce in tuckshops and at events.

How the project began

Research and monitoring has identified the major threats to the future of the reef are climate change, poor water quality from land-based run-off, impacts from coastal development, and some remaining impacts from fishing.

The Great Barrier Reef Marine Park Authority initiated the Reef Guardian Stewardship Program. It involved people from schools, councils, fishing and agricultural industries in the development of the program to ensure it was relevant and workable for them. Other key government and non-government organizations were also involved in the project development and continue to work closely with the GBRMPA in the delivery of the program.

Goal(s)

Community-based stewardship making a real difference to the health and resilience of the reef. The coastal community and industries are aware of the potential impacts of their actions on the reef and engaged in ensuring ecologically sustainable use and benefits for current and future generations.

Description of the project

The Reef Guardian program recognizes the good environmental work undertaken by communities and industries to protect the Great Barrier Reef. It works with those who use and rely on the reef, or its catchment, for recreation or business in order to help build a healthier and more resilient reef.
The Great Barrier Reef catchment area lies adjacent to the Great Barrier Reef World Heritage Area and comprises approximately 25% of the land area of Queensland. The Great Barrier Reef receives the run-off from 35 basins which drain 424,000km² of coastal Queensland. This connection from the land to the reef is understood by Reef Guardian participants, and that the future health and resilience of the reef is linked to increasing awareness in the whole community of this connection and influencing actions that impact on coastal and marine ecosystems.
Reef Guardians take voluntary action, beyond what is required by law, to minimize their impacts on the catchment. They are proactive in sharing information about practices that are good for the reef and in encouraging others to adopt these practices and to get involved in stewardship of the reef and its catchments
The program uses a community-based approach to promote environmentally and economically sustainable land use and community behavior in the Great Barrier Reef Region to ensure the Marine Park is protected for future generations.

What has been achieved

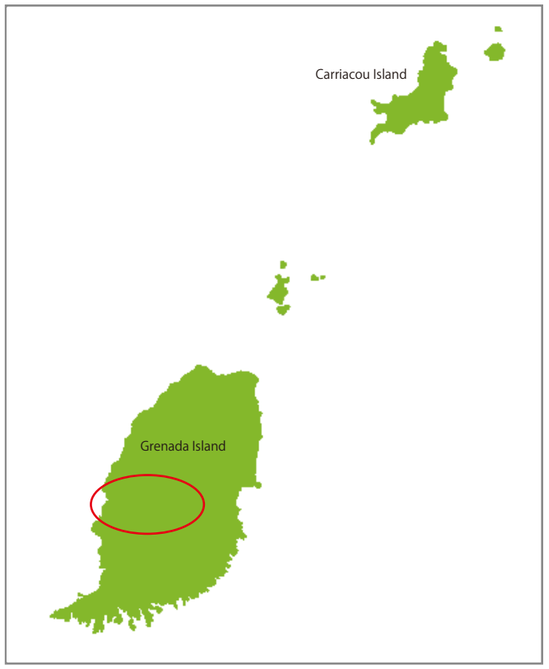
A total of 310 Reef Guardian schools with over 127,000 students and 8,000 teachers take part in annual on-ground activities and access teaching resources to support education about the reef, its catchments and how to keep it healthy. The reef-related teaching resources have been developed to complement the Australian National Curriculum.
Sixteen local government Reef Guardian Councils cover 60% of the Great Barrier Reef catchment and a population of almost 900,000 people. They play an important role in water, waste and land management, community education, planning for sustainable population growth and ensuring environmentally sound development.
Seventeen commercial fishing operations across the Great Barrier Reef Marine Park are recognized as Reef Guardians for using practices that go beyond what is required by law to sustain the future health of the marine environment and the fisheries on which their business depends.
Farmers are also being recognized for the leadership they demonstrate in seeking and implementing farming practices to ensure healthy coastal ecosystems and high water quality of run-off destined for the Great Barrier Reef lagoon.

Lessons learned

The program has successfully engaged the community in stewardship of the reef by tapping into people's desire to sustain ecological, aesthetic, cultural and economic values of the reef. It does so in practical ways that are understood and relevant to the various community and industry sectors.
The collaborative/partnership approach to the development and delivery has been important to making the program resources and activities relevant and of value to participants. This has also supported the spread of interest and participation in reef stewardship.
The resources, activities and promotion of what Reef Guardians are doing raises awareness, understanding and appreciation for the reef and its connected ecosystems. Program participants network with like-minded people across the Great Barrier Reef catchment to share information and ideas to inform their actions that impact on the environment. The action-based activities foster stewardship and promote a community culture of custodianship for reef protection. The program empowers participants with a sense of involvement in the bigger picture and encourages them to make a positive difference.

Grenada

Reef Guardian Stewardship Program in Grenada
(Oct. 2013~ongoing)



Project Location:
Beausejour watershed (encompassing all communities along the Beausejour River.)

How the project began

A report commissioned by the Organization of American States (OAS) on the nutrient and sediment inputs of the Beausejour River revealed that nutrient levels (phosphates and ammonia) entering the Moliniere-Beausejour Marine Protected Area (MBMPA) via the river system surpassed all maximum allowed limits recommended by the Caribbean Environmental Health Institute (CEHI) (S. Nimrod, et al. 2013). The report also indicated that the Beausejour River is a major source of sediment loading on some of the coral reefs within the Protected Area.
The Reef Guardian Stewardship Program was initiated by the Fisheries Division of the Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment with small funding aid provided by the Australian Agency for International Development (AusAID), and the Great Barrier Reef Marine Park Authority (GBRMPA), through the Grenada Fund for Conservation (GFC).

Goal(s)

The project aims to achieve targets such as:

- To educate farmers on the importance of safeguarding coral reefs and associated ecosystems through Marine Protected Areas (MPAs);
- To demonstrate the linkages between land practices and the health of the marine environment; and
- To recognize, implement and promote good environmental practices (such as proper fertilizer application and good water quality and soil management practices).

Description of the project

The program is an awareness tool, which works by identifying, assessing, and promoting sustainable environmental practices by farmers. It uses a hands-on, community-based approach, aimed at guiding the everyday actions and decisions of stakeholders that would facilitate long-term environmental benefits for the reef. The Reef Guardian Stewardship Program originated and was transferred from Australia.

Reef Guardians support the ridge to reef concept by promoting sustainable land management (SLM) practices that encourage good water quality at the source, while remaining economically viable for its members. The concept aims to promote the vision that marine environments, including wetlands and coral reefs, are less vulnerable to damage when rivers are healthy.

The driving force behind the success of the Reef Guardians program is that it provides a platform where members can gain recognition for good environmental practices. Ultimately, these members will be encouraged to continue and improve environmentally safe, sustainable practices while motivating others to do the same.

What has been achieved

Achievements that have been made by this project include the following:

- A series of educational training workshops have been held with the Northeast Farmers Organization (NEFO) members on the functions and importance of MPAs, linkages between farming and marine ecosystems, sustainable farming methods, and water quality testing.
- NEFO members have received training in proper methods of composting and are implementing composting on their farms, thus reducing the use of chemical fertilizers and the resultant runoff into river systems.
- Two new mechanical shredders were donated to the NEFO: Farmers have also implemented the use of shredders to reuse materials on their properties. Using shredded materials as mulch helps to keep moisture in soils and reduces the amount of water that runs off the farmland. It also lessens on the use of chemical fertilizers because plant nutrients are essential recycled.
- One bio-gas digester was constructed for one livestock farmer to be used as a demonstration for other farmers. This is a pilot and other bio-gas digesters will be donated to livestock farmers. This will prevent farmers washing waste from pigpens, which goes directly into the river and flows out into the marine protected area.

Lessons learned

The success of the program thus far is greatly attributed to the superb level of organization and the passion and willingness of the NEFO farmers to assist. Thus working with an organized group has proven to be more efficient than working with individuals. As a base, it is extremely important to establish a strong relationship based on trust with group members. It is also equally important to get them to understand the impacts of their environmental footprints and develop within them a desire to reduce these impacts.
One of the limiting factors in implementing sustainable land management practices is financial capability. Many farmers do not possess the financial resources to purchase costly equipment such as shredders or to build infrastructure such as soakaway systems for livestock. It is therefore important to assist completely or partially with the provision of funding. The Caribbean Aqua-Terrestrial Solutions (CATS) program has provided the funding for the implementation of sustainable practices on reef guardian farms.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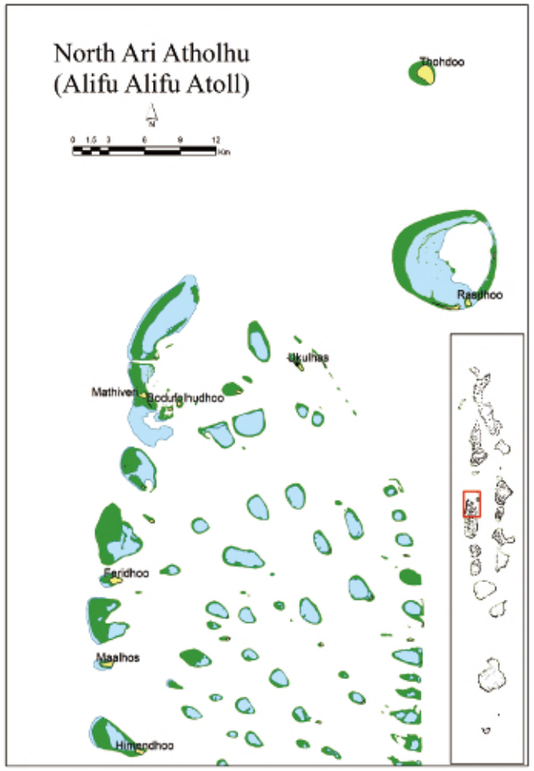
Main organizer(s) and stakeholder(s) of the project

Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment

Communities along the Beausejour River catchment area, Local crop and livestock farmers and fishers and the Northeast Farmers Organization (NEFO): a voluntary group of local farmers to train and implement sustainable agricultural practices

Maldives

Project REGENERATE: Reefs Generate Environmental and Economic Resiliency for Atoll Ecosystems (2013~2015 End of Phase I, 2019 End of Phase II)



Project Location: North Ari Atoll, Maldives

How the project began

Mass coral bleaching in 1998 and 2010 killed a majority of shallow corals. Coral reefs play a fundamental role in food provision, shoreline protection, and tourism revenue in the Maldives.

The IUCN Global Marine and Polar Program produced and submitted the proposal for Project REGENERATE that is funded by the USAID. IUCN is the implementing agency, and the Project is a partnership between the government of Maldives, USAID, and IUCN.

Objective(s)

- Enhancing the use of GIS in the national environmental decision-making process
- Enhancing understanding of resilience to climate change in North Ari Atoll
- Building the capacity of civil society to monitor and improve management of marine resources
- Supporting environmental education and public awareness at the national level
- Supporting private sector to developed, ecosystem-based management approaches

Description of the project

A major goal of this project is to develop a Resilience-Based Management (RBM) framework to improve the ability of policymakers and stakeholders in the Maldives to understand and address the risks from global, regional, and local-scale pressures on their environment. Resilience can be defined as the capacity of a system (ecological or social) to withstand and absorb shocks without collapsing into a different, often less favorable, state. RBM is an innovative approach to environmental management because it recognizes the inevitability of change, emphasizes adaptation to change, and focuses on building resilience rather than the conservation of a steady-state environment. At completion, this project will provide the foundation for reef managers to improve the outlook for coral reef ecosystems and the communities dependent on them. It will enhance our understanding of socio-ecological resilience, improve access to knowledge, and increase the capacity to manage coral reefs in the Maldives.

What has been achieved

The project has achieved a number of milestones such as the following:

- Capacity to use GIS in government enhanced through ESRI training.
- Government's environmental data plotted for use in NGIS.
- Social surveys with North Ari fishermen on bait and reef fisheries.
- High-resolution ecological data collected and analyzed for 36 sites in North Ari atoll.

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- Social resilience data collected from more than 25% of the population of North Ari.
- An ecosystem services assessment completed for North Ari.
- Natural resources and human use mapped out for North Ari that will elucidate conflict zones.
- Workshops on a wide range of citizen science protocols that will train over 500 people.
- 16 public seminars that raised awareness of critical environmental issues.
- Coral reefs of resorts surveyed and data used for developing management plans for MMAs.
- A generic house reef management plan for resorts produced and presented to the Ministry of Tourism for national adoption.
- Dive centers adopted Green Fins best practices for diving, and new national Green Fins coordinators were trained.
- Workshops organized for local island councilors, resort managers, and central government ministries on managing coral reefs.
- Physical vulnerability to climate change was assessed for 23 community, uninhabited, and resort islands in North Ari.
- A policy review of the potential for implementing ecosystem-based adaptation strategies in the Maldives was carried out.
- Several infographics produced to communicate the science of coral reef resilience, ecosystem services, and turtle life cycles.
- Short documentary on sea grass produced and aired on national television.
- Newsletters disseminated to a wide range of interested parties through a distribution list.
- A one-stop shop for all information on marine conservation, science, and management for the Maldives with the development of the Maldives Conservation Portal.
- IUCN Fellowship Programme for interns, apprentices, and fellows provided thirteen job opportunities and two coral reef fellowships for Maldivians in the field of environmental management, thus raising the profile of the Bachelors in Environmental Management course at Maldives National University and enhancing the capacity of government officials to manage coral reefs.

Lessons learned

- It is challenging to integrate best practice reef management at resorts and communities due to the business sector bottom line, capacity, and resources.
- GIS is currently an underused tool in the Maldives and could be integrated better into the decision-making process for decentralized monitoring and governance of marine and coral reef resources.

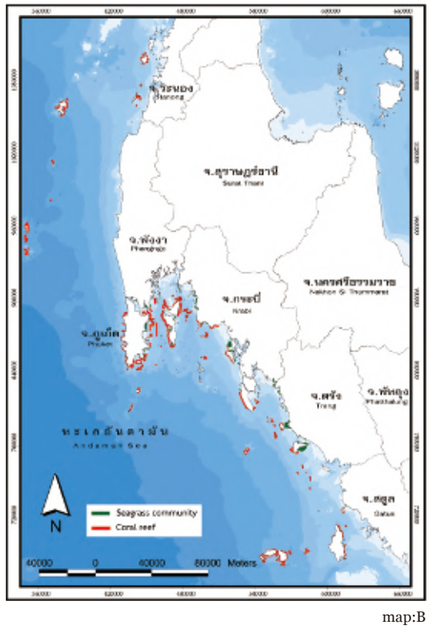
Main organizer(s) and stakeholder(s) of the project

IUCN, Government of Maldives (Ministry of Fisheries and Agriculture, Ministry of Environment and Energy, Marine Research Center)

Local island communities, resort management, private sector business, students of primary to secondary levels, civil society groups

Thailand

Assessing the Conditions of Coral Reefs and Seagrass Communities in the Gulf of Thailand and the Andaman Sea (Oct. 2010~Sep. 2020)



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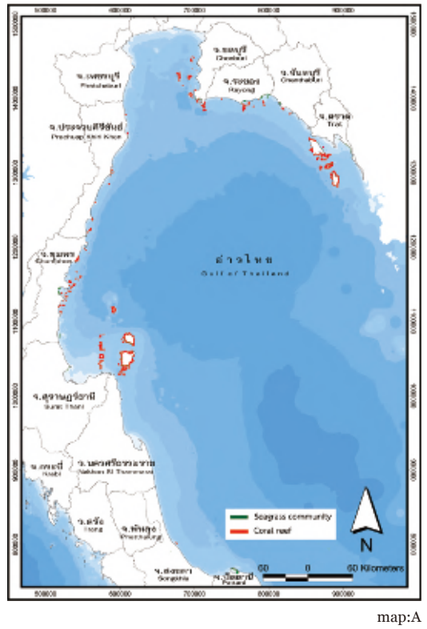

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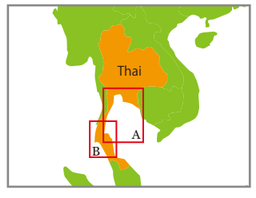

Project Location:
Inner Gulf of Thailand:
Chonburi Province
Eastern Gulf of Thailand:
Rayong, Chantaburi, Trat Provinces
Western Gulf of Thailand:
Phetchburi, Prachuap Khirikhan, Chumphon, Surat Thani, Nakhon Si Thammarat, Songkhla, Pattani Provinces
Andaman Sea:
Ranong, Phangnga, Phuket, Krabi, Trang, Satun Provinces

How the project began

The project has been implemented because of the degradation of coral reefs and seagrass communities, as well as the decrease in ecosystem services in Thai waters in the face of global change. The main cause of coral reef degradation is coral bleaching, therefore enhancing coral reef resilience is needed.

The Department of Marine and Coastal Resources (DMCR) initiated the project with consultation among government agencies and local communities. The Department of National Parks, Wildlife, and Plant Conservation (DNP), Marine Biodiversity Research Group, Ramkhamhaeng University (MBRG-RU), and other Thai universities worked in several locations to support the project.

Objective(s)

The objectives of the project are as follows:

-To assess conditions and long-term changes of coral reefs and seagrass communities in Thai waters
-To analyze the causes of coral reef and seagrass degradation
-To examine the recovery potential of degraded coral reefs and seagrass communities and their resilience to environmental change
-To gather information in the geographic information database of DMCR

Description of the project

Coral reefs and seagrass communities in the Gulf of Thailand and the Andaman Sea are complex ecosystems with high biodiversity. These ecosystems are connected to terrestrial ecosystems, especially nutrient cycling, energy transfer, and connectivity of larvae and adult populations of marine animals. Ecosystem services from coral reefs and seagrass communities are very important to the socioeconomics and lifestyles of coastal communities, particularly incomes from fisheries and tourism industries. However, some coral reefs and seagrass communities in Thailand have been damaged by natural and anthropogenic disturbances, such as coral bleaching, sediment from coastal development, destructive fishing, and unmanaged tourism. The project highlights the importance of the long-term assessment of coral reefs and seagrass communities with analyses of the root causes of degradation. The results from the project are necessary for establishing appropriate management strategies and interventions. Although the project is mainly implemented by government agencies, certain local communities and NGOs have been actively involved in the planning, implementation, and evaluation phases of the project. Preventive measures for coral reef and seagrass conservation are very important in accomplishing the project goals and require close collaboration with the local communities for their understanding and support concerning watershed and coastal management.

What has been achieved

Coral reef conditions varied among reef sites because of the monsoon influence, levels of degradation from coral bleaching, and human activities. The following are some of the findings from the research. The 2010 coral bleaching event caused severe mass mortality of corals (80% to 90%) in several reefs in Krabi and Phangnga provinces. Coastal development activities, tourism-related activities, wastewater and solid waste from coastal communities, and destructive fishing practices resulted in degradation of coral reefs in Rayong, Surat Thani, Songkhla, and Phuket provinces.

Conditions of seagrass communities showed seasonal variations and some impacts from human activities, such as sediment from coastal development for tourism; wastewater from industries, shrimp farms, and coastal communities; destruction by clam dredging, trawling, and push nets; and dredging and construction of the breakwater.

Several management strategies were proposed, such as zoning for utilization, controlled tourism activities and fishing practices, preventive measures for impacts from watershed and coastal development, local community participation for management, and the raising public awareness and education.

Lessons learned

The project provides essential information required to make management decisions and to establish proper policies for coastal resource conservation. Long-term ecological and socioeconomic monitoring of coral reefs and seagrass communities is important to understand the extent, nature, and causes of the damage and to identify ways to address these threats. Integrated coastal management, especially watershed and terrestrial ecosystems management, is very important in the prevention of threats from coastal development, land-based pollution, tourism impacts, and illegal fishing. The results from this project are essential to inform stakeholders about the success or failure of management actions and to apply adaptive management where they have not been successful in achieving goals. This project suggests that co-management of coral reef and seagrass resources by government agencies and local communities, with advice and assistance from researchers, can be an effective management strategy for marine and coastal conservation.

Main organizer(s) and stakeholder(s) of the project

Department of Marine and Coastal Resources (DMCR), Department of National Parks, Wildlife and Plant Conservation (DNP), Marine Biodiversity Research Group, Ramkhamhaeng University (MBRG-RU)

Department of Marine and Coastal Resources (DMCR), Department of National Parks, Wildlife and Plant Conservation (DNP), Department of Fisheries (DOF), Pollution Control Department (PCD), Marine Department (MD), Office of Natural Resources and Environmental Policy and Planning (ONEP), Department of Tourism, Tourism Authority of Thailand (TAT), Coastal Provinces, Coastal Local Administrative Offices, Marine Biodiversity Research Group, Ramkhamhaeng University (MBRG-RU), Thai universities and NGOs

Summary of case-study projects from different regions and an analysis of effective community-based approaches emphasizing land-sea connectivity

Examples from different countries indicate that a common problem of environmentally influential factors originated on land and included domestic wastewater and waste, sediment, and chemical substances from agricultural chemicals on farmland discharged into coral reefs affecting the ecosystem. In particular, the project on the island of Komodo, a remote island in Indonesia and a World Heritage Site, is being implemented using the problem of waste disposal caused by increased numbers of tourists and a resident management system with an insufficiently developed infrastructure as the major theme. Meanwhile, in Japan, the sediment discharged from farmland for more than 40 years has been affecting the ecosystem of coastal coral reefs for a long time, and projects are being implemented in cooperation with prioritized local communities. Other project themes in the Maldives and Fiji include the promotion of administrative systems to protect the environment and the tourism industry as well as a reduction in the overexploitation of fisheries. Overviews of activities in different regions are described below.

FIJI

The problems faced by the Kubulau District include a reduced number of fish species from overfishing and the influences of outflows from illegal mines. The KRMC was organized by representative residents and took the initiative to establish an ecosystem-based management plan. Residents are implementing conservation activities in cooperation with conservation supporters. The regional organization KBDC was recently established to support KRMC. Natural science researchers and social researchers evaluated traditional environmental knowledge and established a comprehensive management plan covering the terrestrial ecosystem and the freshwater and coastal ecosystems. The goal is to establish a system to distribute funds raised through eco-tourism and local industries to develop local communities and as an environmental management fund.

INDONESIA

The island of Komodo, a World Heritage Site, and nearby islands are the habitat of the Komodo dragon and now face the problem of inappropriate dumping and disposal of waste from increased tourism on the islands. A project in Indonesia is establishing a system for reusing, recycling, and properly disposing of wastes with local people. The project established an industrial organization to reuse and process waste for use by local communities and then set up training groups of women to learn the skills to transform recycled items into handicraft goods.

JAPAN

A project of WWF Japan since the 1970s is to prevent the outflow of sediment from sugarcane fields with local communities in prioritized regions. External researchers and organizations specialized in natural science and social science are participating in this project. They are identifying prioritized farmlands to work on and monitoring the amount of outflows and then provide information to local conservation organizations in order to build a system to implement continuous investigations and conservation activities by the local people. They are also applying this model to other regions.

USA

The project in the United States is the conservation activities for the ridge-to-reef approach to handle the effluent from West Maui in Hawaii by the local people. The project involves people in the local tourism industries, such as the Ocean Friendly Landscape Program, to investigate the amount of chemical substances and reduce effluents by emphasizing close communication with local residents, tourism organizations, and primary industry organizations. The project is being implemented in cooperation with local communities during the proposal phase by focusing on setting plans that match the traditional values of West Maui.

AUSTRALIA

Projects in Australia have been implemented to educate and increase the number of Reef Guardians as a community-based approach to improve the ability to recover and regenerate coral reef ecosystem. The projects promote the conservation of the Great Barrier Reef by supporting regions and stakeholders in the various industries that continuously take advantage of the reef environment. The projects have provided classes in more than 300 schools in different regions, and more than 12,000 students have participated in conservation activities. In addition, as a model incorporating fisheries and agriculture, the projects are improving the quality of sediment and water released from the primary industry by supporting and spreading the activities of motivated farmers and farm owners as models.

GRENADA

AusAID and GBRMPA transferred the conservation scheme of the Reef Guardian Program in the Great Barrier Reef in Australia to Grenada in 2013. The projects are reviewing the use of chemical fertilizers by farmers in target areas and providing training opportunities to farmers and people involved in agriculture as efforts to link the management of environmentally influential factors on land with the conservation of coastal areas.

MALDIVES

The project in the Maldives is named Regenerate and is based on an approach of resilience-based management. The project supported the improvement of technologies and knowledge of government policy officials and then provided workshops for resident leaders and resort industry managers as a part of training opportunities. The project investigated the coral reel ecosystems and the use of the coastal environment by people to reflect findings about the use of the local environment and conservation management plans. The project is creating maps of the findings and conducting social investigations in eight target communities to create conservation plans.

THAILAND

Coral reefs and algae populations are being reduced because of the outflow of waste and wastewater from coastal communities, development, overfishing, and tourism along coastal areas. The project in Thailand is conducting a long-term survey on these problems and proposing the establishment of conservation plans with the government, local communities, and NGOs. The implementation of the plan includes providing opportunities for local residents to improve their understanding and promoting joint efforts in the conservation management of coastal and ocean areas. The project has proposed plans to set restricted areas, sustainable systems for fisheries and tourism, and environmental education for local residents.

The following are common points that have been found effective or important across different regions in implementing comprehensive and community-based management covering the land to the ocean.

- *It is important to facilitate communication involving as many residents as possible based on traditional uses of the environment in a specific region and information acquired through scientific investigations.*

- *Participation of young students and children, encouragement for senior citizens who have difficulties in communication, and the establishment of long-term conservation targets are effective ways to spread activities throughout the entire community.*

- *It is important to understand the constraints and incorporate the requests of industries and producers who may be the source of environmental impacts when asking for their cooperation in conservation.*

- *Activities with leaders of local communities and residents as well as the development of a system involving administrative and legislative officials are important.*

- *It is necessary to adaptively review activities based on the latest information and status when implementing activities in cooperation with local communities.*

The above are also important categories common to local projects in any region. These will prove effective hints to activities when readers are to implement similar activities in their regions if they consider the main points of these categories from the proposal phase to the implementation phase of plans.

Other points to be considered in the design phase of a project and at the start of a project based on lessons learned in different regions are as follows: ensuring the participation of stakeholders, especially core persons and landowners in the early phase and adding their concerns, difficulties, and requirements as points for consideration. Other opinions include investigations and projects that should be designed to include as broad an area as possible for implementing the management of the entire basin from the land to the ocean. Another opinion is that financial support for non-profit activities is effective in ensuring cooperation between a project and target areas and the implementation of activities by local stakeholders.

Based on the above, comprehensive community-based management from land to the sea should target as large an area and as many communities as possible depending on funding and manpower availability. The following are also necessary: identification of traditional culture and social systems of a region in the early phase and planning of a project; proposal of a plan based on scientific investigations; involvement of landowners, community leaders, and government and legislative officials; and the implementation of a project to the extent that they can provide support. The project implementation phase requires the distribution of financial and technical support and information to local groups that are implementing the project in addition to leaving room for flexibly changing plans and stakeholders who support the project depending on the situation. The diagram on the following page summarizes the key elements to be considered at the project proposal phase and subsequent phases based on the above observations.

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Enabling conditions to consider in the different project phases

Keys to an effective approach for the planning and implementation of community-based coral reef conservation and management projects emphasizing land-sea connectivity

Phase 1: SITE EVALUATION

- Identifying and understanding the relationships between ecosystem services and methods of using the natural environment and traditional culture of a region
- Identifying and understanding the concerns of landowners and ranges in which they can provide support
- Conducting investigation, evaluation, and analysis in as broad an area as possible
- Establishing conservation targets based on scientific indexes and the selection of local stakeholders

Phase 2: PROJECT PLANNING

- Engaging leaders of local residents and legislatures
- Engaging communities in upstream and downstream regions and local organizations deeply involved with conservation and management
- Engaging core stakeholders of local communities in the early phase
- Securing financial support for local coordinators and non-profit activities
- Involving experts who act as mediators
- Establishing and enrichment laws and regulatory rules
- Raising and transforming the awareness of residents and developing infrastructures related with a project

Phase 3: PROJECT IMPLEMENTATION

- Encouraging communication and the participation of as many residents as possible
- Setting long-term goals and approaches to age groups and communities that have difficulty being involved through the participation of students and children
- Ensuring the participation and support of landowners as sources of environmentally influential factors
- Promoting communication and establishing a cooperative system with local organizations, people in the organizations, and administrations that lead projects
- Engaging local stakeholders in the establishment of plans and budget planning

Phase 4: ADAPTIVE MANAGEMENT

- Adapting and revising activity plans depending on latest information and situation
- Establishing implementation methods to reduce environmental influences and damages by reflecting requests from people causing the influences and damages
- Changing local stakeholders and people cooperating in a project depending on the relationship to the project and local conditions
- Sharing, reviewing, and examining the outcomes of activities with local stakeholders

Contact person and information of each case-study project

Country	Project	Organization	Contact Person(s)	E-mail	Postal Address	Phone	URL
Fiji	Community-Based Integrated Land-Sea Management in Kubulau District: Fiji's first District-Level Ridge-to-Reef Management Plan	Wildlife Conservation Society Fiji Program	Sangeeta Mangubhai	smangubhai@wcs.org	11 Ma'afu Street, Suva, Fiji	+679 -331-5174	http://www.wcsfiji.org/AboutUs/Wherewework.aspx
Indonesia	Integrated Waste Management (IWM): Building Partnerships for Effective Management of Komodo National Park	①Debuty Director of Utilization of Environmental Services, Ministry of Forestry ②WWF Indonesia and Komodo National Park ③Komodo National Park	①Cherryta Yunia ②Wawan Ridwan ③Helmi	①Cherrytays@yahoo.com ②wridwan@wwf.or.id	①Manggala Wanbakti Bld., Block Ⅶ, 7th Floor, Gatot Subroto Str, Jakarta 10270 Indonesia ②Gedung Graha Simatupang Tower2 unit C Lantai 7, Jl. Letjen TB Simatupang Kav, Jakarta, 12540, Indonesia	①+62-21-572-0229 ②+62-21-728-9461 ③+62-81-34111-2323	http://www.wwf.or.id/en/news_facts/blog/?33523/Komodo-Island-Trash-Does-Not-Turn-Into-Cul-De-Sac
Japan	Establishment of Community Based Management (CBM) in the Nansei Archipelago Region and Reinforcement of Eco-Friendly Village at Shiraho Community	WWF Japan	Masayuki Gonda Masahito Kamimura	masayuki@wwf.or.jp	WWF Coral Reef Conservation and Research Center, Shiraho118, Ishigaki, Okinawa	+81-980-84 4135	http://www.wwf.or.jp/activities/2015/07/1272007.html
USA (Hawaii)	West Maui Ridge to Reef Initiative, Hawaii	Coral Reef Alliance （Ridge to Reef Initiative, West Maui Soil and Water Conservation District)	Tova Callender	tova@westmauiR2R.com	55 Konale Pl., Kihei, HI 96753, USA	+1-808-214-4239	http://www.westmauir2r.com/
Australia	Reef Guardian Stewardship Program	Great Barrier Reef Marine Park Authority	Ben Palmer	ben.palmer@gbrmpa.gov.au	Townsville head office, 2-68 Flinders Street, PO Box 1379, Townsville, QLD 4810	+61-7-4750-0700	http://www.gbrmpa.gov.au/our-partners/reef-guardians
Grenada	Reef Guardian Stewardship Program in Grenada	Reef Guardian Stewardship Program: Grenada	Roland A. Baldeo	rolandbaldeo@gmail.com	Melville Street, St. George's, W.I. , Grenada.	+1-473-440-3814 (Mobile)+1-473-417-2966	https://www.facebook.com/GMPANetwork
Maldives	Project REGENERATE: Reefs Generate Environmental and Economic Resiliency for Atoll Ecosystems	IUCN	Ameer Abdulla	ameer.abdulla@iucn.org	2nd floor, H. Merryrose Male, Maldives	+34-654-980-909	https://www.iucn.org/about/work/programmes/marine/marine_our_work/gmpp_coral_reefs/gmpp_coral_reefs__projects/gmpp_project_regenerate_maldives/
Thailand	Assessing the Conditions of Coral Reefs and Seagrass Communities in the Gulf of Thailand and the Andaman Sea	①Marine and Coastal Resources Research & Development Institute ②Marine Biodiversity Research Group, Faculty of Science, Ramkhamhaeng University	①Niphon Phongsuwan ②Thamasak Yeemin	①niphon.ph@dmcr.mail.go.th ②thamasakyeemin@yahoo.com	①9th Floor, the Government Complex Building B 120 Chaengwattana Road Lak Si, Bangkok, 10210, Thailand ②Ramkhamhaeng University, Huamark, Bangkok 10240, Thailand	①+66-2-1411-3412 ②+66-2-310-8415	http://marinegiscenter.dmcr.go.th/km/coral_doc17/?lang=en#.VjcRzG51csk

RESOLUTION on promoting an integrated approach to community-based coral reef conservation and management emphasizing land-sea connectivity

Adopted on 23 October 2014, at the 29th ICRI General Meeting (Okinawa, Japan)

Noting that fringing reefs are found extensively in Okinawa, Japan, where the 29th ICRI General Meeting was held from 20-23 October 2014;

Recognizing that coral reefs, especially fringing reefs, are heavily influenced by land-based activities, it is particularly important to consider human activities and impact as part of the measures for coral reef conservation;

Emphasizing ICRI's cornerstone on integrated management, specifically to manage coral reefs and associated ecosystems in a manner that recognizes the connectivity of land and sea, and the impacts of anthropogenic pressures;

Recalling the "Resolution on using co-management approaches for marine protected areas and other mechanisms for managing coral reefs and associated ecosystems" adopted at the 28th ICRI General Meeting in Belize City, Belize;

Recalling the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA);

Recalling the GCRMN report Catchment Management and Coral Reef Conservation: a practical guide for coastal resource managers to reduce damage from catchment areas based on best practice case studies published in 2011, which introduces 11 recommendations for catchment management;

Noting the decision of the Twelfth Meeting of the Conference of the Parties to the Convention on Biological Diversity on marine and coastal biodiversity, which includes priority actions to achieve Aichi Target 10 for coral reefs and closely associated ecosystems.

Accordingly, ICRI encourages its Members to:
Consider the merits of integrated approaches to community-based coral reef conservation and management emphasizing land-sea connectivity;

Apply the lessons learned on watershed management for conserving fringing reefs from the cases presented in the workshop at the 29th General Meeting and in the GCRMN report, as appropriate;

Promote, where appropriate, collaboration among stakeholders that facilitate community-based conservation and management efforts that integrate the conservation and management of the relevant watersheds;

Contribute to the sharing of information and experience in fora provided by relevant conventions, organizations, or initiatives.

Accordingly, ICRI requests its Secretariat to:
Compile the case studies on integrated approaches to community-based coral reef conservation and management emphasizing land-sea connectivity from submitted ICRI Members' Reports and organize with reference to the GCRMN report;

Report on the compilation of the above case studies at the 30th General Meeting in Thailand;

Disseminate the information through ICRI Media and other available and appropriate media.

Accordingly, ICRI requests its Members to:
Assist in the compilation of case studies by providing information in addition to the submitted Member' s Reports, upon request from the ICRI Secretariat;

Encourage similar integrated approaches to community-based coral reef conservation and management emphasizing land-sea connectivity, where appropriate, that would have long term benefits;

Support the ICRI Secretariat in disseminating the compilation of case studies.

Ministry of the Environment
Government of Japan

ICRI
International
Coral Reef Initiative

WWF
WORKING WITH ICRI TO SAVE CORAL REEFS

Case Studies: From Ridge to Reef
Implementing coral reef conservation and management through a community-based approach emphasizing land-sea connectivity

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