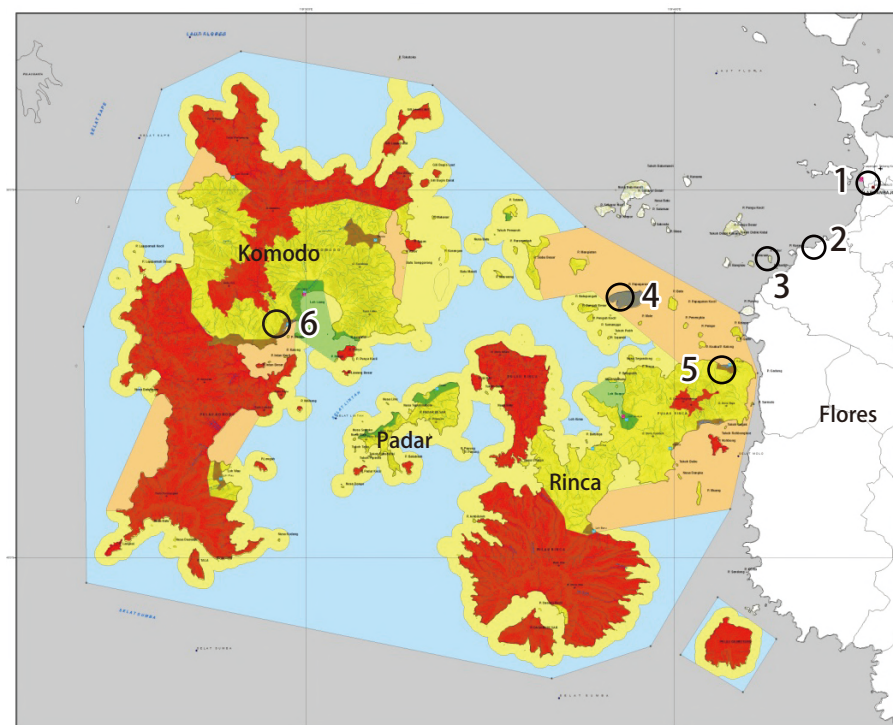


Indonesia

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

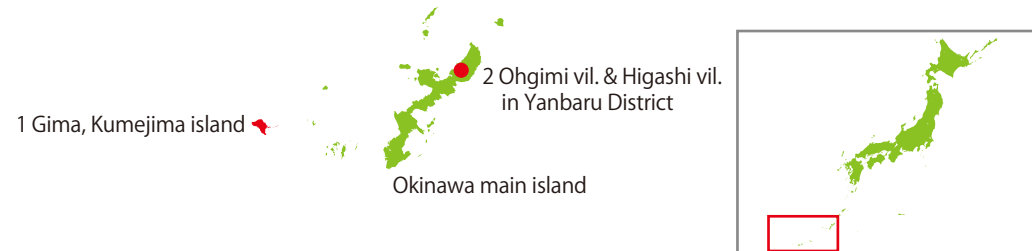
Local governments, civil society organization (CSO), community groups, business organizations



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 be 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.

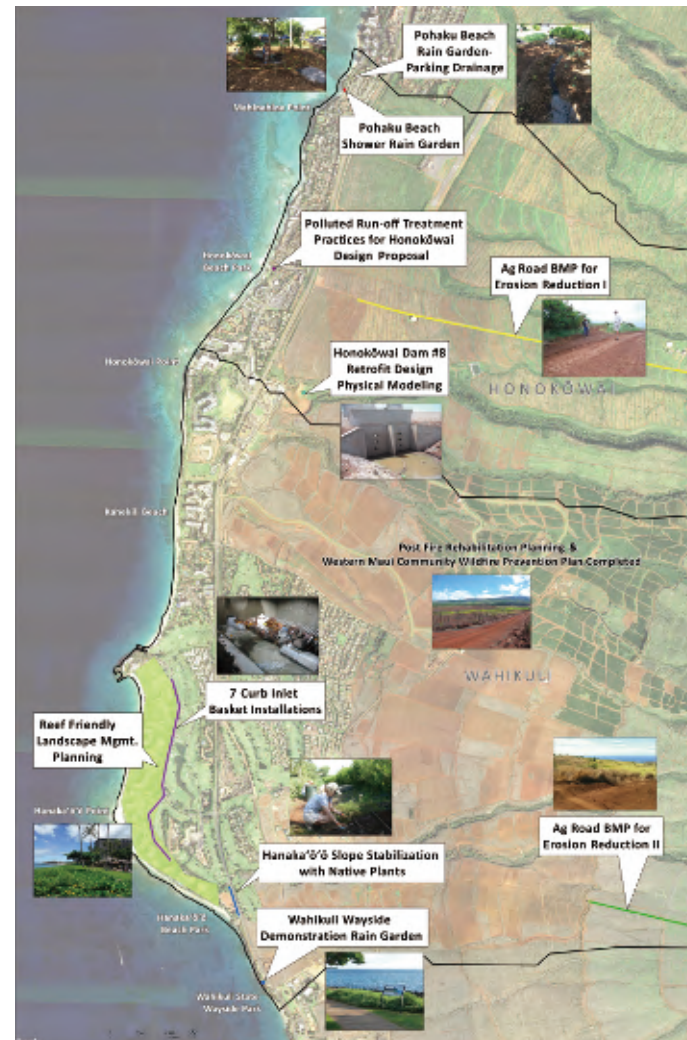
Main organizer(s) and stakeholder(s) of the project

WWF Japan, public and private research facilities, and universities (Activities of Shiraho 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)



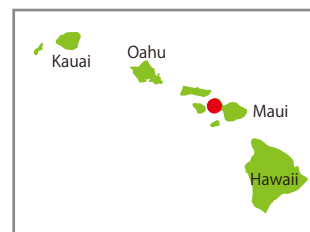
How the project began

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.



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.

Project Location:

West Maui, Hawaii, USA.
Specifically, the watersheds of Wahikuli, Honokowai, Kahana, Honokahua and Honohua

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



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