

LEARNING SITE

THE BANDA ISLANDS

MARINE PROTECTED AREA NETWORK



Background

The Banda Islands Marine Protected Area (MPA) Network was established to protect and manage some of the most diverse and distinct marine ecosystems in the world. The archipelago, in Indonesia's Maluku Province, is a critical area for sea turtles, the endangered Napoleon wrasse, mandarin fish, and yellowfin tuna, as well as a multitude of coral and coral reef fish species. The area is also an important migratory route for blue whales and other marine mammals.

The Banda Islands have played an important role in world history. As well as the rich history of the Bandanese, and the trade that brought merchants from across the region, the islands were passed between colonial powers for centuries, leaving behind remnants in the form of architecture and traditions.

The 11 small volcanic islands which make up the archipelago sit in the Banda Sea, rising out of the Weber Deep, which, at 7.2 kilometers deep, is the deepest part of the Earth's ocean that is not in a trench.

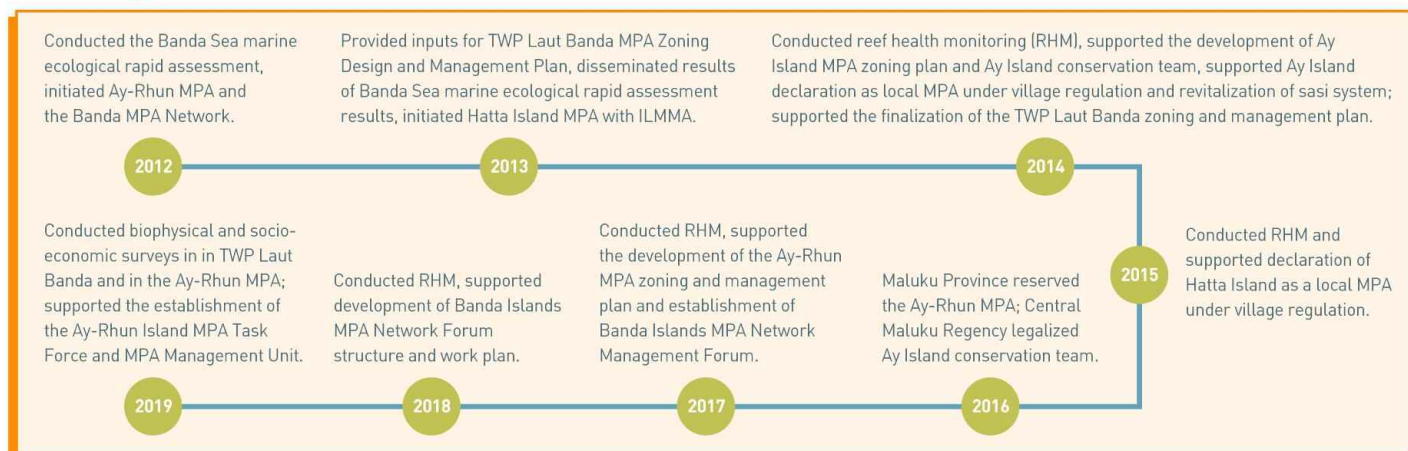
The conditions in this region make it rich in diverse species, and in 2009 a USAID assessment identified the area as one of the highest marine conservation priority regions for Indonesia. Sitting in the heart of the Coral Triangle, the islands' thriving coastal and marine habitats also support local communities, who primarily rely on fishing and marine tourism. CTC has worked with the local government, communities, and global partners to build up a network of marine protected areas which aims to support local customs and livelihoods while protecting marine and coastal ecosystems. In 2012, Banda Islands Marine Protected Area Networks supports 18,544 people in 12 villages such as Selamon, Kampung Baru, Dwiwarna, Rajawali, Merdeka, Nusantara, Waer, Tanah Rata, Lonchoir, Pulau Rhun, Pulau Ay, and Pulau Hatta.

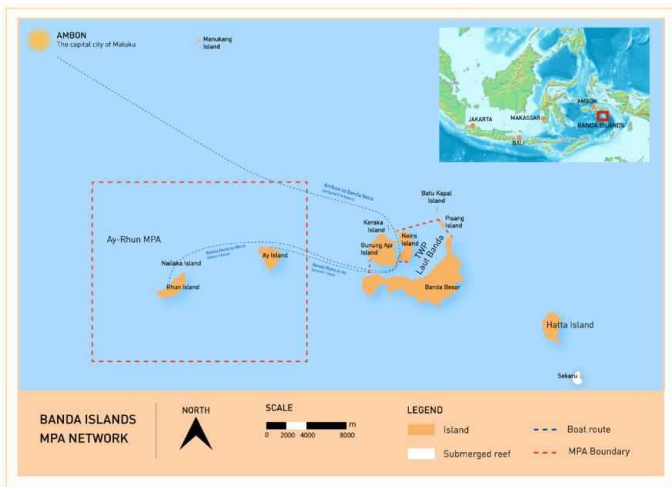
Building a Resilient MPA Network

An MPA was initially established in Banda in 1977 by the Indonesian Ministry of Agriculture. In 2009, management of the site was handed over to the Ministry of Marine Affairs and Fisheries (MMAF). Today, MMAF, along with district governments, local communities, NGOs, and industry partners, is building up conservation efforts to develop a network of MPAs which will support people and ecosystems across the region. This network has been designed to maximize benefits for communities by ensuring local industries develop sustainably, fish stocks are maintained, and biodiversity is protected.

CTC is supporting the development of the network, working to build capacity and cooperation between all stakeholders. The network currently contains three individual MPAs, with a national MPA of the Banda Marine Tourism Park (Taman Wisata Perairan Laut Banda, or TWP Laut Banda), provincially established Ay and Rhun Islands MPA that is facilitated by CTC, and Hatta Island locally-managed marine area. Through these collaborative efforts, communities are sharing knowledge and improving practices to support conservation in the area. CTC is also working to build the network into a learning site, where practitioners and local leaders can learn about marine conservation, MPA management, and gain hands-on experience through in-the-field training.

CTC Support to the Banda Islands MPA Network





History of the Islands

The resilience of Bandanese culture has been recognized by UNESCO, and the islands have been suggested as a potential World Heritage Site. The Cakalele dance, and the Kora-Kora boat race held each year, are two living traditions which highlight the rich history of the people of Banda whose culture survived centuries of foreign influence and colonial rule.

The world's sole source of nutmeg until the mid-19th century, the Banda Islands drew traders from across the world for thousands of years. Merchants from China and the Middle East may have reached the Banda Islands as early as the 9th century, while the Portuguese and Dutch arrived in the 16th century. In 1621, the Dutch took over the archipelago in efforts to globally dominate nutmeg trade. By the early 20th century, however, the nutmeg trade had declined and with them, the political importance of the Banda Islands to the Dutch government. The islands became a place for revolutionaries and nationalists in the years preceding Indonesian independence in 1945. Today, fortresses, buildings and ports found across the islands still speak to its colorful history of colonization and trade.

Nutmeg for New York City

In the 1600s the British occupants of Rhun Island, one of the smallest in the Banda archipelago, made a deal with the Dutch to trade the highly valued island, rich in nutmeg, for the swampy island of New Amsterdam, now known as Manhattan. The island swap was part of the Treaty of Breda, signed on July 31, 1667, to end the second Anglo-Dutch War, and it gave the Dutch a monopoly over nutmeg, which was worth more than gold at the time, and set the scene for British dominance in North America.



Conservation in Action

Marine Biophysical and Social Surveys

The CTC team works with local partners to conduct surveys of reef ecosystems, as well as social surveys with local communities to gain a holistic understanding of the challenges the MPA network faces, and how to build an adaptively managed network that supports communities and marine life. Surveys completed in November 2019 across Ay and Rhun islands showed that communities are supportive of developing the MPA, and are already seeing the positive impact conservation is having in the area. Simultaneous biophysical surveys showed that while overall hard coral cover has declined somewhat since 2012, many reefs previously damaged through blast fishing are showing signs of recovery, and coral diversity remains high. Data collected also showed that targeted fish species such as grouper, snapper, and giant trevally are in abundant supply, meaning fish stocks can support the artisanal fishing practices in the islands while maintaining healthy marine ecosystems.



Gunung Api Lava Flow



The Banda Islands MPA Network has a unique feature in its extensive lava flows, which provide ideal substrate for corals to grow. Gunung Api, an active volcano which borders the Banda Sea Marine Tourism Park within the network, last erupted in 1988, with lava flowing down to cover sections of the reef. However, scientists who visited the area just five years later found that corals had already begun to grow and flourish in the damaged areas, creating new reef on top of the lava flow.. Studies on reef damage by volcanic eruptions in other parts of the world have shown that many reefs never recover from such devastation, or can take up to 50 years to reestablish themselves. The rapid recovery in Banda is a testament to the diversity and health of coral in the area.

Marine Life in the Banda Islands MPA Network



The endangered Napoleon wrasse calls these islands home, with a large population found in the MPA network. These magnificent fish can grow over two meters long and live for up to 30 years. But their slow reproduction and status as a delicacy in parts of Asia has led their population to dwindle. The establishment of the Banda Islands MPA Network means their habitat is protected and the population can recover. Along with these bigger creatures, divers from across the world come to the Banda Islands to visit the distinctive environments that provide habitats for smaller marine animals too, such as frogfish, pygmy seahorses, and the vibrant mandarin fish. The area is also home to the unusual flashlight fish, which uses bioluminescence to spot prey at night, as well as *Acropora desalwii*, a type of table coral that was named after the local Banda Islands champion, historian, and diplomat, Des Alwi. For marine scientists and divers, the Banda Islands are a highly valuable location for research and discovery, and continue to amaze visitors with their masses of marine life.

Studying Marine Mammals in the Banda Sea



As one of the top ocean predators, cetaceans, play an important role in the health of marine ecosystems. CTC works with partners to study their migration patterns and build the capacity of local MPA stakeholders to conduct rapid ecological assessments in the Banda and Ceram Seas. The MPA network and surrounding areas have been identified as critical habitat for cetaceans, including blue whales, spinner dolphins, pilot whales and the mysterious Cuvier's beaked whale. Ensuring local stakeholders have the capacity to include incorporate cetacean conservation into MPA management plans is crucial to their protection, with over half of all cetacean species currently listed as either vulnerable, endangered, or critically endangered.

Sasi

Sasi is a traditional resource management practice, once common across eastern Indonesia. Now rarely practiced, the communities in Hatta Island are maintaining the tradition as part of their MPA management plan. The village leaders implement Sasi to control fishing practices, placing restrictions on catching certain species for designated time periods. Sasi covers popular seafood such as lobster (*Nephropidae*) and sea cucumbers (*Holothuroidea*), and shells such as Lola shells (*Trochus niloticus*) and Batu Laga shells (*Turbo marmoratus*). When Sasi is opened, local fishing communities may catch the protected species for up to two weeks, utilizing specific fishing equipment and observing size restrictions. The implementation is closely monitored by village elders and violations are subject to penalties imposed by the community. Sasi is then closed again for a designated number of years, to allow the marine animal populations time to regenerate.



Collaborating with Local and Global Partners

CTC continues to work with partners to develop and strengthen the Banda Islands MPA Network with the support of Margaret A Cargill Philanthropies, USAID, Apex Environmental and Packard Foundation. The network aims to be integrated with the Central Maluku District Spatial Plan, to both conserve marine ecosystems and sustain local livelihoods. The MPA Network is now a CTC learning site for managers and practitioners, government officials, community groups, scientists, students, and NGOs to gain hands-on experience in MPA management and marine conservation, and to enable knowledge sharing. Through these dedicated, shared efforts, the Banda Islands are setting an example for the future of marine conservation through collaboration at local, regional, and global scales.



Protecting Local Livelihoods

Majority of households in the Banda Islands rely on subsistence fishing, mainly engaging in pelagic yellowfin tuna fishing, along with some commercial fishing, tourism, and nutmeg farming. Growth in marine and historical tourism is providing alternative income opportunities for local communities, with many liveboard dive vessels now making stops in the Banda Islands, and local dive shops beginning to appear. Ensuring these developments happen sustainably, and to the benefit of local communities, is a priority for the MPA network managers. As zoning regulations to protect ecosystems change social dynamics in the islands, community support for conservation, incorporating local customs into management plans, and introducing alternative income streams, are crucial to the sustainability of the network.



Women Leader Program: Banda Aware Project

Banda Aware is a marine conservation and community empowerment program funded by the Australian Government and the US Department of the Interior through CTC and the CTI-CFF Women Leaders Forum. Banda Aware aims to support communities to use sustainable building materials and eliminate the need for coral and sand mining in the region. The program came about after a Women Leaders Forum event connected Dinah Yunitawati, a senior technical officer in marine spatial planning with the Ministry of Marine Affairs and Fisheries, and Sri Rahayu Mansur, a technical officer with the TWP Banda MPA management unit. These women leaders identified a key issue that is damaging marine life and degrading coastal ecosystems. They are now working with the community to implement sustainable and economically viable solutions, and build support for the protection of ecosystems.



Training a New Generation of Ocean Champions



Working with local community groups is vital to the management of MPAs. CTC conducts regular resource use monitoring, and community based marine and fisheries surveillance training for surveillance teams, called Pokmaswas, who support MPA management teams across the Banda Islands. The Pokmaswas teams patrol the waters around their home islands, ensuring MPA regulations are understood by local coastal communities, and monitoring the marine and coastal ecosystems. This community-led conservation strategy helps to ensure the sustainability of the MPA network, and has brought together the local government and communities to support and manage the network collaboratively.

About Us Coral Triangle Center (CTC)

CTC is a foundation based in Bali with a regional scope and global impact. CTC works closely with local communities, the private sector, governments, and partners to strengthen marine resource management in the Coral Triangle to protect coral reef ecosystems and ensure sustainable livelihoods and food security. CTC currently supports on-the-ground conservation in Bali, Maluku and North Maluku in Indonesia, and in Timor-Leste.

CTC is developing its Center for Marine Conservation in Sanur, Bali, as an integrated learning space for training programs, outreach activities, and artistic and cultural performances to influence millions of people by 2025 to care for the ocean and those who depend on it. CTC leads regional learning networks of women leaders, local government executives and marine protected area practitioners in Indonesia, Malaysia, the Philippines, Papua New Guinea, the Solomon Islands, and Timor-Leste. CTC is also a certified training center of the Government of Indonesia and an official partner of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security.

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