Protecting and Saving Marine Life

Coral Triangle Center: Leading the Fight against Destruction and Extinction

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A small but influential local NGO based in Indonesia is helping nations across the Indo-Pacific Ocean implement programs to promote the sustainable use and aquatic wonder of their coastlines.

In 1989, a young accomplished scuba diver was exploring a coral reef beneath the coastal waters of an island in Indonesia when she heard and saw something shocking, fishermen using dynamite and cyanide to kill fish or stun them into submission in order to increase their catch for the day. "You could literally hear the explosions and see the fish completely depleted," recalled Rili Djohani. "And then the cyanide; the fishermen went underwater and spread it across the reefs, stunning the fish but also killing the coral in the process."

Djohani had recently completed her degree in tropical marine ecology in the Netherlands, where her Indonesian parents had also studied and met, and where she grew up. She had learned to dive in the North Sea, a forbidding cold ocean that does not offer

Multiple tourism options exist for visitors to the Nusa Penida Marine Protected Area.

Seaweed farmer tends to his stock.

divers much to see, but is a great training ground for diving under difficult circumstances. She had since dived in the Mediterranean and all around the Caribbean by the time she began volunteering for the World Wide Fund for Nature shortly after graduating. She and scientists working for the Indonesian government were conducting underwater surveys of coral ecosystems, for the purpose of recommending a series of protected areas for marine life, when she first saw the destructive effects of fishing with explosives and poisons.

"The dynamite and cyanide were devastating and so widespread," she said, "and so I thought we have to do something about this."

Djohani has been true to her original thought. After six months as a volunteer, she went to work full time for the World Wide Fund for Nature and launched a career as a marine life advocate. After five years, she became leader of the Indonesian branch of another major international NGO, The Nature Conservancy. Today, she is executive director of the Coral Triangle Center, a local NGO headquartered on the Indonesian resort island of Bali; it is at the forefront of a major international movement to protect coral reefs and fish from destruction or extinction.

The NGO's name comes from the roughly triangular shape of a 5.7 million square kilometer area of the Indo-Pacific Ocean formed by the coastlines of six countries: Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands, and Timor Leste. The nations are scrambling to regulate the use of coastal waters and teach the 120 million people who depend on them for their livelihoods and the millions more who come as tourists how to protect ecosystems that are under siege from many threats besides those witnessed by Djohani years ago.

Since its founding in 2011, the Coral Triangle Center (CTC) has been a leader in a campaign marked by growing urgency over the sustainable use of marine resources. The Coral Triangle is both a global refuge and genetic pool for about 75% of the world's coral species. It also contains about 30% of the world's reefs; studies show that 85% of its reefs are threatened -- nearly half of them, seriously so.

The six nations recently chose eight organizations with expertise in marine protection as their official partners for developing and implementing marine initiatives across the region. Seven of the eight are major international agencies and NGOs with hundreds of staff members. The eighth is the only local partner, the Coral Triangle Center, which began with 5 employees in 2011; it had 20 when it was chosen. It has 27 today. Many credit the recognition to Djohani's leadership, the support of key core funders, and to the dedicated talent she recruited.

She said one of the reasons CTC has become an important player is simply the growing realization by governments of the six nations and those with stakes in their coastlines, including fishermen, tourism associations, and many others, that the time is now to commit to sustainability. A second is that by being a small and local organization focused only on marine conservation and protection, CTC can react quickly and expertly to issues that arise.

"It is out of the ordinary that here is this local group, small compared to the international groups and agencies involved, but here is this local group that can be nimble," Djohani said. Because of its size, she added, CTC "can help catalyze things, be present at strategic events, deliver specific products."

Djohani was taking time out from a recent conference in Jakarta to speak by telephone about the CTC. The conference, sponsored by the United States Agency for International Development, was an example of how CTC can catalyze, be present for strategic events, and deliver specific products.

In 2014, the six Coral Triangle nations launched a program proposed by Djohani and CTC. The idea behind it was that marine threats affect women and men in local communities differently because they have different skills and perspectives from each other, and that programs that do not take this into account can amplify existing social inequalities that marginalize women in decision-making. Representatives of the six nations agreed, and the Women Leaders Forum came to life.

CTC is the secretariat or administrative body for the forum, and Djohani was in Jakarta to attend a forum meeting on how to move forward on projects that so far have included peer exchanges across the region to equip women with skills that will help them lead marine protection efforts in their communities. With the help of two of CTC's international partners, several women at the Jakarta conference had previously traveled to the U. S. for leadership training and to devise a model for future initiatives and collaboration.

"There was no other group that could take this on as quickly as we could," Djohani said. "With a big organization you can't take it on quickly, because it is not in your work plan or your budget, and then it is a year before anything happens."

MARINE PROTECTED AREAS

Each year, many thousands of Bali tourists climb aboard fast ferries to visit three islands southeast of Bali. The islands are part of Bali, one of 33 provinces in Indonesia, a vast archipelago of 17,000 islands. They comprise a special zone, or Marine Protected Area (MPA), one of many in the Coral Triangle. Simply put, MPAs are areas of oceans where human activity is regulated to preserve ecosystems and protect shorelines.

The islands are popular destinations for divers, snorkelers, swimmers, or other vacationers looking for a more tranquil alternative to the hustle-bustle of Bali. The ocean area the islands occupy is known as the Nusa Penida MPA, named after the largest of the three. Using scientific research provided by CTC and others, as well as by participating in joint field research, local government officials formed the MPA in 2010. It was four more years before the national government endorsed it and the MPA was officially established with a zoning plan anchored in law and a management board.

CTC helped develop the MPA by building networks of those with stakes in the now-protected waters – the tourism industry, fishermen, seaweed farmers, and others – and by encouraging the support of national and regional marine authorities. CTC also helped shape the zoning plan with studies of life beneath the water and socio-economic surveys on the lives of the 48,000 indigenous villagers who depend on the islands for food and income.

The villagers were accustomed to using the ocean in the ways their forbears had for countless generations: fishing when they pleased; tending their seaweed farms; harvesting their salt ponds. As they began to see the effects of damaged coral, they started to come around to the idea that the MPA's regulations were investments in their futures because they provided them and the islands' visitors a way to share nature's assets equitably and sustainably.

"The initial perception was that an MPA was all about conservation," said Marthen Welly, manager of CTC's learning sites in Nusa Penida and elsewhere. "In time, they came to see the zoning system was not all about restrictions, but sharing resources."

The Nusa Penida MPA consists of four core zones and seven subzones defined by buoys just

offshore or four miles into the sea, depending on what activities are permitted. Fishing, seaweed farming, and water sports inside the zones are governed by rules that sometimes change – for example, according to the time of day. Another zone is for snorkelers; its currents are less swift than elsewhere. No activity is permitted in the smallest zone, in deference to Hindu traditions that regard seas near temples as sacred.

One study CTC helped produce showed that the reefs of the MPA's three islands are home to 300 coral species, nearly 600 fish species, and many types of plant life. It is a particularly rich ecosystem, with animals and plants interacting with one another in extraordinary ways. A prime example is the enormous mola mola. It lives in deep cold water and can grow to 2,000 pounds, but it cruises into the warmer water of the reefs where seagulls and small fish can pluck away the parasites it picks up in deep water. Nusa Penida is famous for another species, the giant manta ray, which occasionally flies out of the water and flops back down with a loud smack. It has been doing this for about 400,000 years.

The captain of a Mangrove Forest tour boat.

They are typically seen in another MPA zone, which is referred to as the "no-take" zone because no fishing is allowed at any time. Divers from the world over come to observe the mola mola and the manta ray, which dive operators and resorts particularly tout in their advertisements. In addition to the zoning regulations, CTC helped develop codes of conduct for the operators and their customers aimed at giving the species some quiet space: never approach from behind; never swim beneath; never use flash photography.

"It's not good when all the dive operators with their tourists rush to an area because a mola or a manta has been spotted and everyone wants to see it," said Hesti Widodo, CTC's training and learning manager. "If they or other fish feel disturbed, they're not coming back, and that's not good for tourists or dive operators. Fish will find a place where they feel more secure."

Spreading such messages across the Coral Triangle is one of CTC's core goals. It carries it out in workshops, field visits, and classrooms, using one or more of 24 courses it designed in tandem with marine scientists. One of its courses offers instruction on the use of geographical information system software to visualize an area and discover ecological relationships and patterns – in other words, how to draw the boundaries and zones of an MPA.

In 2012, building on its reputation, CTC began working with Indonesia's Ministry of Marine Affairs and Fisheries and local governments and communities across the Banda Islands to collect the same sort of marine surveys and socio-economic data it did for the Nusa Penida MPA. Over the next two years, as it helped the national ministry design a Banda Sea MPA, it also helped establish locally managed marine areas off the coasts of three of the islands: Rhun, Hatta, and Ay.

CTC, as it had in Nusa Penida, made sure indigenous people were part of the planning, implementing, and monitoring processes. In Indonesia, systems imposed in a top-down manner often

result in what Rili Djohani describes in Indonesian as a case of *spaper parksa* -- sounds good, but nothing actually happens.

In the cases of Hatta and Ay islands, officials and community leaders, relying on CTC research, invoked an ancestral tradition known as *sasi*, which requires that certain areas of the sea be declared off-limits to protect certain species. It was the first time in four decades the tradition had been invoked. It was a big breakthrough, because it established a precedent: local people returning to traditional customs relying on the latest marine science.

CTC and international partners are also helping another MPA in Timor Leste, a nation that shares the island of Timor with Indonesia. The MPA will be established around the island of Atauro, off the coast of Timor Leste, where CTC has conducted research since 2013. One major finding is that Atauro's waters are cooler than neighboring areas, and that means it can be a refuge for species threatened by rising ocean temperatures.

Rising ocean temperatures is one more reason for the sense of urgency among those trying to protect the Coral Triangle. Warmer water causes coral to lose the algae that live within them and provide nourishment. That causes coral to turn white, a condition known as coral bleaching, which can lead to coral death, which in turn damages ecosystems, the keys to a healthy planet.

"The stakes are so high," said Djohani.

ECOSYSTEMS AND ECOTOURISM

Marthen Welly, CTC's learning sites manager, used to work with Djohani at the Indonesian branch of The Nature Conservancy, as did the first five CTC staff members. He was an education and outreach specialist and is, like her, an accomplished scuba diver. Before TNC, he was national coordinator of a network of 127 Indonesian NGOs active in marine issues. His work in the field over the years required much interaction with his countrymen, and that imparted some insights.

"In Indonesia, it is often not so much about what you say, but how you approach people," he said. "You become friends first. They don't want to talk with you until you become friends. When you are a friend, you're part of their house, not outside their house."

Wyan Sukitra, ecotourism entrepreneur.

Welly began making friends with a man named Wayan Sukitra several years ago. They met on Lembongan Island, one of the other two islands in the Nusa Penida MPA. It is much smaller than Nusa Penida, but it has many more tourists. Divers, snorkelers, and swimmers are drawn to its sapphire blue waters and beaches, which are pearl-white and soft, unlike those along the limestone shores of Nusa Pineda. As a result, Lembongan has more housing options for tourists: luxury resorts, high-end bungalows, and homes for rent.

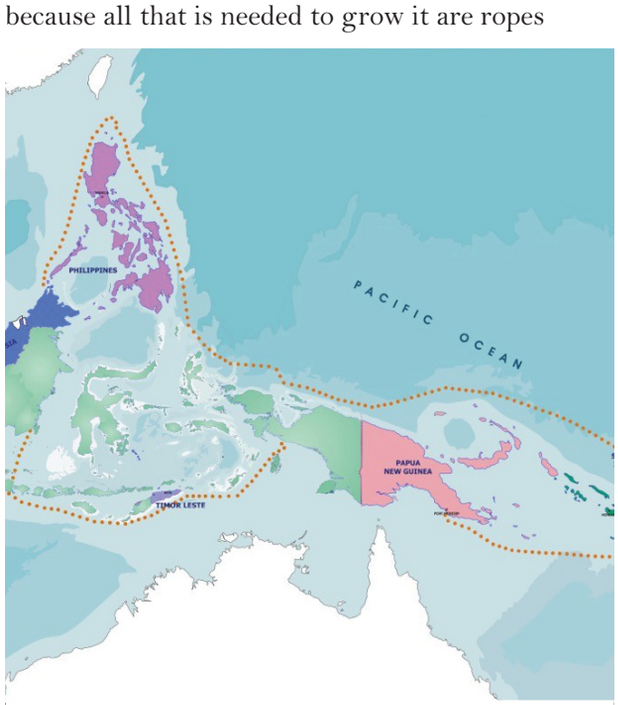
These days, they can also stay in five one-room cabins newly built along a beach in a tiny settlement a few miles east of the village of Jungut Batu, a major depot for the fast ferries to and from Bali. Behind the story of the cabins is one of ecosystems and ecotourism, or environmentally responsible travel by those who want to experience nature's wonders.

The settlement is home to 34 people who live on slightly elevated land wedged between an offshore seaweed farm and a mangrove forest. The farm and the forest are unique ecosystems that for years

were the villagers' main ways of making money. They harvested seaweed, a big source of food in Asian countries, and sold it to wholesalers who passed it along to distributors. They also chopped down mangrove trees, a big source of firewood and furniture making. In either case, the villagers were on the lowest end of the value chain for both products, and the markets for each were volatile. Money in the village is tight, but it was even tighter several years ago, when Welly and Sukitra met.

"There was a little bit of a difference in the community about how to use their seaweed and mangrove resources," Welly said during a recent return trip to the village, as Sukitra greeted him near the beach and extended a friendly hand. Some villagers wanted to cut down more mangrove trees; some wanted to expand the seaweed farm, but then Welly and other CTC experts, as part of their socio-economic surveying for the Nusa Penida MPA, spoke with villagers about seaweed, mangrove, and two unfamiliar concepts: ecosystems and sustainability.

Seaweed is a popular food in Asia because it is nutritious and easy to grow. It is packed with protein and vitamins; it is popular with villagers because all that is needed to grow it are ropes suspended in shallow saltwater and sprinkled with seaweed seeds. It can be harvested every 35 days for up to 10 months a year. Like coral reefs, seaweed farms are home to many species.



Dotted line denotes boundaries of the Coral Triangle.

Mangrove forests sprout in tidal basins where oceans and land meet. They are a natural barrier for filtering wastes from land that can harm fish and coral. They are home to many fish species that spend their juvenile years feeding on the nutrients of mangrove leaves and roots. The value of the beautiful, reddish wood of a mangrove tree is a main reason why 50% of them worldwide have been destroyed over the last half-century.

"When CTC started talking about this, we didn't know about the function of the mangrove," Sukitra recalled, just before offering to show Welly the inside of one of the newly built cabins.

Enlightened by CTC, villagers began thinking of their mangrove forest as a resource requiring protection, or eventually it would not exist. They also picked up another CTC cue. Mangrove money could be made in another way, tourism. A mangrove forest is one of nature's wonders. The thick, spidery roots of the trees create a maze of narrow channels of quiet water beneath a green canopy. "One thing they said was that when the mangrove do well, the tourists will come," Sukitra said.

Before long, the villagers launched a tourism startup, the Mangrove Tour Group. For a small fee, tourists could climb aboard a wooden boat captained by a villager standing at the bow and using a long oar to gently prod his small vessel through the tributaries of a mangrove forest now safe from destruction.

The tours are limited to a 12-acre area; 556 other acres of now protected mangrove forest comprise one more of the Nusa Penida MPA zones.

"We now make money from seaweed and mangrove," said Sukitra, standing beside an outdoor wooden bar built for tourists who come for drinks by the sea. The bar is next to the first of the five newly completed cabins, where today some European tourists perch on the porch, watching some friends play on the beach. In the distance, a seaweed farmer in a

wide straw hat is standing in a canoe, pushing a long pole into the water, harvesting his stock.

"We are very happy now," Sukitra added.

That claim seems to be supported by taking a walk along some paths leading to the dock for the mangrove tour and casual chats with other villagers as they weaved ropes for the seaweed farms and played games with their lively children.

QUADRUPLE BOTTOM LINE

The sea, once it casts its spell, holds one in its net of wonder forever.

—Jacques Cousteau

Rili Djohani caught the sea spell early. As a child and junior ranger of the World Wild Fund for Nature, she used its education kits to give presentations on endangered species for her classmates. As a teenager, the aquatic wonder of explorer Jacques Cousteau's documentaries inspired her to join her university's dive club and develop a high level of underwater expertise.

"The sheer colors of the reefs and the fish" in Cousteau's films were "mesmerizing," she said.

The diving and her affection for Cousteau's films led her to study tropical marine ecology. The Netherlands, where she grew up, is hardly tropical, but the Dutch have an understandable interest in oceans and coastline management. The boundary between land and sea is constantly changing; half of the land is just a meter above sea level. The interplay between human uses and natural forces is different from tropical areas such as Indonesia, but it is just as vital to understand.

CTC Executive Director Rili Djohani
(Photo Courtesy of CTC)

Djohani was not wasting her time pursuing a degree in tropical marine ecology, because she shared one of her parents' dreams – to return to Indonesia someday. Separately, her parents left Indonesia after it declared independence from the Netherlands in 1945. They met at a gathering of an Indonesian student club that toured Europe to showcase Indonesian song, dance, and culture. The dream was to get their university degrees and go back to Indonesia and help develop it as a nation. The dream was put on hold awhile after they married and started raising a family.

"I wanted to latch onto their dream," Djohani said. "I wanted go back to my roots and help build an organization that could preserve the beautiful ecosystems of Indonesia."

Six months after exploring and mapping reefs across Indonesia as a volunteer for the World Wide Fund for Nature, Djohani joined its Indonesian branch and began latching on to her dream. Over four years, she developed the NGO's marine conservation portfolio, the sites where it helped governments and local communities protect their waters. All of the sites she explored and mapped as a volunteer eventually became MPAs.

In 1995, she joined the Indonesian branch of The Nature Conservancy to help establish its coastal and marine programs. It was the first of many jobs at TNC, which included, beginning in 2000, helping set up a TNC ecosystem training center and MPA support network in Bali that was the precursor to today's Coral Triangle Center, and which was then also known by the same name. From 2004 to 2008 she was TNC's country director, responsible for forest and coastal management.

As a major international organization, TNC was involved in several environmental issues such as climate change and fresh water, in addition to

forest management and coral reefs. Its involvement in multiple issues was what prompted a series of discussions that led to the creation of a small, local NGO, today's CTC, established under Indonesian law and focused only on coral reefs,

The legal part of it was as important as the narrow focus. International NGOs in Indonesia cannot raise money inside the country. The laws that govern NGOs essentially amount to this: If an international organization wants to give money to Indonesia, fine, but it cannot raise money in Indonesia because it puts the organization into competition with domestic groups.

Djohani, then a top TNC executive, was among those who began taking what TNC created in 2000 down a separate path. Because of the laws, money also became a big part of the discussions. "Sponsors in Asia like to give to local institutions, but it also was partially the idea that you can make yourself sufficient as a local organization by generating money," she said.

"Think of it this way: as a local, we can sell T-shirts or some product from CTC," Djohani added. "If you are TNC, you can't. If you can't raise money, you cannot build up local capacity."

Part of TNC's mission is to enhance local capacity. So the idea for a new NGO founded under Indonesia law and focused only on coral won support from TNC's leaders. With their approval, Djohani began building the foundation for a new CTC.

A key and early supporter was George Tahija, chief executive of the Indonesian holding company Austindo. Pivotally, he was a member of the advisory board for the Indonesian branch of TNC. He, like many others, believed it was sometimes difficult for large organizations to transfer knowledge to local communities, partly because they can quickly tilt their resources toward other environmental issues besides coral, depending on their perceived importance at the time, or funding or leadership.

In 2010, the new CTC was born, with Tahija as one of three founding directors. The other two were Hasyim Djalal, who had served Indonesia in several high-level government jobs and diplomatic missions, and Made Subadia, a top Indonesian conservation official. They and Djohani recruited a board of trustees from corporate, governmental, academic, and media worlds. Djohani also recruited an advisory board that included top international scientists and representatives of each of the Coral Triangle nations.

Two groups provided CTC's core funding for organizational and administrative purposes. Djohani said that the core funding "cannot go on in perpetuity," so CTC is planning to build a US$8 million learning complex and conference center in Bali on land donated by Tahija that it projects will draw enough tourists to generate US$1 million a year in entry fees and other revenue sources – including, no doubt, T-shirts. The projection is based on 100,00 visitors a year, or about 300 a day. Djohani said the proposal is built on a solid business case that counts on support from all those involved in Bali tourism. The Indonesian government has already announced a plan to double tourism, from 10 to 20 million visitors, by 2020.

Siti Syahwali, CTC's operations manager, is in charge of planning and fundraising for the project. If it is successful, it will add to CTC's growing reputation for innovation and expertise in marine conservation.

"I know it's a buzzword, but we want to be world class," she said.

At the same time Djohani was laying the foundation for CTC, she and others in Indonesia and across the Coral Triangle, including representatives of TNC, were working on another initiative. The heart of the initiative was a formal pact by the six Coral Triangle nations to collaborate on a regional plan of action. The agreement, known as the Coral Triangle Initiative (CTI), was launched in 2009.

At about the same time the new CTC was launched a year later, the six nations started rolling out collaborations, including one that resulted in the Women Leaders Forum that drew Djohani to visit Jakarta, noted earlier in this case study. CTC has played key roles in other CTI programs,

including one to educate business people that it is in their economic interest to promote ecologically sound tourism practices.

Djohani speaks in terms business people can appreciate when she describes the importance of "no-take" fishing zones, such as the one in the Nusa Penida MPA where mola mola and manta rays are sometimes seen. "If countries set aside 'no-take' zones, then they can preserve and grow their stock of fish, like interest on capital," she said. "You can't eat up your capital. If you do, you don't earn interest. No interest, no fish."

Her comment illustrates two sides, financial and ecological, of CTC's framework for the design, implementation, and monitoring of an MPA. The other two are social, as in CTC's studies of indigenous life, and political, as in how it cultivates relationships with mayors, governors, and ministers – a challenge with any one country, let alone six with their own traditions and cultures.

Djohani thinks of the four parameters as the "quadruple bottom line" for measuring the effectiveness, legitimacy, accountability, and sustainability of an MPA. The words appear in the subtitle of the thesis she is writing for her doctorate in environmental policy and law, back at her alma mater in the Netherlands, once her home as a junior ranger.

GROWING PAINS

On the day Marthen Welly returned to Lembongan Island to say hello to Wayan Sukitra, there was talk of an incident nearby two months earlier. A catamaran had pulled into a seaweed zone and dropped its anchor into a reef. The incident was reported to the MPA management board, comprised of local officials and leaders, who rely mainly on volunteers to respond to incidents and periodically patrol the zones. But a local official said patrols do not occur very often and that the availability of volunteers changes frequently. In addition, the marine expertise of the patrol's members can be limited.

Later on the day of his visit with Sukitra, Welly visited another friend on Lembongan Island, a man known as Saku, who leads an association of local dive operators who have undergone CTC training and support the MPA zoning. Saku sat on a picnic table by the beach as divers who had gone out earlier in the day, possibly in response to a Facebook post that a mola mola had been spotted, got out of their dive boat and walked up the beach.

As the divers passed by in their wetsuits, lugging oxygen tanks, flippers, and facemasks, Saku said, "We ask the divers to come to the same feeling we have for this island, but too many of them don't understand about the coral and fish."

Later on, another villager came along to sit at the picnic table. His name was Inyoman Gede Mulinata, and he joined a group of fishermen with similar aims as the dive association in 2009, when, he said, "the coral were not in good shape because so many fishermen break coral." Mulinata said he and other fishermen who have undergone CTC training now understand a coral is an animal, not a rock on a reef, and it is vital for their fishing that the animals stay alive. He used to fish all day or anytime he pleased, but now he leaves at 5 a.m. to fish for two-and-a-half hours, and then relinquishes the ocean to tourists at 8:30 a.m. He goes back out at 4:30, after the tourists leave.

It was now lunchtime and Mulinata marveled at the size of a large tour boat a couple hundred feet offshore. A couple hundred swimmers took turns jumping loudly off its platforms. Mulinata did not know exactly how much Bali tourism has increased – up 1.4 million in five years, according to government data – but he knew it was a lot and some of the behavior he saw bothers him. "The boat captain might say, 'Don't touch the coral,' but a lot of people don't speak English. They don't care about this environment. Many can't swim, so all they do is jump in the water and flap their arms and make noise."

The catamaran incident and the MPA management team's spotty patrol efforts, Suka's concern that divers feel the same respect for the islands as he does, and Mulinata's frustration with tourist behavior are all signs of the MPA's growing pains

and also understandable problems that can be addressed, if not ever completely solved.

The catamaran offense was almost certainly due to ignorance; some sailors simply do not know the zone outlines well enough. The unfamiliarity is unsurprising. Even though the Nusa Penida MPA was declared in 2010, its management board and zones were not established under law until 2014. It is going to take a while to spread the word about the MPA. CTC has plans in the pipeline to increase awareness, particularly of tourists, who are the most unaware.

It hopes to soon unveil an app for divers, surfers, and other visitors to download information about the MPA's implementation and regulations before they arrive. The app also will enable visitors to make their own reports about the status of the reefs, which CTC will analyze and pass on to the MPA management board.

Another plan involves a target – that at least half the tourists who arrive in the MPA are aware that it is one. About 200,000 came in 2010, according to a CTC survey. Though precise figures are hard to come by, because Bali officials count only those visitors arriving at the airport in Bali, the number now probably far exceeds 200,000. Bali tourism has increased every year since 2010 and was up 14% in 2014 alone.

CTC will try to achieve its target by establishing agreements with several of the major ferry and tour boat companies to post signs on ships and distribute briefing materials to tourists before they arrive. It also plans to establish links with Bali's hotels and its nine tourism associations, which have been slow to inform visitors about the MPA and its zones. A tourism guidebook available in various MPA locations describes what it is and includes the codes of conduct for visitors. However, a tour for this case study of several Bali tourism websites, including those specifically targeting the three islands, showed that none noted that the islands comprised an MPA with zoning rules and high expectations for tourist behavior.

CTC recently started to address that issue by appointing a new trustee to its board, Ngurah Wijaya, a twice-elected chairman of the Bali Tourism Board, with a strong interest in protecting Bali's assets. He has lived there for six decades and fears for its future, he recently told the *Jakarta Post*, if its leaders do not emphasize sustainable tourism.

BLACK MAGIC ISLAND

The day after his visit to Lembongan Island, Welly was up early and talking on his mobile. He was sitting by himself at a long horizontal table in an open-air pavilion of the Ring Semeton Inn on the island of Nusa Penida. It is a small modest place for tourists who want to get way off the beaten track. One by one, other members of a group Welly led to Nusa Penida the night before left their cabins and joined him for breakfast. They waited until he was finished talking on the phone, because the call seemed important.

The call was from a friend, the mayor of the local Klungkung district, which includes the MPA. It is the first layer of official control over what happens in the area. Its decisions can be appealed or overturned at multiple steps of a ladder that ends at the top of Indonesia's government. The mayor, known as the *bupati*, needed Welly's help: A meeting was being held that night in a village where non-Indonesian investors, working through an Indonesian intermediary, want to build a large resort.

It was the kind of meeting Welly and other CTC experts have attended for years. As was the case with Wyan Sukitra and others, they introduce them to new ideas: the importance of ecosystems and sustainability of resources.

At first glance, Nusa Penida seems ripe for development. It has ample land and beachfront, but on further inspection its land is rocky and its beaches are narrow because of large hills that hug the sea. It also has little infrastructure, with few roads and scarce sources of water and electricity. The limestone soil makes farming hard; a lot of food is shipped in from Bali.

For years, rumors of large new resorts have swirled around the island, but nothing but a few small inns were ever built. But the call from the

bupati was not based on rumor. Everyone in Semaya, a remote village not far from where the resort would be built, would gather to discuss the pros and cons of the proposed project. It would likely be a stormy meeting, because a jetty would have to be built in a protected seaweed zone to allow boats to deposit the resort's customers.

The *bupati*, Welly said, wanted him to speak at the meeting and explain again to villagers what the MPA is and what its protected zones are. The other speakers would include the *bupati*, the head of the local Indonesian marine affairs office, a village official, and the Indonesian representing the overseas investors.

"We need to be careful, we have to be neutral," Welly said. He would no doubt oppose violation of the zone, which he helped craft, but he couldn't say that, not that night. "We can't impose our view. The villagers should set the agenda."

It was a long slow ride to Semaya, along a tattered narrow blacktop. The ride ended near Pura Batu Kuning, a Hindu temple on a hill beside the sea. It was a beautiful ornamental pavilion, with marble columns and a bamboo ceiling; guarding one of the entryways was a large menacing marble statue of *Ogoh-ogoh*, a mythical being whose job is to keep bad things out of houses.

Nusa Penida has a rich mythological history. At one time, the story goes, it was home to demons and dark spirits. Penida (priests) had to come and chase them away from the nusa, or homeland, of the good spirits. But they were not completely successful; the worst dark spirit, I Macaling, survived. The metaphysical battle between light and dark led to what some call Nusa Penida today: black magic island.

The mythology is woven into today's reality. Spiritually, the indigenous people of Nusa Penida see life as a struggle between good and evil, and that both are equally necessary and present. When it came time to ask questions and comment on the resort proposal, this spiritual struggle became apparent.

Vans carrying the night's speakers pulled up beside the temple. A group of villagers leaned against a three-foot high wall of stone opposite the temple. Another gathered near the back of it, beside another wall of stone. A villager told a visitor that the groups represented a for-or-against split over the resort. All of the villagers at the meeting would be men; women were not permitted to attend. The men wore brown or red headwear used by Hindu males for formal meetings.

Before the meeting began, the scheduled speakers, their aides, and a few others walked down the hill supporting the temple to a newly carved but unpaved road that led to a cove where the jetty would have to be built. The men stopped and peered out at the sea. They were speaking in the local dialect, but yes, they seemed to agree, that was a protected seaweed farm just offshore. It was also clear that huge chunks of the hill and many trees would have to go in order to bring in water and electricity and to accommodate a resort even just a bit bigger than the cozy Ring Semeton Inn.

The men walked back up the road and into the temple and sat cross-legged on the floor at the front. The *bupati* asked Welly to sit directly to his right. The man representing the investors sat to his left. The *bupati* opened by saying district officials had received formal requests to build the resort and had to act on them one way or another, but in the meantime more negotiations were needed to improve the investors' proposal. Welly spoke next and described the MPA, its history, and its zones. He said that CTC cannot tell officials or villagers what to do.

As Welly spoke in the local dialect, one of his colleagues standing just outside the temple explained the strategy. "Our presence is not to be against, but to try and make sure everyone understands the issues," said Wira Sanjaya, the CTC manager for Nusa Penida, and another TNC expert who left when CTC was reborn. "A western NGO, if it came in here and said, 'You have no choice, you have to be against this,' they would likely be asked to leave the temple."

The *bupati* can recommend waivers of zoning rules if he concludes most villagers agree with his decision. Since his position is an elected one,

consensus is helpful. But consensus seemed like it was going to be hard to achieve once more details of the proposed resort began tumbling out. It would have 600 rooms along the beach or stacked in terraces along two sides of a hill, in addition to the jetty in the seaweed farm. It would require a lot of infrastructure.

During the meeting, the Indonesian intermediary promised that the investors would do whatever they can to address the villagers' concerns about the seaweed farm or damage to coral reefs or encroachment upon sacred areas. The man was speaking for Malaysian and New Zealand investors who are only entitled to lease land, rather than own it, because they were not Indonesian.

After the speakers were finished, villagers started sharing their thoughts. One spoke contemptuously of Kuta, a formerly serene fishing village that was now a crowded and a bit shabby tourism center on Bali. Yes, but the resort will bring jobs, one replied; but, another said, villagers are incapable of hotel employment.

"What skill do we have for hotel work?" he asked. "Our life is for nature. Our skill is for fishing seaweed."

One man said it was fine for seaweed farmers to want to protect their farms, but what about those who have little money and cannot grow enough food? They need those jobs. Yes, but… how come the resort did not hire any local people when it began building the road down to the cove by the seaweed farm?

It went on for another hour, with the same sort of back-and-forth, and then villagers began to exit, some by way of the menacing statue of *Ogoh-ogoh*, the mythical being who guards houses from bad things.

The debate over the light and dark of the resort proposal would go on awhile. Six months after the temple meeting in the spring of 2015, no consensus was near on whether to recommend the *bupati* grant a waiver of zoning rules.

Rili Djohani knows what CTC would do if a waiver were granted: issue an emergency alert to all the groups with stakes in the MPA. The zoning is part of local law, and any exception would mean a lengthy legal battle all the way to the top of the ladder and in venues of public opinion. "Unfortunately, if a lot of money is involved and if this group could put in a lot of money to different parties, we don't know what would happen, but so far it hasn't," she said.

LESSONS AND CHALLENGES

One lesson about CTC as an organization is that being small can make you nimbler. Creating an organization rooted in Indonesian law and focused on coral was good for the Nusa Penida MPA, because it enabled CTC to develop local capacity. CTC's ability to adapt and react to change and new science appears to be turning out well in the Banda Islands and Timor Leste, and that augurs well for other countries in the Coral Triangle where CTC, working with local partners, is likely to get involved in marine learning and MPA design, implementation, and monitoring.

The value of nurturing partnerships is another lesson that is obvious and has been learned by many organizations locally, regionally, and globally, and with governments at all levels. CTC's nurturing resulted in its selection as the only local NGO

Villagers and marine expert beside protected seashore near site of proposed resort.

of the eight international agencies and groups chosen as development partners for the Coral Triangle Initiative programs. That is an impressive accomplishment for a new and small organization.

Part of its success was certainly the result of Djohani's long service on behalf of the reefs, which produced many professional connections, but in the field it was also due to an approach that worked: studying the socio-economics of indigenous people and introducing them to marine science to help understand and value their resources.

Marthen Welly was speaking of Indonesians when he said it is important to make friends first, before you ask people to do things. But the dictum seems to have also applied in other countries and with other peoples. The initial approach is cultural, based on the sound idea that understanding local customs helps win partners who trust you. The Klungkung district *bupati's* invitation to Welly to speak at the Semaya village meeting is evidence of a partner who trusts.

Of course, a major lesson of the CTC story is also a major challenge. The expertise that produced its learning programs in the Nusa Penida MPA and elsewhere has led to positive change. There is the story of Wayan Sukitra, who learned about ecosystems and ecotourism, and saved a lot of mangrove trees. And then there is the story of Inyoman Gede Mulinata, the fisherman who learned why it is important to keep coral alive and share resources.

But there also is the catamaran that dropped anchor on coral beneath a seaweed farm. And there are all the tourists who at this point pour into the Nusa Penida MPA without much or, in many cases, with *no* information about what it is and why responsible tourism is important there. CTC has developed plans to educate tourists and the tourism industry, but the Indonesian government's plans to try to double tourism by 2020, from the 10 million who visited in 2014, are daunting.

Tourists to Indonesia almost always head to the coastlines. If Bali gets twice as many of these visitors as it did in 2014, 8 million people will visit in 2020, and the Nusa Penida MPA will no doubt receive more than the 200,000 it saw in 2010. That is going to be a particularly big challenge that CTC responded to in the summer of 2015 when it named a new trustee to its board, the twice-elected chairman of the Bali tourism board. His job is to get more hotels and others in the tourism industry committed to sustainable tourism, and they are going to have to cooperate.

Another challenge is pulling off a big idea, the learning complex and conference center that CTC wants to build to generate income it will need someday to replace its core funding. CTC has to raise about US$8 million to finance it, and it might be able to reach that goal because of the reputation and network CTC has built since 2011 and because of the influence of its founders and trustees. Rili Djohani thinks it can raise the money, and she has proven she can get things done.

Finally, in the Nusa Penida MPA and eventually in others, CTC has to find ways to negotiate paths that will be tricky. How does it support and not alienate officials who for various reasons cannot do what they are supposed to do? Such as, for example, manage an MPA patrol team in an effective way. Or immediately take a leadership role and say no to a resort proposal that violates zoning laws.

CTC cannot enforce zoning law. It has one representative, Marthen Welly, on the 15-person Nusa Penida MPA management board. But it can and will continue to fight for what it has fought hard to achieve. The government's large tourism ambitions will almost certainly stir many conservation-versus-development conflicts, such as the one at a temple in a remote village on the island of Nusa Penida.

Rili Djohani knows there will be others. But CTC is ready.

"It is pivotal in Indonesia to grow community engagement," she said.

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QUANTITATIVE INDICATORS

Financial

Planned budget or income versus actual expenditure for the fiscal year	2014 Income: US$ 2,186,000 2014 Expenditure: US$ 2,087,000 2015 Income; US$ 2,095,000 2015 Expenditure to date (June 2015): US$ 817,000
Income composition by source: individuals, corporations, events, trusts, other (please specify)	Private grants: 66% Public grants: 20% Corporation: 1% Contract services: 14%
Income composition: domestic versus international	Domestic: 2% International: 98%

Personnel

Staff retention rate	24 of 25 (96%)
Turnover rate	4%
What is the board composition?	Occupation • Corporate: 1 • Media, PR: 1 • Maritime & External Affairs: 2 • Non-profit & Conservation: 3 • Academia (marine, fisheries): 2 • Financial & Accounting: 1 • Legal: 1 Gender: female, 25; male, 75%
How many meetings does the board hold per year?	4
How many staff members are there?	25
How many staff members have attended some non-profit or management training course?	22 of 25 (88%)

Quantitative Indicators Continued

Organizational

Do you publish an annual report?	Yes
How many sites/locations do you currently operate in?	Two domestic sites (Nusa Penida and Banda Islands) and six countries (Indonesia, Timor Leste, Malaysia, Philippines, Papua New Guinea and Solomon Islands)
Do you measure results?	Yes. By targets for multiple strategic objectives in four categories: financial, 7; external programs, 13; internal processes, 15; learning and growth, 7
What types of outreach?	Social media, TV news (for events), radio, print, community bulletin board, events at schools, malls, public spaces and functions
Do you regularly meet with government representatives? If yes, on a scale of 1-3 how close is the relationship with government? 1 = not close; 2 = somewhat close; close = 3	Yes. Closeness of relationship = 3 Two FTEs as dedicated government liaisons at the Indonesian Ministry of Marine Affairs and Fisheries; also work closely with governments of other Coral Triangle countries (Timor Leste, Malaysia, Philippines, Papua New Guinea and Solomon Islands)