



Fatal adaptation: Cyanide fishing in the Kei Islands, Southeast Maluku

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Introduction

Live Reef Fish Information Bulletin No. 4 featured an article by Dedi Adhuri entitled, "Who can challenge them? Lessons learned from attempting to curb cyanide fishing in Maluku, Indonesia". Mr Adhuri completed his research in late 1996; I arrived in the Kei Islands in October 1997 to conduct research on customary coastal resource management practice and institutions.

One of the main reasons that Mr Adhuri and I selected the Kei Islands as our research site was Kei's reputation for robust and highly articulated customary (*adat*) law. Scholars of common property resource management (CPR) and indigenous knowledge systems (IKS) consider the islands of Maluku to be an area particularly rich in customary communal resource management practice and institutions, and within Maluku, Kei stands out as a place where traditional systems and structures have largely withstood the corrosive sociopolitical and market forces that have weakened or peripheralised them in other areas. Perhaps the best known manifestation of Malukan *adat* law is *sasi laut*. *Sasi* is the spatial and temporal prohibitions on harvesting crops, cutting wood, or gathering other products from local gardens, forest, tidal zone, or village-controlled sea, as well as more generalised proscriptions against slander, arguing, fighting, harassing or raping women, and other untoward behaviour. *Laut* means sea – *sasi laut* is rules and restrictions pertaining to marine territories and resources. In addition to its ritual significance of mediating relations between human communities, the natural environment, and spirits of ancestors, *sasi* serves the very practical functions of making sure that nobody takes what does not belong to them, that fruits ripen before picking, that shellfish can reproduce and grow, that migratory or spawning fish are allowed to accumulate and reproduce, and that sufficient food or funds can be gathered for important communal events or activities. In Kei, *sasi* is called *hawear*, and is regulated by several well-known tenets of Kei *adat* law.

Sasi/hawear changes over time in response to changing markets, technologies, politics, and religion; however, the practice is suffused with a mystique of great antiquity and supernatural force, blending arcane ceremony with modern economy and governance. *Sasi* is generally considered to be in decline in Maluku, although it is experiencing a revival in some places, driven partly by non-governmental organisations (NGOs) and academic interests in customary resource management institutions, the politics of ethnic identity, and attempts to strengthen local communities' traditional territorial claims and resource entitlements (Novaczek et al. 2001; Thorburn 2000a; Zerner 1994).

Dedi Adhuri's article described an incident in a village he called "DL", located on a small island just north of the Southeast Maluku district capital, Tual, in the Kei Islands. Dullah Laut is one of the villages I studied during 12 months in Kei. Many things that Mr Adhuri described still pertained when I arrived, while others had changed significantly. Following is a brief review of Mr Adhuri's article, followed by a description of the changes I encountered.

The "first wave"

Mr Adhuri's article begins with a chronological description of a typical case of local conflict that had arisen due to the arrival of cyanide fishers in Kei. His story is characteristic of experiences in Kei and elsewhere with "first wave" cyanide fishing firms. When I arrived, the live fish industry in the Kei Islands had entered its second phase.

According to Pet-Soede and Erdmann (1998) and others, the live fish trade follows a typical progression. Phase one is the invasion of large cyanide catcher boats, usually owned by well-capitalised and connected firms. These operations take large amounts of fish, causing major damage to local reef ecosystems. Fishing with poisons, and causing harm to the environment are against the law in Indonesia.² Bribes and "connections" are commonplace, and local law enforcement agencies are

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2. National laws and regulations that forbid damaging coral reefs or using poisonous substances include Law Number 4 of Law Number 4/1982 Basic Provisions for the Management of the Living Environment (subsequently replaced by Law Number 23 of 1997), Law Number 9 of 1985 on Fisheries, and the Decree of the Director General of Fisheries Number IK/220/D4.744/91K on Capturing Fish with Forbidden Substances/Equipment.

largely powerless to prosecute violators (or, are actively involved in the illegal activities themselves). If local community members object, they can be subjected to threats and intimidation, given cash payments, or some combination of the two. The latter is more or less in keeping with local *adat* law, where a fine (called *bukman* in the Kei language) is paid to redress damage and appease the offended party.³

As fish stocks begin to dwindle, and the companies begin to experience declining returns on capital, they move on to new untapped areas, in the manner of pioneer slash-and-burn agriculturists in newly opened tropical forest areas. As they leave an area, small- and medium-scale operators take over, employing a combination of traps, hook-and-line, and cyanide to catch the remaining fish. These second wave operations usually work in conjunction with local fishers and communities, rather than competing with them. Fish are collected in holding pens, then sold to transport ships that call regularly. These small- to medium-scale enterprises have lower overhead and operating costs, and are happy to carry on with lower volumes and profits than the big first wave companies. By going after smaller fish, and in areas with lower concentrations of fish, these second phase cyanide fishers continue to spread the devastation initiated by the first wave of cyanide fishing.

Adhuri's story begins in August 1996, when two fishermen from Dullah Laut apprehended two cyanide fishing craft and four fishermen. This was easily done, because each of the boats had a diver underwater using a hookah compressor. They could not flee until the divers were safely on board. On each boat, the villagers discovered cyanide tablets, squirt bottles, needles to puncture distended air bladders, and a few live fish in holding tanks. The men worked for a notorious cyanide fishing company called PT Mina Sinega, a joint venture between a Sulawesi-based private fishing firm and the Indonesian Army Co-operative Centre, PUSKOPAD.

When informed of the event, the village head was livid, and struck the offenders. He then secured the confiscated boats and equipment, and delivered the fishermen to the district police headquarters (*Polres*) in Tual. His intention was to quickly consign the case to local law enforcement before the military could intervene and settle the matter with a hasty cash payment. Dullah Laut already

had a history of confrontation with cyanide fishing boats, which they felt were encroaching on the village's marine territory. According to Kei custom, every village possesses a marine *petuanan* with locally acknowledged boundaries and rules. Outsiders must request permission to fish commercially in *petuanan* waters, a process that involves deliberation with village elders, ceremonial exchanges, and, if agreed, some form of rent payment. Although such customary marine territories are not recognised by Indonesian fisheries law, the local fisheries service (*Dinas*) in Southeast Maluku, as in many other parts of the country, encourages outside fishing companies to comply with local custom and make separate arrangements with village leaders. Mina Sinega and other cyanide fishing operators had made no such concessions. There had been numerous clashes between local fishermen and these encroachers over the past two years, to the point that Mina Sinega often posted armed soldiers on their boats. A number of cash settlements to secure the release of commandeered boats and crews had failed to persuade Mina Sinega and other cyanide fishers to stay clear of Dullah Laut's marine *petuanan*. The islands north of the Tual harbor featured some of the largest and richest coral reefs in the Kei Islands (Sutarna 1991).

The Police Intelligence Unit Commander agreed to hold the men for questioning, but explained that such cases were very difficult to prosecute, due to technicalities regarding chain of custody and processing of evidence, plus a lack of clear proof that the fishermen's actions had directly damaged the environment.⁴ The commander suggested that the matter would best be solved by means of customary *adat* law, which would place the village head in charge. His argument was based on the premise that according to Indonesia's 1979 Village Government Law, the village head is the highest authority within the autonomous village administration. It was an odd case of "political hot potato," with the district police and village head each trying to get the other to handle the case, and thus avoid having to deal with higher level government and military officials.

Still determined to prosecute the case to the fullest extent of the law, the Village Head went next to the head of the district government (*Bupati*) in Tual. The *Bupati* explained quite frankly that, since this case involved an army officer, there was nothing he could do, since the military is not under his author-

3. A typical *bukman* payment in Kei consists of a small amount of tobacco and betel nut, or, for more serious offenses, a bronze cannon or gong. Lately, *bukman* more commonly take the form of cash payments.

4. For a discussion of corruption and enforcement of laws prohibiting destructive fishing practices in Indonesia, see Erdmann 2001.

ity. The head of the district fisheries service (*Dinas*) offered the same excuse.⁵

Frustrated by the lack of support from government officials, the village head eventually sought to handle the case according to *adat* law. He presided over a special meeting of the village *adat* council attended by elders of all original kin groups in the village, the Tual sub-district army post commander (*Dandim*), and the fishing company representative. One member of the council suggested a fine of 10 million rupiah (about USD 4400 at that time), reasoning that this was the amount prescribed by national fisheries law. A few individuals, perhaps attempting to curry favour with the fishing company and military, argued for a lower fine, on the grounds the village head had beaten the fishermen.⁶ The council eventually settled on a payment of six million rupiah. The company representative said he would need to discuss this with his superiors in Ujung Pandang⁷, and would return soon with a response.

The company agreed to pay the six million rupiah fine. When it came time to pay, however, the military commander first took one million rupiah to distribute among his associates as a fee for brokering the agreement. The village head kept another two million, reasoning that he was entitled to a *bukman* for his role in instituting the customary court proceedings. When the *adat* council reconvened, they were told that the company had agreed to pay only three million rupiah, which was then divided into two, half each for the village church and mosque. In accordance with local custom, the company representative then gave an additional 10,000 rupiah “table cloth money” to each of the council members. The case was closed, and the village head returned the boats and equipment to the company representative.⁸

The “second wave”

Not long after the events described above, one by one the large cyanide fishing companies began leaving the Kei Islands. PT Mina Sinega was the first to disappear, falling into bankruptcy through a combination of mismanagement and larceny. In

January 1997, the last major company, PT Surya Sulawesi, a joint venture between a retired Hong Kong police inspector and a Ujung Pandang businessman, quietly left without even informing its local agent of its plans. When questioned about the companies’ abrupt departure, both the district police commander and regional navy commander admitted that law enforcement obviously had little to do with it, and suggested that “people’s power” was the main reason these companies had decided to move elsewhere. Tenacious local fishermen, they felt, had finally hounded the companies out of Kei’s waters. Some local fishermen, particularly those organised by local NGOs, agreed with this interpretation. District fisheries service officials also expressed consternation, noting that none of the companies’ licenses had expired or been revoked. They suggested that it had become too expensive to operate in Kei, since villagers and local partners were demanding ever more exorbitant fees and fines from the companies.

While these may have been contributing factors, the main reason these companies left was declining yields. They simply chose to move elsewhere, to exploit more productive virgin reefs. In short, this development was merely part of the natural progression from large capital-intensive operations to smaller low-cost operations that characterises the live reef fish and other fishery industries in overexploited Asian waters (Panayotou 1985).

In mid-1997, all that remained of the first phase companies were a few wooden mother ships left rotting on the shore of Bay of Sorbai, surrounded by clusters of cracked red fibreglass runabouts. Underwater, evidence of the companies’ recent presence was more graphic. Visual surveys of reefs surrounding several small islands to the north and west of Kei Kecil revealed the extent of devastation caused by six years of cyanide fishing. Live coral cover at three meters depth in many areas was only about twenty percent; at ten meters it was closer to five percent (I. Amin, R. Gustave and F. Cruz pers. comm., 2 March 1999, Denpasar, Bali).⁹ The trochus-producing reefs of the north and east coasts of Kei Besar had fared better, protected by the huge Eastern Monsoon waves that render div-

5. Adhuri’s investigation later revealed that the district Fisheries Service had issued a letter of recommendation that the offending company be granted a license to operate in local waters, three days after the cyanide fishers had been apprehended in Dullah Laut.

6. Adhuri found out that the most vociferous opponent of the stiff fine had previously signed an agreement with the *Dandim*, granting permission to construct a base camp for a grouper fishing operation on a nearby island, for which he was given a new out-board motor. As hereditary leader of a founding kin group of Dullah Laut, he argued that he was within his rights to enter into such an agreement.

7. Ujung Pandang is the capital of South Sulawesi and a major center of the Indonesian fishing industry.

8. The summary of Adhuri’s case study ends at this point. Events described below transpired after he completed his research in Dullah Laut in 1996.

9. Amin et al. concluded that the coral damage apparent in these areas was most likely entirely due to cyanide use — blast fishing had been a common problem in these areas during the 1970s and 1980s, but this activity had ceased many years before this research was conducted.

ing there impossible for about half the year, as well as by strictly enforced village regulations restricting access — that is, *sasi*. There, the amount of live coral cover was greater and resembled conditions described in a National Institute of Science (LIPI) survey of Kei's coral reefs conducted in the mid-1980s (Sutarna 1991). Already, reefs in some areas west of Kei Kecil were showing signs of regrowth, particularly soft corals.

The live fish industry in Kei had entered its second phase. Local operators, either individuals who had arrived with the first wave companies and stayed on, or local traders who had worked with the first wave companies or entered the business subsequently, now dominated the local live fish trade. Three individuals in particular controlled most of the trade in Kei: Ahau, a Taiwanese national who arrived with PT Mina Sinega and formed a joint venture with the wife of the local army officer who played a central role in settling the Dullah Laut case described above; Karno, a man with a military background who also arrived in Kei with another of the first wave companies, and Stanley H., owner of Toko Empat, an office supply and dry goods store that has been in Tual for generations.¹⁰

During interviews in 1998, these local operators all strenuously denied using cyanide, claiming that only big companies with strong backing from Jakarta could get away with this sort of illegal practice. Local fishermen told another story. These traders take a very different approach to gaining access to village reef territories and resources. Whereas the first wave of companies wielded their power and impunity to run roughshod over local *adat* rules, and were able to argue as well that Indonesian law recognises no local control of national marine territories, the smaller second phase firms generally seek to accommodate local norms and practices.

The most common approach is to provide credit to local fishermen to purchase outboard motors or build floating fish pens, accepting payment in the form of live fish. At first, the traders accept all fish, but soon begin specifying that they will take only certain kinds. This makes it more difficult for the fishermen to meet the payment schedule, and as good patrons, the traders offer help — in the form of little white cyanide pills. Since these fishermen are operating in their own village-controlled marine *petuanan*, this arrangement is not perceived as violating local *adat* regulations.

This presents local law enforcement officials with a dilemma: do they want to subject impoverished villagers to the stiff fines and long jail sentences stipulated by the law? According to the regional navy commander, clearly not (S. Permanto pers. comm., 6 May 1998, Tual, Kei Islands). If they are serious about confronting this problem, they need to prosecute the businessmen who supply the cyanide. The businessmen, though, can argue that they have a perfectly innocent and legal loan arrangement with the fisherman, and cannot be held responsible for his choice of technologies.

An increasingly common arrangement is for businessmen to enter into a contract with an entire village community — either government or *adat* leaders — for permission to develop a live fish business in local waters. The amounts offered, although paltry compared to the profits to be gained, are quite large by Kei village standards. This is particularly true since the collapse of the rupiah. Like other export commodities, the final sale price of live grouper is calculated in dollars. Ten million rupiah, a common price for permission to set up a base camp and fish in village waters, is presently worth only about USD 1200. Still, this is greater than the 6.5 million rupiah that villages officially received at that time from the central government each year to cover administrative costs and village development projects.¹¹ Additionally, the companies employ local fishermen, or offer the simple loan arrangements described above. In the midst of Indonesia's economic crisis, this is very favourably received in many village communities.

Dullah Laut revisited

Two years after the *adat* court incident described above, Dullah Laut was still the epicentre of cyanide fishing in Kei. After initially battling the outsiders, several young men from Dullah Laut and neighbouring villages had already ceased fighting and gone to work for first phase companies before their abrupt departure in 1996–1997. These were the first people to sign up with the new local firms when they emerged on the scene.

In mid-1998, there were about 18 floating net pens dotting the reef edge in front of the village. These were mostly owned by two of the three main local traders, although some belonged to individual villagers who had already paid off their loans. The larger operation, Ahau's, had eight employees from outside of Kei living at a base camp on an

10. Ahau, Karno, Stanley H., and Toko Empat are all pseudonyms.

11. The actual figure, by the time it reached the village, was usually only a small portion of this amount. In fiscal year 1998/99, the official subsidy was raised from 6.5 million to 10 million rupiah.

island north of Dullah Laut, plus another 30 to 40 local villagers diving for him. Karno, whose base camp is located across a narrow strait on the island of Dullah,¹² had no permanent employees, but worked with about 50 local divers. The third major local trader, Stanley H., did not have permission from Dullah Laut to operate in the village *petuanan* area, but about 10 divers from the village worked for him in other nearby sites. Practically every pirogue (*sampan*) lining the beach in front of Dullah Laut was equipped with a compressor, a sure sign it was being used for cyanide fishing.

A prominent village elder¹³ proudly explained that he had “solved the problem with the fishing companies”. The large companies that had caused so much trouble before were gone, and in their place were some new, good companies that had “entered through the front door”. They had approached the proper *adat* officials, and asked and received permission to fish in local waters. For this, they had paid a handsome fee. Besides, many villagers were working for these companies now, earning large sums of money.

The religious and political history of Dullah Laut plays an important role in understanding the situation there. Dullah Laut is comprised of two separate hamlets, or *kampung*. The original village is now called Duroa, or Dullah Laut Kristen (Christian Dullah Laut). A kilometre to the south is a second enclave, called Dullah Laut Islam. Just after the turn of the century, the traditional village chief (*Orang Kaya*) of Dullah Laut was converted to Catholicism by Dutch priests. A large group followed him to embrace the new faith. His son, however, was convinced by Islamic teachers from Tayando, an island a few hours sailing to the west, to become a Muslim. He and his group moved a short distance away to form a new *kampung*. This was a fairly common occurrence in Kei, and was done without rancour. Muslim converts moved out of Christian or pagan communities to avoid contact with pigs and dogs. Family ties remained strong between *kampung*, and interfaith marriage was common.

As the original village, Dullah Laut Kristen remained the seat of government, until the implementation of the New Order Government's Law No. 5/1979 on Village Government. By this time,

Dullah Laut Islam, like many of the other Islamic *kampung* in Kei, had a larger population than its parent village. Furthermore, it appears that the provincial and regional governments generally favoured Islamic villages in determining where the seat of government for newly consolidated village units (*Desa*) would be placed. Dullah Laut's village government is located in Dullah Laut Islam, a reversal of the proper *adat* hierarchy that acknowledges Dullah Laut Kristen as the community's true hearth and centre.

Adding insult to injury, the *adat* elder of Dullah Laut Islam was rejected as a candidate for village head during the government's screening process. Instead, a man with ties to the local *Raja*¹⁴ and Head of the Southeast Maluku District Government (*Bupati*) was nominated for the job. The *adat* elder mentioned above and many of his supporters refused to acknowledge the legitimacy of the official village government. The village head's act of taking two million rupiah *bukman* from the earlier settlement, a fact widely known in the village, stripped him of the moral authority to lead, they claimed.

These schisms, particularly the cooling ties between the two village communities, were easily exploited by cyanide fishers seeking permission to operate in village waters. They made separate deals with each group, confident that the one did not know what the other was doing. Interviews in the two *kampung* turned up quite dissimilar versions of who arrived first, whom they paid, how much they paid, who “entered through the front door” and who was “unauthorised”, and the implications of these arrangements according to local *adat* law. These differences were revealed in conversations with an outsider (the two sides were apparently not talking to each other).

Mesjid al-Bius

With the passage of time, the communities of Dullah Laut were also becoming divided into pro- and anti-cyanide groups. The pro-cyanide clique received a powerful boost in early 1998 through a new arrangement to help pay for construction of a mosque in Dullah Laut Islam. The community had been attempting to construct a new mosque for several years. They first tried to collect 5000 rupiah per household each week to support this effort, but

12. Dullah is one of the three main islands comprising the Keis, the others being Kei Besar (Greater Kei) and Kei Kecil (Lesser Kei). Dullah Laut is one of about 100 smaller islands scattered to the north and west of the three main islands. Only about a half dozen of these smaller islands are inhabited.

13. The same man who sided with the fishing company in the earlier case.

14. The *Raja* of Dullah is one of the most powerful men in Kei. Traditionally one of the leading kingdoms in the islands, for many generations the man holding this post has sought and enjoyed close relations with whichever government was in power. The present *Raja* is head of the GOLKAR (the government party throughout the New Order period) faction in the District People's Representative Council (DPRD II), and benefited handsomely over the years from his close association with New Order leadership.

construction remained stalled due to lack of funds. A few villagers had the idea to request loans from the live fish traders, to be paid off in the form of live fish. The two traders quickly agreed, and provided loans of five million rupiah each to the mosque committee. Construction moved rapidly ahead, to the point that the building was nearly complete when I departed in November 1998. Fishermen from Dullah Laut Islam devoted one day each week to catching fish to repay the loans. It took less than four months to pay off the entire 10 million rupiah, and they had requested new loans to complete the project.

The communal basis and socially laudable goals of this arrangement, along with its profitability and ease, provided the live fish companies a most attractive package to offer other communities. Construction of fine churches and mosques is a common aspiration in Kei and most other Indonesian communities. In the Malukan context, the fish-for-mosque (or fish-for-church) arrangement neatly replaces one of the major functions of the *sasi* institution: raising funds for community projects. As more than one villager pointed out, they would have to impose *sasi* to close the area for at least three years before they could hope to raise that much money. A local detractor, however, suggested publicly that the new mosque will have to be named *Mesjid al-Bius*, the Mosque of Narcotics.¹⁵

Conclusion: A toxic adaptation

As mentioned above, the practice of *sasi* is a well-known feature of many Malukan societies. The spatial and temporal prohibitions on harvesting crops, cutting wood, or gathering other products from local gardens, forest, tidal zone, or village-controlled sea is more than an institution designed to regulate resource use *per se*, but serves a variety of cultural and social functions, encompassing relations between people, the natural environment, and gods, ancestors, and spirits (von Benda-Beckmann et al. 1995). However, it is *sasi*'s potential as a local community-based resource management and conservation institution that has lately captured the attention of scholars, conservationists, and NGOs (e.g. Kriekhoff 1991; Zerner 1994; Basagio 1995; Nikijuluw 1995; Thorburn 2000a, 2000b; Novaczek et al. 2001). The Kei Islands are known for their strong and resilient *sasi* institutions. This is one of the major reasons that Dedi Adhuri and I, along with numerous other scholars over the years, chose Kei for our research site (e.g. Abrahamz 1991; Adonis et al. 1988; Antariksa 1995; Retraubun 1996).

Local legends speak of forms of *sasi* being practised as early as the 14th century, perhaps longer (Ukru et al. 1993). Historians generally agree that *adat* culture in Maluku reached its zenith in the mid-1600s and has been in decline since then. Cooley (1962) predicted in 1962 that the practice of *sasi* would soon disappear altogether. Forty years later, *sasi* is actually enjoying something of a revival in many areas as communities and NGOs attempt to deploy the venerable institution to help protect local territories and resources from outside exploitation, and to strengthen local claims to access and benefits.

Traditional resource management institutions are subject to constant change and adaptation, in response to the local environment, to internal cultural demands and values, and to external forces. This is true of *sasi* as well. Malukan *sasi* has undergone numerous changes in response to migration and war, boom-bust cycles for local commodities, economic exploitation and political subjugation during the "spice wars" of the 16th to 19th centuries, Christianisation and the spread of Islam, colonial government attempts to undermine the power of local hereditary leaders — including actually banning the practice of *sasi* between 1880 and 1893 — and, most recently, the Indonesian government's policy of standardising village government structures throughout the Republic, using a model that does not take into account local cultural forms and practices. Von Benda-Beckmann et al. (1995) document the evolution of *sasi* in Central Maluku from the use of magic totems to warn away enemies and trespassers to its adaptation during colonial times for territorial control and revenue generation, followed by its co-optation by religious and political leaders and, in some cases, its commercialisation. More recently, *sasi* is being hailed as an "indigenous resource management system" grounded in a deep understanding of local ecosystems and what now has come to be known as "carrying capacity" (Zerner 1994).

The fish-for-mosque deal in Dullah Laut can thus be viewed as the latest in a long series of adaptations of the *sasi* institution to outside stimuli. Although *sasi* has not been practised in Dullah Laut for nearly a generation, the new arrangement incorporates many of its features — locally acknowledged boundaries and access rules, and most importantly, the communal function of "social good." It could be that this is the final adaptation; there will soon be no reef fishery to manage. Diving near Dullah Laut in 1998, an expert from the International Marinelife Alliance predicted that at present rates of destruction, the reefs of Dullah Laut would be devoid of life in four more years.

15. *Bius*, meaning narcotic, is a term commonly used in Indonesia to describe potassium cyanide or other fish poisons.

(Cruz pers. comm., 30 August 1998, Dullah Laut, Kei Islands). Interviews with villagers in 2001 indicate that Mr Cruz's dire prediction was off by a year — the reefs were already barren.

Postscript

Five months after I departed from Kei in November 1998, the islands were engulfed in the religious conflagration that had broken out in the provincial capital, Ambon, the previous January. Dullah Laut became a major refuge for Muslim villagers escaping violence in other parts of the islands, at one point hosting more than 3000 refugees. Most fishing operations were halted, as people were afraid to leave the safety of their villages, and trading boats avoided the province altogether.

I was able to briefly return to the Kei Islands in November 2001, three years after I had left. The violence in Kei had lasted only three months, but the devastation was widespread and severe. More than 200 people were killed, thousands of houses and public buildings were destroyed or damaged, and more than 30,000 people — more than a quarter of the entire Kei Islands population — were displaced. In hastily erected refugee encampments, more people died of treatable diseases such as diarrhoea, measles, and malaria.

When I visited, communities throughout Kei were well along in the process of reconciliation and reconstruction. Most of the refugees had left Dullah Laut, and "business as usual" had for the most part resumed. Again, the reef edge in front of the village was lined with floating net pens, and motorised *sampan* equipped with onboard compressors were busy coming and going. They were no longer catching fish in Dullah Laut or other nearby islands; there was nothing left to catch. Most of the fishing was taking place in the waters of small islands far to the west and north. While I was unable to confirm this, local sources speculated that the Dullah Laut fishermen were able to take advantage of the post-conflict situation in the islands: many communities required large amounts of cash to rebuild their burned out villages, and many felt indebted to the people of Dullah Laut for the time they spent there as refugees.

I noted two other important changes during my brief visit in 2001. First, the ongoing conflict in Ambon had forced many of the foreign fishing

fleets stationed there to seek new homeports. Many of these were now based in Tual. While these fleets fish for offshore species such as tuna far offshore in the Banda Sea, western Pacific, or the southern part of Indonesia's exclusive economic zone, the presence of these Thai and Korean fleets surely increases the numbers of buyers ready and able to transport live fish to markets in Hong Kong and elsewhere in Southeast Asia.

Second is the impact of decentralisation. In January 2001, Indonesia embarked on a radical program to devolve many responsibilities and tasks of governance to the district (*Kabupaten*) level. This included the subdivision of coastal waters, with *kabupaten* controlling the first four miles from the low tide line, and provinces controlling the zone between four and twelve miles from shore. In combination with the ongoing financial crisis in the country, this radical reformation of government is giving rise to many unanticipated and undesired outcomes in the field of natural resource management (Thorburn 2002). Local governments are scrambling to raise revenues using whatever means available. Many local agencies and officials view the sea as a potential source of cash, using both legitimate and illegal means.

Licenses for the large foreign tuna fleets are still issued from Jakarta. But the local government has greater say over what they do in port and nearby — for example, the purchase of baitfish from local lift net operators. As for illegal cyanide fishing, the patterns of corruption and impunity remain the same, only some of the players perhaps have changed.¹⁶

There are other outcomes of the new decentralisation law and the communal violence in Kei. Even before the new Law no. 22 on regional government was written, an "adat revivalism" movement was gaining momentum in many parts of Indonesia, as NGOs and local communities attempted to retain or regain some control over management of local resources and territories. A number of villages on the east and west coasts of Kei Kecil, northern Kei Besar, and the island of Tanimbar Kei were reviving *sasi* as a means to strengthen their claims to local coastal waters and reefs and keep cyanide fishers out as long ago as 1996–1998. The new regional government law restores the "natural autonomy" of Indonesia's villages, and several villages in Kei have taken this to heart and produced village regu-

16. This bulletin has featured numerous articles and commentaries on the relationship between official corruption and destructive fishing techniques in Indonesia. For an intimate study of the effects of corruption on a local fishing community in Indonesia, please refer to "Who is to blame? Logics of responsibility in the live reef food fish trade in Sulawesi", by Celia Lowe in LRF Information Bulletin No. 10, June 2002. The same issue features another piece by Mark Erdmann on community-based efforts to overcome corruption to protect local reefs entitled "Perspective: The WAR on destructive fishing practices." Mr. Erdmann also wrote a case-based overview article entitled "Who's Minding the Reef? Corruption and enforcement in Indonesia," featured in LRF Information Bulletin No. 8, March 2001.

lations on a variety of matters, including access and gear restrictions in their marine territories, and the practice of *sasi*. Similarly, in the wake of the communal violence of 1999, there has been a concerted effort to revive Kei *adat* traditions, grounded in the belief that the conflict was largely a result of Kei people's departure from the "wisdom of the ancestors." This includes efforts in some villages to reinstate *sasi* regulations and practice.

If they move quickly and decisively, there may still be reefs to manage and protect.

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