

Introduction: Pacific Islanders, “custodians of the ocean” facing fisheries challenges

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*[The] sea is our pathway to each other and to everyone else,
the sea is our endless saga, the sea is our most powerful metaphor,
the ocean is in us. (Hau’ofa 2000: 43)*

The Ocean is in us

In his much-acclaimed essay, *Our Sea of Islands*, Epeli Hau’ofa (1993) argued that Pacific Islanders are the most suitable people on earth to be the custodians of the ocean. He reasoned that since Pacific Islanders have been living in the Pacific Ocean for centuries, they have made this ocean their home using knowledge of seafaring, navigation, ship design and construction, and have developed social and cultural systems that can be used to manage the sea and its resources. The personal journey of Joeli Veitayaki, an author of this volume’s introduction and final chapter, and a native of Fiji, illustrates the importance of encounters with and experiences on the sea in the lives of Pacific Islanders. Although his story is not representative of all Pacific Islanders, it highlights the necessity of bringing their perspectives into the centre of global debates about the governance of marine territories and the sustainability of marine resources. Joeli’s view, one increasingly shared in Fiji and regionally, is that Pacific Islanders’ close association and special relationships with the ocean should be used in the drive to effectively manage the ocean.

Joeli’s first encounter with the sea was as a five-year-old boy accompanying his uncle (his mother’s brother) on an old cutter sailing from Suva, the capital of Fiji, to his village on Gau Island, about 80 km away to the east. Joeli was to be educated and raised by his uncle in the village, under a type of adoption that strengthens family ties. As Aseela Ravuvu (2005: 2) explained, “a man’s sister’s son (and to a different extent her daughter) had a particular claim on his counsel, loyalty, assistance and even property”.

The trip took over ten hours. The sea, though calm, looked immense, imposing and gave the impression that it must be respected because of the mysteries it hid. In the village, Joeli was immediately taught to swim so that he could be spared the watchful attention of the elders, who kept him under their radar until he earned his freedom by proving that he could swim and survive on the island.

Growing up, Joeli participated in reef gleaning, fish poisoning, fish drives, turtle fishing, gillnetting, handling of other types of nets, spear fishing on the surface and underwater, and a variety of night fishing activities. The multitude of traps, nets, spears, poisons and other ingenious fishing methods used by Pacific Islanders, in particular Fijians, demonstrate their deep understanding of their prey (see also Veitayaki 1990: 50-55). Joeli was taught to pole and navigate the family's small wooden punt along the adjacent shores. He was also taken by his family members to the gardens and was coached on his relations with other members of his group. This was all part of his induction into being an islander. His uncle told him that if he did not want to eat, he could be excused from these family chores, but if he loved food, as he did, then he had to work harder.

Food was cooked in saltwater, as there was no processed salt. Women had rocks that were occasionally picked from where they were placed at sea to boil in water and make soup whenever fishing was unsuccessful. Strict food restrictions were also observed within the village and on the island. In a communal feast for instance, members of the chiefly clan would have pork, freshwater fish and a few chiefly marine fish species such as trevally, while the *bati* or warrior and planter clan members would only eat reef fish.

Every year, the primary school community dived for branching coral, which was roasted overnight in wide shallow pits to produce white chalk powder. When mixed with water, this provided the paint that was used to turn all of the black stones in the school compound into a refreshing white. Sand, dead coral and gravel from the sea provided building and decorative materials. The sandy beaches were recreational spots where people drew, played or simply sat to observe the beauty and power of the sea. The villagers also used the sea as a rubbish dump and toilet because they believed it was capable of swallowing and accommodating these wastes.

Joeli also heard of shark gods, giant octopuses and stingrays which protected the fishing ground and people and punished those who acted inappropriately. He was told of the dual between a shark god and a giant octopus; a fight that was won by the octopus, a mere invertebrate.¹

Bravery and prowess at sea were acclaimed, revered and the common subject of folklore. Joeli's uncle, a self-taught seafarer, sailed as a young man and gradually learned to be a navigator. On one of his trips to the island, the steering chain connected to the rudder broke and the ship began to drift. He volunteered to dive under the ship and tie ropes around the rudder in order to set the ship back on course towards its original destination. He did so despite the fact that Joeli's mother's older sister was killed by a shark when diving for trochus just beside the reef passage. His grandfather and uncle were also lost at sea when the cargo sailboat transporting them capsized.

1. The surprising fact that an octopus can win over a shark has been captured on video in recent times.

Joeli was familiar with the joy and sensation of having a good fish catch and the disappointment, laments, excuses, long faces and jokes when the catch was not up to expectation. At the time, poor catches were interpreted to be the result of wrong timing, wrong decisions or customary misgivings. Overfishing was never considered to be an issue as people believed that nature would always provide for them as it had for their ancestors before them.

Years later, Joeli left the island and sailed to Suva to pursue his education. The journey took nearly a week as the cutter visited three other small islands to collect passengers and copra. By the time the cutter reached the final destination, the school was into its first week and it was hard to distinguish passengers from crew members as everyone had shared the same basic facilities, which had an overpowering oil stench. The cutter was dirty, small and powered by a loud but slow engine spurting dark black smoke, revealing the ship's arrival long before it was seen. The kitchen and toilets drained straight into the sea.

At school and later university, Joeli learned about how fish are adapted to live in the sea and of the importance of maintaining the beauty and integrity of coastal habitats so that they may continue to provide the services that they offer. He learned of coral reefs that protect the tiny islands and support a variety of organisms, some minute, some small and others big — each uniquely adapted to live on land, in water, or both. Similarly, some of these organisms live in fresh water, salt water, or both. He also learned of ocean explorations, naval battles and overseas territories and of new development options such as aquaculture, desalination and renewable energy.

On many Sunday afternoons, Joeli went to the local port in Suva because he was fascinated by its activities. There were cruise ships and large cargo vessels loading or offloading all types of products, oil and gas tankers, private pleasure boats and the occasional naval and research vessels from countries outside the Pacific Islands.

Joeli graduated in geography and English from the University of the South Pacific (USP) in the early 1980s oblivious to the environmental and political storms brewing in the Pacific Ocean. Overseas territories of colonial powers were being used for nuclear testing,² overfishing was taking place, and shipping and marine pollution threatened the security of life in the region. No course or programme on the proper use and management of the marine environment was available at the time. The Pacific Island region, countries and people were not prepared to deal with the issues relating to the protection of their ocean, although it was the dominating feature of the human environment in the USP's 12 nations.

2. Radioactive materials in Mururoa, Johnston and Kwajelein Atolls continue to pose danger to local communities and islands. In addition, nuclear powered ships and vessels carrying radioactive materials are still plying the ocean, while international business concerns are still looking for islands on which to dispose toxic industrial wastes.

For his postgraduate studies, W.C. Clarke and R.R. Thaman, two distinguished Pacific Island geographers with a keen interest in ocean resource management, advised Joeli to do his research in the area of marine resource use. He was easily convinced because of his childhood experience and his interest in the fishers of Qoma Island, a fishing village near to where he was teaching at the time. The relationships with the sea of these men and women, who invested the barest minimum in their fishing activities, regularly pursued fish in their realm with equipment that was an eclectic combination of old and new, and were not formally regarded as commercial fishers because they were villagers, intrigued him. He wanted to understand and publicise the plight of these fishers. Interestingly, his association with Qoma villagers marked the beginning of his involvement in marine resource management. He became familiar with more traditional knowledge, resource use methods and management practices, the importance of fisheries to the local economy, the depletion of resources and the increasing importance of the marine space. These lessons from Qoma Island became the foundation on which Joeli has based his research in Fiji and the Pacific Island region.

Fijians, like most Pacific Islanders, still practise intricate exchange arrangements with their relations, and these arrangements ensure that resources are used efficiently and that people look after each other in times of need. Hoarding is neither practical nor necessary because people's basic requirements are supplied through their kin-based networks (see also Narayan 1984: 13). An important feature of indigenous Fijians' social relations and culture is that people are related to one another because of where they are from. Social relations called *mataqali* (a respectful relation between people from the Kubuna Confederacy³), *tovata* (a respectful relation between people from the Tovata Confederacy), *tauvvu* (jovial but close relation between people who have common ancestral gods), *naita* (jovial but close relation between people from Kubuna and Burebasaga Confederacies), *takolavo* (relation between particular districts within Viti Levu), and *dreu* (jovial but close relation between people from Tovata Confederacy and those from some parts of Viti Levu), are examples of the social networks guaranteeing that people assist each other because they are related. In their villages and homes, people also tell stories about their fish, bird and plant totems, which demonstrate their common lineages. These relations are reinforced and publicised during social ceremonies and are strengthened by inter-marriages, regular visits and sharing. They are at the core of resource use practices, such as

3. Today, all of the chiefs of Fiji and their people belong to one of three confederacies: Kubuna, Burebasaga and Tovata. These confederacies are a result of geographical propinquity, kinship ties (often engineered by strategic marriages), and conquests and/or military alliances. Before colonization, the central highlands of the main island of Viti Levu, and the west and northwest areas of Fiji, were not part of these confederacies, but the colonial government found such socio-political entities far easier to both comprehend and administer, and these areas were therefore simply associated with Kubuna, and to a lesser extent Burebasaga.

kerekere or the borrowing of food, mats, *tabua* (whale teeth) and other artefacts from one's relations, which ensures that surpluses are shared and thus prevents the accumulation of wealth. Similarly, *kana veicurumaki*, or the sharing of subsistence resources, is a widely observed practice between groups that have resources or borders in common or who cannot eat the same food due to the nature of the relationship binding them — for example, people linked to the sea cannot eat fish in the presence of people linked to the land, but they will eat the land people's pork while the others eat their fish. This practice also allows access to food when prevailing conditions are abnormal, such as after a cyclone.

A person caught fishing illegally in an area will seek pardon from the village or district chief by presenting an offering of *yagona* (kava, *Piper methysticum*) or *tabua* (whale teeth) depending on the severity of the deed. More generally, presentations to seek forgiveness and atonement for any serious breach of protocols and norms committed against other people are referred to as *matanigasau* and *bulubulu*. In other instances, people who feel that their misfortunes or mishaps are due to something wrong they or one of their elders have done will make the same presentation to appease the spirits that they believe are punishing them. Turtle fishers of Qoma Island use this form of seeking forgiveness and atonement to ensure they succeed with a catch when they are out in the fishing ground (Veitayaki 1990, 1995). These turtle fishers believe that they go fishing with their ancestral spirits, who will punish them if they are offended, that is to say if the fishers conduct themselves inappropriately or deviate from acceptable practices. Failure to make a catch is interpreted as the sign that not all is well within the family unit.

Customary marine tenure, meaning the formal or informal ownership of sea space by a social unit (Calamia 2003), is common across the Pacific. In Fiji, the size and location of customary fishing grounds were formalized by the determination of boundaries between the 1890s and 1996, in the beginning by the colonial government and later by the Fijian government. These boundaries do not reflect the size of the population which depends on the marine resources, nor are they based on ecologically optimal management units (Muehlig-Hofmann et al. 2005). They are rather the result of a local history of migration, settlement, marriage and warfare, and reflect who wielded the most influence when government representatives came to put these boundaries into writing.

Joeli also learned of the United Nations Convention on the Law of the Sea,⁴ which favoured Pacific Island countries by making them Large Ocean Island States,

4. "The United Nations Convention on the Law of the Sea lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. It enshrines the notion that all problems of ocean space are closely interrelated and need to be addressed as a whole. The Convention was opened for signature on 10 December 1982 in Montego Bay, Jamaica. [...] The Convention entered into force in accordance with its article 308 on 16 November 1994 [...]. Today, it is the globally recognized regime dealing with all matters relating to the law of the sea."

or LOIS, and simultaneously burdened them with the responsibility of ensuring the sustainable and peaceful use of the Pacific Ocean. He became aware that these LOIS were collaborating increasingly with each other to protect and secure their respective self-interests in the face of global challenges such as environment management and commitment to global initiatives and arrangements.

In 1992, Joeli joined what is now the School of Marine Studies at USP, and then in 2001 completed a Ph.D. in environment management and development at the Australian National University in Canberra, Australia. Since the 1990s, his responsibilities at USP have included teaching, research and advice (to students and researchers, Pacific Island governments, and other people and institutions) on marine resource management. In that capacity, he helped to build the multidisciplinary Marine Studies programmes which are available today. For the first time, these programmes have allowed Pacific Island students to focus their academic pursuits on the sea, which is considered as a food basket, hunting ground, recreational arena, theatre, and art gallery, as well as an economic and cultural highway linking Pacific Islanders to each other and to the outside world.

Pacific peoples are observant, adaptive and resilient — traits honed by millennia of close association and intimacy with their ocean and island homes. These traits have allowed them to live with minute land resources and ever changing island environments for thousands of years. Now, however, contemporary changes such as global warming, ocean acidification, environmental degradation, alteration of natural habitats, loss of territories and boundaries, globalisation and rampant consumerism promise a tropical cyclone or tsunami of a magnitude greater than anything Pacific Islanders have ever faced.

What is the future for fisheries in the Pacific?

The Pacific Ocean has exceptional dimensions: it covers about half of the Earth's total ocean area and a third of its total surface. It also plays a major role in the global supply of fish and other marine resources (for example, crustaceans and echinoderms⁵). In 2011, according to statistics from the Food and Agriculture Organization (FAO) of the United Nations, the Northwest Pacific had the highest fishery production with 21.4 million tonnes (26% of the global marine catch), followed by the Southeast Pacific with 12.3 million tonnes (15% of the global marine catch) and the Western Central Pacific with 11.5 million tonnes (14% of the global marine catch) (FAO 2014: 37). Together, these three regions provide almost half of the global marine

(Website of the United Nations Division of Ocean Affairs and the Law of the Sea, http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm, Accessed on July 20, 2015).

5. Including holothurians, also called sea cucumbers or "bêches-de-mer".

catch. The current challenges “to produce more fish, to do so in a sustainable manner and to ensure that fish for food is also available where most needed” (FAO 2014: 199) are therefore of paramount importance in the Pacific Ocean.

In this context, the Pacific Small Island Developing States (Pacific SIDS) of Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Republic of the Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu see themselves as LOIS which are responsible for the sustainable management of the coastal and offshore resources available in “their” ocean. Although historically, geographically, socioculturally and politically diverse, all Pacific SIDS/LOIS are economically dependent on marine resources as they have very limited land territories but extensive economic exclusive zones (EEZs). For instance, Kiribati has a total land area of 800 km² and an EEZ of approximately 3.5 million km². Who would be surprised that such states aspire to control both the exploitation and the conservation of marine spaces and resources? These shared interests are increasingly giving rise to formalized regional and subregional alliances, such as the Western and Central Pacific Fisheries Commission (WCPFC), a regional fisheries management organization, the Pacific Islands Forum Fisheries Agency (FFA), which “strengthens national capacity and regional solidarity so its 17 members can manage, control and develop their tuna fisheries now and in the future”,⁶ and the Parties to the Nauru Agreement (PNA), which controls the world’s largest tuna purse seine fishery as well as around 50% of the global supply of skipjack tuna, the most commonly canned tuna.⁷ The role of these and other organizations with specific mandates to assist the Pacific SIDS/LOIS in meeting their obligations in accordance with the resource use and management agreements, treaties and conventions which they have signed and ratified, as well as their interrelationships, will be discussed throughout the book.

Pacific SIDS/LOIS gained their independence very recently,⁸ their total population (less than 10 million people) represents less than 0.2% of the world population, and their economies rely on funding granted by donors of development assistance to the region, mainly Australia, the United States of America (USA), New Zealand, Japan, China, France and the European Union (Borrevik et al. 2014: 25). Some of these donor states, such as Japan, China and the USA, are furthermore actively involved in fisheries in the Western and Central Pacific Ocean (see especially Allain et al., Rauchholz, and Giron in this volume). Therefore, the future of fisheries and marine

6. See “About FFA” on FFA’s website, <https://www.ffa.int/about> (Accessed on July 19, 2015).

7. See “About us” on PNA’s website, <http://www.pnatuna.com/About-Us> (Accessed on July 16, 2015).

8. Samoa became the first independent State in Oceania in 1962, then other independence proclamations followed each other until the 1990s with, for instance, Fiji and Tonga in 1970, Papua New Guinea in 1975, Vanuatu in 1980 and Palau in 1994.

resources in the Pacific is inseparable from the future of the relationships between Pacific SIDS/LOIS and the superpowers based within as well as outside the region.

This complex situation raises many questions. In particular, who are the stakeholders of coastal and offshore fisheries in the Pacific, what are their practices, and what are the associated management measures? How could the Pacific SIDS/LOIS benefit further and sustainably from the management of Pacific waters, which are critical for regional food security and also represent a reserve of food resources for the rest of the world? How do fisheries articulate with the domain of environmental conservation and the sector of current and future mining in the region? What power relations are involved in this context? How may relations between national governments at the regional level, as well as between these governments and extra-regional governments, non-governmental organizations, international development agencies and the private sector, be strengthened or redefined so that Pacific SIDS/LOIS secure, individually and collectively, the political, financial, technical and other resources and capacities needed to effectively implement fisheries management measures? How can Pacific SIDS/LOIS ensure that these measures support their own interests and decisions?

At first, these various questions were approached in the context of a workshop on the topic “Resources, Boundaries and Governance: What Future for Fisheries in the Pacific?” held at Aix-Marseille University in France on 13-14 October, 2014. This event was co-organized by the Centre for Research and Documentation on Oceania (CREDO, Aix-Marseille University - CNRS - EHESS, France) and the Centre for Pacific Studies (CPS, University of St Andrews, United Kingdom) in the context of the European Consortium for Pacific Studies (ECOPAS). With funding for 2012-2015 from the European Union’s Seventh Framework Programme (FP7) in response to its call “Climate Change Uncertainties: Policymaking for the Pacific Front”, this consortium was composed of six major centres for Pacific studies, four in Europe (Norway, France, the United Kingdom and the Netherlands) and two in the Pacific (Papua New Guinea and the 12-nations of the University of the South Pacific). Its work programme was designed to provide coordination and support to research and policy communities on issues connected to climate change and related processes in the Pacific region.

We thought that the sum of knowledge shared during the workshop deserved to be gathered together and diffused. This book examines various aspects of coastal and oceanic fisheries in the Pacific region. It highlights that both these fisheries sectors raise major economic and ecological issues while revealing significant social changes, political asymmetries and alliances, geostrategic rationales, developments in legislation, customary dynamics and conservation challenges. Understanding the current state of fisheries in the Pacific therefore requires one to simultaneously grasp their coastal and oceanic components as well as deeply entangled international, regional, sub-regional, national and local processes. We also hope that the compelling need to establish a constructive and ongoing dialogue on the matter between social scientists

and environmental scientists, based in Europe and in the Pacific Islands, and between these experts and the various stakeholders and policy-making institutions involved in the Pacific region, will become obvious over the course of the chapters.

Indeed, the authors of this book are scientists from quite diverse disciplines: anthropology, geography, history, economic sciences and international economics, marine biology and biological oceanology, agro-fisheries, marine studies, applied ecology, ethnoecology, environment management and development. They are based in various (academic or applied) research institutions, often multidisciplinary, in France, Monaco, Germany, New Caledonia, French Polynesia, Australia and Fiji. Together, they accepted the challenge to propose an overview of, and to highlight connections between, current data on fisheries in coastal and oceanic areas of the Pacific Ocean while offering a diachronic perspective on associated dynamics and issues. Complementary approaches and interpretations of the data respond to each other throughout the book, and even within certain chapters. This confrontation of views results from an extension of discussions between the scientists who participated in the workshop in October 2014, their colleagues who decided to take part in this publication project, and the editors of the book. We hope that the following chapters will contribute to a better understanding of the current situation of fisheries in the Pacific while demonstrating to the various stakeholders and policy-making institutions involved in the Pacific region how policies and projects relative to fisheries can benefit from the latest research outputs.

Summary of the book's content

The first chapter offers an overview of pelagic fisheries in the western and central Pacific Ocean, with a major focus on tuna fisheries, which provided 58% of the global tuna catch in 2013. Valérie Allain, Graham M. Pilling, Peter G. Williams, Shelton Harley, Simon Nicol and John Hampton present the most recent Pacific Community (SPC) catch estimates and stock assessments of the main tuna species targeted in the Western and Central Pacific Ocean: skipjack, yellowfin, bigeye and South Pacific albacore tuna. They also describe the tuna resource management framework implemented at different spatial scales in the region as well as new developments concerning the monitoring of tuna fisheries.

Through a focus on the Micronesian region, especially the Federated States of Micronesia, Manuel Rauchholz's chapter highlights how local, national and regional efforts to develop sustainable fisheries — and thus prevent the depletion of coastal, nearshore and offshore fish stocks and marine life — are confronted with the overwhelming forces of globally operating fishing corporations, which are particularly active in the commercial tuna industry. In their rush for quick profits, these corporations are relying on exploitative practices and ignoring the voice of science. Rauchholz shows how such a quest for relentless economic gain, associated with political

interests, was and remains a cause for serious ecological and human rights concern using the example, among others, of poaching and illegal fishing activities by foreign vessels, including by purse seine vessels under the PNA's Vessel Day Scheme, in the waters of the Micronesian islands. In parallel, he illustrates issues of self-regulation in local fishing practices through the study of blast fishing on and around Chuuk's coral reefs.

Yan Giron demonstrates that the exploitation of tuna resources in the Pacific is also intrinsically linked to the mining of offshore oil and gas resources, the mining potential of marine rare earths in deep sea areas, geostrategic issues of defence and leadership (involving especially the USA and China), and the establishment of marine protected areas (MPAs) categorized as large-scale (covering marine surfaces of over 100,000 km²) and "no-take" (meaning where fishing is prohibited). In so doing, Giron presents his concept of "maritime pivot", which allows him to analyse opportunist synergies between public and private plays for power as well as articulations between "hard power" and "soft power" in the Asia-Pacific region. He particularly points out some of the unexpected issues raised by the lobbying campaigns of American charitable trusts which promote the creation of a network of large-scale "no-take" MPAs in the Pacific.

Through a case study in New Caledonia, whose lagoons were inscribed on the World Heritage List in 2008, Samuel Cornier and Isabelle Leblic also address the question of the articulation between fisheries, environmental conservation and mining. They particularly illustrate that the impacts of the Hyabé/Lé-Jao MPA (Yambé), officially established in 2009 within the UNESCO serial site, diverge from those expected. The real-world implementation of this MPA reveals low local involvement in marine resource management, social frustrations and tensions, the abandonment of fishing areas or — to the contrary — "hidden" fishing and overfishing activities, and the loss of "traditional" fishing knowledge. The authors put their case study into perspective using the controversies associated with the Coral Sea Natural Park (Le Parc Naturel de la Mer de Corail), an MPA created in 2014 and encompassing all of New Caledonia's EEZ (about 1.3 million km²).

Nathalie Hilmi, Tamatoa Bambridge, Alain Safa, Bran Quinquis and Paul d'Arcy then explore the socioeconomic and cultural significance of fish and fisheries from the viewpoint of Pacific Islanders themselves, especially in French Polynesia which, like New Caledonia, is part of the Overseas Countries and Territories (OCTs) that have special links with France. Their analysis challenges the understanding of marine resources and fisheries in the Pacific through the prism of the still common opposition between the notion of "commodities" (marketable and interchangeable goods or services produced to satisfy wants or needs) and that of "natural heritage" (the biodiversity inherited from past generations, maintained in the present, and transmitted to future generations). They also argue that Pacific societies are re-conceptualizing fish and fisheries as "pluralistic objects" having entangled economic, environmental, social and cultural values.

Catherine Sabinot and Sarah Bernard propose a complementary perspective through their analysis of the evolution of the values, norms and management measures that have been associated with the green turtle (*Chelonia mydas*) in New Caledonia. They demonstrate that this marine species lies at a crossroads of local, tribal, provincial and international expectations. In so doing, they reveal that Kanak society confers on the green turtle a "symbolic" value and increasingly, in the context of growing environmentalist pressures and significant socioeconomic mutations, a "heritage" value. Their study of management measures and their implementation also shows that the green turtle is both the "subject" and "object" of conflicting views, territoriality issues and legitimacy issues.

Gilbert David raises the question of the sustainability of Pacific Island village fisheries in the context of a rising demand for fishery products generated in part by population growth. To do so, he offers a diachronic perspective of three types of village fisheries (outer slope artisanal fishery, artisanal fishery around fish aggregating devices, nearshore subsistence fishery), each considered as a system composed of a production subsystem, a management subsystem and a fisheries product chain and trade subsystem. A particular focus on Vanuatu illustrates this overview. David concludes that given the importance of village fisheries for the food security of Pacific Island coastal populations, ensuring their sustainability should be a priority of both government and village authorities in all Pacific Island countries and territories. According to this author, sustainability can only be achieved through a holistic approach, based on the fisheries system paradigm (rather than an ecosystem approach) and the building of a bridge between national and local levels (for instance through co-management agreements), and through the development of a network of effective locally managed marine areas associated with the setting up of deepwater MPAs, nearshore fish aggregating devices and artificial reefs.

Joeli Veitayaki and Esaroma Ledua close this book by emphasising that the sustainability of both coastal and tuna fisheries is an overwhelming challenge for Pacific SIDS/LOIS. These authors argue that years of increasing use and production with little concern for ecological well-being have resulted in overexploitation, resource depletion and environmental degradation that are threatening these two important and interrelated economic sectors, which therefore face sustainability issues that cannot be addressed separately. They also present several innovative fisheries management arrangements that should be built on, and suggest some policy changes to assure the integrity and health of fisheries resources while securing maximum and perennial returns for Pacific Islanders. In particular, they request all stakeholders (governments, regional and subregional organizations, private sector companies, local communities, etc.) to be involved and collaborate in fisheries management, and Pacific SIDS to reinforce their environmental commitment and their regional alliances.

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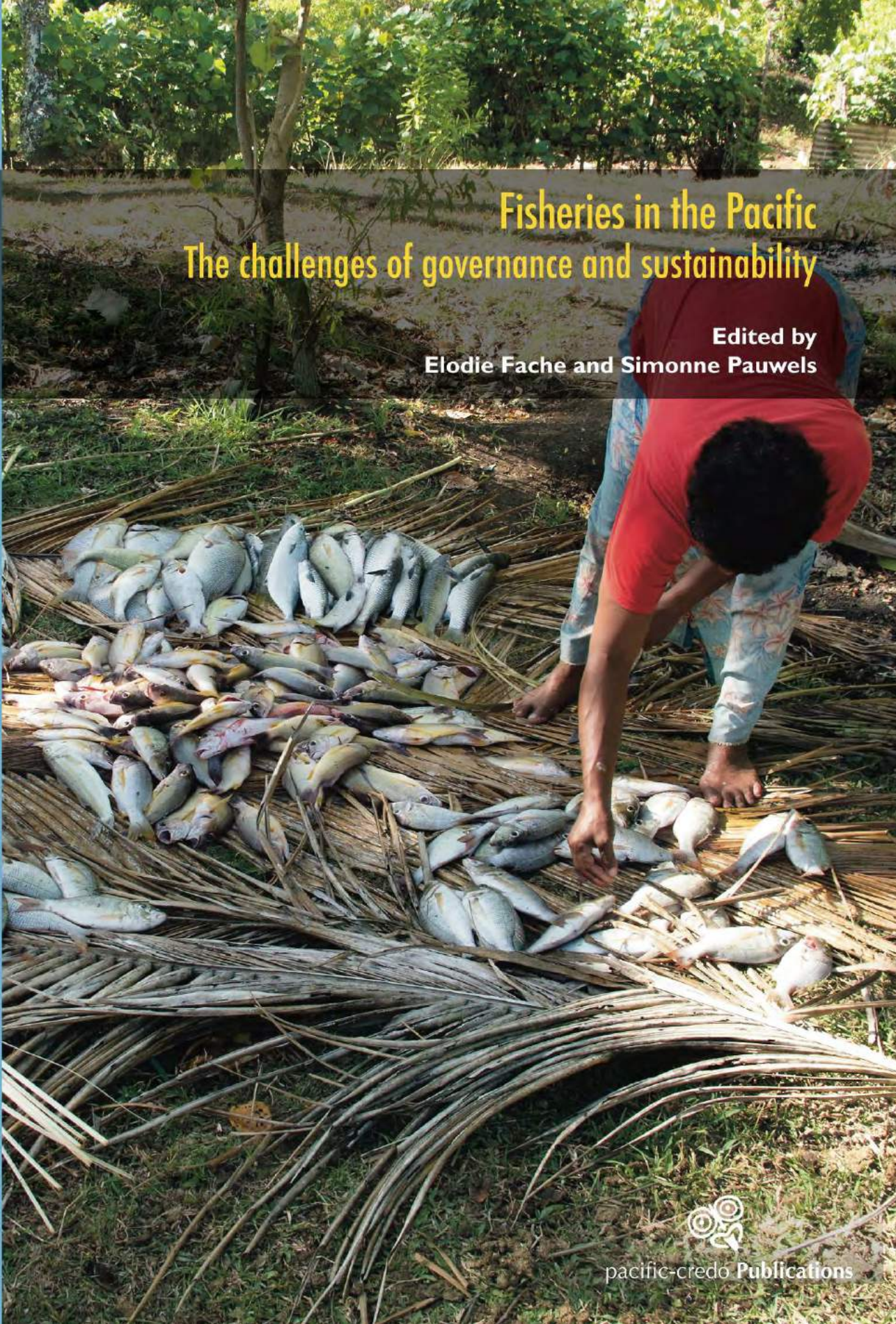


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The challenges of governance and sustainability

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