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Citation: Farran, Sue (2018) Is marine protection compatible with the right to economic development in Pacific Island States? In: New Zealand Studies Association: Regional Identities & Coastal Communities of the Pacific, 27-30 June 2018, Aveiro.

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Is marine protection compatible with the right to economic development in Pacific Island States?

Keynote paper presented at the NZSA Conference, Aviero, Portugal, July 29, 2018

Abstract

The international community is keen to engage all states in the global agenda to protect and preserve marine habitat and ocean eco-systems. Building on the strategic goals of the Convention on Biological Diversity, Aichi Target 11 is for 17% of terrestrial and inland water and 10 percent of coastal and marine areas to be protected by 2020. The UN Sustainable Development Goal 14 is to conserve oceans, seas and marine resources and in 2016 the International Union for the Conservation of Nature advocated for 30% of the world's oceans to be protected while the Nature Needs Half Movement is advocating 50%. At the same time, it is recognised that indigenous peoples have a right to development and a right to determine their own form and pace of development. For Pacific island people that increasingly means developing a blue-green economy in which terrestrial and marine resources are utilised to advance the wealth and health of island people.

Building on research looking at the declaration of Marine Protected Areas around non-sovereign island states and the impact of these on the rights and lives of indigenous people more broadly, this paper looks at the initiatives adopted by Pacific islands to create marine protected areas (MPAs) and locally managed marine areas (LMMAs). In particular, this paper considers the motivation behind the creation of MPAs and LMMAs, the stakeholders involved, the management structures adopted and the benefits and/or disadvantages - not

only to the environment but also to the lives of Pacific islanders - flowing from categorising marine resources in this way.

Introduction

As ocean voyagers, we have always treated the ocean with respect from time immemorial. This is an integral part of our culture: to have the deepest respect and regard for nature which would in turn ensure it continues to provide for the needs of the generations to come (Prime Minister of Cook Islands).¹

Unfortunately, not all people or all nations have treated the oceans with respect and today there is growing concern over the state of the ‘Blue Planet’, the threats to its vulnerable eco-systems and the bio-diversity within the seas that surround us. Perhaps rather belatedly the international community has recognised that all states share the responsibility of addressing these concerns.² How they do so however, is not without controversy, including allegations of ‘ocean grabbing’ by western powers to enhance their green/blue international credentials.³ Although practiced by Pacific Islanders and other indigenous coastal communities for centuries, today, marine protection, has to be considered within a national, regional and international context.

¹ Prime Minister Hon. Henry Pua addressing the UN Ocean Conference, New York 6 June 2017. <http://oceanos-foundation.org/large-scale-marine-protected-areas-lessons-shared-by-the-pacific/>

² For the development of international environmental law see Edith Brown Weiss, ‘The Evolution of International Environmental law’ (2011) 54 Japanese Yearbook of International Law 1-27.

³ See eg Mads Barbesgaard, ‘Blue Growth: savior or ocean grabbing?’ (2018) 45 (1) The Journal of Peasant Studies 130-149; Nathan James Bennett, Hugh Govan and Terre Satterfield, ‘Ocean grabbing’ (2015) 57 Science Direct 61-68.

In this paper I focus on the role of Marine Protected Areas; what they are and what is expected of them or claimed that they can achieve. I then consider the role of locally managed marine areas as a distinct form of marine protection which is particularly pertinent to the Pacific island and critically assess some of the claims made for LMMAs. Finally, I consider the proliferation of MPAs in the region, illustrated by reference to particular Pacific MPAs, and conclude with some reflection on the role of Pacific islands in contributing to the protection of the seas around them and the potential consequences of this. First however, it is necessary to place the topic of marine conservation within the international context.

The international context

International interventions have been key in the governance of oceans, evidenced early on in the United Nations Conference on the Human Environment in Stockholm in 1972, which, inter alia, also identified the potential conflict between environmental protection and economic development.⁴ The right to economic development and the right to determine the pace and form of that development is also recognised as an international right and can be found in the United Nations Charter (Article 1(2)), and the International Convention on Civil and Political Rights (ICCPR) and the International Convention on Economic, Social and Cultural Rights (ICESCR). Both these international conventions have the same Article 1(1), which states that: ‘All peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development’. Equally it is recognised that: ‘All peoples may

⁴ The conference gave rise to the UN Stockholm Declaration on the Human Environment and the establishment of the United Nations Environment Programme (UNEP) to be based in Nairobi.

for their own ends, freely dispose of their natural wealth and resources’ (Article 1(2) ICCPR and ICESCR) and the Human Rights Commission has, on a number of occasions in concluding remarks in national reports, acknowledged the rights of indigenous people to freely dispose of their natural resources. These natural resources can be understood (because the term is not constrained) to include marine resources.⁵ Rights to marine resources may also be understood as cultural and social rights, and economic rights, extending beyond the right to maintain subsistence life-styles, and therefore fall within the International Labour Organisation (ILO) Convention No. 169, which calls on states to promote the ‘full realization of the social, economic and cultural rights’ of indigenous people ...’ (Article 2(2)).⁶ In the context of marine rights, while it might be argued that claims to cultural and social rights limit fishing and other forms of marine resource extraction to traditional methods and the traditional economy, the Human Rights Commission has recognised that modern fishing technologies may also be included.⁷ Of course, the rights of any people, including indigenous people, may not be absolute and states may take legitimate measures to restrict the exercise of rights claimed over marine spaces and resources. Restrictions and limitations can however be controversial and appear to favour one sector over another leading to situations in which apparently discriminatory approaches are challenged; as happened in the case of the New Zealand Foreshore and Seabed Act 2004.

A further international dimension in the context of marine spaces are concepts such as *mare nullius* or the idea that the oceans are common property, or the

⁵ See Valmaine Toki, ‘Study on the relationship between indigenous peoples and the Pacific ocean’ Permanent Forum on Indigenous Issues, NU doc E/C.19/2016/3 (New York, February 2016) 7.

⁶ See also Articles 4(2), 5, 7, 13 and 13.

⁷ *Apirana Mahuika et al v New Zealand* No 547/1993 UN doc. CCPR/C/70/D/47/1993 (9.4). Referring to Article 27 ICCPR.

common heritage of mankind which present further complexities especially in the context of contemporary discourse about biodiversity, conservation and climate change on the one hand, and the potential wealth of the world's oceans on the other hand. It is also the case that while there may have been increasing attention paid to the territorial claims and rights of indigenous people, these often stop short of recognising marine rights, even where indigenous people themselves do not draw a clear line between the two. Consequently rights of management of such resources, the rights to benefit therefrom and the right to determine the form and pace of development may be insufficiently considered against the broader international context.

International concern with the marine environment first emerged in Article 192 of the 1982 Law of the Sea Convention, which imposes an obligation on states to protect and preserve the marine environment. Since then, although there is no overarching environment charter or convention,⁸ there are a number of 'soft law' international instruments such as: the 1992 Rio Declaration on Environment and Development, the United Nations Framework Convention on Climate Change, the Convention on Biodiversity and its related Agenda 21 plan of action, and, most recently, the Paris Agreement, arising as a legacy of the Paris conference on climate change in 2017. All of these raise certain expectations with respect to the environmental responsibilities of nation states. It is also the case that Pacific island states are increasingly participating in the various international events that give rise to these instruments and are parties to a number of them. In particular, all the independent Pacific island states are

⁸ There are a number of specific bilateral and multi lateral treaties dealing with specific environmental issues such as air quality, the trans-shipment of hazardous waste, trade in endangered species, whaling etc.

signatories to the UN Convention on Biological Diversity (CBD).⁹ One of the strategic goals of this Convention is ‘to improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity’.¹⁰ This goal was subsequently translated into targets,¹¹ target 11 of which is that:

By 2020, at least 17 per cent of terrestrial and inland water and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

The role of Marine Protected Areas

Exactly how this target is to be achieved and how it is to be translated into practice is subject to a number of different interpretations.¹² There are a myriad of different ways in which marine resources can be conserved and managed at local, national, regional and international levels. Such measures can range from the local control of take-licences, national legislation protecting certain species, regional impositions of quotas or the regulation of fishing equipment, to international treaties on the dumping of waste and the transportation of toxic

⁹ Cook Islands, Fiji, Marshall Islands, Papua New Guinea and Vanuatu, ratified the CBD in 1993; the Federated States of Micronesia, Kiribati, Nauru and Samoa in 1994; Niue and Solomon Islands in 1996; Tonga in 1998; Palau in 1999; Tuvalu in 2003.

¹⁰ Strategic Goal C. The sustainable Development goal 14 also refers to the conservation and sustainable use of ‘the oceans, seas and marine resources’.

¹¹ This was part of the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020 adopted at the 10th Conference of the Parties in Nagoyo, Japan.

¹² See for example comments by Nik Lopoukhine and Bráulio Ferreira de Souza Dias, ‘Editorial: What does target 11 really mean?’ (2012) 18(1) Parks 5-7
https://www.iucn.org/sites/dev/files/import/downloads/parks_issue_18_1_low_resolution_file.pdf#page=25

substances. These various conservation tools include the use of Marine Protected Areas (MPAs), which are the focus of this paper. While MPAs are not specifically mentioned, to many they have become synonymous with achieving Target 11, not least because they can be counted and measured.¹³ In fact, it has been suggested that MPAs have become a cornerstone in reaching this target,¹⁴ despite the fact that scientific evidence for biodiversity and ecosystems protection is mixed,¹⁵ and the socio-economic benefits of MPAs are debated.¹⁶ There is also no consensus of definition or purpose regarding the labelling of an area of sea as an MPA.

Marine Protected Areas

The term ‘marine protected areas’ can mean many things. The United States National Ocean Service, for example, suggests this umbrella term can include ‘marine sanctuaries, estuarine research reserves, ocean parks, and marine wildlife refuges’.¹⁷ The UN Environment Programme (UNEP) simply defines an MPA as ‘A globally applicable, general term to describe any protected area

¹³ Hannah Thomas, Brian MacSherry, Lance Morgan, Naomi Kingston, Russell Moffitt, Damon Stanwell-smith and Louisa Wood, ‘Evaluating official marine protected area coverage for Aichi Target 11: appraising the data and methods that define our progress’ (2014)24 (2) Aquatic Conservation: Marine and Freshwater Ecosystems Wileyonlinelibrary.com

¹⁴ Lowine Hill, Jodi Johnson and Jan Adamowski, ‘Meeting Aichi Target 11: Equity considerations in Marine Protected Areas design’ (2016) 134 Ocean and Coastal Management 112-119

¹⁵ See for example Michael Fogarty and Steven Murawski, ‘Do Marine Protected Areas Really work?’ (2004) 43 (2) Oceanus Magazine 1-3; Kirsten Grorud-Colvert and Jane Lubchenco, ‘Do Ocean Preserves Actually work?’ The Conversation, January 5, 2017; Bob Pressey, ‘Australia’s new marine protected areas: why they won’t work’ January 17, 2013, The Conversation; Linwood Pendleton et al, ‘Debating the effectiveness of marine protected areas’ (2017) ICES Journal of Marine Science fsx154, <https://doi.org/10.1093/icesjms/fsx154>. See however, Bethan O’Leary et al, ‘Addressing Criticisms of Large-Scale Marine Protected Areas’ (2018) 5(1) BioScience 359-370.

¹⁶ Graham Edgar et al, ‘Global conservation outcomes depend on marine protected areas with five key features’ (2014) 506 Nature: International Journal of Science 216-220.

¹⁷ National Ocean Service (NOAA) ‘What is a marine protected area?’ <https://oceanservice.noaa.gov/facts/mpa.html>

in the marine realm, which aims to conserve nature and maintain healthy oceans'.¹⁸ The International Union for the Conservation of Nature (IUCN) defines MPAs as: 'A clearly defined geographical space, recognised, dedicated and managed through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'. The World Wide Fund for Nature (WWF) defines an MPA as: 'An area designated and effectively managed to protect marine ecosystems, processes, habitats and species, which can contribute to the restoration and replenishment of resources for social, economic, and cultural enrichment';¹⁹ and the FAO define MPAs as 'temporally and geographical defined areas that afford natural resources greater protection than in the rest of the area as defined in relation to fisheries management ...'.²⁰ There are consequently a great many MPAs across the world, some on inland and estuarine waters, some in coastal or territorial waters and others off- shore.²¹

Given the diversity of definitions, it is not surprising to find that the purpose and function of these MPAs also varies. Some MPAs may have primarily ecological objectives, such as preserving and promoting bio-diversity, protecting species identified as being at risk, preserving habitats such as coral reefs or fish-spawning grounds, and/or preventing activities which could have

¹⁸ UN Environment, Marine Protected Areas (MPA) Definition –Biodiversity A-Z
<http://www.biodiveristya-z.org/content/marine-protected-area-mpa>

¹⁹ WWF, 'The case for MPAs'

[http://wwf.panda.org/what we do/how we work/our global goals/oceans/solutions/protecti
on/protected areas/](http://wwf.panda.org/what_we_do/how_we_work/our_global_goals/oceans/solutions/protecti
on/protected_areas/)

²⁰ Food and Agriculture Organisation of the United Nations, 'About MPAs'
<http://www.fao.org/fishery/topic/4400/en>

²¹ Protect Planet suggests there are over 15000 MPAs, (1700 of these in the US – NOAA) protecting 6.9% of the world's oceans, but MPAtlas suggest that only about 3.7% of the worlds oceans are protected and actively managed as MPAs. However, UNEP indicated in December 2016 that more than 5% of the World's oceans are now protected (3.6 million sq km). UN News Centre
<http://www.un.org/apps/news/story.asp?NewsID=55798#.WFGvurlrLcs>, 14 December 2016.

ecologically detrimental effects on the ecology. Others may have human objectives, for example the protection and preservation of sites of historical or cultural importance, the promotion of tourism, the sustainable management of essential food resources, the provision of sites for research, monitoring and/or training.²² Many MPAs will strive to achieve a mix of objectives and purposes. Indeed, the WWF suggests that it is this diversity of purpose that can make MPAs so valuable, providing the benefits of:

- Maintaining biodiversity and providing refuges for endangered and commercial species
- Protecting critical habitats from damage by destructive fishing practices and other human activities and allowing them to recover
- Providing areas where fish are able to reproduce, spawn and grow to their adult size
- Increasing fish catches (both size and quantity) in surrounding fishing grounds
- Building resilience to protect against damaging external impacts, such as climate change
- Helping to maintain local cultures, economies, and livelihoods which are intricately linked to the marine environment

²² Protect Planet Ocean, 'What are Marine Protected Areas?'
<http://www.protectplanetocian.org/collections/introduciton/introboc/mpas/intorudction-item.html>

Not all MPAs will provide all of these benefits, and the primary objective will determine what type of MPA is being referred to. In order to try and achieve some clarification of the use and extent of MPAs, IUCN has suggested a number of different categories: Strict Nature Reserves – where human access and use are controlled and limited; Wilderness Areas – with no or limited human habitation; National Marine Parks; National Monuments/Features; Habitat or Species Management Areas;²³ Protected Landscapes/Seascapes; Protected areas with sustainable use of natural resources. Within one geographical MPA there may, therefore, be a mix of designated categories – an example, can be found in the Natural Park of the Coral Sea of New Caledonia, referred to later in this paper.

The strongest advocates of MPAs, especially for the purposes of conservation, suggest that these areas should be fully protected with no-use permitted; this protection should be strictly enforced; the designated MPAs should be in isolated areas and larger than 100 sq km and, in order to achieve the objectives, should be left undisturbed for at least ten years.²⁴ It is argued that the marine benefits of MPAs where fishing and other human activities are restricted or prohibited, are that marine habitats and populations are conserved and the overall yield of nearby fisheries may also be sustained or increased by exporting biomass.²⁵ More specifically, no-take MPAs:

²³ See for example information about the world's MPAs for Whales, Dolphins and Porpoises in Erich Hoyt, *Marine Protected Areas for Whales, Dolphins and Porpoises: a World Handbook for Cetacean Habitat Conservation and Planning*, 2012, Routledge, Table 5.19 , p 320-327

²⁴ Blue Solutions 'Challenges for Marine Protected Areas' Vilm Seminar 'Biodiversity Conservation for Human Wellbeing' 4 August 2015.http://bluesolutions.info/images/MPA-challenges_Vilm-seminar-August-2015.pdf

²⁵ Andrew Balmford, Pippa Gravestock, Neal Hockley. Colin McLean and Callum Roberts, 'The worldwide costs of marine protected areas' 2004, PNAS 101 (26) 9694-9697

- Protect exploited fish populations and enhance the production of recruits, which can restock fishing grounds;
- Supplement fisheries through spillover of adults and juveniles into the fishing ground.
- Provide a refuge from fishing for vulnerable species.
- Maintain biodiversity of natural biological communities that are different from those in open fishing grounds.
- Facilitate ecosystem recovery after major human or natural disturbances.²⁶

Detractors point out that unless MPAs create corridors, or adjacent areas of protection then protecting one area, especially through no-take categorisation, may just shift problems such as over-fishing to other areas. Also that the location of MPAs is important because if, for example, an MPA is not a natural spawning ground for a particular species, protecting it may be rather pointless. With nomadic/pelagic species, trying to conserve them in spatially limited areas may also be unproductive. With large, remote MPAs there are also the basic problems of patrolling these areas, enforcing no-take or limited take controls, and scientifically monitoring the success of these areas in terms of achieving Aichi targets and meeting CBD obligations. Where there are different types of MPAs within the same area it will also be difficult if not impossible, for fishers and other marine users, to know when they have crossed the boundary of one 'zone' into another, and where permitted activities are different. This may also create enforcement problems because a breach of use conditions in one area may be difficult to prove when the offending boat or fishing vessel moves rapidly into an uncontrolled area, or indeed out of the jurisdiction. As is evident

²⁶ C Roberts and J Hawkins, 'Fully-protected marine areas: a guide' WWF Endangered Seas Campaign, , Washington DC and Environment Department, University of York 2000

when considering examples of MPAs in the Pacific, the actual management of an MPA may be much more challenging than its declaration.

Locally Managed Marine Areas

While large MPAs are the ones that tend to hit the news, of greater relevance to the Pacific region are locally managed marine areas (LMMA) which come within the broad umbrella of MPAs but often have different forms of management from those that might be used for the larger, national MPAs. In the Pacific region the use of LMMAs is widespread,²⁷ not only because coastal marine resources are those most easily accessible to island inhabitants but also because the form of management is proving to be more workable than a top-down, state-controlled approach. It is this aspect of ownership and/or control that particularly distinguishes LMMAs from MPAs.²⁸

In the Pacific region such forms of management have the potential to be more closely aligned with traditional practices and to be more open to integrating traditional knowledge and site-specific information into the designation of the area and the way in which it is to be managed. Although research suggests that the recognition and utilisation of traditional marine management declined in the past,²⁹ this now seems to be reviving, and advocates of traditional resource management emphasise the positive benefits of this alignment.³⁰ Others,

²⁷ IUCN 'Pacific communities demonstrate marine management' 28 May 2017

<https://www.iucn.org/content/pacific-communities-demonstrate-marine-management>

²⁸ These are not the only forms of marine conservation areas, others may include Community Conserved Areas (CCA) or Indigenous and Community Conserved Areas (ICCA), and Marine Managed Areas (MMA). See Govan 2009, 27-28.

²⁹ See R Johannes, 'Traditional marine conservation methods in Oceania and their demise' (1978) 9 Annual Review of Ecology and Systematics 349-364.

³⁰ Joeli Vetiaiyaki, 'Traditional marine resource management practices used in the Pacific islands: an agenda for change' (1997)37(1) Ocean and Coastal Management 123-136; Abigail Golden, Waisea Naisilsisili and Joshua Drew, 'Combining Natural History Collections with Fisher Knowledge for Community-Based Conservation in Fiji' (2014) 9(6) PLOS One <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4030001/>

however, point to the mixed value of traditional practices, not all of which are positive for sustainable development or contribute to the conservation of resources.³¹ It is also the case that while local initiatives may be successful at a small-scale, once they grow too big, either in geographical size, or in terms of the number of stakeholders, there may be problems of management, alignment with national laws, policies and players, and challenges to co-operation between more remote neighbours, villages and/or clans.

So what is an LMMA? Govan et al adopt the following definition:³²

An area of nearshore waters and coastal resources that is largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organisations, and/or collaborative government representatives who reside or are based in the immediate area.

Within the LMMA, as in other forms of MPAs, a variety of conservation tools may be used such as: total no-take, seasonal no-take, or prohibitions on any taking for a certain length of time, or prohibitions on the taking of certain species either entirely or at certain times. In the Pacific these restrictions often align with the use of customary tabus/tambus/ra'ui.³³ While the initiative for identifying and declaring an LMMA will usually come from the local inhabitants – often motivated by one or two key individuals, often LMMAs involve not only local communities but NGOs – including international NGOs such as WWF, government and funding bodies – such as the MacArthur

³¹ See for example William Clarke, 'Learning from the Past: Traditional Knowledge and sustainable Development' (1999) 2(2) *The Contemporary Pacific* 233-253

³² Hugh Govan, William Aslbersberg, Alifereti Tawake and John Parks, *Locally-Managed Marine Areas: A guide to supporting Community-Based Adaptive Management* 2008 *The Locally-Managed Marine Area Network* p 7

³³ Referring to terms used respectively in Vanuatu and Solomon Islands; Papua New Guinea; Cook Islands.

Foundation, the European Union and the Foundation of the Peoples of the South Pacific (FSPI). LMMAs tend therefore to be managed in partnerships or co-operatively, often adopting a bottom-up approach, and building on existing networks and affiliations.

The regional Secretariat of the Pacific Regional Environment Programme supports the use of LMMAs because these forms of marine conservation are recognised as building on traditional environmental stewardship.³⁴ Local marine management is also supported through the LMMA Network which enables local communities to share experience and information across southeast Asia and the Pacific.³⁵ The Pacific Forum has also endorsed proposals put forward by the president of Kiribati, for a ‘Pacific Oceanscape’ and a ‘Pacific Ocean Arc’ aimed at fostering sustainable development, management and conservation of the Pacific ocean.³⁶ The emerging framework focusses on: the establishment of jurisdictional rights and responsibilities; fostering ‘good ocean governance’; supporting sustainable development, management and conservation; promoting, listening, learning, liaising and leading; sustaining action; and facilitating adaptation for a rapidly changing environment.³⁷

While this discourse at regional level may appear not only ambitious but also rather vague, LMMAs offer a pragmatic response to weak or ineffective and frequently under-resourced central and provincial government, and, even where

³⁴ Hugh Govan 2009 Status and Potential of Locally-Managed Marine Areas in the South Pacific, SPREP/WWF/WorldFish-Reebase/CRISP (Coral Reef Initiatives for the Pacific), Noumea

http://www.sprep.org/att/publication/000646_LMMA_Report.pdf

³⁵ See LMMA Network <http://lmmanetwork.org/> Pacific members include Palau, Fiji, Solomon Islands and Papua New Guinea.

³⁶ A framework was developed and adopted in 2009/10. This also falls under the UN Partnerships for Sustainable Development Goals.

³⁷ See ‘Pacific Oceanscape Vision’

<https://www.hokulea.com/wp-content/uploads/2015/04/PacificOceanscape.pdf>

the government is stable and better resourced, LMMAs provide a means whereby local issues, which may not be high on the national agenda, can be addressed. Indeed, it has been suggested that LMMAs now cover more than 12,000 square kilometres in 15 Pacific island states.³⁸ This may seem extensive but in fact the percentage of protected marine area is fairly small given the size of Pacific island Exclusive Economic Zones (EEZs), which in total encompass some 30,569,000 square kilometres of the Western and Central Pacific Ocean.³⁹ It is also the case that in those Pacific countries consisting of many islands, the length of coastlines is extensive, yet the percentage of coastline brought within LMMAs is very small. For example, doctoral research in Solomon Islands in 2013 reported 137 LMMAs,⁴⁰ along a coastline of 9,880 kilometres.⁴¹ The table below indicates the percentage of islands' seas that are protected.

Table 1. Protected marine percentage

Country	Protected marine percentage
Cook Islands	0
Fiji	0.92
Kiribati	11.80
Marshall Islands	0.19
Federated States of Micronesia	0.19
Nauru	0
Niue	0.01
Palau	0.23
Papua New Guinea	0.19
Samoa	0.09
Solomon Islands	0.12
Tonga	1.51
Tuvalu	0.01
Vanuatu	2.27

³⁸ Global Island Partnership, 'Locally Managed Marine Areas' undated <http://glispa.org/glispa-bright-spots/129-locally-managed-marine-areas>

³⁹ Quentin Hanich et al. 'Small-scale fisheries under climate change in the Pacific Islands region' (2018) 88 Marine Policy 279-284

⁴⁰ Philippa Cohen 'The contribution of locally managed marine areas to small-scale fisheries and food security: a Solomon Islands case study' PhD thesis (unpublished) James Cook University 2013.

⁴¹ Pacific Islands Applied Geoscience Commission <http://.sopac.org>.

These figures are taken from SPREP Pacific Islands Protected Area Portal and the information is undated so may not reflect the current picture.⁴²

Given the regional and national support for LMMAs, what do Pacific nations hope these can achieve?

The overarching objectives of LMMAs have been identified as:

1. Enhancing long-term sustainability of resource use
2. Increasing short-term harvesting efficiency
3. Restoring biodiversity and eco-systems
4. Maintaining or restoring breeding biomass of fish and/or invertebrates
5. Enhancing the economy and livelihoods
6. Reinforcing customs
7. Asserting access and tenure rights
8. Empowering communities.⁴³

On the face of it, these objectives seem sound enough, particularly if the overarching aims of Social Development Goals (SDGs), CBD and Aichi Target 11 are considered. However, a careful consideration of each objective highlights potential conflicts between marine resources protection and economic development.

Enhancing long-term sustainability of resource use

The scientific evidence from conservation scientists for MPAs (including LMMAs) is inconsistent and sometimes contradictory. Agardy et al for

⁴² <https://www.sprep.org/country-based/solomon-islands-locally-managed-marine-areas-network-silmma>

⁴³ Stacy Jupiter, Philippa Jane Cohen, Rebecca Weeks and Hugh Govan, 'Locally-managed marine areas: Multiple objectives and diverse strategies' (2014) 20 (2) Pacific Conservation Biology 165-179.

example,⁴⁴ point to the confusion of terms, the uncertainty over how extensive areas should be and what proportion of these should be no-take. As indicated above, some conservationists appear to argue that only no-take areas work and that these work best when prohibitions persist for a number of years.⁴⁵ The declaration of no-take areas may, however, be opposed by fishers and in the long term be counter-productive to community engagement with marine conservation. Those advocating conservation may also oppose sustainable use, which is premised on the natural replenishment of resources provided the use is not excessive. Permitting take for individual consumption is one example of sustainable use, but where populations are growing even this model may impose a burden on resources. Sustainable use also supposes that natural regeneration and replenishment of the resource will not be damaged by factors beyond the MPA, or by factors other than taking. This may work for less migratory species and invertebrates but be less successful for highly migratory species where breeding grounds have been damaged by commercial overfishing or other causes.

There is also the difficulty of determining what use is sustainable, in so far as this requires some future assessment of risk. In Pacific island countries there may not be the science or the resources for this and if precautionary principles are used this may mean that prohibitions are imposed unnecessarily or prematurely, creating shortages and in some cases provoking opposition and/or deliberate breach.

Increasing short-term harvesting efficiency

⁴⁴ Tundi Agardy et al 'Dangerous targets? Unresolved issues and ideological clashes around marine protected areas' (2003) *Aquatic Conservation : Marine and Freshwater Ecosystems*

⁴⁵ See for example the claims of Kirsten Grorund-Colvert and Jane Lubchenco, 'do Ocean Preserves Actually work? The Conversation January 5, 2017.

Harvesting efficiency is often directed at preventing waste, especially in discarded by-catch, which is less a problem with rod and line fishing than trawling or other large take net operations. Control of fishing devices, the number of fishers allowed and the size of catch that is permitted can all increase harvesting efficiency but may not meet local needs, especially where populations are growing or there is a localised demand for more than merely subsistence marine harvesting – for example from local tourist resorts or to meet local market demands. There may also be lack of infra-structure to prevent waste – for example refrigeration. Harvesting efficiency may also be more a matter of education than conservation and may require additional investment in resources.

Restoring biodiversity and eco-systems

While it is generally agreed among conservationists that managing marine space and imposing restrictions on certain forms of fishing, recreational and other use will probably improve eco-systems and biodiversity, there is debate, as indicated above, regarding how great an area needs to be or how extensive the restrictions should be. It is also the case that there are numerous factors that can contribute to biodiversity/eco-system harm, including in particular the consequences of terrestrial activity. In some circumstances it is too late to apply a precautionary approach – the damage has been done. In other circumstances however, this objective coupled with a precautionary approach, for example in considering environmental impact assessments, can go some way to at least reducing possible future harm. The danger in setting this objective is the expectation that results will be clearly evident and/or measurable, or, perhaps, worse, claimed when there is little scientific evidence to establish cause and effect.

Maintaining or restoring breeding biomass of fish and/or invertebrates

Data to determine if this objective is being met is variable and much seems to depend on the size of the reserve, and how long it has been effectively managed for. For example, a small survey around Emau island in Vanuatu, found that while small-scale community conservations areas might enhance invertebrate resources in locations where species were already recognised as being under threat, it was uncertain whether these small-scale reserves would result in sufficiently greater biomass to reverse this trend.⁴⁶ In order to meet this objective longitudinal, frequent and joined up research data is needed, which again may be difficult to obtain due to resources and other constraints.

Enhancing the economy and livelihoods

The extent to which LMMAs or MPAs enhance the economy or livelihoods is a moot point, owing not least to the lack of data on this. A cost-benefit analysis of MPAs in Vanuatu found that there was ‘no evidence that indicates that MPAs have an influence on the level of maximum sustainable yield for fishery, or for the maximum carry capacity for tourism. Therefore, the hypothesis that an MPA can ensure sustainable benefits (from fisheries and tourism) at the intergenerational scale remains uncertain’.⁴⁷

It is also the case that while traditional ways of fishing and marine source extraction may be permitted, often the interpretation of these is limited to individual or family consumption and does not take into account traditional patterns of barter and exchange, trade and indeed sale of such resources. There may also be express or implied assumptions that methods of fishing or marine source extraction will not modernise or take advantage of new technologies, but

⁴⁶ P Dumas, H. Jiminez, M. Léopold and G Petro, ‘Effectiveness of village-based marine reserves on reef invertebrates in Emau, Vanuatu’ (2010) 37(3) Environmental Conservation 364-37.

⁴⁷ Nicolas Pascal, ‘Cost-benefit analysis of community-based marine protected areas: Five case studies in Vanuatu’ SPC Fishers Newsletter, 134, January/April 2011, 41-48, 46.

instead be practiced in a ‘traditional/ time immemorial’ fashion. Where local people wish to engage with the monetary economy more extensively through aquaculture, greater fish-takes or other marine related activities there may be conflicts with other objectives. Certainly this has been the experience in the UK and in places in the world where fishers are organised into collectives to assert their fishing rights, including commercial rights.

Reinforcing customs

There is a wealth of literature detailing customary marine management practices, particularly the use of bans or closures, the reservation of certain species for certain occasions or people, restrictions on types of fishing equipment that are permitted or the quantity of catch that is allowed.⁴⁸ While not all customs are conservation-orientated, and some are rarely observed today, advocates of traditional marine stewardship suggest that many of the tools of modern marine resource management can be found in surviving customs. At the same time, and as suggested above, it should be pointed out that customs are not immutable. Canoes for example may have been replaced by aluminium boats with outboard motors; bows and fishing arrows with spear guns; biodegradable nets and lines with plastic, lead, and other materials that today can be found on coastlines and reefs around the region.

It is also the case that many marine customs are being lost, so one of the challenges if LMMAs are to achieve this objective is to ensure that these customs and their relevance are passed on to future generations, so again education and skills transfer has a key role to play. An example of this being

⁴⁸ Johannes 1978

done can be found in the renaissance of canoe building and sailing in parts of the Pacific.⁴⁹

Asserting access and tenure rights

As with land tenure rights, most marine tenure rights in the Pacific are governed by customary law and customary practices, and while they may be appurtenant to the land they need not be, and indeed those who have access to the beach and reef may not hold land rights in the vicinity. The main distinction seems to be that while land rights may be demarcated by boundaries, access to marine resources is not so demarcated, but enjoyed by communities. To this extent marine resources may be regarded as common property but not property that is common to all. Outsiders may have to get permission to access and exercise such rights. As with land, control will invariably vest in either the head of the family, clan or tribe, a chief or a committee - either of persons of status or elected. As with land tenure and the use of terrestrial resources, there may be tension between the claims of smaller social units or individuals and the common good. New opportunities to capitalise on natural resources can result in the leasing of customary land for development, including tourism and the privatisation of access to the beach or coast. The extraction of materials such as coral and sand, and the exploitation of terrestrial resources that have marine consequences, such as mining, logging and commercial agricultural can also impact on these common or community rights. Some of these developments see coastal areas closed to local users, or customary practices prohibited. It is also the case that as new infrastructures are constructed, such as jetties, wharves, coastal roads etc., patterns of tidal and fresh water flows are affected which can have consequences further out to sea as well as in the immediate coastal vicinity. It is therefore important that terrestrial and marine management are

⁴⁹ See Forsyth and Farran, *Weaving Intellectual Property Policy in Small Island Developing States*, Intersentia 2015, Chapter six.

integrated. An example can be found in the Nguna-Pele Marine and Land Protected Area Network in Vanuatu.⁵⁰ This Network which covers sixteen communities, integrates factors such as waste management, environmental education, biological monitoring and alternative livelihood opportunities - such as breeding trochus and giant clams, and ecotourism, and encompasses eleven local marine protected areas – with different levels of protection, and two forestry areas.

Empowering communities

Although LMMAs recognise that locally based management not only has knowledge and insights which more remote provincial or central government agencies lack, and may provide an effective bottom-up approach to conservation and environmental protection, there are three aspects that need to be considered. Firstly, how does this localised empowerment fit in the larger provincial and national picture in terms of policy, decision-making, the resolution of disputes, the burden of costs and the distribution of benefits. Secondly, to what extent is it formally recognised or facilitated by the national or provincial/state legal and administrative framework? Thirdly, is the empowerment of the community an equitable process or are some more empowered than others, possibly creating or reinforcing elites, or certain privileged positions? In New Caledonia, for example, Kanak representatives of the Customary Senate are included in the management plan for the Natural Park, but not all Kanaks support the Customary Senate, its members or its policies.

To sum up, in achieving the above objectives there may be need for negotiation and compromise as clearly there may be conflicting priorities. Indeed a number

⁵⁰ See UNDP Equator Initiative Case Studies, 'Nguna-Pele Marine and Land Protected Area Network. Vanuatu' 2012, New York

of commentators stress the importance of being clear about which objectives are a priority for which areas. It is then necessary to decide how effective LMMAs/MPAs are in achieving these objectives. It has been suggested, for example, that in order to measure the effectiveness of MPAs there needs to be sufficient scientific data both before and after the establishment of the MPA.⁵¹ While there is an increasing body of scientific research into MPAs including LMMAs, this is often limited in scope and duration and dependent on external funding and/or outsiders coming in to undertake the research. This may raise issues of dependency and sustainability. It is also often the research and publications of those already pre-disposed to advocating MPAs that attracts the limelight, such as the National Geographical Society or Pew Trust. The financial and lobbying power of these non-government agencies may be influential and partnerships with such organisations may be the only viable way in which MPAs can operate – as illustrated by some of the Pacific examples referred to later in this article. New evidence and/or change of circumstances – such as those brought about by climate change, may require a change to the objectives and/or the delineation of MPAs/LMMAs, and adaptive management strategies, informed by new technologies and external scientific knowledge - which may conflict with traditional knowledge or practices, may need to be adopted.

It should also be borne in mind that the objectives of MPAs/LMMAs listed above, take place within a rapidly changing socio-economic environment. For instance government proposals to increase tourism, even if it is eco-tourism, are likely to have an environmental impact on coastal areas and reefs. Similarly, pressure on governments to allow either bioprospecting or mining exploration may compromise off-shore marine reserves or sanctuaries or may conflict with

⁵¹ Benjamin Halpern, 'The impact of marine reserves: Do reserves work and does reserve size matter?' (2003) 13(2) *Ecological Applications* 117-137.

no-extraction rules. Population growth and/or habitation density along coastal localities may outstrip food security founded on long-term sustainability of use, while changing social and economic aspirations may mean that there are new and different priorities for the next generation.⁵²

Moving away from the community and local level, it may be necessary for centralised government to review and revise legislation pertaining to fisheries in particular and the use of regulation of marine resources more generally.⁵³ For example, in Fiji poor legislation governing the establishment of MPAs has been identified as an obstacle to the creation and management of integrated and networked areas.⁵⁴ Often LMMAs take place without any state-regulation or formal recognition beyond the more general acceptance of customary law as a source of law in plural legal societies. This can prove problematic especially for the channelling of aid funding and there may be a tendency – as has happened in some environmental legislation, to create overly complex and costly administrative frameworks, rather than focusing on the need for practical solutions.⁵⁵ There may therefore be some disparity between the law on paper and the practice in reality and some of the intended safeguards may not be effective.

MPAs and Pacific Islands

⁵² See for example research undertaken in Chile: J Tam, Kai Ming Adam Chan, Terre Satterfeld, ‘Gone fishing? Intergenerational cultural shifts can undermine common property co-managed fisheries’ (2018) 90 Marine policy 1-5.

⁵³ Don Gourlie, Ruth Davis, Hugh Govan, James Marshman and Quentin Hanich, ‘Performing “A New Song”’: suggested considerations for Drafting Effective Coastal fisheries legislation Under Climate Change’ (2018) 88 Marine Policy 342-349

⁵⁴ Rowena Valmonte-Santos, Mark Rosegrant and Madan Dey, ‘Fisheries sector under climate change in the coral triangle countries of Pacific Islands: current status and policy issues’ (2016) 67 Marine Policy 148-155, 149.

⁵⁵ See S. Farran ‘Regulating the environment for blue-green economy in plural legal states’ (2018) The Journal of Legal Pluralism and Unofficial Law, DOI: [10.1080/07329113.2018.1466094](https://doi.org/10.1080/07329113.2018.1466094)

In 2001 it was reported that there were 130 MPAs in the 14 Pacific countries of Melanesia and Polynesia,⁵⁶ although it should be noted that firstly, the data was incomplete and would now be out of date, and secondly, it was suspected that most of these were ‘paper-parks’. It is also probable that this count did not include all the LMMAs. Nevertheless, it is clear that the Pacific region has put marine preservation high on its lists of regional priorities as evidenced by the Pacific Oceanscape Framework referred to above.

It is not only regional organisations that have drawn attention to the importance of the Pacific ocean. International scientists, researchers, conservation charities and philanthropic organisations have been quick to point to the pristine marine environments surrounding Pacific and other islands. Indeed, in recent years the world’s largest MPAs have been declared around small island groups and it is these that often make headline news, nationally and internationally. The top ten MPAs by size include the Marae Moana of Cook Islands, the Natural Park of the Coral Sea in New Caledonia, the Pacific Remote Islands in the United States Minor Outlying Islands, the Coral Sea off Australia, and Pitcairn Islands Marine Reserve. The most recent designations of MPAs include Qoliqoli Cokovata, Fiji, in 2018. The role of Pacific islands in contributing to achieving Aichi target 11, cannot therefore be overlooked, but as will become evident from the examples that follow, this contribution comes at a cost and with certain challenges.

Cook Islands

In 2017 Cook Islands declared an area of approximately 2 million square kilometres to be a Marine Sanctuary, and in the same year the Cook Islands

⁵⁶ These countries were: Papua New Guinea, Fiji, Solomon Islands, New Caledonia, Vanuatu, French Polynesia, Samoa, Tonga, American Samoa, Wallis and Futuna, Cook Islands, Tuvalu, Niue and Tokelau. Huber and McGregor 2002.

parliament passed the Marae Moana Act. The Sanctuary is a multi-use MPA in which neither commercial fishing nor mineral exploitation is banned. There is however, a core no-fishing zone extending for 50 miles from the coastline of each island that makes up the Cook Islands, amounting to an area of approximately 320,000 square kilometres. Hosting an event in New York in 2017 in partnership with the organisation Conservation International,⁵⁷ Cook Islands received favourable media and INGO coverage for its championing of marine protection.⁵⁸ Given the recent date of declaration it has yet to be seen how this very large MPA will be managed and what resources demands it will create.

Kiribati

Kiribati's MPA Phoenix Islands Protected Area (PIPA) covers an area of 410,500 sq km 'in a nearly uninhabited region of abundant marine and bird life'⁵⁹ encompasses eight small islands and two coral reef systems, was declared in 2004, with governing regulations being adopted in 2008. This MPA was developed in collaboration with the non-state organisations: New England Aquarium (NEAq) and Conservation International's (CI) Global Conservation Fund and Pacific Island Program. Phoenix Islands consists of 33 islands, and it is recognised that 'Protecting the Phoenix Islands means restricting commercial

⁵⁷ Conservation International is a non-profit environmental organisation based in Arlington, USA, with offices in over 30 countries.

⁵⁸ See Shae Osborne, 'Cook Islands Marine Protected Area Event at UN Ocean conference Big success' Cook Islands News 13 June 2017, Pacific Islands Report <http://www.pireport.org/articles/2017/06/13/cook-islands-marine-protected-area-event-un-ocean-conference-big-success>; 'Cook Islands creates huge Pacific Ocean marine reserve' 14 July 2017 Daily Mail <http://www.dailymail.co.uk/wires/afp/article-4696148/Cook-Islands-creates-huge-Pacific-Ocean-marine-reserve.html>

⁵⁹ Conservation International 'World's Largest Marine Protected Areas Created in Pacific Ocean' 2/14/2008 Conservation International <http://www.conservation.org/NewsRoom/pressreleases/Pages/PIPA-largest-protected-area-in-pacific.aspx>

fishing in the area, resulting in a loss of revenue that the Kiribati government would normally receive from issuing commercial fishing licences'. To address this 'NEAq and CI are helping Kiribati design an endowment system that will cover the core recurring management costs of PIPA and compensate the government for the foregone commercial fishing licence foregone commercial fishing licence revenues.' The economic impact on Kiribati is acknowledged but there has been little coverage of the impact of those actually living in Phoenix islands, the long-term sustainability of the financial package that is offered or the recognised need to find land for Kiribati's expanding population combined with loss of territorial resources due to sea-level rise.

Palau

In 2003 Palau established the Palau Protected Areas Network (PAN), linking a number of existing LMMAs and drawing on traditional conservation methods (*bul*). In 2004 Palau was one of a number of countries which signed up to the Declaration of the Micronesia Challenge. Other Pacific countries were: Guam, Northern Mariana Islands Marshall Islands and Federated States of Micronesia. The aim of the challenge is conserve at least 30 per cent of near shore marine areas. In 2015, by way of the Palau National Marine Sanctuary Act, Palau declared a fully protected marine reserve over 193,000 square miles (500,000 sq km) of its maritime territory. Although the President stated that this MPA was 'essential to conserve the island's livelihood',⁶⁰ no fishing or mineral extraction is permitted in this area. While the conservation objectives of PAN appear to be being met,⁶¹ the latest expansion of the MPA marine area may not be sustainable. At the UN Ocean conference in New York in June 2017, it was

⁶⁰ Sarah Gibbens, 'This Small Island Nation Makes a Big Case for protecting Our Oceans' National Geographic, April 3, 2017

⁶¹ Alan Friedlander, Yimnang Golbuu, Enric Ballesteros, Jennifer Caselle, Maine Gouezo, Dawnette Olsudone and Enric Sala, 'Size, age, and habitat determine effectiveness of Palau's Marine Protected Areas' (2017) 12(3) Plos One <https://doi.org/10.1371/journal.pone.0174787>

acknowledged by the Ambassador from Palau that ‘The MPA will be expensive and local resources are not sufficient to cover the bill. We are still working to find partners who are willing to believe in our plan and to put their money where the benefit is’.⁶² A consequence maybe that Kiribati becomes heavily dependent on the goodwill and possibly agendas of donors willing to support the project, and runs the risk of diverse stakeholders determine the maanagement of this MPA.

New Caledonia

New Caledonia is an overseas territory of France, and France has the power to create marine parks by virtue of the Natural Marine Parks Act, 2006 and has general oversight of the EEZ of New Caledonia although there is considerable devolved government. The Parc Naturel de la Mer de Corail was designated an MPA in 2014, and is 1,292,967square kilometres in size, encompassing the entire EEZ of New Caledonia including the world’s largest lagoon. This is not the first MPA in New Caledonia. There have been a number of smaller MPAs along the coast and in 2008 the main lagoon of New Caledonia was made a UNESCO World Heritage site 2008.

The Parc was created by decree by the New Caledonia government, and marked the culmination of a process which started in 2012. The designation was supported by the French MPA Agency and the Pew Charitable Trust. The Parc is mixed use, although the details of its zoning – which is already subject to challenges by Vanuatu regarding its inclusion of the Hunter and Matthew Islands, and Maori in New Zealand in respect of traditional fishing rights, has yet to be established as does its governance framework. There are a number of

⁶² SPREP ‘Large scale Marine Protected Areas: Lessons shared by the Pacific’ 7 June 2017 <http://www.sprep.org/biodiversity-ecosystems-management/large-scale-marine-protected-areas-lessons-shared-by-the-pacific>

concerns surrounding the creation of the Parc, notably the impact on local fishers, the involvement (or not) of Kanaks in its governance, and the future of the Parc in the context of the 2018 national independence referendum outcome. There are also concerns that because it is mixed use, the Parc will be subject to further mineral exploitation, a matter which is already of great concern in New Caledonia, not only because of the environmental impact of the extensive territorial mining that has taken place, but also the inequitable distribution of benefits, especially to the indigenous people of New Caledonia.

Tokelau

Tokelau is an example of a country with long standing marine environment protection in which tradition runs up against the challenges of development and population growth. Tokelau has two MPAs, the Atafu Marine Conservation Area Marine Reserve which was established in 1995 and the Nukunomu Marine Conservation Area Marine Reserve which was established in 1998. These are both IUCN Category II MPAs, and are relatively small in size and fall under the control of the Economic Development, Natural Resources and Environment (EDNRE) branch of government. Tokelau has also declared itself as a whale (2010) and shark (2011) sanctuary.⁶³ Although the measures being taken to preserve and protect these creatures include a ban on all shark fishing, the director of EDNRE has previously acknowledged that ‘One of the challenges is that we still have not got proper ways to enforce on locals the rules and regulations’.⁶⁴

A further challenge to marine environment protection in Tokelau, as indicated by statements on the government web-site, is managing waste and refuse

⁶³ Priya Chand ‘Tokelau takes measures on marine resources’ SPREP 5 December 2013 <http://www.sprep.org/biodiversity-ecosystems-management/tokelau-takes-measures-on-marine-resources>

⁶⁴ Chand above

disposal,⁶⁵ demonstrating thereby the essential connection between terrestrial activity and the marine environment, and the multiple factors that need to be considered when advocating for marine protected areas.

These examples show not only the engagement of Pacific countries with marine protection but also some of the challenges that arise in doing so. While there is clear evidence of goodwill and commitment to save resources that integral to Pacific livelihoods and identity, it is also apparent that the practicalities of doing so are considerable and ones that may not be addressed by Pacific islands alone.

Conclusion

In June 2017, a Press Release announced that the ‘Global marine protected area target of 10% to be achieved by 2020’.⁶⁶ This is of course positive news, and Pacific islands have played their part contributing to this statistic. However, as shown by the Pacific examples, the exact nature of MPAs is very diverse. While those of greatest area might hit the headlines, these may turn out to be no more than ‘paper parks’. The costs and resources required to patrol these are beyond the scope of most island States, leading to a need for, or dependency on, external technical and/or financial assistance. Further, while there are examples of models which have the potential to give effect to the Aichi target requirement of ‘effective and equitable management’, there are also models which fail to give equitable consideration to the interests and voices of all stakeholders and indeed there have been some suggestions that ‘ocean grabbing’ has taken on some of the same features as ‘land grabbing’ – which should be of grave concern to those Pacific islands which have experienced the latter.

⁶⁵ See Tokelau Millennium Development Report 2012, Government of Tokelau, p 29-31

⁶⁶ UN Environment Programme. Press Release 5 June 2017

<http://www.cbd.int/doc/press/2017/pr-2017-06-05-mpa-pub-en.pdf>

Reservations about the way in which some MPAs have been determined led, in 2017, to a call for a code of conduct to be drawn up and agreed.⁶⁷ Advocates of this code, have recognised the potential for human rights abuses and damaging social consequences in the context of marine conservation.⁶⁸ In particular, they have highlighted problems of lack of consultation and consent, physical displacement, inequitable social impacts, the disempowerment of local communities and disruption to traditional resource management.⁶⁹ Whether such a code will ever be adopted remains to be seen, but what this concern does demonstrate is a growing awareness that in some cases the declaration of MPAs has ridden roughshod over traditional forms of management of marine areas and the knowledge and autonomy of local people, and may result in sacrificing rights to development and economic growth in the interests of preserving the ‘global commons’.

Increasingly it is also being recognised that MPAs of whatever size and geographical location, will only work if the governance framework is inclusive and embedded in the context in which it is to operate. While there are ‘tool kits’ and suggested management forms for MPAs – notably from the IUCN, there is nothing to stop Pacific leaders, either nationally or regionally, from developing their own code of conduct for the identification, demarcation and regulation of MPAs, taking into account the specific needs of Pacific island countries, many of which are small island developing states. In doing so they might capitalise on

⁶⁷ Diane Toomey, ‘A Call for a Hippocratic Oath on Protecting the World’s Oceans’ *Yale Environment360*, June 1 2017.

<https://e360.yale.edu/features/a-call-for-a-code-of-conduct-in-the-creation-of-marine-protected-areas> Accessed 2004/2018.

⁶⁸ Nathan Bennett, Lydia The, Yoshitaka Ota, Patrick Christie, Adam Ayers, Jon Day, Phil Franks, David Gill, Rebecca Gruby, John Kittinger, Zachary Koehn, Nai’a Lewis, John Parks, Marjo Vierros, Tara Whitty, Aulani Wilhelm, Kim Wright, Jaime Aburto and Terre Satterfeld, ‘An appeal for a code of conduct for marine conservation’ (2017) 81 *Marine Policy* 411-418.

⁶⁹ Above at p 412.

the significant contribution that can be made by bringing together modern scientific knowledge and traditional knowledge in developing best practice for sustainable and equitable inter-generational development. Similarly, within the Pacific there are clearly management models that work better than others and while the unique characteristics of each locale need to be considered, the establishment and growth of networks and forums are facilitating the exchange of knowledge and experience which could be used to positive effect.

At the same time, while it might be argued that the oceans are part of the global commons and the heritage of mankind, it should also be remembered that in the Pacific the wealth of islands lies as much in their extensive waters as in their limited land masses. Increasingly the importance of the 'blue economy' is being recognised at a regional and national level. This will create challenges for all Pacific islands in terms of balancing potential exploitation with appropriate and realistic protection. There is moreover a danger, that in seeking international blue credentials, and, persuaded by the pressure of international partners, conservation societies and offers of technical and financial support, Pacific islands may over-commit to marine protected areas, sacrificing Pacific futures to the greater good.