

Island conservation issues in international conventions and agreements

THEMATIC SECTION
Humans and Island
Environments

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SUMMARY

In this review, I look at governance beyond the national level and consider how well island conservation issues are addressed in international conventions and agreements, both global and regional. I focus primarily on small island developing states (SIDS) and look at conventions to which they are parties, in which their needs are specifically mentioned and which have actions directly targeted to SIDS. I also discuss the evolution of international soft law in agreements and action plans to respond to island issues, the role of the secretariats that have been set up by international conventions to support SIDS conservation action and the protection and recognition provided to island protected areas listed under international conventions. The review shows that international governance has increasingly responded to island needs for biodiversity conservation, often with the active participation of SIDS themselves. However, the multiplication of international agreements and their requirements has often surpassed the capacity of island countries to implement them, requiring further adaptations in order to address this problem. The regional organizations of SIDS help to provide an interface with global conventions and international organizations. There remain a number of gaps and challenges that still need to be addressed in order to halt the erosion and hopefully encourage the restoration of island biodiversity.

Keywords: agreements, biodiversity, conservation, conventions, islands, small island developing states

INTRODUCTION

In a globalized world, many external pressures impact islands through trade, development, invasive species introductions, global pollutants and now climate change. To respond to these global and regional challenges, island governments need external legal and regulatory measures that encourage and support their conservation action. A growing international legal framework and supporting institutions for biodiversity conservation and sustainability are complemented by an expanding regional dimension to governance.

Islands are natural evolutionary laboratories and refugia with specific conservation issues that are either unique or at least more extreme than elsewhere (Dahl 1984b). Island species become less competitive and vulnerable to introduced predators or invasive species, and tiny island governments may lack the capacity to manage nature conservation effectively (Jupiter *et al.* 2014). Island conservation has thus become increasingly reflected in international agreements such as the Convention on Biological Diversity (CBD) Programme of Work on Island Biodiversity. As conservation has progressed, islanders have come to see the advantages of conservation measures (Rosabal 2004).

Diplomatically, islands were off the international agenda until 1988, apart from their interest for science and tourism or as strategic locations. With the emergence of small island developing states (SIDS) from 1990, they have become a numerically large and vocal block in negotiations, demanding that their interests be reflected in international law.

It is important to distinguish two political categories of islands today: those that form island states and those that are still dependent territories or simply geographic fragments of continental states with little or no independent governance. While all islands may share similar challenges for biodiversity conservation, their ability to respond to these challenges in unique island ways depends on their political status. Independent states participate directly in international negotiations, while the interests of dependent island territories are subordinated to the larger national interest, if not totally ignored.

Here, I look specifically at international conventions and agreements from an island perspective. How well are the special interests and needs of island conservation addressed in these agreements? Where are SIDS specifically mentioned, with measures taken to respond to their needs? Have islands or islanders participated actively in their preparation and implementation? Are there agreements that were prepared by and for SIDS themselves? These questions frame the analysis that follows and are answered in the section entitled 'Challenges and Gaps'.

Previous assessments have focused on the Pacific Islands, underlining both the success of regional intergovernmental arrangements (Giraud-Kinley 1999; Herr 2002) and the difficulties SIDS have in implementing international conventions due to a lack of internal capacity (Mougeot 2003). Cooperation for ocean and coastal management in the Pacific Islands has been evaluated (Wright *et al.* 2006), and challenges and opportunities for biodiversity conservation have been reviewed (Jupiter *et al.* 2014). Chasek (2010) has also addressed

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Table 1 Global agreements and action plans relevant to island conservation. SIDS = small island developing states.

<i>Abbreviation</i>	<i>Place</i>	<i>Name and URL</i>	<i>Year</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
MAB	Paris	Man and Biosphere Programme http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/man-and-biosphere-programme/	1971	UNESCO	Declares eligible sites as Biosphere Reserves
Agenda 21	Rio de Janeiro	Agenda 21: Programme of Action for Sustainable Development, Chpt.17 Oceans, Sect.G. Sustainable development of small islands https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf	1992	UN	UN recognition of SIDS as a specific category
BPOA	Barbados	Barbados Programme of Action for the Sustainable Development of Small Island Developing States http://www.un.org/documents/ga/conf167/aconfl67-9.htm	1994	UN	First global action plan by and for SIDS
Mauritius Strategy	Mauritius	Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States http://www.un.org/ga/search/view_doc.asp?symbol=A/CONF.207/11&Lang=E	2005	UN	Update of the BPOA
SAMOA Pathway	Samoa	Small Island Developing States Accelerated Modalities of Action (SAMOA) Pathway https://sustainabledevelopment.un.org/sids2014/samoapathway http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/69/15&Lang=E	2014	UN	Third update of SIDS action plan
Agenda 2030	New York	Transforming Our World: The 2030 Agenda for Sustainable Development http://www.un.org/ga/search/view_doc.asp?symbol=A/70/L.1&Lang=E	2015	UN	Sustainable Development Goals including biodiversity conservation for all countries including SIDS

some of the challenges surrounding environmental treaty implementation in the region. By taking a global perspective, I highlight what all islands share and document their rise as a global community of common interests and diplomatic activity, something that I have encouraged for nearly 50 years.

METHODS

I have not aimed for a comprehensive review, but will illustrate the different ways that island conservation benefits from and contributes to international hard and soft law. I identify the legal texts themselves, the processes that derive from the legal texts and the secretariats that have been set up to support the conventions and agreements (Tables 1–3). I give examples of how international and regional legal instruments and processes can support conservation regulation and aspiration and provide channels for collaboration and assistance. I look at agreements that directly address biodiversity conservation and consider briefly some other domains of international law that are tangentially also relevant for conservation. I explore how islands are benefitting from international conventions and agreements, consider institutional challenges and suggest what more could be done to fill gaps and address unmet needs.

I focus on oceanic islands in SIDS and on island territories far from their mother country.

My methodology reflects my role as a practitioner, combining references to legal texts and a selection of the most pertinent literature with my direct experience as a biodiversity expert in Caribbean, Pacific and Western Indian Ocean islands, an organizer of inter-island collaboration including the Secretariat of the Pacific Regional Environment Programme (SPREP), the Deputy Director of the United Nations Environment Programme (UNEP) Regional Seas Programme, a compiler of the *IUCN/UNEP Island Directory* (Dahl 1991), a member of the United Nations Conference on Environment and Development (UNCED) secretariat responsible for drafting the Oceans and Coastal Areas chapter of Agenda 21 including islands (UN 1992) and an advisor to many island governments and programmes in all oceans since 1969.

INTERNATIONAL CONVENTIONS AND AGREEMENTS RESPONDING TO ISLAND NEEDS

Several functions of international conventions and agreements benefit island biodiversity conservation. First, they provide a framework for international dialogue and cooperation, such

as in conferences of the parties, where governments can consider issues beyond their immediate national interest and collaborate on common goals. This is often more important than the specific provisions of the agreement, leading to action plans and joint projects that may go far beyond what the legal text of the agreement requires. Governments can also adopt declarations and prepare common positions for international negotiations at these meetings. This has helped to build common SIDS positions where previously islands were marginalized or completely ignored. These processes work both within island regions and internationally, building collaboration, networking and a sharing of experience across all island states.

Second, such agreements set standards and objectives that governments are expected to respect or achieve. They thus become a focus for national policy-making and action, with results that will be judged by their peers. Peer pressure is an important element in international diplomacy, since enforcement mechanisms are generally lacking. Emulation of best practices can emerge, as island leaders see other countries' achievements and also want to announce successes.

Third, international conventions establish a secretariat, and often subsidiary bodies for scientific advice or technical assistance, becoming elements of international governance that assist parties to follow through with their obligations. The structures of multilateral governance are built in this way and interact and reinforce each other to achieve conservation objectives. Tables 1 and 2 summarize the global conventions and agreements and their relevance to island conservation.

United Nations

The early 1970s saw the United Nations Conference on the Human Environment (Stockholm 1972), the creation of the UNEP and the birth of some specialized conservation conventions. By 1974, the UNEP was establishing Regional Seas Programmes including islands, starting with the Mediterranean. Their action plans and conventions have provisions and protocols on protected areas and wildlife (see below).

In the lead up to the UNCED, the Rio Earth Summit, in 1992, Maurice Strong, the Conference Secretary-General, asked me to join the conference secretariat to prepare a section on the sustainable development of islands in the 'Oceans' chapter of Agenda 21. This section presented the special needs and requirements of SIDS including their biodiversity, stimulated their recognition as a specific entity in the UN and called for global conferences on the sustainable development of SIDS in order to help them identify and express their common interests. The UN defines SIDS as low-lying coastal countries that share similar development challenges and concerns about the environment, especially their vulnerability to the adverse effects of global climate change. Agenda 21 recognized that SIDS and islands supporting small communities are special cases both for environment and development due to their

small size, isolation and vulnerability. Currently, 39 SIDS are included in the list used by the United Nations Department of Economic and Social Affairs (UN DESA) (Taylor *et al.* 2013).

The UN Secretariat established a SIDS Unit in UN DESA, as well as an Inter-Agency Consultative Group on SIDS. In 2001, the UN General Assembly established the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States to follow-up on the implementation of their respective action plans. The UN has supported and hosted the Small Island Developing States Network (Table 4).

After an initiative by Malta and other islands at the UN in 1988, the island countries organized themselves in 1990 as an intergovernmental organization – the Alliance of Small Island States (AOSIS) – to carry out advocacy for small island states and to influence international environmental policy, including presenting common positions in international negotiations such as those on climate change. This is particularly important since individual small island states have few resources for diplomacy and gain much from working collectively. Another important island grouping on biodiversity is the Global Island Partnership, which organizes high-level events at international conferences and collaborations among SIDS (Table 4).

SIDS conferences

The proposal in Agenda 21 for an international conference for all SIDS led to a series of UN intergovernmental conferences (Table 1). The first Global Conference on the Sustainable Development of Small Island Developing States was held in Bridgetown, Barbados, on 25 April–6 May 1994. It adopted the Barbados Programme of Action for the Sustainable Development of Small Island Developing States. The Second International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States in Port Louis, Mauritius, on 10–14 January 2005, adopted the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. The third International Conference on Small Island Developing States held in Apia, Samoa, on 1–4 September 2014, adopted the SIDS Accelerated Modalities of Action (SAMOA) Pathway. For this conference, the UNEP prepared a report on *Emerging Issues for Small Island Developing States* (UNEP 2014a) and *GEO Environment Outlook for Small Island Developing States* (UNEP 2014b).

These conferences helped SIDS to recognize that their impact increases when they act together, and they have been good at creating mechanisms for sharing and collaborating in support of convention objectives. In the Micronesia Challenge, the islands have committed to conserving at least 30% of near-shore marine resources and 20% of terrestrial resources across Micronesia by 2020. In the Caribbean Challenge Initiative, nine Caribbean leaders agreed to protect

Table 2 Global conventions relevant to island conservation. SPREP = Secretariat of the Pacific Regional Environment Programme; UN = United Nations; UNEP = United Nations Environment Programme; UNESCO = United Nations Educational, Scientific and Cultural Organization; UNTS = United Nations Treaty Series number <https://treaties.un.org/>.

<i>Abbreviation</i>	<i>Place</i>	<i>Name and URL</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
CBD	Rio de Janeiro	United Nations Framework Convention on Biological Diversity, https://www.cbd.int/	1992	1993	I-30619	Montreal, Canada (UNEP)	Global legal framework for biodiversity conservation
	Cartagena	– Cartagena Protocol on Biosafety, http://bch.cbd.int/protocol/	2000				
	Nagoya	– Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, http://www.cbd.int/abs/	2010				Protects access to genetic resources
	Nagoya–Kuala Lumpur	– Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, http://bch.cbd.int/protocol/supplementary/					
	Awké Kon	– Guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or that are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities					Recognizes indigenous rights
	Bonn	– Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization	2002				
	Jakarta	– Mandate on Marine and Coastal Biological Diversity	1995				
		– Programme of work on Island Biodiversity, https://www.cbd.int/island/	2006				Specific programme on island biodiversity
Aichi	– Biodiversity Targets to be achieved by 2020 through the implementation of National Biodiversity Strategies and Action Plans, https://www.cbd.int/sp/targets/	2010				Sets targets for biodiversity conservation	
CITES	Washington, DC	Convention on International Trade in Endangered Species of Wild Fauna and Flora, http://www.cites.org	1973	1975	I-14537	Geneva, Switzerland (UNEP)	Controls or prohibits trade in endangered species
CMS	Bonn	Convention on the Conservation of Migratory Species of Wild Animals, http://www.cms.int	1979	1983	I-28395	Bonn, Germany (UNEP)	Framework to conclude specific agreements on migratory species

Table 2 Continued

<i>Abbreviation</i>	<i>Place</i>	<i>Name and URL</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
AEWA		– Agreement on the Conservation of African–Eurasian Migratory Waterbirds	1996	1999		CMS	
		– Memorandum of Understanding concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa	1999			CMS	
		– Memorandum of Understanding concerning the Conservation of the Manatee and Small Cetaceans of Western Africa and Macaronesia	2008			CMS	
		– Memorandum of Understanding on the Conservation and Management of Dugongs (<i>Dugong dugon</i>) and their Habitats throughout their Range	2007			CMS	
IOSEAMarine Turtles		– Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia	2001			CMS	
		– Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region	2006			CMS/SPREP	
		– Memorandum of Understanding on the Conservation of Migratory Sharks	2010			CMS	
IWC	Washington,DC	International Convention for the Regulation of Whaling, https://iwc.int/convention.htm	1946	1948	I-2124	International Whaling Commission, Cambridge, UK	Controls and prohibits hunting of whales
Ramsar	Ramsar	Convention on Wetlands of International Importance Especially as Waterfowl Habitat, http://www.ramsar.org	1971		I-14583	Gland, Switzerland	Recognizes and protects wetlands that are important for migratory birds
UNCLOS		United Nations Convention on the Law of the Sea, http://www.un.org/Depts/los ; https://www.isa.org.jm	1982		I-31363	UN, New York, USA; International Seabed Authority, Kingston, Jamaica	Legal framework for the high seas and seabed, ocean fisheries, extent of state sovereignty and exclusive economic zones
		– Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, http://www.un.org/depts/los/convention_agreements/convention_overview_part_xi.htm	1994		I-31364	UN	

Table 2 Continued

<i>Abbreviation</i>	<i>Place</i>	<i>Name and URL</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
FSA (Fish Stock Agreement)		– Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, http://www.un.org/depts/los/fish_stocks_conference/fish_stocks_conference.htm	1995		I-37924	UN	
UNFCCC	Rio de Janeiro	United Nations Framework Convention on Climate Change, http://www.unfccc.int	1992	1994	I-30822	Bonn, Germany	Legal framework for international action on climate change
	Paris	– Paris Agreement, http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf	2015	2016			
WHC (World Heritage Convention)		Convention Concerning the Protection of the World Cultural and Natural Heritage, http://whc.unesco.org	1972		I-15511	UNESCO, Paris	Recognizes sites as part of world heritage

Table 3 Regional conventions and agreements relevant to island conservation. FAO = Food and Agriculture Organization; UNEP = United Nations Environment Programme; UNTS = United Nations Treaty Series number <https://treaties.un.org/>; rev. = revised; am. = amended; sus. = suspended.

<i>Abbreviation</i>	<i>Place</i>	<i>Name</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
CEP	Caribbean	Caribbean Environment Programme, http://www.cep.unep.org				Regional Coordinating Unit (CAR/RCU), Kingston, Jamaica	UNEP Regional Seas environmental programme for all the Caribbean islands
		– Action Plan	1981				
	Cartagena	Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	1983	1986	I-25974		
	– Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region	1983	1986				
	– Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region	1990	2000				
		– Protocol Concerning Pollution from Land-Based Sources and Activities	1999	2010			
EAS	East Asia	Action Plan for the Protection and Development of the Marine and Coastal Areas of the East Asian Region, http://www.cobsea.org	1981			Coordinating Body for the Seas of East Asia (COBSEA), Bangkok	UNEP Regional Seas programme for South-East Asian countries and islands
MAP	Mediterranean	Regional Seas Mediterranean Action Plan, http://www.unepmap.org	1975, rev. 1995			Coordinating Unit (MEDU), Athens, Greece	UNEP Regional Seas programme for the Mediterranean including all islands
		Barcelona	Convention for the Protection of the Mediterranean Sea against Pollution	1976, am. 1995	1978 2004		
	– Protocol on Pollution by dumping from Ships and Aircraft	1976, am. 1995	1978				
	– Protocol on Pollution from Land-Based Sources and Activities	1980, am. 1996	1983				
	– Protocol on Specially Protected Areas and Biodiversity	1982, am. 1995	1986 1999				
	– Protocol on Pollution from Ships and Cases of Emergency	1976	2002				
	– Protocol on Pollution from Exploration and Exploitation of Continental Shelf and Seabed	1994					
	– Protocol on Pollution by Transboundary Movements of Hazardous Wastes and their Disposal	1996					

Table 3 Continued

<i>Abbreviation</i>	<i>Place</i>	<i>Name</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
PIF	Pacific	Pacific Islands Forum, http://www.forumsec.org	1971		I-12543	Suva, Fiji	Political grouping of Pacific Island states
			am. 2005		I-29909		
SPC	Pacific	Pacific Community (formerly Secretariat of the Pacific Community, South Pacific Commission), https://www.spc.int				Nouméa, New Caledonia	Development cooperation organization of all Pacific states and territories
FFA	Canberra Pacific	Agreement establishing the SPC Pacific Islands Forum Fisheries Agency, http://www.ffa.int	1947		I-1352 I-27574	Honiara, Solomon Islands	Legal framework for fisheries cooperation among Pacific states
SOPAC	Pacific	South Pacific Forum Fisheries Agency Convention Agreement establishing the South Pacific Applied Geosciences Commission (now SPC Geoscience Division), http://gsd.spc.int	1979 1990		I-27575 I-24399	SPC Geoscience Division, Suva, Fiji	Technical assistance in geosciences to all Pacific states and territories
SPREP	Pacific	Secretariat of the Pacific Regional Environment Programme (SPREP; formerly South Pacific Regional Environment Programme), https://www.sprep.org	1982			SPREP Apia, Samoa	Regional environmental programme of all Pacific states and territories, and UNEP Regional Seas programme; responsible for biodiversity conservation and climate change
		– Agreement Establishing the South Pacific Regional Environment Programme	1993		I-33912		
Apia	Apia	Convention on the Conservation of Nature in the South Pacific, http://sedac.ciesin.org/entri/texts/nature.south.pacific.1976.html	1976	1990, sus. 2006		SPREP	
SPREP Convention	Nouméa	Convention for the Protection of the Natural Resources and Environment of the South Pacific Region	1986	1990		SPREP	
		– Protocol for the Prevention of Pollution of the South Pacific Region by Dumping	1986	1990			
		– Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region	1986	1990			

Table 3 Continued

<i>Abbreviation</i>	<i>Place</i>	<i>Name</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
Waigani Convention	Waigani	Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region	1995	2001	I-37758	SPREP	
SASAP	South Asia	South Asia Cooperative Environment Programme, http://www.sacep.org	1982			SACEP Colombo, Sri Lanka	UNEP Regional Seas programme for South Asia and central Indian Ocean islands
WACAF	Abidjan	South Asian Seas Action Plan	1995				
		West and Central Africa Region (WACAF) Action Plan, http://abidjanconvention.org	1981	1984		Abidjan Convention Secretariat, Abidjan, Côte d'Ivoire	UNEP Regional Seas programme for West Africa including islands
IOC	Abidjan	Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region	1981	1984			
		– Protocol for Pollution in Cases of Emergency	1981	1984			
IOC	Western Indian Ocean	Indian Ocean Commission, http://commissionoceanindien.org	1982			Mauritius	Intergovernmental organization of western Indian Ocean islands
EAF	Western Indian Ocean	– Victoria Agreement East African Action Plan	1984 1985	1986		Eastern African Regional Coordinating Unit (EAF/RCU), Seychelles	UNEP Regional Seas programme for Eastern Africa and Western Indian Ocean islands

Table 3 Continued

<i>Abbreviation</i>	<i>Place</i>	<i>Name</i>	<i>Signed</i>	<i>In force</i>	<i>UNTS</i>	<i>Secretariat</i>	<i>Relevance to islands</i>
Nairobi Convention	Nairobi	Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, http://www.unep.org/nairobiconvention	1985	1996		EAF/RCU	
		– Protocol on Protected Areas and Wild Fauna and Flora	1985	1996			
		– Protocol on Marine Pollution	1985	1996			
		– Protocol on Land based sources and activities	2010	2011			
		– Amended Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean	2010				
PNA	Central Pacific	Parties to the Nauru Agreement, under the Forum Fisheries Agency, http://www.pnatuna.com	1982, am. 2010			Majuro, Marshall Islands	Fisheries agreement among island states for skipjack tuna
WCPFC	Western and Central Pacific	Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention), http://www.wcpfc.int	2000	2004	I-40532	Western and Central Pacific Fisheries Commission, Kolonia, Pohnpei, Federal States of Micronesia	Fisheries agreement among all states fishing in the Western and Central Pacific
WECAFC	Wider Caribbean	Western Central Atlantic Fisheries Commission				FAO	Fisheries agreement among states fishing in the wider Caribbean
CRFM	Caribbean	Caribbean Regional Fisheries Mechanism, http://crfm.net	2002			Belize	Fisheries agreement among Caribbean small island developing states

Table 4 Other mechanisms supporting small island developing states' collaboration on conservation.

<i>Mechanism</i>	<i>URL</i>
United Nations Secretariat, Department of Economic and Social Affairs, Small Island Developing States (SIDS) Unit	http://www.un.org/esa/dsd/dsd_aofw_sids/sids_index.shtml
United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States	http://unohrrls.org/
Small Island Developing States Network	http://www.sidsnet.org/
Alliance of Small Island States	http://aosis.org/
Global Island Partnership	http://www.cbd.int/island/glispa.shtml
The Micronesia Challenge	http://micronesiachallenge.org/
The Caribbean Challenge Initiative	http://caribbeanchallengeinitiative.org/
The Western Indian Ocean Coastal Challenge	http://www.wiocc.org/

20% of their marine and coastal environment by 2020, accompanied by a Corporate Compact of business leaders and supported by a Caribbean Biodiversity Fund. The Western Indian Ocean Coastal Challenge is supported by the Indian Ocean Commission ISLANDS Project (Table 4).

The SAMOA Pathway includes three priority areas that are relevant to biodiversity. Under oceans and seas, the target is to conserve by 2020 at least 10% of SIDS coastal and marine areas, especially areas of importance for biodiversity and ecosystem services. It supports SIDS to conserve biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. On forests, it supports the implementation of the Non-Legally Binding Instrument on All Types of Forests, calls for a halt to deforestation and forest degradation, and for effective reforestation and looks to financing to improve the state of biological diversity by conserving and safeguarding ecosystems, species and genetic diversity. Another priority is invasive alien species that threaten biodiversity.

Law of the Sea

While the United Nations Convention on the Law of the Sea (UNCLOS) is not directly concerned with island biodiversity conservation, it has played an important role in defining what is an island and how far its maritime jurisdiction extends, including over biological resources (Jacovides 2014). One innovation was the definition of archipelagic states, incorporating the waters between islands into their sovereign territory (Cogliati-Bantz 2015). UNCLOS has adopted an Agreement concerning islands, and the Fish Stock Agreement, which creates a framework for regional fisheries conventions and agreements.

One of the chief architects in the design and implementation of the Law of the Sea was an islander, Satya N. Nandan from Fiji, first Secretary-General of the International Seabed Authority (<https://www.isa.org.jm/>) in Kingston, Jamaica. He was also involved in some of the important fisheries conventions involving island states (Lodge & Nordqvist 2014).

Convention on Biological Diversity

The overarching international legal text on biodiversity is the UN Framework CBD. The special conditions in small island states are mentioned in the Preamble and the article on financial resources, but not in the substantive text. A number of instruments adopted under the convention (Table 2) include issues of concern to islands, such as impacts on indigenous communities and the Aichi Biodiversity Targets to be achieved by 2020 through the implementation of National Biodiversity Strategies and Action Plans (NBSAPs). In 2006, the Convention adopted a Thematic Programme of Work on Island Biodiversity (<https://www.cbd.int/island/>). It has also published reports on progress in island biodiversity (CBD 2014).

The funding mechanism for the CBD is the Global Environment Facility (GEF) of the World Bank, the UNDP and the UNEP, which support the international dimension of environmental actions. One of its early projects was the South Pacific Biodiversity Conservation Programme (1993–2001), executed by the SPREP in order to pioneer the establishment of 17 community-based Conservation Areas in 12 participating Pacific Island countries, leading to the spread of the locally managed marine areas model (Govan *et al.* 2009). The GEF has also supported trust funds for island protected areas through the Micronesia Challenge. This shows how international mechanisms can pioneer solutions that are appropriate to island biodiversity and customary ownership.

Other conservation conventions

There are other global conventions that address particular aspects of biodiversity conservation from which islands benefit. Several mechanisms provide international recognition for protected natural areas (Table 5) including the World Heritage Convention of the United Nations Educational, Scientific and Cultural Organization (UNESCO), which adopted a World Heritage Programme for SIDS in 2005 (<http://whc.unesco.org/en/sids/>). There are 27 island states and territories or offshore islands with natural World Heritage sites. The Ramsar Convention lists wetlands of international

Table 5 Internationally recognized island protected areas.

<i>World Heritage</i>	<i>Ramsar sites (number of protected areas)</i>	<i>Biosphere Reserves</i>
Australia	Antigua and Barbuda (1)	Chile (Juan Fernández)
– Lord Howe Island Group	Bahamas (1)	Cuba (6)
– Heard and McDonald Islands	Barbados (1)	Dominican Republic (1)
– Macquarie Island	Cape Verde (4)	Ecuador (Archipiélago de Colón – Galápagos)
Belize Barrier Reef Reserve System	Comoros (3)	France (Commune de Fakarava (Atoll de Taiaro), Archipel de la Guadeloupe)
Brazilian Atlantic Islands: Fernando de Noronha and Atol das Rocas Reserves	Cuba (6)	
Chile: Rapa Nui National Park (cultural)	Dominican Republic (4)	
Costa Rica: Cocos Island National Park	Fiji (1)	
Cuba	Grenada (1)	Haiti (2)
– Desembarco del Granma National Park	Jamaica (4)	India (Great Nicobar)
– Alejandro de Humboldt National Park	Kiribati (1)	Madagascar (4)
Dominica: Morne Trois Pitons National Park	Madagascar (10)	Maldives (Baa Atoll)
Ecuador: Galápagos Islands	Marshall Islands (2)	Mauritius (1)
Hawaii (USA)	Mauritius (3)	Mexico (four islands, including Cozumel)
– Hawaii Volcanoes National Park	Palau (1)	Micronesia, Federated States of (Utwe, And Atoll)
– Papahānaumokuākea	Papua New Guinea (2)	Nicaragua (Ometepe Island)
Italy: Isole Eolie (Aeolian Islands)	Saint Lucia (2)	Palau (Ngaremeduu)
Jamaica: Blue and John Crow Mountains	Samoa (1)	Portugal (Corvo Island, Graciosa Island, Flores Island – Azores)
Japan: Ogasawara Islands	São Tomé and Príncipe (1)	Saint Kitts and Nevis (1)
Kiribati: Phoenix Islands Protected Area	Seychelles (3)	São Tomé and Príncipe (Príncipe)
Madagascar	Trinidad and Tobago (3)	Spain (La Palma, Lanzarote, Menorca, Isla de El Hierro, Gran Canaria, Fuerteventura, La Gomera)
– Tsingy de Bemaraha Strict Nature Reserve		USA (Aleutian Islands, Channel Islands, Virgin Islands, Hawaiian Islands)
– Rainforests of the Atsinanana		Yemen (Socotra Archipelago)
New Caledonia (France): Lagoons of New Caledonia		
New Zealand Sub-Antarctic Islands		
Palau: Rock Islands Southern Lagoon		
Pitcairn (UK): Henderson Island		
Portugal: Laurisilva of Madeira		
Saint Lucia: Pitons Management Area		
Seychelles		
– Aldabra Atoll		
– Vallée de Mai Nature Reserve		
Solomon Islands: East Rennell		
Tristan da Cunha (UK): Gough and Inaccessible Islands		
Vanuatu: Chief Roi Mata's Domain (cultural)		
Yemen: Socotra Archipelago		

importance as waterfowl habitats, including many island sites. UNESCO has established a World Network of Biosphere Reserves under its Man and Biosphere Programme combining conservation and sustainable development, with many islands and parts of islands protected as Biosphere Reserves (Table 5).

The Convention on the Conservation of Migratory Species of Wild Animals provides the framework for specific agreements on wide-ranging or migratory species that need to be protected across their range such as waterbirds, marine turtles and marine mammals. A number of these agreements cover ranges including island countries and have SIDS as parties (Table 2).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) controls or prohibits the trade in listed species or parts of species where this trade threatens the survival of the species (Bell 2012). It

is a useful tool for reducing the pressure on island species for export.

Many islands have whales in their waters and interests in whale watching, and the International Convention for the Regulation of Whaling and its International Whaling Commission (IWC), which formerly regulated the hunting of whales, now largely aims to protect the small remaining populations.

Another international convention of critical importance for islands and the survival of their biodiversity is the United Nations Framework Convention on Climate Change (UNFCCC). Islands have become major players in the negotiations at the Conferences of the Parties, and through a Marshall Islands initiative leading up to the Paris Agreement adopted in 2015, they succeeding in having their aspiration of global warming limited to 1.5°C accepted by all countries. The challenges for island states under the UNFCCC are similar

Table 6 Biodiversity conservation in the Sustainable Development Goal targets.

<i>Target no.</i>	<i>By year</i>	<i>Target</i>
2.4	2030	Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
2.5	2020	Maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed
6.6	2020	Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
8.9	2030	Devise and implement policies to promote sustainable tourism, which creates jobs and promotes local culture and products
11.4	–	Strengthen efforts to protect and safeguard the world's cultural and natural heritage
12.2	2030	Achieve sustainable management and efficient use of natural resources
<i>Goal 14</i>		<i>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</i>
14.2	2020	Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
14.5	2020	Conserve at least 10% of coastal and marine areas, consistent with national and international law and based on best available scientific information
<i>Goal 15</i>		<i>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss</i>
15.1	2020	Ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
15.2	2020	Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
15.3	2020	Combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
15.4	2030	Ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits that are essential for sustainable development
15.5	2020	Take urgent and significant action to reduce degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

to those under the conservation conventions (Nurse & Moore 2005).

The Sustainable Development Goals (SDGs) (UN 2015) are the latest framework for integrating biodiversity challenges with other environmental, social and economic objectives in national planning and action until 2030. Two of the 17 SDGs directly address biodiversity conservation: Goal 14 on oceans and marine resources; and Goal 15 on terrestrial ecosystems and biodiversity loss. In addition, targets that are relevant to biodiversity are integrated under a number of other SDGs (Table 6).

All countries including SIDS are expected to adapt these global goals to their own situation and to report regularly

to the UN on their progress. Indicators have been identified for most of these targets (IAEG-SDGs 2016). SIDS should now be considering how they will measure their progress in biodiversity conservation within this new integrated framework for policy, action and reporting.

REGIONAL CONVENTIONS AND ORGANIZATIONS OF ISLANDS

The second level of intergovernmental organization and action is regional, among islands sharing a common sea area. While the islands in a geographic area may share biological characteristics and physical proximity, they have often been

separated by different colonial traditions with diverse legal and cultural systems and languages, retaining closer ties to the mother country than to their near neighbours. This impacts what international agreements they belong to, how they are implemented and how much autonomy they have to adapt them to their local island situation.

The regional intergovernmental organizations and UNEP Regional Seas Conventions in the Pacific, the Caribbean and the Western Indian Ocean have played important roles in building island solidarity and provide necessary expertise and support to very small countries. Atlantic, Asian and Mediterranean island states have grouped with adjacent continental countries (Table 3).

The UNEP's Global Environment Outlook (GEO) programme of environmental assessments has produced two sets of reports for the major island regions, including a biodiversity component. *Pacific Islands Environment Outlooks* were prepared for the UNEP by the SPREP (UNEP 1999b, 2005c). Similar reports were prepared for the Caribbean (UNEP 1999a; UNEP 2005b), for the Western Indian Ocean (1999c) and the Atlantic and Indian Oceans (UNEP 2005a). These reports review the state of the environment and policy responses and discuss emerging issues, allowing island countries to compare their performance with their peers and to learn from best practices.

The International Union for Conservation of Nature (IUCN) has long been interested in island conservation. It has supported regional reviews of island protected areas, such as in Oceania (Dahl 1986), and extended this approach jointly with the UNEP to provide a global review of island conservation needs and priorities in an *Island Directory* and database (Dahl 1991), including 2000 islands, with indicators of conservation importance and human threat, among others.

Pacific

In the Pacific, the island countries and territories have a long tradition of regional cooperation on which biodiversity conservation action has built. The major intergovernmental organizations in the region with some impact on biodiversity and natural resources are the Pacific Islands Forum (PIF), the Pacific Community (SPC), the Forum Fisheries Agency and the SPREP. The Council of Regional Organizations in the Pacific under the PIF ensures cooperation among the regional organizations, both governmental and non-governmental (Table 3).

A short history of regional conservation action in the Pacific Islands illustrates how mechanisms for international cooperation, standard setting and implementing institutions such as convention secretariats are mutually supportive, with interested governments, non-governmental organizations and international organizations working together over decades through a combination of formal agreements, action plans, intergovernmental meetings and scientific symposia to build interest in and capacity for nature conservation

in the 22 small island countries and territories of the region.

In 1947, the governments with Pacific Island territories established the South Pacific Commission (SPC; now the Pacific Community) to combine their efforts to rebuild the islands after World War II. The SPC had work programmes in economic development (including fisheries), social development and public health, but did not respond to political questions. As island countries became independent, they joined the Commission, and today the SPC, headquartered in Nouméa, New Caledonia, includes all independent states and dependent territories in the Pacific Islands.

An SPC meeting in 1969 recommended a special project on nature conservation and the recruitment of a Regional Ecological Advisor, and in 1971, the IUCN and SPC held a Regional Symposium on Conservation of Nature (SPC 1973). I took up the post of Regional Ecological Advisor from 1974 to 1982 and assisted island countries with ecosystem surveys, conservation legislation, training and the establishment of some of the first terrestrial and marine protected areas.

To build political interest, the governments of New Zealand and Australia then initiated a series of South Pacific Conferences on National Parks and Reserves in 1975 and 1979, inviting ministers from the island countries to learn about and commit to the creation of protected areas. These conferences on nature conservation continue as the main forum for regional planning for conservation action. The IUCN funded the SPC to prepare a *Regional Ecosystems Survey of the South Pacific Area* (Dahl 1980) in order to identify the conservation needs of the region, with the initial results presented at a Second Regional Symposium on Conservation of Nature in Apia, Samoa, in 1976, followed immediately by a plenipotentiary meeting to conclude a Convention on Conservation of Nature in the South Pacific (Apia Convention) drafted by the IUCN.

The Apia Convention was the first island nature conservation convention. The number of parties was never large, since a dispute at the plenipotentiary meeting over the representation of autonomous but not yet independent island territories interfered with the signature and ratification process. The Convention was suspended in 2006 in order to avoid duplication with the Nouméa Convention.

The UNEP also became interested in the region after being approached by the SPC in 1974, leading to financial support being given to the SPC to prepare national and regional state-of-the-environment reports and a regional action plan for the SPREP, launched at the Rarotonga Conference on the Human Environment in the South Pacific in 1982 (Fuse & Iwama 1981; Dahl & Baumgart 1982). The UNEP considers the SPREP to be one of its Regional Seas Programmes, although with a broader focus than just oceans and coastal areas. What started as a joint programme of the SPC, the Pacific Forum, the UNEP and the UN Economic and Social Commission for Asia and the Pacific with a secretariat at the SPC became a separate

intergovernmental organization through the 1986 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Nouméa Convention) and the 1993 Agreement Establishing SPREP, with the SPREP in Apia, Samoa, as the main regional body responsible for sustainable development, nature conservation, climate change and other environmental issues (Dahl 1984a, 1984b, 1985). The IUCN continued to provide scientific support to regional conservation planning (Dahl 1984c, 1986).

The SPREP is the Secretariat for three conventions: the Apia Convention, the Nouméa Convention and the Waigani Convention on hazardous wastes. The SPREP has built the capacity of countries in the region to participate in international conventions and negotiations (Herr 2002; Mougeot *et al.* 2003), such as through an information package on the CBD to assist governments with implementation (SPREP 2000), training on CITES, regional preparatory meetings prior to conferences of parties to international conventions and a GEF Integrated Island Biodiversity project. It has also explored how to rationalize the reporting requirements under the different biodiversity conventions.

As mentioned above, the regional conferences on nature conservation have continued every 5 years since 1975, with the most recent 9th Pacific Conference on Nature Conservation and Protected Areas in Suva, Fiji, on 2–6 December 2013. It adopted an *Action Strategy: Framework for Nature Conservation and Protected Areas in the Pacific Islands Region 2014–2020* (SPREP 2014). Part 1 is a Code of Conduct and Guiding Principles, while Part 2 serves as a bridge between the global targets for biodiversity and the implementation of the NBSAPs under the CBD. The SPREP has prepared a guide linking this framework to the CBD Aichi targets (SPREP 2016), but countries still have difficulties in using the guide in their reporting. To ensure coordination with the non-governmental organizations that are active in conservation in the region, the SPREP established the Pacific Islands Roundtable for Nature Conservation (<https://sprep.org/pirt>).

Caribbean

The Caribbean region also has intergovernmental organizations of islands, including the Caribbean Community, which is associated with a Climate Change Centre (<http://www.caribbeanclimate.bz/>), and the Organization of Eastern Caribbean States.

The Caribbean Environment Programme (CEP), a UNEP Regional Seas Programme, provides the legal framework for regional cooperation on biodiversity conservation, including both island and coastal states. The Caribbean Action Plan and the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention) are facilitated by a Regional Coordinating Unit in Kingston, Jamaica. An associated protocol on Specially Protected Areas and Wildlife is implemented by a Regional Activity Centre in Guadeloupe

(<http://www.car-spaw-rac.org/>). As with most Regional Seas Programmes outside the Pacific and South Asia, the focus is on marine and coastal conservation rather than terrestrial conservation.

Indian Ocean, Mediterranean and Atlantic

The Indian Ocean Commission groups Comoros, Réunion (France), Madagascar, Mauritius and Seychelles, with a secretariat in Mauritius. It includes sustainable development and the conservation of resources and ecosystems among its areas of focus, with projects on biodiversity, climate change and coastal zone management. Beyond this, it is the UNEP Regional Seas Programmes, including the relevant island countries and territories, which provide Action Plans and often regional Conventions with a biodiversity conservation component.

The Eastern African Regional Seas Programme covers the Comoros, Madagascar, Mauritius and Seychelles, as well as the coastal states, with an Action Plan and the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean, as well as a protocol concerning Protected Areas and Wild Fauna and Flora. The Eastern African Regional Coordinating Unit is based in Seychelles.

In the East Asian Seas (EAS), Singapore is the only SIDS, although the region includes many islands. The Coordinating Body for the Seas of East Asia in Bangkok is responsible for the Action Plan for the Protection and Development of the Marine and Coastal Areas of the East Asian Region. There is no regional convention, but instead the programme promotes compliance with existing environmental treaties. Long-term strategies for the EAS Action Plan are adopted periodically.

The South Asian Seas, including Maldives, Sri Lanka and India's Andaman, Nicobar and Laccadive Islands, are covered by the 1995 South Asian Seas Action Plan (SASAP) but no convention, with the South Asia Cooperative Environment Programme (SACEP) as secretariat. The SASAP follows existing global environmental and maritime conventions with the Law of the Sea as its umbrella convention. Its actions for biodiversity conservation include assistance in National Biodiversity Strategy and Action Plan updating, a Coral Reef Management Strategy with a list of protected areas (SACEP 2008), capacity development and technical assistance to SACEP member countries in order to develop a South Asia Regional Biodiversity Clearing House Mechanism.

For Mediterranean islands, Cyprus and Malta were considered to be SIDS until they joined the European Union (EU). The Mediterranean became the first region to adopt a Regional Seas Action Plan in 1975, supported by the Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention) and a protocol on Specially Protected Areas and Biodiversity, with a Coordinating Unit in Athens. A strategic Action Programme for the Conservation of Biological Diversity was adopted in 2003.

The Regional Seas Programme for West and Central Africa includes Cape Verde and São Tomé and Príncipe with an Action Plan and the 1981 Abidjan Convention. However, the programme has been under-resourced and has only recently been reactivated.

Apart from Cape Verde, the islands in the Atlantic Ocean Macaronesia Region (Azores, Madeira and Canary Islands) all belong to countries of the EU, as are the islands in the Mediterranean and the North Sea, so they are covered by biodiversity action at the national and EU levels, which are beyond the scope of this review.

Fisheries conventions and agreements

Fish represent another biological resource with significant problems of over-exploitation and conservation, and coastal fisheries are an important conservation concern for islands within the frameworks described above. However, oceanic fisheries are not insular but in the waters between islands and require management at their own regional scales (Aqorau 2014). Numerous fisheries conventions and agreements include islands, so only a few examples are reviewed here.

In the wider Caribbean, the Food and Agriculture Organization of the UN's Western Central Atlantic Fisheries Commission partners with the CEP on biodiversity-related activities like species resource assessment and management plans and training in marine protected area management. The Caribbean Regional Fisheries Mechanism manages island fisheries more broadly.

Unlike the successful single-species Parties to the Nauru Agreement, the Western Pacific illustrates the challenges for conservation action when national interests differ. The Western and Central Pacific Fisheries Commission manages a tuna fishery that is multi-species, multi-jurisdictional and multi-gear, where big-eye tuna (which is seriously overfished) is an incidental catch in other tuna fisheries, and its protection would have economic impacts on the other fisheries. Different island countries benefit from different kinds of fisheries, producing conflicting interests and a conservation burden with winners and losers that is not easily shared. The convention is proof that all of the countries acknowledge the need for conservation action, but in fact each gives priority to its own benefit and there is little interest in compromise (Hanich 2014; Hanich & Tsamenyi 2014). Negotiations failed again in 2016. In islands, as elsewhere, national sovereignty generally wins out over common interest.

CHALLENGES AND GAPS

Returning to the questions asked in the introduction, the special interests and needs of island conservation are well covered in international and regional conventions and agreements, particularly in regions where SIDS have organized their own regional intergovernmental organizations. Most island governments have come to accept the importance of biodiversity conservation and

have contributed island leadership to international processes ranging from the Law of the Sea through climate change negotiations to biodiversity conservation. Intergovernmental organizations of island states participate in international conferences and formulate and present island viewpoints. They also train island diplomats and help island countries to prepare their national positions for international negotiations. The AOSIS has been the international focus, and the SPREP has played an important regional role. Some island states with limited human resources bring outside experts onto their negotiating teams, magnifying their impact.

On the other hand, government action often results more from external demands than internal motivation and conviction. A review of national reporting on the state of the environment since 1992 that I prepared for the UNEP Governing Council in 2008 (UNEP 2008) identified *c.* 900 reports from the 22 Pacific Island governments, mostly prepared in response to external requirements and at the request of donors, with little evidence that they had much impact on national policy.

Island capacity

The main challenge is in the means available for implementation, since the isolation and diversity of islands require adaptation to many different local situations. For the smallest island countries and territories, there will never be sufficient technical expertise locally to respond to all conservation needs, requiring regional technical support. Conservation measures for species and ecosystems must be adapted to islands where land is too limited to create traditional parks and reserves, and indigenous tenure may be important, involving local populations in community-managed conservation areas.

Politicians, in islands as elsewhere, often have short-term priorities and change frequently, so it is civil servants who can maintain some continuity and longer-term vision. When the total government staff is very small, the departure of even a single person can leave a large gap in experience and institutional memory.

If anything, there are too many biodiversity-relevant conventions and agreements, overloading the absorptive capacity of at least the smaller SIDS to make full use of them and creating an administrative burden that detracts from real action on the ground. Sometimes a regional organization can serve as an interface, helping to identify the specific conservation needs of the island and delivering only the assistance that is necessary, as well as assisting with reporting requirements under the conventions.

More could be done by convention secretariats and conferences of parties to adapt to the needs and capacities of SIDS. Some financial support is provided, but limited time and local human capacity, if only to assist outside consultants, is a more important obstacle. Chasek, in her review of treaty implementation in the Pacific, identified four implementation challenges linked to island capacity: capacity

building; coordination; information and data collection and sharing; and prioritization and funding (Chasek 2010).

Island size and culture

A defining characteristic of island reality is small size and clear limits. Traditional island populations were limited by local subsistence. With overseas support and food imports, island populations can now grow without fear of starvation, sometimes reaching very high population densities and degrading biological resources.

One issue that is important for those islands with indigenous populations, especially in the Pacific, is the integration of biodiversity conservation with their traditional cultures. Pacific peoples learned early out of necessity how to live sustainably within their natural resources, with traditional conservation practices that are still relevant. There was complete interdependence of nature and culture, with an understanding of their environment and indigenous species often far beyond what modern science has yet discovered (Johannes 1981, 2002; Dahl 1989). Islanders, like other indigenous peoples, have pushed to have this cultural dimension acknowledged in international legal frameworks for biodiversity conservation, including in the CBD and the Law of the Sea (Chang 2013; Guth 2013).

Today, even the most remote islanders are exposed to the world and its values, eroding traditional culture. Many emigrate for education or better opportunities, so that some SIDS have a majority of their population residing overseas. Sometimes they or their children return, bringing with them values that are less adapted to island life, producing a clash of cultures even within the island population itself. Biodiversity values may suffer. They may also bring positive values to address the new problems that have been introduced with globalization.

Conflicting priorities

The development of SIDS has highlighted two opposing tendencies. On the one hand, islanders recognize how much they have in common socially, economically and environmentally, and are aware of limits and the need for sustainability and biodiversity conservation. On the other hand, island states have formed within the present paradigm of national sovereignty and economic growth, and island political leaders are just as interested in short-term gain and defensive of their national interests as in any other state. The pressures, both legitimate and sometimes corrupting, to favour development and exploitation of resources over conservation may be even harder to resist in small governments with fewer checks and balances. This is where the support for conservation from outside can make an important difference in maintaining a priority for biodiversity over short-term gain. The role of international and regional organizations is important in defining the common interest and working for state adhesion to that common agenda.

Islands are no longer ignored on the international stage. There is now a considerable pool of island specialists and organizations looking out for island interests, including within the UN itself, and the international conferences on SIDS have defined an island agenda and helped to carry it forward to implementation. Islands have been laboratories not only for evolution, but also for creative approaches to biodiversity conservation, often combining traditional knowledge and modern science.

What is needed now is alternative paradigms beyond national sovereignty that would make it easier for island states to meet their needs collectively. New forms of multilevel governance could maintain the rich diversity of island nations, while allowing them to collectively become parties to international conventions and to fulfil the accompanying obligations. This would be more reasonable than expecting the diplomatic corps of a tiny island to be as effective as that of a large nation. The EU, which can become a party to conventions and negotiate on behalf of all of its state members, is a possible model.

Among the unmet needs are helping islands to adapt to accelerating environmental changes beyond their control, such as from climate change, sea level rise and ocean acidification. The human challenges are already great, and the impacts on unique island biodiversity will probably be similar. The exception would be if the depopulation of an island eliminated human pressures on biodiversity, allowing for recovery. There is also a related gap in international legislation under the Law of the Sea, which never anticipated rapidly rising sea levels. If an island state drowns and loses all of its national territory, it loses both the basis for its national sovereignty and its rights over its territorial sea and exclusive economic zone, which would leave its marine biodiversity unprotected. A legal modification to freeze present limits would allow island peoples to retain rights to their marine resources, even if they are forced to become climate-displaced persons (Rayfuse 2011).

Another need that is only partly met is in combating alien invasive species and preventing further introductions (Jupiter *et al.* 2014). Species are often transported accidentally during trade or are introduced in ships' ballast water. International cooperation is necessary to address this beyond what islands are able to do at ports of entry. Exterminating a species once it has become established is a complex and expensive process that is beyond the means of island governments themselves, if it is possible at all.

Genetic diversity is often overlooked in conservation policy and action (Laikre 2010). The emerging issue of marine genetic resources will be important to islands with their extended exclusive economic zones (Kim & Lee 2013), but the international legal framework for the conservation of marine biodiversity is still rudimentary.

All of the above is rather defensive, trying to reduce the erosion of island biodiversity and to prevent extinctions. Hopefully it will soon be possible to consider island restoration, rebuilding the natural systems within which

unique island biodiversity evolved and that can support, if not ensure, long-term sustainability. The science of ecosystem restoration is still embryonic, and international cooperation will be needed in order to help islands that are ready to go in this direction.

More fundamental still is the challenge for each island society to define and evolve a sustainable island culture and economy in harmony with its unique island environment and biodiversity, as suggested in the GEO SIDS Outlook (UNEP 2014b). Rather than falling into the trap of the globalized consumer culture and a society fixed within the geographic limits of a nation state, islands could consider a more dynamic population spread between their islands and other countries and benefiting from both, with a choice of lifestyles adapted to the environmental limits of each location and favouring human well-being, culture, arts and science more than material accumulation. While this is a challenge for all parts of the world set by the SDGs, many island societies have a head start in their traditional island cultures and lifestyles, with the potential to define island life in harmony with biodiversity in new and creative ways.

CONCLUSIONS

This review has documented the extensive set of international and regional conventions and agreements that together provide a substantial framework for efforts to conserve island biodiversity, sometimes to a greater extent than the islands can cope with. These international instruments should continue to be sensitive and responsive to the special challenges of SIDS. Island governments also need to learn, with the assistance of their regional organizations, how to obtain the support they need in a way that is relevant to their capacity to absorb it, including through community-based conservation that is less dependent on governments.

The progress that has been made in protecting island biodiversity in recent decades can be attributed in part to these regional and international measures. The future should extend this multilevel approach to governance with both international coherence and local empowerment for the benefit of island peoples and their biodiversity heritage.

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