

Small islands step into the limelight

If ever there was a way to draw the world's attention to the specific needs of small islands, Cyclone Heta was it. The cyclone bulldozed its way through the Pacific in the early days of 2004, sparing only Tokelau and Wallis & Futuna which had the good fortune to be situated where the cyclone formed. Five other islands were not so lucky. Heta wreaked severe damage in American Samoa, the Cook Islands, Niue, Samoa and Tonga.

Niue was worst hit. A single island state of only 250 km² with a resident population of 2100, Niue could only watch as the cyclone laid waste to its recent development efforts. Heta's 300 km per hour winds, unprecedented in Niue's history, ripped away all the island's satellite communications equipment; however, due to the efforts of local volunteers, Internet services were operational only 10 days later.

While the future of Niue and the Niuean people continues to be debated – predominately by non-Niueans – the locals have quietly set about rebuilding their island, a testimony to the fortitude and resilience of islanders across the globe.

Hazardous territory

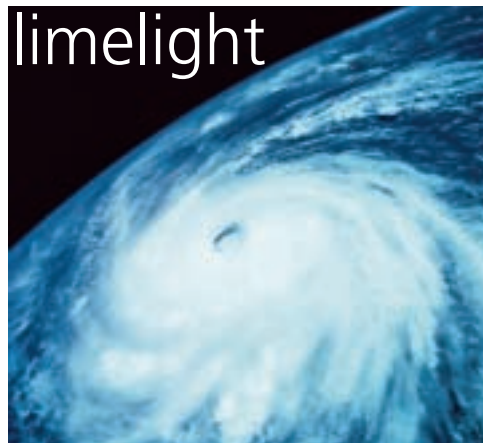
More than half of the 25 most disaster-prone countries are Small Island Developing States (SIDS), vulnerable as these are to volcanic eruptions, earthquakes, tsunamis, landslides, floods, hurricanes and cyclones. For the past 40 years, UNESCO has focused on identifying areas subject to natural hazards, improving risk assessment methods and encouraging preparedness for hazardous events. Work in the Pacific includes support to community-driven natural disaster/hazard mitigation in Tonga, Vanuatu and elsewhere, in collaboration with Massey University in New Zealand and other partners. UNESCO's Intergovernmental Oceanographic Commission (IOC) has provided support for many years to the Tsunami Warning System in the Pacific, which includes disseminating tsunami watches, warnings and advisory bulletins throughout the region.

For the past 10–15 years in the Caribbean, within UNESCO's Coastal and Beach Stability in the Lesser Antilles project, coastal planners, governments and NGOs have been monitoring beaches and coastlines to determine

wise developmental practices. Also in the Caribbean, a number of collaborative activities have been undertaken on educational and communication aspects of disaster mitigation, such as a disaster preparedness manual for Caribbean schools through a joint initiative with the Caribbean Disaster Emergency Response Agency.

Harnessing natural forces

The development of alternative energy systems is a crucial issue for many small islands. UNESCO's long-standing work on harnessing clean energy sources was boosted in the 1990s by the World Solar Summit process (1993–1995) and subsequently through the Organization's contribution to the UN World Solar Programme (1996–2005). Capacity-building aspects include the Global Renewable Energy and Training Programme (GREET) and a series of learning materials on new and renewable energies. Toolkits have recently been published on such topics as solar photovoltaic systems and geothermal energy, with a set of video materials (*see Rays of Hope overleaf*) tracing the history of, and prospects for, renewable energy in the Pacific.



Pinney's Beach on Nevis in the Caribbean before Hurricane Luis struck in August 1995



The same section of Pinney's Beach in October 1995, two months after the passage of Hurricane Luis

An ongoing UNESCO–UNDP initiative provides support to a range of regional and national Pacific sustainable energy projects, such as a national energy policy and strategic action plan for Tokelau, options for 24-hour power for Apolima Island (Samoa), increased use of renewable energies in the Cook Islands and training in photovoltaic solar home systems.

Rising seas

Since the 1994 Barbados Conference (*see page 49*), the Intergovernmental Panel on Climate Change has refined its projections of the impact of climate change on SIDS. This has prompted island nations to assess their needs in terms of resources, training and financial support. Faced with sea-level rise of up to 1 m by the end of the next century, many have drawn up plans to protect their coastlines, such as through the construction of dykes. The densely populated Maldives is even constructing an artificial island for some of its citizens, while Tuvalu and Kiribati in the Pacific are exploring options for the relocation of their entire populations to Australia, New Zealand and elsewhere within the next 50 years.

A major UNESCO contribution to issues related to rising sea levels is the Global Ocean Observing System (GOOS), a collaborative international effort led by the IOC. GOOS is a global network of ships, buoys (*see page 34*), subsurface floats, tide gauges and satellites that collect real-time data on the physical state and biogeochemical profile of the world's oceans. This includes subsystems for data and information management for a variety of purposes, such as measurements and forecasts of changes in water level, the position and strengths of currents, sea-ice measurements and coverage, maps and forecasts of harmful algal blooms and vulnerability assessments of fish stocks and farms.



'Solar panels are made up of many individual cells connected in series. A panel of 34 cells (insert) is for 12 V systems. The larger the panel, the greater the electrical energy produced. For best results, there should be no shade on a solar panel between 9 am and 3 pm. Even if only one cell is shaded, the output can be cut by half or more.' Taken from UNESCO (2003) Solar Photovoltaic Systems Technical Training Manual. The toolkit is based on experience gained in the Pacific, where scattered island communities have pioneered the field testing of solar photovoltaics and rural electrification

Rays of Hope

The 'Rays of Hope' video and booklet highlight the importance of renewable energy in the Pacific, environmental concerns, energy dependence and types of renewable energy. Interviews and project insights from several countries are featured:

In **Kiribati**, solar panels power rural health centres and remote radio-telephone sites.

In **Fiji**, a village co-operative runs a small-scale hydro-electric project providing electricity for over 200 homes in a settlement deep in the interior of the main island.

In **Samoa**, a medium-scale hydro-project in Afalilo has reversed the proportions of hydropower and diesel feeding a hydro-electric power plant, with 80% of energy henceforth coming from hydropower and 20% from diesel.

In **Vanuatu**, coconut oil is being used as fuel for buses, taxis and other vehicles; it is also being used in generators that power a project in hydroponics (plant-growing in a medium other than soil).

'Rays of Hope' is an initiative of UNESCO's Engineering Programme: t.marjoram@unesco.org; to order a copy: www.unesco.org/publishing.

It's a question of 'fresh' water

With their small size and particular geological, topographical and climatic conditions, many SIDS face hurdles when it comes to accessing and managing freshwater of suitable quality and quantity. UNESCO contributes to sustainable water management through the International Hydrological Programme (IHP) and UN World Water Assessment Programme, as well through the Man and the Biosphere (MAB) Programme. Under the aegis of the IHP Pacific Working Group, past and ongoing studies have been focusing on catchments and communities (*see The drama of rivers overleaf*), atoll groundwater recharge and groundwater pollution, among others.

The flywheel of evolution

Small islands have long played an important role in scientific studies on the genetic diversity and evolution of living beings. As David Quammen in *The Song of the Dodo*²¹ puts it, 'geographical isolation is the flywheel of evolution'. A century-and-a half ago, observations on the Galapagos Islands were critical in shaping Charles Darwin's revolutionary *Theory on the Origin of Species by Means of Natural Selection*. At about the same time, the islands in the Malay Archipelago proved essential for refining Alfred Wallace's thoughts on natural law.

However, biological diversity on many small islands is coming under increasing threat through the introduction of exotic species, development of tourism infrastructure, inadequate waste disposal, excessive harvesting of particular biotic groups, such as corals, and so on.

21. Quammen, D. *The Song of the Dodo. Island Biogeography in an Age of Extinction*. Simon & Schuster, New York, 1997, p 128

UNESCO's concern for biological diversity is rooted in two complementary international initiatives. The first is the Convention for the Protection of the World's Natural and Cultural Heritage, a binding legal instrument that focuses on unique sites of outstanding and universal value. The World Heritage List includes: the Aldabra Atoll (Seychelles), East Rennell (Solomon Islands), Mornes Trois Pitons National Park (Dominica), Cocos Island (Costa Rica), two sites in Cuba and the Galapagos National Park and Marine Reserve (Ecuador). The second initiative is the World Network of Biosphere Reserves within the MAB Programme; these sites are exemplary in exploring approaches to sustainable development with the involvement of local people. The list currently comprises

440 sites in 97 countries and territories, including Cuba, Dominica, Mauritius and the US Virgin Islands.

A cultural melting pot

The perception of small island communities as historically remote and isolated is erroneous. In fact, the history of the islands testifies to the great cultural interaction and mixing that they have offered humanity. Indeed, it may be much more appropriate to understand islands as 'cultural crossroads'.

Unlike earlier theories, which imagined people 'drifting' on large rafts at the whim of the ocean currents, we now know that the first settlers were moving deliberately and

The world's small island nations

		Population (2003)	Terrain	Coast- line (km)	Land area (km ²)	Renewable water/ capita/year (m ³)	Adult HIV/AIDS 2001 ^d (%)
Atlantic Ocean	Cape Verde	412,137	ragged, rocky, volcanic	965	4,033	703	0.04
	Sao Tome & Principe	175,883	volcanic, mountainous	209	1,001	15,797	–
Indian Ocean	Comoros	632,948	volcanic islands	340	2,170	1,700	0.1
	Maldives	329,684	flat	644	300	103	0.1
	Mauritius	1,210,447	small coastal plain, central plateau	177	2,030	1,904	0.1
	Seychelles	80,469	narrow coastal strip, coral, flat	491	455	–	–
Gulf	Bahrain ^a	667,238	low desert plain, low central escarpment	–	665	181	0.3
Pacific Ocean	Cook Islands	21,608	low coral atolls, volcanic, hilly	120	240	–	–
	Fiji	868,531	mountainous of volcanic origin, coral atolls	1,129	18,270	35,074	0.1
	Kiribati	98,549	low-lying coral atolls	1,143	811	–	–
	Marshall Islands	56,429	low coral limestone and sand islands	370	181	–	–
	Micronesia	108,143	low coral atolls, volcanic, mountainous	6,112	702	–	–
	Nauru	12,570	sandy beach, coral reefs, phosphate plateau	30	21	–	–
	Niue	2,145	limestone cliffs, central plateau	64	260	–	–
	Palau	19,717	low coral islands, mountainous main island	1,519	458	–	–
	Papua New Guinea	5,295,816	coastal lowlands, mountains	5,152	452,860	166,563	0.7
	Samoa	178,173	narrow coastal plains, interior: mountains	403	2,934	–	–
	Solomon Islands	509,190	low coral atolls, rugged mountains	5,313	27,540	100,000	–
	Tokelau ^{a, b}	1,418	atolls	–	10	–	–
	Tonga	108,141	coral formation, volcanic	419	718	–	–
	Tuvalu	11,305	low-lying and narrow coral atolls	24	26	–	–
Vanuatu	199,414	narrow coastal plains, mountains of volcanic origin	2,528	12,200	–	–	
Mediterranean Sea	Cyprus	771,657	plains, mountains	648	9,240	995	0.3
	Malta	409,420	low, flat plains, coastal cliffs	140	316	129	0.1
Caribbean Sea	Antigua & Barbuda	67,897	low-lying limestone and coral islands	153	443	800	–
	Aruba ^b	70,844	flat, some hills, scant vegetation	–	193	–	–
	Bahamas	297,477	long, flat, coral formations	3,542	10,070	66	3.5
	Barbados	277,264	flat, central highland	97	431	307	1.2
	Cuba	11,263,429	terraced plains, small hills, mountains	5,746	110,860	3,404	<0.1
	Dominica	69,655	ragged mountains of volcanic origin	148	754	–	–
	Dominican Republic ^a	8,715,402	ragged highlands and mountains	–	48,380	2,507	2.5
	Grenada	89,258	volcanic in origin, central mountains	121	344	–	–
	Haiti ^c	7,527,817	ragged, mountainous	–	27,540	1,723	6.1
	Jamaica	2,695,867	narrow coastal plains, mountains	1,022	10,831	3,651	1.2
	Netherlands Antilles ^{a, b}	216,226	hilly, volcanic interiors	364	960	–	–
St Kitts & Nevis	38,763	volcanic, mountainous interiors	135	261	621	–	
St Lucia	162,157	volcanic, mountainous with broad valleys	158	606	–	–	
St Vincent & Grenadines	116,812	volcanic, mountainous	84	389	–	–	
Trinidad & Tobago	1,104,209	flat, hilly, mountainous	–	5,128	2,968	2.5	
US Virgin Islands ^{a, b}	124,778	hilly, rugged, mountainous	180	349	–	–	
South China Sea	Singapore	4,608,595	lowland, undulating central plateau	193	683	149	0.2

^aNot a member of the Alliance of Small Island States (the Netherlands Antilles and US Virgin Islands are however observers); ^bNon-self governing;

^cPopulation estimates for Haiti explicitly take into account the effects of excess mortality due to AIDS; ^dEstimate

Source: www.un.org/esa/sustdev/sids/sidslst.htm; population data for 2003, HIV/AIDS and land area data: CIA Factbook : www.cia.gov/cia/publications/factbook/; freshwater data: UN (2003) *World Water Development Report. Water for People, Water for Life* (Table 4.2). UNESCO Publishing, Paris

The drama of rivers

For the past three years in the Epule community in Vanuatu, there has been a ban on fishing in the local river and on some of the associated reefs. This has met with resistance from the locals even though they have long suspected that their river was being polluted by logging, farming and a growing village population. The village chief hopes the locals will ultimately come to accept the ban.

The desire to impress upon the local ni-Vanuatu people that the ultimate responsibility for the management of water resources lay with them inspired the IHP to join forces recently with the local theatre groups Haulua and Won Smol Bag (bislama for 'one small bag'). The theatre groups put on plays for the local communities highlighting types of behaviour which are harmful to the river and contrary to laws and codes of practice within Vanuatu, such as logging within 50 m of a river.

The script for the *River Play* was developed in close collaboration with the Department of Geology, Mines and Water Resources. The performances were well received by village audiences at a number of locations. Most importantly, during the lively discussions which followed each performance, many villagers offered to participate in prevention and restoration activities, such as tree-planting along streams and rivers, or the monitoring of catchments.

For further information on the IHP's Catchments and Communities project: www.unesco.org/water

knowingly amongst the vast body of water that is the Pacific Ocean. Those 'bits' of land in the sea, the islands, were their meeting points, their 'crossroads'. With this understanding, UNESCO launched 'Vaka Moana: the Ocean Roads' under the auspices of the World Decade of Cultural Development, with the intention of reinforcing linkages between Pacific peoples through a better knowledge of their common historical links and dependence on the ocean, and the promotion of all forms of art which have the common theme of the sea.

Promoting cultural heritage

In terms of the conservation of cultural heritage, more important perhaps to many SIDS than tangible properties and sites is what is known as 'intangible cultural heritage'. This embraces all forms of traditional and popular or folk culture originating in a given community transmitted orally or by gesture, including customs, languages, music, dance, rituals, festivities, traditional medicine and pharmacopoeia.

Several UNESCO cross-cutting activities are underway in island settings on the use of cultural assets for raising living standards and preserving cultural heritage. These schemes include the promotion in the Pacific region of traditional crafts as a way to open up job opportunities for the poorest youth. In the Caribbean, the YouthPATH initiative seeks to involve rural youth in natural and cultural heritage tourism and other income-generating initiatives. Activities focus on such attractions as a nesting turtle site,

a former slave village, a fishing-whaling settlement. Underpinning the whole regional project is the notion of the Caribbean Sea as a connective link between island cultures, in temporal as well as spatial terms.

Transmission of traditional knowledge

Local and indigenous knowledge is another dimension of cultural diversity that takes on special significance in small island situations. Traditional marine resource management in the Pacific has been the focus of several UNESCO events since the 1980s. In recent years, UNESCO work on local knowledge has been boosted through discussions on 'science and other systems of knowledge' linked to the UNESCO-ICSU World Conference on Science (Budapest, June 1999).

One significant outcome has been the launching of the project on Local and Indigenous Knowledge Systems in a Global Society (LINKS). In mid-2004, LINKS will be releasing a CD-ROM on traditional navigation in the Pacific, which will serve primarily as an educational tool for schools highlighting to students the significance of stick charts for teaching swell patterns, stone circles for illustrating star compasses and other indigenous knowledge practices. LINKS is also working through a Vanuatu-based project to encourage primary and secondary pupils to incorporate indigenous knowledge within their own communities and schools.



Traditional navigation in the Pacific; foliage in the boat rigging provides a simple means of following subtle changes in the direction and strength of the wind

The fight against HIV/AIDS

Being a dynamic cultural crossroad can also negatively impact upon a country's aspirations. One serious concern in this regard is HIV/AIDS. Studies, especially those in the Caribbean, have underlined the cultural dimension in the prevention of HIV/AIDS and in caring for its victims, as well as the critical role of education in limiting the spread and impact of the epidemic. Multidisciplinary cooperation and broad partnerships are crucial for the prevention of HIV/AIDS, as are innovative uses of media and communication tools in building targeted public awareness and fostering behaviour change, particularly among youth.

'Front-line zones' on the road to Mauritius

'The world's small island developing states are front-line zones where, in concentrated form, many of the main problems of environment and development are unfolding'.

United Nations Secretary-General, Kofi Annan,
New York, September 1999

Rio, June 1992. The international community at the Earth Summit recognized that small islands are 'a special case for environment and development'. This understanding paved the way for small island developing states to come together as a group to discuss their specific concerns.

Barbados, April – May 1994, 'Small Islands: Big Issues'. The Global Conference on the Sustainable Development of Small Island Developing States. The *Agenda 21* adopted at Rio spawned the Barbados Programme of Action (BPoA). BPoA lists 15 priority areas for specific action, including climate change and sea-level rise; natural and environmental disasters; waste management; coastal and marine resources; and tourism.

Johannesburg, September 2002. The World Summit on Sustainable Development reaffirmed that SIDS are a special case in terms of both environment and development. Among the recommended follow-up actions, the Johannesburg summit called for a full and comprehensive review of the BPoA.

Mauritius, 10–14 January, 'Small Islands, Big Stakes'. As decided by the UN General Assembly, a full and comprehensive 10-year review of the implementation of the BPoA will be undertaken and emerging issues will be identified for follow-up.

For further information on UNESCO's contribution to BPoA: www.portal.unesco.org/islandsBplus10; on the SIDS Network and the Alliance of Small Island States: www.sidsnet.org/aosis

In the Caribbean, UNESCO is working with a range of partners to encourage effective policies and practices for HIV/AIDS mitigation and prevention within formal and non-formal education. One example is a pilot project in Jamaica involving UNESCO, the Ministry of Education and other educational institutions in the country²².

Sustainable development can never be realized without youth

Immediately prior to, and during, the international BPoA review meeting in Mauritius in January 2005, young islanders from all SIDS will meet to discuss their concerns about small island living, share experiences, promote cultural understanding, participate in debates and side-events and present their outcomes to the main meeting. This initiative, dubbed 'Youth Visioning for Island Living', while proposed by the Ministry of Education and Scientific Research of Mauritius, is being facilitated initially by UNESCO as a joint effort between its Coastal Regions and Small Islands Platform and its Section for Youth, and supported by a variety of national, regional and inter-regional organizations and donors.

Go to: www.unesco.org/csi/smis/siv/vision-action.htm

Connecting islands to the global community

With limited numbers of tertiary institutes based in small islands – thereby exacerbating island 'brain drain' – one of the burgeoning areas of higher education is expected to be distance learning modules and programmes through greater application of ICTs. In a similar way, Community Multimedia Centres (CMCs) encourage community empowerment and address the digital divide by combining community broadcasting with Internet and related technologies. The aim is to transform existing community radio stations into CMCs, complete with PCs, faxes, telephones, and email and Internet services. Initial participants include radio stations in Barbados, Cuba, Jamaica, and Trinidad & Tobago.

Small Islands Voice (SIV²³) is an inter-regional initiative in the Caribbean Sea and Indian and Pacific island regions. It uses ICTs and existing media to encourage general public discussion and involvement in sustainable development activities at a local level. Young islanders are also assured their 'space to speak' via the SIV Internet youth forum²⁴, which has generated debate on diverse subjects ranging from whaling and asbestos in schools to recycling and growing levels of gang violence.



Bequia Community High School in St Vincent & the Grenadines, contributing online to the Small Islands Voice youth Internet forum

Implementation of the UN Barbados Programme of Action has had mixed results. Many living in small islands have no knowledge of the BPoA and how it relates to their everyday life. However, various initiatives have been improving life in SIDS. These include the Alliance of Small Island States and the UN-based information network, SIDSNET. Along with sister agencies, UNESCO is contributing to the overall goal of sustainable island development, in the belief that these island states are not 'islands in a far sea' but 'a sea of islands'²⁵.

Claire Green²⁶ and Malcom Hadley²⁷

22. UNESCO's International Institute of Educational Planning and the University of the West Indies, 2003; and the Regional Strategy on Education and HIV/AIDS for the Caribbean, UNESCO Kingston and IIEP

23. www.smallislandsvoice.org

24. www.sivoyouth.org – username: view; password: only

25. Hau'ofa, E. (1993) Our Sea of Islands. In: *A New Oceania. Rediscovering Our Sea of Islands*. University of the South Pacific, Fiji, and Beake House, p. 7

26. UNESCO Coastal Regions and Small Islands platform: www.unesco.org/csi

27. Former Editor, Nature and Resources (UNESCO quarterly)