# Wise practices for island conservation:

## Prefiguring the Durban Action Plan?

BY DIRK TROOST AND MALCOLM HADLEY

### Introduction

Small islands are renowned for their biological diversity and their endemism, and biological diversity plays a crucial role in the daily life and social fabric of the human populations of many small islands, from subsistence economy to contemporary tourism.

Small islands have also long played an important role in scientific studies on the genetic diversity and evolution of living beings. A century-and-a half ago, observations on the Galápagos Islands were critical in shaping Charles Darwin's revolutionary Theory on the Origin of Species by Means of Natural Selection. And in recent decades, topics such as island biogeography and the impact of alien invasive species on island biota have figured prominently in the theory, concepts

lation biology, ecosystem management and conservation science.

However, biological diversity on many small islands is under increasing threat, through such impacts as the introduction of exotic species, development of tourism infrastructures, excessive harvesting of particular biotic groups (e.g corals), and so on. Generally, island species tend to be much more vulnerable to changes in their environments. Plant and animal populations tend to be small, localized, highly specialized and they tend not to have developed defence mechanisms against a broad range of potential predators or competitors.

Within such a context, it is scarcely surprising that conservation of biodiversity takes on a special hue in small islands. To the extent



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Tree ferns are a prominent feature in the mountain forests of the volcanic **Morne Trois Pitons National Park** (designated as a World Heritage site in 1997), in the Caribbean island of Dominica. Photo: UNESCO/ J.W. Thorsell.



that small islands provide the setting for many innovations in biodiversity conservation. And have thus added substance to visions on the exemplary role of small islands and small island developing states (SIDS) in respect to sustainable development, reflected in the following two statements culled from an issue of UNEP's *Our Planet* magazine devoted to small islands (Volume 10(3), 1999).

Small islands are microcosms for our world. We are all inhabitants of the global island, surrounded by the limitless ocean of space. If we can find solutions to the special vulnerabilities of islands, it will help us address more global problems.

Kofi A. Annan, United Nations Secretary General

Small island developing states have been at the forefront of global environmental consciousness raising and problem solving.

Mohamed T. El-Ashry, former Chief Executive Officer, Global Environment Facility (GEF) Consistent with such perceptions, this contribution explores the thesis that small islands constitute living laboratories for innovative approaches to biodiversity conservation. The Durban Action Plan adopted at the Vth World Parks Congress (Durban, 8-17 September 2003) is used as a framework for examining some of these approaches, in such domains as the role of protected areas (PAs) in sustainable development, PAs linked to surrounding landscapes and seascapes, rights of indigenous peoples, empowerment of younger generations, improved forms of governance, and so on.

The contribution draws mainly but not exclusively on experiences from various UNESCO initiatives relating to biodiversity conservation (Box 1), including World Heritage sites and the World Network of Biosphere Reserves (UNESCO 2002a), as well as postings from an Internet discussion forum on wise coastal practices and other sources.

### Box 1. UNESCO Activities Related to Biodiversity Conservation in Small Islands

UNESCO's continuing concern is rooted in two complementary international instruments for the conservation of biological diversity, as well through various field projects and several internet discussion forums.

The Convention for the Protection of the World's Natural and Cultural Heritage is a binding legal instrument which provides a permanent legal, financial and administrative framework for international cooperation in contributing to the protection of the world's natural and cultural heritage. The focus is on sites of outstanding and universal value. The World Heritage List includes insular sites listed specifically for their biological processes and biodiversity values such as Fraser Island and Lord Howe Island Group (Australia), Cocos Island (Costa Rica), two sites in Cuba, Morne Trois Pitons National Park (Dominica), Galápagos National Park and Marine Reserve (Ecuador), New Zealand Sub-Antarctic Islands, Aldabra Atoll and Vallée de Mai (Seychelles), East Rennell (Solomon Islands).

The World Network of Biosphere Reserves has developed within the Man and the Biosphere (MAB) Programme, and in late 2003 comprises 440 sites in 97 countries. Biosphere reserves are sites to explore and demonstrate approaches to conservation and sustainable development at a regional scale, with associated research, monitoring, training and education and the involvement of local people as the driving force for conservation.

The Web-based discussion forum on Wise Coastal Practices for Sustainable Human Development (WiCoP Forum) is operated as part of UNESCO's Coastal Regions and Small Islands (CSI) Platform. A team of moderators and translators maintain the site -- editing the contributions before they are posted in English, French and Spanish on the Forum site, and in addition sending the new postings as e-mail to over 17,000 individuals connected with the Forum. Since the Forum's creation in May 1999, individual contributors have flagged many perspectives related to biological diversity and its conservation and management in coastal regions, in both continental and insular settings, drawing in part on experience gained in CSI-sponsored field projects (e.g. UNESCO 2002c).

The Intergovernmental Oceanographic Commission (IOC) includes several initiatives relating to coastal marine biodiversity, focused on such biotic groups as coral reefs, harmful algae and coastal benthos. Among the outputs of the Global Coral Reef Monitoring Network (cosponsored by UNEP, the World Bank, IUCN and the IOC) is the biennial 'Status of Coral Reefs of the World', the most recent version of which (Wilkinson 2002) includes information on the status and changes of coral reefs in 36 individual SIDS.

## Conservation challenges and island innovations

It is well accepted by the 'conservation community' that protected areas are not synonymous with biodiversity conservation and that many of the challenges in biodiversity conservation lie outside protected areas. This said, by taking as its theme 'Benefits Beyond Boundaries', the Durban Congress recognized that protected areas cannot remain in isolation from the surrounding areas of land and sea, and from the communities and the economic activities in and around them. As such, the conclusions and recommendations of the congress can be considered a fairly good reflection of current thinking on conservation challenges.

The principal outputs included a set of 32 recommendations (addressing such subjects as climate change and protected areas, cultural and spiritual values, tourism), a vision statement entitled the Durban Accord, and the Durban Action Plan -- a suggested checklist of the activity needed to increase the benefits of protected areas to society and to improve their coverage and management. This Durban Action Plan is organized around ten key outcomes, with suggested actions at various levels (international, regional, national, local, protected area authority) (http://www.iucn.org/themes/wcpa/wpc2003/ pdfs/outputs/wpc/durbanactionplan.pdf). In the following paragraphs, the substance of these various outcomes are used as topic heads for examining some recent and planned initiatives in biodiversity conservation in small island settings.

## Critical role in global biodiversity conservation

Outcome 1 of the Durban Action Plan seeks to fill gaps in the global system of protected areas, identifying specific actions in this respect by Parties to the Convention on Biological Diversity and the World Heritage Convention.

One action requested of the World Heritage Committee is to give priority to achieving complete knowledge of potential World Heritage around the world, including marine biomes of outstanding universal value. Some work has already been undertaken that addresses this issue. In 2002, the World Heritage Centre

and IUCN organized a workshop to identify priority tropical coastal, marine and small island areas for nomination as World Heritage (Hillary et al. 2003). Following the workshop, three pilot projects, that all contain small islands, have been initiated in this respect: the Pacific Line Islands, the Southern Caribbean Islands group, and the Eastern Pacific Marine Conservation Corridor. Among the priorities for future action is further development of the World Heritage marine programme, including testing the application of transboundary and serial approaches into new marine World Heritage nominations.

## Fundamental role in sustainable development

Reinforcing action to ensure that protected areas strive to alleviate poverty is an explicit part of Outcome 2 of the Durban Action Plan.

A small-islands perspective is provided by an evaluation of a recent ten-year (1992-2001) project to promote biodiversity conservation in the Pacific (Hunnam 2002). The evaluation notes that options for conserving biodiversity are to stop its use (i.e. to try to 'set it aside') or to use it in ways that do not degrade its natural values, by limiting the types of exploitation, their timing, intensity or techniques employed. The close dependence of Pacific-islander lives and livelihoods on local natural resources means that the latter approach is more realistic and likely to be more effective. The recommended approach is to ensure that conservation is shaped and recognized as a cornerstone of sustainable development and is therefore an important valid business for government and private agencies concerned with economic and social development and the use of natural resources in fisheries, forestry, agricultural, mining and tourism.

The evaluation further underlines that conservation is essentially a social issue requiring democratic involvement of the people and local communities whose lives and livelihoods are most affected. As elsewhere, local people must be recognized and empowered as the primary stakeholders and central participants in conservation projects.

### Linking protected areas to surrounding landscapes and seascapes

Outcome 3 of the Durban Action Plan relates to the challenge of further developing a global system of protected areas linked into wider ecological/environmental systems on land and at sea. All-too-often in coastal regions, land and water areas are under separate jurisdictions and management authorities, making difficult a coherent approach to regional ecosystem complexes. More promising is recent experience in a number of small-island settings, where a range of mechanisms and procedures have been sought to articulate the work of agencies having different management responsibilities in land-marine ecotone areas.

Central to this challenge is consideration of adjacent land and marine systems as an ensemble, with different areas zoned for different functions and purposes and core protected areas identified in both terrestrial and marine ecosystems.

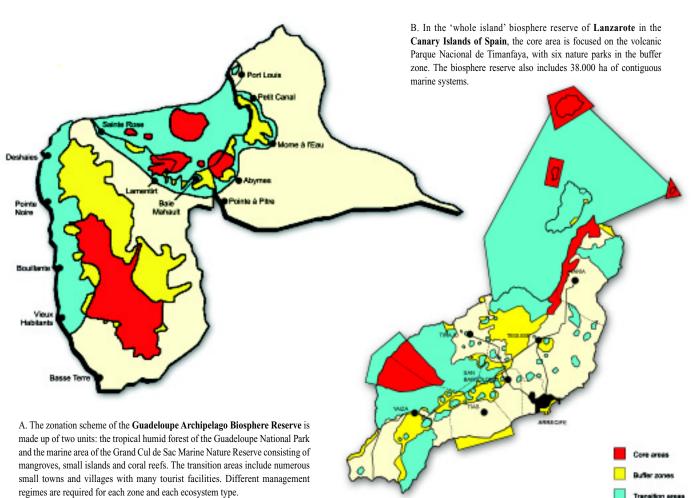
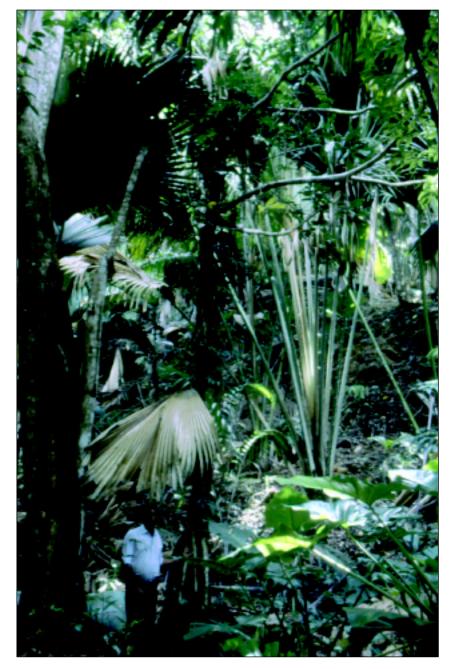


Figure 1. Zoning contiguous land and marine areas for different purposes and uses





Small islands are renowned for their biological diversity and endemism. The natural palm forest of the **Vallée de Mai** World Heritage site in the Seychelles is the home of the 'coco de mer' (*Lodoicea maldivicia*), the largest seed in the plant kingdom. Photos: UNESCO/Julian Palmyre.

An example is in the Galápagos Islands in Ecuador, where in 2001 the World Heritage Committee approved the addition of the Galápagos Marine Reserve to the existing World Heritage site. Currently the World Heritage Centre, together with partners, is working towards establishment of a sustainable development and conservation corridor between Galápagos and Cocos Island World Heritage sites and with small island sites in Panama and Colombia.

Examples of biosphere reserves in smallisland settings, which include both terrestrial and marine ecosystems, are Nanji Islands (China), Seaflower (Colombia, comprising the archipelago of San Andrés-Providencia-Santa Catalina in the southwestern Caribbean), West Estonian Archipelago, Archipelago Sea (Finland), Archipel de la Guadaloupe and Iroise (France), Boloma Bijagos (Guinea Bissau), Tuscan Islands (Italy), Far East Marine (Russian Federation), Isla de El Hierro, Lanzarote, La Palma and Menorca (Spain), US Virgin Islands and the Socotra Archipelago (Yemen). Experience in a number of these reserves – in such domains as conflict prevention and resolution, and the zonation of land and water areas for different purposes (Figure 1) – provides insights useful in conservation planning and management in other small island situations.

### Improving effective management

The challenge of improving the quality, effectiveness and reporting of protected area management (Outcome 4 of the Durban Action Plan) has many dimensions Among the measures for improving the health of protected areas is making management more comprehensive, participatory and affordable, and sensitive to cultural and spiritual factors.

For example, the island of Siberut – the home of the Mentawai people, located 150 km from the western coast of mainland Sumatra in Indonesia – was designated as a biosphere reserve in 1981, and an area somewhat less than half of the island as a national park in 1983. But these recognitions remained largely 'paper designations' for a decade and a half. More recently, a series of small-scale pilot projects for community development has led to a new (2001-2005)

community-conservation project focused on the empowerment of customary environmental management (Myers et al. 2003). The project aims to develop and put into practice a new management mechanism that integrates customary ecological knowledge and practices of local people with conservation and socio-economic planning. For programmes in conservation and incomegeneration, co-management teams have been set up, consisting of members from indigenous communities, local NGOs, the national park authorities and UNESCO, with initial support provided principally through the ASPACO project (Asia-Pacific Cooperation for the Sustainable Use of Renewable Resources in Biosphere Reserves and Similarly Managed Areas). As a critical part of the co-management structure, a transparent financial management has been et up, allowing open auditing between different levels of the project management and stakeholders.

Demonstrating how using an assessment, monitoring and reporting framework can enhance effective management is a principal aim of the UNESCO/IUCN/UNF project 'Enhancing Our Heritage'. Among the ten World Heritage sites taking part is Aldabra Atoll, where special attention has been given to prioritizing management actions and identifying how management systems need to be improved.

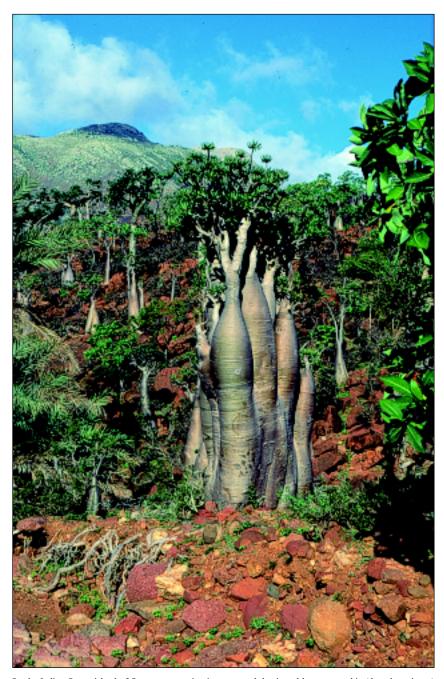
Promoting sensitive use of modern scientific knowledge and technological tools is another ingredient for improved conservation planning. Examples here include the use of remote sensing technologies for tropical coastal management (Edwards 2000) and the development of geographic information systems for regional planning, as illustrated through the integrated management GIS for the Bijagos archipelago in Guinea Bissau, which includes ten maps of the littoral environment at a scale of 1:50,000 (Cuq 2001).

## Recognizing the rights of indigenous peoples and local communities

Outcome 5 of the Durban Action Plan relates to the rights of indigenous peoples, mobile peoples and local communities being recognized and guaranteed in relation to natural resources and biodiversity conservation. All-too-often in the past, world-wide, the various components of the conservation community have tended to disregard or minimize the roles, knowledge and customary laws of indigenous and mobile peoples and local communities, in respect to their lands, territories and resources. Sometimes, indigenous peoples and local communities have been expelled from government-created protected areas, thereby severing their relationships with their territories and undermining their cultural integrity. Indeed, indigenous peoples

and local communities have often borne the costs of and received few benefits from protected areas.

Yet in many small-island settings, indigenous and mobile peoples and local communities have remained the custodians of nature, and form the starting point of many recent conservation initiatives. In the Pacific, for example, countries have experimented with community-based conservation areas as an alternative to inflexible protected area models that deny local people access to natural resources. As part of the ten-year



On the Indian Ocean island of Socotra, vegetation is sparse and dominated by xeromorphic (drought-resistant) forms. Socotra became parte of the World Network of Biosphere Reserves in 2003, following preparatory work supported through one of the island-biodiversity projects of the Global Environment Facility (GEF). Photo by Giuseppe Orlando

(1992-2001) South Pacific Biodiversity Conservation Programme (SPBCP), 17 community conservation areas have been set-up in 12 counties of the region (Read 2002). Though results of the project have been mixed (Hunnan 2002), there has been sufficient evidence to suggest that, in the Pacific at least, conservation is first and foremost about respecting community rights to the lands and resources on which they depend.

One of the sites featured in the SPBCP is the Vatthe ('Eye of the sea') Conservation Area on Espiritu Santo Island, Vanuatu, with key roles being played by the communities of the coastal village of Matantas and the inland village of Sara (Martin et al. 2000). Despite a history of dispute, the villages came together to establish the Vatthe Conservation Area and associated Conservation Area Management Committee, assisted by a conservation support officer funded by the programme. Together with a small ecotourism enterprise, the Vatthe Conservation Area is owned and managed by the communities of both villages who have chosen the conservation of their forest, allowing for traditional use and ecotourism initiatives, over lucrative logging contracts.

Reinvigorating oral traditions is another dimension of recognizing the rights of indigenous and mobile peoples, as has been done in a project with the Moken sea gypsy communities of the Surin Islands, in the Andaman Sea off the southwestern coast of Thailand (UNESCO 2001). Among other aims, the project has sought to strengthen dialogue between officials of the marine national park and the Moken, to enable the latter to become active partners in the management of the area and safeguarding its heritage value through the sharing of knowledge, skills and tools.

In some small islands, making resource management laws available and understandable to local resource users may be an important step in promoting dialogue and stakeholder participation. In Haiti, for example, fisheries laws are written in French. However the majority of those affected by the laws (i.e. inhabitants of coastal communities and especially fisherfolk) only speak or read Créole. Whence the translation of the fisheries

laws into Créole, as a crucial component of a project to enhance coastal and fishery management through stakeholder participation, local knowledge and environmental education (UNESCO 2002b).

## Involving and empowering younger generations

Engaging young people to take an active role in resource management and biodiversity conservation (Outcome 6 of the Durban Action Plan) has been a key feature of a long-term project in the Caribbean (which started in 1985-86) for understanding beach changes, applying the knowledge gained in improved coastline planning, and training school children in the use of scientific method for observing and monitoring change. This work has been carried out within the framework of a UNESCO regional project involving 13 countries/territories, involving persons from government agencies and non government organizations, from the private banking sector, from scientific and educational communities, and from civil society (UNESCO 2002c, Annex II).

Together, a standardized methodology has been developed, to measure, assess and manage the various phenomena associated with beach erosion. Beach monitoring programmes have been established, as part of measures for improved coastal planning and erosion mitigation. Five countries in the region have tested a generic methodology to ensure that new coastal development is placed at a safe distance from the active beach zone, thereby providing for the safety of coastal infrastructure and the conservation of beaches. In cooperation with the Caribbean Development Bank, coloured illustrated booklets on wise practices for coping with beach erosion have been published for ten island countries/territories, with a combination of generic and island-specific information.

Support has been provided for getting the message into the living room, by providing training and equipment to persons from environmental and broadcast agencies. Most recently, in collaboration with the UNESCO Associated Schools Project, the Sandwatch project has been launched for training schoolchildren in the use of the

scientific method through monitoring and observing changes, activities and processes at local beaches. And then, with the assistance of teachers, parents and communities, for applying that information in the design and implementation of specific projects to solve a particular problem while also improving the beach environment.

## Increased support for protected areas from other constituencies

Establishing and recognizing mutual agendas for conservation among diverse constituencies (part of Outcome 7 of the Durban Action Plan) should result in many partnerships involving the business and commercial sector as well as conservation volunteer programmes of various kinds.

An example is provided by Chumbe Island, situated 13 km southwest of Zanzibar Town in Tanzania and covering an area of approximately 20 ha and bordered on its western shore by a fringing coral reef of exceptional biodiversity and beauty. Based on the initiative and investment proposal of Chumbe Island Coral Park Ltd, a private company created for the management of Chumbe, the island was gazetted in 1994 as a protected area by the Government of Zanzibar. This created the first managed marine park in Tanzania, and also (it is believed) the first private marine park in the world.

The objectives of the Chumbe Island Coral Park project are non-commercial, while operations follow commercial principles. The overall aim is to create a model of sustainable conservation area management where ecotourism supports conservation and education. Profits from the tourism operations are re-invested in conservation area management and an environmental education programme for local schools that includes excursions to Chumbe.

About two-thirds of the investment costs of approximately US\$1 million were financed privately by the project initiator (a conservationist and former manager of donor-funded aid projects). Several project components -- such as the construction of the visitors centre, biological baseline surveys, the Aders' duikers sanctuary (protecting a highly endangered endemic species of miniantelope), nature trails and the park rangers'

patrol boats -- received some funding from a range of donors. This covered about a third of the investment costs.

More than 40 volunteers from several countries provided, and continue to provide, crucial professional support for between one month to three years. Running costs of the park are entirely covered from income generated through ecotourism.

This information on private sector investment in coral reef conservation figured in an initial account on Chumbe Island, posted in March 2000 on the WiCoP discussion forum (Riedmiller 2000). The account triggered a considerable 'post-bag', with respondents taking up such issues as the need for a world-wide representative system of similar reserves and incentives for non-consumptive use as an alternative to heavy taxation. The case study also illustrates the use of modern information and communication technologies in diffusing information and promoting debate on an innovative approach to biodiversity conservation in an island setting.

### Improved forms of governance

Promoting the application in all protected areas of five principles of good governance (legitimacy and voice, performance, accountability, fairness and direction) is among the lines of action foreseen under Outcome 8 of the Durban Action Plan. The institutions of governance are constantly evolving and include a wide range of structures, including government-managed, comanaged, private, charitable and community-based structures. Small islands provide several innovative examples.

In Jamaica, government intentions to create 14 terrestrial, marine and integrated protection areas have been confronted with widespread social distrust of regulatory systems that are perceived as belonging to somebody else, or operating in someone else's interest. Rather than setting-up a national agency to manage these areas, national policy provides for the delegation of management authority to qualified NGOs. For example, in 2003, the Caribbean Coastal Area Management (C-CAM) Foundation was delegated management responsibility of the Portland Bight Protected Area.

A crucial step in seeking compliance

has been to create a sense of ownership of the laws and regulations among natural resources users. This was achieved in Portland Bight by assisting the fishers to prepare their own fisheries management regulations using the local fisheries associations and the Fisheries Management Council midwifed by C-CAM (Espeut 2002). Thus the fishers now feel that they own the regulations rather than viewing them as a system of rules being imposed from above.

Even when the local community owns the regulations, some may still resent outsiders coming in and arresting their relatives and friends for non-compliance. A better way to cement a new culture of compliance and natural resource management is to empower community leaders as enforcement officers. In the Portland Bight Protected Area, some 50 fisherfolk were officially appointed 'Honorary Game Wardens' and 'Fishery Inspectors' under the Wildlife Protection Act and the Fishing Industry Act, thereby providing them with powers of search and arrest. All the enforcement officers are given training by C-CAM and they are informed that compliance is the objective, not making

One of the fears with this approach was that the community enforcement officers might abuse their authority. Careful selection of suitable persons, thorough training, and close supervision have resulted in not one case of abuse of authority, or false arrest, since 1996, and a 100% conviction rate in those cases which have gone to court.

Another fear was that Honorary Game Wardens and Fishery Inspectors would excuse their friends and relatives and harass their enemies, or take bribes. No such cases have been observed, in fact the reverse. The community enforcement officers advise their relatives and friends not to embarrass them by committing an offence, as they would be forced to personally arrest them so as to prove they are not corrupt.

## Enhanced resources for protected areas

Outcome 9 of the Durban Action Plan addresses the challenge of securing enhanced funding for protected areas, commensurate with their values and needs, including resources within the mechanism agreed for the implementation of the Convention on Biological Diversity, specifically the Global Environment Facility (GEF). Considerable GEF funding has already been made available to biodiversity conservation in small islands, through relatively large targeted projects (e.g. for Socotra) and through enabling activities of various kinds (Mook 1999). In looking forward, the intention of GEF to provide increased support to its small grants programme can be considered a positive trend for small islands, in that resources are likely to be in tune with needs and so-called absorptive capacities. The United Nations Foundation is also increasing its support for improving management effectiveness of World Heritage sites, drawing on experience within such recent projects as that on alien species eradication in the Galápagos.

## Communicating the benefits of protected areas

'Improved communication and education on the role and benefits of protected areas' (Outcome 10 of the Durban Action Plan) is an important component of environmental programmes and projects in many small island situations. An example is the process leading to the setting-up of the Seaflower Biosphere Reserve in the Caribbean, under the aegis of the Colombian public agency CORALINA (Corporation for the Sustainable Development of the Archipelago of San Andrés, Old Providence and Santa Catalina). Central in this process has been an extensive community-wide education programme involving workshops and meetings, teacher training courses and information campaigns, and the inclusion of a communication and educational component in various research and management activities, for example on fisheries recovery, mangroves, coral reefs, marine turtles (Mow et al. 2003: see also separate case study in this issue). Most important, the programme generated a considerable momentum of grassroots involvement and support for new conservation and resource management initiatives that take explicit account of livelihood-related issues.

### **Concluding remarks**

Effective approaches for biodiversity conservation combine sound science and cultural sensitivity with robust legal frameworks, adequate resources and appropriate management

World-wide, there is now widespread recognition of the crucial role of local people as the driving force of biodiversity conservation. This involvement may be especially important in small island situations, for several reasons: the nature of traditional often communal ownership of land and marine resources in regions such as the Pacific; the absence or weakness of government-based conservation agencies in many small island developing states; the non-compliance of resource users to topdown, government-imposed regulations in some islands. In addition to testing various types of co-management and governance arrangements, small islands may also represent privileged areas in seeking new resources for innovative approaches to conservation (e.g. involving the private sector) and scaling inputs to levels that are assimilable and non conflictual.

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