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**SMALL ISLAND STATES AND SUSTAINABLE DEVELOPMENT:
STRATEGIC ISSUES AND EXPERIENCE**

By

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The paper builds directly on and considerably expands a chapter by Stephen Bass on "*Ecology and Economics in Small Islands: Constructing a Framework for Sustainable Development*", contributed to "*Economics and Ecology: New Frontiers and Sustainable Development*" (Ed: E.Barbier 1993) - a book published by Chapman and Hall.

The analysis presented also draws from the experience of IIED working with many other institutions, organisations and individuals in assisting or promoting the development of strategies for sustainable development or their near equivalents. In particular, we have drawn from work undertaken by IIED and IUCN during 1992-94 which led to the preparation of a book, "*Strategies for National Sustainable Development: A Handbook on their Planning and Implementation*" (Carew-Reid *et al.* 1994).

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AOSIS	Association of Small Island States
CARICOM	Caribbean Community
COI	Commission de l'océan Indien
EC	European Community
EMPS-90	Environmental Management Plan for Seychelles, 1992-2000
EEZ	Exclusive Economic Zone
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	United Nations Food and Agriculture Organisation
GDP	Gross Domestic Product
GNP	Gross National Product
IIED	International Institute for Environment and Development
INTERAISE	International Environmental and Natural Resource Assessment Information Service
IUCN	World Conservation Union
MFA	Royal Norwegian Ministry of Foreign Affairs
MIRAB	Migration, Remittances, Aid and Bureaucracy
NCS	National Conservation Strategy
NEAP	National Environmental Action Plan
NEMS	National Environmental Management Strategy
NGO	Non-governmental Organisation
NSDS	National Sustainable Development Strategy
ODA	Official Development Assistance
	Overseas Development Administration (UK)
SEDS	Sustainable Environment and Development Strategy (St Helena)
SIDS	Small Island Developing States
SIDA	Small Island Developing States
SNED	Seychelles National Environment Committee
SPC	South Pacific Commission
SPREP	South Pacific Regional Environment Programme
TFAP	Tropical Forestry Action Programme
UNCED	United Nations Conference on Environment and Development (1992)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
USAID	United States Agency for International Development
WWF	World Wide Fund for Nature
WRI	World Resources Institute

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Small Island States and Sustainable Development: Strategic Issues and Experience

"For us small island developing States, the question of sustainability is not an abstruse, arcane concern. It is rather a matter that affects the very nature of our existence"

H.E. Mr L.Erskine Sandiford
Prime Minister of Barbados¹

1 Introduction

In 1992, the United Nations Conference on Environment and Development (UNCED) met to consider the interlinked problems of environment and development, and to propose principles and means by which nations and the international community could pursue development paths that were more sustainable. This conference was attended by more heads of state than any other meeting in history, so significant was the goal of sustainable development considered to be. Agenda 21, the action plan of UNCED, stressed the importance of developing National Sustainable Development Strategies (NSDSs) as a mechanism for arriving at concrete policies and actions that help countries move towards sustainable development, and which help them to meet the commitments and principles agreed at UNCED.

"[Agenda 21's] successful implementation is first and foremost the responsibility of governments. **National strategies, plans, policies and processes are crucial in achieving this...**" (UNCED, 1992; our emphases)

As a follow-up to UNCED, the UN Global Conference on the Sustainable Development of Small Island Developing States was held in Barbados in May 1994. The conference reaffirmed the principles and commitments to sustainable development made at UNCED and set out a programme of action for small islands to implement Agenda 21. It also stressed the need to develop national and regional strategies, plans, policies and processes:

"Based on the principle of the right to development, small island developing States should, in accordance with their own priorities, endeavour to achieve the goals of sustainable development by, *inter alia*, formulating and implementing policies, strategies and programmes that take into account development, health and environmental goals, strengthening national institutions, and mobilizing all available resources, all of which are aimed at improving the quality of life" (UN 1994).

Neither Agenda 21, nor the small islands conference, gave specific guidelines on how to prepare the national strategies which they espoused so centrally. However, during the last 15 years, many countries have developed various forms of comprehensive national strategies and plans which aim, to greater or lesser extents, to integrate environmental and developmental objectives. These include conservation strategies, environmental action plans, green plans, forestry action plans, etc. From this wide body of experience, many lessons can be drawn which suggest how a process to undertake an NSDS, as advocated by Agenda 21, might be approached. In a recent two-year

¹ Opening statement to the UN Global Conference on the Sustainable Development of Small Island Developing States. Barbados, 26 April - 6 May 1994.

study, IIED and IUCN examined the experiences of over 100 countries in developing and implementing various forms of strategy, leading to the publication of a handbook on strategy preparation and implementation (Carew-Reid *et al.* 1994).

There have also been several other reviews of experience of strategies and 'green planning' (e.g. Hill 1993; ERM 1994) and case studies of strategies undertaken in different regions (IUCN 1993 a,b). The World Bank has also undertaken several recent reviews of its experience in promoting National Environmental Action Plans (World Bank 1993, 1995).

Several dilemmas are likely to face those charged with developing an NSDS: some political; some related to setting objectives and defining the scope and style of the strategy; others concerned with choosing approaches and methodologies. One of the most difficult challenges concerns the issue of participation in the process. These and other problems have been discussed by Dalal-Clayton *et al.* (1994). There is now also a growing perception of the need for developing island countries to move "beyond paper" to the implementation of existing strategies, agreements and plans.

Much of this analysis of past experience and challenges facing the development of NSDSs is based on strategies developed in larger countries and the main continental areas. Little attention has been paid to the experiences of small islands and micro states. Yet it is here where many of the issues which need to be faced in considering paths towards sustainable development are most sharply brought into focus. In small islands, economic, social and environmental changes are more likely to impact on the whole country than in large land-based countries, since, for example:

- # the economies of small islands tend to be based on a single or limited range of activities (e.g. fishing, tourism, particular cash crops);
- # the numbers of people are relatively small, and population densities high; and
- # distances across individual islands are short, so that ecological impacts may be felt across the island (chemical discharges from a point source may pollute the entire coastal zone, deforestation may cause soil erosion and sedimentation across the island, etc.); however, distances may be vast for countries of many islands (e.g. Kiribati, Cook Islands, French Polynesia);

Many small islands are particularly vulnerable to the adverse consequences of climate change such as sea-level rise, coral bleaching, and the increased frequency and intensity of tropical storms. Indeed, sea level rise has been the principal galvanising issue bringing many small island developing states together for the first time. These concerns have been addressed at various international meetings. At the Second World Climate Conference in 1990, coastal and small island States formed the Alliance of Small Island States (AOSIS) to demand action on climate change and its impacts (see Box 1). AOSIS became very vocal and gained considerable notoriety during the negotiations on the Climate Change Convention.

Box 1: The Association of Small Island States (AOSIS)

At the Second World Climate Conference in 1990, small island and low-lying coastal developing countries formed the Alliance of Small Island States (AOSIS) to demand action on climate change and its impacts, notably sea level rise. This group, whose members are also members of island regional groupings or organisations (e.g. SPREP), share common objectives on environmental and sustainable development matters. AOSIS represented the interests of coastal and small island states during the negotiations of the Convention on Climate Change. As of April 1994, AOSIS had 36 members and 5 observers.

AOSIS does not have the formal structure or permanent status of many other international and regional organisations, and is a relatively informal network of small island countries. It maintains an office in New York to advise its member countries on issues of common concern, to provide a clearing house for member countries' views on major issues, and to coordinate negotiating positions.

Moreover, the highly strategic coordination and international lobbying of AOSIS led to it becoming one of the strongest voices at UNCED, despite the small size, populations and individual political clout of each nation, and despite reluctance among some island countries - being sensitive to the implications for relations with other developing countries in the G77 - for the organisation to speak at all at UNCED.

In this paper, we first focus on the ecological, economic and social factors which typify small island states, and then consider the opportunities for, and difficulties in developing, NSDSs, illustrating these through several case examples of recent island strategies.

2 Small Island Characteristics and Trends

We define the term 'small island state' as a state covering generally less than 1000 km² and with a population under one million. However, some larger islands are discussed in this paper (e.g. Mauritius: 1865 km²; Trinidad: 4828 km², both having populations just over 1 million). Table 1 lists the land mass and populations of the small island developing states (SIDS) receiving Official Development Assistance. The figures given represent the total extent of each nation, but many of these comprise literally hundreds (sometimes thousands) of very small islands. The geographical situations of small islands vary considerably: some are low-lying atolls with populations of a few hundreds, and others have towering mountains.

Small island states share a number of characteristics. In essence, these derive from the high exposure of island ecologies, economies and societies to external influences, and the low capacities for adjustment in relatively small, resource-poor islands:

- # a narrow economic base;
- # economic dependence on larger countries for markets and investment and, most significantly, for sea and air transport;
- # geographic isolation within and between countries which can significantly limit economies of scale;
- # geographic isolation (which, however, can effectively be reduced by proximity to an established sea or air route);
- # an inability to exploit land transport fully;
- # small populations, and hence a limited pool of skills;
- # yet often high population densities, and hence high demands on resources (Hong Kong, Singapore, South Tarawa (Kiribati), Majuro (Marshall Islands), Malta and Barbados have some of the highest population densities in the world);
- # highly circumscribed space; paucity of natural resources; and, even though productivity is often high, production systems are often highly vulnerable;
- # the intimate linkage of all island ecosystems: impacts in one part will affect other parts;

- # a high ratio of coastline to land area, leaving islands vulnerable to marine and climate influences, such as cyclones, hurricanes, storm waves, salt-related corrosion and marine pollution;
- # the vulnerability of island ecosystems to other external ecological influences, notably exotic species introduction; and
- # in spite of the above, the presence of traditional and/or community-based "subsistence affluence" systems of production, which may be sustainable in the face of many island constraints.

Such characteristics are fundamental parameters for small island development; yet development has tended to proceed with inadequate information on them.

The potential for small islands to pursue sustainable development depends upon maintaining the quality of certain, necessarily limited, natural resources. At their most basic, these resources provide essential life-support systems: maintaining water supplies and soil fertility, and protecting individual islands from coastal erosion. Yet, whilst some traditional practices have been quite sustainable, historically, many small islands have developed cash economies by liquidating natural capital, a process having its origin in the "frontier" culture of western economies. As a result, the natural life-support systems of many small island nations have been critically diminished. Even in the few circumstances where it is possible to create substitutes for these systems, the cost is great.

Island states can be considered to comprise various sub-systems: economic, social/demographic, cultural, political, physical and ecological. However, in small islands, these systems are particularly mutually inter-dependent. The interaction of these sub-systems defines the behaviour and sustainability of an island in the face of external influences and internal adjustments. A sustainable equilibrium is achieved when each subsystem performs acceptably, resulting in increases in income, health, cultural richness, island decision-making autonomy, biological diversity, and - as already noted - secure ecological life-support. In contrast, disequilibrium results when stresses are so high that one type of society, economy or set of ecological conditions replaces another too rapidly, with inadequate time for all the sub-systems to adjust. Such disequilibrium has characterised the history of many islands (McElroy and de Albuquerque 1991). Disequilibrium is especially pronounced in the smallest islands: those with less than 800 km² and fewer than 100,000 people (Brookfield 1986)².

Disequilibrium in small islands has been most clearly exhibited in the string of commodity booms and collapses which have characterised island development thus far: e.g. in minerals, timber, sugar, bananas, migrant labour and more recently tourism.

Island economic growth has frequently "taken off" through exporting natural resources of highest value at the time. These may be minerals, e.g. phosphate in Kiribati (now exhausted) and Nauru from the mid-1800s, nickel in New Caledonia from 1870, and oil in Trinidad from 1900. High-value timber stocks were devastated in much of the Caribbean (e.g. Honduras mahogany from Barbados from the 16th century), in parts of the Pacific (e.g. sandalwood from Hawaii from the late 18th century), and in the Indian Ocean (e.g. ebony from Mauritius). These wholesale removals

² Some observers of development recognise the unique case of islands only for the smallest islands; they consider that the development constraints of larger islands are comparable to small countries in general (see, for example, Brookfield 1986).

of very particular natural resources have been accompanied by substantial environmental degradation, and by significant social changes - due in part to the small size of island social systems.

Mineral extraction, timber removal, and the establishment of plantation crops, have all led to the most significant anthropogenic environmental transformation of islands: deforestation. The typical process has included:

- # logging of valuable hardwoods;
- # replacement of natural forests by erosive and pest/disease-prone plantation agriculture;
- # soil exhaustion and plantation epidemics;
- # market or price collapse for plantation products;
- # plantation collapse and the subsequent marginalisation of poor people to upland forests;
- # upland deforestation by displaced people;
- # consequent upland erosion, and hence further appropriation of the island's natural ecosystems - and subsequent further degradation;
- # economic disinvestment of the degraded island interior in favour of coastal development or, where environmental degradation leads to collapse of life-support systems, emigration;
- # extreme lack of investment in managing the ever-diminishing forests; and
- # a dependence on remittances from migrant labour, aid and foreign investment.

The process has often been exacerbated by natural disasters such as hurricanes which periodically destroy the vulnerable plantation monocultures and remaining forest; by the neglect of "unprofitable" islands on the part of colonial and dominant economic powers; and by the inability of small island populations to muster the skills and the political and economic power to counteract the trend. As a result, biological productivity, diversity and resilience have diminished. Much land in many islands now lies derelict.

Today, half the world's nations with forest cover below five per cent are small islands. Many islands, especially in the Caribbean and SE Asia, were originally heavily forested. Caribbean development is historically associated with tremendous forest loss, a loss which now has disturbing ramifications for the future of island economies and ecologies, particularly land degradation (see Box 2). Yet the values of remaining intact forest for supporting other island systems (e.g. water supplies for agriculture and domestic use, landscape for tourism) are neither well known, nor properly included in island development planning.

Box 2: Forest Loss in the Caribbean

Large stands of Honduras mahogany were logged from the 16th century onwards, and were depleted by the early 19th century. From 1630 to 1880, larger areas of forest were cleared for export plantations, notably for sugar and cotton. As early as 1655 in Barbados, only very small forest relicts remained and, by 1700, the soils of some estates were severely impoverished in attempts to maximise the production of sugar - at that time considered to be a valuable spice (Watts 1987). Today, Barbados has less than 1 per cent forest cover, one of the lowest in the world.

The inevitable consequence of land degradation was abandonment. It was hastened by the plummeting

economic viability of plantation estates in the mid- to late-19th century, due to: rising labour costs after the emancipation of slaves; price competition from larger countries producing sugar and cotton at lower cost with economies of scale not available to islands; and, in the case of cocoa and citrus estates, disease epidemics which quickly covered the small islands. Other land was abandoned due to the massive emigration that has occurred over the last 160 years, and especially to the United States and the United Kingdom since the 1950s.

Plantation collapse and slave emancipation increased smallholder pressure on land not held by plantation owners, notably upland forests (Watts 1987). Settlement on steep, forested slopes continues today, partly because smallholders - most of them still legally termed squatters - are debarred from flat land held by major landowners.

Today, Brown (1982) has shown that the forest area in a given Caribbean island reduces with increasing population, higher energy consumption (as a measure of human activity), increasing road networks and lower, flatter topography.

Some islands this century have responded to this legacy of degradation by developing an extreme form of economy, independent of local resources but dependent upon economic opportunities elsewhere. This has been known as the "MIRAB" economy (migration, remittances, aid and bureaucracy). Migration may be massive in response to employment opportunities abroad. For instance, there are more Cook Islanders, Tokelauans and Niueans living in New Zealand than there are in these same islands (Hamnett 1986). Equally, according to 1991 estimates, of the total 6500 residents of St Helena, only about 5350 live on the island; the rest work under contract on Ascension Island (800) and in the Falklands (240). It is estimated that a further 4000 St Helena emigrants now live in South Africa and some 2000 in the UK (Kew/IIED 1993).

Other islands, especially those with very few natural resources, have adopted a development path that depends upon income from banking, insurance, postage stamp sales and tax-free financial markets - income which accrues by virtue of the island having the status of a nation. Together with subsidised, imported food and an ageing workforce, they explain the paradox of non-coastal land remaining abandoned and unrestored in so many over-populated small islands. Both the MIRAB and the "tax-free" forms of development avoid many of the risks of environmental degradation experienced with the (earlier) exploitation of forests and minerals and agriculture. Indeed, some observers believe that they could possibly represent durable development models (e.g. Ogden 1989), but such models remain subject to disequilibrium, in part because environmental management is neglected, and hence essential life-support systems are vulnerable, but also because they are heavily dependent upon external demands.

MIRAB economies are examples of the extreme social transformations that have often resulted from externally-induced changes in islands. Most extinctions of human populations (as well as the often-cited extinctions of animal and plant species) have been on islands: the Guanches in the Canaries, and the Arawaks and the Caribs in the Caribbean (Crosby 1986). Only where there has been insignificant colonial influence have indigenous cultures survived, such as many of the Pacific Islands, the Maldives and the Comoros (Hein 1986). Throughout the Caribbean, in contrast, today's population is the product of colonial settlers and administrators, African slaves, and indentured East Indians and other labourers brought in to take the slaves' place following emancipation. No Arawaks and almost no Caribs survive. The new Caribbean people have adopted cultural and demographic means to create as much resilience as possible. For example, the races

tend to mix fairly freely, establishing a national culture, and emigration and immigration regulations are set according to economic and environmental fortune. Yet they have developed few resource management practices that are sustainable, in contrast to other islands where "pre-contact" populations and resource practices remain today.

2.1 The challenge: small island sustainable development in a "post-frontier" world

Today, significant progress towards sustainable development continues to elude most small islands. Structural adjustment has created overwhelming imperatives to export. Many islands are attempting a transition from boom-bust export economies dependent upon agriculture and natural resource exploitation towards tourism and light industrial exports. All these new activities also depend upon environmental resources, however: notably watersheds, landscapes and coastlines. They also generate environmental impacts: solid waste, pollution, landscape change, erosion of cultural traditions, and excessive appropriation of natural habitat. As with the historical syndrome of deforestation, such impacts can be irreversible and limit the performance and resilience of island subsystems.

These new island problems have roots which are similar to those of deforestation: that of a "resource frontier" approach to development. This approach is engrained in island policy, administration and enterprise, following the precedents of (colonial) continental experience.

Before the colonial era, Europe's agriculture and industry depended upon intensive techniques, because of its increasingly restricted resource base. The "New World" of the colonies, in contrast, opened up rich possibilities for expansion. In ensuing centuries, predatory natural resource use came to characterize imperial European civilization: a process of land territorialisation, capitalization and abandonment, and transfer of economic activity to further "virgin" tracts. The success of this approach led some emergent settler cultures to cultivate a mythology of "expanding frontiers". The profits helped to finance urban-based industries; and the dynamic of industrial growth served in turn to sustain the mythology of unlimited frontiers, and further transformed frontier myths into a belief in perpetual economic growth.

"Having expanded on the things of nature, the West came to believe that expansion was in the nature of things" (Weiskel 1990).

This frontier approach is now prevalent throughout the world, in development policy and in the conduct of business. Even small islands - in the grip of larger countries and corporations - operate in the same way. Islands were easier to colonize and control than continental countries, and much of the earliest colonial frontier agriculture was based on islands. Yet islands command inadequate space to sustain such an approach, and environmental degradation and social transformation has been evident from soon after the earliest colonial conquests (Wood 1968, Watts 1987).

Some circumstances, however, have enabled some islands to still maintain frontier myths. Recently, 200-mile exclusive economic zones (EEZs) have been declared around many islands. EEZs have pushed back the resource "frontier" considerably. For example, the tuna resource that now lies within the Pacific island zone is the largest in the world; and the catch, insignificant before 1970, increased to 35 per cent of the world catch in 1984 (Hamnet 1986). Similar expansions of "frontiers" - and of short-term fortunes - have been experienced in the Falkland Islands.

Other attempts to push back the frontiers have been less successful. For example, urban infrastructure in the Maldivian Islands has been constructed with coral dredged from the sea. The costs of exploiting this "free" resource may yet prove to be far higher than those of its extraction. The coral reef is an important buffer for storm waves, of increasing importance in the face of projected sea level rise and greater storm surges, and its removal may already have contributed to increased incidence of inundation. (Ince 1990).

In general, therefore, it is not possible for islands to create new resource frontiers. The challenge for islands is to create policy, and institutional and technical frameworks, for "post-frontier" development: for sustaining the natural resource capital, living off the "interest" produced by this capital, and closing ecological cycles so that wastes become resources, and resources are renewed. Initially, to do so will entail uniting efforts of economic development and environmental management. Ultimately, it will depend upon changing the premises and beliefs of island societies. To do both will require greater insight into the peculiarities of island economies and island ecologies, and their interaction with external influences.

The assumption tends to have been that the continental experience provides the best models for development. Perhaps because of this, the behaviour of island ecologies and island economies, and especially their interactions (including with island social structures and dynamics), have been little explored. Such an exploration, however, will be fundamental to defining sustainable development in islands. What must become clear is that, in islands especially, there are few legitimate "frontiers": there are limits to resources and to sinks for wastes.

In this paper, we argue the need for approaches to island development that are informed by insight into the peculiarities of island economies and island ecologies, by the traditional methods of operating within island constraints, and by effective means of securing international relations. We outline the requirement for developing sustainable development strategies for small islands which might encompass:

- # systems for analysing and monitoring:
 - the island's economic and ecological characteristics, and their limits;
 - external economic and ecological influences on the island; and
 - the interactions of the island's characteristics with the external influences
- # public participation in decision-making and resource control measures, to maximise positive interactions and minimise negative ones;
- # instituting traditional and new resource management systems for restoring, stabilising and developing the resource base;
- # generating multiple use possibilities for island resources;
- # equipping institutions and staff to undertake multiple functions;
- # establishing hazard management capabilities;
- # reducing the isolation of island professionals;
- # establishing policy and economic incentives and other means to achieve the above; and
- # sorting out which of the above are best dealt with nationally, and which through (regional/inter-island) collaboration.

3. The Vulnerabilities of Island Economies and Island Ecologies

Today, in all countries of the world, there is a growing understanding of the linkages between economic systems, social and cultural dimensions, and the state of the environment. Furthermore, it is widely accepted that this understanding must inform the development process. For small islands, therefore, knowledge of the peculiar characteristics of *island economies*, *island ecologies* and *island social/cultural structures*, and their interactions, is vital for sustainable development:

3.1 Island economies tend to be narrowly-based, and highly exposed to external economic and political influences

Small island states seek autonomy, yet they have been able to develop only through interacting with larger economies, which provide capital, markets, and transport links. In turn, however, external trading partners are increasingly rarely "captive" to an individual island, and hence have not been induced to invest in the long-term diversification and sustainability of island enterprises. The high degree of dependence has not been mutual.

Small islands have limited capacities both to produce and to consume; they cannot create monopolies and operate large-scale operations; they cannot develop substantial internal markets; and they cannot raise large amounts of capital/finance on the home market. The economies of scale necessary to cover high transport costs are elusive; and islands become dependent upon transport links with just one or two countries - and hence on a limited market. Few islands ever record a trade surplus. They import inflation, and exchange rates are beyond their control, frequently being pegged to the dominant trading partner's currency. Economic restructuring is hampered by the excessive mobility of crucial domestic determinants of future growth - capital and labour (McElroy *et al.* 1987). Where labour has been used to migrating, it comes to expect high wages, which cannot always be sustained in the island itself.

A feature of island economies is the prevalence of boom and bust, based on very few commodities, with the boom phase being inadequate to permit any diversification (The Economist 1988). Islands need to diversify, and yet there is inadequate manpower and resources available to do so. And when they manage some diversification, very often the most that can be achieved is to produce small quantities - merely "samples", as one British aid official has described it.

With non-renewable resources, the problem is the misfit between the optimum rate of depletion to an external investor (who wants a high rate, and can move on to another source if this is not achieved) and the optimum for the host society, including its future generations. Yet the need for foreign exchange, and the fear that technology may remove their markets in time, has meant that islands have permitted external investors to keep the upper hand, and hence to 'call the shots' in depleting resources (Girvan 1991).

Small islands are price-takers and hence also "become chronic takers of technology, infrastructure, resource-allocating institutions, trade patterns - in brief, all of the strategic decisions that circumscribe their viability are externalised" (McElroy *et al.* 1986). Many small islands also receive a high proportion of aid or transfers (Hein 1986).

Table 1 shows how the amounts of *per capita* Official Development Assistance (ODA) vary enormously between small island countries: from less than US \$10 for some islands with strong economies and relatively large populations (e.g. Bahamas, Barbados, Trinidad and Tobago) to as

high as US \$2855 for Niue - a very poor island with a very low population. In some countries, such as Sao Tome and Principe, aid is larger than GNP.

The relatively high per capita ODA received by some islands is a reflection of their dependency or colony status (e.g. St Helena, Montserrat, Turks and Caicos, New Caledonia). Some small islands actually provide aid (e.g. Bermuda, Cayman Is.). In short, there is a frequent discrepancy between the legal status of independence of many islands and their practical needs for dependence (Knight and Palmer 1989); and opportunities to evolve self-sustaining island approaches to development have not arisen.

Writing on the South Pacific, Carew-Reid (1989) notes that foreign aid is a major influence in setting the pace and direction of development in the region, and that a "cycle is gaining momentum wherein foreign aid supports development which triggers unexpected changes in social and natural systems. These changes then eventually require further aid treatment".

The exception to the general rule of economic dependence arises if countries can raise enough capital to seize locational advantages, e.g. as Singapore did in the 1960s. However, scale and locational attributes are not permanent parameters but may change with new technology. Mauritius was the "star and key of the Indian Ocean" in the eighteenth century, but its locational advantage on the shipping routes between Europe and Asia was removed once the Suez Canal was opened (Brookfield 1986).

In practice, most islands - whether formally independent or not - become linked with (often very distant) poles of political and economic importance. Even within a small archipelago, individual islands may be associated with different foreign influences. Often the former colonial power -

Table 1: Official Development Assistance to Selected Islands in 1993

ISLAND(S)	TOTAL AREA (sq. km)	POPULATION 1993	GNP per capita (US \$)	NET ODA per capita (US \$)	TOTAL NET ODA 1993 (\$ m)
AFRICA					
Comoros	2235	493,853	(487)	103.3	51
Mauritius	2040	1,092,130	2980	35.7	39
St Helena (UK)	122	6,698	---	2239.5	15
Sao Tome & Principe	964	132,338	(354)	362.7	48
Seychelles	308	69,519	6370	143.8	10
NORTH/CENTRAL AMERICA					
Anguilla (UK)	91	6,963	---	718.1	5
Antigua & Barbuda	443	64,110	4870	46.8	3
Bahamas	13878	255,811	12020	7.8	2
Barbados	430	254,934	6240	3.9	1
Bermuda	53	60,213	---	-83.0	-5
Cayman Is. (UK)	259	29,139	16300	-34.3	-1
Dominica	751	87,035	2680	114.9	10
Grenada	344	83,556	2410	107.7	9
Montserrat (UK)	102	12,617	---	792.6	10
Netherlands Antilles	800	184,325	---	444.9	82
St Kitts & Nevis	267	40,061	---	274.6	11
St Lucia	622	151,774	(2900)	177.9	27
St Vincent/Grenadines	388	115,339	(1990)	121.4	14
Trinidad & Tobago	5130	1,299,301	(3980)	5.4	7
Turks & Caicos (UK)	430	12,697	---	866.3	11
Virgin Is (UK)	153	12,555	---	238.9	3
SOUTH AMERICA					
Falklands (UK)	12173	1,900	---	526.3	1
SOUTH/CENTRAL ASIA					
Maldives	298	234,371	820	132.3	31
PACIFIC					
Cook Is	236	17,977	---	723.1	13
Fiji	18274	749,946	2140	78.7	59
Kiribati	861	74,788	710	200.6	15
Marshall Is	181	50,004	---	639.9	32
Micronesia, Fed. States	702	114,694	---	558.0	64
Nauru	21	9,460	(8070)	--	--
New Caledonia (Fr)	19103	174,805	(13533)	2265.4	396
Niue	260	1,751	---	2855.5	5
Pacific Is (Trust Tr.)	1779	157,750	---	564.2	89
Polynesia, French (Fr)	4000	205,620	---	174.6	359

Table cont.

Table 1: Continued:

ISLAND(S)	TOTAL AREA (sq. km)	POPULATION 1993 (million)	GNP per capita (US \$)	NET ODA per capita (US \$)	TOTAL NET ODA 1993 (\$ m)
PACIFIC					
Solomon Is	27556	360,010	(613)	177.8	64
Tokelau (NZ)	12	1,760	---	1704.5	3
Tonga	748	103,114	(1350)	290.9	30
Tuvalu	25	9,494	(326)	421.3	4
Vanuatu	12190	174,574	(1161)	183.3	32
Wallis & Futuna (Fr)	200	17,095	---	--	--
Western Samoa	2831	194,992	(940)	261.5	51

Figures in parenthesis are estimates.

Sources: OECD (1995); Waysata World Fact Book (1993)

which was responsible for the island entering the international economy in the first place - is the dominant influence. For example, in the Caribbean, the predominant trading partners include the UK, France, the Netherlands and the USA. Dependent territories, such as St Helena, tend to be heavily dependent on their 'mother countries'. Hence it is common that regional economic interests do not coincide unless islands in a region share similar relationships with a major country. As a result, regional trade can be relatively slight. For example, in the early 19th century there was considerable hope that Trinidad, experiencing decline in its sugar industry, would be able to take advantage of its proximity to South America and other islands - effectively to become a "Liverpool in the West Indies". The political, economic and transport links with South America were too weak, however, and the fact that the new South American republics were so unstable meant that the interests of Great Britain remained predominant (Wood 1968).

Furthermore, the frequently great distance of small islands from their dominant foreign partners, and the ability of the foreign power to choose alternative partners if offered better deals, mean that islands suffer a lack of stability in investment, aid and markets. For example, the Caribbean sugar and tourism industries - the two most significant in that region - are driven by the North American economy and its political policies towards the Caribbean. When there has been recession in North America, or when political events in the Caribbean have not suited the USA, island economies have suffered.

Changes in the policies and practices of trading partners can also upset island economies. For example, the favourable market in the UK which Windward Islands bananas enjoyed for many years is now upset by European Union imports from Central and South America. These imports have increased due to changes in EU policy and have been made possible by GATT rules which make preferential access difficult. While the Windward Islands have secured some guaranteed access to the European market for a few years, the future will be difficult. To some extent, product

differentiation may help - the British consumer prefers the smaller Windwards banana. Eugenia Charles, the Dominican Prime Minister, has made clear to the EU that there is a risk that certain banana producers, faced with financial ruin, may turn to the drugs trade that has become entrenched in the Caribbean. In part, she has justified her call for EU support to (diversifying) the banana industry on this basis.

Since World War II, tourism has exerted the most profound influences on tropical islands (Doumenge 1985). The smaller islands of the Caribbean (below 800 km²) now account for 40 per cent of tourism expenditure within the Caribbean (McElroy and de Albuquerque 1991). Many islands possess a comparative advantage in tourism, because of their high proportion of coastal land and unclouded skies. Although tourism does not directly consume island resources, it is highly dependent upon markets and political conditions in market countries. Furthermore, the environmental and cultural conditions upon which tourism depends are themselves influenced by foreign markets; these encourage deliberate changes in the environment, e.g. through built development and imported cultural attractions, as well as leading to many indirect changes.

Indeed, McElroy and de Albuquerque argue that the "overgrowth propensities endemic to island policy and international tourism interests" seem inevitably to lead to major ecological and social transformation. Tourism development in most small Caribbean islands appears to have made an inexorable progression towards high-density, mass-market styles which entail intensive infrastructure development on the vulnerable coast, high attendant social, cultural and ecological impacts, and almost total macroeconomic dependence upon external tourism markets (McElroy and de Albuquerque 1991). In the face of dominant foreign influences and the need to generate foreign exchange rapidly, island tourism industries are unable to self-impose an optimum scale of operation consistent with social and ecological sustainability (Daly 1984, quoted in McElroy and de Albuquerque 1991). This trend is also evident in parts of the Pacific (Gerald Miles, pers. comm., 1995).

Clearly, if its scale is not controlled, tourism presents a potential environmental hazard, especially as it is concentrated on the relatively fragile coastal ecosystems. It can be socially destabilising, for in many islands, the tourist population greatly outnumbers locals, and has a greater buying power and hence a significant "vote" in island development. Sustainable tourism will depend upon integrated policy and planning that will: build upon and enhance local social, cultural and economic activities and their mutual links; maximise visitor expenditure rather than numbers; widen the season but also allow for ecological and infrastructure recovery; and provide measures to control ecological and social impacts.

Island natural resources may never be as important to the global economy as they were during historical times, when, for example, spice production was highly lucrative. Yet, for many small islands, the surrounding marine territory may increasingly become the most important resource. This territory - which for small islands is far larger than the island - must always be considered as part of the small island system. Nearshore fisheries provide subsistence, social security reserves and unemployment insurance for many island people (Office of Technology Assessment 1987). However, they depend upon very limited areas of seagrass beds, mangroves and reefs, which are easily degraded by industrial and urban development - particularly pollution and land reclamation. Offshore fisheries present far larger resources for development, but they often require technology and capital from other countries to do so; again, therefore, island economic resources are placed in the hands of external powers. As we have noted above, such large areas of often "virgin" territory, whether they be classified as EEZ or not, are often conceived of as a new "frontier" to mine.

3.2 Island ecosystems are intimately connected

Many small islands are entirely coastal entities - a reality which has been part and parcel of the increased emphasis on integrated coastal management as an important approach for islands. But many other small islands are characterised both by a high diversity of terrestrial and marine ecosystems per unit-area, and by the extensive links between these ecosystems. These links provide valuable mutual support between ecosystems, and they contribute to life support mechanisms. For example, upland forests buffer lowland systems by slowing rainwater runoff and erosion, and by recharging streams and groundwater supplies at a rate which is steadier than that of rainfall. By moderating the movement of nutrient sediments, forests also renew the biological productivity of savanna croplands, marshes and mangroves. These low-lying systems further trap water and sediment to protect the clarity, and buffer the salinity, of marine lagoons and coral reefs. Hence good management of one (agro)ecosystem, such as upland forests, can improve the management of other (agro)ecosystems, such as agriculture, tourism and pelagic fisheries. There are also certain natural energy "buffers" to reduce the inherent ecological vulnerability of islands to external influences. For example, coral reefs and mangroves which fringe islands protect their shores from storm surges.

Yet, by virtue of these same links, an ecological event in one part of an island can have consequences in another (Office of Technology Assessment 1987). The Caroni Swamp in Trinidad provides many examples of ecosystemic interlinkages - and their economic consequences. Until very recently, this mangrove swamp was treated literally as a wasteland - and much of Port-of-Spain's solid waste is still dumped there. These wastes, as well as industrial effluents and agricultural chemical run-off from sugar estates, have resulted in high toxicity levels damaging to mangrove fish nurseries. This problem is exacerbated by nearby port and road construction and by deforestation in the mountainous Northern Range, which increase the swamp's silt load. The biological diversity of the swamp is decreasing, which eventually will damage its most financially-rewarding direct use - ecotourism. Eventually, if the swamp continues to diminish, inland systems will be at greater risk from storm surges and possible sea level rise.

3.3 Island environments are vulnerable to external environmental influences

The ecological significance of small islands is disproportionate for their size. This significance arises from:

- # the small populations of island species;
- # their isolation from alternative populations of the same species; and
- # the limited array of competitors and specific predator/prey relationships.

Many islands are important areas of biological endemism (e.g. St Helena - see Box 3), and island ecosystems commonly exhibit high species richness. Yet some of the factors which render islands of ecological significance also leave them susceptible to external influences. Islands are often incorrectly exemplified as "closed systems" when, in fact, they are often very far from this; and they are becoming increasingly open every day under the impact of modern technologies. Because

of their high ratio of coastline to land area, small islands are particularly vulnerable to coastal and marine influences.

The survival needs of the densely-packed human populations (which often depend upon imported biological diversity such as cattle, goats and annual crops) have long overridden longer-term concerns such as the conservation of indigenous biological diversity. It is not therefore surprising

Box 3: Endemism and Species Extinction in St Helena

The high degree of endemism in St Helena (species restricted to St Helena), particularly amongst plants and invertebrates, places the island fourth amongst islands of international importance after Galapagos, Hawaii and Juan Fernandez islands. Amongst Atlantic islands, the Canary Islands have a larger number of endemic plant species, but the greater number of endemic genera place St Helena much higher in the scale. The balance between species is as follows:

Relative Proportions of Indigenous to Exotic Plant Species

Group	Introduced		Indigenous		Endemic	
	No.	%	No.	%	No.	%
Flowering plants 260+	86		2	1	34	11
Gymnosperms	6	100	0	0	0	0
Ferns	5	15	8	24	16	47
Mosses	?	11	48	12		52 ?
Liverworts	?	9	45	11		55 ?
Lichens	?	36	69	16		31 ?
Marine algae	?	59	98	1	2	?

There are as many as ten endemic plant genera on St Helena - a remarkably high figure for such a small island. Many of the endemic flowering plants are endangered, e.g. *Nesiota elliptica* (St Helena Olive) - now extinct in the wild, *Commidendrum spurium* and *C.rotundifolium* (False and Bastard Gumwoods, respectively) and *Phyllica polifolia* (St Helena Rosemary).

Over 200 endemic species of invertebrates have been described. Amongst the most celebrated is the Giant Earwig (*Labidura herculeana*), the largest species of earwig in the world, reaching 78mm in length. It has been recorded alive on the island. The Ground beetle (*Aplothorax burchelli*) is the largest of St Helena's Coleoptera, reaching 38mm in length, and is also globally endangered. There are also 10 endemic fish species.

The majority of the original vegetation cover and ecosystems of St Helena have been almost entirely destroyed. Over 60% of the island has become covered by eroded areas of rock or by prickly pear, aloe and other exotic species. Indigenous semi-natural forest covers less than 1% of the island, occurring only in isolated remnants, mainly along the central mountain ridge. These remnants are of zoological, botanical and biogeographical importance, consisting of the island's last natural or semi-natural associations of the indigenous plants and animals.

Plant extinctions have been fairly well documented, with seven species lost since 1502. Three recent bird extinctions are known and at least two invertebrates, although this figure may be over 50 if sub-fossils are taken into account. With the exception of birds, faunal extinction has been much less researched than the terrestrial flora. The number of invertebrates lost is unknown.

Source: Kew/IIED (1993).

that most of the recorded species losses of the last few centuries have been in tropical islands. Many species became extinct shortly after colonial conquest, with the introduction of colonial crops, livestock and their attendant panoply of pests and diseases (Crosby 1986).

Many of the island species that remain have lost their competitive ability, and whole island ecosystems are vulnerable to collapse if exceptionally invasive species are introduced. There are one hundred times more endangered species *per capita* in the island Pacific than in mainland Africa, for example (Dahl, 1984). Island resource management has to be exceptionally carefully designed if it is to sustain island biodiversity; yet there are few special provisions or guidelines available for this.

Islands in the Caribbean and the South Pacific are especially prone to natural disasters such as hurricanes, cyclones and volcanic eruptions. The smallest islands cannot deflect hurricanes and cyclones, and they are not large enough to moderate general climate circulation patterns. This renders them vulnerable to drought and other climatic events, which can destroy complete ecosystems. Certain island ecosystems are resilient to such events, e.g. "hurricane forests", which regenerate following frequent hurricanes. However, where island ecosystems are not left wild but are used for human purposes, such long-term ecological resilience is inadequate, and natural disasters can be highly damaging for human enterprise in the short term. They erode the productive resource base, and natural regeneration is not speedy enough to restore essential ecosystem processes. The persistence of sugar over the centuries - although it is now a low value crop with increasing input costs - is in part due to its relatively high resistance to hurricanes compared to, for example, bananas.

The Republic of Vanuatu appears to be the island nation most prone to cyclones in the Pacific with 29 between 1970 and 1985, followed by cyclones *Eric* and *Nigel* in January 1985, and then the devastating cyclone *Uma* in February 1987. A recent study concluded that in any 20-year period since 1940, any given location in Vanuatu would be affected by around 10 cyclones (SPREP 1992).

Hurricanes are the most significant natural calamities in the island Caribbean. In 1955, Grenada's then-biggest industry, nutmeg cultivation, collapsed. The banana plantations in Saint Lucia were destroyed in 1980, as were five million forest trees in Dominica. The direct costs of Hurricane Gilbert in Jamaica in 1988, which devastated the fruit, coconut and coffee industries, amounted to US\$956 million, according to the Planning Institute of Jamaica. Half of the losses were in agriculture, tourism and industry, and half in housing and infrastructure. What is not clear is whether the Planning Institute's cost estimation included damage to the natural resource base in addition to man-made resources - from, for example, landslides and deforestation in watershed catchments, and their effects on soil and water quality and quantity. If the Institute had followed the procedures of the UN Disaster Relief Organisation in cost assessment, which is likely, then these natural resources costs would not have been included (Vermeiren 1991). Most recently, in September 1995, Hurricane Luis caused deaths and extensive damage across various islands. Media reports suggested that in St Kitts and Nevis, 75% of buildings were destroyed. The final extent of the damage remains to be assessed.

In future, it is possible that the natural energy buffers, which protect islands from damage from the sea, may be tested beyond their limits. The sea level rise and increased storm frequency expected with probable global warming may inundate much of low-lying islands such as Anguilla, Marshall Islands, Tokelau, Tuvalu and the Maldives. In the Eastern Caribbean, for example, there may be a rise in average temperature of 1.5°C by 2030 and slightly increased rainfall and humidity. Such a

temperature increase at the surface of the sea could increase the frequency of hurricanes by 40 per cent and the maximum wind speed by 8 per cent. Furthermore, a 30 cm sea level rise is possible by 2030. This would likely lead to an increase in wave energy and destructive power, with the following physical effects (Bass and Cambers 1991):

- # inundation of coastal low terrain;
- # increased beach and cliff erosion;
- # migration and/or reduction of wetlands;
- # saltwater penetration; and
- # altered tidal currents.

The Pacific island nations recognised the importance of the threats of sea level rise in a collective report to UNCED (SPREP 1992):

"The likelihood of sea level rise is a basic consideration for any development planning in the Pacific atolls and other low-lying islands. Even if protective coral reefs continue to grow upwards at a rate equal to that of the rising seas, the coastline will become more prone to erosion, coastal engineering structures will be threatened, and the construction of new infrastructure near the shore placed at great risk. There will be loss of mangrove forests, of agricultural areas and fuelwood resources. Rising temperature would affect coral mortality, seagrass beds would be lost, and inshore fishing productivity may decline.

A particularly serious effect of rising sea level for the atolls is the likely impact on freshwater lenses underlying the atolls. The risk of salt water intrusion will rise as sea level rises, lateral leakage increases, and the lens becomes thinner; already scarce freshwater resources will be lost or at least at very grave risk. As the sea level rises further, salt water will move within reach of pump intakes of groundwater wells, the roots of coconut palms and other tree crops, and of the common atoll staple of pit-grown taro".

The net result of all these impacts is likely to be disequilibrium in social and economic systems. In the Eastern Caribbean, most of the economic resources (particularly for tourism) and the strategic resources (infrastructure such as ports, airports, roads, housing and services) are coastal. They are highly vulnerable to rising sea levels and storm surges. This will bring with it higher costs of insurance and/or failed development. It may become increasingly difficult to attract and insure investment, particularly foreign investment and especially for coastal developments. The comparative advantage of areas which are less sensitive to climate change, and particularly to sea level rise, will increase. This will affect land prices and alter land use patterns, reversing the current trend towards investment and settlement in the coastal zones and shifting population groups to uplands. As yet, however, there are inadequate planning frameworks to ensure that new investment will be sustainable (Bass and Cambers 1991).

3.4 Deterioration of island environments erodes indigenous economic and social potentials

Natural ecosystems are exceptionally important for island societies, even though their total area may be minuscule on a world scale. Small island forests, for example, can be absolutely critical for life support systems, especially for local water supplies, subsistence wood, food and medicine, and soil stabilisation. The watersheds of small islands are far smaller than those on the continent; even slight forest degradation can destroy watershed functions. Over 60% of the island of St Helena has

been reduced to eroded wastelands following deforestation (see Box 3). In some small islands, e.g. Carriacou, the forest has been cut to such an extent that fresh water has had to be brought in by ship (OAS 1988) and in others, e.g. Curacao, energy-intensive desalination plants are needed. In one island off Bougainville, Papua New Guinea, almost all wood and water has to be shipped in from the mainland. The loss of forests in Trinidad has led to widespread flooding of homes and farmland in the wet season, and erratic water supplies in the dry season; the costs of this forest loss are estimated at hundreds of millions of dollars per year in an island with a population of 1.3 million. Likewise, island aquifers are small and vulnerable; even minor saltwater or toxin intrusions can render an aquifer unfit for human use - at great cost to local people and the tourism industry. Even where aquifers are well-managed, they may simply not yield enough to meet demands. In Kiribati and the Marshall Islands, for example, atoll aquifers are already inadequate to meet the needs of growing urban populations (Hamnett 1986).

3.5 Small islands suffer many constraints in tackling unsustainable development

Firstly, whilst there is increasing public concern for unsustainable resource use in many islands, currently there are few imperatives to address the problem. The total values of resources such as beaches, coral reefs, wetlands, aquifers and forests are not yet signalled in economic terms, as we have seen above. Many are still treated as free resources locally, and the incentive is to liquidate those which are of the highest value internationally³.

Second, island manpower and skills are inadequate to tackle the problems of unsustainability. The public sector plays a disproportionate role in the economies of island nation-states. In the Pacific, government expenditures range from 30 to 50 per cent of GDP (Hamnett 1986). In the Eastern Caribbean, governments employ 30 per cent of the labour force. A priority for nearly all governments is to reduce the proportion of the labour force which does not generate income. Combined with the incentive to liquidate resources, this has meant that seemingly long-term concerns such as environmental management have been neglected. Small islands cannot afford to train and maintain the numbers of forestry, agriculture, water and conservation professionals that would be required to manage island resources under "continental" sectoral models of resource management. Consequently, many island governments will employ only one of each professional, if at all, in a vertical hierarchy which inadequately recognises the links between island ecosystems. This professional limitation is likely to be a major constraint in developing and implementing NSDSs in small islands, as evidenced in the case of the proposed Sustainable Environment and Development Strategy (SEDS) in St Helena (see section 7.1). A more integrated approach to natural resource management is required.

Most island professionals will, by necessity, have been trained outside the region. It is at the tertiary education level that the impact of smallness of scale on education is greatest, as Unesco has shown (Unesco 1994.) Yet approaches developed for large, continental areas are not always appropriate. There are very few natural resource management training institutions in island regions, and training does not address the wide range of disciplines required for resource management in

³ Whilst valuation and natural resource accounting is not yet routine, there are *ad hoc* examples of its use, e.g. relating the cost of environmental activity to the expected benefits, e.g. the cost of a loan from the Inter-America Development Bank for coastal conservation in Barbados, or of a loan from the French Government for sewerage treatment in St Lucia (Yves Renard, pers. comm. 1995).

small islands. For example, a small island forester is potentially involved in watershed management, tourism, agroforestry, wildlife conservation, environmental education, timber import and export, and public participation, as well as timber production. Training in the latter alone is no longer appropriate.

Third, immediately-available funding to tackle unsustainability has been low. It is not possible to raise funding from external trading partners that are not "captive" to the island, nor are local resources adequate. It is noticeable that significant aid funding has been focused on the larger continental countries. The special case of island resources - small in quantity but great in human significance - has gone unnoticed.

Fourth, inter-island cooperation is potentially of value in dealing with the limitations of micro-states. But it is frequently poor, because of poor inter-island transport, trade and joint facilities, language problems, the expense of communications and liaison, etc. However, certain matters should tend to improve following the establishment of various regional and international organisations, e.g. the Indian Ocean Commission in 1982, the South Pacific Organisations Coordinating Committee (SPOCC) in 1989, the South Pacific Regional Environment Programme - SPREP - in 1982 (Box 4), and the Alliance of Small Island States - AOSIS - in 1990 (Box 1). Also, there is now an internationally recognised framework for inter-regional cooperation defined by the outcomes of the 1994 UN Global Conference on the Sustainable Development of Small Island Developing States held in Barbados (Barbados Declaration and Programme of Action for the Sustainable Development of Small Island Developing States)

Box 4: South Pacific Regional Environment Programme (SPREP)

SPREP is the regional technical and coordinating organisation responsible for environmental matters in the Pacific region, established to give effect to the Action Plan for Managing the Natural Resources and Environment of the South Pacific, which was adopted in 1982 at the Rarotonga Conference on the Human Environment in the South Pacific. SPREP works on behalf of its 26 members, including 22 island governments and administrations, and receives support member countries (notably Australia and New Zealand) and a number of international organisations.

SPREP is recognised worldwide as the environment programme of the South Pacific countries and operates in partnership with the South Pacific Commission (SPC), UNEP, the Forum Secretariat, and the Economic and Social Commission for Asia and the Pacific (ESCAP). SPREP played an important role in preparing for UNCED, assisting governments in the process of preparing their National Reports. It coordinated the preparation of two reports: *Environment and Development: A Pacific Island Perspective*, which contains a valuable synthesis of National Reports and relevant information concerning sustainable development in the region; and *The Pacific Way: Pacific Island Developing Countries' Report to UNCED*, which presents a regional consensus on the priorities for further action.

During the 1990s, SPREP has coordinated a major programme to develop National Environmental Management Strategies (see Box 5) in fourteen Pacific region countries: five funded by the Asian Development Bank, seven by UNDP, and two by other donors.

Sources: SPREP (1992); Thistlethwaite and Votaw (1992).

Fifth, as we shall explore in the next section, even in islands without a colonial heritage, external economic and social influences are now so high that potentially restorative, traditional and community-based resource management systems are disappearing. These have been pushed aside by people who are no longer satisfied with subsistence, but who have higher material aspirations; they have been discredited by similarly western-looking authorities, including aid agencies; or they are no longer effective with higher population and economic pressures. Societies in most islands have readily accepted what Girvan (1991), in commenting upon the Caribbean, complains has been "the tyranny of the ideology of GNP growth associated with capitalism and modernisation theory". Progress has been equated with the "indefinite accumulation of material artifacts, and the environment is assumed to be infinitely capable of supporting this" (Girvan 1991).

Finally, it should be said that there are also certain advantages to being small, notably the potentials: to reach consensus, to monitor environment and development more closely, and to adapt more speedily. There is also an absence of certain problems that face larger countries, such as large-scale industrial pollution.

3.6 Traditional island practices offer some insights into sustainable development

Ways of dealing with certain constraints that face islands might usefully be sought from traditional responses to island circumstances. The resource management techniques and control systems associated with pre-colonial societies, in particular, provide some lessons about subsistence and resilience.

For example, prior to European contact, Melanesian and Polynesian island societies exploited natural resources mainly to meet subsistence needs. On fertile, volcanic islands a "subsistence affluence" was achieved; and its food and labour surpluses were employed to support elaborate religious and political systems, not to develop resource-exploitative and export-driven economies as they were on the colonised islands (Hamnett 1986).

Even on atolls with very poor soils, sustainable subsistence systems were established. Traditional knowledge and practices have been behind many successful means of environmental protection. For example, in the Pacific region, customary land tenure exists in all independent island countries (except the Kingdom of Tonga), and a large degree of communal control over land use and natural resource exploitation is retained. Community prohibitions can also be imposed on certain practices. In Polynesian atolls, the concept of *raui* (restraint) prohibits resource exploitation by closing off areas or seasons, limiting exploitable sizes or harvest levels. However, in some Pacific island countries, the authority of Chiefs has been eroded, and such conservation practices are no longer fully applied or are not enforced (SPREP 1992).

In contrast to governmental control systems which are inflexible, community control systems, and resource ownership, are continually negotiable through traditional decision-making structures. They are hence far more resilient, and take a more "holistic" view, than their western equivalents. And, just as significantly, many of these control systems are based on the premise that resources are held in trust for future generations. There are traditional forms of land management, too, that can ensure sustainable yields even on infertile atolls, e.g. mulched taro pits, dug below the water table; and there are traditional land capability classification systems that recognise island ecological dynamics. (Liew 1986).

Whilst traditional examples present the best "text book" illustrations of sustainable practice in the absence of external economic influences, almost all islands have - parallel to the major economic activities that are dominated by external parties - strong, informal, subsistence activities that contribute to local livelihoods and the resilience of islands as a whole. An examination of what makes them work, for the people concerned and the island nation, could be fruitful. Often, like the traditional mechanisms, they depend upon community rules and cooperation.

Such insights into (neglected) island practices may help to define future island sustainable development patterns. However, we also believe that there may be a few cases where the island experience reveals lessons for the world as a whole. To an extent, islands provide microcosms of global issues - for these are clearly places where it is impossible to escape indefinitely the reality of resource limits. Indeed, the germ of a colonial realisation of the possible limits to resource frontiers evolved in tropical islands such as Mauritius, St. Helena and the West Indies, as early as the late seventeenth century. Grove has noted that the work of the medical practitioners and botanic garden curators posted to these island colonies was, in fact, fundamental in forming later conservationist responses in Europe. Tropical islands - once considered as earthly paradises, later explored and catalogued scientifically, and finally exploited for their natural resources, with consequent environmental crises - became allegories of the whole world. Men and women of vision were able to deduce, from colonial island development experiences, what might occur at the global level if development patterns proceeded as if resources were limitless. Many of their arguments were as mature as those posed by environmentalists today (Grove 1990).

4 Frameworks for Sustainable Development

The economic demands placed on island resources, particularly by dominant economic partners, are frequently overwhelming and destabilising. The susceptibility of small islands to the environmental problems associated with these demands, and their vulnerability to other external climatic and environmental influences, are both high. In contrast, the capabilities of most islands to analyse these issues and to respond appropriately are limited. Hence, in many islands, particularly those for which major strategic decisions are effectively made externally, the responses are usually reactive.

In Box 5, we indicate the ways in which an individual island can tackle these problems. But a strategic approach is required to combine the requirements listed in Box 5 in reorienting island development towards sustainability. It could have five components:

- 1 A framework for planning and public participation to forge new directions - a national sustainable development strategy (NSDS).
- 2 Tools for analysing the island circumstance and generating solutions within such a framework.
- 3 Resource management techniques appropriate for islands.
- 4 Institutional strengthening.
- 5 International relations consistent with the above.

In this paper, we concentrate on the first item in this list, but make observations on the other items, as they affect the way in which strategies would be prepared, implemented and refined.

4.1 Developing a National Sustainable Development Strategy

Over the last decade, there have been many different approaches to strategies and plans aiming to integrate environment and development policy. Some of the most commonly-applied are national conservation strategies (NCSs) and national environmental action plans (NEAPs) promoted, respectively, by the World Conservation Union (IUCN) and the World Bank. But there is a range of others including, for example, green plans, national forestry action plans, and plans to combat desertification.

Box 5: Key Factors for Developing a Framework for Island Sustainable Development

To tackle the problems likely to be caused by or resulting from external economic, climatic and other environmental influences, individual islands need to:

- # understand its economic and ecological characteristics: the resource capabilities and their values;
- # understand the rationale and operation of traditional and subsistence resource management systems, and the preconditions for their successful use and future development;
- # understand the external economic and ecological influences: their type, degree, frequency/hazard, and likely costs/benefits;
- # assess the island's interactions with external influences: their impacts on island capabilities and values; and identify ways of maximising positive interactions and minimising hazardous ones;
- # understand the economic and policy signals (external and internal) encouraging current resource uses;
- # set strong strategic "bargaining" positions with external decision-makers, to counter the boom-bust syndrome;
- # institute public participation in decision-making and resource management, based on traditional systems where appropriate;
- # set ultimate limits to the appropriation of natural habitat, based on the total economic value of natural habitat, the costs of its removal, and the costs of its conservation ⁴;
- # restore, stabilise and develop the resource base outside protected natural habitat - to include strategies aimed at multiple and adaptable purposes, using minimal external inputs, closing ecological cycles, combating wastage and taking advantage of renewable sources of energy;
- # establish hazard management capabilities, e.g. for oil spills, hurricanes and other potentially catastrophic external influences;
- # equip institutions and staff to undertake multiple functions, and to have a good grasp of the interactions of economic, ecological and social subsystems, but also to have access to the best specialists when needed;
- # enable training institutions to produce highly-qualified generalists;
- # establish policy, legislative, participatory and economic incentives and other means to achieve the above; and
- # determine which aspects of the above are best tackled regionally (notably in cooperation with other islands) rather than nationally.

⁴ The provision of essential life-support systems, such as watershed conservation and coastal protection provided by natural habitats, is likely to figure prominently.

In the context of small islands, the preparation of National Environmental Management Strategies (NEMS) is an important development (Box 6). NEMSs have been pioneered by the South Pacific Regional Environment Programme (SPREP) (see Box 3) drawing their inspiration from the World Conservation Strategy (IUCN/WWF/UNEP 1980).

Box 6: National Environmental Management Strategies (NEMS)

"A NEMS helps a country frame a program to achieve ecologically sustainable development. To be practical and implementable, the NEMS must result from wide-ranging community consultation from the outset. The process begins with the preparation of a detailed assessment of the state of the country's environment, including its resource wealth, and the identification of ecologically sensitive areas. All relevant factors bearing on the formation and implementation of a NEMS are studied, including administrative policies and institutional capabilities, legislation and regulations, formal and informal educational processes, and the development activities by both government and private sectors. Ideally, NEMS formulation is an iterative public consultative process to arrive at a consensus on a set of agreed programs and strategies which will require full community involvement to implement successfully.

The Pacific is in a rapid NEMS learning curve and is adapting experience from other parts of the world to its own cultural and social conditions" (Thistlethwaite and Votaw 1992).

During the 1990s, SPREP has assisted countries in fourteen Pacific countries to develop NEMS with financial support from the Asian Development Bank, UNDP and other donors.

Recently-agreed international conventions on biodiversity, climate change and desertification include requirements for yet more national action plans. And, as we have noted, Agenda 21 calls for highly comprehensive NSDSs.

Over 100 countries around the world are now engaged in preparing and implementing some form of strategy, although they may go by a variety of names. Many of those in developing countries and newly industrialising countries have been assisted by bilateral donors, multilateral development banks (particularly the World Bank) and UN agencies (notably UNDP through its Capacity 21 initiative). From this growing body of experience concerning strategies, there is an emerging consensus on strategy processes which appear to work best.

The lessons of past experience

Experience shows that there is no one type of approach and no single formula by which an NSDS can or should be undertaken. Every country will need to determine, for itself, how best to approach preparation and implementation. To a great extent, the process decided upon will be fashioned by prevailing political, bureaucratic and cultural circumstances. Furthermore, economic, environmental and social conditions will differ in each country.

As a consequence, a "blueprint" approach is neither possible nor desirable. Rather, a recent IIED/IUCN review of a wide range of past strategies from around the world suggested that there is a number of key *lessons* and guiding *principles* for successful strategies (Carew-Reid *et al.* 1994).

Experience shows that, for an NSDS to be successful and effective, it:

- # should be a cyclical process of planning and action, in which the emphasis is on managing progress towards sustainability goals, rather than producing a "plan" or end product (see Figure 1);
- # should be genuinely multi-sectoral and integrative, aimed at engaging relevant interests and overcoming institutional and policy fragmentation;
- # is crucial to focus on priority issues, and identify key objectives, targets and means of dealing with them; the strategy must not get swamped by a huge agenda at any one time;
- # needs to involve the "widest possible participation"; this means sharing responsibility and building partnerships among all concerned - business, community and interest groups, as well as governments - but only where the partners feel it is appropriate;
- # must take an adaptive and flexible approach, recognising that problems are characterised by complexity and uncertainty, and policy responses and technological capability change over time;
- # is therefore vital to set up mechanisms for monitoring, evaluation and learning from experience, as an integral part of the process; the principles of precaution and continuous improvement are important; and
- # is necessary to recognise that preparing an NSDS is an exercise in capacity-building, and should be organised to enhance institutional arrangements, sharpen concepts and tools, foster professional skills and competence, and improve public awareness.

Furthermore, the IIED/IUCN review also revealed that there are certain *tasks* which appear to be common to the more successful strategies (Box 7) (Carew-Reid *et al.* 1995).

One of the key lessons from past experience is the need for the 'widest possible participation'. Achieving effective participation is likely to be one of the most challenging objectives to meet. Few strategies have involved participation beyond the consultation of selected groups, and this has constrained their scope and hampered their implementation (Bass *et al.* 1995).

None the less, an island's strategic planning framework has to be participatory, for fundamental decisions about the future of island societies will be made. For example, should development policy aim at nurturing self-reliant nation states irrespective of the personal sacrifice this may entail for residents, or should it aim at material development, perhaps at the cost of some island autonomy? (Ogden 1989). Most important (as Girvan, 1991, points out) is achieving national consensus on priorities where there are few resources and little time and technology to deal with an overly-comprehensive agenda; and agreeing cooperative state/private/community responses.

Hence, early on in the development of an NSDS, it is important to address the factors which prevent participation - for effective participation does not happen automatically. There is a need to create the conditions conducive to effective participation (information availability, sufficient freedom for advocacy groups, rights and procedures for participation in planning and other mechanisms, institutional incentives, community organisation and mobilisation, participation skills, etc.).

Figure 1: The Strategy Cycle

Note: This figure shows the elements of the strategy as a series of consecutive steps. In reality, many elements will occur concurrently, i.e. implementation of various kinds and capacity-building need to continue throughout the cycle.

Source: Carew-Reid et al. (1994)

Box 7: Tasks in the Strategy Process

Determine if conditions are appropriate - e.g. a conducive political and social climate, high-level political support, and adequate funds.

Decide on an entry point. An NSDS should be a cyclical process (see Figure 1). Some elements follow one from the other; others (e.g. information analysis, monitoring and evaluation, and some implementation) proceed throughout the cycle. A new strategy should take account of what has gone on before, perhaps starting at whatever stage a significant ongoing or past strategy has reached.

Establish an engine to drive the process. Often, a Secretariat is formed, comprising committed staff with good management skills, both from inside and outside the government. The Secretariat may be responsible to a Steering Committee with broad representation, and frequently independently chaired. Neither body should have vested sectoral interests or be located in a sector or interest group.

Decide the process design. The Steering Committee and Secretariat will need to determine the scope of the strategy, the main "stakeholders" to be involved, the issues to address, the approach, and how to manage the individual elements which comprise the strategy cycle (shown in Figure 1).

Determine the participants. Participation implies full involvement of relevant groups (both government and non-government) in appropriate tasks including strategy design, exchanging information, decision-making, implementation etc. It is necessary to decide how much participation is possible and necessary, and to develop mechanisms for participation, e.g. core groups, round tables, workshops, community-based techniques, etc.

Information assembly and analysis. This can be undertaken through background studies and workshops, and by government agencies, universities, research and policy institutions and independent professionals.

Policy formulation and priority-setting. Establish principles, goals and objectives of the strategy, and targets for achieving objectives, through appropriate fora, e.g. policy dialogues and round tables.

Address the hard questions of sustainable development - the major issues, obstacles and risks will be subject to differing opinions and attitudes. There are likely to be winners and losers and trade-offs will be necessary. Policy dialogues should first focus on potential win-win situations, later moving to the more intractable issues.

Action planning and budgeting. An NSDS is a "macro" approach that needs on-the-ground "micro" actions. These can include: policy, legislative, institutional and organisational changes; capacity-building for government, NGOs and local communities; and a range of programmes and projects.

Implementation and capacity-building - embracing the corporate sector, NGOs and communities, as well as government. Government can create an 'enabling environment' for development action by all sections of society, and NGOs can play a key role in catalysing participation and local action.

Communications - keeping participants informed of progress, expressing consensus, generating wider understanding of sustainable development, and encouraging participation - through briefings, newsletters, media coverage, etc.

Monitoring and evaluation - of both the process and products.

Source: Dalal-Clayton *et al.* (1994).

The strategy framework also needs to encompass far more concerns than the traditional frameworks of physical or economic planning, because of the extensive interactions of island sub-systems. There are few precedents in islands, and approaches will have to be built up during strategy preparation and implementation. For example, in national conservation strategies, parallel processes of professional and public consultation have been employed for (IUCN/WWF/UNEP 1991):

- # characterising natural and human resources;
- # identifying policy and economic signals that affect the use of resources; analysing the responses of different socioeconomic groups to these signals; and the environmental and development impacts of such responses;
- # defining priority environment and development issues;
- # developing optional solution packages to move towards sustainability - covering policy, planning, institutional, technical and social changes;
- # consensus-building to select and reconcile solution packages in a coherent strategy for sustainable development;
- # official and public approval and implementation; and
- # review of development and conservation progress.

This and similar approaches have been employed in a number of countries for other strategic planning initiatives (Carew-Reid *et al.* 1994; Dalal-Clayton *et al.* 1994). But rarely have they been successfully built up and applied in a single strategy iteration. Hence, approaches which allow continuous improvement are needed.

In summary, strategies appear to be most immediately successful where there is: high-level political backing from the beginning of the exercise; a strong ethic for cross-sectoral/institutional collaboration; extensive public consultation, treated as seriously as professional consultation; and effective social structures for consensus-building.

Such prerequisites are often obtained in small islands. Smallness permits relatively easy liaison with island colleagues, consultation with the public, consensus-building, and rapid societal changes as a result of consensus. There are certain constraints, however. In small societies, intense face-to-face personalism and kinship ties can reduce objectivity in decision-making and inhibit the confrontation of serious (polarising) issues (Benedict 1967, quoted in McElroy *et al.* 1987). The NCS framework outlined above has encouraged objectivity, but it has not always been adequate to confront serious issues. Approaches towards developing NSDSs in small islands, as elsewhere, will need to encompass not only pressing environmental issues, but also difficult economic and social issues.

4.2 Developing the analytical and participatory methods

Expertise and experience in using effective analytical methods and planning may not be available readily in small islands. And, even if it is available, such methods as environmental impact assessment (EIA), cross-sectoral policy analysis, specific environmental economics techniques, landscape/seascape analysis and carrying capacity assessment, and the means to use these methods interactively, such as geographic information systems (GIS), tend to have been developed for larger countries. There is, however, a small, but useful, body of literature providing guidelines for environmental impact analyses in islands (e.g. McEarchern & Towle 1974, Caribbean

Conservation Association 1984, Office of Technology Assessment 1987, Carpenter *et al.* 1989, and Beller *et al.* 1990). These and impact assessment guidelines from country governments around the world, donor agencies, multilateral development banks, international organisations and NGOs are listed (with many abstracted) in a recent Directory (Roe *et al.* 1995).

Nevertheless, many methods may need to be specifically adapted for use in islands, drawing from the disciplines of island biogeography, island and coastal zone ecology, resource and environmental economics, and island development studies, in a way that will make them practicable for necessarily limited island planning capabilities. Existing methods would be more effective if a strong analytical framework for examining island behaviour is developed; this has yet to emerge (McElroy *et al.* 1987). It could usefully be based on the integrative techniques of:

- # agroecosystems analysis (for resource characterisation, use and linkages)
- # Participatory Learning and Action (for analysing local social and resource use dynamics and views);
- # conflict resolution and consensus-building (for agreeing agendas, objectives, targets and compensation), and
- # environmental economics (for resource valuation and trade-offs between resource uses).

The use of these and other methods in strategies is discussed in Carew-Reid *et al.* (1994) and, for participation, in Bass *et al.* (1995). There is, however, a challenging research task for honing the methods to suit island circumstances. It cannot be done by individual small islands in isolation.

4.3 Island resource management

Knowledge of resource management specific to small tropical islands is weak. Certain principles can be recommended, however. Firstly, as we have noted in section 3.6, the characteristics of traditional island resource management systems (especially from stable, pre-colonial societies) can reveal some lessons about low-input, resilient technologies that maximise the use of natural processes. However, it is clear that there are limits to the application of such approaches, especially in fast-changing societies that wish to live beyond the "subsistence minimum" and in changing economic circumstances. Hence, we also recommend general ecological, economic and social principles for the development of island resource management.

From an *ecological* viewpoint, resource management should mimic and/or act in concert with natural energy buffers and ecological processes, especially to increase resilience in the face of external economic and environmental forces. Management systems would therefore include: constant ground cover, diversity of species and plant canopy architecture - such as in agroforestry; maximum use of solar energy and minimal use of external energy sources; ecological loop-closing, e.g. reusing wastes, transfer of organic matter and minerals between agroecosystems rather than loss to the sea. Traditional techniques may provide insight for such systems, although those that depend upon time, e.g. fallowing systems, may not be appropriate in densely-populated islands subject to high resource demands. In using the large EEZ of many islands for fishing by (foreign) fleets, strict ecological codes of practice should be applied. Since the ecology of fish management is an area which is still not well-understood, this is an appropriate area for international cooperation and development assistance.

From an *economic* viewpoint, resource management should aim to sustain high income on relatively small land units. It should realise comparative advantages to produce speciality crops for which there are possibilities of creating monopolies, such as flower/fruit/vegetable/spice intensive horticulture and orchid cultivation - and particularly of ecolabelled products where a price premium or preferential market access might be gained from the demonstration of a well-managed island environment. Resource management should also realise comparative advantages for speciality services, such as ecotourism, marine sports and marine navigation. To do so will require good market information and promotion, and ensuring adequate and regular supplies - which, however, would tend to exclude commercial activities on the smallest islands. Especially in islands involved in tourism, a landscape management approach to land-based resources, based on local traditions, should add value.

From a *social* viewpoint, resource management should: maximise the potential reversibility of the land, e.g. putting as little fertile land as possible under concrete; provide for essential food security as well as for export - again, favouring multiple use; allow resources to be left unmanaged for long periods while opportunities for alternative income-earning arise - favouring perennial crops; and sustain cultural traditions (traditional landscape, cuisine, etc.).

In light of these principles, research is required for improving management techniques and yield regulation guidelines - especially for reef management, offshore fisheries and all multiple use regimes; and designing mitigation strategies for sea level rise and climate change.

4.4 Island institutional strengthening

Successful strategies have, themselves, been vehicles for institutional strengthening - broadening the scope of institutions' understanding of sustainable development, and providing a framework for renegotiating institutions' mandates, responsibilities, and required resources. We suggest:

- # an emphasis on integrating structures, which may often be informal e.g. cross-sector environmental core groups, inter-agency committees and review groups, round tables and action networks;
- # learning-by-doing projects through the strategy - demonstrations made during strategy processes;
- # aiming for lean, multiple-function and multi-disciplinary agencies;
- # joint management of resources between government and the private sector or communities;
- # strengthening NGOs to act as brokers of partnerships;
- # strengthening community institutions, particularly those involved in resource management;
- # encouraging voluntary actions in the private sector - often a more efficient way of meeting objectives than responding to legislation;

- # involving groups active in cultural conservation and restoration - as the harnessing of creativity and cultural values will be important in locating and embarking upon paths towards sustainability; and
- # developing shared regional facilities e.g. for satellite information, disaster management, and training.

4.5 International relations

The most developed strategies to date have been from the larger countries. Yet these have infrequently dealt with international dimensions, if at all. For small island states, a consideration of the international dimension is much more critical. To some extent, an NSDS will be an exercise in putting the island's own house in order, but it should also generate good information about the positive and negative effects of international relations: trade, aid, debt, foreign exchange, foreign policy, defence, etc. It should then go on to present a "foreign policy agenda for sustainable development", covering the kinds of investment, trade, aid and other links that contribute to sustainable development. Particular issues that might be looked at include:

- # an assessment of the "ecological footprint" of major trade or aid partners on the island state - e.g. the quantities of export taken from the island state and their implications for land use, environmental and social impact; how much of the current resource use in the island state is dedicated to foreign purposes; how much environmental damage is caused by activities undertaken for foreign benefit ?
- # an assessment of non-marketed "global benefits" being provided by the island state for international benefit, rather than for local benefit - e.g. how much is island biodiversity conservation being undertaken, and at what opportunity cost to the nation, where benefits will principally be global ?
- # an assessment of the pros and cons of undertaking certain activities as part of regional groups - there are signs that regional groupings, or at least thematic groupings, are helpful for islands in increasing their global "bargaining power" on sustainable development, and in increasing the skills/resource base upon which islands can draw. For example, many of the research tasks suggested in sections 4.1 - 4.4 might be achieved, and at the same time the isolation of professionals on different islands reduced, through international networking, professional associations and joint facilities. They also provide justification for support to inter-island initiatives, such as the International Scientific Council for Island Development (INSULA), Unesco's island activities, and the Island Resources Foundation, and to regional initiatives such as the Caribbean Natural Resources Institute and the Pacific Sustainable Development Network Programme;
- # a general assessment of global progress towards or away from sustainability, and its implications for the island state as a technology- and price-taker; and
- # an assessment of the possible financial and other implications of the above. How might this affect foreign policy ? Can arguments be made to secure international compensation, either

bilaterally or through international agreements ? What standards should be applied to minimise damaging environmental and social impacts of investment and trade, and to minimise boom-bust cycles ?

5 Island Strategy Experience

There is no official or unofficial mechanism of tracking the 'state of play' concerning the various strategy (or near equivalent) processes in islands or other states. Individual agencies involved in financing or promoting particular strategy models (e.g. the World Bank for NEAPs, IUCN for NCSs, UNDP for strategies in general) occasionally prepare situation reports. Table 2 provides an approximate guide to the status of various strategy processes.

Apart from strategies for individual small island states, there have also been efforts to undertake regional approaches. In 1974, UNEP initiated its Regional Seas Programme (RSP) focusing on the development of regional action plans for controlling pollution and managing marine and coastal resources (Box 8). In 1989, as a follow-up to the work of the World Commission on Environment and Development, and to provide a regional outlook on the environment as an input to UNCED, an independent Latin American and Caribbean Commission on Development and

Box 8: UNEP Regional Seas Programme (RSP)

Each regional action plan was formulated according to the needs of the region as perceived by the governments concerned. All were similar, though activities varied by region. Components included: an environmental assessment, a program of environmental management, environmental legislation, institutional arrangements, and financial arrangements among donors, UN agencies and the governments of the region. Plans were designed to assess the quality of the marine environment and the causes of its deterioration and to link these findings with activities for managing and developing the marine and coastal environment. Action plans promoted the parallel development of regional legal agreements and of action-oriented programme activities. In all, some 100 reports were published as part of the RSP Reports and Studies series.

Source: WRI (1990).

Environment was convoked by UNDP and the Inter-American Development Bank, with the collaboration of the Economic Commission for Latin America and the Caribbean (ECLAC) and UNEP. The new Commission was established to oversee the preparation of a report "*Our Own Agenda*" (IADB/UNDP 1990) reflecting regional thinking, analysis and discussion. Contributions were made by a select group of experts and scientists from the region.

In the Pacific region, regional perspectives and action plans have been prepared under the coordination of the South Pacific Regional Environment Programme (SPREP) (see Box 4).

No island state has yet been through a fully-comprehensive strategy, including substantial implementation, review and reiteration. The experience in larger countries is much richer. None

the less, experience in some islands is beginning to add lessons additional to those described in section 4.1.

Table 2: The Status of Island Strategies

ISLAND	ENVIRONMENTAL PROFILE	NCS	TFAP	NEAP (or equivalent)	NEMS	Other
AFRICA						
Comoros	1993 ⁵ , 1993 ¹⁹			1995		
Mauritius	1993 ⁷			1990		
St Helena (UK)	1993 ³⁴					SEDS initiated 1994 ³⁵
Sao Tome & Principe	1993 ⁸			1991		Forest ecosystem study 1991 ³⁶
Seychelles		in prep		1990 ³⁷		
CARIBBEAN	1992 ⁵³					Regional strategies (1988 ⁵¹ , 1988 ⁵² , 1990 ⁵⁴ 1991 ⁵⁵)
Anguilla (UK)	1993 ¹					
Antigua & Barbuda	1991 ³⁸	in prep	1993 ²²			
Bahamas						
Barbados	1993 ⁴	in prep	(?) ²³ , 1993 ²⁴			
Bermuda						
Cayman Is. (UK)						
Dominica	1991 ³⁹		1993 ²⁵			
Grenada	1991 ⁴⁰		1993 ²⁶	in prep		
Montserrat (UK)	1993 ³		1993 ²⁷	in prep		
Netherlands Antilles						
St Kitts & Nevis			1993 ³³			
St Lucia	1991 ⁴¹	1987 ⁴³	1993 ²⁸			
St Vincent/Grenadines	1991 ⁴²		1993 ²⁹	in prep		Biodiversity assessment 1986 ⁴⁴
Trinidad & Tobago		in prep	1993 ³⁰	in prep		
Turks & Caicos (UK)						
British Virgin Is (UK)						

Note: Numbered sources are listed in Table 3.

Table 2: Continued:

ISLAND	ENVIRONMENTAL PROFILE	NCS	TFAP	NEAP	NEMS (or equivalent)	OTHER
SOUTH AMERICA Falklands (UK)						
SOUTH/CENTRAL ASIA Maldives	1993 ¹¹			1993		
PACIFIC		in prep				Regional perspective (1992 ⁵⁶ , Regional strategy (1992 ⁵⁷)
Cook Is	1993 ⁶⁴				1993 ¹²	Biodiversity assessment 1988 ⁴⁵
Fiji	1992 ⁶⁵ , 1993 ⁶	in prep	1990 ³²	in prep	1993 ⁵⁸	Biodiversity review 1992 ²
Kiribati	1994 ⁶⁷				1994 ¹³	
Marshall Is	1993 ¹⁵				1992 ¹⁴	
Micronesia, Fed. States	1993 ⁶⁶				1993 ⁵⁹	
Nauru						
New Caledonia						
Niue	1993 ⁶⁸				1994 ⁶⁰	Biodiversity assessment 1988 ⁴⁶
Palau	1994 ⁶⁹				1994 ⁶¹	
Polynesia, French						
Solomon Is	1993 ²⁰		in prep		1993 ¹⁶	
Tokelau	1995 ⁷⁰				1995 ⁶²	
Tonga			in prep		1993 ¹⁷	Biodiversity assessment 1988 ⁴⁷
Tuvalu	1993 ⁷¹				with Cabinet	Biodiversity assessment 1988 ⁴⁸
Vanuatu	1993	in prep	in prep		1993 ⁶³	Biodiversity assessment 1988 ⁴⁹
Wallis & Futuna						
Western Samoa	1993 ¹⁰ , 1993 ²¹		in prep		1993 ¹⁸	Biodiversity assessment 1988 ⁵⁰

Note: Numbered sources are listed in Table 3.

Table 3: List of Sources Given in Table 2

1	Island Resources Foundation (1993). Anguila Environmental Profile
2	SPREP/IUCN/ADB (1992). Fiji: A National Biodiversity Profile.
3	Island Resources Foundation (1993). Montserrat Environmental Profile.
4-10	IUCN (1993). Environmental Synopses for, respectively: Barbados, Comoros, Fiji, Mauritius, Sao Tome & Principe, Vanuatu and Western Samoa:
11	IUCN (1993). Marine Protected Areas Needs in the South Asian Seas.
12	SPREP/IUCN/ADB (1993). Cook Islands: National Environmental Management Strategy.
13	SPREP/ UNDP (1994). Kiribati: National Environmental Management Strategy.
14	SPREP/IUCN/ADB (1992). Marshall Islands: Action Strategy for Strengthening Environmental Management 1992-96 (Part B).
15	SPREP/IUCN/ADB (1993). Marshall Islands: State of the Environment Report (Part A).
16-17	SPREP/IUCN/ADB (1993). National Environmental Management Strategies for, respectively: Solomon Islands, The Kingdom of Tonga
18	SPREP/UNDP (1993). Western Samoa. National Environmental Management Strategy.
19	UNDP/UNESCO/IUCN/COI (1993). Diagnostic de l'Etat de l'Environnement aux Comores: Direction G�n�rale de l'Environnement; Projet.
20	SPREP/IUCN/ADB (1993). Solomon Islands: State of the Environment Report.
21	SPREP/IUCN/ADB (1994). Western Samoa: State of the Environment Report.
22	CARICOM/FAO/ODA (1993). Antigua and Barbuda: National Forestry Action Plan.
23	Govt. of Barbados (undated). Tropical Forestry Action Plan for Barbados.
24-30	CARICOM/FAO/ODA (1993). National Forestry Action Plans for, respectively: Barbados, Dominica, Grenada, Montserrat, St Lucia, St Vincent and Grenadines, and Trinidad and Tobago.
31	SPREP (1993). Implications of Climate Change and Sea Level Rise for Tokelau: Report of a Preparatory Mission.
32	Govt. of Fiji/UNDP/FAO (1990). Fiji: National Forestry Action Plan.
33	CARICOM/FAO/ODA (1993). St Kitts and Nevis: National Forestry Action Plan.
34	Kew/IIED (1993). Report on Sustainable Environment and Development Strategy and Action Plan for St Helena. Vol.2: Environmental Profile.
35	Kew/IIED (1993). Report on Sustainable Environment and Development Strategy and Action Plan for St Helena. Vol.1: A Proposed Approach.
36	IUCN (1991). Conservation of Forest Ecosystems in the Democratic Republic of Sao Tome and Principe.
37	Govt. of Seychelles (1990). Achieving Sustainable Development: Environmental Management Plan of the Seychelles, 1990-2000. Dept. of Environment, Victoria, Seychelles, June 1990.
38-42	USAID (1991). Country Environmental Profiles for, respectively: Antigua and Barbuda, Dominica, Grenada, St Lucia, St Vincent and Grenadines.
43	IUCN (1987) St Lucia National Conservation Strategy.
44	USAID (1986) Biodiversity Assessment for St Vincent.
45-50	USAID (1988). Biodiversity Assessments, respectively, Cook Islands, Niue, Tonga, Tuvalu, Vanuatu and Western Samoa.
51	USAID (1988). Biological Diversity and Tropical Forest Assessment for the Eastern Caribbean.
52	RSMI/CIDA (1988). Caribbean Environmental Programming Strategy: Final Report. Resource Systems Management International Inc., Toronto, and CIDA.
53	USAID (1991). Environmental Agenda for the 1990s: A Synthesis of the Eastern Caribbean Country Environmental Profile Series.
54	LACCDE (1990). "Our Own Agenda": Latin American and Caribbean Commission on Development and Environment. IDB/UNDP.
55	Fundacion Bariloche (1991). Environment and Development in Latin America and the Caribbean: Problems, Opportunities, and Priorities.
56	Thistlethwaite R. & Votaw G. (1992): Environment and Development: A Pacific Island Perspective: SPREP.
57	SPREP/UNDP (1992): The Pacific Way: Pacific Island Developing Countries' Report to UNCED.
58	Govt.Fiji/IUCN/ADB (1993). Fiji. National Environmental Management Strategy
59	SPREP/IUCN/ADB (1993). Federated States of Micronesia. National Environmental Management Strategy
60	SPREP/UNDP (1994). Niue. National Environmental Management Strategy
61	SPREP/UNDP (1994). Palau. National Environmental Management Strategy
62	SPREP/UNDP (1995). Tokelau. Environmental Action Strategy.
63	Govt.Vanuatu/SPREP/IUCN/USAID (1993). Vanuatu. National Environmental Management Strategy.
64-71	Environmental profiles prepared as part of NEMS process for, respectively, Cook Is., Fiji, Micronesia Fed States, Kiribati, Niue, Palau, Tokelau and Tuvalu.

5.1 St Helena Sustainable Environment and Development Strategy

The small island of St Helena (population 5000) is a dependency of the UK located far from any other land mass in the southern Atlantic ocean. It has a rich endemic fauna and flora, but suffers from severe land degradation and limited development options, and is highly vulnerable to external actions and decisions, notably those made from London. A process was started in 1993 towards developing a Sustainable Environment and Development Strategy (SEDS). Initially, a six-week scoping exercise was conducted, facilitated by a Team from The Royal Botanic Gardens at Kew and IIED. The exercise was cross-sectoral and inclusive of all government departments, the private sector, NGOs and the public. It involved a wide range of surveys and data-gathering exercises and exhaustive consultations and participation, e.g. numerous official and public meetings, visits to farmers and smallholders, phone-ins, school painting competitions and seminars, and *ad hoc* discussions. Analysis of issues raised at 15 separate public meetings (Box 9) revealed that, even in a small and isolated place like St Helena, there is widespread interest and concern about the environment and development amongst all types and age groups of people. There was also special concern about the decision-making process itself, and notably the low degree of local control. The issues raised were both national and international in scope (Table 3). They were ranked by the team after placing them in context together with information from the diversity of other methods used to assess islanders' opinions and attitudes, e.g. questionnaires.

Box 9 Public Meetings Held During Scoping for the St Helena Sustainable Environment and Development Strategy (SEDS)

[This box accompanies Table 4]

1. Alarm Forest (the Briars) Community Meeting
2. Half Tree Hollow Community Meeting
3. Longwood Community Meeting
4. Kingshurst (St Pauls) Community Meeting
5. Levelwood Community Meeting
6. Blue Hill Community Meeting
7. Jamestown Community Meeting
8. Sandy Bay Community Meeting
9. Farmers Association
10. Smallholders
11. Fishermen's Association
12. Heritage Society
13. Church Group Meeting
14. Radio Phone In
15. SEDS Seminar

Table 4: Public Concerns About the Environment in St Helena

RANK/ISSUES RAISED	FORUM															TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1. GOVERNMENT CLOSED SHOP	-	*	*	*	*	-	*	*	-	*	*	*	-	-	*	10
2. Agricultural/Food Security	-	-	-	-	*	*	*	-	*	*	*	*	-	*	*	9
2. Research/Education	*	*	*	*	-	*	-	*	-	-	*	-	-	*	*	9
2. Soil Erosion	*	-	*	-	*	-	*	*	*	*	-	-	-	*	-	8
2. INTERNATIONAL POLLUTION	*	*	*	-	*	*	-	*	-	-	*	-	-	*	-	8
2. Apathy Amongst Populace	-	*	*	-	*	*	*	-	-	-	-	*	*	-	*	8
3. Water Shortage	-	*	*	*	*	*	*	*	*	*	*	-	-	-	-	7
3. Living Costs	-	-	-	-	*	*	*	*	*	*	*	-	-	-	-	7
3. TOO MANY CONSULTANTS	*	*	-	*	*	-	*	*	-	-	-	-	-	*	-	7
3. No Cash for Environment Work	*	-	-	*	*	-	*	-	-	*	*	*	-	-	*	7
4. UNEMPLOYMENT	-	-	-	-	*	-	*	*	*	*	-	-	-	-	*	6
4. INTERNATIONAL OVERFISHING	*	-	-	*	*	*	-	-	-	*	*	-	-	-	-	6
4. LACK OF CONTINUITY	*	-	-	*	*	-	*	-	-	*	*	-	-	*	-	6
5. Increased Water Cost	-	-	-	*	-	-	*	*	*	*	-	-	-	-	-	5
5. Cactoblastus Killing Opuntia	-	*	-	*	*	-	*	-	-	*	-	-	-	-	-	5
5. Organic Matter	*	-	*	-	-	*	-	-	*	*	-	-	-	-	-	5
6. Increase in No. of Pests	-	*	*	-	-	-	*	-	-	-	-	*	-	-	-	4
6. Local Pollution	-	-	-	*	-	*	-	*	-	-	*	-	-	-	-	4
6. Flax Mulch/Soil Conditioner	-	-	*	-	-	-	*	-	*	*	-	-	-	-	-	4
6. Land Use Strategy	*	-	-	-	*	*	-	-	-	-	-	*	-	-	*	4
7. Lack of Fishing Fleet	*	-	-	*	-	*	-	-	-	-	-	-	-	-	-	3
7. Recreational Facilities	-	-	-	-	-	*	-	*	-	-	-	-	*	-	-	3
7. 3 Day Labour	*	-	*	-	*	-	-	-	-	-	-	-	-	-	-	3
7. Natural Regeneration	-	-	*	-	-	*	*	-	-	-	-	-	-	-	-	3
7. Taxes, esp Land Tax	*	-	*	-	-	-	-	-	-	-	*	-	-	-	-	3
7. GLOBAL CLIMATE CHANGE	-	*	-	-	-	-	*	-	-	*	-	-	-	-	-	3
8. Water Quality	-	-	-	*	-	-	-	*	-	-	-	-	-	-	-	2
8. Building Heritage	-	-	-	*	-	-	-	-	-	-	-	*	-	-	-	2
8. Nature Trails	-	-	*	*	*	-	-	-	-	-	-	-	-	-	-	2
8. Legislation	-	-	*	-	*	-	-	-	-	-	-	-	-	-	-	2
8. VIDEOS	*	-	-	-	-	*	-	-	-	-	-	-	-	-	-	2
8. Drought	-	*	-	-	-	-	-	-	-	*	-	-	-	-	-	2
9. Absentee Landowners	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
9. Road Condition	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	1
9. School Closure	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	1
9. Lack of Finance	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	1
9. Removing Historical Remains	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	1
9. Spear Fishing	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	1
No. Present	7	13	8	16	11	7	7	9	6	14	6	4	3	5	15	131
Sex - male	2	7	3	11	7	3	2	6	5	12	6	1	3	3	10	81
- female	5	6	5	5	4	4	5	3	1	2	0	3	0	2	5	50
Age < 30	0	2	1	3	2	2	2	2	0	2	0	0	0	1	0	17
30-60	6	7	7	10	8	2	4	5	5	9	6	2	1	4	14	90
60+	1	4	0	3	1	2	1	3	0	2	3	0	1	1	25	

NB: Capitalised items are, or are influenced by, international affairs
The fora listed above are detailed in Box 8.



The Team's report indicates that:

"Almost everyone spoken to had one issue or another that concerned them which would directly or indirectly affect the relationship between man and nature" (Kew/IIED 1993).

The island's government was very enthusiastic about the opportunities presented by the strategy process since, at present, the future of the island's economy looks particularly difficult. But government officers commonly commented that the public was apathetic. In contrast, the Team noted that the public appeared to be resigned to decisions always being taken on their behalf (often by expatriate officers or in London) - and therefore felt it pointless to become interested in development issues if they could not influence decisions. In fact, many islanders were only prepared to speak more openly to the Team about their concerns when not in an open or public forum. Nevertheless, the people of the island were very supportive of the idea of a strategy initiative as it offered, through a participatory process, the potential for them to become actively involved in determining their own fate.

Clearly a participatory strategy process on the island will help to build trust between government and the administration. As the report observes:

"The people clearly perceive a threat of over-bearing government. There is a feeling of 'them and us'. This factor, above all others, is symptomatic of the biggest obstacle confronting measures to promote partnerships for sustainable development on the island" (Kew/IIED 1993).

The island's government established a SEDS Response Committee to decide how to deal with the options for a strategy process outlined in the team's report. In late 1994, the Response Committee decided to create a (government-based) Advisory Committee on Environmental Affairs (ACE) to coordinate the SEDS process, and sought technical assistance and financial support from the UK Overseas Development Administration. The ACE has provision for some non-government representation, but mainly on an *ad hoc* basis. It remains to be seen how participatory the process will remain, but initial indications are that despite an enthusiastic public response during the scoping phase, the government is intending to conduct the SEDS process as an essentially internal planning exercise. If this is the case, the people of St Helena may continue to dissociate themselves from any active involvement and many opportunities for building partnerships for sustainable development may be lost. Initially, the main attention under the SEDS is being given to integrated pest management and endemic biota conservation.

5.2 Mauritius National Environmental Action Plan

"... Mauritius was made first, and then Heaven; heaven was copied after Mauritius".

Mark Twain

The Republic of Mauritius lies in the Indian Ocean some 800 km south east of Madagascar. The Mauritius NEAP was one of the earlier NEAPs promoted by the World Bank, and represents an example of a top-down, project-oriented strategy. Work began in February 1988 when a five-person World Bank mission visited the island. This led to the preparation of a report to government, "*Economic Development with Environmental Management: Strategies for Mauritius*" (World Bank, May 1988). The report described key environmental issues (notably severe pollution problems) and made detailed recommendations for action. The latter amounted to a 'shopping basket' of potentially 'bankable' projects.

The report was discussed at a technical seminar in September 1988. This was attended by some 150 local government and NGO participants, donor and international NGO representatives. The seminar was organised in a way which did not allow for an effective consideration of the World Bank's analysis. It focused mainly on considering a large number of individual project proposals, rather than addressing the overall policy and institutional problems underlying serious environmental issues. Many participants criticised this piecemeal approach and drew attention to the need to develop a 'real strategy' which provided coordination for environmental management and development planning, and which forged links and cooperation between sector ministries and departments.

Subsequently, the report was 'updated', supposedly taking account of conclusions reached at the seminar, although there appears to be little real difference between the two documents. The revised report (World Bank, November 1988) was accompanied by an Environmental Investment Program for Sustainable Development (World Bank, September 1988) setting out individual projects in detail. These documents were presented to Cabinet and approved, and subsequently were the basis for a Donors Conference in Paris in January 1989. The revised report was subsequently published as the NEAP for Mauritius (March 1990).

Development of the NEAP involved no public consultation or participation, and was effectively the product of a World Bank team, working with government officials. The technical seminar was the only forum for public discussion, but this was stage-managed in a top-down manner and had no clear influence on the final NEAP.

On the positive side, the World Bank's report identified the need for a comprehensive national environmental policy "which provides the goals, objectives, directions and guidance for Government's action, and which explicitly lays out the essential linkage between the Government's environmental and economic development endeavours" (World Bank 1988). Consequently, it made a recommendation to "develop a National Environmental Policy for Mauritius, for review and adoption by Government". Furthermore, the report recommended that there was an urgent need to draw up comprehensive legislation for environmental protection and management.

Technical advisers were provided by the World Bank in 1990 to assist the then Ministry of Housing, Lands and the Environment. This resulted in a White Paper on the National Environmental Policy, providing 10 guiding principles for environmental management, presenting environmental goals and 11 specific objectives, and setting out 28 attributes of the policy and the measures to "achieve the mission". The suggested measures are listed in Box 10.

The NEAP led to the initiation of an Environment Investment Programme (EIP) (1990-1995) which is soon to be completed. It also resulted in the establishment of the Ministry of Environment and Quality of Life with the Department of Environment as its main body for enforcing environmental legislation, as well as the Environment Protection Act (1991). Under this Act, environmental impact assessment has become an important instrument for integrating environmental concerns in policy- and decision-making.

Box 10: Implementing the Mauritius National Environmental Policy

SUGGESTED MEASURES	ACTIONS TAKEN
<p>Establishment of the Department of the Environment (the Government had already established an Environmental Protection Department in 1989) to be responsible for the administration of environmental protection legislation, to design and develop environmental guidelines and standards, and to be a national focal point for information and research on all environmental matters. Further the Department shall assist other Ministries and governmental agencies in their task of protecting and enhancing the quality of the environment.</p>	<p>The Ministry of Housing, Lands and Environment became the Ministry of Environment and Quality of Life in September 1991</p>
<p>Incorporation of environmental considerations in the National Development Plan by adding a separate chapter on this subject.</p>	
<p>Provision of a leadership role by assisting industries in implementing environmentally sound production and manufacturing techniques.</p>	
<p>Establishment of an Environmental Council of Mauritius representing industries, unions, NGOs, educational and research groups, employers' federation, media, and others. This Council will be a vehicle for arriving at a national consensus on all environmental matters.</p>	<p>Established Environmental Advisory Council</p>
<p>Provision of a high-level coordination and policy approval mechanism. The National Environmental Commission has therefore been appointed. It acts as a pivotal body to see that the wishes of Parliament and the Government as a whole are carried out not only by the Department but also by all other government ministries and para-statal organizations.</p>	<p>Inter-Ministerial Environment Coordination Committee established.</p>
<p>Collaboration with the local government (Municipalities and District Councils) in areas of shared responsibilities and common concern for recreation, conservation and protection of the environment, management of land-fill sites, garbage removal, crisis management, enforcement of regulations pertaining to smoking and noise pollution, and other related matters.</p>	<p>National Solid Waste Management Plan 1993</p>
<p>Requirement for environmental impact assessment on all developmental and industrial projects immediately after the legislation has been approved and promulgated.</p>	<p>Environmental Protection Act 1991. EIA effective from June 1993</p>
<p>Encouragement of media (television, newspapers and radio) to be a partner in enhancing environmental awareness in the country.</p>	
<p>Drafting of legislation on environmental protection in order to give force of law to these goals, objectives and the policy.</p>	
<p>Initiation of the policy of "polluter pays" and, where possible, provision of assistance and incentive to the existing industries to upgrade their techniques in order to secure compliance with the standards to be prepared.</p>	<p>Environmental Protection Act 1991 Fiscal incentives made available</p>
<p>Establishment of an integrated and comprehensive national system for environmental protection and conservation.</p>	<p>Integrated Pollution Control system being considered.</p>

Source: Government of Mauritius (1991)

5.3 Seychelles Environmental Management Plan

"Sustainable development is not a policy choice but an imperative for our health and economic welfare..... We simply cannot afford the environmental, economic and social costs of unsustainable development".

H.E. France Albert Rene
President of the Seychelles

The Seychelles consist of 115 small and ecologically vulnerable islands spread out over 1.3 million km² in the middle of the Indian Ocean. Since independence in 1976, national planning in the Seychelles has accepted that sustainable development has three crucial components: social, economic and ecological (Govt. of Seychelles 1992). Between 1976 and 1984, the main goals were to ensure access by all Seychellois to health, education and other essential *social* services and amenities. The 1984-89 National Development Plan concentrated on *economic* development and introduced many measures to diversify the economy and encourage owner-operated businesses, joint ventures and appropriate industries. The country is now focused on the critical *ecological* component of sustainable development. On 5th June, 1990, an Environmental Management Plan of the Seychelles (1990-2000) (EMPS-90) was published (See Box 11) and was integrated with the National Development Plan for 1990-1994. The two plans together constitute a single and integrated national "Strategy for Achieving Sustainable Development 1990-2000" (Govt. of Seychelles 1992). The EMPS-90 differs from the National Development Plan in three important respects:

- # it assessed the environmental and natural resource problems in more detail than was possible in the National Development Plan;
- # it has a longer time perspective, covering the decade; and
- # it put forward additional proposals for strengthening the legal and institutional arrangements for environmental protection and natural resource management.

The 1990-94 National Development Plan and the EMPS-90 (and the accompanying Investment Programme for 1990-2000) are both the result of the combined efforts and cooperation among Ministers, senior officials and experts in all the key national agencies. The Ministry of Planning and External Relations and the Department of Environment led and coordinated the work on both plans, but the assessment of major problems and policy issues and the designation of priorities were made at a series of inter-agency meetings and workshops in 1989 and 1990 involving over 45 senior officials and experts from 17 key Departments, Ministries and parastatal companies. Six major priorities were established:

- # protecting health and environment;
- # managing natural resources on a sustainable basis;
- # Preserving the natural heritage and biological diversity;
- # strengthening laws and institutions;
- # expanding environmental information, education and training; and
- # strengthening international cooperation and laws.

The preparatory work for the EMPS-90 was undertaken with an exceptional amount of international assistance (Box 12). In contrast, the IIED/IUCN review of strategies (Carew-Reid *et al.* 1994) concluded, in general, that external agencies should be "on tap", and not "on top". In view of the many island problems caused by external forces, the Seychelles clearly would have needed to manage this international cooperation very carefully to ensure the strategy is "country-driven".

**Box 11: Seychelles Environmental Management Plan, 1990-2000:
Priority Programmes and Projects**

Environmental Guidelines and Assessment: Priorities include state of the environment reporting; new environmental impact assessment procedures; making annual sustainable development audits; assessing the impact of climate warming and sea level rise.

Pollution Monitoring and Control: Priorities include standards for air, water and noise pollution; a new Pollution Control and Advisory Service; controlling toxic or potentially hazardous goods; national and regional plans to combat major oil spills and ocean dumping.

Waste Management: Priorities include improved sewerage for Greater Victoria and other specified urban centres; the Mah̄ solid waste plan and treatment plant; a regional management plan for hazardous wastes.

Land Management: Priorities include implementation of the Plan D'Aménagement du Territoire; strengthening the Planning Act and building regulations; maintaining and improving soil fertility.

Water Management: Priorities include a national water resources assessment; new water management plans; improved water supply and distribution networks for Mah̄, La Digue and Praslin; upgrade Le Niol treatment plant.

Energy Policy and Conservation: Priorities include the preparation and implementation of a national energy conservation programme; a feasibility study for lead-free gas.

National Parks and Conservation: Priorities include new parks management plans; measures to protect endangered species; upgrading of Curieuse National Park, the Aldabra World Heritage site and maritime parks; a new Parks and Conservation Service, pesticide controls.

Forests Management: Priorities include the preparation and implementation of a National Forests Management Plan; preservation of endemic tree species; new fire prevention measures.

Coastal Environment Management: Priorities include strengthening Coastal Zone Management Plans; controlling beach erosion; a major and marine environment baseline study; reducing sand use in construction.

Marine Resources Management: Priorities include improving fisheries surveys and assessments; new management plans for marine resources; stronger measures to protect endangered sea turtles.

Environmental Law and Enforcement: Priorities include strengthening and extending environmental legislation; the analysis of relevant international standards and guidelines; establishing a new legal advisory and enforcement capacity on environment.

Environmental Information, Education and Training: Priorities include new public information campaigns and participation on conservation and resource management; developing new school and in-service training courses in support of sustainable development.

Note: A Steering Committee for the Implementation of EMPS-90 has been established, comprising representatives from the Department of Housing, Ministry of Planning and External Relations, Ministry of Finance, Ministry of Administration and Manpower, and the Public Utilities Corporation, and chaired by the Minister of Planning and External Relations. It meets fortnightly.

**Box 12: International Cooperation in Developing the
Environmental Management Plan of the Seychelles, 1990-2000**

Significant advice and assistance was provided by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the World Bank. Expert advice and support was also provided on different issues and areas by other agencies:

- # The African Development Bank (reafforestation, waste water treatment);
- # The Canadian International Development Agency and the International Centre for Ocean Development, Halifax (marine environment, oil spill contingency plan);
- # The Commission of the European Communities (South Indian Ocean regional projects);
- # The Food and Agriculture Organisation of the UN (fisheries, environmental law, agriculture sector strategy);
- # The Government of France and the Agence National pour la Recuperation et L'Elimination des Dechets (solid waste management);
- # The Government of Norway and NordPlan (reafforestation);
- # The International Maritime Organisation (marine pollution);
- # The International Union for Conservation of Nature and Natural Resources (IUCN) and the World Wide Fund for Nature (plant and wildlife conservation, marine resources);
- # The Overseas Development Administration of the UK and British Executive Service Overseas (industrial pollution control, water supply);
- # UN Centre for Human Settlements (South Victoria Region project); and
- # The UN Industrial Development Organisation (waste oil recycling).

Source: Govt. of Seychelles (1992)

Public participation was given far less attention than international agency participation. However, the government is now expanding the opportunities for more public participation in the development process, as both a right and duty of all Seychellois:

"Increased attention will be given to fostering the participation of Seychellois in the programmes and projects that affect them directly, especially in the fields of health, environmental protection and education, as well as through community development.

Such participation will enable the population to influence decisions that affect them as well as serve as a means for improving the quality and cost-effectiveness of interventions to attain sustainable development. Participation is interpreted broadly by the Government and includes an institutional dimension which provides for the more active involvement of public and private sector organizations in the development process and the strengthening of the information and related systems required to facilitate such involvement... Special efforts will also be made to encourage individual and community participation in environmental improvement efforts" (Govt. of Seychelles 1992).

Special inter-Ministerial cooperation and partnerships were essential for preparing the 1990-94 National Development Plan and the EMPS-90. Two principal bodies are responsible for maintaining inter-Ministerial consultation, coordination and cooperation on the environment:

- # the Seychelles National Environment Commission (SNEC) - an inter-Ministerial advisory body on national environmental policies and the management of nature reserves; and

- # the Project Appraisal Committee of senior government officials chaired by the Minister for Planning and External Relations.

The Seychelles National Report to UNCED (Govt. of Seychelles 1992) acknowledges that to succeed, "our transition to sustainable development will have to be based on a *continuous process of policy review and evolution of strategies*" (our emphases). The 1990-94 National Development Plan stressed strategic planning, especially within the public sector, rather than attempting to set out a blueprint or programme of resource allocation for the next five years. As a consequence, the plan contains no detailed investment allocation decisions and few production targets. These allocation decisions were left to be set as part of the annual planning process connected with the Annual Capital Budget exercise and the Annual Plan in the Seychelles. As a result, there is an annual project implementation schedule, coupled with shorter term targets. A Macro Economic Sub-Committee works with the Project Appraisal Committee to monitor progress relative to these schedules and targets, and recommends corrective action or revisions as appropriate.

Thus, the 1990-94 National Development Plan is mainly a strategic plan based on a strategic planning process. The focus has been on refining overall national, sectoral and parastatal strategies and on evolving new strategic direction. It specifies national objectives in the following eight main areas:

- # macroeconomic stability;
- # output growth and productivity;
- # economic diversification and export promotion;
- # human resource development for a skilled and versatile work force;
- # employment and equitable distribution of income;
- # environmental protection and improvement;
- # optimal use of land and resources; and
- # institutional development.

As a way of making and regularly checking progress towards sustainable development, all government organisations are required to submit with their annual budget request a statement on the extent to which their activities during the previous year contributed to sustainable development and to the preservation, improvement or diminishment of the environment or natural resources.

5.4 Solomon Islands National Environmental Management Strategy

"Sustainable development is really all about survival in the long term. In that sense, the old subsistence village life is sustainable development, something at which Solomon Islanders have been expert for thousands of years. The idea of sustainable development, then, is nothing new to the Solomon Islands; but more than survival, Solomon Islanders want a satisfactory life for themselves and their descendants, with improved standards of living. New types of economic development are required for that goal to be achieved, and to maintain it new ways must be learned for resource use and management to ensure the economic gains made are sustained" (SPREP 1993).

The Solomon Islands lie in the south-west Pacific, comprising a double chain of six major islands, some 30 smaller islands and approximately 960 isles, atolls and cayes.

The National Environmental Management Strategy (NEMS) for the Solomon Islands (SPREP 1993) was developed as one of a series of similar strategies of Pacific region countries. It was prepared

with the assistance of the South Pacific Region Environment Programme (SPREP) and the Asian Development Bank. The World Conservation Union (IUCN) provided technical advisory services.

The Cabinet endorsed the development of the NEMS in April 1991 and established a 17-member National Task Force on Environment and Sustainable to oversee the process, including representatives from eight ministries.

The NEMS involved intensive formal and informal consultation throughout its development with ministries of the Government of the Solomon Islands, all eight provincial governments, and representatives of non-governmental organisations. The development of the NEMS involved a number of tasks:

- # preparation of a State of the Environment Report for the Solomon Islands (Leary 1991);
- # preparation of Sector Environmental Reports in consultation with national government resource management sectors;
- # preparation of Provincial Environmental Reports in consultation with all provincial governments, and
- # reviews of environmentally relevant legislation and institutional arrangements for environmental administration.

The prepared reports formed the information base to a major NEMS seminar held in November 1991 in Honiara, with over 70 participants including Provincial Premiers, Provincial Members, Area Council members, senior national and provincial government officers, non-governmental organisations and other interested individuals. The strategies and programmes which were identified by seminar participants were then drafted into a NEMS report. The preliminary document was subsequently revised and amended following further consultations with both individuals and organisations, and with national and provincial government leaders and officials. As a result, the NEMS report is regarded as "a truly national document developed by Solomon Islanders for the Solomon Islands" (SPREP 1993). The role of the SPREP team was to facilitate the national seminar and to assist in the preparation of the NEMS report.

The NEMS sets out a "blueprint" for environmental priorities to the end of the century, based on 29 individual strategies addressing environmental problems in the islands. Implementation of these strategies would be organised through 48 programmes selected by seminar participants.

In total, the proposed NEMS strategies for the period 1992-2000 had a budget of US\$ 5.7 million. However, it was accepted that it would be unrealistic to expect to secure multilateral or bilateral donor assistance to fund all the proposed programmes. Ten top priorities were therefore identified for implementation over the first five years, with a total budget of US \$1.6 million (Box 13).

The NEMS recommended continuation of the Task Force, but with slimmed-down membership and including private sector representation, and playing an advisory role to the Minister responsible for environmental matters and to Cabinet.

The NEMS is an example of a strategy in which it is fully recognised that an iterative cyclical process will need to be established to address effectively the issues of sustainable development:

"The NEMS is a snapshot in time... but we can be sure that changes to the NEMS will be needed in the short term, so rapidly is development taking place. An annual review in the context of budget estimate preparation has been advocated. In addition, a major review of the NEMS should be undertaken in five years (1997). This might best be achieved by holding a national workshop following a series of workshops within each province. From this review process should emerge a new NEMS which will not only serve Solomon Islands for the following five years, but also set a framework which will help carry it well into the 21st century" (SPREP 1993).

The NEMS stands out amongst many strategy documents in that it boldly recognises the shortcomings of its process:

**Box 13: Solomon Islands National Environmental Management
Strategy: Top Ten Action Priorities**

(in descending order of priority)

- 1 Improve environmental awareness and education.
- 2 Develop standard EIA guidelines and administrative procedures for national and provincial governments.
- 3 Strengthen the resource information database, with greatest emphasis on reefs, estuaries and lagoons, but also including surveys of flora, terrestrial vertebrate fauna, dugongs, and seagrass.
- 4 Strengthen existing environmental institutions and administration.
- 5 Introduce a comprehensive framework of environmental law with umbrella environmental national legislation reflecting the role of provincial authorities.
- 6 Expand customary land reforestation.
- 7 Improve customary landowner awareness of forestry processes and issues.
- 8 Provide assistance to landowners to enable them to extract and market timber from their own land using small-scale, controlled and sustainable harvesting methods.
- 9 Preserve traditional knowledge and management systems.
- 10 Develop coastal environmental management plans for areas with existing environmental problems.

"The process to develop this strategy was one of consultation and consensus-seeking from the outset, but this was limited through financial constraints and time available to national and provincial levels of government and to some non-governmental organisations (NGOs). Consultation at the Area Council and village level was limited, and further consultation would have been desirable with NGOs, particularly the church organisations.

The strategy must inevitably be weakest in the areas of database and analysis, and existing policy; in some resource areas facts are few and even then analysis is limited. There is currently no official national government environment policy and consequently there are no clear directives for environmental management and conservation at this level of government." (SPREP 1993).

Inevitably, limited information and lack of formal policy limit the extent to which action plans can be developed. Nevertheless, the NEMS and its proposed programmes are a constructive step in developing a more refined national sustainable development strategy and "perhaps different tactics which can evolve as these deficiencies are addressed".

5.5 A Caribbean Perspective

By Yves Renard, Executive Director, Caribbean Natural Resources Institute

The insular Caribbean is a region of great ecological, cultural, social and political diversity, where the forces of nature and history have both contributed to fragmentation. In spite of the many efforts towards cooperation at various regional and sub-regional levels, the Caribbean remains extremely divided by language, culture, and external economic and political relations. In this context, environmental planning and management can and must be seen as integrating factors, as shared needs and objectives which demand that traditional barriers and borders be transcended.

Among the various initiatives at regional programming and cooperation in the field of environmental management, the most notable is the Caribbean Environment Programme (CEP), created in 1976 under the auspices of UNEP. The CEP adopted a strategy for its development (UNEP 1990) which includes five major programmes⁵. This strategy is based on a range of legal and institutional mechanisms for cooperation among all states of the Wider Caribbean, including all small island nations of the region.

There are, or have been, several planning and programming initiatives which are focused on the development of national assessments and strategies, but within a broader regional or international framework. The most notable among these initiatives are:

- # the formulation of National Tropical Forestry Action Plans, spearheaded by the FAO with the support and involvement of several institutions, notably the Caribbean Development Bank and the British ODA Development Division in the Caribbean. Eight of the region's small island states, together with several of the larger countries, have completed national plans⁶;
- # the preparation of country environmental profiles, largely at the initiative of USAID. A leading role has been played by two regional NGOs, the Island Resources Foundation (IRF) and the Caribbean Conservation Association (CCA). As a result, local knowledge and expertise has been used, and the profiles have contributed significantly to national development efforts;
- # the development of National Conservation Strategies (NCSs), encouraged by IUCN in the mid 1980s. But there has been criticism of the lack of funding and continuity of support (from IUCN) for the NCS initiatives. For this and other reasons, the NCSs which were initiated have not been completed. Nevertheless, they have all contributed, in one way or another, to ongoing planning activities in individual countries; and
- # the more recent preparation of National Environmental Action Plans, under the auspices of, and with support from, the World Bank.

⁵ These programmes are: integrated planning and institutional development; specially protected areas and wildlife; information systems; assessment and control of marine pollution; and education, training and public awareness.

⁶ Antigua and Barbuda, Barbados, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

The past ten years have also seen an evolution of the role played by existing mechanisms of political and economic integration in addressing issues of environment and sustainable development. For example, in 1989, the Caribbean Community (CARICOM) convened the first Ministerial Conference on the Environment which led to the establishment of a regional Consultative Forum and the development of a regional programme of action. At the sub-regional level, the countries of the Organisation of Eastern Caribbean States (OECS) have also addressed the need for concerted action - creating a Natural Resources Management Unit (NRMU), implementing several regional programmes, and developing common positions at major regional and international fora.

Regional and international initiatives need to be evaluated, to assess their impact on national institutions, as well as their relevance to local and national needs and priorities. Such an evaluation needs to take account of three key points:

- # as discussed in sections 2 and 3, a range of economic, political and cultural factors limit the effectiveness and impact of planning efforts in small island developing states. This is illustrated by the fact that several of the external initiatives to formulate strategies mentioned above have been met with passive (in some cases, active) resistance from local institutions. From this experience, it is clear that the processes of strategic planning for environmental management and sustainable development have not yet been internalised, except in isolated cases;
- # these initiatives have, in many instances, been a source of confusion and disruption within local institutions. Because of the conditions often associated with donor requests to initiate strategic planning and programming, island countries and their institutions are forced to devote disproportionate attention to the preparation of reports, profiles, action plans and other strategies. These all create exaggerated demands on limited resources. With the adoption of new international agreements and conventions, this pressure will continue to increase as countries are committed to develop new action plans; and
- # undoubtedly, there will be positive impacts of these initiatives: as they serve to create awareness and to focus attention on priority issues; as they expand the scope of environmental concerns to link them with economic, social and cultural issues; and as they channel sources of support to local institutions.

These three points lead to a more general conclusion. To the extent that there is, at the national level, both within government and amongst civil society, the capacity to internalise, manage, lead and use the various regional and international initiatives in support of strategy development, regional and international initiatives can have beneficial impacts. This has been the case in several Caribbean small island states. However, in the majority of cases, their usefulness is likely to be limited by such factors as the limited capacities of local institutions, the insufficient participation of national actors in the design of strategy exercises, the lack of community awareness of issues and possible options, and the absence of consensus on priorities and directions.

As a consequence, there is a fundamental need for meaningful participation, by civil society, in the various stages of policy formulation, planning and management. Indeed, in the Caribbean, as elsewhere, strategies and plans such as NEAPs, TFAPs and NCSs have been more effective and relevant where participatory mechanisms have been developed and used, e.g. through the participation of NGOs in routine aspects of resource management with the full blessing of

government (as in Jamaica), or through more systematic community and private sector consultation for decision-making (e.g. in St. Lucia, and St Vincent and the Grenadines).

Participation and collaboration are recognised increasingly as essential elements of strategy formulation, and currently the insular Caribbean is accumulating valuable experience in this regard. The Caribbean Natural Resources Institute (CANARI), for example, is devoted exclusively to creating avenues for the equitable participation and effective collaboration of communities and institutions in the management of natural resources critical to development. Through a range of research, training and technical collaboration activities, CANARI seeks to develop, document and promote policies, tools and approaches which can lead to more participatory and collaborative processes and arrangements..

The experience of CANARI and several other Caribbean institutions demonstrates that there is need for a more systematic approach to the promotion of participation. For strategy development, five important questions emerge:

- # how can popular knowledge, perceptions and expectations be incorporated more systematically and effectively in information systems and decision-making ?
- # what forms of communication are best able to mobilise all stakeholders and ensure full participation in planning and management ?
- # what are the processes and methods of institutional development which can lead to greater community empowerment and more equitable partnerships between the state and the community ?
- # what are the skills needed in governmental and non-governmental organisations to facilitate participation ? and
- # what policy measures and instruments can create the favourable conditions for participation and collaboration ?

6 Summary and Conclusions on Island Strategy Experience

Over and above the global lessons of strategy experience noted in section 5.1, some observations concerning island strategies may be made:

Firstly, the island experience of sustainable development strategies has been limited. Most strategies have concentrated on environmental issues. Means for integrating environmental objectives with overall development have tended to be restricted to some planning processes. Few resources have been put into the strategies. Strategy exercises have been very linear - executed as a project with a beginning and an end, and have not yet become a regular part of island planning and activity. Environmental valuations and resource accounting, for example, still do not figure in regular planning processes. Yet some island strategies, notably the Solomons and Seychelles, recognise the need for a cyclical approach, and imply a principle of continuous improvement.

Secondly, the degree of consultation was quite high relative to strategies in many larger countries. Yet we do not know of a highly participatory strategy, i.e. involving many groups beyond mere

consultation, with the partial exception of St Helena⁷. Even in St Helena, however, the participatory approach (introduced principally through the expatriate team, which generated so much information about perceived priorities and values), is threatened in future, as there is not yet the institutional environment to continue it. None the less, some island strategies, having been through certain stages, recognise the need for greater public participation in future stages - and they propose the use of indigenous participation systems. It seems, therefore, that there is a need to spend more effort preparing in advance for participation in strategies, so that from the outset it builds upon locally-understood systems and principles - and so that the authorities know what will be happening and its implications.

Thirdly, most island strategies have emphasised documentation - project proposals, guidelines and proposed policies - and temporary committee structures, as opposed to putting into place continuous processes.

Fourthly, the extent of international involvement in island strategies has been high. This reflects a number of factors: the international patronage of the strategy process generally (for the NEAP process until recently, the World Bank has been extremely dominant, even in the largest countries); the need for expatriate advisers due to a local lack of strategy skills; and the general aid-dependency of many islands, especially for new subjects and approaches (for better or for worse, strategies are a "hot issue" in aid circles). In future strategy activities, island states will have to be very careful to ensure that they get the space, the time and the resources to make the strategy experience a country-led one. Donor support should respect this need, and concentrate on: smoothing the country-driven initiative, including revamping of existing national initiatives and turning them into cyclical, participatory approaches; providing process support, but not defining the contents of the strategy (either directly or by exerting any conditionalities); respecting the contents of the strategy in defining subsequent aid programmes; and building local strategic capacity, rather than attempting to "fast-track" the initiative and supply large expatriate teams.

Fifthly, and partly as a consequence of the first four points, the strategic approaches which were used have not yet evolved to suit island conditions and needs. They tend to follow the model of approaches used elsewhere. Until the approaches recognise island realities - and the potentials of island strategies to break out of unsustainable development patterns imposed from elsewhere - then going through an international standard process will have limited utility. Greater attention to wider participation, and more resources and time for island-based professionals to design and contribute to the process, would help.

However, there will be limits to how much the national approach can achieve. As we have noted earlier, many of the strategic decisions which determine island viability tend to be made outside the island state - major investments, trade patterns, technology, etc. An NSDS can help the various groups in an island to muster the necessary information on values gained and lost, and to go

⁷ Bass *et al.* (1995), having examined participation in many national strategies, both continental and insular, found that the type and level of participation varied. They set out a ***Typology of 6 Classes of Participation***. In each class, participation may be narrow (few actors); or broad (covering all major groups).

1. *Participants listening only* (e.g. receiving information from a government PR campaign).
2. *Participants listening and giving information* (e.g. through public inquiries and media activities).
3. *Participants being consulted* (e.g. through working groups and meetings held to discuss policy).
4. *Participation in analysis and agenda-setting* (e.g. through round tables and commissions).
5. *Participation in reaching consensus on the main strategy elements* (e.g. through national round tables, parliamentary/select committees, and conflict mediation).
6. *Participants involved in decision-making on the policy, strategy or its components.*

through the consensus-building required, to determine what (foreign) deals the nation will accept and what it will not. However, often the foreign influence will be far greater than anything that an individual nation's bargaining can deal with.

One of the most effective strategic island activities to date has not been the preparation of any individual island strategy, but has been the strategic gathering of island nations into AOSIS, to tackle the external threats (sea level rise) resulting from the excessive use of fossil fuels by larger nations. This would tend to suggest that there is good mileage in regional or island-wide strategic planning, if based around an issue (rather than an overly-comprehensive agenda) where there is potential to correct international imbalances. Other possible issues are hazardous waste shipping and oil spills. Indeed, we would go so far as suggesting that multi-island and regional efforts look like being essential accompaniments to national strategies.

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