INTER-AMERICAN DEVELOPMENT BANK

REGIONAL POLICY DIALOGUE

EVIRONMENTAL NETWORK

FIRST MEETING: "TOWARDS AN EFFECTIVE ENVIRONMENTAL MANAGEMENT"

SYNOPSIS OF THE STUDY OF THE INSERTION OF ENVIRONMENTAL MANAGEMENT IN SECTORIAL POLICIES: The tourism case in the Caribbean

W O R K I N G P A P E R

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Washington, D.C., April 4-5, 2002

Note: This document is part of a series of papers commissioned by the Inter-American Development Bank for the Environmental Dialogue. This document is under review, therefore it should not be cited as reference. The opinions expressed herein are solely those of the authors and do not necessarily reflect the position of the Bank.

(Original document in English)

Environmental Impacts of Tourism and Related National and Tourism Sector Policies Which Address Such Environmental Impacts

This study is concerned with the insertion of environmental management in tourist sector policies to ensure that threats are recognized and addressed. Four main characteristics of Caribbean tourism provide the rationale for this study. First, tourism is the single most common industry in the region - particularly in the island economies. Second, tourism is the fastest growing industry in virtually every Caribbean country, including those in which the sector is not presently an important economic contributor. Third, tourism also is the most important and, sometimes, the only productive sector in some of these economies. Finally, the environment (ecological and socio-cultural) which is the economic 'goose' that explains the initial three characteristics above - is under significant threat in several Caribbean tourist destinations.

This Report begins with an Executive Summary and is then followed by four (4) Chapters. Chapter 1 provides a review of the empirical trends in Caribbean tourism encompassing both the economic and environmental. This is followed by four island case studies including summaries of focus group meetings with hoteliers in all three case study destinations together with surveys of tourists in Barbados and Tobago. Chapter 2 is the first island case study of The Bahamas The following two (2) chapters (Chapters 3-4) provide similar island case studies of Barbados and Tobago, respectively. An Executive summary is now provided of each of these four Chapters.

Empirical Trends in Caribbean Tourism and Environmental Stress

During the past decade, the Caribbean experienced robust growth as the number of tourists, hotel rooms and expenditures doubled. As the most tourist-dependent region in the world, the Caribbean visitor industry accounts for a fifth of all exports and capital formation and roughly a sixth of GDP and employment. For the smaller islands of this study, with the exception of Tobago, tourism is significantly more important. For Bahamas and Barbados, tourism represents roughly 30-50% of total employment, 50% of GDP and over 60 % of exports and new capital formation. According to an index of tourism penetration, Bahamas and Barbados are characterized as destination approaching mature Stage III designation defined by high-density visitation, mass-market promotion, large-scale plant and infrastructure and high susceptibility to ecosystem damage. Although the three study islands differ considerably in scale and level of development—from Bahamas (3.5 million visitors and 14,000 hotel rooms) to Tobago (some 200,000 visitors and 2,600 rooms) they all require policy attention because their growing dependence on tourism has placed their fragile ecosystems at risk.

Evidence from the literature suggests that the scenic terrestrial and marine assets of the Caribbean are in long-term decline. This is the result primarily of three forces: (1) a colonial tradition of environmental neglect and damaging sugarculture, (2) contemporary institutional and enforcement weaknesses, and (3) intrusive large-scale mass tourism

development in the postwar decades. Condominium clusters and road works on steep hillsides have damaged watersheds and forests causing erosion, silting over streams and wetlands, and polluting lagoons. The doubling of tourist arrivals over the past decade has been accompanied by a doubling of solid waste. Mangrove forests and salt ponds have been destroyed by the construction of resorts, marinas and infrastructure along shorelines, depleting endemic species and archeological artifacts. As a result, the wider Caribbean region ranks second in the world in threatened bird, reptile and amphibian species and third in endangered mammals and marine species.

Marine resources have been damaged from inland sources by eroded sediment loadings, sand mining and the discharge of municipal waste and untreated hotel sewage. Sea-based threats have included over fishing, channel dredging, boat anchoring, and pollution from yacht and cruise ship sewage because of inadequate port reception facilities. As a result, fish catch in the Caribbean is down 50% since 1984, and roughly 30% of the region's reefs are at significant risk. Continued deterioration in environmental quality and biological diversity is projected to accompany the growth of tourism over the next decade unless alternatives to the traditional mass-market strategy are designed and implemented. This is the direction of the present study.

The Case of The Bahamas

Tourism in The Bahamas is today its most significant economic activity. It employs approximately 50,000 people, which is approximately 50% of the Bahamian workforce, makes up 50% of the country's GDP and earns over US$1.8 billion in foreign exchange from tourists spending. Based on its ability to create jobs, earn foreign exchange and generate income, the government of The Bahamas expects tourism to remain the dominant industry of the country for the foreseeable future.

Given this significance of tourism now and in the foreseeable future, the need to protect the tourism product which itself, is the environment of The Bahamas, takes on greater importance in this mature tourism destination. It is, therefore, not surprising that environmental aspects overlooked in the past, are now receiving attention by both government and private sector in their overall recognition of the need to maintain a high quality tourism environment by implementing policies and practices that contribute to preserving it. In fact, in The Bahamas, government agencies and hoteliers alike are now more environmentally aware than in the past and they have, to some extent, been incorporating environmental issues into their respective policies and day-to-day business operations. These steps to incorporate such issues into hotel and tourism decision-making and legislation is also of particular significance as hotel and tourism development is now beginning to extend across The Bahamas islands from the developed destinations of Nassau/Paradise Island (Nassau/PI) in New Providence, and Freeport on Grand Bahama to its "undiscovered" or "emerging" tourism destination islands such as Andros and Exuma where the intention is to increase eco-tourism in these pristine areas.

This review, however, highlights that environmental damages, whether or not solely due to tourism, that have already taken place in The Bahamas will continue to do so with the continued development and expansion of its hotel and tourism sector. If hotel and tourism practices do not change significantly and if developed policies are not properly implemented and monitored environmental impacts can be exacerbated. Of note in this review is the fact that while government environmental policies and legislation abound in The Bahamas, they are targeted at general concerns for the protection of the general physical and biological environment of the country. They, therefore, do not form part of environmental insertions in tourism sector policies. There is, thus, a clear need for specific environmental issues that could be addressed by the hotel and tourism sector to be targeted for inclusion in tourism sector policies as existing policies are too general or lacking in the handling of critical environmental issues.

In evaluating the environmental impacts of tourism in The Bahamas, a background examination of the general physical, biological, and socio-economic environment of the country indicates supports that these environments are impacted by tourism in The Bahamas. Survey results on the country's tourism environmental impact perceptions of residents and tourists in Nassau/PI conducted between November 1997 and March 1998 also provides additional support. In terms of summary, conclusions and policy recommendations a number of key observations can be noted in terms of both environmental impacts of tourism and related environmental policies. The first observation is that the empirical evidence on deterioration in the natural environment is spotty at best throughout the region. Second, even where data exist it is difficult to distinguish the impacts from tourism and from other sources within the society or from marine-based sources.

Box (i)
Stakeholder response to environmental priorities in the tourist sector in the Bahamas

It was pointed out that the licensing requirements for all hotels- under the Environmental Health Services Act - requires hotels to obtain an annual license approved by the Department of Environmental Health in relation to emissions, effluents and solid wastes and other health risk areas within hotels. However, there is no specific environmental policy for hotels. Solid Waste preoccupied the discussion as the main environmental problem facing the country. Hotels were willing to participate in solid waste separation programmes but considered this useless as all waste is still dumped at the same official site with no sorting for recycling purposes. The non-existence of recycling facilities for paper, cardboard boxes and other commonly generated solid wastes was viewed as a distinct drawback in to effective solid waste management by the hotel sector.

It also was pointed that there is a government requirement for large hotels to make use of their own sewage treatment and reverse osmosis (RO)plants with regular inspections to ensure that these plants continue to operate safely. However, it was acknowledged that it was not feasible for all hotels, particularly small ones, to even think of installing an RO plant given the cost and space needed for this. It was felt that government assistance by

way of import duty concessions could be given to hotels in this area. Only one of the hotels represented at the focus group meeting was involved in obtaining some form of green certification (GREEN GLOBE). The other hoteliers were not disagreeable to involvement in a green certification program but noted that this was a very costly exercise. One of these hoteliers related the large capital investment recently spent in retrofitting light bulbs to the energy efficient type. The hotels has now to recover from this before it can get into any other major programs as required by green certification boards. European tour operators were reported to put the safety of their clients directly under the responsibility of hotels and so they are more demanding that hotels are environmentally responsible and safe. In fact, these operators are placing more and more pressure on hotels to abide by certain environmentally safe standards and in the future any hotel not willing to abide by these standards may find itself out of business.

There were six main conclusions from The Bahamas focus group meeting. First, there is no specific environmental legislation for the hotel & tourism sector in The Bahamas although there is a high level of government environmental laws for the country. Second, hotels would have to respond to the pressure from tour operators for environmentally sensitive accommodation if they are to remain competitive. Third, The Bahamas government should play a supporting role by encouraging the hotel sector to participate in environmentally responsible practices and in achieving various green certification standards and should not try to enforce additional environmental legislation on this sector. Fourth, The Bahamas government should seek to ensure that existing environmental laws are enforced and the required penalties are carried out. Fifth, the Bahamas government should provide a comprehensive set of incentives specifically to the hotel and tourism sector to encourage its greening on a large scale. Sixth, a recycling plant is greatly needed in The Bahamas.

The Case of Barbados

The major biotic communities in Barbados are the Coral Reefs, Mangroves and Sea grass beds. These communities are monitored by the CZMU and UWI. A number of entities monitor other terrestrial biotic communities. Fringing reefs on the West Coast have also probably deteriorated as a direct consequence of pollution from the intense hotel and residential developments occurring along the coast. In 1994, the IDB estimated that between visitor and local residents, 150,000 tons of solid waste are generated annually. A major factor contributing to coral reef decay and deterioration of nearshore water quality is wastewater pollution particularly from hotels as a result of poorly maintained septic tanks and package treatment plants. In 1991 the Government with the support of the IDB started a Coastal Conservation Feasibility Study as well as a project in institutional strengthening. These two projects form the core of the Integrated Programme for Coastal Zone Management (1994) to protect country's coasts from erosion and decrease environmental degradation.(UNEP Regional Seas Reports and Studies No. 172) In the case of Barbados, many of the Coral reefs have been damaged or totally destroyed.

The Mangroves have also been wiped out leaving one mangrove (Graeme Hall Swamp), which is now under heavy monitoring and management because of its exclusiveness.

Coral Reefs

There are mainly three types of reefs found in Barbados, these are fringing, patch and bank reefs. In Barbados the fringing reefs are found on the West Coast of Barbados extending 100-200 m from shore and separated from each other by sand areas. Patch reefs are common along the West and Southwest coasts, occurring in shallow water between the shore or fringing reefs and bank reefs. Bank reefs occur approximately parallel to coastline, at 500-1200 m from shore, along the West and Southwest coasts.
In terms of Fringe reefs, surveys that span 1982-1993 shows that on the West coast there is increased algal cover on the coral reef and that there has been a reduction on the species on these reefs, in particular *Diadema antillarum. Also* Hunte & Allard (1994) found that the abundance of the corals decreased between 1987 and 1992.

Causes of degradation in corals in Barbados:
Water Quality- corals are highly susceptible to changes in water quality such as eutrophication (raised nutrient levels), sediment loads, turbidity, temperature, salinity and toxic chemical load. In Barbados there are three sources of increased sediment run-off, these include fresh water runoff from 169 intermittent natural watercourses, storm water drains and drainage pipes. Secondly dredging and land reclamation and construction. According to Oxenford (1994), the construction of large number of coastal properties (i.e. hotels, guesthouse and marinas on the South and West Coast) and beach and sub-marine sea defenses many of which infringe on the recommended setbacks, results in severe sediment plumes. This has the impact also of interfering with the natural seasonal movement of nearshore and beach sediment.

Eutrophication
Ground water seepage along the coastline has been a major source of eutrophication in Barbados and this has had the effect of increasing the plankton growth, reducing water transparency and eventually the death or bleaching of corals. One of the main sources identified by Lewis(1987) is that the ground water in the coastal zone is particularly rich in nutrients, especially nitrates, as a result of a high density of coastal properties having only suck wells for sewage disposal and in the case of some hotels, the sewage being discharge untreated into the sea.

Recreational Use
Intensified recreational use of coastal areas, associated with increased tourism, contributes to reef deterioration. Standing on reefs and littering on reefs are common problems in Barbados, in certain location such as the Bellairs South fringing reef in front of the Folkstone Park, which is heavily used by cruise ship passengers (Oxenford 1994).

Anchor Damage
Sports dive operators in Barbados have reported anchor damage to be a serious problem at most of the popular dive sites on the West and South coast. Indeed, according to

Edwards (1994), of the 37 diving sites reviewed, 95% of them were damaged by dive boat operators taking out tourists to explore the reefs. Edwards also stated that though boat moorings were placed to try to eliminate this problem, these (moorings) are poorly designed and add to the destruction of the reefs.

Mangrove Wetlands

Expansion of tourism development along the coast has resulted in the rapid loss of coastal mangroves estimated now to be only one hectare. The red and white mangrove species, *Dhizophora mangle and Laguncualaria racemosa can* be found in the 32ha Graeme Hall Swamp now renamed the Graeme Hall Bird Sanctuary. Graeme Hall Swamp covers an area of 32 ha in one of the most densely populated areas of the island. The swamp is also home to the widest diversity of resident and migratory birds on the island. There are proposals, however, for this area to be converted into a national marine park (Oxenford et al., 1993).

Chancery Lane mangrove is 16ha but, unfortunately, it appears that development will soon encroach and reduce the area of this sensitive site. The bottom mangrove *Conocarprs erectus* is the only species found in this area. It was felt in the earlier years that swamps were useless areas and their removal for the tourism development was rapid, however, their removal has led to reduced coastal protection, beach erosion and degradation of coral reefs.

Social and Cultural Impacts

Tourism-related tax receipts allow for financial improvements in health and education services to the island. Barbados has always benefited from good quality education and reasonable health services. Both services are free in Barbados. Infrastructural investment benefits are both hosted for the local population and tourists (water and sewage, roads and public transport). As a result, Barbadians benefit from the water systems, roadways and public transportation system. However, these three systems are under stress because of the large demands being placed on them at present.

There are opportunities to acquire tourism-related skills for hotel services and catering, construction and maintenance. These opportunities have seen the creation of the Hospitality Institute under the Barbados Community College along with Building and Construction courses at the Barbados Polytechnic. UWI has also now created a Bachelors Degree within Tourism and Hospitality Management to provide the further training for the industry to the management level.

Despite all of these positive impacts, there are equally the same amounts of negative impacts. The commercialization of traditional welcome and hospitality customs has made the industry more impersonal. This practice takes the locals out of the picture and in Barbados; there was high concern of the amount of all-inclusive hotels created which isolated the tourist to an American type of hospitality.

Damage to family structures and subsistence food production has also resulted. Some years ago many of the West coast homes of locals were sold to foreign investors for large sums of money, in order to erect villas and hotels. Some agricultural land has also been sold for the creation of golf courses. One popular example of this is the sale of Barbados Farms Plantation to Sandy Lane Hotel for the expansion of their golf course. Land speculation in tourism development also enriches some and impoverishes others. This is particularly evident on the West Coast with high land value prices and increased business in general. Displacement of local people to make way for nature reserves is also a concern. This is particularly the case with Harrison's Cave as some of the residents actually live on top of the cave. There have been calls by the relevant authorities to have these persons moved. However, this is a very sensitive issue especially with reflection of the local community of the area.

There is major debate on whether Barbados has lost its cultural authenticity. The globalization of health risks are always a major concern for the Ministry of Health. Barbados has invested around 170 million dollars in a Strategic Programme which the objective of which is to train all civil servants on the HIV/AIDS. Incentives of emigration and urbanization, are not major impacts within Barbados. In general, Barbados benefits from most of the abovementioned positive impacts. However, political scientists argue that Barbados is being neo- colonized with all of the American television and foreign investment apparent. Media and NGO criticisms of tourism-related corruption and abuses of power have never been a major case in Barbados. Environmental Impact studies and Social Impact Studies now are essential requirements for most coastal and terrestrial projects. These requirements are criticized because of their longevity but can alleviate the careless spending of government funds.

Environmental Management Policies in Barbados

The Coastal Zone Management Act has been established and has introduced a variety of standards and procedures, which are relevant to the management of coastal environment. Examples include setbacks, water quality guidelines and standards and Environmental Impact Assessments. Setbacks provisions for the South and West coasts of Barbados (highly developed tourist area) are to ensure safety of structures close to shore and also to support landscape conservation measures and a low comfortable access to shore by the public. Also buildings that are on cliff edges are protected. Whenever the approval for construction is given to hotels, there are also standards for inspection and maintenance. The Physical Development Plan provides for environmental impact assessment of certain classes of development proposals including projects that are likely to be built on the shoreline or otherwise affect coastal resources.

The Barbados Fisheries Act has specific laws and regulations as regards sport fishing. Licenses must be obtained and there are gear restrictions in place to promote the preservation of stock and corals (e.g. no dynamite and poisons in fishing is forbidden and there are laws and fines in place to address the destruction of reefs by anchors). Also the various classes of boat operators have been identified and to ensure the safety of tourist and local sea bathers, the are zones identified for each of these activities. For example

offshore limit of 200 meters for powerboats parallel to beaches and buoy markers systems to demarcate swimming areas have also been set out in some areas.

The marine Pollution Control Act, provides government with the mechanisms for regulating sources of pollution and to compel the treatment or elimination of offending discharges. Controlling the discharge of untreated sewage from the hotels into the sea has been a major challenge for Barbados. This can have severe negative health impacts for sea bathers and also the aesthetic value of the area is also diminished.

The main aims of the *Marine Areas Preservation and Enhancement Act* are to: preserve and protect of marine life in submarine areas of Barbados and the establishment of underwater parks and art centres (e.g. The Folkstone Marine Park). Areas of the parks may be designated as restricted area for the preservation and enhancement of their natural beauty, the protection of flora and fauna, the promotion of enjoyment of public and scientific study and research.

The *National Conservation Commission Act* has as its general responsibility conservation of the natural beauty, topographic features, historic buildings, sites and monuments of Barbados including conserving and developing parks, gardens and caves, also advising on the removal of corals from the ocean bed.

May, 2001 Green Paper on Sustainable Tourism

The Barbados Government also has produced a recent (May, 2001) Green Paper on Sustainable Tourism. In terms of the environment this Green Paper outlines its specific objective as that of promoting: "promote sustainable tourism development through the protection, conservation and development of the natural environment within its carrying capacity and through education and awareness of, respect for, our unique natural heritage.'

Box (ii)
Stakeholder response to environmental priorities in the tourist sector in Barbados

According to the hotel manager's survey, two-thirds of the hotels are located on the beach, half are large (100+rooms employing over 200 workers), and most (78%) are locally owned. Because of the very high cost of energy, all monitor usage and nearly 90% have implemented energy saving measures. Over half rely on some form of solar power. All expressed interest in a tax abatement policy for the purchase of energy-saving equipment, and the majority agreed to adopt efficient technology within a year of its enactment. Although most hotels monitor water usage and have introduced some efficiency measures, there is limited enthusiasm for a policy favoring water-saving technologies (low-flush toilets, shower-flow savers, etc.) because of the availability of low-cost public potable supplies. On the other hand, solid waste is a serious concern. Most hoteliers have implemented reduction measures, but believe government needs to

better support safe disposal of hazardous waste and recycling. A large majority favor and would comply with appropriate incentive legislation. Most hotels use soak away/septic tanks for wastewater, and although managers expressed interest in policy favoring eco-friendly products, few felt it would enhance profitability. Less than 60% showed interest in green certification programs although half had received awards for environmental efforts.

Comments from the focus group representatives paralleled the survey results. Serious problems identified were solid waste, sewage and energy while water conservation and use of eco-friendly products received much lower priority. Several complained there was no supportive government infrastructure for enforcing litter ordinances and for recycling and separating and disposing of solid waste. There were also complaints about the government's slow-paced and disruptive efforts to extend sewer lines across the island. Their suggestions favored incentive policies for purchasing environmental technologies, reducing duties on imported equipment, and earmarking tourist taxes for purchase/upkeep of modernized public installations. They expressed consensus that industry agents were driving environmental standards with 7 hotels already Green Globe certified.

The Case of Tobago

The economy of Tobago is heavily reliant on tourism activities as opposed to Trinidad, the other island in the two-island State of Trinidad and Tobago where the dominant economic activity is oil and natural gas production. Tobago is, in fact, is a relatively late comer into the international tourism market with substantial growth being experienced by the tourism sector over the last decade, particularly along the Southwest coast, the hub of tourism activities. Tobago is only about 300 square kilometers (116 sq. miles) in area, and approximately 60km (28 miles) from top to bottom. Tourism has been the main source of dynamism in the economy of Tobago over the last few years and has contributed significantly to the economy in terms of income and employment generation, foreign exchange earnings and government's tax revenues. This has not been an unmixed blessing, however, and there is evidence of serious threats posed to the environment as a result of tourism activities.

This Case Study examines the environmental impacts of tourism and evaluates the existing policy framework for addressing these impacts. The findings of the Study indicate that the main negative environmental impacts of tourism have been with respect to the deterioration of water quality; degradation of sensitive ecosystems; loss of avifana; sand mining; increased pollution from solid waste; loss of wetlands and loss of biodiversity. The water at the beaches in Southwest Tobago and at the fringing Buccoo Coral Reef have come under increased stress from the increased loading of the environment with inadequately treated, and, in some instances, untreated wastewater from hotels, and guest houses. There is also a growing problem of pollution from yachts particularly at Pirates Bay, Pigeon Point, Plymouth and Store Bay. There has been a

serious degradation of the coral reefs at Buccoo and Speyside from tourism activities including eutrophication of coastal waters from wastewater discharges from hotels and guest houses; reef walking, removal of corals by snorkelers; damage by boat anchors and groundings; damage by scuba divers and from spear fishing. The island's avifana also has been adversely affected by several tourism- related activities. Construction activities in the hotel industry have resulted in the destruction of habitats including wetlands. Noise pollution from jet skiing has also been a contributory factor. There has also been a reported bird kill from the use of pesticide in landscaping activities. The dearth of sand pits in Tobago in conjunction with the high cost of transportation, and the uncertainty of the inter- island ferry services between Trinidad and Tobago have contributed the practice of sand mining for use in construction. This practice has led to the degradation of beaches and wetlands, as was the case at the Kilgwyn Wetlands during the extension of the airport at Crown Point.

The growth in the tourist population over the years and the concomitant increase in the generation of solid waste in the face of existing infrastructural deficiencies for the proper disposal of such waste have resulted in increased pollution from solid waste. Tourism related construction activities have resulted in the destruction of valuable wetlands as occurred at the Kilgwyn Wetlands during the extension of the airport at Crown Point. The destruction of natural habitats including the loss of wetlands and noise pollution have adversely impacted on the wild life population. The reduction in the sighting of some exotic birds has also been attributed to the significant increase in tourist visitation in some habitats such as for example along the Gilpin Trail and at Little Tobago. The expansion in cruise ship tourism and tourism in general have placed increased stress on existing infrastructure for environmental management in particular solid waste, thus increasing the threats to the environment.

Review of Tourism Policy Framework

By far the most comprehensive treatment of environmental issues within the tourism policy framework for Tobago is provided in the May, 2001 National Tourism Policy of the Ministry of Enterprise Development, Foreign Affairs, and Tourism. The policy contains a vision that acknowledges the need to develop a sustainable industry and to conserve, protect and improve the environment. Additionally, the policy identifies integrated national planning as the single most important mechanism for ensuring sustainable tourism. On the other hand, there is a general lack of substantive treatment of environmental issues in the tourism policy articulated in the Tobago Development Plan and its companion document, the Tobago Strategic Plan.

National Environmental Policy

The Trinidad and Tobago National Environmental Policy is an essential part of the overall policy framework for promoting sustainable tourism. In terms of environmental management, sectoral policies, including tourism policy, are subsidiary to and intended to be supportive of the objectives of the over-arching national environmental policy framework, which in several areas constraints the implementation of tourism policy.

Box (iii)
Stakeholder response to environmental priorities in the tourist sector in Tobago

As expected from an emerging destination, there was limited awareness of national tourism policy and confusion over its direction. Their primary concerns were issues that directly affect visitors, especially the declining quality of coastal waters because of soil runoff, sewage effluent into the sea due to the lack of a centralized system, and the discharge of boating waste. They were also more bothered about solid waste removal, rising crime and groyne-altered beaches than water supply and energy costs. Appropriate for a new destination, their suggested improvements focused on environmental education for all tourist agents (taxis, boat crews, etc.) and better marine quality monitoring.