

NATIONAL INTEGRATED DEVELOPMENT PLAN

SECTORAL REPORT ON THE ENVIRONMENT – EMERGING ISSUES

AREA	PRESENT SITUATION	IDENTIFIED ISSUES / PROBLEMS / CONSTRAINTS	PROPOSED POLICY GOALS	PROPOSED MANAGEMENT STRATEGIES	RESPONSIBLE AGENCY		
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(a) Administrative Structure	Responsibility for environmental functions is spread across various Ministries.	<p>No lead agency with responsibility for coordination.</p> <p>Existing agencies/depts. are dispersed and disjointed and are not able to influence national environmental policy making.</p> <p>Fragmented approach to addressing issues without inter-sectoral co-ordination.</p> <p>Environmental consideration not effectively integrated into the national development process.</p>	<p>To institutionalize environmental concerns by re-focusing of attention from coastal and marine issues to the wider area of environmental management and sustainable development as an integral part of the development process.</p> <p>To establish a viable national mechanism for cooperation, coordination and regular consultation, by the establishment of effective institutions and linkages as well as the management of the policy formulation and implementation process.</p>	<p>Re- structuring of the present ministerial set up to create a Ministry of Environment and Natural Resources as a focal point to coordinate all issues on the environment and oversee the use of the resources.</p> <p>Enhancement of linkages and cooperation among all government institutions in environmental protection, planning, monitoring and enforcement.</p>			
(b) Legal System	Inadequacies in legislative controls, the planning process and administrative requirements for the management of the terrestrial and marine ecosystems.	<p>Lack of adequate enforcement and monitoring policy</p> <p>Several outstanding legislation have been drafted over the years but are yet to be</p>	To consolidate, strengthen, provide and extend legislation for the protection and conservation of the environment .	<p>Harmonization of the existing environmental legislations.</p> <p>Enactment of outstanding / proposed environmental legislations.</p>			

	<p>Effective implementation of legislation has been hampered by difficulty in setting up control and enforcement mechanisms.</p> <p>Penalties provided in legislations do not act as deterrents and prosecution of offenders has become a futile process.</p> <p>There is no mandatory environmental assessment legislation and therefore no legal requirement to carry out environmental impact assessments.</p> <p>Insufficiency of environmental legislations as some of the legislations lack essential scientific elements to make them effective. Environmental legislations should have guidelines /criteria/ standards to help law interpreters in their enforcement e.g. effluent limitation standards.</p> <p>The BVI is signatory to about 26 International Conventions and Treaties on the environment, some of which do not have enabling domestic legislation in place. The provisions of these Conventions oblige Parties to put in place mechanisms for their implementation and financing.</p>	<p>passed for example:</p> <ol style="list-style-type: none"> 1- Coast Conservation Bill 2- Land use Planning Bill 3- Draft Legislation on Ground Water Monitoring and Control 4- Parks and Protected Areas Systems Plan <p>Lack of will to carry out the environmental management programs embodied in the several existing pieces of legislation.</p> <p>Minimal penalties are enshrined in legislations which have become obsolete due to trends in development in the BVI.</p> <p>No legislation to conserve / regulate the exploitation of the non-living natural resources such as sandy beaches.</p> <p>Existing legislations are often not supported by necessary regulations and institutional capacities to enable enforcement</p> <p>Difficulty of setting up control and enforcement mechanisms to apply the legal provisions</p> <p>Inadequately trained personnel.</p> <p>Slow efforts at implementing the provisions of International Conventions and Treaties</p>	<p>To provide for effective implementation and enforcement procedures.</p>	<p>Provision of guidelines/regulations to enhance enforcement of legislation.</p> <p>Encouragement and institution of incentive measures for the installation and provision of pollution control equipments and devices in development projects.</p> <p>Development of an effective surveillance and enforcement system.</p> <p>Initiate the use of financial mechanisms for enforcement of compliance with regulations.</p> <p>Initiation of swift court procedures to deal with environmental violations</p> <p>Specification of effluent limitation standards for land based / stationary point sources of marine pollution. These standards should be derived from base line marine water quality data.</p> <p>Introduction of legislation on the use of “heads” in port or anchorages and the related penalties for non- compliance.</p>			
(b) Institutional Capacity / Resource Management	<p>Environmental concerns specific to natural resource management and pollution control are addressed at sectoral level. This often encourages environmentally</p>	<p>Absence of a comprehensive environmental policy and associated management plans.</p> <p>Conflicts among sectoral policies, resource uses and agency jurisdiction.</p>	<p>To restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the</p>	<p>Development of coordinated / coherent policies which employ market based incentives for environmental / natural resources management.</p>			

	<p>unsound practices in some sectors that impact negatively on others.</p> <p>Participation in decision making is most often limited to advisory roles after the fact.</p> <p>Inadequate regulations and manpower has limited the enforcement capabilities of the agencies.</p>	<p>Inadequate technical capacity</p> <p>Institutional weakness and fragmentation of management efforts.</p> <p>Lack of clearly defined policies.</p> <p>Lack of qualified manpower at the technical level.</p>	<p>biosphere.</p>	<p>Capacity building within the Environment Ministry.</p> <p>Strengthening of institutional capacities through provision of trained personnel.</p>			
II. FINANCE SYSTEM							
(a) Budgetary Provisions / Revenue Generation	<p>Budgetary allocation to the Ministry of Natural Resources and Labour within 7 years remained constant at 5% of the overall budget. Conservation & Fisheries Department and National Parks Trust combined budgets average 1% of the overall budget.</p> <p>Direct and indirect contribution of the environment to the economy of the Territory include revenue from fishing licences / permits, registration of boats, mining permits, royalties on beach sand mining, deposits for dredging/ reclamation etc.</p>	<p>Lack of budgeted funds by the</p> <ul style="list-style-type: none"> - the fragmentation of already limited financial and human resources amongst varying government departments. - the commitment of limited financial resources to the management of tourism sites <p>Inadequate funding of key environmental agencies and their programmes.</p>	<p>To increase budgetary allocation to key environmental agencies.</p> <p>Commitment of every citizen to take responsibility for and to bear some of the cost of sustainable development with the thrust to preserve the environment.</p>	<p>Ensure that the administrative structure, planning and information systems are adequately financed from the national budget.</p> <p>Initiate new and additional sources of funding for environmental programmes.</p> <p>Ensure the incorporation of funding requirements into respective environmental legislations particularly those with international obligations.</p> <p>Exploit existing sources of funding at regional and international levels.</p> <p>Initiation of appropriate fiscal measures to generate revenue for funding environmental programmes</p> <p>Explore the generation of funding for infrastructure and pollution control from user charges and costs to industry.</p>			

				Supplement the financing of conservation areas partly from voluntary donations and partly from visitor fees.			
III. RESOURCE USE PRACTICES				To guide the use of the natural resources of the BVI for diverse and often conflicting sectoral activities, so that the continued viability of all aspects of use and ecosystems will be secured.	Encouragement of the use of ecological information in the planning and development of resource oriented projects.		
(a) Land use	<p>An increase of population of 47% over the last 10 years has increased pressure on the use of land. The BVI consists of 38,248 acres {15, 499ha} of land. 31% of which is Crown land and 61% is privately owned. Most of the acreage is mountainous.</p> <p>There is a proliferation of developments along the shoreline and the practice of clearing and cutting of the hillsides for access to building sites.</p> <p>Use of pesticides in agriculture particularly in areas susceptible to slope wash, impacts negatively on reefs communities</p> <p>High rate of deforestation and encroachment of population on</p>	<p>Increased pressure on use of coastal areas for land development e.g. reclamation of coastal zone</p> <p>Improper slope management promotes increased slope wash which has resulted in increased siltation of near shore reef environments</p> <p>uncontrolled land use practices</p> <p>Defacement of the landscape and reduction in the aesthetic value of the scenery.</p> <p>Excessive siltation, pesticides, herbicides and fertilizer pollution leading to poisoning / smothering of marine life and eutrophication of near shore shallow water</p> <p>Deforestation and loss of vegetation as a result of land clearing for development and agriculture</p> <p>The disturbance / removal of near shore habitats such as mangrove systems and</p>		<p>To conduct prior environmental assessment of proposed activities which may affect the environment or the use of a natural resource.</p>	<p>Sustainable land use allocation policy and the coordination of land utilization to balance the demand and reduce conflicts between stake holders.</p> <p>Establishment of guidelines for land-use and soil management, and the necessary framework to implement them.</p> <p>Maintenance of an acceptable balance of land use functions and initiation of urban renewal plans and measure.</p> <p>Promotion of optimal land-use for sustained production.</p> <p>Identifying, mapping and assessing the potentials and constraints of soil resources and the present extent of soil degradation.</p> <p>Encouragement of soil conservation principles in road and other construction activities.</p> <p>Environmental impact assessment as a requirement for major development</p>		

	<p>marginal hillside lands for settlement.</p>	<p>increased turbidity of the sea has resulted in the death of protective coral reef</p> <p>Degradation of important watershed resources and loss of biodiversity.</p>		<p>projects.</p> <p>Institution of issuance of Certificate of Occupancy to dwellings based on proper provision and maintenance of sanitary facilities subject to annual inspection.</p> <p>Preparation of development plans for outlying Islands.</p> <p>Preparation of a Soils Policy and Land Use Policy</p> <p>Assessment of the carrying capacity of local areas.</p> <p>Developing programmes to ensure the rational application of fertilizers and pesticides</p> <p>Preparation of management plans for watershed areas.</p>			
<p>(b) Use of Sea bed</p>	<p>The sea bed, territorial waters and foreshore forms the largest component of the crown estates. It is used for tourism, recreational and commercial ventures associated with marine activities.</p>	<p>Unauthorized and uncontrolled reclamation of the ocean occurs, especially along the southern shoreline of Tortola.</p> <p>Frequent flooding and erosion of these</p>	<p>To archive harmonious development which will not compromise the marine environment</p> <p>To minimize the</p>	<p>Survey and development of management plans for critical shore based areas.</p> <p>Establishment and provision of technical guidelines / operational</p>			

	<p>Development activities include dredging, reclamation, berths and moorings.</p> <p>Public rights of access to / use of the seabed, surrounding waters and foreshore are assumed.</p>	<p>coastal areas.</p> <p>Frequent occurrence of conflicts in access to and use of beaches on outlying islands and adjacent to private estates.</p>	<p>environmental impacts of development activities.</p>	<p>standards for the planning and implementation of mining/quarrying, dredging and reclamation activities.</p> <p>Preparation of water use plans to assess the capability of water areas to sustain development activities.</p>			
(c) Use of the Sea and Coastal waters	<p>Fisheries habitats and spawning grounds are impacted by land development and tourism activities.</p>	<p>Inadequate management of physical development activities and water use.</p> <p>Conflict in allocation of use of water areas for commercial / tourism use and other activities such as fishing and transportation.</p>	<p>To protect and enhance fisheries areas and the related marine ecosystems</p>	<p>Resolution of conflicts in use with other activities.</p> <p>Promotion of deep sea fishing to reduce over fishing in near shore areas.</p> <p>Implementation of fisheries management plans as proposed in the Fisheries Act of 1997.</p> <p>Improvement of the capacity to respond to oil spills and disasters.</p>			
(d) Tourism / Recreational Use	<p>Greater emphasis is placed on tourism development which is solely based on the use of the natural resources without corresponding investment in facilities to mitigate resulting impacts on the environment.</p> <p>Development of the Tourism industry has led to a general degradation of the marine environment particularly yachting activities, marina and hotel development.</p> <p>Dive industry largely unregulated.</p>	<p>Current issue of concern include:</p> <ul style="list-style-type: none"> - Over utilization of resources beyond their carrying capacity. - Excessive proliferation of marinas and mooring fields - Loss of wetland areas to development activities - Loss of habitat and species diversity. <p>Impacts of mini cruise ships through the practice of keeping propellers on while anchored in shallow water. The resulting churning of sand into reefs increases sediment levels on the reefs. Diminished water clarity and deforestation of conditions necessary for healthy coral growth.</p> <p>Use of long chains(300' – 400') to anchor mini cruise ships destroying coral growth</p> <p>Impact on coral reefs through over use of</p>	<p>To provide environmentally protective tourism infrastructure in accordance with the rate of economic development.</p>	<p>Development of a system for the comprehensive management of dive sites and moorings and identification of alternative site to ease congestion</p> <p>Mandatory sampling of water at recreational beaches.</p> <p>Regulation of the dive industry.</p> <p>Assessment of carrying capacities of Tourism sites.</p>			

		<p>dive sites, harvesting for jewelry, divers air trapped under water by corals, damage by materials used in the cleaning and servicing of yachts such as anti fouling paints and oil.</p> <p>Heavy concentration of marinas in mangrove sites has contributed to poor water quality and loss of habitat for juvenile fishes</p>					
<p>IV. WASTE MANAGEMENT</p> <p>(a) Solid Waste Disposal</p>	<p>Ability to meet growing demand for services hampered by inadequate cost recovery which in turn hamper capital expansion and provision of maintenance equipments</p> <p>Population increase of 47% over 10 years and improved living conditions and lifestyles generate an increasing quantity of waste.</p> <p>Tourism Development {which includes yachting, cruise ships and service industries} have increased waste generation which has posed disposal problems and incidences of sea dumping /along coastlines and habitats are frequent.</p>	<p>Lack of pricing policy for sanitation services [solid waste and sewerage disposal].</p> <p>Low public awareness on methods of reduction of waste generation and household methods of source sorting of wastes.</p> <p>Threat of air pollution posed by the effluents emitted by the Incinerator Plant.</p> <p>Waste collection and disposal services largely provided by the Government.</p> <p>Inadequacy of properly managed landfill sites.</p> <p>No regulation of waste disposal facilities required to be provided in developments in outlying areas outside the limits of government services.</p>	<p>To provide environmentally protective waste management infrastructure in accordance with the rate of economic development.</p> <p>To establish standards for the management of wastes and to provide adequate sanitary facilities for the disposal of solid waste and sewage.</p>	<p>Requirement of joint management measures/ linkage between Agencies.</p> <p>Establishment of monitoring programmes including periodic surveillance of waste disposal sites and waste- water treatment systems.</p> <p>Establishment of an appropriate tariff system for waste disposal services</p> <p>Proper selection and adequate management of Landfill sites.</p> <p>Installation of air pollution control device at the incinerator.</p> <p>Stipulation of the provision of adequate waste disposal facilities as a requirement for issuance of certificate of occupancy.</p> <p>Review existing solid waste regulations.</p> <p>Establish monetary charges for use of waste disposal facilities</p> <p>Explore and encourage private sector participation in waste management.</p>			
(b) Sewerage Disposal							

	<p>There is an inability of sewage facilities to meet increasing demand by population and yachting industry. Private disposal systems such as septic tanks are inadequate in construction and maintenance.</p>	<ul style="list-style-type: none"> - Discharge of sewage at sea [untreated sewage disposed at Slaney Point with resultant flow of sewage along coastline]. - Accidental seepage of sewage into canals and drains resulting from pumping deficiencies - No guidelines on the use of holding tanks by yachts. - Seepage from home septic tanks - A build up of offensive odors from sewage collection in urban and developed areas. - Accidental emission of sewage in the channels and corals resulting from pumping deficiencies 		<p>Construction of sewerage treatment facilities with a proper outfall for communities.</p> <p>Requirement of secondary treatment of sewage at all hotels.</p> <p>Developing and designing ecologically sensitive sewage disposal systems for the different communities.</p> <p>Enactment of regulations on proper construction of septic tank systems and drain fields to be enforced by compulsory inspection and certification.</p> <p>Effluent discharge regulations required for marinas and mooring fields</p> <p>Establishment of a marine water quality monitoring regime</p> <p>Encouragement of a system of holding tanks in all yachts with a pump- out facility available in each marina complex which would be linked to the central sewage treatment plant.</p> <p>Regulation for the use of marina facilities by luxury yachts and mini-cruise ships.</p> <p>Execution of environmental education and public awareness programmes.</p>			
<p>IV. RESOURCE CONSERVATION (a) Parks and Protected Areas</p>	<p>Long term measures for conservation such as the preservation of wetlands are perceived to inhibit immediate economic interests.</p>	<p>Infringement of commercial / marine activities into areas already designated for protection.</p>	<p>To establish adequate environmental standards as well as the monitoring and evaluation of changes in the environment.</p>	<p>Provision of advice and technical assistance for the designation of areas as reserves and parks for conservation purposes in line with the National Parks Systems Plan.</p>			

<p>(b) Water Quality</p>	<p>Marine water quality data for some areas is above acceptable pollution levels.</p> <p>Practice of raw sewage dumping at sea as a point source of land based pollution.</p> <p>Unregulated extraction of ground water from private wells by bottling factories.</p> <p>Discharge of brine water into the sea by the several desalination plants.</p>	<p>Pollution of water by agro-chemicals particularly in areas susceptible to slope wash.</p> <p>Reduction of the water table and possibility of salt water intrusion into the aquifer.</p> <p>Observed destruction of marine life by large volume discharges</p> <p>Governments failure to adhere to its own standards for water quality hampers its ability to enforce these regulations.</p>		<p>Institution of the payment of user fees at the various dive sites and snorkel trails.</p> <p>Development and initiation of a phased programme of management measures for the enhancement of the aesthetic appeal of the BVI.</p> <p>Establishment of an Environmental Education and Resource Center in a protected area for the purpose of educating the public/ tourists and school children on BVI's environment and culture.</p> <p>Establishment of adequate controls and enforcement procedures to prevent contamination and depletion of water resources.</p> <p>Establishment of base line studies to ascertain water quality at various points in the coastal areas.</p> <p>Establishment of an early warning system for the identification of potential waste disposal hazards particularly on recreational beaches an waters.</p> <p>Assessment of existing and proposed uses of coastal waters to determine their carrying capacity.</p> <p>Control of point and non-point sources of pollution.</p> <p>Improved water use technology including safe disposal of waste water.</p> <p>Monitoring of sewage / desalination out falls.</p> <p>Monitoring/ regulation of the chlorine</p>			
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<p>(c) Coastal Habitats</p>	<p>Destruction and degradation of shoreline habitats has increased the vulnerability of coastal areas to floods and erosion.</p> <p>Modification of ponds for developmental purposes Creates an imbalance in the adjoining ecosystems which is made obvious by the direct influx of polluted water into the sea. Total acreage of ponds in Tortola reduced from 36.7Ha. in 1993 to 23.34Ha. in 1996.</p>	<p>Excessive mining of beaches to provide aggregates for the construction industry resulting in destruction of the beach through erosion.</p> <p>Un-authorized removal of sand from beaches.</p> <p>Uncontrolled clearing of mangrove sites for development activities</p> <p>Destruction and loss of habitats due to land reclamation and marina development.</p> <p>Marine traffic especially yachting poses increased hazards to coral reefs through anchor damage.</p>		<p>content of swimming pools that drain into the sea.</p> <p>Identification, mapping and monitoring of critical and sensitive habitats to enable project designs to take appropriate steps to minimize damage to and disturbance of breeding, nesting and feeding areas of all species of fauna.</p> <p>Implementation of an inventory/ economic evaluation of existing natural resources and development of action plans for the recovery of stressed areas particularly those with tourism potential.</p> <p>Monitoring of pesticide and agro-chemical levels in the environment particularly water, bottom sediments and fauna.</p>			
<p>(d) Biodiversity</p>	<p>High rate of deforestation and reclamation/ dredging of coastal ponds for development activities. Uncontrolled access to parks, protected areas and coral reefs.</p>	<p>Loss of habitats , breeding grounds and reduction in biological diversity of endemic species</p> <p>Illegal export of exotic / ornamental species of fauna and flora</p>	<p>To maintain and improve the quality of the unique environmental resource endowment of the BVI and the physical characteristics of its coastal areas.</p>	<p>Development of a National Conservation Strategy for the BVI.</p> <p>Strengthening programmes for the identification and study of the natural heritage in fauna and flora and for establishing a national inventory of</p>			

		<p>Poaching of eggs and disturbance of nesting bird colonies.</p>	<p>To establish routine environmental assessment and monitoring programmes to highlight vulnerable species and ecosystems bearing in mind the limited stocks of living and non-living exploitable resources.</p> <p>To sustain biological diversity and productivity.</p> <p>To preserve biological diversity and the principle of sustainable yield in the use of living natural resources and ecosystems.</p>	<p>natural resources.</p> <p>Protecting flora and fauna in danger of extinction as well as the reserves of natural resources for scientific, recreational and cultural purposes. Management of Nesting Bird sites.</p>			
<p>HUMAN RESOURCE DEVELOPMENT (a) Manpower (b) Training</p>	<p>Present staff strength in key departments is inadequate. Absence of trained professional staff.</p>	<p>Limited trained manpower</p>	<p>To develop the human resource capacity of key environment agencies.</p>	<p>Development of a recruitment strategy.</p> <p>Development and implementation of a succession plan.</p> <p>Development of a training program that addresses the needs of the sector</p>			
<p>VI. INFRASTRUCTURE DEVELOPMENT (a) Physical Structure (b) Equipments</p>	<p>The Conservation and Fisheries Dept. presently occupies one floor of a rented building.</p>	<p>There is limited office space and insufficient storage space for equipment.</p> <p>Library and laboratory space are also inadequate.</p> <p>Manual / electronic equipment, computers and accessories are inadequate to support the data/ information management needs.</p>	<p>To maintain appropriate facilities and necessary equipment.</p>	<p>Construction of a complex to accommodate offices, laboratory, library, workshop and training facilities and marine research center.</p>			
<p>VII INFORMATION / DATA MANAGEMENT</p>	<p>Information available mostly in documentary form. Computer network in place but needs further development.</p>	<p>Archiving, storage and retrieval of information mostly in developmental stages.</p>	<p>To publish and disseminate relevant environmental information.</p> <p>To develop effective information storage and</p>	<p>Establishment of an environmental information and data base system.</p> <p>Establishment of proper computer linkages between government agencies.</p>			

			management capabilities.	<p>Consolidation of the information management process.</p> <p>Encouragement of regular updating of the information and database to facilitate effective usage by various agencies.</p> <p>Utilization of the Environmental Information and data base in decision support.</p> <p>Dissemination of information to the public.</p>			
VIII. TECHNOLOGY RESEARCH AND DEVELOPMENT	Uncoordinated TRD in the territory. Areas of importance to government are often not considered by researchers.	Lack of coordination and control of research programmes.	To promote research and development programmes in environmental technology.	<p>Encouragement of research in the development of environmentally sound practices such as recycling and waste minimization.</p> <p>Establishment of a marine research center.</p>			
IX. EDUCATION AND PUBLIC AWARENESS	Environmental education and public awareness programs are being carried out. Programs are run in / secondary schools and during summer vacations. Information dissemination is done	<p>Unclear role of the public in the national development process and their lack of involvement in the management and use of resources.</p> <p>Lack of political will to encourage</p>	<p>To raise public awareness and promote understanding of essential linkages between environment and development.</p> <p>To encourage individual and</p>	<p>Public awareness and education programmes.</p> <p>Increase support for NGO's involved in environmental protection</p>			

	<p>through newsletters , technical reports and brochures.</p>	<p>community action.</p> <p>Inability to have environmental education Introduced into primary and secondary school curriculum.</p>	<p>community participation in environmental improvement efforts.</p> <p>To incorporate environmental awareness materials in school curriculum and to extend supplemental programs as - curricular activities</p>	<p>Encourage cooperative projects between international organization and local agencies for expanding subject material for environmental education.</p> <p>Develop and implement a public information program to stimulate the increased use of biodegradable products and recycling.</p>			
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