

# **FINAL REPORT**

## **BCLME PROJECT BEHP/ML/03/01: “MARINE LITTER PROGRAMME”**

**By**

**Dr Francois Odendaal (South Africa) - Project CTA**

**Dr Tracey Philips (South Africa) – Project Expert**

**Ms Romie Nghiulikwa (Namibia) – Project Coordinator and Country Assistant**

**Ms Raquel Garcia (Angola) – Project Expert**

**Mr Abias Huongo (Angola) – Country Assistant**

**NOVEMBER 2006**

## TABLE OF CONTENTS

<b><u>LIST OF ABBREVIATIONS</u></b>	<b><u>3</u></b>
<b><u>1 ACKNOWLEDGEMENTS</u></b>	<b><u>5</u></b>
<b><u>2 EXECUTIVE SUMMARY</u></b>	<b><u>6</u></b>
<b><u>3 INTRODUCTION</u></b>	<b><u>10</u></b>
<b><u>4 DEFINITIONS</u></b>	<b><u>12</u></b>
<b><u>5 OUTPUTS ACHIEVED</u></b>	<b><u>13</u></b>
<b>5.1 OUTPUT 1: RECOMMENDATIONS TO IMPROVE REGULATORY FRAMEWORK</b>	<b>13</b>
5.1.1 MARINE LITTER LEGISLATIONS AND INITIATIVES IN ANGOLA	13
5.1.2 MARINE LITTER LEGISLATIONS AND INITIATIVES IN NAMIBIA	33
5.1.3 MARINE LITTER LEGISLATION AND INITIATIVES IN SOUTH AFRICA	41
5.1.4 SIMILARITIES AND DIFFERENCES BETWEEN THE THREE COUNTRIES	73
5.1.5 RECOMMENDATIONS	75
<b>5.2 OUTPUT 2: AWARENESS RAISING ACTIVITIES</b>	<b>80</b>
5.2.1 PILOT SITE: WALVIS BAY, NAMIBIA	80
5.2.2 PILOT SITE: SARICO AND MABUNDA, ANGOLA	85
<b>5.3 OUTPUT 3: EDUCATIONAL AND AWARENESS RAISING MATERIALS</b>	<b>91</b>
<b>5.4 OUTPUT 4: DRAFT OF A PROPOSAL FOR COMMUNITY OUTREACH PROGRAMME AND IMPLEMENTATION OF LEGAL RECOMMENDATIONS.</b>	<b>91</b>
<b><u>6 REFERENCES</u></b>	<b><u>94</u></b>
<b><u>7 APPENDIX 1: TERMS OF REFERENCE</u></b>	<b><u>97</u></b>
<b><u>8 APPENDIX 2: EDUCATIONAL MATERIALS</u></b>	<b><u>99</u></b>
<b>8.1 MARINE LITTER TEACHER'S MANUAL ENGLISH VERSION</b>	<b>99</b>
<b>8.2 MARINE LITTER TEACHERS MANUAL PORTUGUESE VERSION</b>	<b>105</b>
<b>8.3 MARINE LITTER SURVEY METHODOLOGY</b>	<b>112</b>
<b>8.4 MARINE LITTER BURNING ISSUE ENGLISH VERSION</b>	<b>114</b>
<b>8.5 MARINE LITTER BURNING ISSUE PORTUGUESE VERSION</b>	<b>127</b>

## **LIST OF ABBREVIATIONS**

**BCLME** Benguela Current Large Marine Ecosystem

**BEE** Black Economic Empowerment

**CSIR** Council for Scientific and Industrial Research

**C&MPPCC** Coastal and Marine Pollution Prevention Coordination Committee

**DEA&T** Department of Environmental Affairs and Tourism

**DLIST** Distance Learning and Information Sharing Tool

**DWAF** Department of Water Affairs and Forestry

**EEZ** Exclusive Economic Zone

**EIA** Environmental Impact Assessment

**ETD** Education Training and Development

**GAPC** Group of Support to Peoples in Need (*Grupo de Apoio a Povos Carentes*)

**GEF** Global Environmental Facility

**GPA** Global Programme of Action

**HCRW** Health Care Risk Waste

**HCW** Health Care Waste

**IMO** International Maritime Organisation

**IPA** Institute for Development of Artisanal Fisheries (*Instituto para o Desenvolvimento da Pesca Artesanal*)

**JEA** Ecological Youth of Angola (*Juventude Ecológica de Angola*)

**KEAG** Kommetjie Environmental Action Group

**LME** Large Marine Ecosystem

**MET** Ministry of Environment and Tourism

**NAMPORT** Namibia Ports Authority

**NBSAP** National Biodiversity Strategy and Action Plan

**NDP** National Development Plan

**NEMA** National Environmental Management Act

**NWMS** National Waste Management Strategy

**SADC** Southern Africa Development Community

**SANParks** South Africa National Parks

**SMME** Small Medium and Micro Enterprise

**SR** Social Responsibility

**SWOT** Strengths Weaknesses Opportunities and Threats

**UNCED** United Nations Conference on Environment and Development

**UNCLOS** United Nations Convention on the Law of the Sea

**UNDP** United Nations Development Programme

**UNEP** United Nations Environment Programme

**WfC** Working for the Coast

**WIS** Waste Information Centre

## **1 ACKNOWLEDGEMENTS**

We acknowledge the help and information provided by the following: David Uushona and Kakujaha Kahepako of the Walvis Bay Municipality in Namibia, Officials of the Namibian Ministry of Environment and Tourism (MET), Vladimir Russo of the National Biodiversity Strategy and Action Plan (NBSAP) Project in Angola, Mr. Yazeed Peterson the Deputy Director of Marine and Coastal Pollution from the Department of Environmental Affairs & Tourism (DEA&T) of South Africa and many others during the course of this work. The financial support of the BCLME Programme is gratefully acknowledged.

## 2 EXECUTIVE SUMMARY

The BCLME Marine Litter Programme assessed the current legal framework and ongoing programmes to reduce marine litter in the three BCLME countries (Namibia, South Africa and Angola), as well as raised awareness on the importance of the issue. This pilot project officially started in November 2005 with funding from the Benguela Current Large Marine Ecosystem (BCLME) Programme and ended in November 2006. The project has been implemented by EcoAfrica Environmental Consultants, Cape Town in partnership with Country Assistants in Angola, Namibia and South Africa. The project goal was to address the marine litter problem at regional as well as local levels. By using three specific pilot sites, the project assessed the litter situation and raised awareness in coastal towns and communities of Walvis Bay in Namibia and Buraco and Mabunda in Angola. This pilot tested methodology that could be replicated, and gathered material that could be used in some other coastal communities along the BCLME where the same problem exists.

The project had four expected outcomes: *(1) Evaluation of regulatory /policy framework of the three BCLME countries on marine litter with a view to harmonize and make recommendations on regulations, enforcements, and penalties, (2) Review of marine litter programmes in Namibia, South Africa and Angola, (3) Select target areas for marine litter survey involving schools, publicize survey results and search for matching funds for the community outreach project, (4) Carry out awareness raising campaigns on marine litter through posters/leaflets*

The Benguela Current Large Marine Ecosystem (BCLME) is one of the world's most productive marine environments, not only in terms of fishery resources but also mineral deposits. Fishing and mining are the two most important economic activities and they contribute greatly to the economic development and growth of Angola, Namibia and South Africa. Consequently, these regions are experiencing high population growth due to migration from inland areas. This has led to an increased demand for resources and has resulted in higher level of domestic and industrial waste from unplanned coastal settlement developments as well as ongoing seabed mining and petroleum exploration.

Pollution and litter from industries and poorly planned and managed coastal developments are causing rapid degradation to vulnerable coastal habitats and also eroding the high tourism potential of the coastal areas. Furthermore, the rapid expansion of coastal cities has created pollution “hotspots” throughout the Benguela Current region, with resultant deterioration in water quality. This has adverse effects on the local population that does not know how to deal with the litter and waste problem. A strong and cohesive legal framework shared and endorsed by the three Benguela countries is necessary for resolving the marine litter problem. There is also a need for greater awareness among stakeholders from local, regional, national and transboundary levels on marine litter for the purpose of developing long-term solutions.

The laws, rules and principles that govern marine pollution in Angola, Namibia and South Africa arise from a series of International Conventions/Agreements/Protocols. These include the United Nations Convention on the Law of the Sea (UNCLOS), Convention of the International Maritime Organisation, Convention on the Territorial Sea and the Contiguous Zone, International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil, Convention for the prevention of Marine Pollution from land-based sources, United Nations Convention on the Law of the Sea, Agenda 21 and the Rio declaration on Environment and Development, Convention for the Co-operation in the Protection; and Development of the Marine and Coastal Environment of the West and Central African Region Protocol. Although the three countries are signatories to these international agreements, there seems to be lack of consistency in enforcement of the recommendations within these agreements.

However, in all the three BCLME countries there is significant evidence in their national Constitution, policies, long-term plans and visions that the countries are concerned about the protection of the coastal environments and possible impacts of various economic activities being undertaken in these areas. Nevertheless, the level of sophistication and cohesion and policy development between various government institutions responsible for marine litter issues varies from country to country.

While there is no specific statute dedicated to marine litter prevention in Angola and Namibia, in South Africa the general environmental legislation is better developed, with specific elements dedicated to marine litter control<sup>1</sup>. In Angola, there is lack of co-ordination between the Environmental Framework Law and other sectoral legislation. For instance, the Angolan Environmental Law has not yet been complemented with the relevant regulations to enable effective implementation, including pollution, waste management and water quality. In Namibia, various ministries and agencies hold direct or indirect responsibilities for the implementation of statutes containing provisions on marine litter prevention.

In addition to the evaluation of the legal framework, ongoing programmes and local initiatives on marine litter from the three countries were also reviewed. While there is a dedicated national marine litter programme in South Africa<sup>2</sup>, there is no identical formal waste or litter minimization/pollution prevention Programme in Angola and Namibia. However, there are local initiatives such as Coastal and Marine Pollution Prevention Coordination Committee (C&MPPCC) in Namibia that promotes the protection of the marine environment through coordination. In Angola there are more active programmes in environmental education and awareness raising initiatives, some of which have targeted the coastal zone. Beach cleanup activities have been undertaken since the nineties in the coastal provinces of Luanda, Benguela, Kwanza Sul and Namibe. The “Healthy Beaches” project (*Projecto Praias Saudáveis*) was a joint initiative of the Ecological Youth of Angola (JEA, *Juventude Ecológica de Angola*) and the Luanda Port Authority. The Institute for Development of Artisanal Fisheries (IPA) of the Ministry of Fisheries engages in activities to promote responsible fisheries and aquaculture and to provide advice and training, where the components of a healthy environment and waste prevention in coastal communities are included.

Based on the findings of this study, several recommendations have been put forward. In Namibia, the enactment of draft Bills into laws for implementation and effective enforcement is urgently needed. In Angola there are still gaps in the legislation that

---

<sup>1</sup> White Paper for Sustainable Coastal Development and the White Paper on Integrated Pollution and Waste Management (2000).

<sup>2</sup> COASTCARE Programme



need to be covered to ensure effective control of marine litter in particular and waste management in general. \*

The legal frameworks for marine litter for the three countries are very different and are in different stages of development. The emphasis at this stage should be placed on harmonization of approaches in policy and legal framework among the countries. The focus should also be directed at the general and sectoral legislation for environmental protection in each country, and at responding to international conventions that the three countries are parties to. Harmonization could be sought on the programmes and local initiatives tackling marine litter at regional and local level in the three countries, by using 'lessons learned' and sharing experiences between them. Much could be learned from the Coastcare Programme in South Africa and 'lessons learned' from the Programme could be shared with Angola and Namibia to develop similar initiatives at the national level. Sharing of experiences and knowledge should also be sought at the sectoral level, in terms of best practice and guidelines for economic activities that can be sources of marine litter and pollution such as fishing, tourism, mining and oil activities.

With the assistance of the Global Programme of Action and Regional Seas Programme a Regional Programme of Action needs to be developed to specifically target marine litter in the BCLME Region. A National Programme of Action should be developed within the context of the Regional Programme of Action for South Africa, Namibia and Angola. National and Regional Programmes of Action should be drawn up with the cooperation of national, regional and local spheres of government who will likely be the executing agents, and in collaboration with NGOs and local associations that will have key roles in implementation. Partnerships with existing programmes (e.g. NWMSI, WftC, etc.) should be developed to maximize synergies and minimize duplication and expenditure. A Working for Coast type programme or series of projects with specific focus on improved waste collection, reuse, recycling and awareness raising; should be expanded into Namibia and Angola, to provide support for the implementation of the above mentioned Regional and National Programme of Action in a manner that not only addresses the marine litter problem but also poverty in coastal communities.

### **3 INTRODUCTION**

The Benguela Current Large Marine Ecosystem (BCLME) is one of the world's most productive marine environments, not only in terms of fishery resources but also mineral deposits. Fishing and mining are the two most important economic activities and they contribute greatly to the economic development and growth of Angola, Namibia and South Africa. Consequently, these regions are experiencing high population growth due to migration from inland areas. This has led to an increased demand for resources and has resulted in higher level of domestic and industrial waste from unplanned coastal settlement developments as well as ongoing seabed mining and petroleum exploration. Pollution and litter from industries and poorly planned and managed coastal developments are causing rapid degradation to vulnerable coastal habitats and also eroding the high tourism potential of the coastal areas. Furthermore, the rapid expansion of coastal cities has created pollution "hotspots" throughout the Benguela Current region, with resultant deterioration in water quality. This has adverse effects on the local population that does not know how to deal with the litter and waste problem. Therefore, greater awareness is needed not only on the existing problem but also on possible solutions.

#### **Objectives and Approach (ref. Appendix 1)**

This pilot project aimed at assessing the current legal framework and ongoing programmes to reduce marine litter in the three BCLME countries, as well as raise awareness on the importance of the issue. By using three pilot sites, the project assessed the litter situation and raised awareness in coastal communities and schools, tested methodologies that can be replicated, and developed materials that can be used in other coastal communities along the BCLME where the same problem exist.

#### **Scope of Work (ref. Appendix 1)**

The Benguela Current Large Marine Ecosystem – BCLME Programme commissioned EcoAfrica Environmental Consultants, South Africa to conduct a study on the current legal and regulatory frameworks on marine litter. The study also examined ongoing programmes geared towards preventing and reducing marine litter in the three BCLME countries. Furthermore, the study assessed the litter situation and raised awareness in coastal communities and schools through practical

exercises with students. It also tested methodologies that can be replicated and produced materials that can be used in some other coastal communities along the BCLME where the same problem exists.

### **Study Team**

- Dr Francois Odendaal: Technical assistance to the project activities implementation
- Dr Tracey Philips: Input on South Africa legislation and programmes
- Ms Romie Nghiulikwa: Project management and input on Namibian legislation, programme and coordination of Namibian pilot site awareness raising activities
- Ms Raquel Garcia: Project management and input on Angolan legislation, programme and coordination of Angolan pilot site awareness raising activities
- Mr Abias Huongo: Input on Angolan legislation and programmes; and undertaking of Angolan pilot sites awareness raising activities

## 4 DEFINITIONS

### **Marine Litter**

The United Nations Environmental Programme (UNEP) in its “Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities” defines litter as: “*Any persistent manufactured or processed solid material which is discarded, disposed of, or abandoned in the marine and coastal environment, sometimes called marine debris.*”<sup>3</sup>

It also states that litter threatens marine life through entanglement, suffocation and ingestion and is widely recognized to degrade the visual amenities of marine and coastal areas with negative effects on tourism and general aesthetics. Litter in the marine environment can also destroy coastal habitats and in some situations interfere with biological production in coastal areas.

### **Marine Pollution**

According to the United Nations Convention on the Law of the Sea (UNCLOS, 1997), “pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities”

### **Integrated Pollution and Waste Management**

Integrated pollution and waste management is a holistic and integrated system and process of management, aimed at pollution prevention and minimization at source, managing the impact of pollution and waste on the receiving environment and remediating damaged environments.

---

<sup>3</sup> UNEP, 1995. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*. United Nations Environment Programme, 1995.

## 5 OUTPUTS ACHIEVED

### 5.1 Output 1: Recommendations to Improve Regulatory Framework

#### 5.1.1 Marine Litter Legislations and Initiatives in Angola

##### Policies and Legislation

While striving to overcome the obstacles that were left by the war and follow a sustainable path to development, Angola is undergoing a number of institutional and legal changes. Many of the existing laws are outdated, while others are under discussion, awaiting approval or have yet to be formulated. This section reviews the existing legal and institutional framework in Angola for marine litter prevention and reduction.

##### International Framework

The adoption of Agenda 21 in 1992 had significant impacts on the development of environmental legislation in Angola, by encouraging the development of the Angolan Environment Framework Law (*Lei de Bases do Ambiente*) and legislation in the fields of fisheries, oil and mining, as well as the establishment of the State Secretariat for the Environment in 1993<sup>4</sup>.

Angola is a party to the Convention of the International Maritime Organisation, the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), and the United Nations Convention on the Law of the Sea. The country has signed but not yet ratified the Abidjan and Basel Conventions. The Protocol on Shared Watercourse System in the SADC Region was signed by Angola in 2000, and the country is also a member of the UNEP Regional Seas Programme for West and Central Africa. Other international conventions signed by Angola that also have relevance in the marine litter context are the International Convention for the Conservation of Atlantic Tunas, the Convention on the International regulations for

---

<sup>4</sup> Russo, V. et al., 2004. *Harmonization of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region*. BCLME Project BEHP/IA/03/03: Final report.

Preventing Collisions at Sea, and the International Convention for the Safety of Human Life at Sea.

### **National Framework**

Within the local context for marine litter control, there are not many specific legal instruments addressing concrete actions for policy definition and implementation. However, when analysing the general context for environment and linkages with other areas, a number of aspects can be noted that have relevance for marine litter.

Law 14/04, of 28 December 2004, which approves the Government's Programme for the biennium 2005/6, addresses environmental preservation, conservation and forestry projects, as well as the preparation of policies and the National Strategy for the Environment.

The most important aspects in the environmental sector where linkages with marine litter issues can be found are visible in the environmental policy and reflected in:

- the (Draft) National Programme for Environmental Management , recently redrafted and awaiting approval (this programme includes as objectives to reach the sustainable development in all its components, establishment of responsibility for all agents, definition of priority actions, promotion of inter-sectoral coordination, and contribution to environmental awareness raising);
- the Programme for Environmental Education and Awareness Raising (this programme addresses issues such as the promotion of education and awareness raising actions, creation of attitudes and skills for better environmental management, promotion of curricula revision, dissemination of environmental concepts, promotion of dialogue, improvement of coordination, provision of courses and training of environmental specialists); and
- the National Strategy to Combat Poverty (it addresses the return and settlement of displaced people and refugees, the minimization of the risk of hunger and the assurance that food needs are met, universal access to primary level education, and the creation of a macroeconomic environment that avoids imbalances).

Angola has an evolving environmental legislation framework covering key issues for the coastal and marine zone with regards to the protection of the environment, environmental impact assessment, and marine protected areas, as well as to activities that may impact on this environment (including fisheries and aquaculture, and offshore oil and gas exploration). Recently issued laws include the Living Aquatic Resources Act that replaced the former Fisheries Act, and policies under preparation include the National Environmental National Programme, the National Biodiversity Strategy and Action Plan (NBSAP) and the National Wetlands Policy.

Angola does not have dedicated waste legislation, but a Draft Waste Act has been prepared for discussion. In the absence of dedicated waste and litter legislation, a wider range of laws and policies was consulted for this study in order to assess their relevance to marine litter control. The table below lists some key legal documents that are in force or under preparation in Angola, and that have direct or indirect relevance to the prevention and reduction of marine litter.

The Local Municipalities Act (*Lei das Autoridades Locais*, n. 17/99) establishes that local governments are responsible for the promotion of development, basic sanitation, environmental protection and land management. However, the waste management system in Angola is very poor or inexistent, both in rural and urban areas.

**Table 1: Some key legislation in Angola with relevance to marine litter**

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<b>Laws and Policies in Force</b>			
Constitution of the Republic of Angola, 1992 <i>Lei Constitucional da República de Angola</i>	Republic of Angola	Provides the basis for the Environment Framework Act through two articles that enable environmental protection and conservation and the right to a healthy and unpolluted environment.	Article 24 recognises that “All citizens shall have the right to live in a healthy and unpolluted environment”.
Environmental Framework Act, N.5/98, 19 June 1998 <i>Lei de Bases do Ambiente</i>	Ministry of Urban Planning and Environment	Based on Articles 12 and 24 of the Constitution. Provides the framework for all environmental legislation and regulations in Angola, defines key concepts, incorporates key international sustainable development declarations and agendas, and establishes citizens’ rights and responsibilities.	Article 3 (1) states that “every citizen has the right to live in a healthy environment (...)”  Article 19 recognises the need for legislation on management of pollutants, and guidelines of urban and non-urban environmental quality relating to pollution originated from sound, fuel burning, industry, agriculture and domestic homes. Legislation on waste has not been enacted yet.
Environmental Impact Assessment Decree, N. 51/04, 23 July 2004 <i>Decreto sobre</i>	Ministry of Urban Planning and Environment	Provides regulations on the procedures and mechanisms to be used in EIAs, establishes norms for conducting EIAs, establishes which projects are to be	Applies to projects that may be sources of marine litter (especially fishing, tourism, industrial, commercial or housing projects, landfills)  Definition of Environmental Impact encompasses any



LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<i>Avaliação de Impacte Ambiental</i>		subject to an EIA, what elements are to be included in an EIA, the nature and extent of public participation, the entity responsible for compliance with these legal requirements, and the EIA monitoring process.	change in the environment (air, water, soil and subsoil, biodiversity, health of people and cultural heritage) resulting from human activities, hence including the generation of marine litter
Land use planning and Urbanisation Act, N.3/04, 25 June 2004 <i>Lei do Ordenamento do Território e do Urbanismo</i>	Ministry of Urban Planning and Environment	Establishes the system for land use planning and urbanization, covering urban and rural land, subsoil, continental platform and inland waters.	Article 15 deals with natural resource use. It states that the policy of land use should prevent contamination and erosion, and attaches special importance to water resources and the coastal zone.
Land Act, N. 9/04, 9 November 2004 <i>Lei das Terras</i>	Ministry of Urban Planning and Environment	Establishes the general framework of the land's legal regime, and the rights falling upon them, as well as the general system of concession and constitution of agrarian rights.	Article 16 deals with environmental protection and use of land.  "Reserved land" is subject to special rules to ensure, <i>inter alia</i> , the protection of the environment. Inland waters, the sea, the exclusive economic zone and the coastal zone are considered partial reserves where all forms of use are allowed as long as they do not compromise the aims of the Environmental Framework Law.

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<p>Water Act, N.6/02, 21 June 2002</p> <p><i>Lei das Águas</i></p>	<p>Ministry of Water and Energy</p>	<p>States the priorities for water resources (both surface and underground) and their use. Establishes a new administrative policy including a decentralised system of access to, and control and protection of water resources.</p>	<p>Applies to non-marine waters, which are important sources of marine litter in Angola.</p>
<p>Inland Waters, Territorial Sea and Exclusive Economic Zone Act, N. 21/92, 28 August 1992</p> <p><i>Lei sobre as Águas Interiores, o Mar Territorial e a Zona Económica Exclusiva</i></p>	<p>Ministry of Water and Energy</p>	<p>Regulates internal waters and lakes, the use of natural resources, the protection of the marine environment and the promotion of scientific marine research.</p>	<p>Article 8 establishes that the Angolan Government is responsible for the protection and preservation of the marine environment within the Economic Exclusive Zone.</p>
<p>Living Aquatic Resources Act, N. 6-/04, 8 October 2004</p> <p><i>Lei dos Recursos</i></p>	<p>Ministry of Fisheries</p>	<p>Defines the rules and principles for the protection and wise use of living aquatic resources, as well as for activities connected to these resources, such as</p>	<p>Article 8 (fishing planning) states as an objective the reduction of pollution, waste, by-catch and lost fishing gear.</p> <p>Commercial and subsistence fishers must comply with</p>

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<i>Biológicos Acuáticos</i>		fishing and aquaculture.	<p>legislation regarding <i>inter alia</i> living aquatic resources and protection of aquatic environment. Recreational fishers have the same duty, with the necessary adaptations to be established in dedicated legislation (Articles 37 and 38).</p> <p>Part II defines measures for protection of living resources and the aquatic environment, through <i>inter alia</i> the reduction or minimisation of pollution of marine and aquatic environments including that generated by fishing, fishing ports, associated activities, and aquaculture (Article 63). Polluting activities should be identified (Article 64).</p> <p>Section V (Pollution) of Part II, Chapter I aims to prevent or minimise the disposal and emission of toxic and/or harmful substances from marine land-based sources. The introduction in the marine environment of banned substances and/or exceeding the legal limits is prohibited; the introduction in the marine, coastal or riverine environment of any other substances that are harmful to the environment is prohibited in the terms to be defined in dedicated legislation to be issued; activities that may cause pollution or destruction of the aquatic environment are prohibited except in special cases to be authorised in</p>

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
			<p>the terms of dedicated legislation to be issued (Article 92). The polluter-pays principle applies (Article 93).</p> <p>Chapter II of Part II (Fishing gears and methods) establishes that no fishing gears should be abandoned on the sea and continental waters.</p> <p>Fishing ports must have appropriate conditions for waste disposal system (Article 172).</p> <p>Rules for prevention of pollution during processing transport and sale of fish (Article 175) and aquaculture activities (Article 201) should be established by the responsible Ministry.</p> <p>Discharging or landing any object or substance that can cause serious damage to living resources or ecological balance is considered a crime (Article 262) and subject to penalties (Article 263).</p>
<p>Oil Activities Act, N. 10/00, 12 June 2000</p> <p><i>Lei das Actividades Petrolíferas</i></p>	<p>Ministry of Oil</p>	<p>States the need to undertake oil activities in a manner that ensures sustainable development and the protection of the environment. Establishes the exclusivity principle for</p>	<p>Oil production in Angola takes place mainly offshore, hence the relevance of legislation in the oil sector.</p> <p>Article 24 deals with environmental protection. Companies involved in petroleum operations have to put in place</p>

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		the national petroleum concessionary Sonangol.	appropriate measures for environmental protection.
Decree on Environmental Protection for the Petroleum Industry, N.39/00, 10 October 2000  <i>Protecção do Ambiente no Decurso das Actividades Petrolíferas</i>	Ministry of Oil	Provides for the protection of the environment in the course of petroleum activities in terms of health, water, soil and subsoil, air, flora and fauna, ecosystems, landscape, atmosphere and the cultural, archaeological and aesthetical values. Applies to both onshore and offshore environments.	Article 6 establishes that Environmental Impact Assessments of facilities shall consider the direct or indirect impact to natural resources consumption, disposal and deposit of wastes and spills.  Article 9 states that Waste Management, Disposal and Deposit Plans must be drawn including quantity and quality of waste generated, reduction methods, and waste handling, treatment and disposal procedures.
Geological and Mining Activities Act, N. 1/92, 17 January 1992  <i>Lei das Minas</i>	Ministry of Geology and Mines	Aims to create the necessary conditions to include the development of the mining industry in the national and international context.	Requires a commitment of license holders to protect the environment.
Regulation on the procedures for management, removal and disposal of refuse	Ministry of Oil	Establishes rules and procedures for managing, removing and disposing of refuse, to be implemented by the operator and other oil companies with a	

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<p>during oil activities, Executive Decree N. 8/05, 5 January 2005</p> <p><i>Regulamento dos procedimentos sobre a Gestão, Remoção e Depósito de Desperdícios na Actividade Petrolífera</i></p>		<p>view to ensuring the prevention or minimization of damage on human health and the environment</p>	
<p>Regulation on the procedures to notify the occurrence of oil spills, Executive Decree N. 11/05, 12 January 2005</p> <p><i>Regulamento sobre os Procedimentos de Notificação da Ocorrência de Derrames na</i></p>	<p>Ministry of Oil</p>	<p>Establishes the rules and procedures to notify the occurrence of oil spills.</p>	

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<i>Actividade Petrolífera</i>			
<p>Regulation on the Management of Operational Discharges during oil production activities, Executive Decree N.12/05, 12 January 2005</p> <p><i>Regulamento sobre a Gestão de Descargas Operacionais no Decurso das Actividades Petrolíferas</i></p>	Ministry of Oil	Establishes the rules for managing operational discharges.	
<b>Laws and Policies under Discussion</b>			
<p>Draft Waste Act</p> <p><i>Projecto de Decreto-Lei dos Resíduos</i></p>	Ministry of Urban Planning and Environment	Under the Environmental Framework Law, this Act aims to provide a framework for inventory, management and enforcement of rules for all types of	<p>Applies to all types of waste</p> <p>Places the responsibility for waste management on local</p>

LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		waste. Other regulations are expected to follow on inventory and management, waste management plan, and waste types list.	authorities and specialized companies, on industries in the case of industrial waste, and on citizens in the case of waste in their possession.
Draft Environmental Management Programme <i>Programa Nacional de Gestão Ambiental Nacional (Versão Provisória)</i>	Ministry of Urban Planning and Environment	The Plan is still under preparation and a new and considerable revised version is expected to be ready soon.	
Draft National Biodiversity Strategy and Action Plan, 2006 <i>Estratégia e Plano de Acção para a Biodiversidade (Versão para Discussão)</i>	Ministry of Urban Planning and Environment	The Draft document has been discussed in a multi-stakeholder workshop in February 2006 and is ready to be submitted for approval. NBSAP will provide the framework for the protection of marine and terrestrial biodiversity.	Considers the pressures on the country's biodiversity, which include marine waste and litter



LAW/ POLICY	RESPONSIBLE AUTHORITY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<p>National Strategy for Wetland Sustainable Development, 2004</p> <p><i>Estratégia Nacional sobre a Gestão Sustentável das Zonas Húmidas</i></p>	<p>Ministry of Urban Planning and Environment</p>	<p>First step towards the protection and sustainable use of wetlands in Angola. Provides a definition of wetlands, defines long-term and short-term objectives for protection as well as the instruments for implementation of the strategy. A National Wetlands Policy is currently under development (a draft has been approved in a national workshop in February 2006).</p>	<p>Recognizes existing threats to wetlands—including the disposal of waste—and the need to ensure their sustainable use.</p>

## Initiatives and Programmes

In parallel to environmental policies and legislation, there is a real and concrete awareness in the coastal provinces of the marine litter problem and the damage it can inflict on the marine environment and the coastal communities. Hence a number of concrete actions have been carried out by governmental institutions, civil society organisations, or in partnership by both. In recent years Angola has been more active in environmental education and awareness raising initiatives, some of which have targeted the coastal zone.

Beach cleanup activities have been undertaken since the nineties in the coastal provinces of Luanda, Benguela, Kwanza Sul and Namibe, Cabinda, Bengo and Zaire. The “Healthy Beaches” project (*Projecto Praias Saudáveis*) was a Pilot joint initiative of the Ecological Youth of Angola (JEA, *Juventude Ecológica de Angola*) and the Luanda Port Authority (Capitania do Porto de Luanda). Waste collection bins were placed along the beaches in Luanda (*Ilha*), involving local communities as well as some Restaurants in the area. This activity was supported by awareness raising efforts through the distribution of pamphlets and other educational material. The bins were used for a year and the waste was collected by the private company Urbana 2000 that is responsible for waste management in the city of Luanda. During this period the population collaborated in the initiative and there was a significant improvement in the area. However, most bins were eventually stolen for easy profit through sale and the project came to a halt for lack of funding. Nevertheless, some Restaurants where security is stronger still have and use the waste bins.

The Institute for Development of Artisanal Fisheries (IPA) of the Ministry of Fisheries strives to promote the development of artisanal fisheries communities. Its activities include the promotion of responsible fisheries and aquaculture and the provision of advice and training, where the components of a healthy environment and waste prevention in coastal communities are included.

Some NGOs and associations also engage in beach cleanup activities in the Luanda Province, such as ASAP in the municipality of Cacuaco, Benfica Environmental Club in the Commune of Benfica and Futuro Verde in the Samba Municipality.

JEA has been active in the Provinces of Luanda, Kwanza Sul, Benguela, Namibe e Cabinda. Sonangol (Oil Company) has a project in the mangrove area of Mussulo, Luanda, which includes an environmental education component about waste. The Group of Support to Peoples in Need (GAPC, *Grupo de Apoio a Povos Carentes*) carries out projects aimed at the development of coastal communities such as the pilot community of Buraco, through which it promotes principles of respect for the environment and healthy living conditions.

Developments in wastewater and waste collection and treatment in some provinces are also having an effect on marine pollution and litter. The Benguela province was the first to benefit from a project called PROLAB in the early nineties, which established a wastewater treatment system for 2 cities and built drains to avoid the dispersion of waste. Similar activities to clean the waste in Chicala (Luanda) have been undertaken by waste management companies.

## **Discussion**

The past conflict situation in the country has led a great part of the population to move to the coastal areas, in search of safety and higher life quality. This situation has resulted in overpopulation along the coast, unsustainable human settlements and poor basic sanitation.

The absence of a concrete policy on waste and discharges at sea means that one can still find along the coast abandoned ships and fish processing plants without an adequate waste water treatment system.

The coastal areas have seen a major population influx and often uncontrolled development with associated impacts on the environment. The degradation of coastal

ecosystems is evident in the vicinity of coastal cities, especially those with high population density<sup>5</sup>. Growing oil activities along the coast have also amplified the environmental problems in the coastal zone.

Coastal urban areas, untreated sewage discharges, industrial waste brought by rivers, fishing activities and oil exploration are among the main marine and land-based sources of marine litter. Fish meal factories along the coast, port activities and the use of beaches for leisure are also sources of pollution. Most marine pollution in Angola is originated on land. Land-based point sources from un-serviced urban areas and polluted rivers and marine outfalls from industry have been highlighted as key issues of concern for marine pollution and litter<sup>6</sup>. The fishing, agriculture and coastal maritime transportation sectors are expected to grow in the future<sup>7</sup> with a resulting impacts on marine litter if this growth is uncontrolled. The tourism sector can also potentially become an increasingly significant source of marine litter if not properly regulated.

A number of horizontal and sectoral laws and policies in Angola make reference to the need to protect the marine and coastal environments and prevent marine litter and waste. The law on Living Aquatic Resources is particularly relevant, yet it requires specific regulations and adequate enforcement.

Nevertheless, in the absence of a dedicated waste legislation, a general framework for waste prevention and management is lacking. The Draft Waste Act under discussion,

---

<sup>5</sup> Russo, V., P. Roque and H. Krugmann, 2003. *Angola: Country Report*. In: *Southern African Institute for Environmental Assessment*. Environmental Impact Assessment in Southern Africa. Windhoek: Southern African Institute for Environmental Assessment.

<sup>6</sup> Clark, B.M., M.T. Laros and L.J. Atkinson, 2004. *Training and capacity needs assessment for the BCLME*. *Final Draft Report*. Prepared by Anchor Environmental Consultants in association with Marlene Laros & Associates for the BCLME Programme Co-ordinating Unit, February 2004. Pp 1-182.

<sup>7</sup> Russo, V. *et al.*, 2004. *Harmonisation of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region*. *BCLME Project BEHP/IA/03/03: Final report*.

and the regulations that will follow, will provide a basis for waste management, yet major efforts are also required in the development of waste collection and treatment infrastructure and systems, as well as in enhancing enforcement capacity and in raising awareness of the importance of the issue. The discussion below highlights some key strengths and weaknesses of the current legal framework and ongoing efforts for marine litter prevention and reduction.

**Some key strengths and opportunities identified are:**

- **Growing environmental legal basis:** Angola has a solid legal basis in terms of environment, including a Constitution that recognises the need for conservation and protection of natural resources, biodiversity and a healthy environment, with a view to maintaining the natural ecological balance and meeting basic human needs. The Environmental Framework Law provides the basis for the protection and wise use of natural resources and, provided that the required complementary legislation and regulation is in place, it can be an effective instrument to achieve those goals. Angola has also signed important international conventions. A range of horizontal legal and policy instruments are increasingly strengthening this legal basis, though some key instruments such as a waste act are still missing.
- **Eco-tourism:** there is a need to rethink and reflect on the current tourism activities along the coast. A strictly environmentally friendly tourism should be one of the solutions to consider.
- **Recognition of the problem of marine litter in sectoral laws:** Most sectoral laws make reference to the need to protect the environment from pollution. The principle of reduction or minimisation of pollution of marine and aquatic environments—including that generated by fishing, fishing ports, associated activities, and aquaculture—is enshrined in the Living Aquatic Resources Act. A set of regulations that link the Environmental Framework Act and the Petroleum Act is currently under discussion<sup>8</sup>. The Ministry of Petroleum has developed reporting requirements for each stage of

---

<sup>8</sup> Cullinan, C., S. Munkejord and H. Currie, 2005. *Institutional Study regarding the establishment of a regional organization to promote integrated management and sustainable use of the BCLME*. Prepared for UNOPS and the BCLME Programme. EnAct International, March 2005. Pp 1-135.

petroleum industry activities. These must be met prior to the authorisation of such activities and there must be regular reporting on the quantity and quality of waste discharges<sup>9</sup>. The Department for the Protection of the Environment of the Ministry of Petroleum is engaged in the preparation of the National Contingency Plan (*Combate à Poluição*) and other legal and administrative mechanisms to control its activities within the National Environmental Protection System (*Sistema Nacional de Protecção Ambiental*)<sup>10</sup>. The Decree on Environmental Impact Assessments for Petroleum Activities is also under preparation<sup>11</sup>.

- **Ongoing decentralisation process:** In times of peace, the decentralisation process that Angola has embarked on appears the ideal frame in which local people can be empowered to manage the natural resources to improve their lives. The example of growing numbers of fishing cooperatives along the coast shows that this empowerment is feasible and can, in fact, yield positive results. Fishing cooperatives can indeed have a key role in marine litter prevention and reduction, through better environmental education and awareness of fishers and those involved in associated activities, as well as through monitoring of the state of the coast and enforcement of regulations pertaining to discharge and disposal of litter not only by fishers but by all that use the coastal zone.
- **‘Lessons learned’ from the other BCLME countries:** In this stage of redefining and creating new laws and frameworks for action, Angola is in a unique position to use “lessons learned” and best practices from Namibia and South Africa as well as other countries in other LMEs. Aimed at the protection of the large marine ecosystem that flanks Angola, Namibia and South Africa, the BCLME Programme provides a valuable

---

<sup>9</sup> Russo, V. *et al.*, 2004. *Harmonization of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region. BCLME Project BEHP/IA/03/03: Final report.*

<sup>10</sup> Cullinan, C., S. Munkejord and H. Currie, 2005. *Institutional Study regarding the establishment of a regional organization to promote integrated management and sustainable use of the BCLME.* Prepared for UNOPS and the BCLME Programme. EnAct International, March 2005. Pp 1-135.

<sup>11</sup> Cullinan, C., S. Munkejord and H. Currie, 2005. *Institutional Study regarding the establishment of a regional organization to promote integrated management and sustainable use of the BCLME.* Prepared for UNOPS and the BCLME Programme. EnAct International, March 2005. Pp 1-135.

framework for harmonized legislation, strategies and initiatives towards the reduction and prevention of marine litter.

**Some of the weaknesses and threats identified in the legal framework and programmes on marine litter are:**

- **No dedicated waste legislation:** While some environmental and sectoral laws make reference to pollution and litter, there is no national framework for waste and litter reduction and management in the country. The Environmental Framework Law has not been complemented yet with the relevant regulations to enable implementation, including those for pollution and waste management and water quality standards<sup>12</sup>. The petroleum industry seems to be taking initial steps towards sector-specific guidelines. While waste and litter management is a horizontal issue, common principles, guidelines and strategies are needed to ensure harmonisation of efforts and cooperation. Such framework is also critical to guide provincial and local action.
- **Poor management and enforcement capacity:** In a context of poverty and insufficient human and financial resources, Angola's capacity for legal enforcement and management actions is limited. The lack of institutional capacity for environmental management and the lack of solid information on the state of environment in Angola<sup>13</sup> are factors that hinder the implementation on the ground of principles of litter prevention and reduction, whether or not enshrined in the law. In addition, the country faces serious infrastructural limitations to any efforts in terms of waste and litter management, including poor or inexistent wastewater treatment and waste collection systems. The same obstacles are faced by NGOs and associations that aim to promote environmental protection and could potentially engage in marine litter control initiatives.

---

<sup>12</sup> Clark, B.M., M.T. Laros and L.J. Atkinson, 2004. *Training and capacity needs assessment for the BCLME. Final Draft Report*. Prepared by Anchor Environmental Consultants in association with Marlene Laros & Associates for the BCLME Programme Co-ordinating Unit, February 2004. Pp 1-182.

<sup>13</sup> Russo, V., P. Roque and H. Krugmann, 2003. *Angola: Country Report*. In: *Southern African Institute for Environmental Assessment*. Environmental Impact Assessment in Southern Africa. Windhoek: Southern African Institute for Environmental Assessment.

- **Insufficient cooperation between sectors:** While striving to improve the legal and institutional framework for development and environmental management, the coordination and cooperation between sectors is still insufficient. Poor coordination between environmental laws and sectoral laws has been recognised in a recent study<sup>14</sup>, as well as the lack of integration of environmental considerations in national socio-economic programmes. Legislation on water quality standards and wastewater treatment seems to be insufficient. One critical concern identified recently<sup>15</sup> is the lack of co-ordination and potential conflict between the Environmental Framework Law and other development-focused legislation. The Technical Multi-Sectorial Commission for the Environment (*Comissão Técnica Multisectorial do Ambiente*) was established in 2001 to act as an advisory board to improve the coordination between Ministries, yet it is not fully operational yet.
- **Insufficient capacity at the provincial and local level:** While a decentralisation process is ongoing in Angola, provincial and local authorities are still facing challenges of insufficient funding and capacity to implement responsibilities for environmental quality<sup>16</sup>. This is the result of many years of centralised policies and the urgency to address pressing needs in terms of basic services throughout much of the country.
- **Accelerated development in the country:** Angola is at a critical juncture where the fast development can either take a sustainable path or have negative impacts for both the environment and the population if left uncontrolled. Tourism, for example is expected to grow in face of the enormous potential of the country and particularly the coastal zone. Should tourism grow in an uncontrolled manner it will result in serious impacts on the marine and coastal environment.

---

<sup>14</sup> Russo, V., P. Roque and H. Krugmann, 2003. *Angola: Country Report*. In: *Southern African Institute for Environmental Assessment*. Environmental Impact Assessment in Southern Africa. Windhoek: Southern African Institute for Environmental Assessment.

<sup>15</sup> Clark, B.M., M.T. Laros and L.J. Atkinson, 2004. *Training and capacity needs assessment for the BCLME. Final Draft Report*. Prepared by Anchor Environmental Consultants in association with Marlene Laros & Associates for the BCLME Programme Co-ordinating Unit, February 2004. Pp 1-182.

<sup>16</sup> Clark, B.M., M.T. Laros and L.J. Atkinson, 2004. *Training and capacity needs assessment for the BCLME. Final Draft Report*. Prepared by Anchor Environmental Consultants in association with Marlene Laros & Associates for the BCLME Programme Co-ordinating Unit, February 2004. Pp 1-182.



- **High percentage of people along the coast:** as a result of the conflict and the search for better living conditions, the rural exodus that took place has contributed significantly to an increase in marine litter in Angola.

## 5.1.2 Marine Litter Legislations and Initiatives in Namibia

### Policies and Legislation

There is significant evidence in the Namibian Constitution, policies, long-term plans and visions that Namibia is concerned about the protection of the marine environment and possible impacts of economic activities in coastal areas like tourism, mining, dredging and offshore petroleum exploration on the marine environment.

### International Framework

Namibia is a signatory to a significant number of frameworks tackling environmental management. International and regional agreements concerning the protection of the (marine) environment set minimum standards to be adhered to by countries which are party to them. These agreements to some extent guide international best practices. The adoption of Agenda 21 in 1992 had significant impacts on the development of environmental legislation in Namibia. Namibia's response to the United Nations Conference on Environment (UNCED), a conference at which five major agreements on global environmental issues were signed, was the draft of its Green Plan. The Green Plan notes the need for new comprehensive legislation to address effluent treatment and disposal methods and standards. This plan was drafted by the Ministry of Environment and Tourism (MET) in 1992. It states that more effective legislation is needed to control pollution, and that an awareness of polluter responsibility should be promoted and fines should be increased in line with current market values"<sup>17</sup>. Following the development of

---

<sup>17</sup> BROWN, C.J., undated. Namibia's Green Plan (environmental and development) to secure for present and future generations a safe and healthy environment and prosperous economy. Windhoek: Ministry of Wildlife, Conservation and Tourism. pp1-174.

the Green Plan; and largely in response to Agenda 21, MET formulated *Namibia's 12 Point Plan for Integrated and Sustainable Environmental Management*<sup>18</sup>.

Other international agreements to which Namibia is party are: the Convention of the International Maritime Organisation, Convention on the Territorial Sea and the Contiguous Zone, International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Convention for the prevention of Marine Pollution from land-based sources, United Nations Convention on the Law of the Sea, Agenda 21 and the Rio declaration on Environment and Development, Convention for the Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and Protocol, The Basel Convention and the Protocol on Shared Watercourse System in the SADC Region

### **National Framework**

Namibia does not have a specific legal framework pertaining to marine litter nor does it have an environmental act in force at present to mitigate negative impacts that the marine litter contributing activities might pose to the coastal environment. Most of its legal and institutional framework related to pollution control/marine litter is contained in a number of pre-independence statutes applied during the period of the South African rule<sup>19</sup>. The principal text dealing with litter is the Water Act of 1956. Several provisions on pollution are contained in sectoral legislations such as mining and petroleum legislation, although these are likely to offer insufficient practical protection to the marine environment.

Nevertheless, an Environmental Management Bill has been drafted, which however does not entirely focus on marine litter but aims to incorporate it into Namibia's

---

<sup>18</sup> A strategic document that sets out the most important areas that need to be developed to place Namibia on a sustainable development path.

<sup>19</sup> Russo, V. et al., 2004. *Harmonization of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region*. BCLME Project BEHP/IA/03/03: Final report.

environmental legislation. It is clear that when enacted it will have important implications for pollution control/marine litter and waste management. It is anticipated that this draft bill will pass into law in the near future and any new legislation on pollution control and waste management will need to take account of its provisions.

There are a number of references to marine litter and pollution in the Namibia's Green Plan. In addition, policies and legislations relevant to marine litter in Namibia are presented in the table below.

**Table 2 Some key legislation in Namibia with relevance to marine litter**

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
Water Act 1956 (an item of South African legislation that was made applicable to South-West Africa under section 180)	Principal law dealing with water pollution in Namibia.	It is a criminal offence in terms of section 22 of the Act to “Pollute freshwater or the sea in a way that makes the water less fit for any purpose for which it is or could be used by people, including use for the propagation of fish or other aquatic life, or use for recreational or other legitimate purpose.”
Constitution of the Republic of Namibia, 1990	Provides the basis for the Environment Framework Act through an article that enables environmental protection and conservation and the right to a healthy and unpolluted environment.	Article 96 provides that the state shall actively promote and maintain the welfare of the people by adopting, inter-alia, policies aimed at the management of ecosystems, essential ecological processes and biological diversity of Namibia; and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future. This also applies to marine litter, as the littering of the marine environment may affect the marine ecosystems, which after all need to be managed.
Prevention and Combating of Pollution of the Sea by Oil Act 1981 and the 1991	Provides a framework for the prevention and combating of pollution of the sea by oil and for determining liability in respect of loss or damage caused by the discharge of oil from	It is the enabling legislation for the Marpol 73/78 Convention signed and ratified by Namibia, but is limited to oil pollution <sup>20</sup> . This is a convention on sea pollution prevention, an action towards marine pollution prevention; that may have the same adverse effects as

<sup>20</sup> Russo, V. et al., 2004. *Harmonization of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region*. BCLME Project BEHP/IA/03/03: Final report.

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
Amendment Act, No.24 of 1991	ships, tankers or offshore installations.	those caused by marine litter.
The Namibian Green Plan of, 1992	Contributes to national efforts to incorporate environmental protection into development planning.	Environmental protection in general includes the protection of marine environment.
Draft Environmental Management Bill, 1997	Aims to give effect to environmental provisions contained in the Namibian Constitution, the Cabinet Policy, EIAs and Namibia's international legal obligation.	It provides a framework for the principles of environmental management which will need to be considered in the design and content of a new legal framework for pollution control and waste management. Pollution of marine environment is part of this.
Draft Pollution and Waste Management Bill	Aims to regulates and prevent discharge of pollutants to the air, water and land in Namibia, and to enable the country to fulfil its international obligations in this regard.	It forbids any person from discharging or disposing of pollutants into any water or water course aside from the discharge of domestic waste from a private dwelling or the discharge of pollutants or waste to a sewer or sewage treatment works, without a water pollution licence.

## Initiatives and Programmes

Marine pollution, especially garbage on the beach, has been a growing problem for the coastal towns. These types of pollution such as plastics, ropes, fishing nets, lines, bottles, cans etc. can be just as deadly to marine life as oil or chemicals. Fish and marine mammals can in some cases mistake plastics for food and can also become entrapped in plastic ropes, nets, bags and other items as – even such innocuous items as plastic rings to hold cans of soft drinks together. It is clear that a good deal of the garbage washed up on our beaches comes from people on shore – holidaymakers who leave rubbish on the beaches. Most of the rubbish found is believed to come from ships anchored at the midwater that find it convenient to throw rubbish overboard rather than dispose it off in ports. For a long while, many people believed that oceans could absorb anything that was thrown into them, but this attitude has changed along with greater awareness of the environment.

Currently there is no formal waste or litter minimization/pollution prevention Programme in Namibia. To address the problem of ship generated garbage on our beaches, and in our marine environment, a number of stakeholders came together to establish the Coastal and Marine Pollution Prevention Coordination Committee (C&MPPCC) whose mission is *“to promote the protection of the marine environment through coordination”*. The C&MPPCC then found it necessary to embark on a campaign *to educate and raise awareness on the impact and the effects of marine pollution on our marine environment and most importantly on our marine resources*. Two task groups have been formed in the C&MPPCC to address various issues related to the problem of coastal and marine pollution to spear head the campaign (one task group on legislation and the other on awareness raising). The C&MPPCC was established two years ago. This committee constitutes the following major stakeholders: Ministry of Works, Transport and Communication – Directorate of Maritime Affairs in South Africa, Chairpersons Ministry of Fisheries and Marine Resources – Research and Inspectorate Directorates, Fisheries Observer Agency, Namibian Port Authorities (NAMPORT), Municipality of Walvis Bay (Environmental Management Section) Secretariat, and meets on a regular basis. To date the committee has produced information leaflets and posters and is now planning to produce digital information in this regard.

According to the State of Environment Report of Namibia, marine pollution is not very widespread, since most of the coastline is devoid of habitation. The highest concentrations occur in Walvis Bay, Namibia's largest shipping port. This originates from effluents used in fish factories, and hazardous substances used in repair and maintenance of fishing vessels and other ships. It has not happened yet, but there is always a possibility of major pollution events from oil tankers which travel along the coast.

The Municipality of Walvis Bay also has a bylaw which addresses beach littering. This bylaw provides the regulations relating to the control of the sea-shore, the sea and its environment with or adjoining the area of jurisdiction of the Municipality of Walvis Bay. The regulations address all sorts of issues relating to bathing area: e.g. dumping, depositing and leaving materials that affect the cleanliness of seashores, the beach area and its environment in any way that infringe the health, safety and comfort of other users. The regulations further address the aspect of prohibition of recreational activities in restricted areas. Of these regulations, is a regulation that is specific on anglers, prohibiting them not to leave bait, fish offal or refuse on the sea shore. Making of fires unless in a container along the seashore is prohibited. The bylaw also addresses the illegal camping along the beaches as an offence unless prior approval is obtained from the local authority. According to the regulations, offenders are fined and imprisoned, however, the fines in the regulations depending of the transgressions shall not exceed N\$ 1000.00 or imprisonment should not exceed three months.

## **Discussion**

In general there is no specific legislation that regulates marine litter and waste management in Namibia, although there are references to marine litter/pollution waste in several Namibian Acts. As a result, there is no uniform policy or practice concerning marine litter waste management and disposal. Most of Namibia's legal and institutional framework for pollution control and waste management is contained in a number of pre-independence statutes applied during the period of South African rule. Many existing statutes and regulations are of South African origin and are no longer appropriate in an independent Namibia; it can in practice be difficult to determine which laws or parts are

currently in force in Namibia<sup>21</sup>. In the absence of equivalent Namibian legislation, the South African legislation still applies de facto. How this legislation should be applied, or who in Government is charged with the responsibility of enforcing it, is open for debate. Namibia does not currently have a separate formal policy on pollution control and waste management.

Several provisions on pollution control and waste management are contained in sectoral legislation, such as mining and petroleum legislation, although these are likely to offer little practical protection to the environment. Namibia is party to a number of international agreements relating to pollution control and waste management including the Montreal Protocol and the Basel Convention. It does not appear that Namibia is currently fully in compliance with its obligations under international law. The legislative approach is outdated, fragmented and sectoral rather than integrated, with little opportunity for public participation.

**Some of the weaknesses and threats identified are:**

- Environmental legislation tackling litter prevention and waste management is outdated and fragmented.
- Development of the Environmental Management Bill begun in 1996 but has not been submitted yet to parliament; the Environmental Management Act needs to be enacted for implementation to begin.
- A new Pollution and Waste Management Bill has also been developed and should be enacted to replace some other fragmented legislations currently in use.
- Marine litter provisions are contained in sectoral legislations and various different ministries and agencies hold direct or indirect responsibility for the implementation of these statutes. There are currently few formal mechanisms to promote co-operation between the various responsible agencies at ministerial level.

---

<sup>21</sup> Ministry of Environment and Tourism, 2001. *State of the Environment Report on Waste Management and Pollution Control in Namibia*. 2001



- The ministry that has environmental issues as a primary concern, the Ministry of Environment and Tourism, currently has no formal role in pollution control and waste management. Efforts to improve co-ordination between public bodies in Namibia include the various measures proposed in the draft Environmental Management Bill. The consequences of this situation are that, apart from the lack of coordination, there is no agency able to take the lead on pollution control and waste management.
- There is no general legislation that regulates litter prevention and waste management in Namibia, although there are references to waste in several Namibian Acts. As a result, there is no uniform policy or practice concerning waste management and disposal.
- Namibia does not currently have a separate formal policy on pollution control and waste management. Nevertheless, there are a number of references to these issues in Namibia's Green Plan. The Green Plan notes the need for new comprehensive legislation to address effluent treatment and disposal methods and standards. It also states that: 'More effective legislation is needed to control pollution. An awareness of polluter responsibility should be promoted and fines increased in line with current market values'.

### **5.1.3 Marine Litter Legislation and Initiatives in South Africa**

#### **Policies and Legislations**

The South Africa Constitution and a series of laws and policies give rise to rules and principles that govern marine pollution in South Africa and which give effect to the International Conventions South Africa has ratified.

#### **International Framework**

A range of international conventions, agreements and protocols provide a regulatory framework for managing marine litter. The United Nations Convention on the Law of the Sea (UNCLOS) unifies many of these Conventions and acts as the international legal framework for provisions relevant to marine litter in Agenda 21 as well as for

international Programmes dealing with marine litter and other sources of marine pollution.

Other International Frameworks that South Africa is party to are: Convention of the International Maritime Organisation, Convention on the Territorial Sea and the Contiguous Zone, International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil, Convention for the prevention of Marine Pollution from land-based sources, United Nations Convention on the Law of the Sea, Agenda 21 and the Rio declaration on Environment and Development, Convention for the Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and Protocol.

### **National Framework**

The South Africa Constitution and a series of laws and policies give rise to rules and principles that govern marine pollution in South Africa and which give effect to the International Conventions South Africa has ratified. Policies and legislations relevant to marine litter in South Africa are presented in the table below.

**Table 3 Some key legislation in South Africa with relevance to marine litter**

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
<p>Constitution of the Republic of South Africa, Act 108 of 1996</p>	<p>Establishes an environmental right and through other rights (e.g. human dignity, equality, and access to health care, food and water) may impact on environmental protection.</p>	<p>Chapter 1, Section 24 states that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected through the prevention of pollution and ecological degradation.</p>
<p>National Environmental Management Act 107 of 1998 (NEMA)</p>	<p>Provides for co-operative environmental governance by establishing principles for decision making, institutions promoting co-operative governance and</p>	<p>Chapter 1: Principles</p> <p>Chapter 1.22 states that “Environmental Management must place people and their needs at forefront of its concern...”</p> <p>Chapter 1.2p gives effect to the polluter pays principle.</p> <p>Chapter 1.4r states that sensitive, highly dynamic or stressed ecosystems, such as coastal shores, estuaries and wetlands require specific attention especially where they are subject to human resource and development pressure.</p> <p>Chapter 2: Institutions</p> <p>Allows for establishment of a National Environmental Advisory Forum and a Committee for Environmental Coordination.</p> <p>Chapter 3: Procedures</p> <p>Environmental Implementation Plans play a key role as instruments for co-</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		<p>ordination implementation.</p> <p>Chapter 6 makes provision for incorporation of International Obligations and Agreements.</p> <p>Chapter 7, Section 28 promotes duty of care and remediation of environmental damage requiring every person who causes damage to take reasonable measures to prevent this from occurring, continuing or recurring and to rectify such pollution or degradation of the environment.</p> <p>Chapter 7 Compliance, Enforcement and Protection</p> <p>Section 34 makes allowances for Criminal Proceedings against any person convicted of an offence under provisions made in selected Act's including: Act 73 of 1980 – Dumping at Sea Control;</p> <p>Act 6 of 1981 Marine Pollution (Control and Civil Liability)</p> <p>Act 2 of 1986 Marine Pollution (Prevention of Pollution from Ships)</p>
<p>Environment Conservation Act 73 of 1989</p>	<p>Provides for the effective protection and controlled utilization of the environment and matters incidental thereto – a number of provisions were repealed when NEMA came into effect. The laws on littering and waste management</p>	<p>Section 19 - No littering or dumping except in space designated for litter.</p> <p>Authorities are responsible for placing containers or places for litter in all places the public has access to and removing the litter.</p> <p>Section 20 – A permit is required to establish and operate a waste disposal site. The Minister may issue directions with regard to management of such sites and no person can discard waste except at a disposal site with a permit.</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
	<p>remain.</p>	<p>Section 21 &amp; 22 – Deals with identification and prohibition of any activities having a detrimental effect on the environment including but not limited to activities related to waste and sewage disposal, industrial processes, chemical treatment and agricultural processes.</p> <p>Section 24 - Allows the Minister to establish regulations regarding waste management and littering.</p> <p>Section 26 - Allows for regulations with regard to activities identified in Section 21 i.e. with regard to environmental impact.</p> <p>Section 28a - Provides for application for exemption from certain provisions in the Act</p> <p>Section 29 - Allows for penalties and forfeiture for offences</p> <p>NEMA did not repeal section 21 &amp; 24 subject to introduction of impending legislation on waste-management and pollution control.</p> <p>NEMA allowed for repeal of Section 21, 26 and 28 (EIA – Environmental Impact Assessment) with effect from a date to be proclaimed.</p> <p>The Minister issued regulations in terms of Section 32 on general policy for issues concerning pollution control and international cooperation, among others. These were published in the Government Gazette (GN 51/15428/32; 21/1/94) – see below.</p> <p>Similarly regulations were published in various issues of the Government</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		<p>Gazette on Environmental Impact Assessment and Waste Management concerning identification of waste, regulations and applications for waste disposal sites (see below).</p> <p>Certain draft Policies and White Papers were proposed including hazardous-waste management, Integrated Pollution and Waste Management and Draft regulations on Environmental Impact Assessment.</p>
<p>General Policy in Terms of the Environment Conservation Act 73 of 1989</p>		<p>Calls for a national strategy for integrated waste management and pollution control in which the elements of accountability, responsibility, minimizing, treatment and reuse enjoy priority.</p> <p>No hazardous waste will be imported into South Africa unless in accordance with international agreements. Disposal should be limited to acceptable standards and management arranged in accordance with international standards.</p> <p>International and regional co-operation in environmental matters will be extended.</p>
<p>Regulations under Section 21 of the Environment Conservation Act 73 of 1989 – Identification of Activities which may have substantial</p>	<p>Identifies activities that damage the environment.</p>	<p>This includes the construction or upgrading of sewage treatment plants and associated infrastructure and the disposal of waste in terms of Section 20 of the Act.</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
detrimental effect on the environment		
Environment Conservation Act 73 of 1989 – Identification of Matter as Waste.	Identification of waste.	Waste is identified as any matter discarded, stored for discarding or stored for recycling (with key exceptions).
Regulations regarding activities identified under Section 21(1) of the Environment Conservation Act 73 of 1989.	Regulations apply to sewage treatment plants and disposal of waste.	Responsibility by both applicant and authority to ensure competent consultant appointed to conduct Environmental Impact Assessment (EIA).  EIA procedure includes application, plan of study for scoping, scoping report, plan of study for environmental impact assessment, submission on environmental impact report, consideration of application and record of decision. Also allows for appeal and access to information.
Regulations under the Environment Conservation Act 73 of 1989 – Waste Disposal Sites	Application form for waste disposal site	Important criteria include proximity to airports, water, residential and industrial areas. Prevailing wind direction and wet season, size of nearest population.  Lifetime, type and volume of waste, method of disposal, adjacent land use and underlying geology.
Dumping at Sea Control Act 73 of 1980	To provide for dumping of substances at sea, sea referring to the territorial waters and waters contained in the exclusive	Dumping/disposal/loading of scheduled items including deliberate of sinking of vessels/platforms/aircraft containing scheduled items is prohibited unless to save a life or avoid damage and a permit is required for dumping/disposing of any

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
	<p>economic zone as referred to in the Maritime Zones Act 1994 (Act 15 of 1994). It also applies to South African registered vessels on the High Seas.</p>	<p>other item under penalty of law.</p> <p>Prohibited substances include: Organohalogen compounds, mercury and its compounds, cadmium and its compounds, persistence plastics and other synthetic materials, high level radio active waste, substances used for chemical and biological warfare.</p> <p>Restricted Substances include arsenic, lead, copper, zinc, beryllium, chromium, nickel, vanadium and their compounds as well as organosilicon compounds, cyanides, fluorides, pesticides and their by-products, containers scrap metal or other substances which because of their bulk will interfere with fishing or navigation, radio-active waste not prohibited and ammunition.</p> <p>Permits take into account the characteristics and composition of the substance, the dumping or disposal site as well as the method of deposit including general considerations – effects on amenities, marine life, other uses of the sea and practicality of alternative land-based methods.</p> <p>The Act also allows the Minister to make certain regulations regarding dumping at sea.</p>
<p>Marine Pollution (Control and Civil Liability) Act 6 of 1981</p>	<p>Provides for protection of the sea from pollution by oil and other harmful substances to give effect to the International Convention for the Prevention of Pollution from</p>	<p>The 1992 regulations on prevention of pollution by garbage from ships arose under this Act as well as the 1992 regulations on the need for harbour's to establish reception facilities for garbage from ships.</p>



LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
	Ships 1973 as amended by the Protocol of 1978	
Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 – Prevention of Pollution by Garbage from Ships Regulation, 1992	Protection of territorial waters and fishing zone from pollution.	Regulates the dumping of garbage from ships.
Marine Pollution (Intervention) Act 64 of 1987	Protection from pollution by activities on the High Seas	Gives effect to the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution and to the Protocol Relation to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil 1973. The Act allows Minister to establish regulations in this regard – none had been promulgated by 1998.
White Paper on Integrated Pollution and Waste Management for South Africa, 17 March 2000	Policy on pollution prevention, waste minimization, impact management and remediation.	<p>Previous legislation has a limited effect because it focuses on disposal and impact and responsibility is scattered. The resulting lack of adequate collection and disposal services is an infringement of the basic human right for a safe and healthy environment as upheld by the Constitution.</p> <p>The White Paper states that “Pollution prevention is one of the most effective means of protecting South Africa’s people and environment.”</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		<p>Accordingly the White Paper focuses on prevention, integrated and holistic management across the entire waste-management chain, as well as partnerships and co-operative governance to eliminate fragmentation, duplication and lack of co-ordination and to rationalize existing legislation into single piece of legislation dealing with pollution and waste.</p> <p>The goals, objectives and short term deliverables of the White Paper will act to reduce waste at point before it enters the waste stream, promote recycling or reuse of waste that is produced, improve waste disposal and remediation efforts.</p> <p>The goals and objectives of the White Paper outlined in Section 5 include:</p> <p>Goal 1: Effective Institutional Framework and Legislation</p> <p>Goal 2: Pollution Prevention, Waste Minimization, Impact Management and Remediation</p> <p>Goal 3: Holistic and Integrated Planning</p> <p>Goal 4: Participation and Partnerships Management Governance in Integrated Pollution and Waste</p> <p>Goal <b>5</b>: Empowerment and Education in Integrated Pollution and waste Management</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		<p>Goal 6 : Information Management</p> <p>Goal 7: International Cooperation</p> <p>The White Paper also developed a National Waste Management Strategy with short term Application Plans to implement the policy. The short-term (2000-2004) deliverables of the action plan are listed under the objectives for each goal. Included in these deliverables are Local Government General Waste Management Plans which will feed into a broader Provincial Government Waste Management Plan that will form an integral part of Provincial and National Environmental Management and Implementation Plans.</p> <p>In terms of Governance DEA&amp;T is the lead agent that must ensure policy development, coordination, implementation, etc. Department of Waster Affairs &amp; Forestry, Department of Minerals &amp; Energy, Department of Agriculture and Department of Health have these responsibilities within their Media or Sector. Provincial Government is responsible for monitoring and enforcement and where necessary develop provincial legislation. Local government is responsible for service delivery.</p> <p>Besides Government the White Paper also recognizes the importance of partners in managing waste including industry, NGO's, civil society and the public.</p> <p>The summary of the International Conventions South Africa is party to indicate that while we have ratified Conventions to regulate marine pollution and dumping</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
		<p>of garbage from ships we have not yet ratified the convention to reduce land-based pollution of coastal and in-land waters. However, reduction of land-based pollution is a focus of the White Paper for Sustainable Coastal Development and the United Nations Law of the Sea Convention which South Africa has ratified.</p>
<p>White Paper for Sustainable Coastal Development</p>	<p>Sets out a Policy that aims to achieve sustainable coastal development in South Africa through integrated coastal management.</p>	<p>One of the key elements relating to the goals and objectives of the White Paper is Pollution Control and Waste Management. This focuses specifically on prevention, minimization and control as well as human ecosystem health. The goal is to strictly control harmful discharges into coastal ecosystems either from land-based or marine sources and to ensure effective anticipatory and reactive methods to reduce consequences of coastal pollution disasters and hazards. The goal is also to manage polluting activities to ensure they have minimal adverse impacts on the health of coastal communities and ecosystems and their ability to support beneficial human uses by minimizing discharge of organic and biodegradable substances as well as pollutants and waste, and staying within carrying capacity and limiting levels so they don't effect human health, use and enjoyment of the coast.</p>
<p>Regulations under section 24(d) of the Environment Conservation Act, 1989 (Act No. 73 of 1989) (2002)</p>	<p>Plastic Bag Regulations Deals specifically with thin film plastic bags that are not reusable and of little commercial value for recycling and are an increasing problem to the environment, particularly in low</p>	<p>2. Prohibition of certain plastics Section 2 prohibits any manufacturing, trade, and commercial distribution of plastic bags, for use within the Republic of South Africa, with wall thickness less than 80 micrometers (microns), except in certain instances.</p> <p>4. Offences and penalties</p>

LAW/ POLICY	KEY ELEMENTS	RELEVANCE TO MARINE LITTER
	income areas where waste collection is poor.	Section 4 states that any person who contravenes any provision of these regulations shall be guilty of an offence and liable on conviction to a fine not exceeding R100 000 or to imprisonment for a period not exceeding 10 years, or to both such fine and such imprisonment, and to a fine not exceeding three times the commercial value of any thing in respect of which the offence was committed, and, in the event of a continuing contravention, to a fine not exceeding R250 or to imprisonment for a period of not exceeding 20 days or to both such fine and such imprisonment in respect of every day on which such contravention continues.

## **Initiatives and Programmes**

The Department of Environmental Affairs & Tourism (DEA&T) is taking a lead role in developing strategy and programmes to improve pollution and waste management in South Africa. These activities fall mainly under the umbrella of the White Paper for Integrated Pollution and Waste Management (2000), the White Paper for Sustainable Coastal Development (2000), the Expanded Public Works Programme and in the BCLME Region, the International Global Programme of Action which is closely linked to the Regional Seas: West and Central Africa Programme. An overview of the strategy and programmes being employed is provided below, together with an in depth review of a Programme directly aimed at dealing with litter in coastal areas.

### **National Waste Management Strategy (NMWS)**

General policy reform post 1994 led to the development of the White Paper for Integrated Pollution and Waste Management (2000). With the support of the Danish Government the policy process was further developed into a National Waste Management Strategy (NWMS). The goals of the NWMS project included the development of strategies for integrated waste management, the development of action plans to implement the identified strategies and capacity building within DWAF and DEA&T to implement the action plans. The project was completed in 1999. Following further negotiations with the Danish Government a National Waste Management Strategy Implementation project was initiated with support of the Danish Government. The project was delayed due to various reasons and eventually started in 2004 and will end in 2006. This project focuses on three short-term priority areas identified by the NMWS, namely, Health Care Waste Management, a Waste Information System and Recycling. The overall project objective is: *“Reduced generation and environmental impact of all forms of waste, so that the socio-economic development of South Africa, the health of its people and the quality of its environmental resources are no longer adversely affected by uncontrolled and uncoordinated waste management.”* The immediate objectives are:

Objective 1 Improved Health Care Waste Management.

Objective 2 Waste Information System is established and in use.

Objective 3 Recycling of waste is increased and extended.

Objective 4 DEA&T is capacitated to take full control of NWMS.

And the outputs are:

Output 1.1 Projections for HCRW generation and treatment.

Output 1.2 Develop models and tools for HCW management.

Output 1.3 Needed information from WIS specified.

Output 1.4 Crosscutting issues (capacity building, legal and institutional matters, planning, funding) addressed.

Output 2.1 WIS software developed.

Output 2.2 Data reported to the WIS.

Output 2.3 Crosscutting issues addressed.

Output 3.1 Waste streams prioritized for recycling.

Output 3.2 Recommendations on extended producer responsibility.

Output 3.3 Needed information from WIS specified.

Output 3.4 Increased use of waste exchange system.

Output 3.5 Crosscutting issues addressed.

Output 4.1 DEA&T Project Management.

Output 4.2 Project Relations.

Various activities including pilot projects will be undertaken to achieve the project outputs. The activities and pilot projects instituted under the umbrella of the National Waste Management Strategy will have an indirect impact on marine litter mainly through the improvement of recycling systems, improved availability of information and data through the Waste Information System and improved Institutional Capacity.

## **Working for the Coast Programme**

Policy review post 1994 led to the development of the White Paper for Sustainable Coastal Development. The CoastCare Programme was initiated to implement the goals and objectives of the White Paper. The Blue Flag Beach Programme was initiated under the CoastCare umbrella and will have an indirect impact on marine litter on selected beaches. The Working for the Coast Programme (WftC) was introduced in 2000 under the umbrella of the CoastCare Programme and was funded through DEA&T's Poverty Relief Programme. The Poverty Relief Programme also includes a Waste Management Programme and although this does not focus on coastal areas the "Cleanest Town Competition" acts as an incentive for local coastal municipalities to improve waste collection. The WftC Programme focuses on coastal areas and has a direct impact on marine litter and therefore forms the basis of the following review.

## **The Expanded Public Works Programme (EPWP)**

South Africa's nationwide Expanded Public Works Programme (EPWP) aims to alleviate poverty by creating jobs to deliver needed public goods and services in the short term, and providing work experience and training to participants to increase their potential for earning future income in the long-term.

## **Environment & Culture Sector**

The EPWP provides jobs and delivers services in the infrastructure sector, environmental and culture sector, social sector and economic sector. As such the EPWP involves several departments. The DEA&T has been nominated to lead the Environmental and Culture sector and has developed a sector plan that provides a framework for participation in the EPWP. Their objective is essentially to alleviate poverty by creating jobs, delivering training to participants and delivering needed services in the environmental and culture sector. Core programmes were developed and poverty alleviation projects are undertaken within these core programmes. For the 1999-2002/3 period the core focus areas included Tourism Infrastructure, Tourism Products, Waste Management, Coastal Development and Working for Wetlands. These were further refined for the 2003/4-2009 period to include: Sustainable Land Based



Livelihoods, Working for the Coast (WftC), People and Parks, Working for Tourism and Working on Waste.

### **Working for the Coast**

The WftC Programme originated under the banner of Coastal Development in the 1999-2002/3 period and is referred to as WftC for the 2003/4 – 2009 period. The WftC Programme seeks to use coastal resources to develop coastal communities and at the same time protect and rehabilitate these resources. Several projects are funded by the Programme. The exact description and output of the projects vary slightly from place to place but they generally encompass the following activities:

- Cleaning of coastal areas on a regular basis of all litter and to recycle this as appropriate
- Assisting with maintenance of public facilities (ablution blocks, parking areas, picnic sites, etc.)
- Rehabilitation of coastal ecosystems
- Assisting with access control
- Serving as information and tourist officers
- Patrolling beach and public areas to ensure safety of the general public and tourists, and to safeguard integrity of facilities
- Identifying sick and injured animals on the beach and reporting to the implementing agent

### *Management*

The original Programme had a national Programme coordinator and assistant as well as a national service provider appointed to design and coordinate the education, training and development (ETD) component. They were supported by the Poverty Relief Unit. An Implementing Agent was appointed to implement an individual project on the ground and a service provider was appointed to assist the implementing agent with the design and delivery of the ETD component.

The national Programme coordinator and ETD service providers eventually fell away due to uncertainty about continued funding after the first year. At first the Programme continued to be coordinated by Marine & Coastal Management with support from the DEA&T Poverty Relief Unit, however, it lacked the focus and cohesion it had originally. The Implementing Agents acted increasingly in isolation and became responsible for delivering training to participants. After a review of the overall Poverty Relief Programme at the end of 2002/3 DEA&T underwent some changes and the WftC Programme is now directly managed through DEA&T's new Social Responsibility Unit. Implementing Agents are still appointed to run individual projects and they have a choice as to whether they will arrange delivery of the training Programme themselves or whether they will transfer this responsibility to DEA&T's national training coordinator for Social Responsibility projects.

### *Poverty Relief*

In terms of poverty relief a review of the 1999-2002/3 Poverty Relief Programme indicated that in 2001 the Coastal Development Programme was allocated R4,658,700 which funded 5 projects, created 431 direct jobs and indirectly benefited 1940 people dependent on those with jobs. In 2002 the allocation increased to R22,150,238 which funded 55 projects, created 1,524 jobs and indirectly benefited 6858 dependents. Since one project generally includes more than one poor coastal community the benefits of the programme were extensive in the coastal provinces of Kwa-Zulu Natal, Eastern Cape, Western Cape and the Northern Cape. Workers earned on average R32.88 per day and indicated that the income helped them to buy food and pay for their children's education, thereby improving their quality of life. In addition to employment the programme also delivered a structured education, training and development programme to participants and improved their skills with the aim of placing them in a better position to obtain a job or start a small business after the project. Further benefits to coastal communities included the involvement of 6 and creation of 3 new SMME/BEE's in 2001 and the involvement of 47 and creation of 13 new SMME/BEE's in 2002.

The EPWP Consolidated Programme Overview and Logical Framework for the 2003/4-2009 period indicates a further expansion of the WftC programme with the goal of

cleaning and upgrading facilities along 700 kilometres of coast. Virtually all the communities on the coast from Cape Town to the Orange River (i.e. within the BCLME region), will now benefit from the programme. The budget allocation increased from R37.4 million to R39.7 million to R41.2 million over the 2004/5 – 2006/7 period. For the total investment of R119.2 million the WftC Programme aims to create 17740 jobs (equating to 8870 person years) and deliver 195136 training days.

### **Benefits to the Environment – Marine Litter**

In terms of the benefits to the environment by removal of land-based sources of marine litter, reports from Implementing Agents indicate that the amount of waste collected varies from place to place and seasonally. Dr Neil Malan from Marine & Coastal Management, who is responsible for the implementation of the CoastCare Programme and was involved in initiating the WftC programme, stated that data on the amount of refuse was initially collected but the practice lapsed. However, the DEA&T review of the Poverty Relief Programme analysed the WftC South Peninsula project and revealed that 24 participants collected about 15,000 refuse bags of waste from 60km of coast in just over a year. The project aimed to collect 1,000 refuse bags per month. During interviews for a feasibility study (2004) on a proposed new WftC South Peninsula project the Implementing Agent, Mr Wolly Peterson, stated that the refuse is collected from beaches, harbours/slipways, scenic drives, storm water drainage areas and key rivers/wetlands. He estimated that annually, approximately 63 tons of the refuse collected was reused/recycled at the existing Kommetjie Environmental Action Group Recycling Centre. The reused/recycled waste included an estimated:

18 tons (1.5 tons per month) of newspaper and cardboard;

3 tons (250kg per month) of cans;

36 tons (3 tons per month) of glass; and

6 tons (500 kg per month) of waste (mainly plastic) that is turned into crafts.

The KEAG Recycling Centre currently supports one person but Mr Peterson felt that the recycling centre could become self-sustaining and provide permanent employment for at least two people, this being one of the goals of the proposed new WftC South Peninsula

Project. Fifteen people are currently generating an income from the craft from waste spin off project and Mr Peterson aims to assist them in growing the craft from waste project into a sustainable small enterprise.

This example indicates that the WftC programme can improve waste collection in local coastal communities, harbours, tourism nodes and environmentally sensitive areas along the coast. Furthermore, a substantial amount of this waste can be reused or collected for recycling in small communal waste management centres and sustainable livelihoods can be created based upon the collection, reuse and recycling of waste at community level.

### **SWOT Analysis**

The following SWOT Analysis was drawn up from an analysis of the DEA&T Review of the 1999-2002/3 Poverty Relief Programme, feasibility studies conducted for six new WftC projects for the 2003/4-2006/7 period which included a review of the preceding projects, discussions with Dr Neil Malan from DEA&T and various Implementing Agents, as well as direct experience gained from implementing WftC projects in the Northern Cape and developing and delivering training programmes to WftC teams in the Northern Cape, Overstrand and Wild Coast during the 1999-2003 period.

### **Strengths**

- The original programme and related projects were based on a sound understanding of the principles of Special Public Works Programmes, achieving Integrated Coastal Management through sustainable development and the principles of adult education.
- The original programme design was well thought out and designed around the integration of poverty relief, sustainable coastal development and adult education goals and objectives with adherence to the requirements of Special Public Works legislation.
- The necessary human resources were originally made available to ensure the programme was managed efficiently. The national programme coordinator

ensured the programme adhered to the objectives, provided support to the various role players, ensured good cohesion and communication between the role players.

- The structured Education, Training and Development (ETD) component ensured that emphasis was placed both on working (cleaning) and capacity building in the original programme.
- Following adult education principles the original projects began with an induction meeting between key officials from DEA&T, the Implementing Agent, ETD service providers and project participants thereby ensuring that all parties had a good understanding of the aims and objectives of the project and the various roles and responsibilities of the different parties.
- Steering Committees were set up for some projects initially to ensure ongoing involvement of key role players such as local government and conservation authorities. In some cases regular meetings of Steering Committees have with time changed into functional working relationships that work well for the projects.
- Regular workshops were originally held for Implementing Agents and ETD Service Providers to ensure good communication, integration and lesson learning.
- Project participants were provided with clothing branded with the CoastCare logo which made the project highly visible on the ground.
- Project participants understanding of the coastal environment in which they lived improved and they in turn promoted awareness in communities of the need to care for the coast.
- Project participants understanding of tourism also improved and they were able to assist tourists with information. Their cleaning activities and repair and maintenance of public facilities also supported tourism.
- Depending on the location and needs project participants acquired skills to do basic repairs and maintenance to public facilities, repair and construct paths and board walks, rehabilitate sand dunes and remove alien vegetation. Their activities improved facilities and the environment.
- The programme has been effective in cleaning the coast to the extent that when the teams stop working at least six local municipalities get inundated by calls from people complaining that the beaches or harbours are dirty. In this

way it has also highlighted the short comings of waste collection systems and the need to improve the system.

- Illegal dumping in remote and often sensitive areas was lessened with the creation of proper dumping areas.
- No skills are required and as a result the programme reaches the poorest of the poor, employing many people who have not been employed for several years and who have just left school and have no work experience at all.
- The projects were required from the outset to allocate at least 30% of the budget to community wages. This is far higher than the average of 6.7% of total expenditure estimated for the overall Poverty Relief Programme (1999-2002/3).
- The minimum wage for workers was set at R33/day from the outset which is higher than the average of R28.89 for the overall Poverty Relief Programme (1999-2002/3).
- The duration of the projects was originally for one year with a possible extension to two years, the maximum time a person can receive employment on a Special Public Works Programme. The employment duration for one person was therefore longer than the average 70 days for the overall poverty relief programme (1999-2002/3).
- The cost per person to create one job ranged from R10,809 to R14,534, which is relatively low compared to other poverty relief programmes such as tourism infrastructure and the average of R25,523 for the overall poverty relief programme (1999-2002/3).
- The programme utilizes the services of existing SMME/BEE's (53 in total by 2003) and promotes the creation of new SMME/BEE's (16 in total by 2003).
- On average one percent of the jobs created were permanent with four projects showing the potential to increase this to approximately 30% and in one case 70%. It should be noted that these four projects were all located in urban and peri-urban areas with a relatively affluent private sector, established tourism trade, conservation agencies and local authorities with financial resources to employ the services of the WftC teams. Each project also had a capacitated, locally based Implementing Agent.
- DEA&T's online, web-based system facilities reporting on communication.

- DEA&T's provincial project managers monitor projects on the ground and provide support where necessary. Originally Marine & Coastal Management also did some monitoring of the projects and held regular workshops with Implementing Agents and ETD Service Providers to provide support, ensure good communication and promote lesson-learning.
- Marine & Coastal Management appointed a consultant to conduct an audit of the programme at the end of the first year, so that necessary improvements could be made and successes highlighted.
- The DEA&T review of the Poverty Relief Programme, including WftC, in 2002/3 resulted in key improvements to the original Poverty Relief Programme including renewed focus on the sustainability and training component of the WftC projects as well as support for and regular meetings between implementing agents.
- The Poverty Relief Programme is gaining international recognition.

### **Weaknesses**

- Uncertainty in the continuity of funding and the stop / start nature of the programme after the first year had a negative impact on the degree of success of the programme, affecting morale, the ability to deliver a full two year training programme to participants, the ability to set up small enterprises and create permanent jobs.
- The absence of a national programme coordinator after the first year resulted in gradual fragmentation of the programme until implementing agents were acting largely in isolation of each other. While emphasis on the poverty relief component was maintained by the poverty relief unit and the nature of the activities remained the same, the relation to the overall CoastCare Programme and the implementation of the White Paper for Sustainable Coastal Development was lost, no data on the amount of waste collected was recorded and the structured ETD programme fell away, minimizing the benefits to participants of a longer term training programme. The environmental and education components and the integration with the poverty relief component were left largely up to the Implementing Agents. Therefore, while the programme continued to relieve poverty, improve the environment and capacitate participants and communities in

various ways, the synergy between the different projects was lost after the first year and communication deteriorated.

- Lack of capacity of implementing agents and poor control and monitoring resulted in some projects being behind on schedule and on reporting, and in too few site visits being conducted.
- Lack of capacity of implementing agents and poor business plans lead to reports of some projects having insufficient funds to carry out activities.
- Several implementing agents felt that the ETD programme delivered in the first year did not work well. They felt that while improving literacy and numeracy were important, hard skills were more pertinent in terms of generating income for the project.
- Late payments from DEA&T lead to workers not being paid or paid late.
- Lack of infrastructure (e.g. transport to get people to work / training) made implementation difficult in some instances.
- Unplanned developments also complicated implementation.
- A lack of clarity on the role and responsibility as well as a lack of involvement from the outset of Local Government, Provincial Government and the Community benefiting from the project, was problematic in some instances.
- In some instances there was confusion around the role and responsibility of Steering Committees and Implementing Agents.
- One of the main problems with the WftC programme is the lack of sustainability and low percentage (average of 1% for the 1999-2002/3 period) of permanent jobs created by the programme. Although some projects did demonstrate the potential to increase the number of permanent jobs, this is extremely difficult to do in remote, rural areas where markets and financial resources for the goods and services provided by WftC are limited.
- Not many workers were involved in making management decisions.
- The high visibility of the project on the ground means that incorrect perceptions can easily be created. For example, a poor impression is created by teams wearing WftC t-shirts sleeping under the trees. However, it may very well be



lunchtime. This can easily be corrected by raising awareness among participants of public perception and changing perceptions by for example putting up a simple sign stating that the team is on a lunch break.

## **Opportunities**

### **A. Expand**

- The programme has high employment leverage relative to other poverty relief programmes and therefore has the potential to be expanded provided the sustainability and viability weaknesses can be addressed. This has been the case for the 2004/5-2006/7 period.

### **B. Synergies**

- One of the main potentials lies in the indirect benefit to tourism industry suggesting advantages to linking with other projects with access to tourism markets.

### **C. Improve**

- Increase the benefits to participants by increasing the duration of projects to at least two years.
- Improve the synergy between the different projects under the new umbrella of the Social Responsibility Unit.
- Improve the positive effect of the programme on integrated coastal management through sustainable development by improving communication between the Social Responsibility Unit and Marine & Coastal Management.
- Improve implementation by appointing Implementing Agents with the necessary skills and resources to implement the projects. Where possible appoint a capacitated local implementing agent as this seems to increase the chances of sustainability.
- Improve planning to ensure more accurate business plans, feasible targets and sufficient budgets. The new Social Responsibility Unit has done this by introducing a two phase process involving an initial three month planning phase

- when the business plan is drawn up, followed by implementation of the activities as per the business plan.
- Improve the ability of projects to generate their own income and create permanent employment by focusing on the sustainability aspect of the project up front in the business plan. This is easier in urban and peri-urban areas but the use of innovative approaches in remote, rural areas can assist in creating micro-enterprises. For example, the lack of privacy is a key concern for households on the Wild Coast. To address this concern, individuals from the WftC teams were taught to use the alien ink berry tree to make room dividers. Initial reports were that the room dividers were selling well to locals and visitors. Trade also does not have to have a monetary basis. For example, some waste management projects start off by reusing biodegradable waste to grow vegetables organically in community gardens and then trading a bunch of carrots for magazines, tins or plastic that can be recycled. This may work initially to get micro enterprises established.
  - Improve the geographic spread of the projects to fill in gaps along the coast. In terms of sustainability one should locate projects in areas where they can provide services to commercial activities or local authorities but the problem is poor communities and environmental problems are not always located near these areas.
  - Avoid possible conflict by clarifying the role and responsibility of Local Government, Provincial Government and the Community benefiting from the project up front and involve all the role players in the initiation of the project. Draw in other partners as required during the project and ensure good communication between role players and partners throughout the project. The new Social Responsibility Unit has approached this by ensuring that projects are listed on the Integrated Development Plans for the region, ensuring a letter of support is in place from Local Government before the project starts and requiring that Implementing Agents put an advisory committee in place on which at least Local Government, Provincial Government and the Community benefiting from the project are represented.
  - Improve support to the Implementing Agents and hold regular workshops for the Implementing Agents to improve co-ordination, communication and lesson learning. The new Social Responsibility Unit has introduced this system.

- Improve capacity of the labour force - ensure workers know goals and objectives of the project, clearly define their role and responsibilities and where possible involve them in project management decisions.
- Improve the capacity of participants by focusing on the training component. The new SR Unit has addressed this by appointing a national training coordinator and provincial service providers and offering implementing agents the option of transferring the responsibility of delivering the training component.

#### D. Utilize the Programme Effectively

- Promote growth in the business sector by focusing on utilizing and developing new SMME/BEE's where possible.
- Use the Programme to assist with collection of data for research and monitoring purposes. For example, the amount of waste collected varies from place to place and seasonally. Data on the number of refuse bags collected and an estimate of the volumes of plastic, paper, etc. should be recorded by Implementing Agents monthly. Not only can this be fed into a national data base that will provide a baseline for monitoring waste but the data can be used to set quarterly milestones or targets for projects after the first year. The WftC South Peninsula project is currently assisting South Africa National Parks to train local people to collect pertinent data for monitoring purposes using hand held computers to record the answers to standardized questions developed by SANParks / Scientists. The information from the hand held computers is downloaded and fed into the SANParks database, thereby providing a cost effective manner of collecting information.
- Create informed, capacitated teams capable of providing on the ground assistance to Government for implementation of projects/activities and cost-effective collection of information and rehabilitation.

#### **Threats**

- 4x4 drivers on dunes inhibit dune rehabilitation. New legislation prohibiting vehicles on beaches, except in special circumstances, will help to address this problem.

- Uncertainty regarding future funding and late payments to Implementing Agents.
- Absence of a multilevel communication structure / strategy.
- Lack of permanent employment created.
- Lack of sustainability.

### **National Programmes in relation to International Programmes**

In response to the major problems facing marine and coastal ecosystems and populations, under the international legal framework of Law of the Sea and in line with the provisions of Agenda 21, the UNEP initiated a Regional Seas Programme and later a Global Programme of Action.

The Regional Seas Programme is UNEP's principle intervention around Chapter 17 on Protection of Oceans and Coasts under Agenda 21. Of specific relevance to the BCLME Region is the Regional Seas Programme for the West and Central Africa region. The Regional Seas Programme for the West and Central Africa region was initiated in the 1980's and has an Action Plan underpinned by the legal framework of the Abidjan Convention and Protocol. The Abidjan Convention is in line with the Law of the Sea and Agenda 21. In terms of marine litter the Action Plan and Abidjan Convention calls for contracting parties to take all appropriate measures to prevent, reduce, combat and control pollution from ships, dumping from ships and aircraft and pollution from land-based sources. The Protocol to the Convention calls for collaboration in the event of an emergency.

In November 1995 an Intergovernmental Conference was held in Washington to adopt a Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities. The Washington Declaration on the Protection of the Marine Environment from Land-Based Activities<sup>22</sup> was proclaimed following this conference. Recognizing that some 80% of marine pollution comes from land-based sources the GPA assists states in taking action individually or jointly within their respective policies,

---

<sup>22</sup> UNEP, 1995. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*. United Nations Environment Programme. 1995.

priorities and resources to prevent, reduce, control or eliminate the degradation of the marine environment, as well as to its recovery from the impacts of land-based activities. It calls for participating states to develop of a National Programme of Action and the collaboration of states to produce a Regional Programme of Action for areas where states share the same marine and coastal area (water body). It also points out that a National Programme of Action is some times best developed within the context of a Regional Programme of Action. The GPA is therefore closely linked to UNEP's Regional Seas Programme.

Achieving the aims of the GPA and Regional Programme/s of Action will contribute to maintaining and, where appropriate, restoring the productive capacity and biodiversity of the marine environment, ensuring the protection of human health, as well as promoting the conservation and sustainable use of marine living resources. The following extract from Section V of the GPA outlines the basis for action, objective/proposed targets and activities (National, Regional, and International) that contracting parties need to undertake in terms of litter:

## **H. Litter**

### *1. Basis for action*

*140. Litter threatens marine life through entanglement, suffocation and ingestion and is widely recognized to degrade the visual amenities of marine and coastal areas with negative effects on tourism and general aesthetics. Litter is any persistent manufactured or processed solid material which is discarded, disposed of, or abandoned in the marine and coastal environment, sometimes called marine debris. Litter in the marine environment can also destroy coastal habitats and in some situations interfere with biological production in coastal areas.*

*141. Litter entering the marine and coastal environment has multiple sources. Sources include poorly managed or illegal waste dumps adjacent to rivers and coastal areas, windblown litter from coastal communities, resin pellets used as industrial feedstocks, and litter that are channelled to the marine and coastal environment through municipal*

storm water systems and rivers. Marine litter is also caused by dumping of garbage into the marine and coastal environment by municipal authorities as well as recreational and commercial vessels.

142. While international action has been taken to prevent the discharge of plastics and other persistent wastes from vessels, it has been estimated that approximately 80 per cent of persistent wastes originate from land. Floatable litter is known to travel considerable distances with regional and sometimes broader implications. Resin pellets used as industrial feedstock circulate and deposit on oceanic scales.

143. Uncontrolled burning of litter containing plastics may generate significant quantities of POPs, metals and hydrocarbons which can reach the marine and coastal environment.

## 2. Objective/proposed target

144. The objective/proposed target is:

- (a) To establish controlled and environmentally sound facilities for receiving, collecting, handling and disposing of litter from coastal area communities;
- (b) To reduce significantly the amount of litter reaching the marine and coastal environment by the prevention or reduction of the generation of solid waste and improvements in its management, including collection and recycling of litter.

## 3. Activities

(a) National actions, policies and measures

146. Actions, policies and measures of States within their capacities should include:

- (a) Introduction of appropriate measures -which could include regulatory measures and/or economic instruments and voluntary agreements -to encourage reduction in the generation of solid wastes;

*(b) Installation of garbage containers for citizens in public areas for the purposes of appropriate collection and/or recycling;*

*(c) Establishment and ensuring the proper operation of solid-waste-management facilities on shore for wastes from all sources, including shipping and harbour wastes;*

*(d) Formulation and implementation of awareness and education campaigns for the general public, industry, and municipal authorities, as well as recreational and commercial vessels, on the need to reduce waste generation and the need for environmentally sound disposal and reuse;*

*(e) Increasing local planning and management capacity to avoid location of waste-dump sites near coastlines or waterways or to avoid litter escape to the marine and coastal environment;*

*(f) Formulation and implementation of improved management programmes in small rural communities to prevent litter escape into rivers and the marine and coastal environment;*

*(g) Establishment of campaigns and/or permanent services for collecting solid wastes that pollute coastal and marine areas.*

*(b) Regional actions*

*147. Regional actions should include the promotion of regional cooperation for the exchange of information on practices and experiences regarding waste management, recycling and reuse, and cleaner production, as well as regional arrangements for solid-waste management.*

*(c) International actions*

*148. International actions should include:*

*(a) Participation in a clearing-house on waste management, recycling and reuse, and waste minimization technologies;*

*(b) Cooperation with countries in need of assistance, through financial, scientific and technological support, in developing and establishing environmentally sound waste-disposal methods and alternatives to disposal.”*

South Africa, Namibia and Angola are listed as participating parties for UNEP's Global Programme of Action and the Regional Seas Programme for the West and Central Africa region, although they have not yet ratified these agreements. In South Africa the Deputy Director of Marine & Coastal Pollution Management, Dr Yazeed Peterson from DEA&T, indicated that their activities were aligned with these two Programmes. In this regard they have had no major prosecutions with regards to pollution and dumping from ships and aircraft although he agreed it is difficult to monitor with the vast distances involved, especially at night. They are also in the process of ensuring proper collection facilities are in place at harbours. Much of their work with regard to land-based sources of pollution has been focused on wastewater and he noted that the CSIR has proposed a management system for wastewater in the BCLME region. Dr Peterson identified marine litter as a problem, especially litter carried in storm water runoff into harbours and areas with little circulation. He stated that intervention at a national level was required to address the litter problem that they were behind on GPA activities and that in line with the GPA guidelines a National Programme of Action needed to be developed as soon as possible. As suggested by the GPA it may be better to develop such a National Programme of Action within the framework a Regional Programme of Action for the BCLME Region. The above extract from the GPA on litter provides a starting point for the development of such a National and Regional Programme of Action.

## **Discussion**

Nationally several Acts give effect to the international Conventions ratified by South Africa. In line with UNCLOS and Agenda 21 the White Paper on Integrated Pollution and Waste Management (2000) follows the precautionary approach by promoting reduction of waste at point before it enters the waste stream, promoting recycling or reuse of waste that is produced and improving waste disposal and remediation efforts. This represents a marked improvement over earlier legislation which focused on managing disposal and impact after the event, rather than prevention. One of the key elements of the White Paper for Sustainable Coastal Development (2000) is Pollution Control and Waste Management in the marine and coastal environment. It focuses on both land-based and marine sources of pollution and the impact on coastal ecosystem and



community health. The process of converting the policy outlined in the two White Papers into legislation is underway as part of the implementation of the White Papers.

According to Yazeed Peterson, Deputy Director of Marine and Coastal Pollution from the Department of Environmental Affairs & Tourism (DEA&T) there are some problems with the international and national regulations summarized above. For example the question has arisen as to whether dumping of spoilt cargo represents a “normal ship operation” or not. However, Mr. Peterson also stated that these problems become apparent during implementation and are addressed during the implementation process. On the whole the current international and South African regulations pertinent to marine litter appear to be quite comprehensive and reflective of best practice. Despite this Mr. Peterson stated that marine litter continues to be a problem, particularly the litter carried by storm water run-off into harbours and bays. He indicated that DEA&T’s focus had been on waste-water and not on marine litter per se and that as a matter of priority a National Programme of Action with a section specifically addressing marine litter needed to be developed. This is in line with UNEP’s Global Programme of Action to which South Africa is party.

## **Conclusions**

The discussion in the previous sections indicates that there is great attention paid to policy development on the protection of environment though at different level in the three BCLME countries. The challenge appears to be less on policy development but greater on the implementation of these policies, at least in the case of Namibia and South Africa where policies have matured for longer. In the sections below, the similarities and differences as well as gaps between the legal frameworks of the three countries are presented.

### **5.1.4 Similarities and differences between the three countries**

In all the three BCLME countries there is significant evidence in their national Constitution, policies, long term plans and visions that the countries are concerned about the protection of the coastal environments and possible impacts of various economic activities being undertaken in these areas.

In all three BCLME countries marine litter prevention provisions are covered by legislation. While there is no specific statute dedicated to marine litter prevention in Angola and Namibia, in South Africa the general environmental legislation is better developed, with specific elements dedicated to marine litter control<sup>23</sup>.

In South Africa the general environmental legislation is further developed and the implementation level is better integrated than in Angola and Namibia. In Angola, there is lack of co-ordination between the Environmental Framework Law and other sectoral legislation. In Namibia various different ministries and agencies hold direct or indirect responsibility for the implementation of statutes containing provisions on marine litter prevention. Currently, there are few formal mechanisms to promote co-operation between the various responsible agencies at ministerial level. At the same time, the one Ministry that has environmental issues as a primary concern, the Ministry of Environment and Tourism, currently has no formal role in pollution control and waste management. The consequences of this situation are that apart from the lack of coordination, there is no agency able to take the lead on pollution control and waste management.

While there is a dedicated waste legislation in South Africa, this is not the case in Namibia and Angola, and therefore a general framework for waste prevention and management is lacking. While the environmental legislation is well developed in South Africa, in Angola the Environmental Law has not been complemented with the relevant regulations to enable effective implementation, including pollution, waste management and water quality. In Namibia the environmental legislation is outdated, fragmented and the environmental management act has not been passed yet.

At the same time, there is a marine litter dedicated Programme<sup>24</sup> in South Africa, but no formal waste or litter minimization/pollution prevention Programme in Angola and Namibia.

---

<sup>23</sup> White Paper for Sustainable Coastal Development and the White Paper on Integrated Pollution and Waste Management (2000).

<sup>24</sup> Coastcare Programme

### **5.1.5 Recommendations**

The following recommendations are made in response to the legislative review at national and international level as well as the overview national, regional and local programmes in all three BCLME Countries.

- In the case of Namibia and South Africa, too many laws are in place already; what is needed in Namibia is the enactment of draft Bills into laws for implementation and effective enforcement. In the case of Angola there are still gaps in the legislation that need to be covered to ensure effective control of marine litter (and waste in general).
  
- The legal frameworks for marine litter for the three countries are very different and are in different stages of development. Harmonization should be directed at the general and sectoral legislation for environmental protection in each country, and at responding to international conventions that the three countries are parties to.
  
- Harmonization could be sought on the programmes and local initiatives tackling marine litter at regional and local level in the three countries, by using 'lessons learned' and sharing experiences between them.
  
- Much could be learned from the Coastcare Programme in South Africa and 'lessons learned' from the Programme could be shared with Angola and Namibia to develop similar initiatives at the national level.
  
- Sharing of experiences and knowledge should also be sought at the sectoral level, in terms of best practice and guidelines for economic activities that can be sources of marine litter and pollution such as fishing, tourism, mining and oil activities.
  
- With the assistance of the Global Programme of Action and Regional Seas Programme a Regional Programme of Action needs to be developed for marine litter for the BCLME Region.

- A National Programme of Action should be developed within the context of the Regional Programme of Action for South Africa, Namibia and Angola.
  
- National and Regional Programmes of Action should be drawn up with the cooperation of national, regional and local spheres of government who will likely be the executing agents, and in collaboration with NGOs and local associations that will have key roles in implementation.
  
- Partnerships with existing programmes (e.g. NWMSI, WftC, etc.) should be developed to maximize synergies and minimize duplication and expenditure.
  
- A Working for Coast type programme or series of projects with a focus on improved waste collection, reuse, recycling and awareness raising, should be expanded into Namibia and Angola, to provide support for implementation of the above mentioned Regional and National Programme of Action in a manner that not only addresses the marine litter problem but also poverty in coastal communities.

It is recommended that the following be considered when drafting action plans and projects:

- Information needs to be sourced and made easily accessible to ensure decisions are made with the right understanding. This includes data on the sources, quantity and impact of marine litter, the standards to aim for in terms of limiting marine litter in the environment as well as information on the progress, successes and challenges of interventions made in this regard. Mechanisms such as [www.dlist-benguela.org](http://www.dlist-benguela.org), [www.bclme.org](http://www.bclme.org) or the Waste Information System being developed through the NWMSI are useful vehicles for making information accessible.
  
- The reality of the sheer distances involved, volumes of litter and number of resident and transitory people along the coast make it difficult to enforce legislation and for any one entity to cope with the problem. To counter this, a mindset of Individual

Responsibility for preventing, reducing, reusing and recycling litter needs to be cultivated. Individual Responsibility refers to an individual person, ship, business, organization or association of any sought. In a post-war scenario and with a populated coast, Angola needs to give special attention to creating individual responsibility and raising awareness of the marine litter problem – not only in coastal communities but also all users of the coast including fishers, tourist operators and oil companies.

- Raising awareness is key to cultivating a mindset of Individual Responsibility. It needs to be made clear to individuals what Government requires them to do and what targets (standards) they should set for themselves. Crucial to this approach is also to point out the benefit of Individual action as soon as it becomes apparent. For example cleaner towns and beaches improve the general well being, health and promote tourism. By pointing out the connection one brings home the realization and empowers individuals with the knowledge that they can do something to improve their life. One of the very real problems faced by WftC teams is the lack of realization and sense of disempowerment found in poor coastal communities. As a result this people have the mindset that throwing paper down gives someone a job and that it is someone else's job to pick up the paper, so when the WftC project stops the streets and beaches soon fill up with litter again. This problem needs to be tackled at the source through the promotion of Individual Responsibility and Individual Empowerment brought about by the realization of the benefits of Individual Action.
  
- Part of Governments responsibility with respect to the above approach should be to make it easy for individuals to take responsibility by, for example, collecting different types of waste on different days, privatizing waste collection and redesigning dumpsites around recycling principles such as in Walvis Bay, supporting communal waste management centres, promoting the idea of cash returns on cans as well as bottles and promoting the development of cost effective, environmentally friendly technology that will allow individual households, ships, businesses, etc. to deal with their waste at "home", so as to minimize the amount of waste entering into the public waste stream. The technology should be appropriate to the area in question, for example, developing technology powered by electricity is inappropriate in remote rural areas with no electricity. Mechanical or solar powered technology would be more

appropriate. There are probably as many ideas as there are individuals as to how things can be made easier to prevent, reduce, reuse or recycle waste. Sharing of ideas and experiences should be promoted and made accessible through the information sharing systems referred to above.

- With innovation it is possible to use waste to create sustainable livelihoods in coastal communities. Key to the creation of sustainable livelihoods is improving waste collection and redesigning dumpsites to facilitate recycling and reuse. This can be done on a small-scale at communal level as demonstrated by the WftC Programme or on larger-scales at a Municipal level as demonstrated by the Walvis Bay Municipality. Even if communal waste management centres in remote areas need to be subsidized to some extent, it may represent savings in terms of the cost of collection and dealing with negative health and environmental impacts of poor waste management.
  
- Current policy and legislation at international and national level (in South Africa) is relatively comprehensive in terms of state of the art integrated waste management and provide an immediate framework within which implementation can occur. Efforts should be focused on implementation and generating visible results on the ground as soon as possible. Programmes such as WftC can be useful in this regard. The realities of trying to implement activities on the ground can then be used to inform further programme, policy and legislative reform. In the case of Angola, where policies and legislation still need to be further developed and complemented, the required policy formulation processes should be accompanied by awareness raising efforts and demonstration projects that can show results on the ground.
  
- Ongoing monitoring and evaluation programmes should play a key role in collecting data to inform sound decision making around management of marine litter. While monitoring and evaluation programmes and the setting of standards should be scientifically designed, managed and verified, the WftC programme shows that it is possible using simple technology to train teams of people from coastal communities to collect objective data and to send that data via internet to a central collation point for scientific analysis and interpretation. This may prove a more effective and less costly

means of building comprehensive data banks to inform decision making and reporting on waste management, the State of the Coast or State of the Environment Report for example. This aspect is particularly important in Angola, where information in many environmental fields including waste management is still poor. Major efforts are now being undertaken to build more solid databases (such as the Country Environmental Profile) and collection of waste data will be key to inform and support effective waste management. The fishing cooperative system that is growing in Angola can have a fundamental role in data collection and monitoring in coastal communities.

- It is vital that analysis of data take place regularly and those regular reports are made to management structures so they can reflect and revise management plans and activities accordingly. The frequency with which this needs to occur will likely become more apparent as more is understood about the nature and pattern of the marine litter problem.

## **5.2 Output 2: Awareness Raising Activities**

Marine litter surveys, beach cleanups, preparation of posters and theatre plays were some of the awareness raising activities that have been undertaken in the pilot sites in Namibia (Walvis Bay) and Angola (Buraco and Mabunda). The project objectives in terms of awareness raising have thus been accomplished to a great extent. The activities were interactive and have raised the interest of the target groups. The students in all schools involved were very enthusiastic and became more conscious of the problem of marine litter. In the Angolan sites, due to the vast quantities and nature of the litter found on the beaches, the material available for the project was insufficient. This is the case also in the beach cleanups that the Buraco community undertakes regularly.

Local authorities have also showed great interest in the project. In the case of Walvis Bay, matching funds have been provided to implement an outreach programme geared towards the general community of Walvis Bay, and support has been given to the idea of pursuing the project further. In the case of Angola, the municipal administration was very receptive and suggested follow-up activities.

### **5.2.1 Pilot Site: Walvis Bay, Namibia**

#### **Description of activities**

As part of outcome 3 of Marine Litter Programme, Walvis Bay has been selected as a pilot site for marine litter awareness raising activities in Namibia. The activities were coordinated by the project team from Cape Town together with a local assistant in Walvis Bay, Theobald Mukena of Coastal Youth Club in Walvis Bay – CYC. From the 22<sup>nd</sup> -25<sup>th</sup> May 2006 a week's long marine litter awareness activities were carried out. These included interviews with stakeholders from institutions that have mandates in addressing marine litter, a workshop on marine litter and a survey together with the Kuisebmond Secondary School teachers and learners as well as CYC members. The main objectives of these activities were to assess type of marine litter, main sources of marine litter, the extent of marine litter problem, impacts of marine litter and possible ways to reduce litter including opportunities for reduction, reuse and recycling.



## **Activities**

Interviews with stakeholders from the Municipality of Walvis Bay, Ministry of Fisheries and Marine Resources, Ministry of Work Transport and Communication, Namibia Ports Authority and Coastal and Marine Pollution Reduction Coordination Committee to get an understanding of what these respective institutions are doing in addressing marine litter were undertaken.

A survey on marine litter was conducted at the Independence Beach. The Independence Beach is regarded as a “hotspot” for marine litter in Walvis Bay. Learners, teachers from Kuisebmond Secondary School; and CYC members participated in this survey. The participants were briefed on the survey methodology to be used. The group was then divided into three groups of four persons. Three persons collected the litter while the last person recorded the data on the data sheet provided. Six transects were set. Litter was collected within transects and weighed but not sorted due to time limitations. The litter was then transported by the Municipality (which also provided transportation for the participants to and from the beach and the plastic bags for the litter) to the landfill site. 1, 800 g of litter (un-sorted) was collected in the six transects and weighed.

After interviews and survey on marine litter with the said stakeholders, all participants gathered for a one day workshop on marine litter. The aim of the workshop was for the stakeholders interviewed to speak directly to the learners and coastal youth club members involved in this initiative about the seriousness of the issue of marine litter. This workshop was an open forum. Issues on marine litter and other environmental issues pertaining to the coastal areas were discussed. Other stakeholders present included NACOMA Programme Coordinator. Officials from the Municipality of Walvis Bay discussed the municipality’s mandate towards marine litter and made it clear that the municipality is ready to assist any local project that tackles environmental management through its Environmental Fund Initiative. In the conclusion, more discussion on the up coming World Environment Day took place.

Since the World Environment Day, 5 June 2006, was just around the corner, participants decided to take the opportunity to commemorate the World Environment Day by holding a clean up campaign. Participants started off with the planning of this celebration. A committee was chosen to spearhead the activities. Institutions to provide assistance were identified (Walvis Bay Municipality, NAMPORT, some fishing companies) as well as DLIST- Benguela Project and the Marine Litter Programme (to co-sponsor this activity) It was decided that since the 5<sup>th</sup> June 2006 was a Monday that the beach clean up takes place on the 3<sup>rd</sup> of June. Please refer to annex for the World Environment Day Report.

## **Results**

### **Types of Waste**

Results from the interviews, discussions and survey undertaken have enabled the identification of the following types of solid waste: **Plastics** (water bottles/ bags/ ropes/ string/strings / caps), **Bottles and Glasses** (glass bottles / broken glasses), **Papers** (carton boxes / papers / cigarettes packets & bugs), **Others** (foam boxes /wood & plank pieces) and **Cans** (cool drink & beer cans).

### **Origins of Waste**

The source of marine litter in Walvis Bay is the fishing industry with the litter circulating out of the breakwater and then eventually being dumped on the beach and alongside the sea. Another important source of marine litter identified is the general community as well as tourists who use beaches during weekends or public holidays or those over night camping as well as attendees of events such as parties on beaches. Archers are also significant contributors to the problem. Most litter emanates from ships anchored at the midwater; particularly plastic bottles. One important observation emphasized was that the problem of marine litter is seasonal. This problem is severe especially during the festive season.

### **Challenges and Possible Solution of marine litter**

The issue of jurisdiction when it comes to marine/coastal issues is often a problem. Three different government bodies (Ministry of Environment and Tourism, Ministry of Fisheries and Marine Resources; and Ministry of Works Transport and Communication

have jurisdiction for areas where the litter situation is problematic. The Ministry of Fisheries and Marine Resources claims jurisprudence over the area below the Low Water Mark (LWM), the Ministry of Environment and Tourism oversees the area above the High Water Mark (HWM) and the Walvis Bay Municipality is often found to be responsible for the area in between by default. It was expressed that the ideal situation would be if there was not this ambiguity and if, for example, the municipality was responsible for the recreational beaches. The Walvis Bay municipality has a by-law that contains regulations against pollution. However, there is lack of enforcement to this by-law due to lack of capacity.

One more challenge identified was that there is no coherent policy for marine litter and environmental management at large. Instead, little is done by several agencies and institutions e.g. pollution control and waste management is done by the Ministry of Works, the Ministry of Fisheries addresses this through the Coastal and Marine Pollution and Prevention Coordination Committee (CMPRCC), and NAMPORT, Directorate of Maritime Affairs and the Municipality all play a role as well. There is no institution directly responsible for spearheading marine litter issues, responsibilities are rather shared between different institutions and this make it more in effective. It would be very useful in the fight against marine litter if this limitation is addressed then it will pave ways for solutions to marine litter to be successful.

Having the types of marine litter discussed above, much has been done to address the problem. A company has been contracted by the Municipality of Walvis Bay to clean the beach once per week. The municipality was also involved in the Agenda 21 Project and one component of this project was aimed at educating the community members on the importance of keeping the environment clean. Students and teachers have been are still to be involved in beach clean ups organized through the Agenda 21 Project. Schools were involved through the environmental education component of the project. Efforts have also been made to enforce the Bi-Law. In fact, Walvis Bay Municipal officers have now been trained and authorized to arrest persons littering the beach within Walvis Bay Municipality jurisdiction.

Other institutions that assist in addressing marine litter include the CMPRCC in collaboration with other stakeholders that had organized beach clean ups involving the community. Within the Walvis Bay harbor, NAMPORT<sup>25</sup> regulates marine litter guided by regulations set in the Marpol Convention, which Namibia is party to.

However, with all these efforts by different institutions, the challenge remains to be that there is no institution directly responsible for spearheading marine litter reduction activities, responsibilities are rather shared between different institutions and this makes it more in effective. Enforcement is said to be a challenge as well, despite their efforts to address marine litter, there is often lack of equipment to do so effectively. There is lack of legislation and the existing legislation is outdated and fragmented. Namibia as a country recently acceded to the Marpol but the regulations cannot be implemented because the legal frameworks to support it are not yet in place.

### **Information Dissemination**

All project activities we covered by a local newspaper, Namib Times. Results of project activities in Walvis Bay have also been summarized on the DLIST –Benguela discussion forum dedicated to the topic of marine litter along the coastal zone of South Africa, Namibia and Angola at <http://www.dlist-benguela.org/mailgust/viewtopic.php?t=1364>

A “Burning Issue” on DLIST-Benguela dedicated to the topic of marine litter was also prepared, in both English and Portuguese ([http://www.dlist-benguela.org/Burning\\_Issues/](http://www.dlist-benguela.org/Burning_Issues/)). This Burning Issue contains summarised information on the topic, lists of documents and web links for further information, updated results of the Marine Litter Project in Angola and Namibia, as well as links for discussions around the topic. A brochure about the topic is under preparation (in both English and Portuguese), summarising some of the information in the Burning Issue and aimed at raising awareness of communities in general and schools.

---

<sup>25</sup> Namibia's Port Authority

## **Conclusions**

Activities undertaken in Walvis Bay as a pilot site were very interactive and have raised the interest of the target group as well as other stakeholders especially the Municipality of Walvis Bay. In fact matching fund has been provided from the Municipality of Walvis Bay, Environmental Fund to have more outreach activities targeted for the general community. Plans are underway to develop a national marine litter project targeting the entire coast of Namibia. Funds will be sort from the Small Grants Programme of UNDP and local authority targeted.

Schools and CYC member involved in the activities were very enthusiastic and conscious of the problem of marine litter and have indeed learned a lot more from the activities. The general situation of marine litter is serious and it needs urgent attention. The participants agreed that initiatives of this sort are important but that larger scale actions are necessary especially in terms of regulations and enforcements.

### **5.2.2 Pilot Site: Sarico and Mabunda, Angola**

#### **Introduction**

The Marine Litter Project, under the BCLME Programme, has been under implementation since October 2005 in Angola, Namibia and South Africa. In the second phase of the project—components **3: Marine litter surveys involving schools in pilot areas** and **4: Awareness of marine litter through posters/leaflets for schools**—a number of activities were undertaken in Angola between June and August 2006, which are described in this report. The selected pilot areas were Mabunda (in Luanda) and Buraco (south of Luanda).

#### **Description of activities**

##### **Participants**

The activities were coordinated by the Marine Litter Project Team. Introductory exercises were carried out by the country assistants Abias Huongo (JEA), Joaquim

Afonso Pedro (Institute for Development of Artisanal Fisheries) and José Soares Nenganga (Group of Support to Peoples in Need). Practical exercises were carried out by the same group together with Raquel Garcia (EcoAfrica).

Students and teachers from the 17 September School in Mabunda and the School of Buraco participated in the activities, as well as members of Mabunda and Buraco communities, members of Buraco Fishing Cooperative, and representatives from local authorities.

Taking into account that the reality in Angola is somewhat different than that in Namibia and South Africa with regards to solid waste along the coast, the project coordinators in Angola made an effort to involve large companies working in waste collection. However, their participation was not possible.

### **Introductory exercises**

During the second phase, a number of introductory exercises were undertaken to ensure that the project goals were met. The country assistants and entities involved were more actively engaged in this phase. The two pilot areas that were identified in the first phase—Mabunda, in Luanda, and Buraco, 50 km South of Luanda—were targeted for frequent visits and activities, in order to ensure active engagement of local communities.

Four awareness raising talks were given in the pilot areas, with participants ranging from students, fishing communities, teachers and staff from local and traditional administrations.

These talks focused mainly on aspects such as: environment and its components, coastal management, marine litter, importance of local communities' participation in protecting their environment, the problem of cholera, and sustainable management of fishing resources, among others.

During these visits, discussions were also held with teachers to decide what practical activities were best suited to the selected communities and to plan the activities. It was decided that the practical phase should encompass awareness raising games, followed by demonstration beach cleaning activities, and preparation by the students of posters or essays about the topic.

### **Practical exercises**

During the practical phase, visits were paid to the pilot areas in the days scheduled with the schools and communities. Further introductory exercises were undertaken to consolidate previous talks, as well as to introduce the practical phase.

In each school, a group of very enthusiastic students presented short theatre plays that they had prepared about the topic, illustrating typical situations that contribute to the problem of marine litter. Students and, in the case of Buraco, community members, were present to watch the plays.

During the beach cleaning activities, the students marked and cleaned areas on the beach using spades, rakes and plastic bags. At the end there was time for discussion on the types of litter found and associated impacts. The local communities participated actively in the practical activities.

During this phase, time was also dedicated to plan the preparation of drawings or essays by the students; the students were requested to illustrate experiences from the coastal areas and problems relating to marine litter. Both schools received material to prepare the posters, which were collected in subsequent visits. It is intended that the best ones can be used to spread the message in other schools in Angola.

A meeting was requested with the Administrator of Samba to present the project and exchange views. It was concluded that the project coordinators in Angola should design a proposal for intervention to be presented to the Administration, who has committed to

co-fund part of the proposal costs. This intervention would follow up, at a larger scale, the activities undertaken in the Samba municipality.

## **Results**

### **Types of waste**

The exercise undertaken with the communities, teachers, students and educators has enabled the identification of the following types of waste: **Plastics** (water bottles/bags/ropes/strings/caps/buckets/plastic containers), **Bottles and Glasses** (glass bottles/broken glasses/cans) **Paper** (carton boxes/paper/cigarettes packets and bugs), **Others** (shells/metals) and various quantities of material of difficult identification due to advanced deterioration.

In Buraco, the waste along the beach was mainly composed of mangrove debris, with some plastics and cans as well, while in Mabunda the students collected all types of material, from plastic to cans and clothes.

### **Origins of Waste**

The main origins of marine litter in these communities are the Kwanza River mouth, local communities, beachgoers and visitants to the beach. The fish market in Mabunda contributes significantly to marine litter in that area.

### **Dimension of the problem**

Some consequences of marine litter in these areas are lack of fish, destruction of fishing gear, and the presence of mosquitoes and other disease vectors. There are thus impacts both on the ecosystem and human health. The situation is problematic in Buraco and extremely serious in Mabunda.



### **Possible solutions**

- Undertaking weekly cleaning campaigns with local inhabitants. In Buraco the community cleans the beach regularly, although it lacks sufficient material such as spades and rakes. The 17 September School often participates in similar beach cleaning activities (usually sponsored by private companies operating in the area); however, the dimension of problem calls for broader interventions. The Samba Administration was receptive and interested in activities at a larger scale to follow up on this project.
- The lack of means for waste disposal in the pilot areas, as well as of recycling industries, was also considered in discussions. The absence of waste bins in the pilot areas makes it difficult to ensure sustainable solutions. Solutions such as these concern the local authorities' fields of intervention.
- Raise the awareness of communities. Cleaning campaigns have an important role in raising awareness, as well as in the dissemination of practical information on the problem and how communities can avoid the problem. The idea of a poster/essay competition in the schools and dissemination of the best ones in other schools was well received both by students and teachers. Awareness raising activities should also be targeted at fishers, users of the fish market, and other communities upstream from River Kwanza.

### **Information dissemination**

#### **Dissemination in the media**

All project activities were announced in the media under the country assistants' coordination. The team had total support from Angop and several programmes in the dissemination of information.

#### **Information sharing and discussion on DLIST**

The results from the activities in Angola were summarised on the DLIST-Benguela discussion forum dedicated to the topic of marine litter along the coastal zone of South

Africa, Namibia and Angola at <http://www.dlist-benguela.org/mailgust/viewtopic.php?t=1364>.

A “Burning Issue” on DLIST-Benguela dedicated to the topic of marine litter was also prepared, in both English and Portuguese ([http://www.dlist-benguela.org/Burning\\_Issues/](http://www.dlist-benguela.org/Burning_Issues/)). This Burning Issue contains summarised information on the topic, lists of documents and web links for further information, updated results of the Marine Litter Project in Angola and Namibia, as well as links for discussions around the topic.

A brochure about the topic is under preparation (in both English and Portuguese), summarising some of the information in the Burning Issue and aimed at raising awareness of communities in general and schools.

Finally, it is intended that the best poster(s) prepared by the students in the schools in Mabunda and Buraco can be adapted and reproduced so they can be used to spread the message in other schools in the country. These activities are co-funded by the DLIST-Benguela Project.

## **Conclusions**

The second phase of the project was very interactive and has raised the interest of the target group. The students in both schools were very enthusiastic and conscious of the problem of marine litter. Hence, the project team at the local level is making efforts to pursue activities, as well as trying to congregate synergies with a view to broader and deeper interventions in these areas. Contacts have been established with the Ministry of Urbanism and Environment, who has committed to contribute with some material for the activities.

The general situation of marine litter is serious in both areas and especially daunting in Mabunda. The participants agreed that initiatives of this sort are important but that larger scale actions are necessary. It is important to involve key stakeholders in these

types of activities, including municipal, local and traditional administrations, as well as ports authorities.

### **5.3 Output 3: Educational and Awareness Raising Materials**

A “Burning Issue” on DLIST-Benguela dedicated to the topic of marine litter was also prepared, in both English and Portuguese ([http://www.dlist-benguela.org/Burning\\_Issues/](http://www.dlist-benguela.org/Burning_Issues/)). This Burning Issue contains summarised information on the topic, lists of documents and web links for further information, updated results of this Project in Angola and Namibia, tips and resources for teachers wishing to implement similar activities, as well as links for discussions around the topic.

A brochure about the topic has also been prepared (in both English and Portuguese), summarising some of the information in the Burning Issue and aimed at raising awareness of communities in general and pointing to more information on the Burning Issue.

Matching funds have also been provided by the Municipality of Walvis Bay and most of which is used for the development of a brochure targeting the general community of Walvis Bay.

### **5.4 Output 4: Draft of a Proposal for Community Outreach Programme and Implementation of Legal Recommendations.**

#### **A- Background**

The BCLME Programme has commissioned EcoAfrica Environmental Consultants to carry out the Marine Litter Programme. The programme aimed to evaluate current legal framework as well as ongoing programmes that aim to address the problem of marine litter. During the marine litter project’s implementation, three pilot sites, Walvis Bay, Mabunda and Buraco from Namibia and Angola have been selected to assess the situation of marine litter as well as raise awareness of the importance of the issue at local level. Surveys have been conducted in the selected sites. The main aim of the surveys were to assess types of litter, main sources of litters, extent of the problem,

possible impacts and possible ways to reduce litter including opportunities for reduction, reuse and recycling.

Local schools and general community members were involved during the implementation of these activities. The survey conclusions show that the problem of marine litter is increasing day by day. It is more than an environmental problem; it is also a cultural problem, and must be addressed by efforts to change attitudes, behaviours, and management approaches. This requires the involvement of everyone, from governments to businesses to the public at large. All stakeholders have a role to play in this regard, by helping to build awareness of the damage done by litter to our coastal environments and their marine life, and to the people who use and depend on them.

It has been identified that the problem of marine litter is multi-sectoral. Marine litter stems from land-based activities of all kinds from poor management of municipal waste to misplaced public behaviour on beaches, and from marine activities such as poor wharf maintenance to poor waste management on vessels. Litter from industries and poorly planned and managed coastal developments are causing rapid degradation to vulnerable coastal habitats and also erode tourism potentials in the coastal areas. Furthermore, the rapid expansion of coastal cities has created pollution “hot spots” in our coastal zones. It has been found that the root causes of the ubiquitous entry of litter into the marine and coastal environment are generally poor management of human activities or inadequate understanding on the part of the public and workers of the potential consequences of their behaviour. The barriers to change are largely resistance to change, deficiencies in public information and a lack of comprehension of effective legal measures for penalties. A regional project with strong national based actions is proposed to address challenges identified in the marine litter programme.

## **B- Goals and Objectives**

The goal of the proposed project will be to address the marine litter problem in coastal communities of Angola and Namibia where the problem of marine litter is found to be worsening day by day. The project will replicate methodologies tested during the pilot phase of the project to other coastal communities of Namibia and Angola. The key to

controlling marine litter is to tackle its sources collectively. This is not only consistent with the precautionary principle, but would appear to be the only management option that is economically sustainable in the longer term. This proposed project will involve all stakeholders that are directly involved in the utilization of our coastal environment. Based on the recommendations put forward in the study of marine litter legal framework in the BCLME Region, the proposed project will identify ways to address obstacles against effective implementation of the legal framework

### **C- Potential Stakeholders**

- Multi Purpose Centres
- Schools
- Fishing Industries
- Local Authority
  - Municipality of Walvis Bay
  - Luderitz Town Council
  - Henties Bay Town Council
  - Municipality of Swakopmund
- Ministry of Fisheries and Marine Resource
- Ministry of Works, Transport and Communication
- Ministry of Environment and Tourism
- Coastal and Marine Pollution Reduction and Prevention Coordination Committee
- Namibia Ports Authority

## 6 REFERENCES

Clark, B.M., M.T. Laros and L.J. Atkinson, 2004. *Training and capacity needs assessment for the BCLME. Final Draft Report*. Prepared by Anchor Environmental Consultants in association with Marlene Laros & Associates for the BCLME Programme Co-ordinating Unit, February 2004. Pp 1-182.

Cullinan, C., S. Munkejord and H. Currie, 2005. *Institutional Study regarding the establishment of a regional organization to promote integrated management and sustainable use of the BCLME*. Prepared for UNOPS and the BCLME Programme. EnAct International, March 2005. Pp 1-135.

Ministry of Environment and Tourism, 2001. *Namibia State of Environment Report Waste Management and Pollution Control in Namibia*. August 2001.

Russo, V., P. Roque and H. Krugmann, 2003. *Angola: Country Report*. In: *Southern African Institute for Environmental Assessment*. Environmental Impact Assessment in Southern Africa. Windhoek: Southern African Institute for Environmental Assessment.

Russo, V. et al., 2004. *Harmonization of national environmental policies and legislation for marine mining, dredging and offshore petroleum exploration and production activities in the BCLME region*. BCLME Project BEHP/IA/03/03: Final report.

UNEP, 1995. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*. United Nations Environment Programme. 1995.

UNEP, 1995. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*. United Nations Environment Programme. 1995

## Laws

### Angola

- Constitution of the Republic of Angola, 1992 *Lei Constitucional da República de Angola*
- Environmental Framework Act, N.5/98, 19 June 1998 *Lei de Bases do Ambiente*
- Environmental Impact Assessment Decree, N. 51/04, 23 July 2004 *Decreto sobre Avaliação de Impacte Ambiental*
- Land use planning and Urbanisation Act, N.3/04, 25 June 2004 *Lei do Ordenamento do Território e do Urbanismo*
- Land Act, N. 9/04, 9 November 2004 *Lei das Terras*
- Water Act, N.6/02, 21 June 2002 *Lei das Águas*
- Territorial Sea, Contiguous Zone and Exclusive Economic Zone Act, N. 21/92, 28 August 1992 *Lei sobre Águas Interiores, Oceanos e Zona Económica Exclusiva*
- Living Aquatic Resources Act, N. 6-/04, 8 October 2004 *Lei dos Recursos Biológicos Aquáticos*
- Oil Activities Act, N. 10/00, 12 June 2000 *Lei das Actividades Petrolíferas*
- Decree on Environmental Protection for the Petroleum Industry, N.39/00, 10 October 2000 *Lei sobre a Protecção Ambiental para a Indústria Petrolífera*
- Geological and Mining Activities Act, N. 1/92, 17 January 1992 *Lei das Minas*
- Draft Waste Act *Projecto de Decreto-Lei dos Resíduos*
- Draft Environmental Management Programme *Programa Nacional de Gestão Ambiental Nacional (Versão Provisória)*
- Draft National Biodiversity Strategy and Action Plan, 2006 *Estratégia e Plano de Acção para a Biodiversidade (Versão para Discussão)*
- National Strategy for Wetland Sustainable Development, 2004 *Estratégia Nacional sobre a Gestão Sustentável das Zonas Húmidas*

## **Namibia**

- Water Act 1956
- Prevention and Combating of Pollution of the Sea by Oil Act 1981 and the 1991 Amendment Act, No.24 of 1991
- Draft Pollution and Waste Management Bill
- Environmental Management Bill Draft, 1997
- The Constitution of Namibia, 1990
- The Green Plan of Namibia, 1992
- Southern African Development Community Protocol on Fisheries

## **South Africa**

- Constitution of the Republic of South Africa, Act 108 of 1996
- National Environmental Management Act 107 of 1998 (NEMA)
- Environment Conservation Act 73 of 1989
- General Policy in Terms of the Environment Conservation Act 73 of 1989 Control Act 73 of 1980
- Marine Pollution (Control and Civil Liability) Act 6 of 1981
- Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 – Prevention of Pollution by Garbage from Ships Regulation, 1992
- Marine Pollution (Intervention) Act 64 of 1987
- White Paper on Integrated Pollution and Waste Management for South Africa, 17 March 2000
- White Paper for Sustainable Coastal Development



## 7 APPENDIX 1: TERMS OF REFERENCE



### **Terms of Reference for: BCLME Project BEHP/ML/03/01. Marine Litter Programme**

#### **Background**

Recent years have seen an enormous increase in unplanned coastal settlements, especially in Angola (as a consequence of the war) and in South Africa. Such settlements have inadequate garbage collection facilities with the result that there is an accumulation of waste materials both on the coastline and in shallow inshore waters. This has numerous negative impacts including impacts on marine resources (especially plastics), and aesthetics which in turn impact on the potential for tourism. On the other hand, this litter could be viewed as a potential resource through re-use and recycling programmes, and also presents an opportunity, because of its highly visible nature, for the development of community environmental awareness-raising programmes.

#### **Recommended approach**

This project will include:

- a) Evaluation of regulatory framework (in the three countries. national, regional and international) and policies on marine litter with a view to harmonisation and to making recommendations on regulations, enforcement and penalties;
- b) a review of the marine litter programmes in South Africa and Namibia

b) target an area for marine litter survey involving schools and obtain publicity and some sponsorship

c) raise awareness of marine litter through poster/leaflets for schools

on:

- the consequences of littering;
- general environmental consciousness;
- the potential for re-use, recycling and reclamation of solid waste;
- introduction of the ZERI philosophy.

### **Outputs required**

Recommendations to improve regulatory framework

Awareness raising materials (posters/pamphlets etc)

Educational material/programmes in schools

.

### **Time schedule**

The project will start in October 2005 and completed not later than October 2006.

### **Capacity Building and Training:**

Capacity building and training is a high priority in the BCLME Programme. Potential contractors tendering for this project should indicate how capacity building and training will be addressed.

### **Criteria for Participation:**

The project should be given to three local NGO's in each country and it should be co-ordinated overall by a regional NGO such as EcoAfrica.

## 8 APPENDIX 2: EDUCATIONAL MATERIALS

### 8.1 Marine Litter Teacher's Manual English Version

#### MARINE LITTER TEACHER'S MANUAL

##### Class and Field activities

Based on the experience gained through the BCLME Marine Litter Project, this manual intends to provide some guidance for teachers who wish to introduce the topic in classes and plan activities with the students. It contains links to ideas and resources for both class and field activities, extracted from different sources and organisations that are dedicated to educational and awareness raising activities. This manual is not aimed at one specific age group, but the activities suggested can rather be adapted to different age groups and local circumstances.

Your suggestions, experiences and new ideas are welcome!  
Please write to [admin@dlis-benguela.org](mailto:admin@dlis-benguela.org).

To define the concepts and objectives for your marine litter classes Go to **Background**

For ideas and resources to explore the subject in the classroom Go to **Class Activities**

For ideas and resources for beach cleanups and other activities on the beach Go to **Field Activities**

## Background

### Concepts

Marine litter, like environmental issues in general, is a cross-cutting issue. It touches upon a number of economic sectors (as sources of marine litter), has environmental, social economic and human health impacts, and spreads across coastal and marine habitats. Important related concepts to mention and establish a connection with are: waste, sea- and land-based pollution sources, coastal and marine habitats and species, human health, fishing, oil activities, and tourism.

Perhaps the most important message to put across is that our actions contribute to marine litter and that through our efforts we can make a difference in the amount of litter that reaches the coast and enters the ocean.

### Objectives

Exploring the problem of marine litter will help students:

- Understand what marine litter is, where it comes from, and what impacts it has on human and environmental health
- Identify solutions to the problem of marine litter
- Demonstrate the role they can play by participating in beach cleanups, reuse programmes and spreading the word

#### Where to read more about marine litter

- Visit “**The Problem**” in this Burning Issue for an overview of the problem of marine litter, its sources and impacts, as well as the current situation in Angola, Namibia and South Africa. Go to [www.....](#)
- Read some facts about marine litter on UNEP’s **Marine Litter Information Gateway** at <http://marine-litter.gpa.unep.org/facts/facts.htm>
- The **South African Coastal Information Centre** at <http://sacoast.uwc.ac.za/education/resources/index.htm> has a wealth of resources

- relating to coastal and marine environments. The **Pocket Guide to Marine Debris** contains information on types and sources of marine litter (<http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>).
- NOAA's **Marine Debris Program** at <http://marinedebris.noaa.gov/whatis/welcome.html#sources> contains summarised information about types and sources of marine litter.
  - Various resources for Educators from the California Coastal Commission are available at <http://www.coastal.ca.gov/publiced/directory/educate.html>. The **Waves, Wetlands, and Watersheds Science Activity Guide** is a classroom and community activity guide that addresses issues such as endangered species, marine debris, coastal geology, water use, and much more. Download it [here](#) to read about marine litter in the section on Community Action Activities, and about related ocean and water concepts in other sections.

### **Class Activities**

To make the introduction to marine litter more engaging, use different modes of instruction— photos and video, as well as games and drama can help illustrate the problem.

**Posters and essays:** students can prepare posters or essays about how they perceive the problem in their area, what solutions are possible, and what they learned in [field activities](#). This can be done as an exercise in class or turned into a competition between groups in the school. The best posters/essays can be used to spread the message in the community and other schools.

**Theatre plays:** students can also prepare theatre plays depicting daily situations that they perceive as contributing to the problem of marine litter. An event can be organised to show these plays to a wider audience in their communities.

**Reuse programmes:** programmes in the school to clean, reduce, or reuse waste can help demonstrate that we all have a role to play, as litter on the streets can end up in waterways and eventually the ocean. Examples of simple programmes are reusing scrap paper, keeping the schoolyard clean, and separating waste in the school.

#### **Ideas and Resources**

- Use **photos of coastal and marine environments** that are available on the DLIST photo library at [http://www.dlist-benguela.org/image\\_library/](http://www.dlist-benguela.org/image_library/). You can contact the DLIST Team if you need high resolution versions of some of the photos.
- A **Coastal Art and Poetry Contest** can encourage the students to reflect on the value of their coast. Read about the Coastal Art and Poetry Contest that takes place in California, USA to get some ideas for your school. Read the contest details and view some of the winners at <http://www.coastal.ca.gov/publiced/poster/poster.html>
- More ideas for actions to protect the coast can be found on the **Coastal Stewardship Pledge**, which was designed as a way for Californians of all ages to commit to protecting our coast and ocean. Individuals choose from a list of suggestions on how to protect the coast, and then pledge to follow through and complete their chosen actions. In the process, they become “Coastal Stewards”. Download [Information for Teachers](#).
- A **Marine Debris Colouring Book** is an idea for the younger ones. See one example at <http://www.yoto98.noaa.gov/books/debris/debris1.htm>
- More resources and ideas for kids/ teachers can be found on **Kids against marine litter**, at UNEP’s **Marine Litter Information Gateway** (<http://marine-litter.gpa.unep.org/kids/kids.htm>)

## Field Activities

Students can put the knowledge gained into action with beach cleanups and marine litter surveys. The beach cleanup allows the students to be part of an immediate solution to the problem of marine litter, while surveys enable them to investigate and understand the nature and causes of the problem and thereupon identify long term solutions. These activities can be adapted to different grades and purposes—from simple cleanups that raise awareness, to more elaborate surveys that collect and analyse data to come up with results and identify solutions.

**Beach Cleanups:** Students can clean a beach or part of a beach using spades, rakes, gloves and plastic bags. They can break into small groups, where some will collect litter and some will hold the bags. Try to get the local authorities' collaboration to collect the litter from the beach after the cleanup. Find out if there are sponsored beach cleanups in your area in which the students can participate.

**Marine Litter Surveys:** By collecting data while picking up litter, students can understand the types and amount of waste that litter the beach. From this information, students can also identify possible sources of litter and understand the connection between our actions and the problem of marine litter. There are different methodologies and data forms to guide these surveys (see Ideas and Resources below).

### Ideas and Resources

- The South African Coastal Information Centre's **Pocket Guide to Marine Debris** contains information on methodologies and safety tips for coastal cleanups and surveys (at <http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>). Read also the **Save our Sea Life** at <http://sacoast.uwc.ac.za/education/resources/envirofacts/plasticpollution2.htm> for other ideas for action.
- The **CoastCare Programme** (DEA&T, South Africa) has a [methodology](#) and [data card](#) for beach cleanups by community members. This was the method used in the BCLME

- Marine Litter Project's survey in Namibia—read this case study at [www.dlist-benguela.org/marinelitter](http://www.dlist-benguela.org/marinelitter).
- Another methodology for beach cleanups and collection of data is that of the **International Coastal Cleanup day**. Download the [data card](#) and read more at [http://www.oceanconservancy.org/site/PageServer?pagename=press\\_icc](http://www.oceanconservancy.org/site/PageServer?pagename=press_icc).
  - **Beach Beat** is a visual survey designed to report on the visual quality of beaches. You can read more about it and download the kit at [http://www.nalg.org.uk/nalg\\_beachbeat.htm](http://www.nalg.org.uk/nalg_beachbeat.htm).
  - The concept of **Adopt-a-Beach** is for volunteers to clean their “adopted” beach regularly throughout the year. Read more about this programme in Canada and get some ideas for your area at <http://www.coastal.ca.gov/publiced/aab/aab1.html>.
  - The California Coastal Commission's **Waves, Wetlands, and Watersheds Science Activity Guide** includes a teachers' guide for activities for all grades around the topic of marine litter (section “Community Action Activities”). [Here](#) you can extract ideas and content to adapt to your local circumstances.
  - More resources and ideas for kids/ teachers can be found on **Kids against marine litter**, at UNEP's **Marine Litter Information Gateway** (<http://marine-litter.gpa.unep.org/kids/kids.htm>)



## 8.2 Marine Litter Teachers Manual Portuguese Version

### MANUAL DO PROFESSOR SOBRE LIXO MARINHO

#### Actividades Dentro e Fora da Sala de Aula

Com base na experiência adquirida através do Projecto BCLME sobre Lixo Marinho, este manual pretende dar alguma orientação a professores que pretendam apresentar o tópico nas aulas e planejar actividades com os alunos. Este manual contém links para ideias e material para actividades tanto dentro como fora da sala de aula, extraídos de várias fontes e organizações que se dedicam a actividades de educação e sensibilização. Este manual não se destina a um grupo etário específico, podendo as actividades sugeridas ser adaptadas a diferentes grupos etários e circunstâncias locais.

As suas sugestões, experiências e ideias são bem-vindas!

Por favor escreva para [admin@dlist-benguela.org](mailto:admin@dlist-benguela.org).

- |  |   |
|--|---|
| Para definir os conceitos e objectivos para as suas aulas sobre lixo marinho | Visite a <b><u>Introdução</u></b>                     |
| Para ideias e material para explorar o tema na sala de aula                  | Visite <b><u>Actividades na Sala de Aula</u></b>      |
| Para ideias e material para limpezas de praia e outras actividades na praia  | Visite <b><u>Actividades fora da Sala de Aula</u></b> |

## Introdução

### Conceitos

Tal como os temas ambientais em geral, o lixo marinho é um aspecto transversal. Está relacionado com uma série de sectores económicos (como fontes de lixo marinho), resulta em impactes ambientais, socio-económicos e na saúde humana, e distribui-se pelos habitats costeiros e marinhos. Conceitos associados importantes a referir e estabelecer ligação com o problema do lixo marinho são: resíduos, poluição de origem marinha e terrestre, habitats e espécies costeiras e marinhas, saúde humana, pesca, exploração petrolífera e turismo.

Talvez a mensagem mais importante a transmitir seja que todas as nossas acções contribuem para o lixo marinho e que através dos nossos esforços poderemos fazer a diferença na quantidade de lixo que chega à costa e entra no oceano.

### Objectivos

Explorar o problema do lixo marinho ajudará os alunos a:

- Perceber o que é o lixo marinho, donde vem e que impactes tem na saúde humana e do ambiente
- Identificar soluções para o problema do lixo marinho
- Demonstrar o papel que os alunos podem desempenhar ao participarem em limpezas de praia e em programas de reutilização e ao espalharem a mensagem

#### Onde poderá ler mais sobre lixo marinho

- Visite “**O Problema**” neste Tema Escaldante para ter uma visão global do problema do lixo marinho e das suas origens e impactes, bem como da situação actual em Angola, Namíbia e África do Sul ([www.....](#)).
- Leia alguns factos sobre lixo marinho no Portal de Informação sobre Lixo Marinho da UNEP (**Marine Litter Information Gateway**) em <http://marine-litter.gpa.unep.org/facts/facts.htm>.

- O Centro Sul Africano de Informação Costeira (**South African Coastal Information Centre**) em <http://sacoast.uwc.ac.za/education/resources/index.htm> contém uma série de materiais relacionados com os ambientes costeiro e marinho. O Guia de Bolso sobre Lixo Marinho (**Pocket Guide to Marine Debris**) contém informação sobre os tipos e fontes de lixo marinho (<http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>).
- O Programa de Lixo Marinho da NOAA (**Marine Debris Program**) em <http://marinedebris.noaa.gov/whatis/welcome.html#sources> contém informação resumida sobre tipos e fontes de lixo marinho.
- Está disponível material para Educadores da Comissão Costeira da Califórnia em <http://www.coastal.ca.gov/publiced/directory/educate.html>. O Guia de Actividades Científicas sobre Ondas, Zonas Húmidas e Bacias Hidrográficas (**Waves, Wetlands, and Watersheds Science Activity Guide**) é um guia para actividades na sala de aula e com a comunidade que aborda temas tais como espécies ameaçadas, lixo marinho, geologia costeira, uso de água, e muito mais. Faça o download [aqui](#) para ler mais sobre lixo marinho na secção sobre actividades para acção comunitária (Community Action Activities) e acerca de conceitos relacionados com oceanos e água noutras secções.

## Actividades na Sala de Aula

Para tornar a introdução sobre o lixo marinho mais estimulante, use modos de ensino variados—fotos e vídeo, bem como jogos e teatro podem ajudar a ilustrar o problema.

**Posters e redacções:** os alunos podem preparar posters ou redacções sobre o modo como encaram o problema na sua área, que soluções são possíveis e o que aprenderam nas [actividades fora da sala de aula](#). Isto pode ser feito como um exercício na sala de aula ou como um concurso entre grupos na escola. Os melhores posters/redacções podem ser utilizados para espalhar a mensagem na comunidade e noutras escolas.

**Peças de teatro:** os alunos podem também preparar peças de teatro retratando situações do dia-a-dia que eles pensam contribuir para o problema do lixo marinho. Poderá organizar-se a apresentação destas peças a uma audiência mais alargada nas comunidades.

**Programas de reutilização:** programas na escola para limpar, reduzir ou reutilizar resíduos podem ajudar a demonstrar que todos nós temos um papel a desempenhar, pois o lixo nas ruas pode acabar em cursos de água e eventualmente no oceano. Exemplos de programas simples são a reutilização de papel de rascunho, manter o pátio da escola limpo e separar o lixo na escola.

### Ideias e Material

- Utilize as **fotos de ambientes costeiros e marinhos** que estão disponíveis na galeria de imagens da DLIST em [http://www.dlist-benguela.org/image\\_library/](http://www.dlist-benguela.org/image_library/). Poderá contactar a Equipa da DLIST se precisar de versões com elevada resolução de algumas das fotografias.
- Um **Concurso de Arte e Poesia Costeira** pode encorajar os alunos a reflectir sobre o valor da sua costa. Leia acerca do Concurso de Arte e Poesia Costeira que é

organizado na Califórnia, EUA, e retire algumas ideias para a sua escola. Leia mais pormenores sobre este concurso e veja alguns dos vencedores em <http://www.coastal.ca.gov/publiced/poster/poster.html>.

- Há mais ideias de actividades para proteger a costa no Compromisso de Responsabilidade Costeira (**Coastal Stewardship Pledge**), que foi concebido como um modo dos californianos de todas as idades se comprometerem a proteger a sua costa e oceano. Os indivíduos escolhem acções de uma lista de sugestões sobre como proteger a costa e comprometem-se a seguir e completar as acções escolhidas. Durante o processo, eles tornam-se “Guardiões Costeiros”. Faça o download da [Informação para Professores](#).
- Um **Livro para Colorir sobre Lixo Marinho** é uma ideia para os mais novos. Veja um exemplo em <http://www.yoto98.noaa.gov/books/debris/debris1.htm>.
- Poderá encontrar mais material e ideias para crianças/ professores em Crianças contra o lixo marinho (**Kids against marine litter**), no Portal de Informação sobre Lixo Marinho da UNEP (**Marine Litter Information Gateway**) (<http://marine-litter.gpa.unep.org/kids/kids.htm>).

## Actividades fora da Sala de Aula

Os alunos podem pôr os conhecimentos adquiridos em prática através de limpezas de praia e levantamentos de lixo marinho. A limpeza de praia dá aos alunos a oportunidade de fazer parte de uma solução imediata para o problema do lixo marinho, ao passo que os levantamentos dão-lhes a oportunidade de investigar e compreender a natureza e causas do problema e, com base nisso, identificar soluções a longo prazo. Estas actividades podem ser adaptadas a vários níveis de ensino e diferentes objectivos— desde meras limpezas de praia que ajudam a sensibilizar até levantamentos mais elaborados que recolhem e analisam dados para chegar a resultados e identificar soluções.

**Limpezas de praia:** Os alunos podem limpar uma praia ou parte de uma praia utilizando pás, ancinhos, luvas e sacos de plástico. Eles podem dividir-se em pequenos grupos, em que alguns recolhem o lixo e outros seguram os sacos. Tente obter a colaboração das autoridades locais para recolher o lixo da praia após a limpeza. Investigue se existem limpezas de praia patrocinadas na sua área em que os alunos possam participar.

**Levantamentos de lixo marinho:** Ao recolher dados enquanto apanham o lixo, os alunos podem compreender quais os tipos e quantidade de lixo que poluem a praia. A partir desta informação, os alunos podem ainda identificar possíveis fontes de lixo e compreender a ligação entre as nossas acções e o problema do lixo marinho. Existem várias metodologias e folhas de dados para guiar estes levantamentos (ver Ideias e Material em baixo).

### Ideias e Material

- O Guia de Bolso sobre Lixo Marinho (**Pocket Guide to Marine Debris**) do Centro Sul Africano de Informação Costeira (**South African Coastal Information Centre**) contém informação sobre metodologias e dicas sobre segurança para limpezas de praia e levantamentos (em

- <http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>). Leia também Salve a Nossa Vida Marinha (**Save our Sea Life**) em <http://sacoast.uwc.ac.za/education/resources/envirofacts/plasticpollution2.htm> para mais ideias de actividades.
- O Programa **CoastCare** (DEA&T, África do Sul) tem uma [metodologia](#) e [folha de dados](#) para limpezas de praia por membros da comunidade. Este foi o método utilizado no levantamento do Projecto BCLME sobre Lixo Marinho na Namíbia—leia este caso de estudo em [www.dlist-benguela.org/marinelitter](http://www.dlist-benguela.org/marinelitter).
  - Outra metodologia para limpezas de praia e recolha de dados é a do **Dia Internacional de Limpeza Costeira**. Faça o download da folha de dados e leia mais em [http://www.oceanconservancy.org/site/PageServer?pagename=press\\_icc](http://www.oceanconservancy.org/site/PageServer?pagename=press_icc).
  - **Beach Beat** é um levantamento visual concebido para informar sobre a qualidade visual das praias. Poderá ler mais acerca deste levantamento e fazer o download do kit em [http://www.nalg.org.uk/nalg\\_beachbeat.htm](http://www.nalg.org.uk/nalg_beachbeat.htm).
  - O conceito de Adopte-uma-Praia (**Adopt-a-Beach**) consiste na limpeza por voluntários da sua praia “adoptada”, regularmente ao longo do ano. Leia mais sobre este programa e tire algumas ideias para a sua área em <http://www.coastal.ca.gov/publiced/aab/aab1.html>.
  - O Guia de Actividades Científicas sobre Ondas, Zonas Húmidas e Bacias Hidrográficas (**Waves, Wetlands, and Watersheds Science Activity Guide**) da Comissão Costeira da Califórnia inclui um guia do professor para actividades para todos os níveis sobre o tópico do lixo marinho (secção “Community Action Activities”). Poderá extrair ideias e conteúdo para adaptar às suas circunstâncias locais [aqui](#).
  - Existe mais material e ideias para crianças/ professores em Crianças contra o lixo marinho (**Kids against marine litter**), no Portal de Informação sobre Lixo Marinho da UNEP (**Marine Litter Information Gateway**) (<http://marine-litter.gpa.unep.org/kids/kids.htm>)

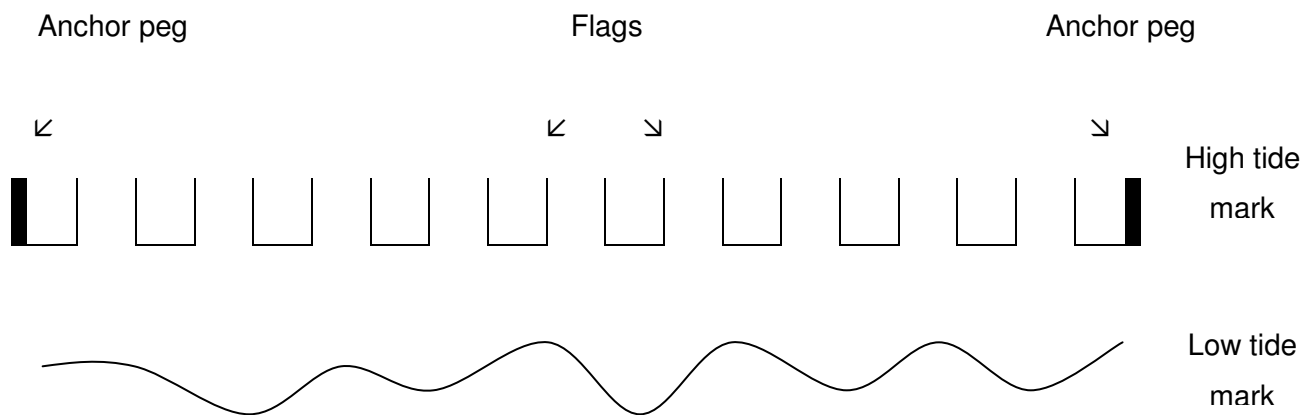
### 8.3 Marine Litter Survey Methodology

#### For Each Site

##### A. Establishing your transects

1. Go to the high tide mark along the beach (where the highest waves reach at the highest tide)
2. Measure off ten transects of 20 meters each along the beach just above the high tide mark. Put in little flags at the beginning and at the end of each transect, just above the high tide mark.
3. Leave approximately 5m between each 20 m transect.
4. Mark your beginning of the first transect and the end of the last one with thick stakes, so you can find the approximate positions of the series of transects later again.

It will look like this:



Congratulations, you are ready to collect data.

##### B. Reading your transects

1. Go to the beach at low tide. You will see your transects above you, higher on the beach.
2. Collect all garbage items along the beach from low tide mark to 10 meters above the high tide mark.
3. One person is the scribe and the other three will collect garbage and put it in big plastic bags.
4. For each garbage item make an entry in the data sheet. Note what it was, what material it was made of (eg. glass, plastic, organic), and whether it was below the HTM, more or less on or near the HTM, or at least 1 m above the high tide mark:
5. Weigh the total amount of garbage for each transect.
6. Sort the garbage into like items (plastic, organic, etc.) in heaps, and weigh each heap of garbage



7. Remove your transect pegs but leave the end pegs in so you can later find the beginning and end again.
8. Keep your data sheets safe for the record and summarize data on a master sheet.
9. Discuss how one can dispose of the garbage and write up recommendations for the municipality.

NB: in removing litter, be careful not to disturb natural habitat for beach organisms such as driftwood and seaweed.

REPEAT ONCE A MONTH, more or less the same time of the month.

### **C. Materials you will need (for each site)**

1. 22 thin sticks about .5 meters high
2. Measuring tape
3. Some red tape, or lint, to tie at the top of the sticks so you can see your transects easily
4. Two thick pegs .5 meters long that you will drive into the beach sand about 5 m above the start of the first transect and the end of the last transect, so that you can find the approximate positions again.
5. Pencils for scribe pencil sharpener.
6. 1 clipboard for the scribe.
7. Big black garbage bags for collecting garbage.
8. Enough data sheets (so if you spoil some or need spares).
9. Scale.
10. Box to keep it all in.

## 8.4 Marine Litter Burning Issue English Version

### MARINE LITTER



Our coast is precious for all—those that live by the sea and depend on coastal and marine resources for their subsistence, and those that visit beaches in their leisure time. Litter originating from the sea and the land, however, threatens the health of the coast and therefore ours as well. Explore the issues, activities, and information resources about this topic in this Burning Issue and contribute with new information that you may have.



#### The problem

What is marine litter, and what are the sources and impacts of marine litter?



#### What is being done?

Explore the initiatives and laws in Angola, Namibia and South Africa.



Angola

#### On the ground...

Find out what students in Angola and Namibia have been doing to clean their coast. The BCLME Programme is implementing the Marine Litter Project, with school activities ranging from coastal cleanups and marine litter surveys to preparation of posters.



Namibia



### **Suggest, ask, discuss...**

Share your views with other coastal stakeholders and pose your questions.



### **Explore...**

Find more information on the web and read more about the topic.

## **THE PROBLEM OF MARINE LITTER**



Marine litter is “**any persistent manufactured or processed solid material which is discarded, disposed of, or abandoned in the marine and coastal environment**”, according to the definition of United Nations Environmental Programme (UNEP).

Marine litter can **originate from the sea** (e.g. ships and dumping-at-sea, offshore rigs and drilling platforms) and **the land** (e.g. storm water run-off, sewer overflows, beachgoers).

Litter **threatens marine life** through entanglement, suffocation and ingestion. It has a **visual impact** on marine and coastal areas with negative effects on tourism, and can pose **human health and safety concerns**. Litter in the marine environment can also **destroy coastal habitats** and in some situations interfere with biological production in coastal areas.

### The state of the coast in the BCLME countries

Most marine pollution in **Angola** is originated on land, especially from overpopulated coastal urban areas, untreated sewage discharges, industrial waste brought by rivers, fishing activities and oil exploration. In **Namibia**, marine pollution is not very widespread since most of the coastline is devoid of habitation. The highest concentrations occur in Walvis Bay, originating from effluents used in fish factories, and hazardous substances used in repair and maintenance of fishing vessels and other ships. Marine litter in **South Africa** is especially problematic when it comes to litter carried in storm water runoff into harbours and bays.

### WHAT IS BEING DONE IN ANGOLA, NAMIBIA AND SOUTH AFRICA?



Find out some examples of initiatives in Angola, Namibia and South Africa, as well as international and national laws relevant to marine litter. Read more on "[Marine Litter Legal Framework and Initiatives](#)", a report produced for the BCLME Marine Litter Project.

#### Actions and programmes

- UNEP's **Regional Seas Programme for the West and Central Africa region** was established under the international legal framework of Law of the Sea and in line with the provisions of Agenda 21. Visit <http://www.unep.org/regionalseas/About/default.asp>
- The **International Coastal Cleanup** happens every year, when people from around the world will clean up their beaches, rivers and lakes. Find out more at <http://www.coastalcleanup.org/welcome.cfm>.
- The **Marine Litter Project**, under the BCLME Programme, aims to assess the current frameworks to deal with the problem of marine litter in Angola, Namibia and South Africa, and to raise awareness on the importance of the issue. Contact Maria Sardinha

at the BCLME Programme Activity Centre in Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)) for more information.

- The South African **Coastcare Working for the Coast Programme** seeks to use coastal resources to develop coastal communities and at the same time protect and rehabilitate these resources. It encompasses various activities including coastal cleanups on a regular basis and recycling as appropriate. Visit [http://www.environment.gov.za/ProjProg/CoastCare/working\\_for\\_the\\_coast.htm](http://www.environment.gov.za/ProjProg/CoastCare/working_for_the_coast.htm)
- The Namibian **Coastal and Marine Pollution Prevention Coordination Committee (C&MPPCC)** has been established to promote the protection of the marine environment through coordination.
- The **“Healthy Beaches” project (Projecto Praias Saudáveis)** was a pilot joint initiative of the Ecological Youth of Angola (JEA, Juventude Ecológica de Angola) and the Luanda Port Authority (Capitania do Porto de Luanda). JEA is regularly involved in coastal cleanup and environmental education activities. Contact Abias Huongo at [huongoam@hotmail.com](mailto:huongoam@hotmail.com) for more about JEA’s activities.

Know of more initiatives? Write to [admin@dlis-benguela.org](mailto:admin@dlis-benguela.org)

## Legal frameworks

A number of **international conventions** and agreements dealing with the sea, marine pollution and the protection of the marine and coastal environment have repercussions on the prevention and mitigation of marine litter. Many of these conventions have been signed by Angola, Namibia and South Africa.

While there is no specific **national legislation** dedicated to marine litter prevention in Angola and Namibia, in South Africa the general environmental legislation is better developed, with specific elements dedicated to marine litter control.

### National legislation relevant to marine litter in the BCLME Countries

In **Angola**, a Draft Waste Act has been prepared for discussion. Other legal instruments that have relevance for marine litter include the Draft National Programme for Environmental Management, the Living Aquatic Resources Act, and laws in the oil sector.

The principal text dealing with litter in **Namibia** is the Water Act. Several provisions on pollution are contained in sectoral legislations such as mining and petroleum legislation. There is reference to marine litter and pollution in the Namibia's Green Plan as well as on the Draft Environmental Management Bill.

The **South Africa** Constitution and a series of laws and policies give rise to rules and principles that govern marine pollution in the country, including the Dumping at Sea Control Act, Marine Pollution (Control and Civil Liability) Act, Marine Pollution (Prevention of Pollution from Ships) Act, Marine Pollution (Intervention) Act, White Paper on Integrated Pollution and Waste Management for South Africa, and White Paper for Sustainable Coastal Development.

## ON THE GROUND: PILOT ACTIVITIES OF THE BCLME PROGRAMME

### BCLME Programme's Marine Litter Project

The **Marine Litter Project**, under the BCLME Programme, aims to assess the current frameworks to deal with the problem of marine litter in Angola, Namibia and South Africa, and to raise awareness on the importance of the issue. The project components are:

- 1) Assess the regulatory/policy framework of the three countries on marine litter
- 2) Review existing marine litter programmes in Angola, Namibia and South Africa
- 3) Carry out marine litter surveys involving schools in pilot areas
- 4) Raise awareness of marine litter through posters/leaflets for schools

Find out more on [www.bclme.org](http://www.bclme.org) or contact Maria Sardinha at the BCLME Programme Activity Centre in Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)).

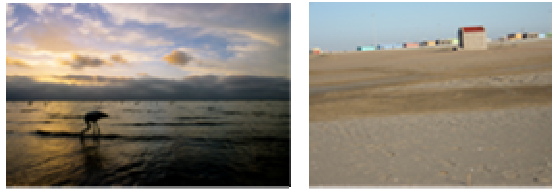
### Marine litter survey in Walvis Bay

In the last week of May 2006, the Project Team and a group of students and teachers from the Kuisebmond High School in Walvis Bay, members of the Coastal Youth Club, officials from the Walvis Bay Multi Purpose Centre, Ministry of Fisheries and Marine

Resources, Ministry of Works Transport and Communication and the Walvis Bay Municipality were involved in a long week of activities around the issue of Marine Litter in the town.

### ***The pilot site***

Walvis Bay is one of the few major towns on the coast of Namibia, with high **sand dunes** stretching inland and wetlands of international importance in the **Walvis Bay Lagoon** nearby. A town with 55,000 inhabitants, Walvis Bay is an important fishing port and economic and tourism centre. The major sources of litter are the **fishing industry** and **tourists** who use the beach.



### ***The activities***

The students and Coastal Youth Club carried out a physical **survey** at the Independence Beach, which is considered to be a "hotspot" for marine litter in Walvis Bay. Different groups were formed and in each group three persons collected the litter while the last person recorded the data on the data sheet provided. Six transects were set up, along which litter was collected and weighed. The litter was then transported by the Municipality to the landfill site. A total of 1, 800 g of litter was collected in the six transects.



On the following day there was a **discussion forum** with the students and the Coastal Youth Club, as well as invited stakeholders from the Walvis Bay Multi Purpose Centre, Ministry of Fisheries and Marine Resources, Ministry of Works Transport and Communication and the Walvis Bay Municipality. Discussions focused on types of marine litter, main sources of marine litter, extent of the problem and possible ways to reduce, reuse and recycle litter from an institutional perspective.

It was also made clear that the Municipality of Walvis Bay assists any local project that tackles environmental management through its **Environmental Fund Initiative** and the youth were encouraged to make use of that opportunity. Students were also introduced to the broader framework of the **NACOMA Project** (Namib Coast Biodiversity Conservation and Management).

The participants decided to dedicate the World Environment Day to the issue of "marine litter" through a beach clean up and a committee that was set up to spearhead the activities. Indeed, the **World Environment Day "Clean up Campaign"** between Walvis Bay and Swakopmund took place on 5 June 2006 with technical and financial assistance from the DLIST-Benguela Project, BCLME Marine Litter Programme, Walvis Bay Municipality through its Environmental Management Section, Coastal Youth Club, the Walvis Multi Purpose Centre Trust, Kuisebmond Secondary School, the Ministry of Fisheries.

This was just the beginning of activities, more interesting activities aimed at awareness raising by different means are expected to start soon—watch this space!

### **Some conclusions...**

- Most of the litter was found above the high-water mark and the items most commonly found were sweet wrappers, plastic bags, polystyrene, bottle caps, beer bottles, cigarette butts, and boxes.
- More bins are needed on the beach, and pictures can be used on the bins to draw people's attention.



- The students felt more aware of what marine litter was and why they should be concerned about it. The use of posters and school visits were considered good further awareness raising tools.
- Fishermen should be targeted by awareness raising campaigns.

For more information about these activities please contact Romie Vonkie Nghiulikwa at [romie@ecoafrica.co.za](mailto:romie@ecoafrica.co.za) or Theobald Mukena at [theobald@mpc.org.na](mailto:theobald@mpc.org.na).

Write your comments and suggestions on the [Discussion Forum](#).

### Beach cleanup near Luanda

Last July, students and teachers from the school in Buraco and the 17 Setembro School in Mabunda engaged in beach clean up demonstration activities together with members of the Ecological Youth of Angola (JEA), the Ministry of Fisheries, the NGO Group of Support to Peoples in Need (GAPC) and EcoAfrica.

#### *The pilot sites*

**Buraco** is a community in the Commune of Ramiro, about 60 km south of Luanda, with close to 1,000 inhabitants. **Fishing** is the main livelihood. The nearest health centre is located 20 km from Buraco and a **new school** has recently been built. Buraco has an estuary with an extensive but already damaged **mangrove system** that is used by the community as source of fuel. The problem of **litter** is visible in the community, both litter brought by the sea to the beaches and waste generated by the community and spread around the houses. There is no waste collection in this community.



**Mabunda** is located near the centre of Luanda. It is one of the most important **fish markets** in Samba Municipality, with clients coming from various parts of the city to buy fish both for sale and household consumption. This area faces serious sanitation problems. The beaches are seriously polluted with **litter** brought by the sea and rivers as well as originated by the fish market. An **open drain** discharging onto the beach aggravates the pollution problem in the area and associated health risks. There are a number of **schools** in the area, some of which are actively involved in beach cleanup activities usually funded by the private sector.



### **The activities**

In the first visits to both sites, the project team presented the project to the schools and members of the communities, briefed the students about the problem of marine litter and planned the activities with the teachers. The teachers and project team together decided that sensitisation games followed by beach cleanup demonstration activities would be the most adequate for the schools.

On the day scheduled for the activities in each school, a group of very enthusiastic students presented short **theatre plays** about the subject, depicting typical situations that contribute to the problem of marine litter.



For the **beach cleanup**, the students marked areas on the beach and cleaned these areas using spades, rakes and plastic bags. In Buraco the litter along the beach consisted mainly of mangrove debris, with some plastic and cans as well, but most of the litter was found closer to the village, where there is no waste collection. In Mabunda the marine litter situation is serious and requires urgent attention. The students collected all types of material, from plastics to bottles, cans, and clothes.



The project team met with the Municipal Administrator of Samba, who showed great interest in the initiative and suggested **follow-up activities** with the support of the Administration and the Ports Authority. Elisal, the company responsible for waste management in the area, was unfortunately not available to participate in the discussions.

The students in both schools were left with the task of preparing **posters and essays** on the topic. The best ones will be used to spread the message to other schools in Angola.

More activities are thus expected—watch this space for new updates!

### **Some conclusions...**

- The students in both schools showed great enthusiasm and a high level awareness of the problem of marine litter.
- The school in Mabunda particularly is often involved in environmental education and awareness raising activities (including coastal cleanups) usually sponsored by private companies operating in the area.

- The school and members of the community in Buraco carry out regular beach clean ups themselves, but lack appropriate material.
- General waste and litter situation is serious in both areas and especially daunting in Mabunda. The participants agreed that initiatives like this are important but that actions on a larger scale are necessary.
- There are no waste bins on the pilot areas and no waste collection near the beaches, which makes it difficult to undertake the beach cleanup and to make any solutions sustainable.
- It is important to involve key stakeholders in activities of this sort, such as waste management companies, the municipalities and the Ports Authority.
- The idea of a poster/ essay competition in the schools and the dissemination of the best posters/ essays in other schools in the country was welcome by both students and teachers.

*For suggestions and queries about these activities please contact Abias Huongo at [huongoam@hotmail.com](mailto:huongoam@hotmail.com) or Raquel Garcia at [raquel@ecoafrika.co.za](mailto:raquel@ecoafrika.co.za).*

*Write your comments and suggestions on the [Discussion Forum](#).*

## SUGGEST, ASK, DISCUSS...



### Share your views and opinions

Issues surrounding marine litter and pollution have been raised on the DLIST Discussion Forum in some occasions. If you have questions, suggestions, or information to share with the wider DLIST Community, visit the discussion forums.

- Visit the [discussion forums](#) and participate. Tell us about the problem of marine litter in the area where you live, what is being done to solve the problem, and give us ideas on activities for kids and ways to involve the community to help solve the problem.
- Read the latest about the [BCLME Marine Litter Project](#) and give your comments and suggestions.

### Suggestions and questions?

- To learn more about the **Marine Litter Project** contact Maria Sardinha at the BCLME Programme Activity Centre in Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)) or visit [www.bclme.org](http://www.bclme.org)
- For suggestions or new information for **this Burning Issue**, contact the DLIST team ([admin@dlis-benguela.org](mailto:admin@dlis-benguela.org))

## EXPLORE...



### Explore the web

- **Global Marine Litter Information Gateway** <http://marine-litter.gpa.unep.org/>
- **Marine Litter Net** <http://www.marine-litter.net/index.htm>
- **South African Coastal Information Centre (Coastcare)** <http://sacoast.uwc.ac.za/>
- **BCLME Programme** [www.bclme.org](http://www.bclme.org)

### Manuals, tips, reports...

- **Pocket Guide to Marine Debris** with information on types and sources of marine litter and methodologies for coastal cleanups and surveys. <http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>
- **Marine Litter Legal Framework and Initiatives**, a report produced by the Marine Litter Project of the BCLME Programme. Download it [here](#).
- Resources for kids/ teachers on **Kids against marine litter** <http://marine-litter.gpa.unep.org/kids/kids.htm>
- More about coastal communities in general along the BCLME coast on the report entitled **How can coastal communities become involved and benefit from the BCLME Programme**. Download it [here](#).

Have more interesting documents and web links? Write to [admin@dlis-benguela.org](mailto:admin@dlis-benguela.org)

## 8.5 Marine Litter Burning Issue Portuguese Version

### LIXO MARINHO



A nossa costa é preciosa para todos—para quem vive perto do mar e depende dos recursos costeiros e marinhos para a sua subsistência, bem como para quem visita as praias no seu tempo de lazer. O lixo proveniente de fontes marinhas e terrestres ameaça, contudo, a saúde da costa e, conseqüentemente, a nossa saúde também. Explore os temas, actividades, e informação existente acerca deste tópico neste Tema Escaldante e contribua com mais informação.



#### O problema

O que é o lixo marinho, e quais as origens e impactes do lixo marinho?



#### O que está a ser feito?

Explore as iniciativas e leis em Angola, Namíbia e África do Sul.



Angola

#### No terreno...

Descubra o que alunos em Angola e Namíbia têm feito para limpar as suas praias. O Programa BCLME está a implementar o Projecto sobre Lixo Marinho, com actividades escolares desde limpezas de praia e levantamentos de lixo marinho à preparação de posters.



Namíbia



### **Sugira, pergunte, discuta...**

Partilhe as suas opiniões com outros grupos de interesse e coloque as suas questões.



### **Explore...**

Descubra mais informação na internet e leia mais sobre o assunto.

## **O PROBLEMA DO LIXO MARINHO**



Lixo marinho é “**qualquer material sólido manufacturado persistente que tenha sido descartado, depositado ou abandonado no ambiente marinho e costeiro**”, de acordo com a definição do Programa Ambiental das Nações Unidas (UNEP).

O lixo marinho pode ter **origem no mar** (ex. navios e despejo no mar, plataformas petrolíferas no alto mar) e **na terra** (ex. escoamento de água das chuvas, derrames de esgotos, veraneantes).

O lixo **ameaça a vida marinha** ao prender os movimentos e através de asfixia e ingestão. Tem um **impacte visual** nas áreas marinhas e costeiras com efeitos negativos no turismo e pode causar **problemas de saúde e segurança humana**. O lixo no ambiente marinho pode também **destruir habitats costeiros** e, em algumas situações, interferir com a produção biológica em áreas costeiras.



### O estado da costa nos países BCLME

A maior parte da poluição marinha em **Angola** tem origem terrestre, resultante especialmente de áreas urbanas com excesso de população, descargas de esgoto não tratado, resíduos industriais trazidos pelos rios, actividades piscatórias e exploração petrolífera. Na **Namíbia**, a poluição marinha não é muito generalizada pois a maior parte da linha costeira não é habitada. As maiores concentrações ocorrem em Walvis Bay, provenientes de efluentes usados nas indústrias pesqueiras e substâncias perigosas usadas na reparação e manutenção de navios de pesca e outros navios. O lixo marinho na **África do Sul** é especialmente problemático no que diz respeito ao lixo trazido pelo escoamento de águas de chuva para os portos e baías.

### O QUE ESTÁ A SER FEITO EM ANGOLA, NAMÍBIA E ÁFRICA DO SUL?



Descubra alguns exemplos de iniciativas em Angola, Namíbia e África do Sul, bem como leis internacionais e nacionais relevantes para o lixo marinho. Leia mais no relatório “[Marine Litter Legal Framework and Initiatives](#)” (Quadro Legal e Iniciativas sobre o Lixo Marinho), preparado para o Projecto de Lixo Marinho do Programa BCLME.

#### Acções e programas

- O **Programa Regional dos Mares da região da África Oeste e Central** (*Regional Seas Programme for the West and Central Africa region*) foi estabelecido sob os auspícios do quadro legal internacional da Lei do Mar e de acordo com as provisões da Agenda 21. Visite <http://www.unep.org/regionalseas/About/default.asp>

- A **Limpeza Costeira Internacional** (*International Coastal Cleanup*) tem lugar todos os anos, envolvendo pessoas em todo o mundo na limpeza das suas praias, rios e lagos. Leia mais em <http://www.coastalcleanup.org/welcome.cfm>.
- O **Projecto de Lixo Marinho**, do Programa BCLME, pretende avaliar os quadros existentes para lidar com o problema do lixo marinho em Angola, Namíbia e África do Sul e sensibilizar para a importância do tema. Contacte a Maria Sardinha no Centro de Actividade do Programa BCLME em Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)) para mais informação.
- O **Programa Coastcare Trabalhando para a Costa** (*Coastcare Working for the Coast Programme*) da África do Sul pretende utilizar os recursos costeiros para promover o desenvolvimento das comunidades costeiras e, ao mesmo tempo, proteger e reabilitar estes recursos. Engloba várias actividades incluindo limpezas costeiras regulares e reciclagem quando apropriado. Visite [http://www.environment.gov.za/ProjProg/CoastCare/working\\_for\\_the\\_coast.htm](http://www.environment.gov.za/ProjProg/CoastCare/working_for_the_coast.htm)
- O **Comité para Coordenação da Prevenção da Poluição Costeira e Marinha** (*Coastal and Marine Pollution Prevention Coordination Committee, C&MPPCC*) foi estabelecido para promover a protecção do ambiente marinho através da coordenação.
- O **Projecto Praias Saudáveis** foi uma iniciativa piloto conjunta da Juventude Ecológica de Angola (JEA) e da Capitania do Porto de Luanda. A JEA participa regularmente em limpezas de praia e actividades de educação ambiental em Angola. Contacte o Abias Huongo em [huongoam@hotmail.com](mailto:huongoam@hotmail.com) para saber mais sobre as actividades da JEA.

Conhece mais iniciativas? Escreva para [admin@dlis-benguela.org](mailto:admin@dlis-benguela.org)

## Enquadramento legal

Muitas **convenções e acordos internacionais** sobre o mar, poluição marinha e protecção do ambiente marinho e costeiro têm repercussões na prevenção e mitigação de lixo marinho. Muitas destas convenções foram assinadas por Angola, Namíbia e África do Sul.

Enquanto em Angola e Namíbia não existe **legislação nacional** especificamente dedicada à prevenção de lixo marinho, na África do Sul a legislação ambiental encontra-se mais desenvolvida, com elementos específicos dedicados ao controlo do lixo marinho.

### **Legislação nacional relevante para o lixo marinho nos Países BCLME**

Em **Angola** foi preparada uma versão provisória da Lei de Resíduos para discussão. Outros instrumentos legais que têm relevância para o lixo marinho incluem a versão provisória do Programa Nacional para a Gestão Ambiental, a Lei dos Recursos Biológicos Aquáticos e leis no sector petrolífero.

O principal texto que trata do lixo marinho na **Namíbia** é a Lei das Águas. As leis sectoriais, tais como leis do sector mineiro e petrolífero, incluem várias provisões sobre poluição. Tanto o *Plano Verde (Green Plan)* da Namíbia como a versão provisória da Lei de Gestão Ambiental fazem referência ao lixo e poluição marinha.

A Constituição da **África do Sul** e uma série de leis e políticas dão origem a regras e princípios que governam a poluição marinha no país, incluindo a Lei sobre o Controlo do Despejo no Mar, Lei sobre Poluição Marinha (Controlo e Responsabilidade Civil; Prevenção de Poluição proveniente de Navios; e Intervenção), *White Paper* sobre Gestão Integrada de Poluição e Resíduos para a África do Sul, e *White Paper* para o Desenvolvimento Costeiro Sustentável.

### **NO TERRENO: ACTIVIDADES PILOTO DO PROGRAMA BCLME**

#### **Projecto sobre Lixo Marinho do Programa BCLME**

O **Projecto sobre Lixo Marinho**, no âmbito do Programa BCLME, pretende avaliar os quadros existentes para lidar com o problema do lixo marinho em Angola, Namíbia e África do Sul, bem como sensibilizar para a importância do tema. As componentes do projecto são:

- 1) Avaliar o enquadramento legal/político sobre lixo marinho nos três países
- 2) Rever os programas existentes sobre lixo marinho em Angola, Namíbia e África do Sul
- 3) Realizar levantamentos de lixo marinho envolvendo escolas em áreas piloto
- 4) Sensibilizar para o lixo marinho através de posters/panfletos para escolas

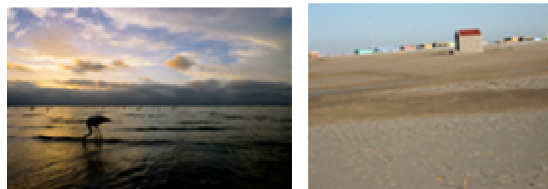
Leia mais em [www.bclme.org](http://www.bclme.org) ou contacte a Maria Sardinha no Centro de Actividade do Programa BCLME em Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)).

## Levantamento de lixo marinho em Walvis Bay

Na última semana de Maio de 2006, a Equipa de Projecto e um grupo de estudantes e professores da Escola Secundária de Kuisebmond em Walvis Bay, membros do Clube Jovem Costeiro, representantes do Centro Multi-fins de Walvis Bay, do Ministério das Pescas e Recursos Marinhos, Ministério das Obras, Transportes e Comunicação e do Município de Walvis Bay participaram numa semana de actividades em torno do tema do Lixo Marinho na cidade.

### *O sítio piloto*

Walvis Bay é uma das poucas cidades ao longo da costa da Namíbia, com **grandes dunas de areia** que se estendem até ao interior e zonas húmidas de importância internacional na **Lagoa de Walvis Bay**. Uma cidade com 55,000 habitantes, Walvis Bay é um porto pesqueiro importante e um centro económico e turístico. As principais fontes de lixo são a **indústria pesqueira** e os **turistas** que usam a praia.



### *As actividades*

Os estudantes e o Clube Jovem Costeiro levaram a cabo um **levantamento** físico na Praia da Independência, que é considerada como um ponto focal de lixo marinho em Walvis Bay. Foram formados vários grupos e em cada grupo três pessoas recolheram lixo, enquanto uma pessoa registou os dados numa folha de resultados que foi fornecida. Foram estabelecidos seis transectos, ao longo dos quais se recolheu e pesou o lixo. O lixo foi então transportado pelos serviços municipais para o aterro sanitário. Foi recolhido um total de 1,800 g de lixo nos seis transectos.



No dia seguinte, teve lugar um **fórum de discussão** com os estudantes e o Clube Jovem Costeiro, bem como partes interessadas convidadas do Centro Multi-fins de Walvis Bay, Ministério das Pescas e Recursos Marinhos, Ministério das Obras, Transportes e Comunicação e do Município de Walvis Bay. As discussões concentraram-se nos vários tipos de lixo marinho, principais origens de lixo marinho, dimensão do problema e formas possíveis de reduzir, reutilizar e reciclar o lixo do ponto de vista institucional.

Foi ainda mencionado que o Município de Walvis Bay apoia projectos locais relacionados com a gestão ambiental através da sua **Iniciativa do Fundo Ambiental**, tendo a juventude sido encorajada a tirar partido dessa iniciativa. O enquadramento geral do **Projecto NACOMA** (Conservação e Gestão da Biodiversidade da Costa do Namib) foi também apresentado aos estudantes.

Os participantes decidiram dedicar o Dia Mundial do Ambiente ao tema do “lixo marinho” através de uma limpeza de praia, tendo sido estabelecido um comité para liderar as actividades. Assim, a “**Campanha de Limpeza**” do dia Mundial de **Ambiente** realizou-se no dia 5 de Junho de 2006 entre Walvis Bay e Swakopmund, com apoio técnico e financeiro do Projecto DLIST-Benguela, Projecto de Lixo Marinho do Programa BCLME, Centro Multi-fins de Walvis Bay, Escola Secundária de Kuisebmond, e Ministério das Pescas.

Isto foi apenas o início das actividades, esperando-se em breve mais actividades de sensibilização interessantes utilizando meios diversos—fique atento a este espaço!

### **Algumas conclusões...**

- A maioria do lixo foi encontrada acima da linha de maré alta e os itens mais frequentes foram invólucros de doces, sacos plásticos, polistireno, tampas de garrafas, garrafas de cerveja, beatas de cigarro e caixas.
- São necessários mais caixotes de lixo na praia, podendo utilizar-se imagens nos caixotes para chamar a atenção das pessoas.
- Os estudantes ficaram a perceber melhor o que é o lixo marinho e porque se devem preocupar com o tema. O uso de posters e visitas escolares foram considerados bons instrumentos de sensibilização.
- As campanhas de sensibilização deveriam dirigir-se também aos pescadores.

Para mais informação acerca destas actividades, por favor contacte a Romie Vonkie Nghiulikwa em [romie@ecoafrika.co.za](mailto:romie@ecoafrika.co.za) ou o Theobald Mukena em [theobald@mpc.org.na](mailto:theobald@mpc.org.na).

Escreva os seus comentários e sugestões no [Fórum de Discussão](#).

### **Limpeza de praias perto de Luanda**

Em Julho de 2006, estudantes e professores da Escola do Buraco e da Escola 17 de Setembro na Mabunda participaram em actividades de demonstração de limpeza de praias, em conjunto com membros da Juventude Ecológica de Angola (JEA), o Ministério das Pescas, a ONG Grupo de Apoio aos Povos Carentes (GAPC) e a EcoAfrica.

### **Os sítios piloto**

**Buraco** é uma comunidade na Comuna do Ramiro, cerca de 60 km a Sul de Luanda, com cerca de 1,000 habitantes. A **pescas** é o principal meio de subsistência. O centro de saúde mais próximo situa-se a 20 km do Buraco. Foi recentemente construída uma **nova escola** na comunidade. O Buraco tem um estuário com um **sistema de mangal** extenso mas degradado, que é utilizado pela comunidade para a obtenção de lenha. O problema do **lixo** é visível na comunidade—tanto lixo trazido para as praias pelo mar como resíduos gerados pela comunidade e espalhados perto das habitações. Não existe recolha de lixo nesta comunidade.



**Mabunda** localiza-se perto do centro de Luanda. É um dos **mercados de peixe** mais importantes no Município de Samba, recebendo clientes de várias partes da cidade que compram peixe tanto para venda como para consumo próprio. Esta área enfrenta graves problemas de saneamento. As praias encontram-se muito poluídas com **lixo** trazido pelo mar e rios, assim como proveniente do mercado de peixe. Uma **vala de descarga** na praia agrava o problema na área e os riscos de saúde associados. Existem várias **escolas** na área, algumas das quais activamente envolvidas em iniciativas de limpeza de praia normalmente financiadas pelo sector privado.



### **As actividades**

Nas primeiras visitas a ambos os sítios, a equipa de projecto apresentou o projecto às escolas e membros das comunidades, resumiu o problema do lixo marinho aos alunos, e planeou as actividades com os professores. Os professores e a equipa de projecto decidiram que as actividades mais adequadas para as escolas seriam jogos de sensibilização seguidos de actividades de demonstração de limpeza de praias.

No dia agendado para as actividades em cada escola, um grupo de estudantes muito entusiastas apresentou curtas **peças teatrais** sobre o tema, ilustrando situações típicas que contribuem para o problema do lixo marinho.



Para a **limpeza de praias**, os estudantes marcaram áreas na praia e limparam essas áreas utilizando pás, ancinhos e sacos plásticos. No Buraco, o lixo ao longo da praia consistiu principalmente em material dos mangais, com alguns plásticos e latas também, mas a maioria do lixo encontrava-se perto da vila, onde não existe recolha de lixo. Na Mabunda, a situação do lixo marinho é grave e requer atenção urgente. Os alunos recolheram vários tipos de material, desde plásticos e latas a roupas.



A equipa de projecto reuniu-se com o Administrador Municipal da Samba, que mostrou um grande interesse na iniciativa e sugeriu **actividades de seguimento** com o apoio da Administração e da Capitania de Luanda. Elisal, a empresa responsável pela gestão de resíduos na área, não esteve infelizmente disponível para participar nas discussões.



Os alunos em ambas as escolas ficaram com a tarefa de preparar **posters e redacções** sobre o tema. Os melhores serão utilizados para espalhar a mensagem noutras escolas em Angola.

Esperam-se, assim, mais actividades—fique atento a este espaço para mais novidades!

### ***Algumas conclusões...***

- Os estudantes de ambas as escolas mostraram-se muito entusiasmados e conscientes do problema do lixo marinho.
- A escola da Mabunda, em particular, participa frequentemente em actividades de educação e consciencialização ambiental (incluindo limpezas de praia), normalmente patrocinadas por empresas privadas que operam na área.
- A escola e membros da comunidade no Buraco realizam limpezas de praia regulares, mas têm falta de material apropriado.
- A situação geral do lixo marinho é grave em ambas as áreas e especialmente assustadora na Mabunda. Os participantes concordaram que iniciativas como esta são importantes mas que são necessárias acções a uma escala maior.
- Não existem caixotes de lixo nas áreas piloto nem recolha de lixo perto das praias, pelo que se torna difícil realizar limpezas de praia e garantir soluções sustentáveis.
- É importante envolver grupos de interesse chave em actividades deste género, tais como empresas de gestão de resíduos, os municípios e a Capitania.
- A ideia de uma competição de posters/redacções nas escolas e disseminação dos melhores posters/redacções noutras escolas do país foi bem recebida tanto pelos alunos como pelos professores.

*Para sugestões ou questões sobre estas actividades, por favor contacte o Abias Huongo em [huongoam@hotmail.com](mailto:huongoam@hotmail.com) ou a Raquel Garcia em [raquel@ecoafrika.co.za](mailto:raquel@ecoafrika.co.za).*

*Escreva os seus comentários e sugestões no [Fórum de Discussão](#).*

## SUGIRA, PERGUNTE, DISCUTA...



### Partilhe as suas perspectivas e opiniões

Têm sido abordados no Fórum de Discussão da DLIST, em várias ocasiões, assuntos relacionados com o lixo e poluição marinha. Se tiver questões, sugestões ou informação para partilhar com a Comunidade alargada da DLIST, visite os fóruns de discussão.

- Visite os [fóruns de discussão](#) e participe. Descreva-nos o problema do lixo marinho na área onde vive e o que está a ser feito para solucioná-lo, e dê-nos ideias sobre actividades para crianças e modos de envolver a comunidade na resolução do problema.
- Leia as últimas notícias sobre o [Projecto sobre Lixo Marinho do Programa BCLME](#) e envie os seus comentários e sugestões.

### Sugestões e questões?

- Para saber mais sobre o **Projecto sobre Lixo Marinho** contacte a Maria Sardinha no Centro de Actividade do Programa BCLME em Luanda ([bclme.behp@nexus.ao](mailto:bclme.behp@nexus.ao)) ou visite [www.bclme.org](http://www.bclme.org)
- Para sugestões ou mais informação para **este Tema Escaldante**, contacte a Equipa da DLIST ([admin@dlis-benquela.org](mailto:admin@dlis-benquela.org))

## EXPLORE...



### Explore na Internet

- **Portal de Informação Global sobre Lixo Marinho** (Global Marine Litter Information Gateway) <http://marine-litter.gpa.unep.org/>
- **Lixo Marinho Net** (Marine Litter Net) <http://www.marine-litter.net/index.htm>
- **Centro Sul Africano de Informação Costeira (Coastcare)** (South African Coastal Information Centre) <http://sacoast.uwc.ac.za/>
- **Programa BCLME** [www.bclme.org](http://www.bclme.org)

### Manuais, dicas, relatórios...

- **Guia de Bolso sobre Lixo Marinho** (Pocket Guide to Marine Debris) com informação sobre os tipos e origens de lixo marinho e as metodologias para limpezas e levantamentos costeiros.  
<http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>
- **Quadro Legal e Iniciativas sobre Lixo Marinho** (Marine Litter Legal Framework and Initiatives), um relatório preparado pelo Projecto sobre Lixo Marinho do Programa BCLME. Faça o download [aqui](#).
- Recursos para crianças/professores em **Crianças contra o lixo marinho** (Kids against marine litter) <http://marine-litter.gpa.unep.org/kids/kids.htm>
- Mais informação geral sobre comunidades costeiras ao longo da costa BCLME no relatório intitulado **Como podem as comunidades costeiras envolver-se e beneficiar do Programa BCLME: Uma Análise**. Faça o download [aqui](#).

Tem mais documentos e links de internet interessantes? Escreva para [admin@dlis-benguela.org](mailto:admin@dlis-benguela.org)