Protecting coastal and marine environments from land-based activities

A guide for national action

UNEP

GPA

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United Nations Environment Programme (UNEP)
Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

Foreword

Coastal and marine environments play many different roles in relation to public health, food security, economic and social benefits, cultural values and traditional livelihoods. The state of these environments is mirrored by activities carried out on land. Activities varying from industrial and agricultural production to daily domestic routines affect the health of these ecosystems and of the people that depend on them.

During the first intergovernmental review meeting of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) in 2001, governments confirmed their commitment to use the coastal and marine environments in a sustainable way through implementation of the GPA.

In 2002 the United Nations Environment Programme (UNEP), as the Secretariat of the GPA, published a Handbook on the Development and Implementation of National Programmes of Action for the Protection of the Marine Environment from Land-based Activities (NPAs). It provides guidance for environmental managers and policy makers on how to implement the GPA in their own countries. Since its release many lessons have been learned and related policy developments gained importance.

Many NPAs have been formulated but concrete measures and action is lagging far behind. In this revision of the NPA Handbook it is stressed that institutional, financial, legislative, social, and technical aspects should be further addressed. Emphasis is put on affordable programming, calling for realistic, step-by-step implementation of priorities within a cross-sectoral, participatory framework, through a flexible and iterative process. Linkages with other strategic processes are made more explicit, such as the Millennium Development Goals, sustainable development partnerships, poverty reduction strategies and sectoral policies, and linkages between coastal areas and upstream river basins.

A key purpose of the NPAs is to mobilize stakeholders and resources, and to ensure that activities fit into existing institutional, policy, societal and budgetary frameworks. As needs and priorities vary greatly between countries, action has to be tailor-made. In quite some countries a specific NPA programme may not be necessary because other relevant programmes are already in place, in other countries a limited programme may be enough to pull all relevant actors together, and in a third group of countries a full-scale programme will be required.

We re-named this new version, using the word guide instead of a handbook, because it mainly points to relevant sources that provide specific guidance. I hope that this revision will facilitate action that will actually protect our coastal and marine environments. We anticipate that up-dated versions will be produced as new approaches in relevant sectors mature into replicable methods. Feedback for future revisions is most welcome.

Dr. Veerle Vandeweerd
Coordinator, UNEP/GPA Coordination Office

Reader's guide

There are several ways in which this report can be used. Government and NGO staff, members of the private sector and others can use it to acquaint themselves of the basics for taking national action to protect the marine and coastal environment from land-based activities. It can also help ministries and other stakeholder representatives in the process of creating an enabling environment and subsequently implementing activities that will respect marine and coastal ecosystems. At the same time, it can be used in training workshops and other capacity building initiatives.

The report has three major parts. Part I is meant for policy makers as well as environmental managers ranging from national to local levels. It has a simple structure in which it sets the scene for action. Chapter 1 gives a general introduction; Chapter 2 briefly describes action taken so far at global and regional levels and summarizes lessons learned from relevant national strategic planning tools such as the National Programmes of Action (NPAs) and sustainable development strategies; Chapter 3 introduces guiding principles for national action.

Part II goes into more detail, especially addressing environmental managers, outlining specific tasks involved in a NPA process. Chapter 4 proposes a framework with five main steps that will lead to action. For each of the five Steps specific tasks are formulated (see Box next page). Chapter 5 describes Steps 1, 2 and 3, dealing with the initiation of a NPA process and the formulation of a realistic programme. Chapter 6 covers Steps 4 and 5, focussing on actual successful measures and activities.

Throughout the report examples are included in the text or in illustrations (numbers of figures and boxes are linked to Chapter numbers). In addition, Part III presents annexes with background information, more extensive examples and a list of recent publications recommended for further reading.

For *national* action it was possible to include specific examples and references that mainly deal with conceptual approaches, or with the mechanics of creating an enabling environment in the fields of policy, legislation and financing. For *local* on the ground activities the options become too numerous to present in this report. As a result, in most cases only brief examples are given with reference to more detailed sources.

Five major steps, each with specific tasks

STEP 1 Initial preparations

To start a cross-sectoral and multi-stakeholder process for the protection of the coastal and marine environment from land-based activities:

- designate the overall lead that will have to carry out initial preparation tasks:
- set up (and chair) a NPA Core Group
- define the overall scope and guiding principles
- consult potential financial partners
- hold initial brainstorming sessions with key actors
- develop and agree on an initial work plan
- secure funding for preparatory activities (mainly Step 1 and 2)
- ensure formal endorsement of the NPA process by the government

STEP 2 Identification of problems and of constraints and opportunities for successful solutions

To analyse the current situation:

- assess policy tools, (potential) partners and linkages
- assess data, monitoring and reporting mechanisms
- assess legal and financial frameworks
- For all: identify problems, constraints, opportunities and (capacity building) needs

STEP 3 Formulating realistic strategies and action

To develop a tailor-made NPA programme for step-by-step implementation through a wide network of linkages, partners and stakeholders:.

- set up an institutional network
- set realistic objectives, goals, targets and time-frames
- define prioritization criteria and set priorities
- produce a programme pipe-line and formulate short and medium term activities
- devise a financing strategy
- formulate communication and participation strategies
- designate implementing agencies and assign responsibilities

STEP 4 Kick-off national level measures and on the ground activities

To start implementation involving all stakeholders and to ensure support and a sense of ownership at all levels by creating awareness:

- ensure adoption and acceptance of responsibilities by implementing agencies
- start ongoing awareness and outreach activities

STEP 5 Monitoring, evaluation and revision

To set up strong monitoring, feedback and evaluation components:

- ensure continuous monitoring, evaluation and revision
- set-up assessment and reporting programmes to evaluate action
- select indicators against which set goals and targets can be evaluated

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Acronyms

ASEAN	Association of Southeast Asian Nations
AU	African Union
Billion	1 000 million
BPOA-SIDS	Barbados Programme of Action for the Sustainable Development of Small Island Developing States
CBD	Convention on Biological Diversity
CBNRM	Community-based Natural Resource Management
DPSIR	Driver-Pressure-State-Impact-Response Framework
EC	European Commission
EEA	European Environment Agency
EEAC	European Environment Advisory Council
EIA	Environmental Impact Assessment
EU	European Union
EUCC	The Coastal Union (of Europe)
FAO	Food and Agriculture Organization of the UN
GDP	Gross Domestic Product
GEO	Global Environment Outlook
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP)
GIWA	Global International Waters Assessment
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
GTA	Grupo Técnico del Agua
HELCOM	Helsinki Commission (for the Baltic Sea)
ICARM	Integrated Coastal Area and River Basin Management
ICZM	Integrated Coastal Zone Management
IFI	International financial institution
IGO	Inter-governmental organization
IHE-Delft	International Institute for Infrastructural, Hydraulic, & Environmental Engineering
IISD	International Institute for Sustainable Development
IMO	International Meteorological Organization
ISO	International Organization for Standardization
IUCN	World Conservation Union
IWP	International Waters Project of GEF
IWRM	Integrated Water Resource Management
JPOI	Johannesburg Plan of Implementation
LBA	Land-based Activities
LBS	Land-based Sources of Pollution
LME	Large Marine Ecosystems
LOICZ	Land-Ocean Interactions in the Coastal Zone
MA	Millennium Ecosystem Assessment
MAP	Mediterranean Action Plan
MBI	Market-based Instrument
MDG	Millennium Development Goal
Mercosur	Mercado Común de Sur
MPA	Marine Protected Areas
NEAP	National Environmental Action Plans
NEHAP	National Environment and Health Action Plans
NEMS	National Environmental Management Strategy
NGO	Non-governmental organisation
NPA	National Programme of Action for the Protection of the Marine Environment from Land-based Activities
OECD	Organisation for Economic Cooperation and Development
O&M	Operations and Maintenance
PERSGA	Programme for the Environment of the Red Sea and Gulf of Aden
POPs	Stockholm Convention on Persistent Organic Pollutants
pp	per person
PPP	Purchasing Power Parity
PPP	Public-Private Partnership

PPP	Profit Planet Public
PRSP	Poverty Reduction Strategy Paper
ROPME Sea Area	Regional Organization for the Protection of the Marine Environment of the sea area surrounded by Bahrain, I.R. Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates
RDB	Regional Development Bank
SACEP	South Asia Cooperative Environment Programme
SD	Sustainable Development
SDP	Sustainable Development Partnership
SDS	Sustainable Development Strategy
SEA	Strategic Environmental Assessment
SIDS	Small Island Developing States
SPREP	Secretariat of the South Pacific Regional Environment Programme
UN	United Nations
UNCED	UN Conference on Environment and Development
UNCLOS	UN Convention on the Law of the Sea
UNDESA/DSD	UN Department of Economic and Social Affairs/Division for Sustainable Development
UNDP	UN Development Programme
UNEP-WCMC	UNEP World Conservation Monitoring Centre
UNESCO	UN Educational, Scientific and Cultural Organization
UNFCCC	UN Framework Convention on Climate Change
UNICEF	UN Children's Fund
UNOPS	UN Office for Project Services
UNSD	UN Statistical Division
USA	United States of America
US EPA	US Environmental Protection Agency
WHO	World Health Organization
WRI	World Resources Institute
WWF	World Wide Fund for Nature
WSSD	World Summit on Sustainable Development

Part I

Setting the scene for national action

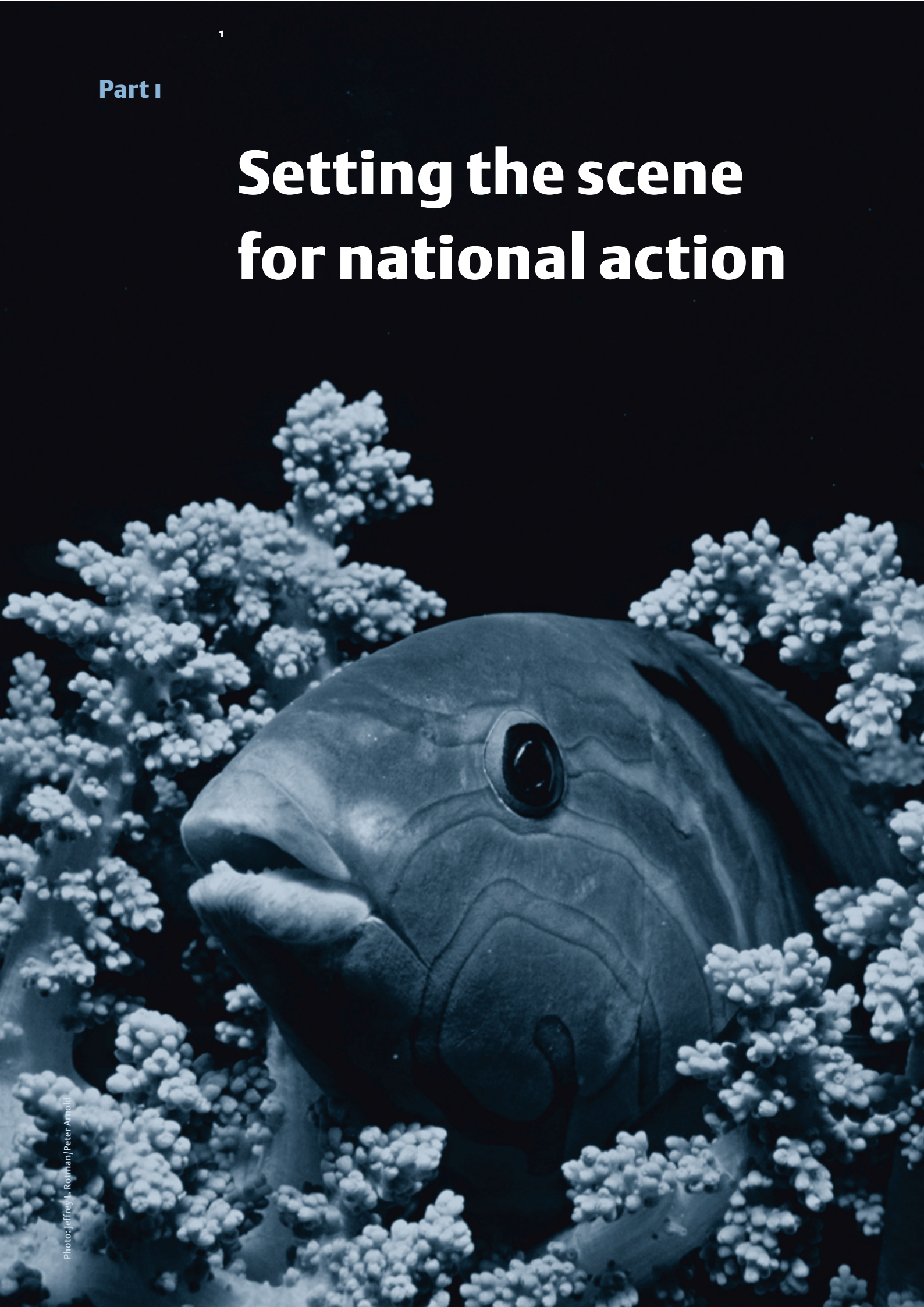


Photo: Jeffrey L. Rotman/Peter Arnold

Why protect coastal and marine environments from activities on land?

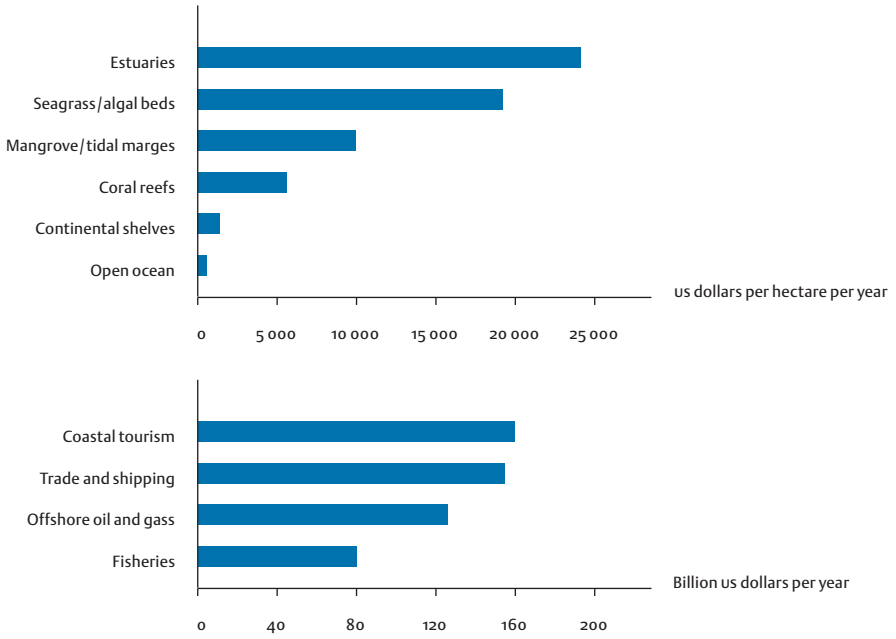
1

Coastal areas and oceans are complex and fragile environments with many different functions linked to public health, food security, and other economic and social benefits. These are also decisive elements in the alleviation of poverty. Healthy estuarine, near-shore and oceanic systems provide cultural heritage, food, building materials, traditional livelihoods, tourism opportunities, transportation routes, storm protection, organisms for biotechnology and many more benefits that are frequently overlooked or abused.

Coastal and marine ecosystems provide huge social, economic and cultural benefits...

Although economic valuation of ecosystems needs to be treated with caution, it is generally accepted that the goods and services delivered by nature are worth trillions of dollars. Some elementary global figures on the value of ecosystems and the benefits from activities in these ecosystems are summarized in the two graphs below. A recent UNEP-WCMC study, focussing on coral reefs and mangroves, presents the same order of magnitude (UNEP-WCMC 2006).

FIGURE 1.1 Estimated mean value of marine biomes and benefits from activities in marine and coastal ecosystems



Constanza 1998 and Plat McGinn 1999 as compiled in UNEP 2002a

...while men's activities on land mainly generate harmful impacts to these aquatic environments

The state of coastal and marine environments is mirrored by the activities carried out on land. Clearing vegetation, mining, and building roads, homes and hotels can destroy habitats and fill rivers and estuaries with mud and silt. Everyday living produces solid waste and sewage that poison groundwater, rivers and lakes, and eventually oceans. Industrial and agricultural production causes pollution of rivers and coastal waters, which can result in algal blooms and contaminated seafood products. Clearly, land-based activities generate harmful impacts and together affect the health of the invaluable salt and brackish water ecosystems and of the people who depend on them as a source of wealth, beauty and recreation.

Sources of degradation are many. A generally accepted and often quoted estimate is that some 80 per cent of all marine pollution originates from land-based activities, either near the shore or from far inland. In the GPA framework (see also Section 2.1) major contaminants and sources of degradation are grouped as listed in Box 1.1 (see also Annex 1 and 2). The box illustrates the enormous variation and complexity in activities that threaten the world's seas and coastal areas, and gives an indication of the type and extent of the action required to counter the effects.

Contaminants reach our waters from point sources, diffuse sources and atmospheric deposition

BOX 1.1 GPA contaminants sources of degradation and areas of concern

Chapter II of the GPA details, among others, the most important contaminants that threaten marine and coastal ecosystems, as well as the major sources of degradation. It shows the most vulnerable areas. The lists below are not intended to show any order of priority. The importance or relevance of the list will depend on the characteristics of the area. Hyperlinks to sites that provide more details on a specific subject are available on the Clearing-House section of the UNEP/GPA web-site (www.gpa.unep.org).

Contaminants

- Sewage
- Persistent organic pollutants
- Radioactive substances
- Heavy metals
- Oils (hydrocarbons)
- Nutrients
- Sediment mobilization
- Marine litter

Sources of degradation

Point sources (coastal & upstream), such as:

- Waste-water treatment facilities
- Industrial facilities
- Power plants
- Military installations
- Recreational/tourism facilities
- Construction works (such as, dams, coastal structures, harbour works and urban expansion)
- Coastal mining (such as, sand and gravel)
- Research centres
- Aquaculture
- Introduction of invasive species
- Physical alteration, including habitat modification and destruction (such as dredging, draining of wetlands or clearing of mangrove areas)

Non-point (diffuse) sources (coastal and upstream), such as:

- Urban run-off
- Agricultural and horticultural run-off
- Forestry run-off
- Mining waste run-off
- Construction run-off
- Landfills and hazardous waste sites
- Erosion as a result of physical modification of coastal features
- Dams and irrigation up-stream, depleting nutrient and freshwater flows into estuaries

Atmospheric deposition caused by:

- Transportation (vehicle and shipping emissions)
- Power plants and industrial facilities
- Incinerators
- Agricultural operations

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Areas most affected or vulnerable (areas of concern)

- Critical habitats, such as coral reefs, wetlands, sea-grass beds, coastal lagoons and mangrove forests
- Habitats of endangered species
- Ecosystem components, such as spawning areas, nursery areas, and feeding grounds
- Shorelines
- Coastal watersheds
- Estuaries and their drainage basins
- Specially protected marine and coastal areas
- Small islands

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In 2006 the UNEP/GPA Coordination Office released an overview of the state of the marine environment in relevant to the GPA issues (UNEP/GPA 2006a). To compile this report a wide range of global references was consulted, many of which are listed in Box 1.2. Besides, ten regional papers were produced on the state of the marine environment in relation to the GPA degradation source categories. A more detailed report at regional level is under preparation, based on these ten reports. The global SOE overview report gives a brief history of progress made in the framework of the GPA, which was adopted in 1995. The bulk of the report describes the current status regarding sources of degradation considered by the GPA (see Box 1.1).

Progress in legal and institutional arrangements, implementation and cooperation, but...

The overall conclusion of the SOE Overview is that real progress has been made in the development, as well as in data collection, monitoring and assessment. However, it is too early to make decisive statements about the effects of these efforts on the state of the marine environment.

The report further highlights:

- *three issues that require attention*: management of municipal wastewater (a priority in six of the ten regions assessed; nutrient over-enrichment; and physical alteration and destruction of habitats in the coastal zone
- *six emerging challenges*: coastal dead zones; depleted freshwater flows; downstream rivers and near-coast freshwater wetlands; New chemicals in the environment; the need for good quality and resilience of coastal habitats; and impacts of sea level rise; and
- *two important management tools*: indicators to assess changes in the state of the marine environment relevant to GPA sources; and integrated management of river basins and coastal areas

...although specific figures may still be lacking there is no doubt that...

There are several other recent studies that try to present a picture of the state and trends in the world's ecosystems (Box 1.2). The Millennium Ecosystem Assessment (MA) is one example, covering all ecosystems of the world. Since April 2005 reports have been released that are of direct interest to GPA efforts: the Overall Synthesis Report on Ecosystems and Human Well-being, and several sub-reports with thematic syntheses on Biodiversity, Desertification, Wetlands and Water, and Health. These reports 'show beyond any question the degradation we have caused to the ecosystems of the earth. At the same time, the MA demonstrated unequivocally that we can better manage these assets, and, by so doing, secure their benefits for the future' (MA 2005a).

...we are still causing enormous damage to the world's ecosystems

Another example is the Global International Waters Assessment (GIWA). The final report was released in early 2006, and includes among others a scoring matrix for all seas of the world, summarizing impacts of 22 damaging sources and activities (GIWA 2006). A score (severe, moderate, light or no impact) is given for each sea looking at eight issues related to pollution, three to freshwater, five to fisheries, two to habitats and four to global change. Environmental impacts are considered, as well as economic, health and other social and community impacts. The matrix also indicates whether impacts are increasing, decreasing or show no change. Overall, only the scores for the Arctic Rim are dominated by yellow and green (light or no impact). In all other seas the red and orange colours (severe or moderate impacts) dominate the scores in varying degrees.

BOX 1.2 Global information sources and assessment programmes relevant to coastal and marine environments

Earth Trends	Database and information site on environment and development www.earthtrends.wri.org
GEO	Global Environment Outlook (global, (sub-) regional and annual reports) www.unep.org
GEO Data Portal	Database, data aggregated at global, regional and sub-regional level www.geodata.grid.unep.ch
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection www.gesamp.imo.org
Small Islands	Web-site giving access to information on islands and Small Island Developing States (SIDS) especially from within the United Nations system www.sidsnet.org
LME	Large Marine Ecosystems www.edc.uri.edu
LOICZ	Land-Ocean Interactions in the Coastal Zone www.loicz.org
TDA	Transboundary Diagnostic Analysis of GEF www.iwlearn.net
MA	Millennium Ecosystem Assessment www.maweb.org
MPA	Marine Protected Areas www.iucn.org
UN Oceans	UN Atlas of the Oceans www.oceanatlas.org
WHO and UNICEF	Joint Monitoring Programme on Water Supply and Sanitation www.unicef.org
UN Water	World Water Development Report – II www.unesco.org
Other IGO sources	Databases, information and news at web-sites of FAO, IMO, IUCN, OECD, UNDP, UNSD, UNESCO, UNEP-WCMC, World Bank, WRI, WWF www.fao.org, www.imo.org, www.iucn.org, www.oecd.org, www.undp.org, unstat.un.org, www.unesco.org, www.unep-wcmc.org, www.worldbank.org, www.wri.org, www.panda.org

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Environmental accounting systems are still lacking...

Researchers also try to document the value of benefits that ecosystems provide and of the costs of damage caused by societies. Not an easy task, especially as present net values are to be compared with possible multiplier effects of the value generated by the destruction of a resource. Unfortunately management decisions are usually strongly influenced by marketable ecosystem services (such as fishery), while important non-marketable benefits (such as coastal protection and biological diversity) can be much more valuable. A recent study of eight Mediterranean countries, for example, showed that timber and wood fuel generally accounted for less than a third of the total economic value of forests, while the non-marketed benefits (recreation, hunting, watershed protection, carbon sequestration, non-wood forest products) accounted for between 25 and 96 per cent.

...but innovative experiences do exist

However, even though the economic value of such non-marketed services may be very high, it will have a low financial value if no one is prepared to pay for it. The lack of an environmental accounting system integrated with the traditional economical accounting system hinders adequate economic valuation of natural resources and ecosystems. Some innovative experiences in the field of water are being developed under the auspices of the United Nations Statistics Division. See for details the UNSD website (www.unstat.un.org/unsd/envAccounting/default.htm) and a 2004 workshop report on integrated water resources accounting in Morocco. The report gives positive recommendations for the adoption and initiation of an official water accounting system for Morocco (UNSD 2004).

Many facts and figures can be found on the valuation of natural resources in various publications and web sites. See for example the crude global figures shown in Figures 1.1 and some more local case study results in Box 1.3. It is difficult to put a price tag on environmental protection, especially for issues of biodiversity, landscapes or the social functions of water. Growing evidence exists, however, that coastal degradation is associated with large direct costs to the economy and society.

BOX 1.3 Estimates of values and of costs of damage to coastal and marine environments

An intact wetland in Canada is valued at US$6 000 per hectare whereas one cleared for intensive agriculture is only worth US$2 000 per hectare.

The average operational management cost of a marine protected area is estimated at US$775 per km². This is less than 0.2 per cent of the estimated global value of a square kilometre of reef or mangrove. In other words: it is well worth to spend a small amount on good management of valuable areas.

Losses as a result of damage by alien, invasive species in the Cape Floral region of South Africa are estimated at US$93 million per year.

Much of the tourism industry, often representing a large percentage of national income, depends on environmentally attractive coastal areas. For example, the annual recreational value of coral reefs in the six Marine Management Areas of the Hawaiian islands ranges from US$300 000 to tens of millions of dollars per year.

However, poor environmental quality deters tourists, immediately lowering income from tourism. This is obvious when coral reefs are damaged. Real estate also quickly looses its high value when the quality of the surroundings deteriorates.

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Coastal degradation is associated with large direct costs to economy and society

After a new fishing harbour and commercial port were built in the 1990s near Tangier in Morocco, the Tangier beach nearly disappeared as the sediment transport regime changed. As a result Tangier, as a tourist destination, lost 53 per cent of its international night-stays, local tourism transport was reduced by 40 per cent and local craftsmen lost 25 per cent of their income.

The collapse of the Newfoundland cod fishery in the early 1990s as a result of over-fishing caused the loss of tens of thousands of jobs and cost at least US$2 billion in income support and retraining.

In 1996, the cost of the damage that UK agricultural practices caused to water (pollution and eutrophication – excessive plant growth that depletes oxygen in the water), air (emissions of greenhouse gases), soil (erosion, emissions of greenhouse gases) and biodiversity was US$2,6 billion, or 9 per cent of average yearly gross farm receipts.

In England and Wales, freshwater eutrophication alone resulted in water treatment costs, reduced value of waterfront dwellings, reduced recreational value of water bodies, and tourism losses. The damage was estimated to be US$105-160 million per year, plus US$77 million a year to address those damages.

Seafood contaminated by harmful algal blooms causes significant health problems. The socio-economic impact in Greece, Italy and Spain is around €329 million per year, affecting mainly commercial fisheries (€59 million) and tourism (€265 million).

Unsafe water, sanitation and hygiene account for almost half of all environmental health risks. For example, 3.3 million children under five years are reported to die each year due to faecal oral infections and the economic loss of the total global health impact of human infectious diseases associated with pathogenic micro-organisms from land-based wastewater pollution of the sea is estimated at US$12 billion per year.

Spiritual and cultural values of ecosystems, such as urban parks or sacred forest groves, can be as important as their other functions.

Sources: Blue Plan 2005, EEA 2005a, GESAMP 2001, MA 2005a, Shuval 2003, UNEP-WCMC 2006, WHO/UNICEF 2004 <

Because the value of ecosystems is difficult to translate into cash benefits, it is difficult to make those who damage ecosystems pay or to design incentives for those who preserve nature: prevention is better than cure.

Preventive action and precaution is required in the absence of certainty...

Since there is a risk of serious irreversible damage to coastal or marine environments and in the absence of full scientific certainty concerning possible damage, precaution is required. Activities should be permitted only if the damage can be adequately mitigated using cost-effective measures. Even though the cost of halting the degradation may seem prohibitive and constraints on initiating action may be numerous, allowing further damage may eventually cost more. Without more action now the current levels of degradation could grow significantly worse, and would become a major barrier to achieving sustainable development (as for example set through the Millennium Development Goals – see Chapter 2).

...this requires changes in political practices

There are many different groups in society involved in harmful land-based activities, each with their own interests, opinions and objectives. The protection and sustainable development of coastal and marine environments thus pose challenges that demand multi-disciplinary and cross-sectoral responses. and require changes in policies, institutions and practices are required. This report provides guidance for national action and hopes to illustrate that affordable options exist.

Action taken so far

2

2.1 Global action

Global conventions

The international community has long recognized that the impact of land-based activities on the marine environment is a local, national and regional problem with global ramifications. The fundamental duty of States to prevent, reduce and control pollution of the marine environment from land-based activities stems from Articles 207 and 213 of the UN Convention on the Law of the Sea (UNCLOS 1982).

Many international conventions relate to sustainable coastal and marine development...

Several other international conventions are clearly linked to sustainable use and development of coastal areas and oceans. Some date back to the early 1970s, such as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar 1971); others are as recent as the Stockholm Convention on Persistent Organic Pollutants (POPS 2001). Box 2.1 below lists relevant global agreements (both binding and non-binding).

BOX 2.1 Relevant global agreements and approaches

Global Conventions

Ramsar 1971	Convention on Wetlands of International Importance, especially as Waterfowl Habitat www.ramsar.org
World Heritage 1972	Convention Concerning the Protection of the World Cultural and Natural Heritage www.whc.unesco.org
UNCLOS 1982	United Nations Convention on the Law of the Sea www.un.org/Depts/los
Basel 1989	Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal www.basel.int
UNFCCC 1992	United Nations Framework Convention on Climate Change and its Kyoto Protocol www.unfccc.int
CBD 1992	Convention on Biological Diversity www.biodiv.org
Aarhus 1998	Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters www.unece.org/env/pp
POPS 2001	Stockholm Convention on Persistent Organic Pollutants www.pops.int

Non-binding global agreements

UNCED 1992	United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992. Fundamental documents: The Rio Declaration and Agenda 21 www.un.org/esa/sustdev/documents
BPOA-SIDS 1994	Barbados Programme of Action for the Sustainable Development of Small Island Developing States, www.sidsnet.org
GPA 1995	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, www.gpa.unep.org
Mauritius 2005	Mauritius Strategy for the further implementation of the BPOA-SIDS www.sidsnet.org
MDGS 2000	Millennium Development Goals www.developmentgoals.org
WSSD 2002	World Summit on Sustainable Development, held in Johannesburg in 2002. Fundamental document: Johannesburg Plan of Implementation www.un.org/esa/sustdev/documents

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Non-binding global agreements

...as do less binding agreements

Efforts to achieve a more sustainable development have received an unprecedented boost when Agenda 21 was agreed to at the UN Conference on Environment and Development in 1992 in Rio de Janeiro. There is no doubt that the Programme of Action for the Sustainable Development of Small Island Developing States (BPOA/SIDS, see Annex 3)) adopted in Barbados in 1994 and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) adopted in 1995 (see Box 2.2) were impelled by Agenda 21. All these non-binding agreements have been reaffirmed during the 2002 World Summit on Sustainable Development where the Johannesburg Plan of Implementation (JPOI) was adopted. All of these programmes strive to achieve the same result: societies that develop in a more sustainable way, taking into account the three overlapping dimensions of sustainable development: economy, society and environment.

To do so programmes are set up that aim to reduce poverty, improve human health and well being and at the same time maintain environmental integrity for generations to come. More and more, it is clear that human well being can not be achieved without ecosystem well being. One is an integral part of the other, as has been powerfully argued in the Millennium Assessment programme.

One MDG can only be met when also addressing all other MDGs

In other words, all Millennium Development Goals (MDGs, see Annex 4) are inextricably linked and one cannot be achieved without addressing the other. Water plays a crucial role in each MDG. Healthy oceans can only exist when land, water and air are used in a sustainable way. This in turn will only occur when destructive exploitation of the environment related to hunger and extreme poverty has been abolished. With it will go high incidences of water-born diseases and child mortality. Healthy oceans and sustainable use of land, water and air, provide better opportunities for poverty alleviation. When proper primary education and gender equality is in place, and when global solidarity on the protection of the environment is really acted upon, then the positive cycle will be complete. Concerted action is needed, in parallel and integrated at the level of generic frameworks (which the Millennium Declaration is in itself), as well as at more practical strategic, policy and programme levels within a country, adjusting approaches to often very specific characteristics and priorities in a country. The GPA objectives contribute to and to the MDGs and WSSD Targets.

The GPA promotes action at global, regional and national levels

BOX 2.2 The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

One hundred and eight countries and the European Commission adopted the GPA in 1995. Through this Global Programme of Action governments expressed their commitment to prevent the degradation of marine and coastal environments from land-based impacts and threats. They acknowledged that this demands long-term, cross-sectoral, multi-disciplinary, and participatory responses. The GPA encourages regional cooperation, which enhances national action, and, as a primary objective, the GPA facilitates action by States. It provides recommendations for action at different levels, as well as criteria for their development.

Chapter II of the GPA sets out a range of cross-sectoral considerations that underpin the strategic nature of coastal and marine resources. These recommended considerations form a basis for action at national (and local) level. The full text of this Chapter (see Annex 1) also provides a structured >

Focus is on mainstreaming the GPA, governance and financing...

description of recommended tasks for a successful NPA process. Ten years after the GPA was adopted this description remains up-to-date:

- identification and assessment of problems
- establishment of priorities
- setting management objectives for priority problems
- identification, evaluation and selection of strategies and measures
- criteria for evaluating the effectiveness of strategies and measures
- programme support elements

At the First Intergovernmental Review (IGR-1)of the GPA in 2001 in Montreal, the international community reaffirmed its concerns about the state of the world's coastal and marine environments, and committed itself to improve and accelerate the implementation of the GPA. Three specific action points were identified:

- mainstreaming the GPA (ensuring linkages with existing strategies, programmes, activities and funding mechanisms)
- improving oceans and coastal governance (considering policy, institutions, capacity, and technology)
- financing the GPA (considering aspects such as international funding, domestic instruments, partnerships, transparency and accountability).

The full text of the Montreal Declaration is included in Annex 2. <

Management approaches and tools

Relevant scientific developments are gradually being translated into practical approaches and tools for sustainable policy and management.

Different frameworks can be used to achieve sustainable development

Choosing a management framework becomes particularly important when the relationships between environmental and socio-economic issues are analyzed. Many initiatives follow the *logic of sustainable development* and its three dimensions economy, society and environment mentioned above, also referred to as Profit, People, and the Planet or as the concept of ecosystem and human well being. The reports listed in Box 2.8 are recommended for further reading on sustainable development frameworks.

Impacts of projects, programmes, policies and strategies should be assessed upfront

Through a *Strategic Environmental Assessment* (*SEA*) potential economic, social and environmental impacts and the effectiveness of proposed policies and/or strategies can be assessed to determine whether they will strengthen other policies or could be counter productive. Such less favourable developments unfortunately do happen (Box 2.3). SEA is a relatively new development. On a project level the legal requirement to make an environmental impact assessment (EIA) before a (large) project is approved is already more common. More background information can be found at: IAIA at www.iaia.org, IIED 2005, UNECE 2005 and the EU at www.europa.eu.int/comm/environment/eia/home.htm.

BOX 2.3 Well intended, but un-coordinated policy can result in less favourable developments: the example of the US flood insurance programme

In 1968, the US Congress created the National Flood Insurance Program (NFIP) in response to rising cost of taxpayer funded flood disaster relief and the increasing amount of damage caused by floods. Many US communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. The NFIP makes federally backed flood insurance available to real estate owners and renters in these communities. The NFIP reports enthusiastically that operating expenses and claims are paid through premiums collected for flood insurance policies, if needed backed up >

with normal government loans, and that buildings constructed in compliance with NFIP standards suffer approximately 80 per cent less damage than those not built in compliance.

Others argue, however, that the national programme actually subsidizes and stimulates building activities in coastal and other flood prone areas, while in fact, from local environmental, economic and security points of view, the government should be discouraging such developments. These NFIP opponents state that increasingly intensive development of coastal and other flood-prone areas (affordable because of guaranteed insurances) is a negative trend, among others causing serious implications for the environment of fragile coastal ecosystems.

Researchers of the Thurmond Institute, for example, looked at the number of development permits issued in 1992, the year a coastal landowner sued the South Carolina Coastal Council when he was refused permission to rebuild in an area where Hurricane Hugo blew away the sand dunes. While that lawsuit was being fought by the state, development permits in Murrells Inlet dropped by 65 per cent. Ultimately, the US Supreme Court ruled that the state could prevent him from rebuilding, but must also compensate the landowner for the loss. Once the lawsuit was resolved, the number of permits rose by 378 per cent in 1993. This could be an indication of the influence such an insurance scheme can have: construction increased along sensitive coastlines because investments were now insured.

www.fema.gov/nfip, www.scienceblog.com/community/older/1999/B/199901032.html <

Integrated water resources management (IWRM) is a systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives. When responsibility for drinking water rests with one agency, for irrigation water with another and for the environment with yet another, lack of cross-sectoral linkages leads to uncoordinated water resource development and management, resulting in conflict, waste and unsustainable systems. Box 2.4 briefly characterizes IWRM, summarized from Cap-Net and GWP 2005.

The many different uses of water resources are interdependent

BOX 2.4 Integrated Water Resources Management (IWRM)

A meeting in Dublin in 1992 gave rise to four water management principles that have been the basis for much of the subsequent water sector reform:

- Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.
- Women play a central part in the provision, management and safeguarding of water.
- Water has an economic value in all its competing uses and should be recognised as an economic good as well as a social good.

Integrated water resources management comprises the logical and appealing concept that the many different uses of water resources are interdependent. The basic theme is that unregulated use of scarce water resources is wasteful and inherently unsustainable: high irrigation demands and polluted drainage flows from agriculture mean less freshwater for drinking or industrial use; contaminated municipal and industrial wastewater pollutes rivers and threatens ecosystems; if water has to be left in a river to protect fisheries and ecosystems, less can be diverted to grow crops. There are plenty more examples.

Some selected benefits from IWRM:
Environment: IWRM can assist the water sector by raising awareness among all users of the needs of ecosystems and the benefits these generate. The ecosystem approach focuses on a system approach to water management: protecting upper catchments (reforestation, good land husbandry, soil erosion control), pollution control (point source reduction, non-point source incentives, groundwater protection) and environmental flows. It provides an alternative to sector competition when stake-holders can join in developing a shared view and joint action. >

Agriculture: it is the single largest user of water and the major non-point source polluter of surface and groundwater resources. However, indiscriminate reduction in water allocation for agriculture may have far-reaching economic and social consequences. With IWRM, planners are encouraged to look beyond agricultural economics: the contribution of food production to health, poverty reduction and gender equity, for example, could over-ride strict economic comparisons of rates of return on each cubic metre of water.
Water supply and sanitation: IWRM should mean increased security of domestic water supplies, as well as reduced costs of treatment as pollution is tackled more effectively.IWRM stimulates the push for recycling, reuse and waste reduction. It will trigger sustainable sanitation solutions that aim to minimise waste-generating inputs, and reduction of waste outputs, and to solve sanitation problems as close as possible to where they occur.

Some lessons learned from IWRM so far:
- Government is a key stakeholder
- a champion supporting the iwrm planning is needed
- sustained participation is the driver of the process
- development of local capacity is a must
- the gender perspective is needed from the start.

Summarized from Cap-Net and GWP (2005)

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Integrated coastal area and river basin management advocates an ecosystem approach...

Integrated coastal area and river basin management (*ICARM*) combines concepts such as Integrated Coastal Zone Management (ICZM), Integrated Coastal Area Management (ICAM) or Integrated Marine and Coastal Area Management (IMCAM) with IWRM. ICARM mainly follows an ecosystem approach, looking at the entire range of possible goods and services, rather than one dominant natural resource such as fish, timber or hydropower. ICARM is focussing on the actual management of shared freshwater and marine issues.

...and interlinking management of water-sheds, coastal areas and marine environments

It evaluates how people's use of an ecosystem affects its functioning and production. It looks beyond traditional jurisdictional boundaries, working with a systemic approach, looking at natural watershed boundaries. Most importantly, it advocates that what people do upstream has ramifications on ecosystems and human well being downstream and vice versa. ICARM can help to make sure that natural resources are managed in such a way that all coastal and marine degradation sources are considered and that all logical actors are involved in finding a solution. Such interlinked water resource management can, for example, contribute to the MDG Target on water and sanitation. ICARM is best illustrated by the 12 UNEP/GPA guiding principles included in Annex 5. More background on ICARM can be found in FreshCo Partnership 2005, MA 2005b, UNEP/GPA (in prep) and WRI 2000. will add final reference

Resource-dependent communities can evoke more sustainable traditional practices

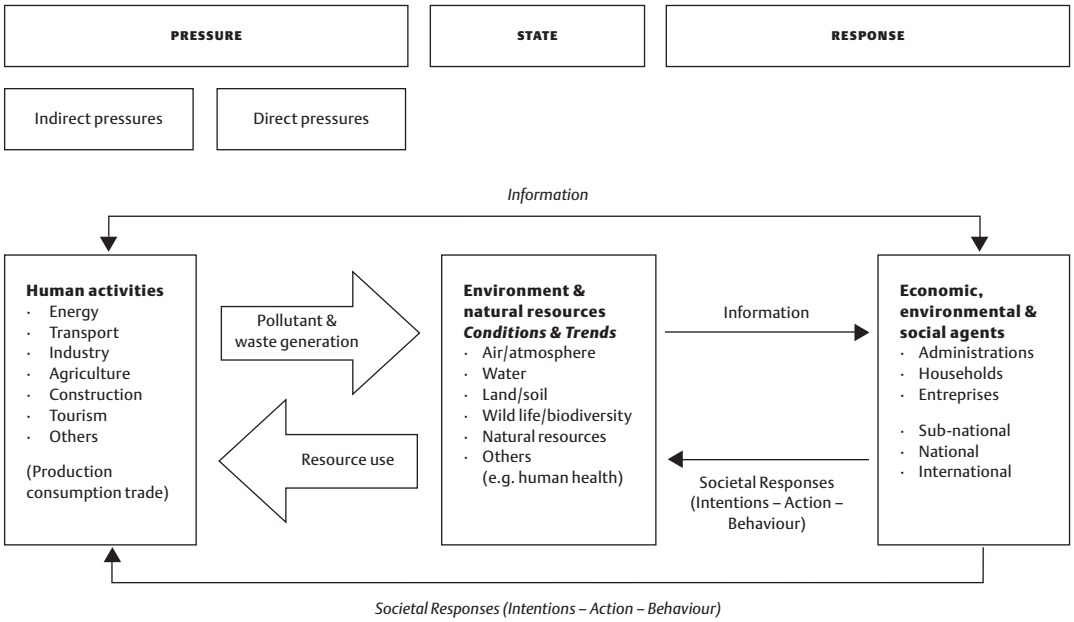
Community-based natural resource management (*CBNRM*) emphasizes the fact that the livelihoods of local communities depend on the natural resources surrounding them. Many resource–dependent communities can evoke more sustainable traditional practices. Also in today's world CBNRM has the potential to improve the conditions of natural resources, while at the same time providing a livelihood for local communities. To achieve this, any planning and management action taken should ensure that local communities are involved and can continue to benefit from nature. CBNRM experiences show successes and may be an answer to affordable NPA action. Box 2.7 and Annex 6 give examples of CBNRM. There are numerous publications that present very interesting case studies and experiences with community-

based management. A selection of relevant publications for further reading is as follows: Haverkort and others 2003, UNEP 2004a, UNEP-WCMC 2006, WRI 2003, and WRI 2005 (see Annex 9).

A Driver-Pressure-State-Impact-Response framework stimulates integrated thinking

All these tools differ in their applications, but since the mid 1990s *the Driver-Pressure-State-Impact-Response* (DPSIR) framework has become a common analytical tool in the field of sustainable development and environmental management (Figure 2.1). It was initially developed by OECD. Drivers or indirect pressures (the root causes, the fundamental processes in society that fuel activities –) and direct *pressures* (the actual economic activities and human influences) cause changes in the state of the environment and in the social livelihood system. Such environmental changes can have (negative or positive) *impacts* on human well being, through changes in ecological services and environmental stress (such as pollution). And finally, *responses* are measures taken by the government and society to restore, mitigate or prevent damage (through policy, actions, or investments). These days most information and assessment programmes use a DPSIR framework for their indicator based reporting, and in doing so they assist in advocating integrated approaches. UNEP's Global Environment Outlook reports, OECD's Environmental Outlooks, and regional environmental assessment reports such as those of the EEA are just a few major examples.

FIGURE 2.1 The Driver-Pressure-State-Impact-Response framework



Adapted from OECD 1999

Other concepts and tools that could be considered are referred to in other chapters. For national and sub-national level aspects of NPA programming and implementation the examples and references are quite specific. These mainly deal with conceptual approaches that could be followed and with creating an enabling environment with respect to policy, planning, legislation and financing.

Successful local examples are numerous

For more local level action options and examples become so numerous that it is beyond the scope of this report to systematically present them. Only brief examples are given with suggestions for further reading, such as tools for stakeholder involvement (mediation and conflict resolution), endogenous development, different knowledge concepts (indigenous, traditional, scientific), decision support tools, and indicator frameworks. In addition issues such as best affordable technologies, integrated pesticide and fertilizer management in agriculture, clean production practices in industry, gender issues, codes of conduct in tourism, and integrated wastewater, sanitation and hygiene management should be considered.

2.2 Regional action

LBS Protocols under regional conventions and programmes define harmonized measures at regional and national levels

Regional frameworks, such as the regional seas programmes, including conventions and action plans, provide clear mandates and platforms for identifying and furthering implementation of regional priorities. Of particular relevance are the Protocols on Land-based Sources of Pollution (LBS)and regional programmes under the various conventions, which define concrete harmonized measures at regional and national levels, including monitoring and assessment programmes and compliance and enforcement mechanisms. The latter often are not really operational, and too weak in the first place. Recently adopted Protocols include those of the PERSGA and Wider Caribbean regions. The PERSGA region has also finalized a GPA regional programme of action.

Many other (sub-) regional political or environmental entities or country groupings exist that may not be directly linked to a regional sea, but have developed strategies and programmes with linkages to coastal and marine environments, for example the Water Framework Directive, Marine Strategy and Marine Pollution Directives of the European Union (www.europa.eu.int/comm/environment).

Although instruments vary from region to region, they often provide a legal mandate for countries to develop national action to protect the coastal and marine environment from land-based activities. They mostly promote that relevant regional instruments and strategies should be an integral part of national action.

The focus of this guide is at the national level, so it will not try to provide a comprehensive picture of relevant regional developments and activities. Box 2.5 lists regional seas programmes, which can be a useful starting point for more in-depth tracking of a subject in a region (see also www.gpa.unep.org).

BOX 2.5 Existing regional efforts

UNEP regional seas programmes

Arctic	Mediterranean	South-East Pacific
Black Sea	North-East Pacific	South Pacific
Caspian	North-West Pacific	North-East Atlantic
Baltic	Red Sea and Gulf of Aden	West and Central Africa
Eastern Africa	ROPME Sea Area	Wider Caribbean
East Asian Seas	South Asian Seas	Antarctic

Other relevant regional entities and programmes

ASEAN	EU – ICZM	RDBS
AU	International Waters Project GEF	SACEP
EUCC	Mercosur	UN Economic (and Social)
EfE		Commissions

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2.3 National action

Many existing integrated national policies, strategies and action programmes are of direct relevance to coastal and marine environments...

Each country has its own governmental structure, legislation and national budget, all dealing with different aspects that are of direct relevance to coastal and marine environments. Central ministries of finance and planning, Offices of Prime Ministers or special Councils have formulated policies, strategies and action programmes, striving for integration through national land use plans, urban, rural or coastal area development plans, integrated water resources management, coastal zone management, or coastal area and river basin management plans, national or local Agenda's 21, Sustainable Development Strategies (SDSs) and partnerships (SDPs), National Environmental Management Strategies (NEMS), National Environmental Action Plans (NEAPs,) or Poverty Reduction Strategies Papers (PRSPs).

...as are sectoral policies and regulations that strive for integrated strategic action

Also, sectoral ministries have policies, strategies and regulations to direct national developments in their sector, such as in agriculture, freshwater, fisheries, forestry, biodiversity, urban development, waste, transport, tourism, and health. And here too efforts are underway to integrate strategic action, for example through National Environment and Health Action Plans (NEHAPs, mainly in Europe and meanwhile often replaced by SDSs) or integrated transport and environment strategies.

Such national developments, instruments and activities often already tackle some of the contaminants, degradation sources and areas of concern identified by the GPA (see Box 1.1). Often the national efforts to achieve sustainable coastal and marine development already have (or should have in future) many linkages in line with the 1995 GPA objectives. Stimulated by the GPA, many countries followed the GPA recommendation to start a process to develop National Programmes of Action for the Protection of the Marine Environment from Land-based Activities (Box 2.6).

Since the GPA Secretariat was set-up in 1999, close to 60 countries embarked on a NPA process adapted to their own situation

BOX 2.6 Existing NPA processes

Since the GPA Secretariat was set-up in 1999, 40 countries produced official NPA documents, while some 20 others have embarked on a NPA related process adapted to their own situations. Some of these almost 60 countries are following a short NPA path, others follow intermediate or full NPA paths (details on different NPA paths are set out in Chapter 4). Many examples given in this document reflect on experiences gained during these processes, and illustrate that concrete NPA action can be successful.

Countries that have started a NPA process include:
Albania, Algeria, Australia, Bahamas, Bangladesh, Barbados, Benin, Bosnia & Herzegovina, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Ecuador, Egypt (Red Sea and Mediterranean), Finland, France (Mediterranean), Ghana, Greece, Guatemala, Honduras, Iceland, India, Israel, Italy, Jamaica, Kiribati, Lebanon, Libya, Malta, Mexico, Monaco, Morocco, Nepal, Nigeria, Pakistan, Palestinian Authority, Panama, Peru, Russia (Arctic), Sao Tome and Príncipe, Serbia & Montenegro, Slovenia, Spain (Mediterranean), Sri Lanka, St. Lucia, Syria, Tanzania, Togo, Tonga, Trinidad & Tobago, Tunisia, Turkey (Mediterranean), Yemen.

In addition there are countries that have other strategies and programmes in place that already cover aspects of a NPA process, such National Environmental Action Plans (NEAPs) in Central and Eastern Europe and National Environmental Management Strategies (NEMS) in the Caribbean. These countries chose not to produce an official NPA document, but to make sure that NPA relevant action is taken through those existing strategies and programmes.

See www.gpa.unep.org/ for up-dated information <

Results of NPA processes (improvements in quality of coastal and marine environments) will materialise only through concrete activities on the ground in districts and municipalities, together with local communities, combining modern and traditional concepts, knowledge and tools. Several examples in this guide relate to local level action and many thousands more from all over the world can be mentioned. Box 2.7 briefly describes a GEF International Waters Project with a wide variety of community level projects in 14 Pacific Island countries. In addition, the references given in the paragraph on community-based natural resource management (CBNRM) in Section 2.1 provides many interesting experiences and lessons learned.

Many successful local examples exist of concrete activities with local communities

BOX 2.7 Local action to strengthen environmental management in Pacific Island countries

The Pacific Islands region is three times larger than the USA or China. More than 98 per cent of this area consists of ocean. The remaining 2 per cent is made up of around 200 high islands and another 2 500 low islands or atolls. Only 500 of these islands are inhabited. Three out of four Pacific Islanders live in rural areas and many people still depend on coastal resources for food and economic opportunities.

A GEF International Waters Project (IWP) is working with pilot communities in 14 Pacific Island countries to find practical ways to strengthen environmental management in three key areas: coastal fisheries, waste reduction and freshwater protection. IWP is playing an important role in making villagers aware of how important it is to protect their resources and for people to understand the effects of their daily activities.

The IWP recognizes that community participation is essential if sustainable resource management is to be achieved, and that more environmentally friendly behaviour needs to be promoted through a range of tools including legislation, economic incentives, infrastructure, public services, and social marketing. >

The IWP is working with communities and national governments to:
- understand and address the root causes of environmental and resource management problems
- collect baseline information on key social, economic, and environmental factors governing resource use
- identify low cost solutions
- encourage greater community participation in resource management
- strengthen resource management at the national level

Key management tools applied are:
- community participation
- resource economics
- strategic communications
- monitoring & evaluation
- institutional strengthening

Projects vary widely from the formulation of local catchment management plans, to water supply treatment, prevention of watershed pollution, improved waste management, coastal fisheries management, and introduction of safe, practical and cost-effective toilet systems.

In each country a National Coordinator has been appointed within a lead Government agency to manage the project. A National Task Force is set up with representatives from government, NGOs, and local communities to support the National Coordinator. The Task Force is responsible for using the lessons provided by the community-based activities to improve management of resources at the National level (bottom-up).

The IWP is funded through the Global Environment Facility (GEF) and co-managed by the Secretariat of the Pacific Regional Environment Programme (SPREP) and the United Nations Development Programme (UNDP). The SPREP web-site provides detailed information on experiences, findings and progress in each country.

At the 16th SPREP Meeting in September 2005, participating countries pointed out that excellent results had been achieved and many lessons learnt during the 10 years of implementation and voiced their wish for an expansion of the activities.

Source: www.sprep.org/iwp <

2.4 Integrated development strategies: lessons learned

As illustrated in Section 2.3 on National Action, countries started formulating integrated strategies and policies to achieve a more sustainable development since the late 1980s and early 1990s in the run-up to, and following the 1992 Rio Conference where Agenda 21 was adopted.

What are the lessons learned since Rio from sustainable development action at national level?

More than a decade later politicians, managers and donors are asking the important question, has progress been made in taking strategic and coordinated action towards sustainable development at national level, either for a whole country or for coastal areas only? How far are we in actual implementation at local level?

There are many local successes in development of innovative approaches and tools...

Much experience has been gained, but no systematic analysis has been made on NPAs. Several review reports were recently published, however, documenting lessons learned from sustainable development strategies at national levels. The conclusions of the various studies show many similarities. In Box 2.8 a compilation is presented of the main findings of six such studies. They conclude that many local successes exist in the development of innovative approaches and tools, but that nations are only at the early stages. Although there is no single recipe for achieving sustainable development, a number of key challenges have been identified that are prerequisites for (cost-) effective delivery on the ground.

...but only few nations are acting truly strategically...

BOX 2.8 Lessons from more than a decade of national efforts to achieve sustainable development

There are several recent reviews of experiences and lessons learned during various forms of integrated strategy and programme development processes (such as sustainable development, integrated coastal zone management, integrated marine and coastal area management, or integrated environment and health management). For this box six reports were selected that provide a wealth of useful lessons learned. Full titles and where possible web-links are included in Annex 9 that lists publications recommended for further consultation.

Overall, experiences show that policy responses lack the basic design and implementation elements that are required for success. Principles that can be identified as prerequisites for (cost-) effective delivery on the ground are:

- Moving towards sustainable integrated development is a *learning process*, it can not be implemented through a fixed plan; it should be a flexible, adaptive system that can continuously evolve and improve
- Demonstrate consistent *leadership, commitment and focus* in Government (political, institutional, financial, individual); establish a clear legal mandate for the process; strengthen institutional structures
- Address *linkages*: this may require adjustments in institutional cultures and a new strategic governance structures, both horizontal (linking government institutions with relevant stakeholders, such as the private sector and the general public) and vertical (linking action from national to community level and to neighbouring countries)
- Foster *ownership, transparency, a shared vision during formulation* of activities: ensure that stakeholders are aware and represented in formulation and decision making; institutionalize outreach and communication– both up and down; build consensus on trade offs; apply conflict resolution
- Encourage *broad awareness and participation in implementation* by ensuring well-defined roles and delegated/shared responsibilities; set up partnerships among government, civil society, the private sector and external institutions; show mutual trust and respect; cherish local identity and tradition
- Use *integrated assessment tools* to identify linkages among environmental, social, economic and geographical systems, to identify constraints and priorities, and to analyse costs and benefits of policy options; use integrated decision-support tools; ensure easy access to information and sharing of knowledge; make better use of scientific support and local expertise for management decisions
- Develop a *realistic financing strategy*, using a mix of financing arrangements (tailor-made, prioritized, affordable, linked with national budget expenditures and revenue generating processes); adopt more market-based instruments (so far under-utilized) in addition to command-control regulation
- Prioritize and link *short, medium and long-term* time-frames for flexible, phased (step-by-step) implementation; applying the inter-generational principle
- Agree on *transparent objectives* and *realistic, quantified and time-bound targets*; formulate integrated indicators against which defined targets can be measured; create a system of accountability
- Ensure a *full-range feedback mechanism*: monitoring and evaluation to create a knowledge base including lessons learned, so that objectives and activities can be regularly adapted or re-formulated
- Where needed *build capacity* to facilitate that the above key challenges and principles can be followed through (such strengthening institutions, weak and conflicting legislation, the design of financial instruments, and the selection affordable technological options).

Sources: Blue Plan 2005, EEAC 2005, IISD/GTZ/DMZ 2005, OECD 2005, UNDESA/DSD 2002, UNEP/CBD 2005 <

...and actual implementation is lagging behind

Experiences gained in the GPA Coordination Office during the last 6 years while promoting and facilitating the development of NPAs mirror the findings summarised above. Since the late 1990-s many countries started (or are about to start) a NPA process (Box 2.6). Many NPA programme documents have been produced, presenting an inventory and prioritization of GPA related problems. Most documents also present an institutional set-up for the process and a list of priority project proposals. Actual implementation however, has hardly taken off in most cases. Apparently the proposed programmes were not realistic enough, considering

the usually scarce funding and the enormity of the work to be done. Or new NPA programmes were not really required since other programmes were already in place that sufficiently covered NPA objectives (see Chapter 4).

As the Blue Plan concludes in its 2005 Mediterranean Environment and Development Outlook, 'Wanting to tackle everything through an (integrated) process seems to be a pipe dream. Although integrated in the assessment stage and involving different actors, the process would gain if priority objectives were formulated for concrete progress along a few limited and well-defined directions that could evolve over time in line with local realities.'

Based on all these lessons the GPA Coordination Office has formulated elaborate guiding principles for NPA action (see Chapter 3). This NPA Handbook revision provides even more specific guidance that will hopefully result in concrete action and results.

First and foremost, more emphasis needs to be put on affordability and capacity (financial, institutional, human resources). It should be acknowledged that needs and priorities vary greatly between countries (in space and time). For this reason the assessment of problems constraints and opportunities to tackle problems, is one of the most important steps in a NPA process. Depending on the outcome of such an assessment, a country can choose its NPA-route , which could involve linking up to other existing relevant programmes, implementing a limited NPA programme or taking on a full-scale NPA programme – (see Chapter 4).

Guiding principles for national action

3

3.1 Introduction

It is fundamental to be realistic while programming action...

The responsibility for implementation of the GPA at regional, national or local level lies within countries. Political support and community interest will only be ensured if positive results are visible. It is thus necessary to be realistic when programming action. National action has to be planned and overseen by various ministries and agencies at national and sub-national levels. Actual results (improvements in the quality of coastal and marine environments) will materialize only through concrete activities on the ground in the districts, municipalities and communities.

...and when considering financing, institutional arrangements and capacity needed

Concrete action should be adapted to the specific situation in a country, building on existing strategic mechanisms and programmes, having political support and commitment, mobilizing stakeholders and resources at the right levels, linking up to existing institutional, budgetary and policy frameworks, working with achievable targets, budgets and long-term financing, and incorporating lessons learnt in the process. In summary, NPA action should be based on realistic assumptions of available and potential financing, institutional arrangements and capacity needed to implement activities in the short, medium and long term.

A NPA process should provide a flexible policy and management framework. It is a strategic tool that can assist governments, industry, tourism, agricultural or other relevant sectors, and local communities in prioritizing their coastal and marine development needs and goals. It is a tool for formulating affordable short, medium and long term activities to achieve these goals, and for mobilizing political and financial support to implement them (Box 3.1).

BOX 3.1 Basic functions of a NPA process

- Increase awareness and understanding of the value, benefits and vulnerability of coastal and marine environments
- Provide a flexible mechanism for identifying and addressing priority problems through partnerships and consensus amongst stakeholders
- Identify, finance and implement realistic and affordable activities that address specific causes of degradation or threats and that show positive results
- Mobilize resources and partners, including the private sector
- Strengthen the public sector's ability to effectively respond to causes of degradation and ensure sustainability of activities undertaken
- Enhance environmental, financial, institutional, legislation and regulation frameworks <

When developing a NPA both the general and the more specific principles should be considered (Box 3.2). They are all fundamental for sustainable coastal and marine development. As such they are not listed in any order of priority nor should the list be considered exhaustive. Some are considered general principles that are valid throughout the NPA process, while others are specific to the *development* of a realistic programme or for successful *implementation*. Boundaries between the three different groups are not fixed. For example, the formulation of a financing strategy has been included under the principles for development of a programme, but mobilization of funds is an aspect that should be kept

Guiding principles for national action to protect aquatic environments from activities on land

in mind at all stages of the NPA process as a vital prerequisite for success. The same is true of participation, which is required at all levels and stages of the process. In this chapter each principle is briefly characterized. The principles will come up regularly in Part II of this guide where the overall framework and specific tasks in the NPA process are described (Chapters 4, 5 and 6).

BOX 3.2 Guiding principles for national action

General principles for a NPA process (Section 3.2)
- process should lead to concrete action
- commitment exists to create an enabling environment (political, institutional, financial, personal)
- linkages are built (mainstreaming), vertical, horizontal, geographical, stakeholder groups)
- a flexible tailor-made framework is used
- stakeholder involvement is ensured (ownership, legitimacy, consensus, trust, respect)

Specific principles for developing realistic NPA action (Section 3.3)
- assessment of GPA related problems and of constraints and opportunities for action
- prioritisation for step-by-step implementation
- precaution and inter-generational equity
- affordable financing
- learning process

Specific principles to achieve successful NPA implementation (Section 3.4)
- transparent operational plans
- outreach and communication
- conflict resolution
- monitoring, evaluation and revision
- capacity building

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3.2 General principles for NPA action

Process should lead to concrete action

Ask what steps are realistic and affordable to better address LBA problems...

A NPA may or may not be a separate document as long as it includes specific targets and a clear timetable. While a first phase will often comprise the preparation of a programme document, this document must not be viewed as an end in itself. It should be a flexible process rather than a fixed blue print. The correct question is not 'Do we have a NPA document?' but 'How effective are we in tackling land-based sources of marine pollution?' 'How can our action be improved to become more successful?', 'What concrete steps are realistic and affordable and can thus be undertaken to better address LBA problems facing the country?', or What action needs to be taken at national level and what activities are required on the ground at local level'?

...and ensure a cross-cutting, participatory process with short, medium and long-term priorities

A NPA is never really finished, it is not a finite task that can be performed and then forgotten. Government authorities are responsible for creating and maintaining an enabling environment in which participatory, demand-driven sustainable development can take place. A NPA is a dynamic, crosscutting, participatory process with realistic short, medium and long-term priorities for coastal and marine protection, involving strategic planning, concrete targeted and affordable projects, feedback and periodic evaluation to improve performance and revise activities. Initiation and oversight of the process is the responsibility of a lead agency, assisted by a core-group. Detailed planning and actual implementation of concrete activities is the responsibility of other specific institutions.

The latter should be sufficiently represented in the core-group from the beginning. The reports listed at the end of Box 2.8 are recommended for further reading in this context.

Commitment to create an enabling environment

NPA activities need to be backed up by true and long-term commitment and solidarity throughout the entire process and in all aspects: political, financial, institutional and individual commitment. This is one of the toughest principles in the list, since there are so many major constraints that can prevent governments, institutions or people from actually making the necessary commitments. There are political constraints: party politics, personal agendas, election promises, changing presidential/governmental terms, or corruption. These aspects often do not match with needs and ambitions of local communities. Financial barriers (personal gain, lack of sufficient funds, societies, municipalities or families can not always afford solidarity or commitment), competition between and within institutions (sharing scarce funding, different perceptions and priorities for different groups, personal careers): such problems occur at all levels, from (inter)national Government institutions down to local communities.

Be committed to create and maintain an enabling environment for action at both national and local level

These barriers make it difficult for all those involved to really feel a sense of ownership, accept responsibilities, and make the commitment that is required to be successful. Some such conflicts can be resolved by bringing stakeholders closer together through mediation and participatory approaches, but in all cases a sound political, social, legal and economic basis is a prerequisite, with an enabling environment for investment, domestic financial and capital markets, job opportunities and other socio-economic safe guards. Box 3.3 lists a number of governance issues that are important to consider when trying to commit to an enabling environment that will result in successful implementation of NPA related strategies, programmes or activities.

BOX 3.3 Commitment to an enabling environment for success

An enabling environment for success needs to be created from a sound political and socio-economic basis. To create and commit to such an environment good governance issues need to be take into account:

- continuity in leadership with regard to long-term decision-making (changes during election cycles often change the focus of long-term resource management programmes).
- absence of corruption
- access to information on economic, social and environmental indicators
- effective communication to expand awareness
- existence of creative mechanisms to foster sharing of scientific data and (local) expertise
- robust participation of relevant stakeholders in planning and decision making
- effective legislation and justice on property and use (tenure) rights
- effective (non-conflicting) laws, regulations and justice for protection of the environment
- stable and effective enforcement and compliance mechanisms
- affordable access to utilities (such as safe drinking water, electricity, sewerage treatment)
- monetary stability and a transparent and solid monetary system
- consistent, clear and non-discriminatory rules for investments, unambiguous tax laws, and import and export regulations and tariffs

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Mainstream the NPA message in existing policy, legislative and implementing structures

Linkages/mainstreaming

Links between a NPA process and other strategic processes, policies, development plans and approaches need to be made. The NPA message should be built in the broad range of already existing legislative, policy and implementing structures that are relevant to a NPA process. Such mainstreaming will stimulate co-operation and avoid duplication and thus waste of already scarce resources. When processes are closely linked, timely adjustments can be made to existing programmes, so that actions will complement and even benefit and strengthen each other. The NPA process has interfaces at many different administrative, institutional, financial, legal, scientific, societal and geographical levels (Box 3.4). The reports listed at the end of Box 2.8 are useful documents to consult in this context.

BOX 3.4 Types and levels of linkages in a NPA context

Important linkages exist with (see Chapter 2 for details):

- the Rio Declaration and Agenda 21
- the international Millennium Development Goals (MDGs)
- the Barbados Programme of Action and its Mauritius Strategy for Further Implementation of BPOA
- existing global multilateral environmental agreements, such as UNCLOS, UNFCCC, CBD, Ramsar
- existing regional seas programmes, conventions and other regional entities and activities
- central strategies, councils and programmes such as the national budget, public investment programmes (such as infrastructure), sustainable development or poverty reduction strategies
- sectoral national strategies, such as on agriculture, water, health, urban development or tourism
- national legislative frameworks and regulation dealing with the environment
- different sectors of society, such as NGOs, the private sector, and the scientific and financing world
- and between coastal areas and upstream river basins <

A flexible tailor-made framework

The complexity of underlying causes and the linkages between sources of environmental degradation and threats imply that a country must respond to unique circumstances and priorities. Each country should thus develop its own tailor-made NPA process that best suits its existing geographic characteristics, political, socio-economic, institutional, legal and regulatory frameworks, using the best available and most affordable knowledge (science and technology, assessments, inventories and data). No two NPA processes will have the same scope, focus or structure.

No single model exists for a NPA process

A NPA programme may or may not be referred to as a NPA. Other titles may well be more appropriate, especially if the NPA is linked to existing integrated programmes or sectoral policies such as sustainable development or poverty reduction strategies, integrated health and environment programmes, or sectoral strategies on water quality, marine protected areas, fisheries, agriculture or tourism. The important issue is not the title, rather the inclusion of concrete action to address harmful effects of land-based activities on the coastal and marine environment.

No single model can be provided for a NPA process. Based on experience gained a structure is proposed comprising five major steps that need to be taken to start up the process and to develop realistic action and affordable tools for successful implementation of local

activities. Depending on their unique circumstances countries should determine which steps and elements best assist their national undertaking (see Chapter 4).

Stakeholder involvement

Create a sense of ownership and commitment...

To be successful, a national strategy should reflect the needs and aspirations of the people. To create a sense of ownership and commitment the NPA process should facilitate the identification and mobilization of stakeholders, resources, and partners. Different stakeholders exist at different levels, but representatives of all groups should be involved as early on as possible.

Effective and high-quality public and private consultation and participation should be encouraged in programme development, and during implementation and monitoring, trying to find an appropriate balance between top-down and bottom-up procedures (see also Box 2.7). This principle is central to ensuring long-term legitimacy of the process and its outcome.

...by timely involvement of stakeholders at the appropriate level...

In practice stakeholder representatives in early stages of the NPA process will mainly originate from (sub-) national levels (such representatives have close contact with their grass roots). While moving through the entire NPA process also representatives from local government and community levels will participate.

...going from different actors at national level...

At national level it is important that not only environment or sectoral government authorities are involved in programming, but also the finance ministry, which can keep the whole group informed of national budget and other financing options. All actors can so make sure that whatever is planned or programmed is affordable. It is equally important that decision makers with responsibilities for cross-sectoral prioritization are involved, so that priorities are set while considering scarce resources across sectors.

...to the level of local communities

Further down the line, during actual implementation it is important to recognize communities' interests in and knowledge of (coastal) ecosystems and to incorporate this into management arrangements. Local communities should be encouraged to share responsibility for protecting coastal and marine environments from land-based activities, by allowing them to benefit from these environments and from the planned activities. Many successes exist when local knowledge and traditional community resource management systems are taken seriously. The story of the Sokhulu people in South Africa who depend on collecting mussels for their subsistence is a good example. It is nicely documented in WRI (2003-2004) and summarized in Annex 6.

3.3 Specific principles for developing realistic NPA action

The above general principles are relevant throughout the entire NPA process. When a country has started a NPA process, the principles listed below are specifically important for the preparatory stages when the actual programme and funding strategy are being formulated.

Assessment of the existing situation

Assess existing political, institutional, information, policy and management mechanisms and tools

Early on in the NPA process an assessment needs to be made of the existing situation in a country. GPA related problems and conflicts need to be identified, and constraints and opportunities for action to be analysed, forming the bases for further development of the NPA programme. In this guide three groups of aspects have been distinguished on which the assessment should focus: existing political and institutional aspects (such as government policy, institutions, agencies, associations and other key actors – public and private), data and information (such as research, monitoring, state-of-the-environment reporting and outreach programmes), and policy tools (such as national budgets, central and sectoral strategies, integration tools such as EIA and SEA, legislation, regulations, financial instruments, compliance & enforcement). For all three groups also the available resources and capacities (financial and human) need to be assessed. Networking with relevant institutions is important, since studies may already be available on problems, needs, constraints, and opportunities (in Chapters 5 and 6 several examples are given).

Prioritization for step-by-step implementation

Countries should be set priorities in consultation and through consensus. Aspects to consider when prioritizing needs and activities are: political support and commitment, affordable budgets and sustainable long-term financing, achievable targets, benefits for stakeholders, and legislative, institutional, technical and operational feasibility.

A step-by-step approach is encouraged. After constraints have been identified, priorities can be listed in a rolling NPA programme pipe-line. For some priorities action can be taken at short notice (or on a medium term), because the funds required are readily available. Such action often focuses on awareness raising, assessments of the actual situation, development of affordable financing strategies, and capacity building. Many priority areas, however, will be too complicated or too expensive to tackle in full straight away. The field of wastewater, sanitation and hygiene (in most countries the biggest problem and highest priority) is an example. A start can be made with modest local options. Although not yet ideal, simpler options may well be affordable in the short and medium term, and are certainly useful as a first step (see Figure 5.2 on the Wastewater and Sanitation ladder).

Formulate acceptable and affordable activities for short, medium and long-term time-frames

With a rolling programme pipeline short-term activities and projects can be formulated in detail for immediate implementation within existing financial and technical resources. These are often one to three year projects during which an enabling environment is created that facilitates more substantial medium (three to five years) and long-term projects (five to ten years).

Countries with large territories may decide to develop their national programme progressively on the basis of sub-national units. The first Brazilian NPA, for example, only applies to the Upper South West Atlantic Region. The Syria NPA programme covers only the narrow coastal zone along the Mediterranean. When funding is too tight a country can also decide to start at local level with one or two pilot projects, so triggering the process, and stimulating expansion over time (see the Sri Lanka example in Box 4.3).

Precaution and inter-generational equity

Costs of inappropriate or in-action are higher than costs of early action...

When there are threats of serious or irreversible damage to a countries' coastal and marine environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent further degradation. Although the value of resources and environmental services of coastal and marine environments is difficult to translate into cash, it is generally understood that the costs of in-action will be higher than the costs of early action. Box 1.3 provides some illustrations of costs of inappropriate action, illustrating that societies are currently not always sufficiently considering the well being of future generations.

...prevention is cheaper than cure

In other words, a precautionary approach should be considered through preventive and corrective measures. A recent European Environment Agency (EEA) report provides a wealth of information on the precautionary principle and is recommended for further reading (EEA 2002).

Affordable financing

Link up with those that plan and allocate (public) funds

Only proposals that are initially affordable is the existing situation have a chance to receive funding. The establishment of sustainable financial mechanisms is thus a prerequisite for success. Currently a NPA is often prepared in isolation from other demands for financing sustainable development. This is one of the reasons why countries usually do not succeed in obtaining sufficient resources for NPA activities. To secure adequate financing, it is important to establish linkages with other environmental priority areas (for example in the agriculture, public services and tourism sectors). Good and timely links with those that plan and allocate (public) funds enhances chances that funds are earmarked for NPA activities.

Decide what is needed now, what is needed in future, and how resources can be obtained

A realistic financing programme should deal with three components: what is needed for priority action now, what is needed for the future, and how can resources be obtained. Experiences so far with NPAs, but also, for example, with SDSs and NEAPs in Central and Eastern Europe and Central Asia, show that one of the main bottlenecks to increased financing seems to be the low capacity of water and environmental authorities to make effective proposals to existing public finance instruments.

Measures that provide direct benefits to the public will be most successful

Another bottleneck relates to the issue of affordability. True commitment at all levels will occur through measures that are affordable and preferably provide direct benefits to the public. Solidarity is important here. Currently many people can not afford user charges that would be adequate to cover operation and maintenance costs. In some cases subsidies are even provided for those richer members of the population, who can pay full costs.

Learning process

Revisit activities and adjust or select new interventions if required

A NPA process builds upon experiences of earlier stages (successes or failures). It is a learning process. A cyclical approach should best be followed, where the various steps taken are evaluated at regular intervals. As projects are implemented, NPA goals and objectives set earlier will gradually be achieved and solutions will be provided progressively for the negative impacts caused by land-based activities. Priorities in the rolling NPA pipeline should thus be periodically revisited to adjust or select new interventions if required.

Continuous feedback can ensure that new actors, initiatives, resources or constraints do not go un-noticed

Certain barriers that were not known when the activity was formulated may be discovered during implementation. New resources may become available, existing traditions revealed or new findings collected. All of this can be fed back into the process and revisions made to ensure the best, most appropriate fit for the NPA process. The concrete benefit of a flexible framework is that continuous feedback between the different steps can ensure that fresh actors, new initiatives (such as legislation and judicial decisions), expanded knowledge (modern or traditional), other resources (funding, technology) or constraints are not ignored. Figure 5.1 presents this learning process in different ways.

3.4 Specific principles to achieve successful NPA implementation

Once a realistic programme has been formulated, with a prioritized programme pipeline for short, medium and long-term action, a first set of projects should be selected for which funding has been or can realistically be secured. Chances for successful projects are enhanced when the following principles are adhered to.

Transparent operational plans

It is important to follow a high-quality process to formulate affordable and transparent proposals for short- and medium term activities, rather than presenting many proposals that have not been worked out in sufficient detail. Transparent operational plans have to be prepared.

Prepare transparent budgets, set realistic and practical targets and time-frames, assign clear responsibilities

To be successful, detailed and preferably not too rigid budgets should be prepared, so that potential funding agencies can get a transparent picture to base their financing decision on and, once started, accountants can present transparent financial reports. Realistic and practical targets should be set in the programming phase which should be clearly presented in the document, and linked to a realistic time frame for meeting the targets. The institutional set-up should be worked out in detail, assigning clear (negotiated and agreed) responsibilities to the various participating stakeholders. Only with practical, affordable and realistic operational plans (on which consensus exists among the actors), can those who will be involved in the actual implementation accept (and commit to) the responsibilities.

Outreach and communication

Keep stakeholders informed from the beginning through targeted outreach...

True commitment at all levels will occur through actions that demonstrate they are affordable and provide benefits for the public. It is thus extremely important that an active awareness raising and outreach programme is set up, keeping stakeholders informed of developments and progress from the beginning. Experience with Sustainable Development Strategies has shown that SD councils are successful mechanisms for fostering dialogue among different stakeholders (see Task 1.1 in Chapter 5 on designating the lead for a NPA process).

...using a wide variety of tools for different situations and groups

To communicate with and reach all groups, a wide variety of outreach tools exist for different situations and various stakeholder groups. Among them are round-table meetings, public consultations, information dissemination via publications , or electronic media programmes, such as dedicated web-site, radio and television programmes, posters, brochures, pictures, songs, street theatre, village and neighbourhood meetings, and the like. Usually a combination of several of these will comprise a targeted campaign.

Box 5.13 summarizes an example of a public consultation in Barbados on implementation of its 1998 Coastal Zone Management and Marine pollution Control Acts, and the Land-Based Sources Protocol. Pilot projects can sensitize and increase awareness, as illustrated in relatively low-budget monitoring projects in St. Lucia (see Box 6.2). These projects raised awareness of potential pollution problems in the area amongst the local community. The results are used to seek additional funding for follow-up activities. Similarly the projects in Pacific Island countries referred to in Box 2.7, have strong outreach components. This can be seen also with the Sokhulu case in South Africa in Annex 6.

Conflict resolution

Identify potential or actual conflicts up-front

Sustainable development aims to use and develop the potential of an area without jeopardising the conservation of the are itself. However, development and conservation can be – or are often – perceived as conflicting goals. As long as conflicts remain it will be difficult for action to be successful. An analysis of constraints and opportunities will identify potential or actual conflict areas.

(Potential) conflicts often arise from socio-economic 'mismatches'. Industries may well recognize the need for certain measures but may not have the required access to capital markets. Other private entrepreneurs may be aware of negative impacts but will try to go ahead with their plans purely for their own personal gain. Policy makers have other objectives than analysts. Farmers or fishermen know perfectly well how to best manage their land or fisheries, but when tenure rights are not secure they will not invest time and effort to do so. Poor countries do not have enough funds for proper sewage treatment in all their cities.

In some countries monitoring compliance with and subsequent enforcement of rules and regulations can avoid negative impacts or correct unfavourable situations (see Box 6.4 with abstracts of some judicial cases). Often such compliance and enforcement requirements may be a too heavy burden on limited resources (human and financial).

Often conflicts can be resolved if methods are built-in while planning for action

Some conflicts are resolved by bringing stakeholders closer to mutual understanding through participation and mediation (see Annex 6). Boxes 5.8 and 6.3 briefly present decision support tools that can also be used to avoid or resolve conflict (Hemmati 2002). Easier, more regular access to information, participation and justice will contribute to avoiding conflicts.

Monitoring, evaluation and revision

Activities should be monitored over time, periodically revisited and, if required, adjusted accordingly. Priorities in a NPA programme pipeline may have to be adjusted based on experiences gained during implementation (policies and legislation may have changed).

With feedback on lessons learned a NPA process and knowledge base can be continuously improved

Results and findings should be systematically acknowledged, documented and disseminated. Achieved results can be positive, neutral, negative or a complex of partial success or failure. With such feedback on lessons learned it will be possible to ensure a continuous improvement of the NPA process and knowledge base, and, eventually, of the state of the coastal and marine environment. The process of planning and documenting a NPA process may itself be viewed as a 'project' that should be revisited at regular intervals, for example, every 5 years.

Credible indicators should be used against which set targets can be monitored

Specific criteria and mechanisms are required to evaluate the effectiveness of the NPA process and activities (what works and what does not). Simple and credible indicators should be used against which targets can be monitored (Box 6.7). Depending on progress (or lack of it) in meeting targets new interventions may have to be formulated or existing ones re-formulated. When targets are met ahead of schedule activities may need to be expanded or new ones initiated. Targets may need to be tightened. More often actual results lag behind the time frame set to achieve targets. In such cases one or several steps back will be required (loosening initial targets, starting less ambitious activities, or adjusting (and maybe even cancelling) existing ones.

Collect information only if it is meaningful, practical and purposeful

Efficient monitoring requires orderly information and knowledge that is goal-directed and tied to the targets and time frames. Not all information is valuable. It is key to make the right selection (meaningful, practical and purposeful) from the vast sea of information. The knowledge management concept (originating from the corporate sector) may be a useful tool to consider and further develop for NPA purposes (see Box 6.5).

Capacity building

Training should be given at the right place, addressing the right people

Effective implementation of a NPA process can be assisted by capacity building programmes to develop and strengthen human resources and institutional capacities in government at national and local levels, and amongst local communities. Targeted, well-defined training will be required and there is a need to make sure that activities are relevant and adapted to the situation in a country, reason why needs assessments are important. A seminar series on the development of environmental financing strategies asks for different participants than a training course on wastewater management or community participation workshop. Likewise, the transfer and assimilation of new technology and know-how should be appropriate in the local situation (socially/culturally acceptable, financially affordable, environmentally sound, and economically sustainable).

Different capacity building efforts should complement each other

As also emphasized in the Bali Strategic Plan for Technology Support and Capacity-building, adopted in 2005 by the UNEP Governing Council, different capacity building efforts at international, national, and local levels, funded by international organisations, governments, the private sector and NGOs, should complement each other. It is important that countries address their capacity-building and technology support needs in a coordinated and concerted manner since the same (or at least very comparable) needs and constraints will occur in many different fields and institutions. Acknowledging this up-front will provide opportunities to streamline resource efficient action (UNEP 2005a).

An important lesson learned from NPA processes so far is the shortcoming in assessing costs of proposed actions and to develop realistic plans for mobilizing and efficiently allocating the financial resources needed to support investments and other activities. A major bottleneck to increased public sector financing seems to be the low capacity of water and environmental authorities to make effective proposals to existing public finance instruments, such as Public Investment Programmes and state budget.

Traditional knowledge and concepts should be re-discovered and taught

Capacity building should not only deal with new, mainly western, techniques, approaches and technologies. Also traditional knowledge and concepts should be re-discovered and taught. Endogenous development is an interesting concept in this context: development based mainly, though not exclusively, on locally available resources, local knowledge, culture and leadership, with the openness to integrate traditional as well as outside knowledge and practices. It has mechanisms for local learning and experimenting, building local economies and retention of benefits in the local area.

Part II

A NPA process that stimulates national action

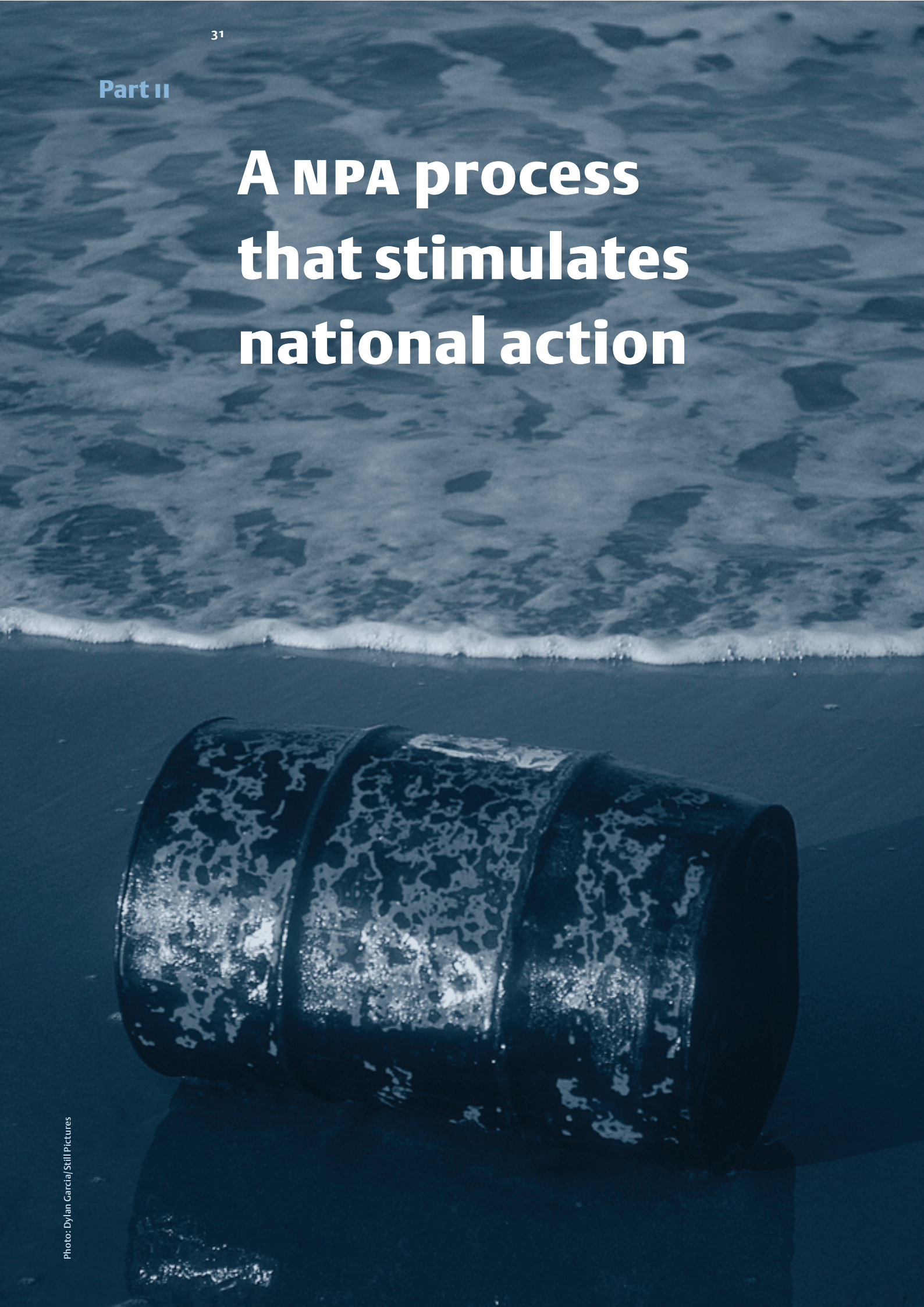


Photo: Dylan Garcia/Still Pictures

A flexible cyclical umbrella framework

4

The selection of an appropriate approach for a NPA process must respond to specific national circumstances and priorities. Each country is advised to explore different options. In Part I action taken so far and main guiding principles and approaches have been briefly described. This chapter proposes a flexible framework for a NPA process.

The framework

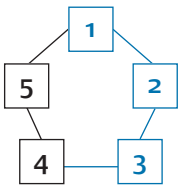
A cyclical approach with five interlinked steps is recommended...

It is recommended to use a logical framework when designing the NPA process so that activities are not undertaken in an ad hoc manner. This will facilitate a continued development of the programme over the medium and long term. Moreover, it makes a NPA process more transparent and accessible to the many and diverse stakeholders and end-users. This guide identifies basic elements and tools that can facilitate and strengthen procedures for action within a country. It does not attempt to detail the potential content of a NPA programme.

...that will eventually improve the state of the aquatic environment

A logical framework provides an overall umbrella for the entire NPA process and in this guide a circle has been chosen to depict it graphically. Five interlinked steps are recommended (Figure 4.1), each involving specific tasks. A cyclical approach should best be followed, where steps are evaluated at regular intervals, and, if needed, adjusted (see also the last principle of Section 3.3 and Figure 5.1). Such an iterative approach, building upon lessons learnt in earlier stages, will gradually improve a NPA process, and eventually the state of the coastal and marine environment.

FIGURE 4.1 A flexible and cyclical NPA framework



Developing realistic NPA action
STEP 1 Initial preparations
STEP 2 Identification of problems, constraints & opportunities
STEP 3 Formulating of realistic strategies and action

Towards successful NPA implementation
STEP 4 Kick-off national measures and on the ground activities
STEP 5 Monitoring, evaluation and revision

Box 4.1 summarizes benefits of such a flexible umbrella framework for national action. Specific tasks for each step are listed in Box 4.4, and described in detail in Chapters 5 and 6, where appropriate including possible tools and recommendations. Chapter 5 covers the formulation of realistic NPA action; Chapter 6 deals with tasks that will lead to successful NPA implementation.

BOX 4.1 Benefits of a flexible tailor-made umbrella framework

- A flexible umbrella framework makes it easier for all stakeholders to determine the viability and sustainability of proposed or ongoing projects, measures, policies or initiatives
- It is an effective tool for the development of a concrete, cost effective and targeted programme pipeline, strengthening the potential for mobilisation of donors and investors
- A comprehensive structure makes it simpler to incorporate environmental considerations into sectoral, national and regional development plans
- Linkages with other programmes and gaps are more readily identified, thus avoiding duplication or fragmentation of work

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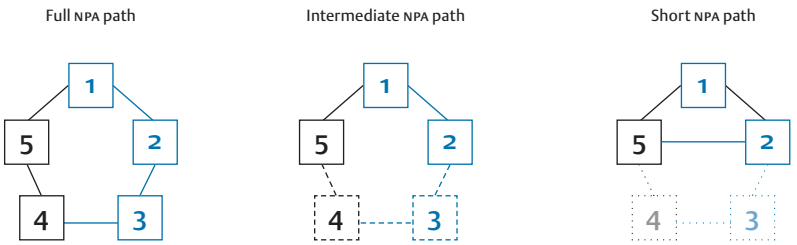
- Management needs that are usually not prioritized, such as capacity-building, legislation, and institutional strengthening, can be identified
- A 'national programme pipeline' can be established, to which new projects can be added as impacts are progressively identified and characterized and corresponding projects designed
- Priority setting of action can be facilitated when based on agreed financial plans for activities that are identified in such a programme pipeline <

Needs and priorities of countries vary greatly

As mentioned before, the needs and priorities of countries vary greatly, and this guide can be used in accordance with each country's circumstances. Whichever a countries' situation, it is important to realize up front that a NPA process should not try to re-invent the wheel, it should above all build upon existing programmes, assessments and research.

Focus should be on development of realistic action that complements other programmes and activities. Sufficient existing strategies and programmes may well be in place, in which case a country could follow a short NPA path. Such a decision would ideally be taken after Step 1 (the initial preparations) and Step 2 (assessment of problems, constraints and opportunities) have been finalized. At that point a core group has been set up, key actors have been identified, brainstorming session(s) have been held on potential financing, problems, constraints and opportunities, and a more in-depth assessment has been made of what exists and what is missing, of what works and what does not work . Based on this information the core-group can decide which NPA route is the most appropriate for the country. Figure 4.2 shows three possible paths.

FIGURE 4.2 Three possible paths for a NPA process



The short NPA path

Short – explain existing mechanisms through which NPA related activities are dealt with

Care for the coastal and marine environment is fully integrated in ongoing strategies, programmes and activities to achieve sustainable development. For this reason a separate NPA process is started. The only specific action needed is to produce a short paper explaining the mechanisms through which NPA relevant activities are dealt with in the country, and to continue monitoring the situation to make sure coastal and marine environments remain part of the existing mechanisms. In this case the NPA cycle is very short, going from Step 2 directly to Step 5. Australia is a country that fits this short path. In a six page NPA Note Australia describes its marine and estuarine environment, the pollutants affecting its coastal waters, and the way Australia meets its obligations under the GPA through existing policy instruments (Box 4.2).

BOX 4.2 Australia's Framework for Marine and Estuarine Water Quality Protection

Australia meets its obligations under the GPA through its Framework for Marine and Estuarine Water Quality Protection. This 'Marine and Estuarine' Framework builds upon existing overall water policy instruments as they apply to coastal waters and wetlands:

- The Council of Australian Government's Water Reform Framework
- Australia's 1992 National Water Quality Management Strategy (NWQMS)
- Australia's National Principles for the Provision of Water for Ecosystems in particular

The NWQMS comprises 21 guideline papers, the most significant and recent (2000) paper being the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, which outlines a framework for water resource protection and management.

The 'Marine and Estuarine' Framework was developed as a nationally consistent approach to protecting the marine environment from the effects of land based pollution. Identification of problems, achieving reductions in pollutant loads and establishment of end-of-river (or river mouth) targets are central components. As well as the development of coastal water quality and wetlands improvement plans. Key features of the Framework include identification of:

- environmental values of the coastal waters
- the catchment that discharges to that coastal water
- water quality issues and subsequent water quality objectives
- maximum pollutant load targets to be achieved to attain and maintain the set water quality objectives
- allocation of maximum pollutant load to diffuse and point sources of pollution
- river flow objectives to protect the identified environmental values
- management measures, timelines, and costs to implement the plan
- jurisdictions that will provide a reasonable assurance to investors to invest in activities to achieve the set targets

www.deh.gov.au/coasts/pollution/cci/index.html <

The intermediate NPA path

A country already has operational mechanisms through which it is trying to achieve more sustainable development, but the coastal and marine environment is not always sufficiently incorporated. Sometimes the capacity and speed at which activities take place ask for specific NPA action. Emphasis would in this case be on networking to ensure that existing mechanisms incorporate action to direct land-based activities towards protection of the coastal and marine environment. In this case a country would go through the entire NPA cycle, but focus on adding components and funds to existing mechanisms, following the intermediate NPA path.

Intermediate – ensure that existing mechanisms incorporate action to direct impacts from land-based activities

In the Caribbean, for example, countries are in the process of integrating NPA objectives, targets and activities into their existing National Environmental Management Strategies (NEMS). Canada is also an example of the intermediate route. Its NPA actions include monitoring existing actions when they are deemed adequate; strengthening existing actions when they are deemed inadequate; and proposing new actions for immediate preventive and remedial measures to fill gaps, based on existing knowledge, resources, plans and processes (www.npa-pan.ca).

Full – go through the entire NPA cycle in all its detail

The full NPA path

There are not enough mechanisms in operation to ensure that the coastal and marine environment is sufficiently protected from land-based activities. In this situation the country may wish to start a fully-fledged NPA process. It would go through the entire (periodically repeated) NPA cycle in all its detail, making sure that steps are taken in close cooperation with relevant existing institutions and processes. This is the path that is being followed by most countries. Below the example of Sri Lanka is briefly summarized (Box 4.3).

BOX 4.3 Sri Lanka's NPA process
For the Protection of the Marine Environment From Land-based Activities

The NPA Programme Document

In Sri Lanka a full NPA process was started with the production of an initial NPA programme document, published in December 2003 and officially launched in mid 2004 by the Ministry of Environment and Natural Resources:

Part I: Present status of the coastal region and the critical land-based activities that affect the marine environment of Sri Lanka (45 pages):

- Biophysical, climate and socio-economic features
- Degradation of the marine environment (water pollution, coastal erosion, biodiversity and habitats, sites of special significance)
- Management of the marine environment (policies and legislation)

Part II: The National Action Plan:

- Identification and assessment of problems
- Establishment of priorities for action related to main areas of concern
- Setting goals, management objectives and policies for established priorities (control marine water pollution, coastal erosion, degradation of marine habitats and their biodiversity, and deterioration of sites of special significance)
- Identification, evaluation and selection of strategies and actions
- Identification of criteria for evaluation of effectiveness (targets/indicators)
- Socio-economic analysis of selected strategies and actions
- Programme support elements
- (Initiation of the) implementation of policies, strategies and actions (through a Committee on Environmental Policy and Management)

Part III: Pilot project proposals:

- Solid waste management by a local authority in Gampaha district (5 yrs; US$510 000)
- Design of an appropriate sewerage system for new and improved settlements (5 yrs, US$510 000)
- Study on economic significance of the coastal regions of Sri Lanka (1½ yrs; US$22 000)
- Preparation of a zonal plan for development of aquaculture in Hambantota District (2 yrs; US$50 000)
- Control river sand mining in the Deduru Oya River Basin (5 yrs, US$510 000)
- Study of squatter settlements and links to coastal pollution on the West Coast (1 yr; US$12 850)

Follow-up activities

As with many of the NPA processes started so far, there was a need for strengthened institutional capacity, and above all increased financial resources, particularly after the country was hit by the December 2004 tsunami.

Meanwhile many activities were started in the context of rehabilitation after the Tsunami, which fit directly into the NPA process. Projects were also formulated before the tsunami, such as the NPA follow-up project developed with the GPA Coordination Office, which started at the end of 2005: Planning and developing market-based instruments for medium and long-term strategic planning of implementation of Sri Lanka's NPA (1½ yrs; US$ 66 000) <

Different tasks to be undertaken under each step are listed in Box 4.4. Not all tasks will be necessary; as always, this depends on the circumstances of the country.

BOX 4.4 Five major steps, each with specific tasks

STEP 1 Initial preparations

To start a cross-sectoral and multi-stakeholder process for the protection of the coastal and marine environment from land-based activities:

- designate the overall lead that will have to carry out initial preparation tasks:
- set up (and chair) a NPA Core Group
- define the overall scope and guiding principles
- consult potential financial partners
- hold initial brainstorming sessions with key actors
- develop and agree on an initial work plan
- secure funding for preparatory activities (mainly Step 1 and 2)
- ensure formal endorsement of the NPA process by the government

STEP 2 Identification of problems and of constraints and opportunities for successful solutions

To analyse the current situation:

- assess policy tools, (potential) partners and linkages
- assess data, monitoring and reporting mechanisms
- assess legal and financial frameworks
- For all: identify problems, constraints, opportunities and (capacity building) needs

STEP 3 Formulating realistic strategies and action

To develop a tailor-made NPA programme for step-by-step implementation through a wide network of linkages, partners and stakeholders:

- set up an institutional network
- set realistic objectives, goals, targets and time-frames
- define prioritization criteria and set priorities
- produce a programme pipe-line and formulate short and medium term activities
- devise a financing strategy
- formulate communication and participation strategies
- designate implementing agencies and assign responsibilities

STEP 4 Kick-off national level measures and on the ground activities

To start implementation involving all stakeholders and to ensure support and a sense of ownership at all levels by creating awareness:

- ensure adoption and acceptance of responsibilities by implementing agencies
- start ongoing awareness and outreach activities

STEP 5 Monitoring, evaluation and revision

To set up strong monitoring, feedback and evaluation components:

- ensure continuous monitoring, evaluation and revision
- set-up assessment and reporting programmes to evaluate action
- select indicators against which set goals and targets can be evaluated

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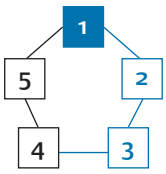
Starting a NPA process and developing a realistic programme

5

This chapter describes how a realistic, tailor-made NPA programme can be developed for step-by-step implementation of priorities through a wide network of partners and stake-holders. Programming should take into account the relative severity of impacts, as well as the precautionary principle, linkages to freshwater environments, and related programmes and strategies at global, regional and national level (such as MDGs and WSSD targets, regional seas programmes, PRSs, and sectoral policies). A fundamental goal of a NPA process is to develop a pipeline of concrete projects that address land-based activities that harm or threaten a countries' coastal and marine environment. In Chapter 3 the NPA principles were described.



STEP 1 Initial preparations

Set up a national, cross-sectoral and multi-stakeholder process for the protection of the coastal and marine environment from land-based activities:

TASK 1.1 designate the overall *Lead Team* (often the Ministry of Environment, co-chaired by Finance Ministry). The Terms of Reference of the Lead Team will comprise the following initial tasks:

TASK 1.2 set up and chair a NPA *Core Group* involving those that will later be responsible for implementation of the NPA programme

TASK 1.3 define the overall *scope and guiding principles* for the NPA process. This will also facilitate mainstreaming the GPA programme

TASK 1.4 consult potential *financial partners* to obtain an indication from where and when finance will realistically be available

TASK 1.5 hold initial *brainstorming* sessions with key actors. Initiate expert assessments on status and trends in the coastal and marine environment and bordering watersheds

TASK 1.6 develop and agree upon an *initial work plan* for the NPA process, with overall objectives and time tables

TASK 1.7 secure *funding* for preparatory activities in the early stages of the NPA process (mainly Step 1 and 2)

TASK 1.8 ensure formal *endorsement* of the NPA process by the government Endorsement

The order in which the tasks are listed here is not fixed. Depending on the situation, the order may well have to be changed for practical reasons, or some of the tasks skipped.

Task 1.1 Designate the lead and secure initial seed funding

The process is ideally led by a Ministry/Council/ Agency of Environment...

A lead agency should be designated (usually by the Office of the Prime Minister) that will spearhead the NPA process, and catalyse and track activities in relevant institutions and other entities. This Lead would also have to facilitate regional and international cooperation (but this guide focuses on the national level).

...co-chaired by the Ministry of Finance or Public Works

In most NPA processes the Ministry (or Agency) of Environment (and/or Natural Resources) typically maintains the role of the driving force. Considering the enormity of the task, it is recommended to designate a co-chair to form a 'Lead Team'. The co-chair would preferably be the Ministry of Finance or a Ministry that will have major responsibilities in NPA programming and/or implementation (for example the Ministry of Public Works).

Operational funds should be available to initiate the process

Together with the designation of lead agencies, the government should demonstrate its commitment to the NPA process by ensuring that operational seed funds are made available to implement its initiating tasks (Step 1). Funds would mainly be required for institutional support for initial networking, consultations and brainstorming sessions. These operational funds could either come from national budgets, or the government could make a strong case in soliciting outside assistance to fund the NPA initiation.

It will be the task of the Lead Team to ensure that throughout the NPA process responsibilities for programming and implementation are clearly defined and assigned, each with their respective timetables and budgets. The Lead Team mainly has a catalytic function, while other agencies that take part in the process will be responsible for implementation of certain aspects of the Programme. To the extent possible, existing programmes and mechanisms should be used or strengthened.

Task 1.2 Set up a NPA Core-Group

It is most effective to designate a NPA Core Group or Task Force that will facilitate the NPA process, involving those actors that will later have major responsibilities for programming and/or implementation. Ideally the Core Group, although established by the government, can operate rather independently (see European experience in Box 5.1).

A Core Group network can facilitate a participatory and consultative process...

In the same way, a NPA Core Group can liaise, consult and work with relevant institutions and stakeholder representatives, ensuring that NPA programming and implementation will be a participatory and consultative process. To the extent possible existing mechanisms should be used or strengthened. Indeed, every NPA process started so far has had its own institutional set-up, specific to the situation in the country (see Box 5.1).

BOX 5.1 Examples of institutional set-ups for NPA processes

Colombia

The Colombian NPA was developed by the National Technical Committee for Marine Pollution. Chairmanship and coordination lies with the Institute of Marine and Coastal Research assisted by the Ministry of the Environment, Housing and Land-use Planning and the Colombian Ocean Commission. The National Technical Committee consists of representatives of 15 national and regional institutions:

- the Ministries of the Environment, Housing and Land-use Planning; Foreign Affairs; Trade, Industry and Tourism; Transport; and Social Protection;
- the National Planning Department; the Navy; the General Maritime Authority; the National Authority for Disaster Prevention and Warning;
- the Institute of Marine and Coastal Research; the Institute of Hydrology, Meteorology and Environmental Research; and the Institute of Environmental Research of the Pacific;
- the Colombian Oil Company; the Association of Autonomous Regional Corporations of Sustainable Development and Environmental Authorities of Urban Centres; and the Corporation for the Sustainable Development of the San Andres Archipelago, Providencia and Santa Catalina.

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...and can be relatively independent from Government as it represents a wide range of stakeholders

The Technical Committee meets at least once a year and the Secretariat is intended to rotate between Committee members. The Committee publishes information on implementation and evaluation of the NPA process on a regular basis and many of the Committee members have been assigned specific responsibilities in the implementation of NPA activities.

Jamaica

In Jamaica the National Environment and Planning Agency (NEPA) has been given the NPA lead. NEPA is an executive agency that is responsible for the coordination of environmental management in the country. Inter-Ministerial oversight comes from the National Resources Committee (NRC) of the Cabinet, which is chaired by the Minister of Water and Housing. NRC is the vehicle for inter-ministerial coordination and government resource allocation. NEPA, together with the Ministry of Land and Environment, convenes two monitoring committee meetings per year and submits annual reports on progress to NRC, which NRC in turn forwards to the Cabinet and Parliament.

Sri Lanka

In Sri Lanka the NPA process is coordinated through the Ministry of Environment and Natural Resources. A core-team has been formed with 30 people:

- 9 senior staff from the Ministry of Environment and Natural Resources
- 2 consultants from the University of Sri Jayewardenepura
- 7 senior staff from various ministries: Housing and Plantation Infrastructure; Enterprise Development, Industrial Policy and Investment Promotion; Home Affairs, Provincial Councils and Local Government; Fisheries and Oceanic Resources; Lands; and Agriculture and Livestock Development
- 11 senior staff from government departments and national programmes (Department of National Planning, Coast Conservation Department), SACEP (this is regional organization), National Aquatic Resources Research and Development Agency, Marine Pollution Prevention Authority, North Western Provincial Environment Authority, Central Environment Authority, and National Cleaner Production Centre.

Europe

Sustainable Development Councils in Europe have a broad representation and are in a rather unique position because they are established by governments, while they operate independently. Experience has shown that these Councils are a good mechanism for fostering dialogue among the different stakeholders. This has the potential for innovative approaches and solutions, and for achieving agreements. A Council provides a potential for bridging the gap between government and non-governmental actors, and for transferring collective views and knowledge of civil society to the government.

Sources: NPA documents at www.gpa.unep.org/bin/php/programs/npa/npa.php and EEAC 2005. <

Task 1.3 Define overall scope and guiding principles for action

The Lead Team should draft the initial scope, guiding principles and overall objectives for a NPA process. Which steps will have to be undertaken? What issues and geographic areas will it address? Given the complex and interlinked range of issues that should be addressed, and taking into account existing global, regional and national policies, priorities and circumstances and available finances, governments will have to decide on a focus for their NPA initiative. This usually implies that a NPA process should be prioritized, phased and iterative, while the scope can be progressively broadened. The initial scope could be kept rather general, developing greater focus at a later stage using the results of Step 2 (identification). Overall guiding principles for a NPA process are described in Chapter 3. Also Annexes 1 and 2 give good background information with GPA recommendations. When defining the initial focus both themes and geographical scope are relevant.

The scope could focus on environmental issues, ecosystems, economic sectors, GPA contaminants and/or geographical zones

There are several entry points that can be used to decide on major themes. They could be organized around:

- environmental issues: land, forests, biodiversity, freshwater, coastal and marine waters, air, climate
- an ecosystem directed approach: integrating watersheds with coastal areas (see Box 5.3 and Annex 5).
- economic sectors: agriculture, forestry, tourism, transport, energy, waste, urban development
- the GPA identified contaminants: such as sewage and sediment mobilization and/or GPA sources of degradation such as wastewater treatment, run-off from agriculture, introduction of invasive species, coastal mining of sand and gravel (see Box 1.1 and Annex 1).

In addition off-shore issues could be included that are impacted on by land-based activities, such as fisheries, marine litter or quality of water resources. In most NPA documents several such themes are combined, for example linking the GPA sources of degradation with economic activities.

BOX 5.2 Brazil's efforts to integrate coastal and river basin policy

Brazil has 17 major river basins draining into the sea, which cover 398 municipalities and house some 40 million people. One quarter of this population lives in Rio de Janeiro State. There are seven River Basin Committees, three of them dealing with large river basins that drain into the sea and cross more than one State. Brazil has a National Plan on Coastal Management (Law No 7.661 of 1988) and a National Water Resources Policy (Law No 9.433 of 1997), but Brazil's public policies are highly decentralized within States, Municipalities and other bodies such as River Basin Committees.

Since 2001 efforts are underway to integrate the National Plan on Coastal Management and the National Water Resources Policy. As a first major step a Technical Body (Camara Tecnica) on Integrated Coastal Area and River Basin Management was formally created during the 7th meeting of the National River Basin Committee, held in October 2004. In August 2005 a First National Encounter of Integrated Coastal Area and River Basin Management was organized in Itajaí. The meeting discussed legal, institutional and technical instruments derived from policies dealing with both coastal area and river basin management.

The discussions focussed on the difficulties to integrate coastal area and river basin management in the light of the complexity of the highly decentralized Brazilian Federal system, which in most river basins and coastal councils causes multiple overlapping competencies. In other cases policies, regulations and decisions are not complementary (some States within the same river basin, for example, have introduced water charges while others have not). Furthermore the need for a greater role of municipalities and local communities was stressed. The predominant opinion was that, in order to respond to the specificities of each geographical unit, policies, legislation, institutions and procedures need to be integrated at the local level.

Source: Report of the First National Encounter of Integrated Coastal Area and River Basin Management, Itajaí, Brazil <

A geographic scope often reflects the size of a country. Whereas a NPA process for a small island state usually covers the entire territory, larger countries may wish to focus their efforts first on specific sub-national region(s), catchment areas or specific hotspots (Box 5.3), and then progressively develop a more comprehensive national programme. When a country borders several seas or its territory covers part of several large river basins, it can take part in several NPA processes. Russia, bordering the Arctic, Black Sea and Caspian

Sea, Turkey bordering the Mediterranean and Black Sea, and Central American countries bordering the Caribbean and the Pacific for example.

BOX 5.3 Hot-spot scope in the Baltic Sea basin.

The Baltic Sea Joint Comprehensive Environment Action Programme (JCP), coordinated through the Helsinki Commission (HELCOM), decided to select hotspots as entry points for action to improve the environment in the Baltic Sea basin. Hotspots are areas where high sensitivity and high pressure increases risk of damage or already cause damage. A number of hotspots were identified where point and non-point sources of pollution were causing serious problems for the Baltic Sea. For example:

- Construction of new sewers and connection of direct outlets – St. Petersburg
- Treatment of municipal and industrial wastewater – St. Petersburg and in St. Petersburg suburbs
- Phosphorus removal from wastewater – Saint-Petersburg
- Reduction of heavy metals in wastewater of metal plating industry – St. Petersburg
- Hazardous waste management at the State Unitary Environmental Protection Enterprise 'Poligon Krasnyy Bor' – Saint-Petersburg
- Air pollution control and wastewater treatment at the Volkhov Aluminium Plant and at the Syassky Pulp and Paper Mill – Leningrad Region
- Treatment of animal waste at large livestock farms – Leningrad Region

Investment activities were started in 1992 to address these problems. The use of co-financing that combines loans from the International Financial Institutions with grants from the European Union and bilateral donors, has proven to be a critical tool to help overcome the major constraint of securing financing for large infrastructural investment. For each hotspot a wide variety of activities has been initiated, and progress is closely monitored and reported upon in detail. The results after a decade are often impressive (see list below). However, despite a general improvement in the ecological balance in the Baltic Sea basin, much still remains to be done. Not one of the hotspots could be taken off the hot-spot list, illustrating the need for long-term commitments and financing. With the improvement of the Russian economy an accelerated implementation and elimination of hotspots can be expected. Some examples of results:

- Up to 75 per cent more municipal wastewater in St. Petersburg treated; much improved sludge processing and management; and Vodokanal St. Petersburg is the first water utility in Russia that received the ISO 14001 certification for its environmental management system.
- The phosphorus content in treated wastewater in three aeration stations in St. Petersburg was reduced by 29.5 per cent, 80.4 per cent and 83.7 per cent respectively.
- By 2002 heavy metals in wastewater in St. Petersburg were drastically reduced: copper by 87.4 per cent, zinc by 55.9 per cent, nickel by 79.6, chromium by 94.8, lead 92.9 and cadmium by 96.7 per cent
- Drastic improvements occurred between 1992 and 2002 in hazardous waste management at 'Poligon Krasnyy Bor' Environmental Protection Enterprise in Saint-Petersburg: emissions reduced from 409 to 52 tons, the number of open pits from 10 to 6, and unprocessed waste from 890 000 to 600 000 tons.
- Work between 1997-2003 on gasification of the power boilers in the Syassky pulp and paper mill resulted in clear emissions reductions: 91.7 per cent for volatile matter; 96.7 per cent for SO_2; and 6.7 per cent for NO_x. The quantity of waste dumped per ton of cooked cellulose remained the same.

Source: HELCOM 2004 <

Pin-point constraints and opportunities...

Task 1.4 Initial brainstorming session(s) and assessments

Consultations with stakeholder representatives at national and/or local levels are strongly encouraged, throughout the process. It is the most effective way to learn about restrictions and opportunities. And the sooner these are known, the more realistic the programme will be.

...by consulting with potential financial partners (the supply side)...

Once themes and overall scope have been roughly decided one of the first activities of the Lead Team would be to consult the potential financial partners (the supply side) to assess what estimated financial resources will be realistically be available from national budgets and other sources.

...and by assessing the environmental, socio-economic and institutional situation

As the next activity the Core Group often requests an inter-disciplinary group of experts to make a reconnaissance assessment of the environmental, socio-economic and institutional situation in a country or major watershed, and make initial recommendations on what they believe the NPA Programme should focus on. The expert findings could be validated through workshops (Box 5.4).

BOX 5.4 Initial expert assessments validated through stakeholder consultations in Central America

In 1997, the Heads of State of Belize, Guatemala, Honduras and Mexico adopted the Declaration of Tulum, a formal commitment to collaborate in the conservation and sustainable use of the Mesoamerican Barrier Reef Systems (MBRS). In June 1998 an Action Plan was adopted for the creation of natural protected areas in each of the 'custodian' countries, for the encouragement of ecotourism and the regulation of coastal development, for the prevention of coastal pollution and for the promotion of international financing, scientific research, training and social participation.

In 2005, eight years after the Tulum meeting, an assessment was carried out of five transboundary watersheds (Rio Hondo, Chamalecon River, Ulua River, Motagua River, and Yucatan Peninsula aquifers). The assessment included an analysis of information and proposed actions on socio-economic, environmental, and hydrological aspects of the five watersheds, plus an analysis of national and regional institutional and legal watershed management arrangements. The results of this assessment will serve the MBRS Action Plan itself and can at the same time be used as input while developing NPA programmes in the region.

The assessment findings were presented in two regional workshops attended by over 80 participants, representing governments, the scientific community, NGOs, and community level groups. During the workshops:

- the stakeholders were informed on the results of the assessment
- the information was validated and additional information was obtained for the final report
- problems, priority actions, and timeframes were identified for each thematic area covered
- support was obtained on the second phase of the MBRS Action Plan to address transboundary integrated watershed management

The outcome of the workshops were incorporated in the updated MBRS Action Plan that was presented at an Expert Meeting in January 2006.

Source: www.mbrs.org.bz/english/news.htm <

Task 1.5 Identify key actors and stakeholder representatives

The guiding objective is to ensure that a sense of ownership is created among all stakeholder representatives. This will stimulate commitment to the measures and activities proposed, and will provide long-term legitimacy. Only through participation and consultation will both effectiveness and efficiency eventually be achieved. Without broad stakeholder representation in the early stages, actions by governments, industry and civil society will be ad hoc, non-complementary and may even be contradictory.

Participation and consultation will deliver effectiveness and efficiency...

The identification of stakeholders is an ongoing process that should be further refined over time and tailored to address different levels, such as national, sub-national and local. Three major groups are listed in Box 5.5. An initial selection can already be made in this inception period (Step 1), while information on more specific stakeholder needs, concerns and (potential) conflicts can be obtained from the assessments that should be undertaken early on in the identification process (Step 2).

BOX 5.5 Three different stakeholder groups

Effective participation only comes about when stakeholder groups are part of the decision-making process. Generally speaking, three significant stakeholder groups can be described:

Authorities (at national, regional and local level), who have the overall responsibility to manage the public interests of resources:
- Politicians and parliamentarians
- Relevant ministries (national development, finance, planning, environment, water, agriculture, health, public words, transport, energy)
- Judiciary (legislators and regulators)

Users (mainly at regional and local level), who extract personal benefits from the resources
- Private sector (business and industry, services and financial sectors)
- Agriculturalists
- Tourism associations
- Local and indigenous communities, women groups

Supporters (mainly at regional and local level), who assist both authorities and users in specific tasks.
- NGOs, such as conservation- and youth groups
- Researchers and scientists
- Financial institutions and potential investment partners, both domestic and international
- Media
- Training and extension personnel <

...especially when involvement is secured in early stages

In the initial stages of a NPA process brainstorming workshops could be organized with actors representing all three stakeholder groups to:
- learn about their needs and concerns, and the challenges or constraints they face
- explore opportunities for their involvement (technical, institutional, financial)
- identify potential benefits that can be derived from their participation in the NPA
- learn about ongoing strategies, policies, legislation, programmes or projects
- become aware of potential conflicts between resource users, and of facilitation and conflict resolution skills on the part of the organizers
- maintain transparency regarding all the options and their implications

In selecting representatives, focus should not only be on coastal and marine areas but also on the hinterland, including the upstream users and polluters of major watersheds. Also in other relevant national level activities (such as formulation of new legislation) more and more examples can be shown of governments trying to involve stakeholders in the early stages (see Box 5.6).

BOX 5.6 Stakeholder involvement in the early stages of national level action in Meso-America

Costa Rica

The water law of Costa Rica is currently being revised. The government decided to integrate mechanisms of stakeholder participation in order to achieve the greatest possible consensus on the law before entering it into force. During the drafting process national stakeholder consultations and dialogues took place, in which users and communities were invited to share their views. The current draft water law proposes the establishment of stakeholder commissions for the major river basins of the country, with representatives of the relevant authorities, the community and other stakeholders. The Ministry of the Environment and Energy is at the same time using the water law revision process as an opportunity to ensure that GPA-related objectives are incorporated into the new law.

Guatemala

In the recently started NPA process in Guatemala a NPA programme is being formulated for the Lago Izabal-Rio Dulce basin, making use of available background studies on the current physical, biological and social-economic characteristics of the basin, and of on-going project data on water quality and quantity. One of the first activities will be a series of consultation workshops to present and discuss the assessment of Lago Izabal-Rio Dulce basin and to hold initial consultations for the development of a NPA programme. Three workshops are envisaged for 2006, one each for upstream, midstream and downstream actors, after which national consultants will produce a draft NPA document for review by the Authority for the Sustainable Development of the Lago Izabal-Rio Dulce basin.

Sources: GTA 2004, UNEP 2005 <

Most existing NPA documents are more initial work plans than full NPA programmes

Task 1.6 Develop a work plan and time table for the NPA process

Based on information obtained through the initial assessment(s), brainstorming session(s), workshops and bilateral discussions with various groups, the Lead Team and its supporting Core Group should develop and agree on an initial work plan, including overall objectives and a time table for the entire NPA process, a more detailed time table and budget for the actual NPA programming phase (Step 2 – identification and Step 3 – formulation), and initial ideas about potential financing mechanisms for actual implementation of the NPA programme.

Many of the NPA documents prepared so far are in fact initial work plans rather than full NPA programme descriptions (see examples of NPA documents at www.gpa.unep.org). With the guidance in this report it is hoped that countries can move to a more active programme and real implementation.

Task 1.7 Secure funding for preparatory NPA activities

As soon as an initial work plan, time table and budget has been agreed on (or even before that) the Lead Team and Core Group should seek partners who can provide seed funds required for the a secretariat and preparatory programming tasks listed below under Steps 2 and 3. Box 5.7 describes options for financing a secretariat and activities under an initial Programme of Work.

Only with sufficient funds to run a small secretariat can a NPA process be successful

BOX 5.7 Financing primary secretariat functions

Especially for countries that follow the intermediate or full NPA path, a NPA process can only be successful when sufficient funds are available to cover the core costs of running a minimal secretariat, including staffing costs, office rental, meeting and other administrative costs. To ensure continuity throughout the NPA process these costs would best be covered from regular government budgets. Such a clear government commitment would stimulate external financing sources. The results of a recent analysis of the cost-structure of five Regional Seas secretariats give a good indication of the level of funds required to cover various cost aspects in a small secretariat, and applicable for national level NPA processes as well. The actual level of funds will obviously depend on the size of a country, the size of the core-group, the expenditure level in a country and so forth, but looking at relative figures compared to total available budgets is illustrative:

- staff-related costs usually are the highest expenditure, making up 50 to 80 per cent of a total secretariat budget, averaging between 65-70 per cent (such costs remain stable over longer periods)
- accommodation and equipment costs usually average around 20 per cent of a total secretariat budget and these costs again remain stable over longer periods
- meeting and travel costs as a percentage of a total budget usually vary drastically depending on the year and country. The main reason being that the travel budget usually is the first budget item to be slashed when overall budget deficiencies occur
- in the initiation stage of a NPA process (Step 1) the overall secretariat costs will take up the bulk of the total NPA process costs; in the programme development stage (Step 2 and Step 3), when detailed assessments takes place, the secretariat costs will be a smaller part of the total cost; when activities are started up the secretariat costs will only be a very small fraction of the budget required.

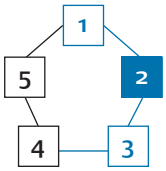
Source: Adapted from UNEP 2006 <

Task 1.8 Ensure formal endorsement of the NPA process

As a long-term strategic programme designed to change government, corporate and public behaviour, the NPA process must be formally endorsed by government authorities at national and sub-national levels. This will stimulate the relevant entities to adequately incorporate NPA action in their planning and budgetary processes at the national and sub-national levels (and even more local levels).

Commitment by the highest government offices sets the example

Several ongoing NPA processes have included a formal annual obligation to report to the highest office on progress, and oversight is often the responsibility of such high-level entities. Commitment by the highest government offices indeed sets the example (such as Offices of the President, Prime Minister Cabinets). The official arrangements for NPA oversight in Colombia, Jamaica, and Sri Lanka briefly described in Box 5.1 are clear demonstration of government commitment to NPA processes. Also a clear commitment to cover core costs for a small NPA secretariat from the regular national budget will stimulate others to develop a sense of ownership.



STEP 2 Identification of problems and of constraints and opportunities for successful solutions

One of the first steps is an analysis of the current situation in a country relevant in a NPA context: existing policy, institutions and stakeholders; information, monitoring and reporting mechanisms; legal and financing frameworks; and key programme support elements for these three aspects. All levels should be considered in the analysis, ranging from regional to national, sub-national, district and municipality levels. Based on such analyses constraints, (potential) conflicts and opportunities can be identified for successful

Analyse the current trends, problems, gaps, constraints, opportunities, resources and capacity requirements...

solutions, as well as requirements concerning resources and capacities (human, financial, technical/legal – usually focussing on capacity building requirements).

The assessments should continue to be made throughout the NPA process, keeping the process up-to-date through feedback mechanisms that go both up and down. This will allow for mainstreaming the NPA process into existing policy and strategy frameworks, into institutional arrangements of relevant agencies, and into legislative and budget definition processes. And it will assist in programming specific short-term projects and medium and long-term action.

Analyses of the existing situation need to be made for the following three themes:

TASK 2.1 *policy tools* (strategies and programmes), (potential) *partners and linkages* (public and private), and identify problems, (potential) conflicts, constraints and opportunities for action and (capacity building) needs

TASK 2.2 research *data, information*, indicator programmes, *monitoring and reporting* mechanisms (socio-economic conditions and state-of-the-environment) and identify problems, constraints and opportunities for action and (capacity building) needs

TASK 2.3 *legal and financial frameworks* that create (or not) an enabling environment for NPA action (national budgets, legislation, compliance and enforcement) and identify problems, constraints and opportunities for action and (capacity building) needs

...while liaising with relevant actors and institutions

Note that in some cases specific assessments or assessment processes may already exist. So, again, it is important to liaise closely with all relevant actors and institutions (governmental, but for example also with the scientific community). The Core Group is in the ideal position to obtain an overview of what is already available.

Task 2.1 Assess policy tools, (potential) partners and linkages

In an effective NPA process much time and effort should be put in the identification of relevant policy tools, (potential) partners and linkages at regional, national, sub-national and local levels, and in developing a sense of ownership.

Make an inventory of strategies, programmes and projects, their human resources and budgetary capacity

An assessment should be made of existing institutions, agencies, associations, scientific and other key groups with relevant mandates, both in the private and public sectors. The assessment should include an inventory of strategies, programmes and projects relevant in a NPA context, and of their human resource and overall budgetary capacity. Boxes 5.1 and 5.4 provide a good starting point. The questionnaire used in the Black Sea Environment Programme is an example that could be used as an entry point for an analysis of relevant institutions and stakeholders in a country; questions could be adapted to fit the specific situation in a country (UNEP/GPA 2004).

Use networks of Core Group members

In this more detailed programming stage it becomes important to access the networks of the Core Group members to create an optimal pool of potential actors. In practice it often means that a database is set up, which could even be made accessible via the Internet, so that people can request to be added to the 'NPA pool' or can alert the Core Team of additional actors that are not yet included.

Once a reasonable picture exists, a summary can be made of constraints that institutions and actors encounter (such as lack of staff, discontinuity in staffing, changing institutional arrangements and related changes in political commitment and funding), potential conflicts (such as institutional competition, insufficient delegation of authority or transfer of funds to local levels), opportunities (such as already functioning institutional linkages and existing joint programming), and capacity building requirements (at the national, sub-national and local levels), that could be associated with specific projects.

Task 2.2 Assess monitoring and reporting mechanisms

The NPA programme should build its objectives and targets on current research, assessments, data, information, indicator programmes, monitoring and environmental reporting mechanisms, covering all aspects of sustainable development: economic, environmental, financial, social/cultural/historical (think of issues such as public and ecosystem health, pollution sources, food security, income distribution). The information and reporting mechanisms dealing with GPA contaminants, source categories and vulnerable areas that have been selected in the preparatory stage of the NPA process (Step 1) are particularly important.

Make an inventory of the state and trends in the environment and the causes and impacts of changes

A comprehensive inventory should be made of existing information from which the current state and trends in the environment can be evaluated, and the main causes can be identified that created the current situation. All existing assessments should be looked into in order to gauge their quality and level of detail and to identify research and information gaps and overlaps. A systematic state of the (coastal and marine) environment reporting system may for example already be in place.

Questions that could be answered after such an inventory are:

- what is happening (what are the environmental conditions and trends)?
- why is it happening (what are the human and natural causes of these changes)?
- are the changes significant (what are the health, economic, social and ecological implications)?
- what is expected to happen in the near future, say the next 20 years (considering expected developments in population, in economic sectors such as tourism and agriculture, and in issues such as freshwater use and habitat destruction)

By answering such questions:

- awareness and understanding will increase of environmental trends and conditions, and their causes and consequences
- a foundation is provided for prioritization of NPA action (see also Step 3)
- measurement of progress in the NPA process is facilitated (see also Step 5)

Make an inventory of international commitments, national legal instruments, voluntary codes of conduct and enforcement

Task 2.3 Assess relevant legal and financial frameworks

In order to develop a comprehensive framework for strengthened action, a NPA programme should build on the existing legal and financial framework in a country, considering relevant international commitments, (sub-) regional obligations and national level legislation, regulations, financial instruments, voluntary actions and agreements, and compliance and enforcement mechanisms. A thorough assessment of all these aspects is essential so that gaps, needs, constraints and opportunities for integration/linkages can be identified.

Question to be answered:

- what is and what could be our response (what are the environmental implications of societal responses)?

Due to the cross-sectoral and multi-disciplinary character of a NPA process, a wide range of instruments and more integrated tools needs to be assessed. Focus depends on the legal system in a country, and will mainly relate to common or civil law, looking into constitutional provisions, sectoral legislation, regulations, standards, case law, and enforcement legislation. Priority fields should be environment, coastal and marine waters, fresh waters, agriculture, forest management (including mangroves), biodiversity, tourism, mining, and health. Not only governmental mechanisms should be considered, since also voluntary action may well have potential. Box 5.8 briefly describes some efforts to assess legal and financial frameworks.

Often legislation exists; it is more the lack of enforcement that hampers control of undesirable trends

BOX 5.8 Assessments of legal and financial frameworks

Legal frameworks

A good example of a recent assessment is the 2003 review of coastal legislation in *South Asia*. It looks at legislation related to the coastal environment, tourism, fisheries and aquaculture, coastal sand mining, ports and land use (agriculture, forestry) in five countries (Bangladesh, India, Maldives, Pakistan and Sri Lanka). A major conclusion of the study is that it is not a lack of legislation that is hampering the control of undesirable activities in coastal areas as much as the lack of enforcement of legislation. Environmental Impact Assessment procedures, for which legislation was usually in place, have to be strengthened to ensure that development activities proceed with acceptable environmental impacts.

A single country example is the 2004 assessment made of *Costa Rica's* legal and institutional framework related to the management of water resources, including the marine and coastal areas. The report concludes that there is a high degree of fragmentation with more than 110 norms of various kinds (such as international conventions, laws, decrees, and regulations) and more than 20 institutions with a mandate related to water resources and coastal and marine areas. Costa Rica is currently formulating an integrated water resources law that also covers marine and coastal areas. Many more national examples exist, for example the recent country reports prepared for a 2005 Meeting of the Network on Compliance and Enforcements of Environmental Legislation in the Mediterranean. In Annex 9 the reports by Bosnia & Herzegovina, Cyprus, Israel and Slovenia are listed, as well as the meeting report itself.

UNEP/GPA is currently preparing a guidance document for reviewing and harmonizing laws and institutions to enhance the implementation of the LBSA Protocols at national level. The report describes how to set-up a review, covering aspects such as constitutional legal framework, statutory framework-, sectoral- and cross-cutting legislation, regulations and non-legally binding guidance instruments, sectoral activities (especially in the industrial, municipal and agricultural sectors), institutions and administrations, and enforcement (national coordination, an institutional framework, training to enhance enforcement capabilities, public environmental awareness and education are important). The report refers to useful other sources, such as the Ramsar Convention 1999 Guidelines for Reviewing Laws and Institutions to Promote the Conservation and Wise Use of Wetlands. >

Market-based instruments can be useful tools to achieve environmental objectives

Financial frameworks

Numerous financial assessments can be quoted, such as the 2006 EEA report that presents an assessment of the main recent developments in the use of market-based instruments in European environmental policy. It covers a range of instruments used to achieve environmental objectives (environmental taxes, charges and deposit-refund systems, environmental tax reform, emissions trading schemes, subsidies, and liability and compensation requirements). The report finds a steadily growing application of market-based instruments across Europe and it identifies the need for cost-effective policy measures in order to make authorities more aware of the advantages of implementing MBIS (excerpts in Annex 8).

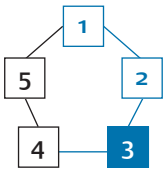
Also the 2006 report of UNEP/PERSGA on financing of environmental conservation of the Red Sea and the Gulf of Aden provides useful information on how to make a financial assessment, discussing financing demands, different types of financing available, sources of funding, and aspects that need to be taken into consideration when evaluating the benefits of specific instruments (see also Annex 8).

Sources: EEA 2006a, GTA 2004, Hadjipanayiotou 2005, Hadžiahmetovic 2005, MOE 2005, Ramsar 1999-2005, UNEP 2006, UNEP/GPA 2003, UNEP/GPA (2006b), UNEP/MAP 2005, Žbona 2005, <

Aspects related to rights to human well-being (such as the right to health, a healthy environment, security and access to information, participation and justice) need to be assessed, as well as requirements for instrumental legislation (such as land-use planning, urban planning, coastal and marine development, integrated impact assessment (IIA), EIA and SEA). Attention needs to be given also to the existing sources of financing. This would include reviewing:

- relevant official budgets that provide resources for the environment and related areas (and instruments to feed these budgets such as taxes, fees, charges, and permits);
- public investment programmes; sub-national governmental budgets;
- private sector financing; and
- user financing and international financing.

Box 5.8 annotates a number of useful documents to consult when embarking on an assessment of existing policy, legal and financial frameworks in a country.



STEP 3 Formulate realistic strategies and action

Once a good overview of the state of and trends in the environment, and of institutions and legislation in a country or (transboundary) watershed is available, a realistic tailor-made NPA programme needs to be developed. This will involve step-by-step implementation through a wide network of partners and stakeholders:

TASK 3.1 set up an *institutional network* for implementation of the chosen NPA path

TASK 3.2 set realistic *objectives and goals* in a well-defined *time frame* to address the major identified problems

TASK 3.3 define criteria for *prioritization* and set priorities

TASK 3.4 produce a NPA *programme pipeline* for short, medium and long-term action and formulate concrete, detailed, and affordable action

TASK 3.5 devise a *financing strategy* for the programme involving relevant government bodies and other partners

TASK 3.6 formulate a *communication and participation* strategy

TASK 3.7 designate implementing agencies and assign *responsibilities*

Note that although initial stakeholder consultations were probably already held to identify major problems and needs, and constraints and opportunities to tackle them, all the next steps of the NPA process should also continuously involve relevant stakeholder representatives.

As explained in Chapter 4 it will not always be necessary to start a full NPA process. Australia was given as an example (Box 4.2). In other cases a limited programme might be enough to pull all relevant actors together, and in yet another situation a full-scale programme may be required.

Decide which NPA path to follow (short, intermediate or full)

Based on the outcome of Step 2 (identification) the Lead Team will have to decide which NPA path to follow. If the short route is chosen focus will be on Step 5. It is however recommended to read the section for Steps 3 and 4 as well (think for example of Task 3.5 on environmental financing strategies).

For the intermediate and full NPA paths it is necessary to consult all following sections. The division between an intermediate and a full NPA path is not sharp. Depending on the specific characteristics of a country, certain tasks may be redundant and others vital. It is up to the Core Group to guide choices to be made in this context.

Task 3.1 Institutional set-up for NPA implementation

The outcome of Step 2 (identification), where key programme support elements were analysed, will clearly illustrate that the linkages are numerous and complex. There are linkages through international commitments (global and regional), between different levels of authority (from national to local), between sectors (both public and private) and through geographic location (coastal areas and upstream river basins) (see Box 3.4). All these linkages refer to as many different institutions and other organizational entities, information and reporting mechanisms, policy tools and legislation.

Joint programming and implementation is beneficial to all parties involved

Based on the initial work plan produced in Step 1 and on Step 2 results, an institutional network should be set up that will have to be kept together by the Core Group. The networks of Core Group members themselves should be used as much as possible. A major task of the Core Group throughout the NPA process is to advocate among all those entities the need for joint programming to protect the coastal and marine environment from land-based activities. After all, where true linkages exist such cooperation is beneficial to all parties. Serious effort should be put into obtaining clear commitments and agreements to work together, implementing NPA related activities through the most logical agencies. Also the private sector and scientific community needs to be involved during the early programming stages, not only after proposals for activities have been finalized. A sense of ownership in the NPA process and actual activities should be fostered.

A strong institutional network can ensure real cooperation and continuity

As a long-term process, a NPA programme should have sustainability mechanisms built in. A strong dedicated institutional network, along with the consolidation of the required institutional and legislative arrangements, can ensure that the NPA process continues, even in the case of changes in, for example, administration.

Task 3.2 Set objectives, goals, targets and time-lines

Realistic objectives need to be defined for the NPA process and goals and targets for specific programme components. This will stimulate result-oriented action and facilitate monitoring so that lessons can be learned through feedback (what works, what does not work, and why).

Chapter II of the GPA (see Annex 1) recommends that objectives cover the GPA source of degradation, vulnerable or already affected areas (see Box 1.1), as well as industrial, agricultural, urban, tourism and other sectors that are relevant in the specific context of a country. Depending on the scope and objectives chosen for the NPA process (see Task 1.3) programme goals and targets need to be set to meet the overall objectives, as well as corresponding indicators and time-tables (see Step 5 and Box 6.7). Wherever possible, countries should take immediate preventive and remedial action using existing knowledge, resources and processes. To assist policy and decision makers in defining objectives, goals and targets integrated assessment and modelling tools can be of help (see Box 5.9).

Formulate specific, measurable, achievable, realistic and time-bound (SMART) goals and targets

Goals, targets and related indicators can be both quantitative and qualitative. They must be 'SMART': specific, measurable, achievable, realistic, and time-bound. They should demonstrate a commitment to action, and generate awareness, support, and incentives for continued result-oriented action. Clear responsibility should thus be assigned for follow-up and implementation to achieve set goals and targets.

Scenario studies can help decision makers to define 'smart' goals and targets.

BOX 5.9 Integrated assessment and modelling techniques as decision support tool

Environmental consequences of today's production and consumption patterns usually only become visible many years later. This delay occurs because environmental processes are slow. Also, the formulation and adoption of policy responses takes a long time and many more years pass before the effects of such policies can actually be noticed or measured.

Scenario development and integrated assessment modelling techniques can be useful tools to help look beyond such delays. Scenarios are descriptions of alternative futures, formulated while keeping the past and present in mind and making assumptions about how things could develop in the future. They are not predictions of what is likely to happen. The role of scenarios is more to examine different perspectives (of different stakeholders), to challenge conventional thinking and to offer a systematic and disciplined way of discussing crucial issues in society. All this will help policy makers in their efforts to define 'smart' objectives, goals and targets. In UNEP's Global Environment Outlook (GEO) report series such integrated assessment and modelling tools are used, both on a global scale and on regional and national levels. Also for the OECD Environmental Outlook, Outlooks prepared by the EEA and, for example, the recent Blue Plan's Environment and Development Outlook (A Sustainable Future for the Mediterranean) scenarios are used intensively.

Techniques range from simple 'what-if?' questions to business-as-usual analyses and complicated computer generated projections. 'What-if?' questions can be raised, working with descriptive (qualitative) story lines for possible futures (what would happen if we would do this and what would on the other hand happen if we would decide to do *that*?). A business-as-usual scenario can be >

analysed, extrapolating the effects of current production, consumption and resource management into the future, which is then compared to the effects of a scenario in which more far-reaching environmental policies are assumed. The latter approach was used in the recent Blue Plan outlook report for the Mediterranean. Much more sophisticated computer models can also be used to project and compare the impacts of three or four different quantified futures (think of the IPCC scenarios).

The outputs of these assessment and modelling studies are often presented through summarizing graphs and maps. Such illustrations are often more convincing and helpful to policy makers than long reports.

Sources: Blue Plan 2005, EEA 2005b, OECD 2001, UNEP 1997, UNEP 1999, UNEP 2002b, UNEP/RIVM 2004 <

Also consider existing regional programme objectives

In most cases, successful national action is also dependent on regional and sub-regional cooperation. This is particularly relevant in enclosed or semi-enclosed seas. Regional cooperation often supports an ecosystem approach to environmental management. Consequently, the activities and objectives of regional bodies, such as the respective regional seas programmes and regional economic organizations, must also be considered when determining national management objectives for the NPA.

Task 3.3 Define criteria for and set priorities

Once NPA programme goals and time related targets have been defined, priorities need to be set and appropriate activities and measures selected for meeting the goals and targets. However, the wide range of causes that impact on the coastal and marine environments cannot be addressed simultaneously, reason why a key element of success is to define *criteria* for establishing national priorities.

Priorities in a programme pipeline should not be strictly limited to environmental sectors, but should include framework conditions that provide the enabling environment to implement environmental action. In other words, criteria must reflect the circumstances and overall priorities of a country and be based on the constraints that have been identified in Step 2 (financial, legal, capacity and institutions). This will assist in mobilizing funds throughout the phased implementation of a NPA programme. Some elements to consider when defining criteria for prioritising action are listed in Box 5.10.

No fixed list of criteria can be prescribed for priority setting...

BOX 5.10 Elements to consider when defining criteria for priority setting

No fixed list of criteria can be prescribed for priority setting, as this much depends on the specific political situation in a country. Some elements to consider when defining criteria for prioritization are:

- were problems identified and characterized in a consistent and coherent way?
- can an activity meant to solve identified problem(s) be initiated immediately?
- will such an activity go beyond the short term perspectives?
- is the socio-economic situation considered when selecting the activity?
- will the activity create equity and consistency, and therefore trust?
- is effective participation by different stakeholder groups encouraged?
- is the decision-making process to assign priority to activities transparent? <

...as it much depends on the specific situation in a country

In the definition of priorities key governance elements are often overlooked, which may undermine the implementation or sustainability of a given activity (see Box 5.11). The prioritization process should thus also consider socio-economic issues, total expected financing available in the short, medium and long term, policy and legislative frameworks (see Box 5.8), and available management, institutional, and technological infrastructure (see Figure 5.2), as well as additional demands for environmental financing and activities outside the scope of a NPA programme. Highest priority should be given to solving financing constraints (see Task 3.5).

BOX 5.11 Key governance elements that are often overlooked

- financing constraints (affordability)
- institutional capacity constraints
- technical capacity constraints
- clarification of agency mandates
- agreed responsibility for implementation of activities
- rationalisation/harmonisation of relevant legislation
- identification of jurisdictional overlaps
- resolution of statutory ambiguities
- compliance and enforcement capabilities

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The temptation to re-visit objectives, goals, targets and priorities again and again, prior to proceeding to the next step, should be resisted. It is important to remember that a NPA process should be a cyclical process: through feedback and monitoring there will be ample opportunity to re-prioritize in later stages when the NPA process cycle is periodically re-visited.

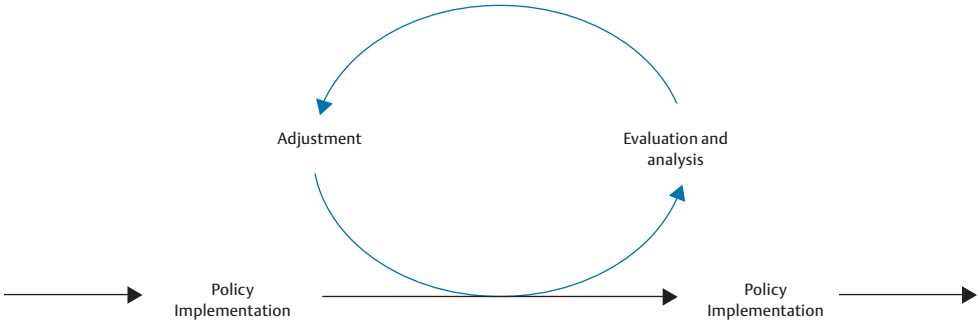
Select priority activities to meet set goals and targets and adjust activities and/or targets based on monitoring and feedback...

Environmental hotspots, for example, obviously have a very high priority but at the same time there may be too many constraints to take action, reason why such priorities cannot be dealt with straight away. When at a later stage the barriers are partly overcome (new funding, knowledge, technology, legislation) this can be fed back into the NPA process so that action can be taken after all (see also Box 5.3 on the hotspots approach applied in the Baltic Sea region).

...or in other words: a NPA process is a learning process

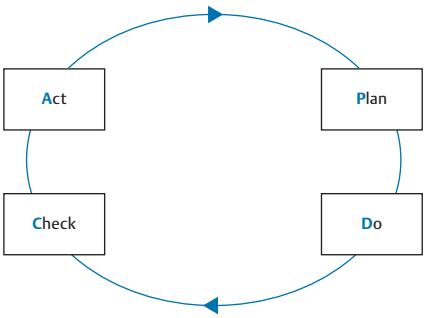
With such programme or activity adjustments the NPA process will be gradually improved, building on lessons learned in earlier stages (successes or failures): a NPA process is a learning process. This aspect is emphasized again and again in reviews of strategic processes, such as the reports listed at the end of Box 2.8, and can be depicted in many different ways. Three examples are included in Figure 5.1.

FIGURE 5.1 Different ways to depict a cyclical and iterative policy and management process



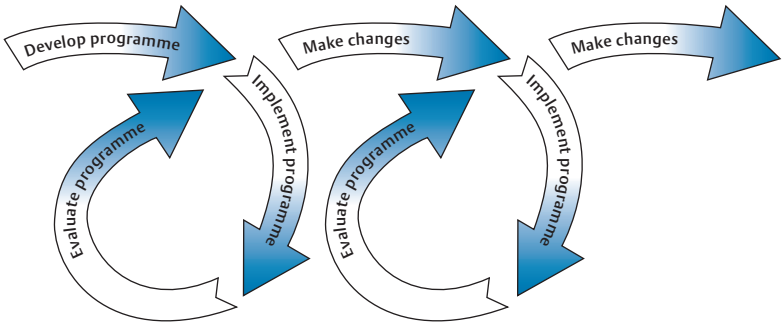
A general cyclical process of policy making

Source: IISD/UNEP 2000



The PDCA Management Framework applied in Jamaica (Plan-Do-Check-Act)

Source: NEPA 2004



The policy spiral often used in integrated coastal and/or watershed management processes

Source: US EPA 2005

Task 3.4 Produce a NPA programme pipeline and formulate concrete action

Apply the prioritization criteria to formulate a realistic NPA programme pipeline...

As indicated above, prioritizing activities should not be a time consuming or expensive process. Once the criteria for establishing priorities have been defined, it is important to proceed: apply the criteria to formulate a realistic NPA programme pipeline, indicating the order of priority for activities. During implementation lessons will be learned, barriers will gradually be broken down and planned goals, targets and activities will be re-considered and re-prioritized.

...and formulate concrete national level initiatives and on the ground projects for short- and medium-term implementation

For priority activities that can be implemented in the short and medium-term detailed concrete steps and projects should be formulated. These activities can relate to national level initiatives to create an enabling environment for a NPA process, for example formulating new or adapting existing legislation (see Box 5.12). Or real on the ground activities can be defined for which transparent project documents should include detailed budgets and other inputs, clear targets and related indicators and time tables to achieve expected results. Also a practical institutional set-up should be defined and a lead implementing agency assigned, as implementation of specific activities will be the responsibility of many different specialized agencies and other actors, all part of the entire institutional NPA network (see Box 5.1).

BOX 5.12 Adapting and/or formulating new legislation

1 Identify which legislative requirements an integrated NPA process will need
- what are the aims and objectives of the NPA?
- what type of laws, regulations, decisions and related authorities are needed?
- which (national) legislation and regulations allow choices to be made and which do not?
- review national laws or administrative measures
- make new or amended legislation?
- what are the costs and benefits to the economy and to the environment?
- which sectors will bear the burden?
- how should the transition to new requirements be organized: deadlines, transition periods, implementation programmes, investments and reports?

2 Decide on the process of legislative transposition
- who should be consulted? Government, industry, NGOs, neighbourhood groups?
- what scientific or technical knowledge is required and what information must go to whom?
- what form of consultation is needed and at what stage in the process?
- other possible roles of organisations outside the national government?

3 Determine how the legislation will be implemented and enforced
- central, regional or local level implementation?
- what powers will officials need to have?
- what co-ordination and consultation amongst regulatory bodies is needed?
- what is the need for information, guidelines, training?
- what are the costs and benefits of different implementation choices?
- what financing is needed for administration? For investment?
- how will costs be recovered and financing obtained?
- what monitoring is needed and by whom and do they need training, staff, equipment?
- what penalties should apply? How will they be applied (administrative, judicial)?

4 For actual adaptation of existing or formulation of new legislation consider
- legislative and budgetary schedule
- preparation and implementation of administrative rules, decrees, and the like
- institutions, staff, and resources
- training, information, communication, meetings with government, industry and public, information assembly, monitoring and reporting
- enforcement

Source: Adapted from EC 1997

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Design indicators to assess progress and to inform the public

Indicators (see Box 6.7) should be formulated to assess progress made through the formulated activities. Indicators should not be too complex, taking into account that different groups and levels of stakeholders should participate in monitoring and evaluation activities (see Annex 6 and Box 6.2). When not too complicated, indicators can also be used to alert the general public of changes taking place in the environment.

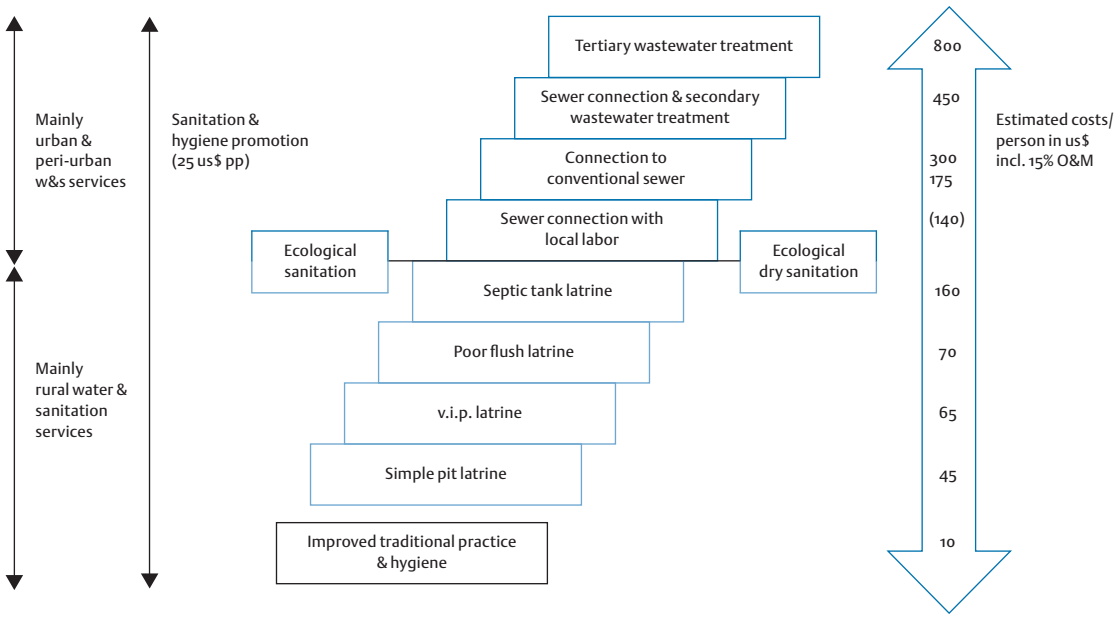
The best chance for achieving positive results is obtained by always keeping the national and local context in mind. For example:

- consider only cost effective and best affordable measures, management practices and technologies to achieve set (environmental) targets. The UNEP/GPA Municipal Wastewater Management programme elaborates on this (see Figure 5.2 and Annex 7)
- consider possibilities for job creation and domestic capital markets
- stimulate the development of market-based instruments (see Task 3.5 and Annex 8)
- stimulate public-private partnerships, domestic and foreign (evaluate such PPPs to decide which type best suits an activity given the circumstances)
- consider opportunities of joining services across neighbouring municipalities (such as sanitation services and wastewater treatment plants)

Consider cost effective, best affordable options

Many priority aspects will be too complicated or too expensive to tackle in full straight away. The field of wastewater, sanitation and hygiene is an example (in most countries a major problem and highest priority). In such situations a start can be made with more modest local options as illustrated in the wastewater technology ladder (see Figure 5.2 and Annex 7). In other cases early activities could be formulated focusing on awareness raising, assessments, capacity building, integration of existing legislation and development of affordable financing strategies and specific investment studies (see Task 3.5 and Annex 8).

FIGURE 5.2 A costed ladder of sanitation options



Source: UNEP 2004b

Task 3.5 Devise a financing strategy

A key objective for a country is to establish sustained financial mechanisms for initiating and running the overall NPA process, NPA programming, and implementation of national level initiatives and on the ground action. Funds will be required throughout the process and at all levels to ensure that it evolves over the medium and long term. In other words, to ensure that a more enabling environment is gradually created and capacities will improve. As indicated above, it is important to be realistic in the formulation of objectives, goals, targets, and priority activities and measures for step-by-step implementation.

Realistic environmental financing strategies should be drawn up...

Many countries' public institutions are weak in mobilizing financial resources. In many countries pilot projects were started to formulate environmental financing strategies, for example in Lithuania, with guidance of the EAP Task Force secretariat at OECD (DEPA 2001). These projects have contributed to changing ways of thinking (helping governments realize the need to take financial constraints into consideration at an early stage) and strengthened the countries' ability to prioritize their own resources as well as leverage additional external resources. Good environmental financing strategies will help countries to utilize their own resources most effectively and efficiently, identify possible new domestic resources, make the most of foreign assistance and optimize possibilities of utilizing international financial institutions, market financing and private capital.

...considering available funding and expectations on potential future funding

Prioritization of activities should always be based on currently available funding and realistic expectations on potential future funding. Priority proposals should be affordable, keeping other demands for environmental financing and urgent needs outside the NPA process in mind. At national level resources will have to be reserved for other development aspect as well (for example education and transport infrastructure) and this will limit the scope of more specific NPA activities. Such an affordability approach is for example followed in the NEAPs in Central and Eastern Europe.

Also consider affordability and solidarity at community level

Also at community level the issue of affordability and solidarity is important. Success or not relates (in)directly to benefits to the public or not. Often people cannot afford user charges that would be adequate to cover operation and maintenance costs and in some cases subsidies are even being provided to the richer part of the population that could pay full costs. Solidarity measures that ensure better access to drinking water do exist, though, such as supplying a minimum free volume per household, while additional consumption has to be paid in full, progressive pricing where the first cubic metres have the lowest price, or charging higher water prices for tourist facilities (Blue Plan 2005).

Look for potential financial partners, linking up sectors such as industry, agriculture and tourism

Long-term environmental capital improvements should be developed. Low-income countries face several specific challenges if they are to develop an effective phased NPA programme. Both existing global, regional and domestic financial sources and mechanisms should be looked into and potential new financial partners (linking up with industry and trade, agriculture and other sectors). Box 3.3 lists good governance issues that need to be considered in order to create or maintain an enabling environment that promotes and protects investments.

NPA activities are best integrated into ongoing public investment programmes and in private and other environmental investments. Domestic sources of financing include sources such as state and municipal general revenues (state budget, municipal budgets), pollution charges and fines, user fees, commercial capital and leasing markets, and other opportunities for increasing domestic sources of financing (such as capital costs, repayment of credits). Donor sources of financing to consider are bilateral donors, international financial institutions (such as The World Bank and regional investment banks), foreign direct investment, and other opportunities for increasing foreign sources of financing (financing for investments, grants for technical assistance, south-south investments). Annex 8 provides guidance on the formulation of a financing strategy based on EEA 2006a and UNEP 2006. The Annex covers:

- reviewing the potential of market-based instruments
- overall action to be taken in a financing strategy formulation process
- details on existing financing sources and promising economic instruments
- criteria to evaluate the potential effectiveness of environmental taxes and charges.

Task 3.6 Formulate communication and participation strategies

Awareness needs to be strengthened of...

Even in countries where key industries and a large segment of the population depend on coastal and marine resource bases, the complex interactions in these environments and the wide range of impacts from land-based activities are often not well understood. A NPA process should strive to deliver greater awareness of the value and importance of these environments in terms of services and functions provided. A solid communication and participation strategy may be a positive driving force for successful NPA implementation. Communication and participation tools should be developed for ongoing consultation with various parties to create awareness, and a sense of ownership and responsibility.

Key objectives of a communication and participation strategy are to generate and strengthen:

...the strategic importance of coastal and marine ecosystems for society...

- awareness of the strategic importance of coastal and marine ecosystems for society (valuation of resources and environmental services, although still difficult, is a powerful tool for generating interest and commitment, both public and private, see Figure 1.1)

...the impacts of land-based activities...

- awareness of the impacts of land-based activities, both coastal and inland (knowledge of cost of damage, Figure 1.1)
- awareness of the actual and potential benefits for each stakeholder group to be derived from specific activities (valuation of resources and environmental services, cost of damage)

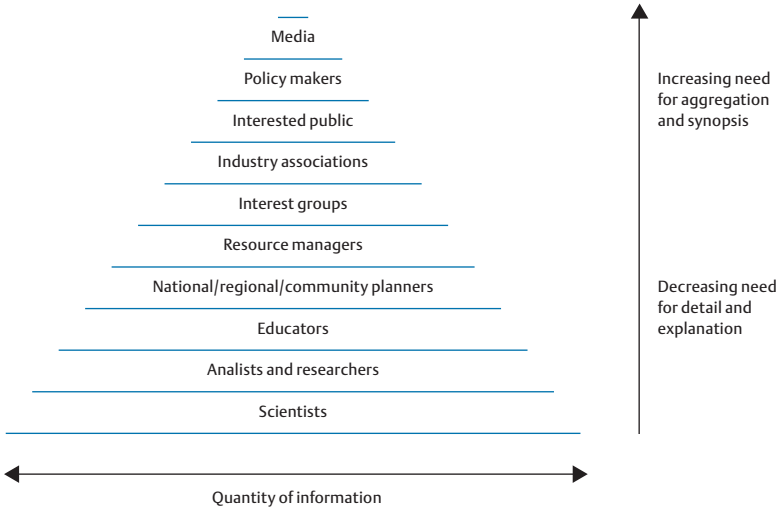
...and the costs of damage and of in-action

- awareness of the potential loss of opportunities if an intervention is not implemented (costs of in-action)
- investments for NPA activities (engaging the private sector and civil society)

The information requirements of a specific industry, of local fishermen or of local authorities in a watershed area may vary significantly. Flexibility is thus important when reaching out, as different stakeholders will require diverse approaches, types and levels of information (Figure 5.3). To reach the right audience, there are many aspects and levels to consider,

ranging from official national consultation documents (Box 5.13), to efforts to improve access to information, participation and justice at more intermediate and local level, and to very local projects to reach and involve local people (Box 6.2 and Annex 6).

FIGURE 5.3 Information requirements of stakeholders: one size does not fit all



Use a combination of different approaches and tools to reach out...

Incentives for participation should be created. A targeted campaign will usually be a combination of many different approaches and tools. Examples are:

- provide sufficient, transparent (easily understood) and timely information
- tailor information to different levels, sectors and needs and ensure that it reaches targeted groups (state, municipal, professional, scientific, population at large); examples of communication channels are official documents, newsletters, dedicated web-site and web-links, papers, radio and TV programmes, posters, brochures, pictures, songs, street theatre, village and neighbourhood meetings
- put accessible mechanisms in place for stakeholder participation (such as clearing house nodes or discussion platforms, internet -chat rooms, national sustainable development or environment and protection councils, public consultations through publications, public hearings through round-table meetings or workshops)

BOX 5.13 National level public consultation on legislation in Barbados

The Barbados government presented a simple 30-page public consultation document in 2004to provide its citizens with an overview of the Coastal Zone Management and the Marine Pollution Control Acts and to inform them on how they will be implemented. In the document the government states that it cannot achieve its goals of protecting the coastal areas without the assistance of the Barbadian public and the companies operating in Barbados. Through the consultation the government hopes to ensure that the system can be put in place while everyone understands the role they play in protecting the environment of Barbados. In the foreword the government encouraged its people to provide feedback.

In the same document the public is informed about the ongoing evaluation of the potential impacts of signing the Protocol Concerning Pollution from Land-Based Sources and Activities, a Wider Caribbean Region agreement meant to address source of pollution such as domestic wastewater and agricultural run-off that may contain pesticides and fertilizers. >

Simultaneous to the release of the document several consultation meetings were organized, where feedback was provided by Government representatives on the draft Acts, whilst specific consultants provided interpretations on the content of the draft legislation and the rationale for the standards selected. For the few issues that were outstanding at the end of these consultations, the consultants were requested to incorporate suggestion into the final report on the consultations and present them to the Government.

The consultation process in now at the stage where the Chief Parliamentary Council is reviewing the Draft Regulations to ensure conformity with the Constitution of Barbados before final adoption into Law by the Minister of Environment. Meanwhile, and as required under the Act, the Environmental Protection Department is continuing its auditing programme for significant pollutant sources. This involves the preparation of an instrument to calculate fees that would be imposed on individual companies who discharge into the marine environment, directly or indirectly, and the preparation of standard agreements as tools to facilitate certain aspects of the draft Marine Pollution (Discharge) Regulations, 2005.

Source: University of the West Indies 2004 <

...involving different existing groups

Efforts should be made to involve existing groups, such as local community groups, trade associations, chambers of commerce, the science community or inter-ministerial working groups. A recently started example of an outreach and participation programme at intermediate level is the CABRI-Volga initiative (CABRI stands for Cooperation Along a Big River; the Volga drains into the Caspian Sea). A first CABRI-Volga Brief was published in December 2005 and a web site is being maintained, both supporting information and know-how exchange between Russian and European stakeholders in the water management domain (see www.cabri-volga.org).

A recent UNEP report on marine litter is an example of an action-oriented analysis of the serious problems caused by marine litter. In just a few pages and using very direct (even harsh) language the causes and trends are presented, followed by options for action that institutions, organizations, industries, and the general public can link up to. The accompanying brochure is even more effective, with to-the-point facts and devastating pictures that say a thousand words each (UNEP 2005).

Task 3.7 Designate implementing agencies and assign responsibilities

New mandates and responsibilities need to be assigned for actual implementation

NPA programming (Steps 1, 2 and part of 3) needs a relatively small mandate taken up by the overall Lead Team and its Core Group. With NPA implementation (Steps part of 3, 4 and 5) mandates will broaden. It is usually a Ministry of Environment (or comparable entity) that is given the mandate to oversee NPA programming. Once a NPA has been adopted by a government for implementation new mandates and responsibilities need to be assigned to lead partners in specific national level initiatives and specific on the ground activities. This involves actors in many sectors of government and society at different levels in the wide institutional NPA network.

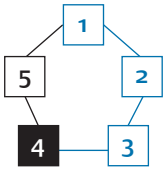
Well defined responsibilities, work plans, time tables and detailed budgets will help both the Core Group and the new implementing partners in overseeing progress (or flagging negative developments) in the delivery of agreed outputs. Evidently, responsibilities, outputs, work plans and budgets are more detailed for high priority activities that will have to start in the short term, while those for the medium and long-term may be more indicative.

Lack of clarity in assignments may in the end be counter-productive

The definition and assignment of responsibilities for identified tasks and activities is an ongoing process that evolves in parallel with NPA programming itself. The Core Group should ensure that throughout the process responsibilities and respective timetables and budgets are clearly defined, assigned, and accepted. Because of the multi-disciplinary and cross-sectoral character of a NPA programme, a lack of clarity in the assignment and acceptance of tasks may result in duplication or fragmentation of work, or even unwanted development. This is particularly important in countries with strongly decentralized administrations. Certain agreements and responsibilities at national (or Federal) level may well have counterproductive implications at a more local level (see Box 5.2 and Box 2.3).

Towards successful implementation

6



STEP 4 Kick-off national level measures and on the ground activities

Sharing responsibilities from the outset of implementation is critical in the NPA process. It does not involve complicated, extensive or expensive tasks, but because of its importance it is included in this NPA framework as a separate step. This kick-off step should ensure that all stakeholders are involved in the adoption of a NPA programme and that awareness is created to enhance support and a sense of ownership at all levels (political, institutional, financial, (sub-) national, local, public, private, community, household):

TASK 4.1 ensure *formal adoption and acceptance* of responsibilities

TASK 4.2 start *outreach and awareness* activities

Task 4.1 Ensure formal adoption and acceptance of responsibilities

Ensure support and acceptance of responsibility at all levels

For NPA activities to be successful, much attention should already have been paid during programming to ensuring explicit political, institutional and financial support from relevant government authorities for the proposed measures and acceptance of responsibilities at all appropriate levels. Besides, the programming phase emphasized that because of the complex and cross-sectoral range of issues, the NPA process must be mainstreamed into other existing planning and budgetary processes. The NPA process should form part of all relevant frameworks, such as policy, legal and budget provisions, enforcement mechanisms, and technical and scientific information and expertise.

The Lead Team should ensure that the proposed measures and projects, have implementation responsibilities assigned, and targets, budgets and time frames set. This done, they should be officially endorsed by relevant authorities. Such official adoption of NPA activities will provide the authority, legitimacy and support that is necessary to bring, and subsequently keep, a wide range of stakeholders on board, both from the public and private spheres.

Task 4.2 Start continuous awareness and outreach activities

Launch activities in a well publicized and official way...

The Lead Team and Core Group could organize a major NPA launch event, opened by the highest possible government official, inviting representatives from all institutions that took part in programming, addressing the widest possible variety of stakeholders, and using all the media within their reach. A small, but essential start-up task is to make sure that the NPA documentation is translated into relevant languages and formats as appropriate. This is true for overall programme document(s) as well as for more detailed documentation on measures and activities and other outreach material. The word 'translation' should be interpreted in the broadest possible way bearing in mind that one size does not fit all. This would include translating formal documentation into custom made formats, such as summaries for policy and decision makers, popular versions for the public at large, and adapted texts address school children (Task 3.6, Figure 5.3 and Box 6.1).

...and approach different audiences with different outreach material

BOX 6.1 Different NPA outreach approaches

Countries have produced a wide variety of outreach material to create awareness of their NPA process. Most countries produced well prepared NPA documents and many made their NPA programme accessible via the Internet. Several countries also set up a web-based Clearing House mechanisms. Australia and Canada are good examples (www.npa-pan.ca, www.deh.gov.au/coasts/pollution/cci/index.html).

Some countries put emphasis on the launch of their NPA programme. Yemen, for example, organized a large public launch through a press conference. At the launch they released their NPA document in print and on a CD ROM, as well as a brochure, a video and a poster. Sri Lanka's launch was organized on an even bigger scale. In mid-2004 Sri Lanka launched its NPA through two workshops for public officials of relevant agencies. There was a public launch where the media was present, brochures and posters were distributed and a TV programme broadcast in order to raise awareness about pollution from land-based activities and of the NPA process. <

Set up a continuous outreach programme to maintain momentum

To maintain momentum and a sense of ownership and responsibility throughout the NPA process an official kick-off ceremony should ideally be followed by periodic progress sessions, inviting the same representatives. Furthermore, a continuous outreach programme will be required, backed by optimal communication and participation mechanisms (see Task 3.6). Pilot projects can also create awareness and introduce or keep NPA thinking alive. Simple participatory monitoring projects or clean-up campaigns, for example, can create awareness and an increased sense of ownership, and can provide useful lessons about local perspectives and constraints (see Box 6.2 and Annex 6).

BOX 6.2 Monitoring and awareness in St. Lucia through local involvement

Two pilot projects were recently implemented. One in Mabouya Valley where the dominant land-use is banana farming and animal husbandry resulting in polluted runoff. The other, in Laborie Bay where the community mainly depends on the marine environment in which discharges from land and sedimentation result in algal blooms and smothering of coral reefs. In both cases there was cause for concern for the livelihoods of the local people. A monitoring programme was therefore set up to measure water quality and at the same time conduct a survey to assess community perceptions of the existing water quality. Under the programme local youth were trained in water sampling, incubation techniques, and interviewing through questionnaires in the local Creole dialect. Secondary school students took the marine and freshwater samples and the questionnaires were administered by members of a local youth environment club, all under the supervision of relevant government institutions such as the Department of Statistics and the Caribbean Environmental Health Institute. This programme delivered monitoring data and information for further planning, while the contact with local communities at the same time sensitized and created more awareness among the people of the potential pollution problems in their surroundings.

Benefits of the pilot projects identified by the community
- enhanced capacity of the youth in data collection and survey methods
- opportunity for community interaction and involvement fostering a community spirit
- increased awareness of potential pollutants in the environment.

Challenges reported
- financial constraints resulting from limited funding
- limited availability of water testing kits and office space for project activities
- limited capacity to analyse data
- potential implications for local livelihoods in case the analysis indicates (too much) pollution
- inadequate awareness and sensitization to encourage community ownership of the project >

Lessons learnt

- community involvement is a necessity to make people aware of adverse environmental and health implications of their (polluting) activities
- authorities and other actors in society must also put the environment on their agenda
- (marine) pollution threatens livelihoods and can be most effectively addressed through changes in individual attitudes and practices
- provide public education on standards and guidelines on agricultural practices
- involve schools and local businesses in environmental management and protection
- incorporate environmental science into the school curriculum
- enhance capacity in communities in data sampling, monitoring, and analysis
- provide technical training for local professionals to maximize sustainable resource use
- ensure continuity of activities and use of data gathered
- investigate alternative sewage management systems

Source: Unpublished progress report of PANOS Caribbean 2006 <

It has been said before: the more the public is aware and involved, the fewer the conflicts and the greater the chances of success. This is also a main message of the Aarhus Convention on Access, Participation and Justice (www.unece.org/env/pp/) and of the Access Initiative (www.accessinitiative.org). The latter made an interesting analysis on 'Aarhus issues' in a number of countries all over the world, among others presented in WRI (2003).

Problems and constraints are best identified through participation and feedback...

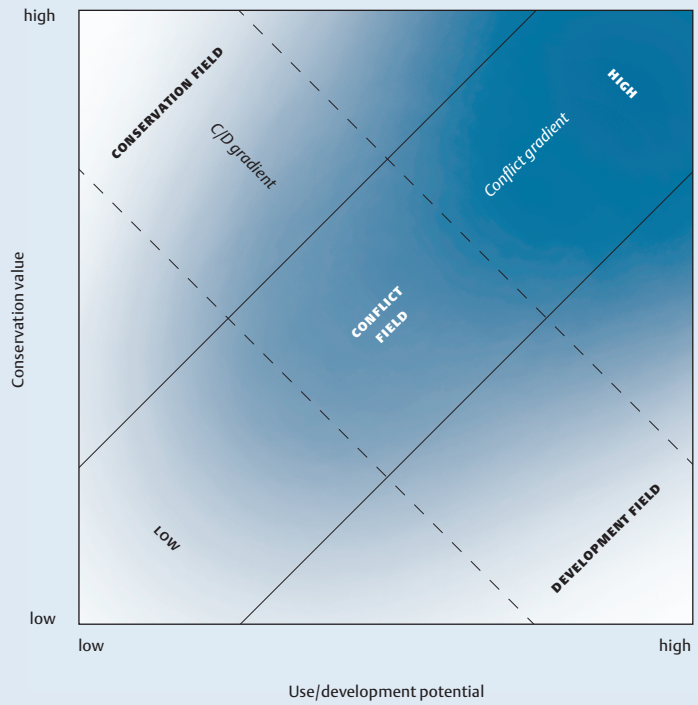
Many examples have been given in this guide illustrating experiences with consultations, outreach and other participatory approaches (Task 3.6, Boxes 5.3, 5.5, 5.13, 6.1, 6.2 and Annex 6). Participation and feedback provides a clearer understanding of the different, sometimes conflicting interests and priorities of the various users of the coastal area and its hinterland. Thus a participatory iterative process is in itself a tool to identify problems and constraints.

Many more multi-stakeholder tools exist for the identification and resolution of problems and conflicts (see also Step 5 on monitoring, evaluation and revision). While implementing measures and activities (partial) consensus can be built. Some conflicts can even be resolved up front by having stakeholders work alongside each other from the beginning, keeping all actors informed and involved while developing realistic management plans, and appointing mediators to assist in resolving frictions. Annex 6 illustrates how conflicting interests can eventually be matched through participatory approaches at very local level. Box 6.3 briefly presents a decision support tool that can be used in policy and programme development, but also to resolve conflict in formulation stages. Hemmati (2002) also presents practical guidance on multi-stakeholder processes in governance and sustainability. In addition, a report produced in the context of UNEP's Environment and Security programme provides useful guidance in the environment-conflict-cooperation realm (UNEP 2004c).

...and good tools exist to resolve conflicts arising from problems and constraints

BOX 6.3 A conflict resolution tool

Plotting development values and conservation values in a diagramme, as done in the figure below, can help when one has to decide whether to open up a specific (coastal) area for development or not. An area with a low conservation value but a high use potential could be considered for development first (the development field at the bottom-right in the diagram). Such areas offer strong opportunities and little conflict as long as environmental impact assessment procedures are strictly followed to demonstrate that negative effects on the conservation value are within acceptable limits. At the other end of the range the figure shows areas with a high conservation value and low potential for development, such as many wetlands (the conservation field at the top-left in the diagram). Development in such areas should preferably be resisted. As development will be very expensive there are often no real conflicts. A logical decision would be to formally protect such areas if in any way possible. In the remaining fields both values are of the same order, causing conflicts between conservation and development (the conflict fields). Conflicts are more severe in high-value areas (the upper-right fields in the diagramme). Further in-depth analysis of these conflict areas is required before a final decision is made on formulation and implementation of a development strategy, programme or project.



Source: Adapted from Cendrero and others 1997

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If all efforts have been in vain, judicial options exist. As also emphasized in the Aarhus Convention, citizens (should) have the right to turn to impartial arbiters such as officially appointed mediators, administrative courts and formal courts of law. In Box 6.4 some interesting judicial cases are briefly summarized.

If all efforts have been in vain, judicial options exist

BOX 6.4 Abstracts of some illustrative judicial cases

Argentina State liable in conflict due to lack of vertical coordination

Argentina is a very decentralized country. Due to lack of coordination there are many conflicts between states and municipalities. The problem of Aguas Argentinas (AA) is a good example. AA is the company in charge of freshwater supply and sewage disposal in the city and the metropolitan area of Buenos Aires. Under its public concession contract it was to complete a main sewer into the sea and a sewage disposal plant by 1997. This work was then postponed for 10 years after AA and the State re-negotiated the contract, and AA continued to discharge wastewater without any treatment into the River Plata. In 2003 the Head of the Municipality of Berazategui accused both AA and the State in the Federal Court
of causing severe pollution of surface, ground and coastal waters, flora and fauna, and of seriously affecting public health. The plaintiff asked that the defendants be compelled to start the pending works immediately, to restore environmental damages and to compensate the damages for US$ 300 million. The Federal Court in the end agreed with the plaintiff and compelled AA to build the sewage disposal plant within 18 months and extend the main sewage-pipe from 2500 to 8000 meters into the territorial waters. The defendants appealed before the Supreme Court.

Municipality of Berazategui vs Aguas Argentinas, Federal Court of La Plata, Sala ii, 0/09/2003

Brazil – Federal Union condemned for lack of compliance and enforcement

An action was brought to the Federal Court of Appeal against mining enterprises in the State of Santa Catarina for ignoring almost all environmental protection rules that aim at responsible environmental stewardship while carrying out mining activities between 1972 and 1989. The Federal Union and the State of Santa Catarina were also accused because their environmental bodies had failed in their responsibility to enforce compliance. The Court ruled that the mining companies and the Federal Union were liable, but found the State not liable because it had taken intensive action to protect the environment following a constitutional amendment in 1988 that empowered States to control such activities. The defendants were required to pay compensation, to develop a recovery programme for the damaged area and rivers within six months, and to produce a plan to reduce future environmental damage. And a 10-year period was fixed by the Federal Court of Appeals to implement the plans.

Ministerio Publico vs. Coque Catanirense, Federal Court of Appeals, State of Catarina, 22/10/2002

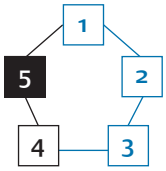
Pakistan – Judiciary as a stakeholder

In 1992 the Supreme Court read in a daily newspaper that business tycoons were attempting to purchase a 450 mile coastal area in Balochistan and convert it into a waste dumping ground, also meant for nuclear waste. The Court immediately enquired whether any area within the territorial waters of Pakistan had been or was to be allocated to any person or whether an application for allocation had been made. This turned out not to be the case. The court then made the following orders for Balochistan: authorities should submit details of persons who had been allocated land on the coastal area

- if an application for allocation was made, full particulars should be supplied to the Court
- authorities should insert conditions with the allocation that land would not be used for dumping, treating, burying or destroying waste of any nature, including industrial or nuclear waste
- the Balochistan Development Authority should follow the same rules with all allocations for ship-breaking, agriculture and any other purpose whatsoever.

Human Rights Case, Supreme Court of Pakistan, 27/09/1992

Source: UNEP/GPA 2005 unpublished report



STEP 5 Monitoring, evaluation and revision

Feedback on trends in the environment and society and other lessons learned should ensure continuous improvement of the NPA process and eventually of the state of the coastal and marine environment. A NPA process should thus incorporate a strong monitoring and evaluation component to be able to assess and report on results achieved (or not) through the programme's measures and activities. Only when it is clear what does or does not work, can the actions be updated and improved:

TASK 5.1 ensure continuous *monitoring, evaluation and revision*

TASK 5.2 set-up *assessment and reporting* programmes to evaluate action

TASK 5.3 select *indicators* against which set goals and targets can be evaluated

Task 5.1 Ensure continuous monitoring, evaluation and revision

Obtaining and maintaining momentum is perhaps the most important issue for successfully addressing harmful effects of land-based activities on the coastal and marine environment.

Ideally, an integrated knowledge base should be set-up for a NPA process, because existing assessments, databases or inventories often overlap, show gaps, or are incompatible for various reasons (such as differences in time-frames, definitions, levels of detail, or geographical coverage). Such an integrated system would be beneficial for all major actors, also for their own purposes. It would much improve the possibilities for communication and sharing information and knowledge (see Box 6.5).

Information should be practical, purposeful, valid, reliable and comparable...

...and is not only about technology, but also about people (intuition, cultural habits, motivation)

BOX 6.5 Knowledge vs information

Knowledge management is a concept that originates from the business community. It can however also be applied in a NPA process. The challenge of knowledge management is to determine what information qualifies as valuable. All information is not knowledge, and all knowledge is not valuable. The key is to find the worthwhile knowledge within a vast sea of information. Information should have relevance, validity, reliability and comparability.

Knowledge management is about people. It is directly linked to what people know, and how what they know can support the objectives of a programme. It draws on human competency, intuition, ideas, cultural habits and motivations. It is not a technology-based concept. Although technology can support a knowledge management effort, it shouldn't begin there.

Knowledge management is orderly and goal-directed. It is inextricably tied to the strategic objectives of a programme. It uses only the information that is the most meaningful, practical, and purposeful.

Knowledge management is ever changing. There is no such thing as an immutable law in knowledge management. Knowledge is constantly tested, updated, revised, and sometimes 'obsolete' when it is no longer practicable. It is a fluid, ongoing process.

Adapted from www.about-goal-setting.com/ <

In the short or medium term, knowledge integration will be an impossible task anywhere in the world but efforts to streamline monitoring mechanisms should continue in order to obtain improved mechanisms in the long term. This is particularly important in countries with highly decentralized administrative systems (such as the USA, Brazil, or Argentina).

A cyclical framework calls for continuous periodic assessment while...

The five basic steps distinguished for the NPA framework follow a logical process and are cyclical in nature. Each cycle should build upon the successes or failures of the previous revolution, thus maintaining positive momentum and ensuring timely adjustments in the process (see Figure 5.1). The cyclical evolution calls for continuous feedback and periodic assessment and reporting on:

- priorities and targets set (met or not?)
- impacts of selected interventions (positive, neutral, negative?)
- constraints, conflicts and opportunities in implementation
- consultations with stakeholders regarding the above items
- financial mechanisms and financial sustainability of measures and activities
- developments in the national institutional and legal frameworks

Such periodic assessment and reporting can be used to revise the NPA process if and where required, so leading to improvements step by step. As a NPA process begins to achieve positive results, it will garner increased political support and financial resources, thus allowing further improvement. The effects of a NPA process will begin to spiral outwards, and visible results will gradually become more evident in the coastal and marine environment.

...processing feedback and communicating with stakeholders in the right format

Monitoring and environmental quality reporting does not only imply the collection and analysis of information that can assist in evaluating project performance and decision-making. Since information requirements of various stakeholders varies considerably, both in quantity and in level of detail and need for aggregation (Figure 5.3), it is also important to ensure that assessment results are communicated to all stakeholders in the right format, using feedback received from all stakeholders. Thus, a programme should work with a broad knowledge base (Box 6. 5) to be able to produce transparent, periodic reports and reviews addressing issues brought up by the different stakeholders (Task 3.6 and Task 4.2).

Task 5.2 Set-up an assessment and reporting programme to evaluate action

The overall purpose of integrated environmental assessment and reporting is to support sustainable development decision-making through the provision of credible environmental information. Balanced environmental reporting should preferably be a participatory process of producing and communicating policy-relevant information, aiming to answer fundamental questions about the key interactions between the environment and human society that are significant to policy and decision makers and the public (Box 6.6).

Environmental assessment and reporting is about answering questions on interactions between environment and human society...

...that are significant to policy and decision makers and the public

BOX 6.6 Fundamental questions in integrated environmental assessment and reporting

Fundamental questions in integrated environmental assessment and reporting as follows:

- What is happening? Or: What are the environmental conditions and trends?
- Why is it happening? Or: What are the human and natural causes of these changes?
- Are the changes significant? Or: What are the health, economic, social and ecological implications?
- What can be expected for the next 20 years?
- What is and what could be our response? Or: What are the environmental implications of societal responses?

By answering such questions:

- awareness and understanding will increase among all stakeholders of environmental trends and conditions, and their causes and consequences
- a foundation is provided for improved decision making at all levels, from the individual to national
- measurement of progress towards sustainability is facilitated

EEA 2001, EEA 2006b, UNEP 1996

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Examples of assessment and reporting related aspects are given throughout this guide

There are so many good examples of environmental reporting processes that no selection will ever do proper justice to all those valuable experiences, both at global, regional and national level. Chapters 1 and 2 mention major assessment programmes (Box 1.2), approaches and tools (Figures 2.1, 2.2, 2.3 and 2.4). Many boxes are included, as well as references and recommended reading in Annex 9.

Likewise, many relevant source books, guidelines, handbooks and training manuals have been developed, such as the recent USEPA Handbook for Developing Watershed Plans to Protect and Restore Our Waters (USEPA 2005) and the IISD/UNEP training manual to build capacity in integrated environmental assessment and reporting (IISD/UNEP 2000). A new expanded revision of the latter is expected to be published later in 2006, dealing with: data and indicators; integrated analysis of environmental trends and policies; analyzing inter-linkages between ecosystem and human well-being; scenarios; creating physical outputs of the assessment; and process monitoring, evaluation and learning.

Task 5.3 Select specific indicators to evaluate NPA action

With smart indicators it can be determined if a NPA programme is having success

A key element in successful action programmes is to determine whether they are meeting their objectives. Specific criteria should be developed to be able to do so. Credible indicators should be selected to report on targets achieved or not. Indicators should be objectively verifiable, clearly specified and simple, also considering the fact that various groups and stakeholders should participate in monitoring and evaluating activities. In Task 3.2 it is stated that indicators should be 'SMART': specific, measurable, achievable, realistic, and time-bound. As suggested in the GPA, indicators should address:

- environmental effectiveness
- economic costs and benefits
- equity (costs and benefits of the programme are being shared fairly)
- flexibility in administration (programme can adapt to changes in circumstances)
- effectiveness in administration (management of the programme is cost-effective and accountable)
- timing (the time-table needed to put the programme in place and to begin producing results)
- inter-media effects (the achievement of the objectives of the programme creates a net environmental benefit).

With well defined indicators a country can:

- monitor conditions and trends in ecosystems and human well-being impacts
- assess progress against set targets and thus assess effectiveness of policies
- track changes in public attitudes and behaviour
- ensure participation and transparency among interested and affected parties
- forecast and project trends and thus provide early warning

Process, stress reduction, and environmental and human well-being indicators can be distinguished

Process indicators will assist in tracking institutional, policy, legislative, regulatory and financing reforms necessary to bring about change (Box 6.7). Such process indicators will need to be adjusted over time. In the early strategic stage of a NPA process the only types of appropriate indicators may well be the fact that a country has officially appointed a NPA Core Group, produced an initial NPA work plan and arranged for an initial grant to get the process up and running; in other words, whether a country has implemented Step 1 kind of activities. Further into implementation other process indicators become more important, such as the fact that a country is seeking investment financing (a Step 3 activity), or is demonstrating true commitment by enacting legal reforms or instituting regulatory programmes.

In terms of process there is progress in existing NPA programmes, while...

Along these lines progress can in fact be shown in many of the ongoing NPA processes (see Box 2.6). For example, as a follow-up to the formulation of its NPA document Sri Lanka recently started a strategic exercise, together with SACEP and with UNEP/GPA funds, to plan and develop market-based instruments for medium and long-term implementation of the NPA of Sri Lanka. Also the Barbados public consultation in 2004 is a good example of progress. It provided its people with an overview of the Coastal Zone Management and the Marine Pollution Control Acts and informed them on how they will be implemented, at the same time asking for peoples' feedback (Box 5.13).

Stress reduction and environmental indicators can be distinguished for real action on the ground (Box 6.7).

...many years may still have to go by before positive trends can be detected in stress reduction and environmental or societal change

BOX 6.7 Process, stress reduction, environmental and human well-being indicators

Process indicators demonstrate institutional and political reforms and progress in the time-consuming, step-by-step path to solving NPA related problems and constraints. Examples:

- establishment of a NPA Lead Team and Core-Group to engage key actors in the NPA process
- establishment of a NPA secretariat, and provision of regular government funds for running costs
- release of assessment reports characterizing the current situation in a country considering aspects such as institutions, policies, legislation, compliance, enforcement and financing
- release of an endorsed affordable financing strategy
- release of an endorsed outreach and communication strategy to ensure stakeholder involvement
- release of an endorsed NPA programme document (or written explanation on how NPA aspects will be included in another existing process)
- sampling, laboratory and analysis methods are harmonized

Stress reduction indicators document action on the ground, taken by any of the many actors of the NPA network. Example:

- discharge reduction after an enforcement action on a polluting industry (point source)
- nitrogen loading reduction after an investment to upgrade a municipal sewage treatment plant
- estimated sedimentation reduction after eroded land was stabilized by tree planting
- reduced release of pollution to groundwater after enforcements actions on agricultural practices (such as quota on manure release)
- additional release of water from up-stream dams to ensure more freshwater enters coastal waters

Environmental and human-well being indicators demonstrate changes in aquatic ecosystems in coastal waters and oceans and in society. Unfortunately many years may go by before positive trends can be detected. Examples:

- measurable improvements in trophic status
- measurable improved chemical, physical or biological parameters
- demonstrated reduction of persistent organic pollutants in the food chain
- changes in local income, social and/or health conditions due to improved environmental conditions
- increased stakeholder awareness and documented stakeholder involvement

Sources: Adapted from GEF 2002, OECD 2002, UNEP/GPA 2003 <

A final word

A NPA process should ensure that the right support elements for success are in place.

For a NPA programme to be successful all actors need to have the capacity to perform as required in the context of integrated NPA activities. This encompasses people from top national and local municipal management levels, from government staff to local business and community representatives. A NPA process should ensure that the supportive elements for success are in place. Many such programme support elements have been described in this guide (institutional/organizational, policy, legislation and financing, technology choices, outreach, monitoring and evaluation). Examples range from guidance in the very early stages of a NPA process at national government level to specific local level aspects during concrete action on the ground.

Capacities need to be strengthened, also because of new concepts and ways of thinking

In most cases, the human capacities for such elements need to be strengthened to obtain good results, also because an integrated NPA process often involves new concepts and innovative ways of thinking. It is hoped that the examples presented in the text, boxes and figures of Parts I and II, and the information presented in the annexes in Part III below, can be used to enhance the capacity at all levels in government offices, other institutions, private companies or NGOs.

Feedback on this report would be much appreciated

Like a NPA process, this guide is also a product of an iterative and cyclical process. It is based on lessons learned since the release of the 2002 UNEP Handbook on Development and Implementation of NPAs. UNEP hopes to receive extensive feedback from users on this major revision, smoothening the way towards a further improved third revision.

Part III

Background information, examples and recommendations for further reading

Photo: Darlyne A. Murawski/Peter Arnold

Annex 1 Chapter II of the GPA: Action at the national level

Basis for action

16. Sustainable use of the oceans depends on the maintenance of ecosystem health, public health, food security, and economic and social benefits including cultural values. Many countries depend on sources of income from activities that would be directly threatened by degradation of the marine environment: industries such as fishing and tourism are obvious examples. The subsistence economy of large coastal populations, in particular in the developing countries, is based on marine living resources that would also be threatened by such degradation. Also to be considered are the impacts of such degradation on maritime culture and traditional lifestyles.

17. Food security is threatened, in particular in developing countries, by the loss of marine living resources that are vital for the adequate provision of food and for combating poverty. Public health considerations from a degraded marine environment manifest themselves through the contamination of seafood, direct contact, such as through bathing, and the use of sea water in desalination and food-processing plants.

Objectives

18. To develop comprehensive, continuing and adaptive programmes of action within the framework of integrated coastal area management which should include provisions for:

a) Identification and assessment of problems;
b) Establishment of priorities;
c) Setting management objectives for priority problems;
d) Identification, evaluation and selection of strategies and measures, including management approaches;
e) Criteria for evaluating the effectiveness of strategies and programmes;
f) Programme support elements.

Actions

19. States should, in accordance with their policies, priorities and resources, develop or review national programmes of action within a few years and take forward action to implement these programmes with the assistance of the international cooperation identified in Chapter IV, in particular to developing countries, especially the least developed countries, countries with economies in transition and small island developing States (hereinafter referred to as 'countries in need of assistance'). The effective development and implementation of national programmes of action should focus on sustainable, pragmatic and integrated environmental management approaches and processes, such as integrated coastal area management, harmonized, as appropriate, with river basin management and land-use plans.

20. Recommended actions to give effect to the objectives in the development of national programmes of action by States are summarized in sections A, B, C, D, E and F below. They are illustrated in more detail in the actions and targets identified in Chapter V below.

A Identification and assessment of problems

21 The identification and assessment of problems is a process of combining five elements:

a) Identification of the nature and severity of problems in relation to:
   i) Food security and poverty alleviation;
   ii) Public health;
   iii) Coastal and marine resources and ecosystem health, including biological diversity;
   iv) Economic and social benefits and uses, including cultural values;

b) Contaminants: (not listed in order of priority)
   i) Sewage;
   ii) Persistent organic pollutants;
   iii) Radioactive substances;
   iv) Heavy metals;
   v) Oils (hydrocarbons);
   vi) Nutrients;
   vii) Sediment mobilization;
   viii) Litter;

c) Physical alteration, including habitat modification and destruction in areas of concern;

d) Sources of degradation:
   i) Point sources (coastal and upstream), such as: (not listed in order of priority)
      a. Waste-water treatment facilities;
      b. Industrial facilities;
      c. Power plants;
      d. Military installations;
      e. Recreational/tourism facilities;
      f. Construction works (e.g., dams, coastal structures, harbour works and urban expansion);
      g. Coastal mining (e.g., sand and gravel);
      h. Research centres;
      i. Aquaculture;
      j. Habitat modification (e.g., dredging, filling of wetlands or clearing of mangrove areas);
      k. Introduction of invasive species;

   ii) Non-poit (diffuse) sources (coastal and upstream), such as: (not listed in order of priority)
      a. Urban run-off;
      b. Agricultural and horticultural run-off;
      c. Forestry run-off;
      d. Mining waste run-off;
      e. Construction run-off;
      f. Landfills and hazardous waste sites;
      g. Erosion as a result of physical modification of coastal features;

   iii) Atmospheric deposition caused by:
      a. Transportation (e.g., vehicle emissions);
      b. Power plants and industrial facilities;
      c. Incinerators;
      d. Agricultural operations;

e) Areas of concern (what areas are affected or vulnerable): (not listed in order of priority)
   i) Critical habitats, including coral reefs, wetlands, seagrass beds, coastal lagoons and mangrove forests;
   ii) Habitats of endangered species;
   iii) Ecosystem components, including spawning areas, nursery areas, feeding grounds and adult areas;
   iv) Shorelines;
   v) Coastal watersheds;
   vi) Estuaries and their drainage basins;
   vii) Specially protected marine and coastal areas; and
   viii) Small islands.

B Establishment of priorities

22 Priorities for action should be established by assessing the five factors described above and should specifically reflect:

a) The relative importance of impacts upon food security, public health, coastal and marine resources,
ecosystem health, and socio-economic benefits, including cultural values, in relation to:
   i) Source-categories (contaminants, physical alteration, and other forms of degradation and the source or practice from which they emanate);
   ii) The area affected (including its uses and the importance of its ecological characteristics);

b) The costs, benefits and feasibility of options for action, including the long-term cost of no action.

23. In the process of establishing priorities for action and throughout all stages of developing and implementing national programmes of action, States should:

a) Apply integrated coastal area management approaches, including provision to involve stakeholders, in particular local authorities and communities and relevant social and economic sectors, including non-governmental organizations, women, indigenous people and other major groups;
b) Recognize the basic linkages between the freshwater and marine environments through, inter alia, application of watershed management approaches;

c) Recognize the basic linkages between sustainable management of coastal and marine resources, poverty alleviation and protection of the marine environment;
d) Apply environmental impact assessment procedures in assessing options;
e) Take into account the need to view such programmes as an integrated part of existing or future comprehensive environmental programmes;
f) Take steps to protect:
   i) Critical habitats, using community-based participatory approaches that are consistent with current approaches to conservation and uses compatible with sustainable development; and
   ii) Endangered species;
g) Integrate national action with any relevant regional and global priorities, programmes and strategies;
h) Establish focal points to facilitate regional and international cooperation;
i) Apply the precautionary approach and the principle of intergenerational equity.

24. The precautionary approach should be applied through preventive and corrective measures based on existing knowledge, impact assessments, resources and capacities at national level, drawing on pertinent information and analyses at the subregional, regional and global levels. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent the degradation of the marine environment.

C Setting management objectives for priority problems

25 On the basis of the priorities established, States should define specific management objectives, both with respect to source categories and areas affected. Such objectives should be set forth in terms of overall goals, targets and timetables, as well as specific targets and timetables for areas affected and for individual industrial, agricultural, urban and other sectors. Wherever possible, States should take immediate preventive and remedial action using existing knowledge, resources, plans and processes.

D Identification, evaluation and selection of strategies and measures

26 Strategies and programmes to achieve these management objectives should include a combination of:

a) Specific measures, including, as appropriate:
   i) Measures to promote sustainable use of coastal and marine resources and to prevent/reduce degradation of the marine environment, such as:
      a. Best available techniques (incl. socio-economic factors) and best environmental practices, including substitution of substances or processes entailing significant adverse effects;
      b. Introduction of clean production practices, including efficient use of energy and water in all economic and social sectors;
      c. Application of best management practices;
      d. Use of appropriate, environmentally sound and efficient technologies;
      e. Product substitution;

   ii) Measures to modify contaminants or other forms of degradation after generation, such as:
      a. Waste recovery;
      b. Recycling, including effluent reuse;
      c. Waste treatment;

   iii) Measures to prevent, reduce or ameliorate degradation of affected areas, such as:
      a. Environmental quality criteria, with biological, physical and/or chemical criteria for measuring progress;
      b. Land-use planning requirements, including criteria for siting of major facilities;
      c. Rehabilitation of degraded habitats;

b) Requirements and incentives to induce action to comply with measures, such as:
   i) Economic instruments and incentives, taking into account the 'polluter pays' principle and the internalization of environmental costs;
   ii) Regulatory measures;
   iii) Technical assistance/cooperation, including training of personnel;
   iv) Education and public awareness;

c) Identification/designation of the institutional arrangement with the authority and resources to carry out management tasks associated with the strategies and programmes, including implementation of compliance provisions;

d) Identification of short-term and long-term data-collection and research needs;
e) Development of a monitoring and environmental-quality reporting system to review and, if necessary, help adapt the strategies and programmes;
f) Identification of sources of finance and mechanisms available to cover the costs of administering and managing the strategies and programmes.

E Criteria for evaluating the effectiveness of strategies and measures

27 A key element in successful strategies and programmes is to develop ongoing means of determining whether they are meeting their management objectives. States should develop specific criteria to evaluate the effectiveness of such strategies and programmes. While such criteria must be tailored to the particular mix of elements (illustrated in section C above) in each strategy or programme, they should address:

a) Environmental effectiveness;
b) Economic costs and benefits;
c) Equity (costs and benefits of the strategy or programme are being shared fairly);
d) Flexibility in administration (the strategy or programme can adapt to changes in circumstances);
e) Effectiveness in administration (management of the strategy or programme is cost-effective and accountable);
f) Timing (the timetable needed to put the strategy or programme in place and to begin producing results);
g) Inter-media effects (the achievement of the objectives of the strategy or programme creates a net environmental benefit).

F Programme support elements

28 The long-term objective of national programmes of action should be to develop integrated strategies and programmes to address all action priorities in relation to impacts upon the marine environment from land-based activities. In addition, the programmes of action must themselves be integrated with overall national objectives and other relevant programmes in relation to sustainable development. States therefore should seek to ensure that there are administrative and management structures necessary to support the national programmes of action. These include, as appropriate:

a) Organizational arrangements to coordinate among sectors and sectoral institutions;
b) Legal and enforcement mechanisms (e.g., need for new legislation);
c) Financial mechanisms (including innovative approaches to provide continuing and predictable programme funding);
d) Means of identifying and pursuing research and monitoring requirements in support of the programme;
e) Contingency planning;
f) Human resources development and education;
g) Public participation and awareness (e.g., based on integrated coastal area management principles).

Annex 2 Montreal Declaration on the Protection of the Marine Environment from Land-based Activities

1 We, the representatives of 98 Governments, with the valued support and concurrence of delegates from international financial institutions, international and regional organizations, the private sector, non-governmental organizations, other stakeholders and major groups, meeting in Montreal, Canada, from 26 to 30 November 2001, for the first Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, agree as follows;

2 We are concerned that:

a) The marine environment is being increasingly degraded by pollution from sewage, persistent organic pollutants, radioactive substances, heavy metals, oils, litter, the physical alteration and destruction of habitats, and the alteration of timing, volume and quality of freshwater inflows with resulting changes to nutrient and sediment budgets and salinity regimes;

b) The significant negative implications for human health, poverty alleviation, food security and safety and for affected industries are of major global importance;

c) The social, environmental and economic costs are escalating as a result of the harmful effects of land-based activities on human health and coastal and marine ecosystems and that certain types of damage are serious and may be irreversible;

d) The impacts of climate change on marine environments are a threat to low-lying coastal areas and small island States due to the increased degradation of the protective coastal and marine ecosystems;

e) Greater urgency is not accorded to taking action at the national and regional levels for meeting the objectives of the Global Programme of Action.

3 We are concerned also about the widespread poverty, particularly in coastal communities of developing countries, and the contribution that the conditions of poverty make to marine pollution through, for example, lack of even basic sanitation; and how marine degradation generates poverty by depleting the very basics for social and economic development.

4 We acknowledge that the United Nations Convention on the Law of the Sea and Agenda 21 provide the key framework for implementing the Global Programme of Action.

5 We declare that implementation of the Global Programme of Action is primarily the task of national Governments. Regional seas programmes also play an important role in implementation and both should include the active involvement of all stakeholders.

6 We shall cooperate to improve coastal and ocean governance for the purpose of accelerating the implementation of the Global Programme of Action, by mainstreaming, integrating coastal area and watershed management, and enhancing global, regional and national governance processes.

7 We shall also cooperate to identify new and additional financial resources to accelerate the implementation of the Global Programme of Action, by building capacity for effective partnerships among Governments, industry, civil society, international organizations and financial institutions, and by making better use of domestic and international resources.

Mainstreaming of the Global Programme of Action

8 We commit ourselves to improve and accelerate the implementation of the Global Programme of Action by:

a) Incorporating the aims, objectives and guidance of the Global Programme of Action into new and existing activities, action programmes, strategies and plans at the local, national, regional and global levels and into sectoral policies within our respective jurisdictions;

b) Strengthening the capacity of regional seas organizations for multi-stakeholder cooperation and action, including through participation in partnership meetings focused on concrete problem identification and solution;

c) Supporting the ratification of existing regional seas agreements and development of additional ones, as appropriate, and promoting collaboration between existing regional seas organizations, including through twinning mechanisms;

d) Calling on the United Nations agencies and programmes and international financial institutions to incorporate, where appropriate, the objectives of the Global Programme of Action into their respective work programmes, giving priority in the period 2002-2006 to addressing the impacts of sewage, physical alteration and destruction of habitats and nutrients on the marine environment, human health, poverty alleviation, food security and safety, water resources, biodiversity and affected industries;

e) Calling upon regional seas programmes in light of assessments of their marine environment to:
   i) Identify priorities with particular regard to those set out in paragraph 8(d) above;
   ii) Prepare action plans to address the implementation of those priorities and work, as appropriate, with national authorities to implement those plans;
   iii) Produce interim reports on the carrying out of these action plans with a view to completing full reports at the time of the next Global Programme of Action review.

Oceans and coastal governance

9 We further commit ourselves to improve and accelerate the implementation of the Global Programme of Action by:

a) Taking appropriate action at the national and regional levels to strengthen institutional cooperation between, inter alia, river-basin authorities, port authorities and coastal zone managers, and to incorporate coastal management considerations into relevant legislation and regulations pertaining to watershed management in particular transboundary watersheds;
b) Strengthening the capacity of local and national authorities to obtain and utilize sound scientific information to engage in integrated decision-making, with stakeholder participation, and to apply effective institutional and legal frameworks for sustainable coastal management;
c) Strengthening regional seas programmes to play a role in, as appropriate, coordination and cooperation:
   i) In the implementation of the Global Programme of Action;
   ii) With other relevant regional organizations;
   iii) In regional development and watershed management plans;
   iv) With global organizations and programmes relating to implementation of global and regional conventions;
d) Supporting this new integrated management model for oceans and coastal governance as an important new element of international environmental governance;
e) Improving scientific assessment of the anthropogenic impacts on the marine environment, including, inter alia, the socio-economic impacts;
f) Enhancing the state-of-the-oceans reporting to better measure progress towards sustainable development goals, informing decision-making (such as setting management objectives), improving public awareness and helping assess performance;
g) Improving technology development and transfer, in accordance with the recommendations of the United Nations General Assembly.

Financing of the Global Programme of Action

10 We commit ourselves to improve and accelerate the implementation of the Global Programme of Action by:

a) Strengthening the capacity of local and national authorities with relevant financial and other resources to identify and assess needs and alternative solutions to specific land-based sources of pollution; and to formulate, negotiate and implement contracts and other arrangements in partnership with the private sector;
b) Calling on international financial institutions and regional development banks and other international financial mechanisms in particular the World Bank and the Global Environment Facility, consistent with its operational strategy and policies, to facilitate and expeditiously finance activities related to the implementation of the Global Programme of Action at regional and national levels;
c) Giving due consideration to the positive and negative impacts of domestic legislation and policies, including, inter alia, fiscal measures, such as taxation and subsidies, on land-based activities degrading the marine and coastal environment;
d) Taking appropriate action at the national level including, inter alia, institutional and financial reforms, greater transparency and accountability, the development of multi-year investment programmes and providing an enabling environment for investment.

Other provisions

11 We welcome the Strategic Action Plan on Municipal Wastewater and urge the United Nations Environment Programme to finalize this document as a tool for implementing the objectives of the Global Programme of Action.

12 We call upon Governments to ratify the Stockholm Convention on Persistent Organic Pollutants, the 1996 Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and other relevant agreements in particular regional conventions, such as the 1999 Aruba Protocol to the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and protocols dealing with the prevention of pollution of the marine environment as a means of implementing the Global Programme of Action. We also stress the need for increased international cooperation on chemicals management.

13 We welcome also the work done by the Global Programme Coordination Office, commend its 2002-2006 work programme to the Governing Council of the United Nations Environment Programme and encourage it to implement the programme at a strengthened level, subject to availability of resources.

14 We note the outcome of the First Intergovernmental Review of the Global Programme of Action as a valuable contribution to the implementation of Agenda 21. We request that the next Global Ministerial Environment Forum endorse this outcome. We commend the outcome to the attention of the Monterey International Conference on financing for Development, as well as of the Third World Water Forum to be held in Kyoto, Japan in 2003. We request the preparatory process of the World Summit on Sustainable Development to take full account of the outcome of this meeting and the objective of the Global Programme of Action as it considers measures on protection of the marine environment.

15 We request the Executive Director of the United Nations Environment Programme to convene the second Intergovernmental Review Meeting in 2006 and seek support for organizing the meeting.

Adopted by the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities at its first meeting on Friday, 30 November 2001

Annex 3 Sustainable development of Small Island Development States: from Barbados 1994 to Mauritius 2005

The special development needs of small island developing States received an unprecedented boost at the UN Conference on Environment and Development in June 1992 in Rio de Janeiro. In Chapter 17 of Agenda 21 the international community explicitly recognized the special constraints to the sustainable development of small island developing States. This led to the Global Conference for the Sustainable Development of Small Island Developing States, held in 1994 in Bridgetown, Barbados, the resulting Programme of Action for the Sustainable Development of Small Island Developing States (BPOA/SIDS).

During the World Summit on Sustainable Development the Johannesburg Plan of Implementation (JPOI) was adopted. In the plan Governments reiterated that small island developing States face a number of specific challenges in addressing environmental protection and economic development. Although they continue to take the lead in the path towards sustainable development in their countries, they are increasingly constrained by the interplay of adverse factors clearly underlined in Agenda 21, the BPOA and the decisions adopted at the 22nd special session of the General Assembly. In addition, the JPOI called for a full and comprehensive review of the implementation of BPOA in 2005. The General Assembly then decided to convene an international meeting for the BPOA review in Port Louis, Mauritius, in January.

This milestone Mauritius International Meeting (MIM) adopted two important documents: the Mauritius Declaration and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States.

The Mauritius Declaration reaffirms, inter alia, the commitment of governments 'to support the sustainable development strategies of small islands developing States through technical and financial cooperation, regional and inter-regional institutional assistance, and an improved international enabling environment' (paragraph 19).

The Declaration also expresses appreciation for the efforts of the UN and its specialized agencies in helping to advance the sustainable development of SIDS, and invites them to 'strengthen their support to the Strategy through enhanced coherence and coordination' (paragraph 10).

The Strategy addresses the fourteen priority areas of the 1994 BPOA/SIDS, new and emerging issues, and key means of implementation.

- The original priority areas of the BPOA/SIDS included climate change and sea-level rise; natural and environmental disasters; management of wastes, coastal and marine resources; freshwater resources; land resources; energy resources; tourism resources; and biodiversity resources. These are areas where UNEP has been active in different degrees since the adoption of the BPOA/SIDS. Paragraph 26 bis, where it is indicated that 'small island developing States and the international development partners should fully implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), particularly with the support of the United Nations Environment Programme (UNEP), by undertaking initiatives specifically addressing the vulnerability of small island developing States.'
- The new and emerging issues relate to graduation from least developed status, trade, capacity building and education for sustainable development, production and consumption, natural and regional environmental enabling environments, health, and knowledge management and information for decision making.
- The implementation section provides for the actions that will help foster the development agenda of SIDS in the years to come.

As per this Strategy, the UN is requested to mainstream SIDS issues within the mandates of its agencies, funds and programmes to facilitate coordinated implementation at national, sub-regional and global levels. UNEP is one of the key UN organizations implementing follow-up in the field of the environment in this context, and since the mid-1990s several of its Governing Council decisions elaborate the specific mandate of UNEP relating to SIDS accordingly. In the most recent relevant decision 23/5 the Executive Director of UNEP is again requested to continue strengthening its activities on a tailored and regional basis. The GPA Coordination Office is fully committed to ensure that UNEP further rationalizes its delivery in the Pacific, the Atlantic, Indian Ocean, South Asian and Caribbean SIDS regions utilizing the UNEP network of Regional Offices, regional seas conventions and actions plans, as well as regional and international partners.

Annex 4 The Millennium Development Goals (MDGs)

A complete list of the goals, targets, and indicators

Goal 1: Eradicate extreme poverty and hunger

TARGET 1: Halve, between 1990 & 2015, proportion of people with income less than $1 a day

- 1a Proportion of population below $1 (PPP) a day
- 1b Percentage of population below national poverty line
- 2 Poverty gap ratio (incidence x depth of poverty)
- 3 Share of poorest quintile in national consumption

TARGET 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

- 4 Prevalence of underweight in children (under five years of age)
- 5 Proportion of population below minimum level of dietary energy consumption

Goal 2: Achieve universal primary education

TARGET 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

- 6 Net enrolment ratio in primary education
- 7a Proportion of pupils starting grade 1 who reach grade 5
- 7b Primary completion rate
- 8 Literacy rate of 15 to 24-year-olds

Goal 3: Promote gender equality and empower women

TARGET 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015

- 9 Ratio of girls to boys in primary, secondary, and tertiary education
- 10 Ratio of literate women to men ages 15- to 24
- 11 Share of women in wage employment in the non-agricultural sector
- 12 Proportion of seats held by women in national parliament

Goal 4: Reduce child mortality

TARGET 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

- 13 Under-five mortality rate
- 14 Infant mortality rate
- 15 Proportion of one-year-old children immunized against measles

Goal 5: Improve maternal health

TARGET 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

- 16 Maternal mortality ratio
- 17 Proportion of births attended by skilled health personnel

Goal 6: Combat HIV/AIDS, malaria, and other diseases

TARGET 7: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

- 18 HIV prevalence among pregnant women ages 15- to 24
- 19 Condom use rate of the contraceptive prevalence rate
- 19a Condom use at last high-risk sex
- 19b Percentage of 15-24-year-olds with comprehensive correct knowledge of HIV/AIDS
- 19c Contraceptive prevalence rate
- 20 Ratio of school attendance of orphans to school attendance on non-orphans ages 10-14

TARGET 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

- 21 Prevalence and death rates associated with malaria
- 22 Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures
- 23 Prevalence and death rates associated with tuberculosis
- 24 Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS)

Goal 7: Ensure environmental sustainability

TARGET 9: Integrate the principles of sustainable development into country policies and program and reverse the loss of environmental resources

- 25 Proportion of land area covered by forest
- 26 Ratio of area protected to maintain biological diversity to surface area
- 27 Energy use (kilograms of oil equivalent) per $1 GDP (PPP)
- 28 Carbon dioxide emissions (per capita) and consumption of ozone-depleting chlorofluorocarbons (ODP tons)
- 29 Proportion of population using solid fuels

TARGET 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.
Reformulated WSSD Target 10 Halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water and the proportion of people who do not have access to basic sanitation.

- 30 Proportion of population with sustainable access to an improved water source, urban and rural
- 31 Proportion of population with access to improved sanitation, urban and rural

TARGET 11: Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

- 32 Proportion of households with access to secure tenure

Goal 8: Develop a global partnership for development

TARGET 12: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction – both nationally and internationally). Some of the indicators listed below will be monitored separately for the least developed countries, Africa, landlocked countries, and small island developing states.
Official development assistance

- 33 Net ODA total and to the least developed countries, as a percentage of OECD/DAC donors' gross national income
- 34 Proportion of bilateral, sector-allocable ODA of OECD/DAC donors for basic social services (basic education, primary health care, nutrition, safe water, and sanitation)
- 35 Proportion of bilateral official development assistance ODA of OECD/DAC donors that is untied
- 36 ODA received in landlocked countries as proportion of their gross national incomes
- 37 ODA received in small island developing states as proportion of their gross national incomes

TARGET 13: Address the special needs of the least developed countries (includes tariff-and quota-free access for exports enhanced program of debt relief for HIPC and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction)

TARGET 14: Address the special needs of landlocked countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)
Market access

- 38 Proportion of total developed country imports (by value and excluding arms) from developing countries and from least developed countries, admitted free of duty
- 39 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries
- 40 Agricultural support estimate for OECD countries as a percentage of their gross domestic product
- 41 Proportion of ODA provided to help build trade capacity

TARGET 15: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
Debt sustainability

- 42 Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative)
- 43 Debt relief committed under HIPC initiative
- 44 Debt service as a percentage of exports of goods and services

TARGET 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth

TARGET 17: In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries

TARGET 18: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications
Other

- 45 Unemployment rate of 15- to 24-year-olds, male and female and total
- 46 Proportion of population with access to affordable, essential drugs on a sustainable basis
- 47 Telephone lines and cellular subscribers per 100 population
- 48a Personal computers in use per 100 population
- 48b Internet users per 100 population

Annex 5 Integrated Coastal Area and River-basin Management (ICARM)

UNEP/GPA is preparing a report on ICARM related Case Studies. Some of the experiences encountered can be pre-summarized as follows:

Some cases clearly show that singling out management of point sources does not lead to improved estuarine and coastal water quality. It is imperative that non point sources, mainly from agriculture, are addressed in parallel.

Several cases show that reduced average flows and diminished peak flows threaten downstream ecosystems and their economic viability in several ways. Restoring natural discharge patterns will alleviate problems caused by salinity intrusion, especially impacts on agriculture potential in flood-plains.

Several cases demonstrate impacts of dams and resulting reduced sediment supply on the morphology of beaches, leading to increased coastal erosion. Through linked upper- and downstream management such negative impacts of dams on shoreline stability can be addressed.

Many of the cases illustrate the significant socio economic benefits that linked management can provide in a variety of ways, such as improved fisheries productivity, enhanced coastal/delta agriculture, and improved tourism potential.

Some cases also demonstrate that even small scale watershed improvement activities coupled with lagoon management initiatives can have significant socio-economic benefits for coastal communities as well as environmental benefits.

Large transboundary river basin management cases demonstrate that real water quality improvements can be reached through cooperative efforts of riparian countries. The cases show that costs of ignoring linkages can be enormous. One case even illustrates clearly that once components of an ecosystem have been destroyed or degraded beyond a certain point, restoration is very difficult or even impossible.

Twelve UNEP/GPA guiding principles on ICARM for policy and decision makers

1 Identify the shared issues for river basin, coastal area and marine environments
River basin management is focussed on its own specific issues, as is the management of the coastal area and marine environment. Some of these issues are common to river and coast and necessitate an integrated approach.

2 Prioritize the shared issues and assess the need for and benefits of integrated management of river basin and coastal area.
Integrated management is complex because river basins and coastal zones have different communities and separate management structures. The needs and benefits of integration should be explicit as well as the constraints that prohibit an integrated approach.

3 Analyse cause and effect relations for the identified issues in the river catchment and coastal area.
Pressures and driving forces behind the shared issues should be analysed, as well as the impacts on environmental or socio-economic conditions. The potential for environmental change and societal response should be explored. For shared issues the causes, effects and possible solutions may involve river basin and coastal area in a complex manner, making an integrated approach a prerequisite.

4 Define the spatial problem area for the integrated approach and identify the stakeholders relevant to the issues, causes and effects.
As Integrated Management of River-basin and Coastal Area (ICARM) builds on the good practices of Integrated Water Resources Management (IWRM) and Integrated Coastal Zone Management (ICZM), the focus of the integrated river-coast management should in principle be on the missing link for the shared issues. Each issue defines its own spatial problem area and needs an area specific strategic approach. A thorough stakeholder analyses should facilitate the selection of the relevant stakeholders to be involved.

5 Secure political commitment as an absolute prerequisite for appropriate integrated management
Build broad political commitment for the integrated management of shared issues for river and coast. This is a pre-condition for effective involvement of relevant stakeholders in dialogues and planning processes. This is especially needed to harmonize separate institutional responsibilities, legislation, regulations and management structures for river basins and coastal areas.

6 Involve all relevant stakeholders from the very beginning to secure their commitment.
Involve relevant stakeholders in a dialogue process from the identification and prioritisation of issues to the analysis for management planning and decision making. Special attention should be given to stakeholders interests and concerns and to moderate and building consensus in the dialogues.

7 Define goals of the management initiative as part of a long term perspective of the integrated management of catchment and coast.
Defined goals for the short and long term should be realistic, as unrealistic goals risk a loss of credibility. Stakeholders should be involved in the joint definition of management goals. Define indicators for adequate evaluation of the developments.

8 Establish a common knowledge and information platform as a major tool for participatory planning processes.
Lack of information is a key impediment to public participation. Sometimes information is abundant, but scattered and access is lacking. A knowledge platform should be specific to the socio-economic conditions of the region and should optimally provide for transparency of information.

9 Facilitate knowledge and awareness raising at all relevant levels to create optimal conditions for a participatory approach.
Awareness raising on freshwater-coast interactions and knowledge building about the benefits of integrated management are needed to create involved stakeholders and build support for positive institutional, legislative and regulatory change.

10 Create an enabling environment for the management of river and coast to achieve sustainable solutions at both national, river basin and local level
Governments should be challenged to set the integrated policies and legislation that constitutes the 'rules of the game' and enable all stakeholders to play their respective roles in the context of a joined management of river basin and coastal area.

11 Encourage coastal and freshwater management institutions to make arrangements for an integrated approach of relevant aspects of management of catchment and coast.
Integrated management does not necessary imply the integration of institutions. It does however require coordinated strategic, administrative and institutional cooperation at local, national and international levels, through the establishment of basin committees, or other cooperative bodies to address the practical issues of integrated management of river basin and coastal area.

12 Ensure adequate resources and capacity to secure successful implementation and sustainability of integrated management of catchment and coast.
People, facilities and funds are essential for proper and full implementation and management stability. Collaborative initiatives on financing between river basin and coastal and marine management authorities can help avoid competition and mutually reinforce sustainability.

Annex 6 Community-Based Natural Resource Management (CBNRM)

Mussel harvesting along the coasts of KwaZulu-Natal:

From conflict over resource tenure to agreed community rights

The ancestors of the Sokhulu people (mainly the women) have been harvesting mussels along the coast of KwaZulu-Natal province in South Africa for at least 2.000 years. They employed a system of rotational harvesting that allowed each mussel bed to recover for several years. Occasionally, at vulnerable times, they closed the harvest season completely to preserve the mussel stock.

In 1933 commercial forestry came to the area and foresters and loggers soon challenged the Sokhulu people's right to collect and drove them in hiding. In 1984 the situation turned even more difficult when the area became part of a nature reserve to protect the rich habitat and biodiversity, and to support eco-tourism. Mussel collectors now had to purchase permits and the daily take was limited to 50 mussels. Most villagers could not afford to buy such permits, and, besides, the amount of mussels allowed barely constituted a family meal. This, and the fact that the villagers were regularly harassed by the foresters, fishermen, recreational collectors and park authorities, made them decide to collect their mussels
'illegally' at night working fast to avoid detection and arrest (meaning they had to completely strip rocks, mainly done by the men using coarse tools). And so a people that had long depended on and preserved the mussel beds was gradually divorced from its access to the resource and from its previous sustainable practices.

In 1995 a co-management project was negotiated, in which local harvesters, together with researchers from the University of Cape Town and a community liaison officer, would help park authorities ensure that the mussels were harvested in a sustainable way, while the park administration would secure them legal access to the mussel beds. Several Sokhulu youth were trained as monitors to oversee experiments to determine a sustainable harvest level. Seeing the results of their own experiments, the harvesters readily accepted limits set for the harvest system, glad they could now collect mussels legally. A joint enforcement system was set up to punish poachers from outside and those villagers who breached the rules.

In December 2002 the initial subsistence collecting zone was expanded and the Sokhulu community and the park authority signed a contractual agreement that spells out the roles and responsibilities of the two co-management partners, and confirms their commitment to continue working together. Meanwhile 17 similar management programmes had been started along the coast of KwaZulu-Natal. A conflict over resource access and tenure was so transferred into a situation where local people have a right to harvest mussels as long as they can demonstrate in hard numbers that the level of harvest is sustainable.Through careful management that respects both the local culture and history and the requirements of modern-time development a quite disastrous situation was turned into a potentially thriving alternative. The many problems encountered along the road were tackled through direct consultation with the local people, serious efforts to resolve conflicts, and training of local people and government staff in monitoring and compliance.

Keeping this success going still requires several (mainly legal) steps, but in principle co-management apparently offers a viable route to empowering local subsistence use of coastal resources. Governance lessons learned show that co-management requires:

- A locally respected management committee, endowed with legal standing to create and enforce management rules
- Democratic election of local committee representatives to establish legitimacy and accountability
- Joint fact-finding and local, participatory experiments to establish credible new harvesting regimes
- Sustained financial and technical support for local consensus building so that solutions take hold
- An assessment of the status of the resource, followed by consistent monitoring to determine if the resource is being used sustainable
- Realization that subsistence harvesting rights are fragile if they begin to compete with commercial harvesting

Source: WRI 2003

Annex 7 Municipal Wastewater Management

Ten keys for local and national action on municipal wastewater

1 Secure political commitment and domestic financial resources
A political climate has to be created in which high priority is assigned to all the aspects of sustainable municipal wastewater management, including the allocation of sufficient domestic resources.

2 Create an enabling environment at national *and* local levels
Public authorities remain responsible for water and wastewater services. The 'subsidiarity principle', this is the delegation of responsibilities to the appropriate level of governance, applies to the entire water sector. National authorities should create the policy, legal, regulatory, institutional and financial frameworks to support the delivery of services at the municipal level in a transparent, participatory and decentralized manner.

3 Do not restrict water supply and sanitation to taps and toilets
A holistic approach to water supply and sanitation should be adopted. This incorporates not only the provision of household services, but various other components of water resource management, including protection of the resource that provides the water, wastewater collection, treatment, reuse and reallocation to the natural environment. Addressing the environmental dimensions mitigates direct and indirect impacts on human and ecosystem health.

4 Develop integrated urban water supply and sanitation management systems also addressing environmental impacts
Municipal wastewater management is part of a wider set of urban water services. The wastewater component is usually positioned at the end of a water resource management chain. Integration of relevant institutional, technical, sectoral, and costing issues of all major components of the chain is required. Consideration should be given to the joint development, management, and/or delivery of drinking water supply and sanitation services.

5 Adopt a long-term perspective, taking action step-by-step, starting now
The high costs of wastewater systems necessitate a long-term, step-by-step approach, minimizing current and future environmental and human health damage as much as possible within existing budgetary limits. Non-action imposes great costs on current and future generations and misses out on the potential of re-using valuable resources. A step-by-step approach allows for the implementation of feasible, tailor-made and cost-effective measures that will help to reach long-term management objectives.

6 Use well-defined time-lines, and time-bound targets and indicators
Properly quantified thresholds, time-bound targets and indicators are indispensable instruments for priority setting, resource allocation, progress reporting and evaluation.

7 Select appropriate technology for efficient and cost-effective use of water resources and consider ecological sanitation alternatives
Sound water management relies on the preservation and efficient utilization of water resources. Pollution prevention at the source, efficient use and re-use of water, and application of appropriate low-cost treatment technologies will result in a reduction in wastewater quantity and in investment savings related to construction, operation and maintenance of sewerage systems and treatment facilities. Depending on the local physical and socio-economic situation, different technologies will be appropriate. Eco-technology is a valid alternative to traditional engineering and technical solutions.

8 Apply demand-driven approaches
In selecting appropriate technology and management options attention must be given to users' preferences and their ability and willingness to pay. Comprehensive analyses of present and future societal demands are required, and strong support and acceptance from local communities should be secured. With such analyses realistic choices can be made from a wide range of technological, financial and management options. Different systems can be selected for different zones in urban areas.

9 Involve all stakeholders from the beginning and ensure transparency in management and decision-making processes
Efforts and actions on domestic sewage issues must involve pro-active participation and contributions of both governmental and non-governmental stakeholders. Actors stem from household and neighbourhood levels to regional, national and even international levels, and possibly the private sector. Early, continuous, targeted and transparent communication between all parties is required to establish firm partnerships. The private sector can act as a partner in building and improving infrastructure, in operating and maintaining of facilities, or in providing administrative services.

10 Ensure financial stability and sustainability

10.1 Link the municipal wastewater sector to other economic sectors

Sound and appropriate wastewater management may require substantial construction and operational investments in wastewater infrastructure and treatment facilities. Relative to the water supply sector, cost recovery in the wastewater sector is traditionally a long process. Developments in other (socio-) economic sectors, for instance water supply or tourism, may create opportunities to address sanitation at the same time. Linking wastewater management with other sectors can ensure faster cost-recovery, risk-reduction, financial stability and sustainable implementation.

10.2 Introduce innovative financial mechanisms, including private sector involvement and public-public partnerships

Traditionally, sanitation services have been provided by public authorities. Costs for investments, operation and maintenance, however, often outstrip their capacities, as do present and future requirements for serving the un-served. Therefore, innovative, more flexible and effective financial management mechanisms have to be considered, such as micro-financing, revolving funds, risk-sharing alternatives, municipal bonds. Public-private partnerships, and also public-public partnerships, are important tools to assist local governments in initial financing and operating the infrastructure for wastewater management.

10.3 Consider social equity and solidarity to reach cost-recovery

The employment of principles like 'the water user pays' and 'the polluter pays' is required to achieve stable and sustainable wastewater management with efficient cost-recovery systems. These principles should be applied in a socially acceptable way, considering solidarity and equitable sharing of costs by all citizens and facilities. Various user groups should be made aware of – and be able to identify with – concepts such as 'water-' and 'catchment solidarity'. All users will benefit from environmental improvement.

Guidelines on municipal wastewater management

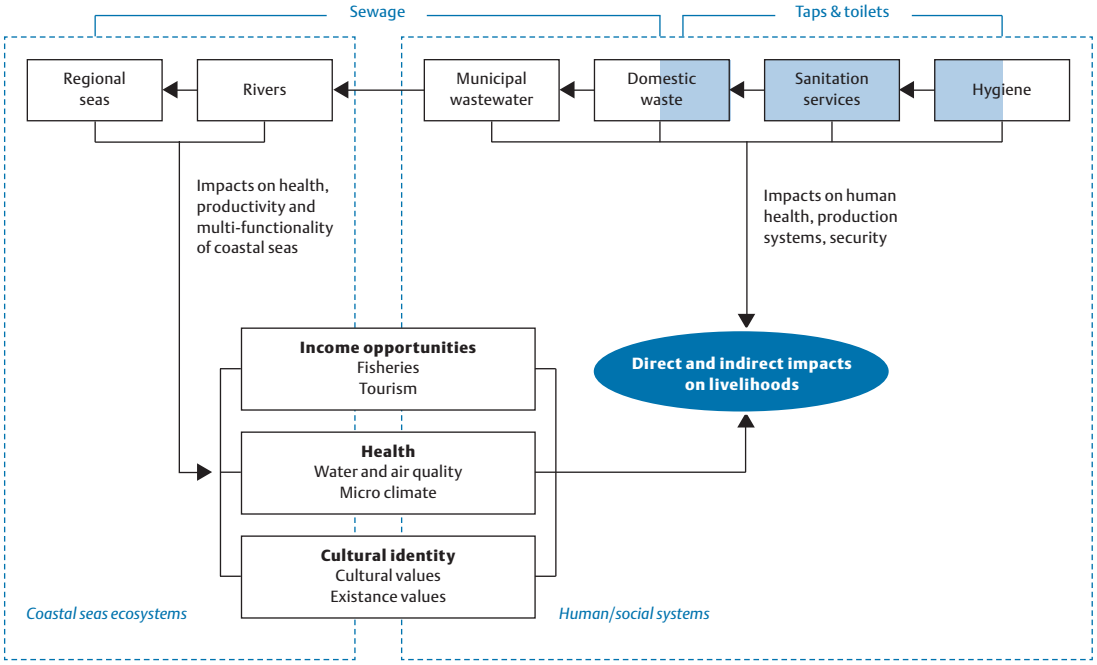
The above ten keys also form the red line throughout the *Guidelines on Municipal Wastewater Management*, which is a practical guide for decision-makers and professionals on how to plan, design and finance appropriate and environmentally sound municipal wastewater discharge systems (UNEP/WHO/HABITAT/WSSCC 2004). The report is meant for:

- decision-makers involved at a strategic level;
- operational professionals in government institutions; and
- professionals in the private sector, development banks, and related organisations.

The report focuses on four elements, with their respective sets of management tools:

- approaches and policies, including demand-driven, opportunity-driven, and integrated management approaches (Chapter 1);
- institutional arrangements, including public participation and new partnerships with the private sector and water users (Chapter 2);
- technological options, including steps for choosing the most appropriate technology, and considering wastewater as a resource (Chapter 3);
- financing options, including private capital and public–private partnerships (Chapter 4).

Keys number 3 and 4 are illustrated in the diagramme below: design integrated processes of hygiene, drinking water supply, sanitation services and municipal wastewater management, not only looking at human health aspects, but also at environmental impacts. Addressing the environmental dimensions mitigates impacts on both human and ecosystem health – and thus on livelihoods.



Source: adapted from AID Environment

Municipal wastewater training manual

The above keys principles are also an integral component of the UNESCO-IHE – UNEP/GPA training partnership related to municipal wastewater management, in short TSC-GPA. TSC-GPA is a course development unit of the UN/DOALOS Train-Sea-Coast Programme, a UNDP-GEF funded capacity building initiative with a global mandate. TSC-GPA offers management training for decision makers and practitioners at the municipal level to improve the capacity to reduce discharge of untreated wastewater and increase the number of people with access to sanitation.

A recent assessment on regional training needs revealed that there is a need for region specific training material, adapted to the distinct physical geography, economic situation, cultural habits and population distribution. To cater for this need a first CD-ROM was developed to supplement the existing training material, focussing on wastewater technologies and management for Pacific Islands. The CD-ROM contains a wealth of information grouped into:

- a compendium of technologies appropriate for Pacific Islands
- a tutorial in project cycle management to identify feasible solutions
- three software tools to support decision making
- a document library with a hundred publications on management and technologies.

See for more details www.gpa.unep.org/training

Annex 8 Financing sources and economic instruments

There are two very recent documents that are highly recommended for further reading. One is the European Environment Agency document on the use of market-based instruments in Europe of which some excerpts are included below. The other is a recent UNEP/GPA document on financing for the environmental conservation of the Red Sea and the Gulf of Aden, of which some very relevant annexes are included below.

Excerpts from the executive summary of EEA 2006 document
'Using the market for cost-effective environmental policy'
http://reports.eea.eu.int/eea_report_2006_1

Why market-based instruments?

- they help to realize environmental, economic and social policy objectives by incorporating hidden costs of production and consumption to people's health and the environment (such as costs from air & water pollution, waste disposal, soil & species loss, climate change & extreme weather)
- MBIs provide a stimulus to consumers and producers to change their behaviour towards more eco-efficient use of natural resources
- some MBIs raise revenue that can either be earmarked as environmental expenditures, or can be used to offset taxes on labour and capital

Types of MBIs

- *tradable permits* that have been designed to achieve reductions in pollution (such as emissions of CO_2) or use of resources (such as fish quotas) in the most effective way through the provision of market incentives to trade
- *environmental taxes* that have been designed to change prices and thus the behaviour of producers and consumers, as well as raise revenues
- *environmental charges* that have been designed to cover (in part or in full) the costs of environmental services and abatement measures such as waste water treatment and waste disposal
- *environmental subsidies and incentives* that have been designed to stimulate development of new technologies, to help create new markets for environmental goods and services including technologies, to encourage changes in consumer behaviour through green purchasing schemes, and to temporarily support achieving higher levels of environmental protection by companies
- *liability and compensation schemes* that aim at ensuring adequate compensation for damage resulting from activities dangerous to the environment and provide for means of prevention and reinstatement

MBIs work better if

- they are well-designed in themselves and as part of a wider package of instruments
- the reasons for having them and how revenues will be used are clearly communicated
- the levels at which prices are set reflect both an incentive to producers and consumers to change behaviour and a realistic analysis of affordability

Elements for effective MBIs

- have an instrument champion, such as the London major who introduced the congestion charge
- pick winners by focussing on issues for which agreement and pressure exists to have them addressed
- make optimal use of added value of MBIs in policy mixes
- keep it simple and understandable
- keep it realistic
- give advanced notice of the introduction of a new instrument
- minimize changes
- understand the potential of trade-offs
- keep stakeholders on board
- maintain equity in implementation
- make sure that people can respond
- ensure indexing of tax/charge rates to inflation to avoid erosion of value over time
- ensure consistency and compatibility

Information on Annexes included in the 2006 UNEP/PERSGA report *'Financing for the environmental conservation of the Red Sea and the Gulf of Aden'*

Although the report deals specifically with the Red Sea and Gulf of Aden, it contains much information that is of direct use in other regions as well, especially several of the Annexes.

PERSGA Annex 4 describes 10 tasks required to design a good NPA financing strategy, summarized:

- review the current list of short-, medium-, and long-term NPA activities identified
- identify existing sources of financing
- update the financial costs of activities identified
- review required legislative framework, institutional setup, capacity, and sources of financing for each activity
- identify potential new sources of funding (see also the table below).
- perform a funding gap assessment
- hold a stakeholder meeting to discuss findings
- identify options to minimize the possible funding gaps, involving key stakeholders
- produce an affordability analysis at household and national levels.
- prepare a financing strategy applying the affordability concept and identified additional financing

PERSGA Annex 5 describes 13 tasks to be undertaken to assess potential MBIs, summarized:

- provide an overview of international best practices on environment related taxes and charges for water supply, wastewater services and waste and identify those relevant for the NPA process
- review existing environment related taxes and charges and, if needed, propose adjustments or new instruments based on the current political and economic situation and international experiences
- assess the appropriate level of government to levy taxes
- assess the institutional set-up for monitoring and collecting tax revenues
- assess the appropriateness of current levels and structure of user charges on water, wastewater and waste, and, if needed, propose a methodology to restructure tariffs and adjust them regularly
- assess a reasonable environmental tax/GDP ratio for the short term and medium term (think of water supply, water pollution, wastewater and waste management & recycling, the agricultural sector (insecticides, pesticides) and other sectors such as tourism, energy, and transport
- assess the scope for ecological tax reform, considering appropriateness of use of revenues from new environment related MBIs

PERSGA Annex 8 describes three different types of environmental funds, summarized:

- An *endowment* is a fund whose capital is invested in order to generate a steady annual stream of income. Only the investment income is spent. Only under unusual, specifically defined circumstances can the capital itself be spent, and typically the endowment must be replenished within a short number of years afterwards. Many environmental fund experts believe that it is not cost-effective to establish an endowment fund whose capital is less than US$5 million, because the annual investment income would be largely absorbed by administrative and transaction costs.
- A *sinking fund* is designed to disburse its entire capital plus its income over a designated period of time. This type of funding can be well adapted to the funding of projects with development or income-generating potential that are expected to become self-sufficient after an initial seed money or start-up phase. Sinking funds offer donors the opportunity to earmark funding for specific projects or activities. Debt-for-nature swaps have been a major source of sinking funds.
- A *revolving fund* is periodically replenished through fees, taxes or levies collected or through donor contributions or swapped interest payments. It is usually hard in practice, in some cases due to country-specific financial regulations, to prevent central exchequers from obtaining such funds which means that specifically earmarking them for conservation purposes can be problematic given other competing demands. It may therefore be more sensible for monies generated from user fees and conservation taxes to be used to help fund national commitments directly. Also because new environment funds are often under pressure to demonstrate concrete results and success quite rapidly, in order to secure contributions to the funds from other donors.

In general it is recommended that an environment fund be established with a revolving fund portion and a sinking fund portion. It might be advisable in the start-up phase to spend a larger percentage of the total funds through sinking funds, financing some priority projects that can generate immediate impacts and benefit. Then as the NPA process evolves and greater levels of user payments become the norm, greater amounts can be spent from the revolving portion of the fund.

PERSGA Annex 9 provides a check list to evaluate the potential effectiveness of environmental taxes and charges. The Annex lists 48 questions, grouped under the following 12 categories:

- tax/charge design
- organisational arrangements
- purpose of tax/charge:
- complementarity and substitutability of taxes with other instruments
- potential effect and effectiveness of the tax
- effect on producers
- effect on consumers
- equity and distributional effects
- trade and competition Issues
- revenue
- employment
- administrative and compliance cost

Annex 12 provides a table on financing mechanisms for marine conservation taken from Spergel and Moye 2004 (see next page).

TABLE 1 Financing mechanisms for marine conservation

Financing mechanism	Source of revenue
Government revenue allocations	
Direct allocations from government budgets	Government budget revenues
Government bonds and taxes earmarked for conservation	Investors, tax payers
Lottery revenues	Gamblers
Premium-priced motor vehicle license plates	Vehicle owners
Wildlife stamps	Postal customers, hunters, fishermen
Debt relief	Donors, government, NGOs
Grants and donations	
Bilateral and multilateral donors	Donor agencies
Foundations	Individuals, corporations
Non-governmental organisations (NGOs)	NGO members and supporters
Private sector	Investors
Conservation trust funds	Multi-source
Tourism revenues	
Protected area entry fees	Visitors to parks
Diving and yachting fees	Divers, boaters
Tourism-related operations of protected area agencies	Tourism operators, tourists
Airport passenger fees and cruise ship fees, taxes and fines	Tourists, cruise lines
Hotel taxes	Hotel clients
Voluntary contributions by tourists and tourism operators	Tourism operators, tourists
Real estate and development rights	
Purchases or donations of land and/or underwater property	Property owners, donors
Conservation easements	Property owners, donors
Real estate tax surcharges for conservation	Property owners, donors
Tradable development rights and wetland banking	Property developers
Conservation concessions	Conservation investors
Fishing industry revenues	
Tradable fishing quotas	Commercial fishermen
Fish catch and services levies	Commercial fishermen
Eco-labelling and prouct certification	Seafood producers, wholesalers, retailers and end-use purchasers of ornamental tropical fish and corals
Fishing access payments	Governments, associations of and/or individual fishermen
Recreational fishing license fees and excise taxes	Recreational fishermen
Fines for illegal fishing	Fishermen
Energy and mining revenues	
Oil spill fines and funds	Energy companies, donors
Royalties and fees from offshore mining and oil and gas	Energy and mining companies
Right-of-way fees for oil and gas pipelines and Telecommunications infrastructure	Private companies
Hydroelectric power revenues	Power producers
Voluntary contributions by energy companies	Energy companies
For-profit investments linked to marine conservation	
Private sector investments promoting biodiversity conservation	Private investors
Biodiversity prospecting	Pharmaceutical companies

Source: Spergel and Moye 2004

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