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WORLD MARITIME UNIVERSITY
Malmö, Sweden

**PROTECTION OF BANGLADESH WATERS
AGAINST ACCIDENTAL OIL POLLUTION
FROM SHIPS**

By

KHONDAKER MD. ASADUZZAMAN
Bangladesh

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE

in


**GENERAL MARITIME ADMINISTRATION AND
ENVIRONMENT PROTECTION**

1998

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

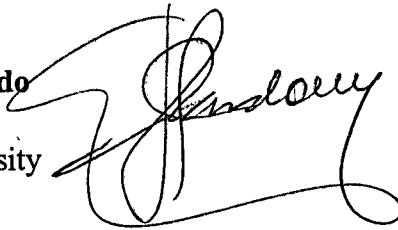
The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.


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ABSTRACT

Title of Dissertation: **Protection of Bangladesh Waters against Accidental Oil Pollution from Ships.**

Degree: **MSc**

Bangladesh, as being a flag, coastal and port state, has a genuine concern about the threat of oil pollution from marine transportation in its waters. However, her concern for accidental oil pollution from ships is not adequately matched by appropriate preventive and remedial measures. As a result, the country continues to be in an absolutely vulnerable position with respect to the dangers of oil pollution.

This dissertation is a study of the need for and the ways of protecting the marine environment of Bangladesh from oil pollution incidents. The threats of accidental spills in Bangladesh waters are discussed and the present marine environment protection framework and oil spill response arrangements are briefly examined. A critical appraisal of the response to a past oil spill incident is given and major areas of concern and tasks to be undertaken are identified.

Finally, conclusions are drawn on the basis of the study and a number of recommendations are made for enhancing the effectiveness of the existing marine environment protection framework and national arrangements for oil spill response.

KEYWORDS: Marine, Environment, Oil, Pollution, Response, Protection.

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LIST OF ABBREVIATIONS

BSC	Bangladesh Shipping Corporation
CLC 1969	International Convention on Civil Liability for Oil Pollution Damage, 1969
DOE	Department of Environment
ERL	Eastern Refinery Limited
FUND 1971	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971
IMO	International Maritime Organization
INTERVENTION	International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969
IOPC	The International Oil Pollution Compensation Fund
MARPOL 73/78	The International Convention for the Prevention of Pollution from Ships
MMD	Mercantile Marine Department
MOE	Ministry of Environment and Forest
MOS	Ministry of Shipping
NOC	No Objection Certificate
OILPOL 1954	International Convention for the Prevention of Pollution of the Sea by Oil, 1954
OPRC 1990	The International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Program

Chapter 1

INTRODUCTION

✓ The seas are central to earth's ecology. Spreading over an area of 361,740,000 sq km or 70.92% of the total surface of the earth, they sustain a great diversity of life on this planet and control the climate. They are the source of natural resources that meet much of man's basic needs. They provide us with protein, energy, means of transportation, employment, recreation, and also support countless other economic, social and cultural activities.

But unfortunately human activities have been polluting the seas for a very long time causing damage to the marine and coastal resources and the ecology in general. With the ever-increasing population, rapid pace of technological advance and massive industrialisation together with globalisation of the economic system, the marine environmental problems got more and more acute during this closing century. The sheer vastness of the seas had led man to believe that their assimilative capacity was virtually endless. However, during the last quarter of the century a growing perception of threats to environment made the world aware that the indiscriminate use of the oceans as a dumping ground could cause immense damage to the marine environment and seriously jeopardise the delicate balance of life on earth. In the words of Sir Arthur C. Clarke (1998), 'The sea is our greatest heritage. We are only now beginning to realize its value. Let us use it more wisely than we have used the land.'

Apart from a host of landbased sources, ships are considered a major source of marine ^{land, air, water} pollution. Shipping activities may cause different kinds of environmental hazards to the marine environment, namely, operational pollution, accidental pollution and physical damage to marine habitats or organisms. During routine operation ships may discharge or introduce a wide variety of pollutants into the marine environment which include oil and oily wastes, noxious liquid substances, sewage, garbage, antifouling paints, alien organisms etc. These may affect the marine environment in many ways. ✓

In tonnage terms, the most important pollutant from shipping operation is oil (IMO, 1998). Oil discharged or spilled into the sea can seriously affect the living resources of the sea and damage the ecosystem. Oil, however, is not a totally alien substance to sea as many synthetic pollutants are. Actually more than half of the oil in the sea enter the marine environment from a variety of natural sources which include the hydrocarbon content of phytoplankton in the sea itself, natural seeps from the land, atmospheric fallout etc. Accidental oil spills from ships constitute only a small percentage of the total quantity of oil that is spilled, discharged or leaked into the oceans annually. But although accidental spills are not the largest source of oil pollution, they are considered the most important because of the environmental damage they are capable of causing. 'While hydrocarbons produced in the sea are evenly distributed throughout the ocean expanses and those received through the air are diffused, oil spills lead to unnatural concentration in a restricted area' (Gourlay, 1988). Even a small accidental spill can be deadly in its effects, particularly if it occurs close to the coast.

Oceans are part of the common 'ecological space' that all the people share in the form of global common resources. 'There are no separate seas, only one interlinked world ocean' (Gourlay, 1988). Obviously, the global challenges of marine environment protection derive from the aggregate of local actions all over the world.

Therefore these challenges can successfully be met only through co-ordinated local efforts.

As Environmental responsibilities continue to expand and take on increasing importance, the Government of Bangladesh recognises the importance of environmental protection and sound management practices as the basis for long-term sustainable development in the country.

Water is one of the few principle natural resources of Bangladesh, and the location of the country makes water management the key issue in its environmental plans. The government's Environment Policy puts great emphasis on the issue of ensuring environmentally sound utilisation of all water resources. Water resources management traditionally connotes the idea of flood control, drainage and irrigation to boost agricultural production. But today the management and protection of coastal and territorial waters is considered equally important for the development of coastal and marine resources in the context of the country's growing dependence on them.

Bangladesh has a good deal of maritime interests that need to be protected. Most of the 720 km of Bangladesh's coastline are vulnerable to marine pollution. The main sectors which have influence on marine and coastal environment and resources are: fisheries, forestry, industry, transport and tourism. There has long been the recognition that along with sustainable use of marine resources, control of both industrial and ship-borne pollution and preservation of national ecosystems are extremely essential for the development of the country. In this context prevention and tackling of oil pollution from shipping activities is a very important environmental issue.

The concerns of Bangladesh about the threat of accidental oil pollution from ships is well-justified. With the increasing concentration of traffic at the ports and more

frequent move of oil tankers the risks are always on the increase. But the country's concern for oil spills dangers is not adequately matched by appropriate preventive and remedial measures. There is in general an absence of efficient disaster management planning for marine and coastal region and no national contingency plan exists for effectively responding to marine environmental emergencies. Besides, lack of institutional reforms and absence of necessary legislative support leave much of the related responsibilities spread through a number of Ministries, Departments and regulatory authorities.

The dissertation is an attempt to examine the existing situation taking into account the prevailing risks and the state of response available and to draw conclusions and make recommendations for taking appropriate measures and setting up an effective system for the prevention of and responding to accidental oil pollution from ships.

Chapter 2

BANGLADESH AND ITS MARINE ENVIRONMENT

Nestled in the crook of the Bay of Bengal, Bangladesh lies in the north-eastern part of South Asia. The country has an area of 1,48,393 sq km and is bounded by India on the west, the north and the north-east; by Myanmar on the south-east; and by the Bay of Bengal on the south. It sits atop one of the world's largest river deltas, a vast floodplain of the Brahmaputra, the Ganges, the Meghna and some smaller rivers, together with estuarine and tidal floodplains.

The limits of territorial waters of Bangladesh are 12 nautical miles and the area of the high seas extending to 200 nautical miles measured from the baselines constitutes the exclusive economic zone of the country. It is a maritime nation and about 95% of its overseas trading is routed through maritime sector. The country's geographical position is fairly advantageous to building a strong merchant fleet which may play a vital role in carrying national sea-borne trade.

2.1 MARINE AND COASTAL ENVIRONMENT

As Charles E. Cobb, Jr. (1993) sees it, 'Water completely defines Bangladesh.' In no country in the world is life more influenced by its waters than in estuarine Bangladesh. The 720 km long coastline is characterised by a vast network of rivers flowing into the sea, a large number of islands in between the channels, the shallow

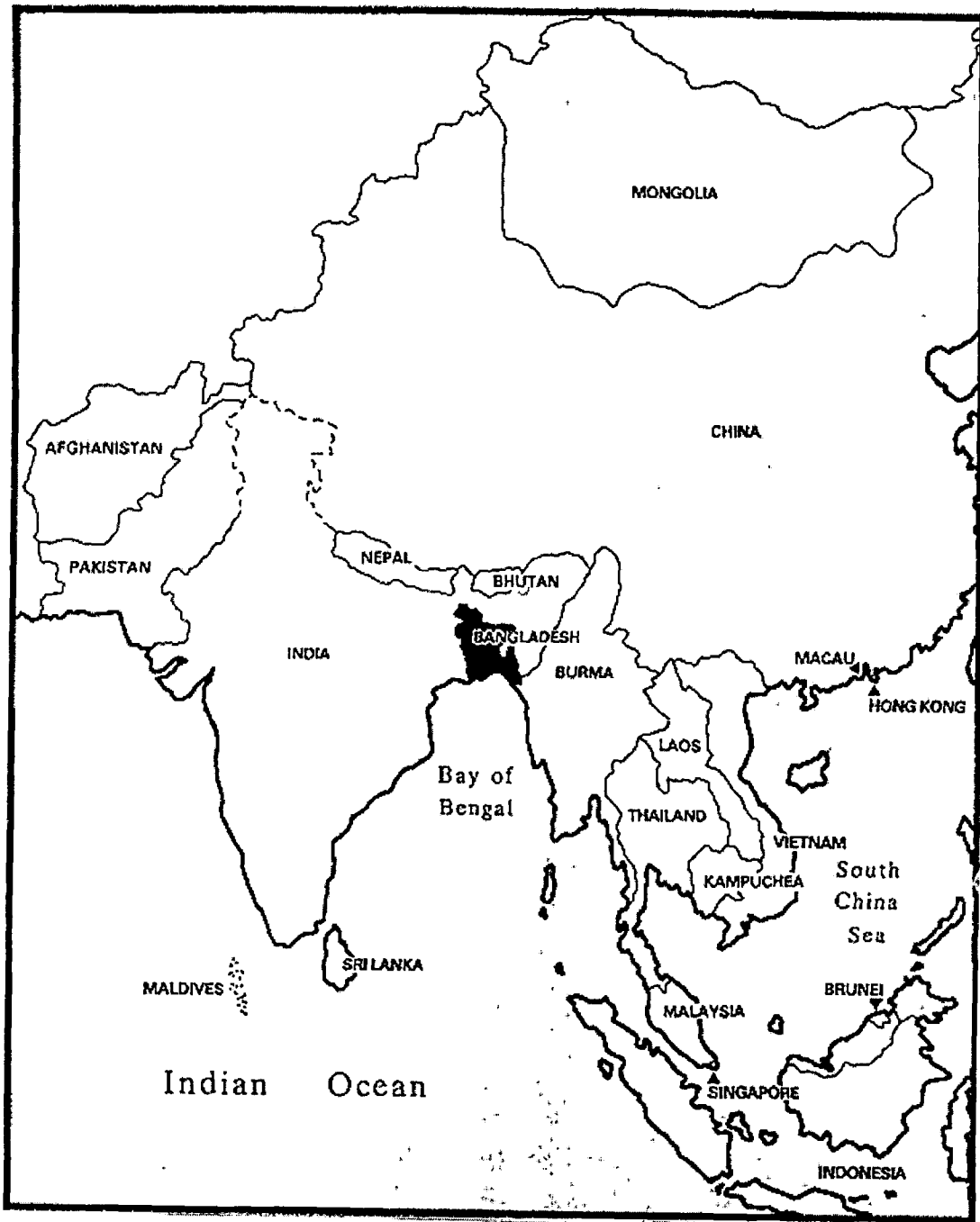


Figure 1: BANGLADESH AND ITS NEIGHBOURS

northern Bay of Bengal, and hundreds of lakes and man-made ponds. These all nurture the rice farms, plantations, and marine and inland fisheries that are the livelihood for over five million people in 1100 coastal villages and many more inland.

Much of Bangladesh is wetlands which support a great diversity of wildlife. Compared with other countries in the region, Bangladesh has by far the greatest biodiversity on an area basis. In fact, few countries in the world can match its rich and varied flora and fauna which are not only a unique biological phenomenon, but also a valuable natural resource of the country.

2.2 USE OF MARINE AND COASTAL RESOURCES

The territorial waters of Bangladesh in the Bay of Bengal itself supports hundreds of coastal communities dependent on the coastal fringe for resource exploitation. The marine zone also supports industrial fisheries directed at shrimp and pelagic fish. Marine fisheries and coastal aquaculture also represent one of Bangladesh's major foreign currency earners. The mangrove forests are not only a wildlife sanctuary, but also an essential element for onshore shrimp cultivation and act as a food source for offshore fisheries. The two seaports of Bangladesh are located in the coastal zone in Chittagong and Khulna which handle most of the country's import and export cargo. Further, Bangladesh appears to have a significant potential for coastal tourism.

2.2.1 FISHERIES AND AQUACULTURE

Fisheries in Bangladesh play a vital role in the national economy by supplying animal protein, providing employment, earning foreign exchange and supporting

multifarious ancillary industries at the rural levels. An estimated 70-80 per cent of the animal protein consumed in the country is provided by the fisheries sector.

As it is difficult to fulfil the minimum protein requirement of the teeming millions from the freshwater subsector alone, high importance has been accorded to the marine fisheries. At present the marine fisheries subsector contributes about 28% of the country's total fish production of 1.3 million metric tons. The subsector has the largest share of foreign exchange earnings and contributes to the development budget in the same proportion. With higher level of management and development attention to the marine fisheries subsector, it would be possible to have a substantially increased production.

In Bangladesh, both freshwater and brackishwater aquaculture are practised. Brackishwater aquaculture, also known as coastal aquaculture, is a rapidly expanding farming activity and plays an important role in the overall fisheries development effort in the country. The farm products are marine and estuarine shrimp, fish and crab, of which *Bagda* shrimp (black tiger shrimp: *penaeus monodon*) is the primary target culture species. Coastal aquaculture products are largely export-oriented and account for 52% by volume and 64% by value of the total fisheries export (Karim and Aftabuzzaman, 1997).

2.2.2 MANGROVE FORESTS

The coastal region is dominated by estuarine and mangrove ecosystems. Bangladesh ranks 12th among the 22 nations who own the world's major mangrove forest areas. In the south-western part of the country, in the district of Bagerhat, lies the *Sundarbans*, 'the beautiful forests'. It is the largest single expanse of mangrove forest in the world which covers an area of about 6,000 sq km.

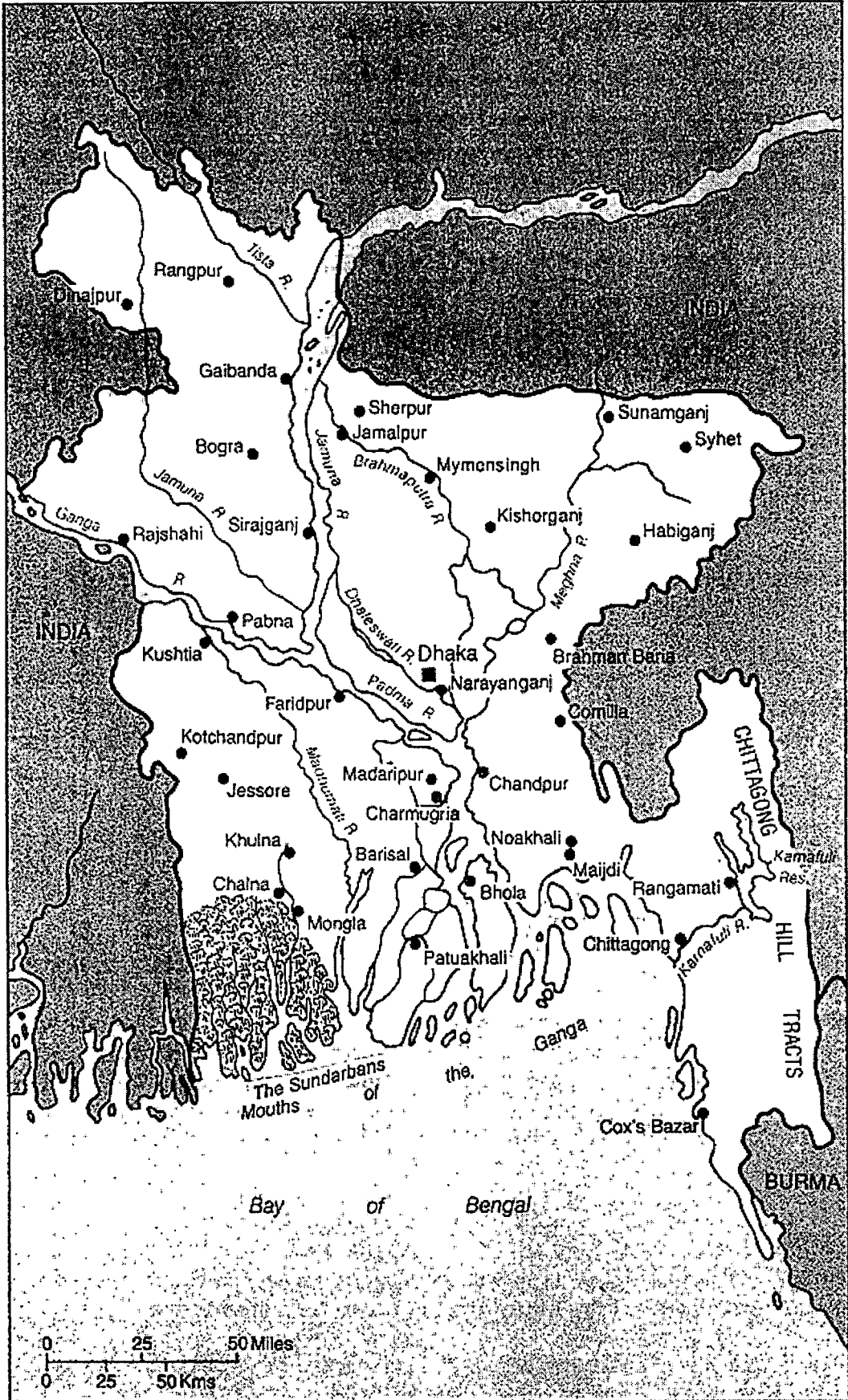


Figure 2: BANGLADESH

The Sundarbans are internationally renowned for its abundant wildlife. It has an amazing diversity of flora and fauna and hosts a total number of 334 floral species and 425 animal species. It is the natural habitat of the world famous Royal Bengal Tiger, spotted deer, crocodiles, jungle fowl, wild boar, lizards, rhesus monkey and a countless variety of beautiful birds. Among the animal species there are 32 mammal species, at least 186 bird species and 43 reptile and amphibian species. The area is an important breeding and nursery area for both offshore and nearshore marine and brackish fish species and shrimps, of which more than 120 species are caught by commercial fishermen.

The Sundarbans alone comprise 44% of the productive forests of the country, and the mangroves in the region have great economic value. It contributes about a half of forest-related revenue which comes from timbers, beeswax, honey and other forest products.

The Sundarbans act as a natural barrier against tropical cyclones and tidal surges from the Bay of Bengal and protects the inland areas from the ravages of this fierce natural disaster. Constantly flooded by the ebb and flow of the tide, the Sundarbans are also famous for its unique natural beauty. Its pristine environment attracts a lot of tourists, both local and foreign.

2.2.3 SEA-PORTS

Bangladesh has got two sea-ports, Chittagong Port in the east and Mongla Port in the west. They play a vital role for the economic development of the country.

The Port of Chittagong is the principal port of Bangladesh. It is located on the right bank of the river Karnaphuli at a distance of about 9 nautical miles from the coastline of the Bay of Bengal. With the entire eastern part of Bangladesh as its hinterland the

Chittagong Port handles about 12 million metric tons of cargo per year which includes about 80% of the country's import cargo and 70% of the export cargo.

The Port of Mongla is situated on the east bank of the Pussur River about 45 km south of the city of Khulna in the south-western part of the country. With the western part of Bangladesh and its neighbouring countries like Nepal and Bhutan as its hinterland, it handles about 3 million tons of cargo a year.

2.2.4 SHIPPING

Shipping activities at Chittagong Mongla Ports and within the Bay of Bengal are remarkably intense. The ports handle more than 1600 international ships annually along with a large number of coastal and inland water transport ships.

Bangladesh Shipping Corporation (BSC), a public sector organisation, owns 17 ships with a total capacity of 252,576 DWT which play a very important role in the national economy by carrying import/exports of the country throughout the world. Two of the vessels are seagoing tankers with a capacity of about 10,000 GRT each. Efforts are being made to add one mother tanker and four container vessels to BSC's present fleet.

In the private sector, among about 70 shipping companies in the country 8 companies own 15 ocean-going vessels with a total capacity of 183,966 DWT.

Currently, Bangladesh handles only 16% of the overall import and export cargo, although under international convention it is entitled to handle up to 40%. This indicates that there is significant scope for both BSC and the private sector companies to increase their fleet. During the implementation of the current Fifth Five Year Plan of the government, necessary efforts are to be taken to this end.

2.2.5 TOURISM

The southern rim of Bangladesh, washed by the waves of Bay of Bengal and embroidered with unending rows of vegetation, offer a unique spectacle of natural beauty. From Teknaf located in the far eastern point of the country to the Sundarbans forests in the west, the entire stretch of the coast is a distinctive area of tourist attraction. Coastal tourism in Bangladesh is actually the most significant part of the flourishing tourism industry.

Located at a distance of 152 km south of Chittagong and having the world's longest (120 km) unbroken stretch of beach sloping gently down to the blue waters of the Bay of Bengal, Cox's Bazar is one of the most attractive tourist spots in the region. A chain of green hills which runs parallel to the seashore for about 96 km, serves as a picturesque background to the beach. The wide beach is endowed with miles of silvery-golden sand. Free from sharks, the beach is good for bathing, sun-bathing or swimming. Nearby offshore islands like Sonadia and Maheshkhali are also attractive spots for swimming and sunning. St Martin Island has got coral reefs and white-sand pocket beaches fringed with coconut palms and bountiful marine life.

Also, the broad sandy beaches of Chittagong with its fine cool climate attract a great number of holiday-makers.

The pristine stretches of Sundarbans mangrove forests is another great tourist attraction in the country. Spread over the deltaic swamp along the coastal belt of Bagerhat district, it is the home of a great variety of wildlife including the Royal Bengal Tiger. Constantly flooded by the ebb and flow of the tide, and criss-crossed by hundreds of meandering streams, rivers and creeks, the Sundarbans is famous for its unique natural beauty. Every year hundreds of local and foreign tourists and holiday-makers visit these forests.

Another rare scenic beauty spot overlooking the Bay of Bengal located in the district of Patuakhali is Kuakata. It has a wide sandy beach from where one can get the unique opportunity of watching both sunrise and sunset. A tourist centre has been set up at Kuakata in early 1998.

The government is planning a massive uplift of the coastal tourism so that it can play a more significant role in the country's economic development.

2.2.6 OIL AND GAS

The development of the oil and gas sector is vital for further strengthening of national economy. However, natural gas is currently the only indigenous non-renewable energy resource of Bangladesh which is being produced and consumed in significant quantities. Natural gas output now accounts for about 70% of the country's commercial energy supply. Currently, about 90% of power generation is based on natural gas and the whole of the urea fertiliser requirements of the agricultural sector is met by using gas as feed stock. On the other hand, exploration activities carried out so far, both on-shore and off-shore, could not discover any significant oil deposit.

In a major breakthrough in the energy sector, the country's first off-shore gasfield, Sangu, started transmission of gas to the national grid in June 1998. The gasfield located 40 km away from Sangu estuary was discovered following a comprehensive seismic survey in the Bay of Bengal in 1995. The exploration indicated a proven reserve of about 850 billion cubic feet of gas. A supply of 160 million cubic feet of gas per day from Sangu represents 20% of the country's total gas production and is expected to help meet the growing demand of gas in the port city of Chittagong and in power plants and fertiliser factories.

Chapter 3

THREATS OF ACCIDENTAL OIL POLLUTION FROM SHIPS

3.1 STATE OF OIL POLLUTION

The marine environment of Bangladesh has long been under increasing threats of pollution originating from shipping activities. Shipping operations at Chittagong and Mongla Ports and within the Bay of Bengal contribute to coastal and marine pollution in a number of ways including discharge and spillage of oil.

Localised oil pollution in the vicinity of Chittagong and Mongla Ports is said to be heavy. Increased shipping activities in the ports, crude and refined oil transportation, oil leaking from mechanised vessels, refinery and workshop spillage and accidental or wilful oil spillage by tankers are the major sources of pollution threatening the aquatic lives and coastal resources in the Bangladesh territory.

There is frequent spillage into the river during loading and unloading of oil at the oil receival terminals at the Chittagong Port. Spillage also occurs during the pumping of fuel oil and supply of bunker oil to ships at the ports. Much of the oil pollution also originates from bilge pumping from coastal and inland water transport.

Because of the draft restriction in Chittagong harbour, large tankers carrying refined or crude oil are required to transfer the cargo to small tankers at the outer anchorage. The lightering operation frequently results in minor oil spills.

✓ A large part of the oil pollution from ships comes from intentional discharge. Virtually no control is exercised in Bangladesh waters over the release of waste oil from ships. Owing to a lack of waste reception and treatment facilities in the ports, and a lack of effective legislation and surveillance, foreign and domestic ships and trawlers discharge their oily waste in the sea unhindered. ✓

✓ The oil installations, state-owned oil refinery and oil storage sites of different oil companies do not have adequate environment protection measures. These are reported to be polluting the surrounding canals and river by releasing oil, oily water and sludge. ✓

Ship-breaking operations around Chittagong and Khulna also discharge oily wastes along with other noxious materials. Most of the ship-breaking occurs along the foreshore north of Chittagong along a 15 km length of coastline. Ships include ocean-going oil tankers and ore carriers. Waste oil has seriously degraded the entire coastline.

3.2 THREATS OF OIL SPILLS

3.2.1 TANKER ACCIDENTS

Tanker accidents are the best-known cause of oil pollution that may arise from shipping activities. An oil spill following a tanker accident can be disastrously

damaging to the surrounding environment. Accidents taking place close to the shore are generally even more catastrophic in their harmful effects.

The risk associated with oil transportation in Bangladesh waters is high due to regular oil tanker movements. About 20 crude oil carriers and 80 product carriers call at Chittagong Port every year. Both the sea-ports of Bangladesh suffer from draft problem. As a result, lighterage is required to carry cargo up to jetty from distant anchorage accommodating bigger vessels of over 25,000 DWT. Two lighterage tankers are used to transport crude oil from the mother tankers waiting at outer anchorage in Kutubdia to oil terminals inside the Chittagong Port.

The Bay of Bengal and the associated river mouths are characterised by strong waves, wide tidal fluctuations, frequent cyclones and tidal bores. The entrances to the river channels leading to the ports are changing constantly. Pilotage is therefore compulsory for ocean-going vessels.

The increasing movement of tankers and the geographical features of the region greatly contribute to the potential for minor oil spills as well as major ones of national or international significance. Tanker accidents can result from mechanical failures as well as human negligence or errors. Oil spills from tanker accidents may occur due to collision, allision, grounding, fire on board or explosion resulting from flammable gas.

Chittagong Port handles approximately 1200 international ships annually, as well as a large number of coastal and inland water transport vessels. More than 400 ships call at Mongla Port each year. It is not unlikely for non-tanker accidents to cause small scale oil pollution.

3.2.2 TERMINAL OPERATIONS

According to figures published by the International tanker Owners' Pollution Federation, the most common pollution incidents occur during terminal operations when oil is being loaded or discharged – perhaps as many as 92% of oil spills (IMO, 1998).

Chittagong Port is the hub of petroleum industries in Bangladesh. More than 3.2 million tonnes of crude oil and petroleum products are imported through this port annually. The port has got seven oil terminals where all the imported oil is handled. Two lighterage tankers are used to transport crude oil from the mother tankers waiting at the outer anchorage in Kutubdia to the oil terminals inside the port. Most of the finished products are transported from Chittagong to different parts of the country by coastal tanker fleet.

The oil terminals lack sufficiently sound ship/port interface. The structural design of the terminals have fallen behind in dealing with the increase in import of petroleum goods in the past couple of decades. Most of the equipment used both at general and oil terminals need replacement or improvement. Lack of regular monitoring of fittings and absence of provision of proper oil-collecting products or equipment at the docks contribute to the probability of accidental oil pollution during terminal operations. Oil spills may occur in both general terminals and oil terminals during the handling of bunker due to fuel oil leakage or overflow of tanks. Larger spills can take place in the course of normal loading/unloading operations.

3.2.3 NATURAL DISASTERS

Perched at the top of the inverted funnel that is the Bay of Bengal, Bangladesh sits directly in the path of some of the world's most powerful tropical cyclones.

Cyclonic storms building up in the Bay are always feared to impact the coast of Bangladesh lying at the apex of the funnel. Usually during the pre-monsoon and post-monsoon seasons swirling tropical depression form over the Bay, which often turns into cyclones and slam on the Bangladesh coast. These cyclones are accompanied by catastrophic storm surges which sometimes cause tens or hundreds of thousands of deaths and destroy large swathes of crops and property. In April 1991 a devastating cyclone and accompanying tidal surge killed an estimated 139,000 people and left nearly ten million homeless.

The coastal ports of Chittagong and Mongla and their neighbouring areas are in most cases swept by these cyclones. Ships staying in these areas run major risks of maritime casualties. Without proper precautionary measures like moving out to the sea or to the outer anchorages, vessels can be seriously damaged by collision, allision, grounding etc during a cyclone and cause oil spills.

During the cyclone in 1991 quite a few vessels staying in Chittagong Port area suffered serious damages. A number of vessels sank in the channel and one slammed onto a bridge over the River Karnaphuli and knocked down part of it. But fortunately no major oil spills resulted from any of these accidents.

3.3 INSTANCES OF OIL SPILL

Small spills during the pumping of fuel oil to ships and during loading and unloading of oil at the oil receival terminals are quite common. However, no major oil spill resulting from terminal operations was so far reported.

Oil pollution incidents caused by accidents are not rare either. One of such incidents occurred in Mongla Port in 1994. A Panamanian flag ship named *MV Pavlina-1*

caught fire while loading jute at the port. She had 193 tons of FO and 25 tons of MDO and an oil spill was reported on 14 August 1994. A considerable quantity of oil leaked into the water. Although the actual quantity of spilled oil could not be ascertained, a thick layer of oil was found floating on the water covering an area of about one square kilometre around the vessel. The oil drifted to the coast, and damage to marshes, plants, grass, mangroves, paddy fields, cattle grazing grounds and fishing grounds was evident.

A large oil spill took place back in 1989. MT Filothei, an old Cypriot vessel arrived at the outer anchorage of Chittagong Port fully loaded with crude oil imported for Eastern Refinery Limited. Immediately after its arrival an ongoing spill was detected by a lightering ship. The spill continued for about thirty hours. The cause of the spill was never discovered, but the total amount of spilled oil was calculated to be 2,247.70 long tonnes. Widespread damage to fisheries, other aquatic resources and coastal vegetation was evident.

Despite the threat of oil spills resulting from accidents caused by natural disasters, Bangladesh has been lucky not to have a major incident of this category. The most recent one of such accidents took place in May 1998. A lightering tanker of Bangladesh Shipping Corporation was damaged in collision with a cargo vessel of the Corporation at the outer anchorage of Chittagong Port near Kutubdia during a cyclone, causing an oil spill in the sea. The quantity of spilled oil was not known.

3.4 RESOURCES THREATENED BY OIL POLLUTION

The marine or the coastal waters have their unique ecosystems which, as is the case with others, possess a limited capacity to withstand environmental stresses. When

pressed beyond their limits these ecosystems may be greatly disrupted and become unable to support the living organisms within them.

Oil is considered as one of the major marine pollutants. It is, in fact, a complex mixture of a great many individual chemical compounds. Crude oil contains thousands of such compounds. As the properties like toxicity, solubility and viscosity vary from oil to oil, it is very difficult to predict the effects of an oil spill on the environment. However the most serious effects of oil pollution are also the most obvious.

In addition to producing devastating effects on animal and plant lives in the water and on the beaches an oil spill may also reduce the beauty and recreational value of the amenities. In most cases spilled oil is toxic to marine organisms and may seriously affect the phytoplankton and zooplankton which represent the first level of the food chain of a marine ecosystem. This may disrupt the whole food chain in the area.

An accidental oil pollution in Bangladesh waters may seriously affect the fisheries and agricultural resources. Although oil usually remains on or near the surface where fish do not encounter it, fish kill may occur where they have eaten smaller marine life severely contaminated by oil. Besides, tainting of fish by small quantities of oil makes them unpalatable and therefore unsalable. Reports of tainted fish can be highly detrimental to the commercial export market. Fouling of fish spawning areas or blockage of migration routes could have serious consequences for breeding patterns.

Seabirds and marine mammals are particularly vulnerable to spilled oil. If an incident results in fouling of breeding beaches, it can have very serious effects on breeding success.

The entire Bangladesh coastline is alive with hundreds of floral and animal species. The near-shore marine life is more susceptible to contamination. An oil spill along the shoreline will significantly degrade the ecosystems that it encounters. Even a minor spill can have long-term serious negative effects on the vegetation of the Sundarbans mangrove forests. Also the important breeding and nursery grounds for fish and shrimps in the Sundarbans can suffer very serious damage.

An oil spill in the Chittagong or Mongla port area will have the potential to cause significant impact on environmental resources within the estuary and along the coastal zone. Upstream biological communities may also be affected by the spill which could prevent upstream migration of aquatic animals.

An oil pollution incident can produce serious consequences for the tourism industry. Gross fouling of beaches will result into considerable loss of tourist receipts. A fall in the income for the hotels, stores and individuals directly involved in the tourism industry may lead to significant negative multiple effects on other sections of the economy in the area.

3.5 MARINE ENVIRONMENT PROTECTION FRAMEWORK

As per the 'Environment Protection Act, 1995' of Bangladesh, environment includes water, air, land and physical properties and the inter-relationships which exists among and between them and human beings, other living creatures, plants and micro-organisms. The environment is thus the sum total of all social, physical, biological and ecological factors. In the backdrop of this idea environmental concerns have assumed vital importance and it is now widely accepted that there must be an integrated approach between environment and all development activities.

As the marine and coastal resources utilised and influenced by a number of sectors, marine environmental issues often need to be addressed by all the appropriate sectoral Ministries and agencies. Some cross-sectoral responses are also required in some cases.

3.5.1 ENVIRONMENT POLICY AND MARINE ENVIRONMENT

The National Environment Policy of the government sets the policy framework for environmental actions in combination with a set of broad sectoral guidelines. It broadly addresses all environmental issues of concern and contains the following specific comments with respect to coastal and marine resources:

- Ensure conservation and environmentally sound development of coastal and marine ecosystems and resources;
- Prevent all local and external activities that lead to pollution in the coastal and marine areas;
- Strengthen necessary research in order to preserve and develop coastal and marine environment and resources;
- Restrict coastal and marine fishing within sustainable limits.

3.5.2 GOVERNMENT BODIES AND AGENCIES WITH RESPECT TO PROTECTION OF MARINE ENVIRONMENT

3.5.2.1 Ministry of Environment and Forest

As the designated environment ministry, the Ministry of Environment and Forest is the focal body for environmental management of coastal and marine resources. It

works in conjunction with concerned sectoral Ministries and has an active part to play in policy advice and environmental action planning, in co-ordinating and overseeing the implementation of action plans, and in reviewing and monitoring the impact of development initiatives on the environment across all sectors.

The Ministry of Environment and Forest oversees the activities and interact with a number of technical agencies which include: Department of Environment, Forest Department, Forest Industries Develop Corporation, Bangladesh Forest Research Institute etc.

The Ministry has recently finalised National Environment Management Plan (NEMAP) which provides the policy framework of an action plan for environmental development in combination with a set of broad sectoral guidelines. It identifies the key environmental issues of concern to Bangladesh and emphasises, *inter alia*, maintenance of the ecological balance and overall progress and development of the country through protection and improvement of the environment, and identification and control of all types of activities related to pollution and degradation of environment.

3.5.2.2 Department of Environment

The Department of Environment, as the technical arm of the Ministry of Environment and Forest, is responsible for environmental planning, management, monitoring and enforcement. The Department's responsibilities include: monitoring air and water qualities, controlling and monitoring industrial pollution, surveillance of environmental improvement components of development projects, promoting environment awareness through public information programme etc.

The scope of activities of the Department of Environment transcends into every sector of the socio-economic system and spreads throughout the length and breadth of the country. To administer the process it has got four regional offices in four administrative Divisions – Dhaka, Chittagong, Khulna and Rajshahi – with the headquarters situated in Dhaka.

The Department of Environment also maintains contact and co-ordination with various international and regional fora related to environment and undertakes programmes under various international conventions.

3.5.2.3 Ministry of Shipping

The Ministry of Shipping is the highest administrative body of the government with regard to shipping in Bangladesh. It is the apex policy-making organisation in the marine sector in general. Its activities also includes planning and evaluation, senior personnel management of the agencies under it, and budgetary and other administrative matters. Ensuring marine safety standard and prevention, control and response in respect of marine pollution in Bangladesh waters are among the major objectives it is supposed to achieve. It endeavours to protect the marine environment by providing guidance and enforcing laws regarding marine pollution in the coastal waters.

The Ministry of Shipping has a number of agencies under its administrative control.

3.5.2.4 Department of Shipping

It is an executive agency under the Ministry of Shipping with wide-ranging regulatory functions. Together with dealing with regulatory matters like maritime safety administration, enforcement of Bangladesh Merchant Shipping Ordinance,

registration of ships, survey etc, the Department also looks after matters pertaining to prevention of marine pollution. Its primary tasks are to supervise the seaworthiness of vessels for preserving and protecting life, health, ships and the marine environment. It is authorised to exercise the administrative measures to maintain and improve maritime safety standards.

The Department of Shipping also plays an important role in drawing up acts and regulations applicable to the country's maritime sector including those regarding safety of shipping and control of marine pollution from ships.

3.5.2.5 The Port Authorities

The Sea-ports serving Bangladesh are Port of Chittagong and Port of Mongla. About 77% of total sea-borne export and import cargo of the country are handled by the Chittagong Port, while Mongla Port handles the rest of export and import freights. With ever-increasing shipping activities, prevention of environmental pollution in the port areas is a long-felt requirement.

The Ports are run by two separate bodies called Chittagong Port Authority and Mongla Port Authority under the administrative control of the Ministry of Shipping. The Authorities are responsible for taking appropriate measures to prevent environmental pollution within the port limits. To meet this requirement The Port Authorities have initiated actions for the prevention and control of marine pollution from ships to preserve the environment in general and marine environment in particular.

The potential for large oil spills in or around the port areas and their impact on the marine environment was discussed in Chapter 2. The ports have drawn up contingency plans for combating accidental pollution at sea.

3.5.2.6 Department of Coast Guard

The existing organisations for the protection of life and property at sea and for the enforcement of the country's jurisdiction in its maritime zone proved to be inadequate. Therefore Bangladesh felt the urgent need to set up an independent Coast Guard organisation to undertake non-military maritime duties. With a view to ensuring safety of the country's territorial waters and maritime zones and protecting national interests in those zones an act called 'The Coast Guard Act, 1994' was brought into force in December 1994. According to the provisions of the Act the Department of Coast Guard was established in the following year under the Ministry of Home Affairs.

The duties assigned to the Coast Guard under the Coast Guard Act aim at protecting the maritime and other national interests of Bangladesh in the maritime zones of the country. Under Section 7(e) of the Act, the Coast Guard is entrusted with the responsibility to preserve and protect marine environment through surveillance of Bangladesh waters and taking appropriate measures for prevention and control of marine pollution. The Coast Guard is also the principal agency for the enforcement of any warrant or order issued by a court or any other authority with regard to a vessel or a person on board the vessel staying in the territorial waters of Bangladesh.

3.6 EXISTING LEGISLATION FOR PROTECTION OF COASTAL AND MARINE ENVIRONMENT

Protection of environment, especially with regard to marine and coastal ecology and maritime industry, is a matter of immense complexity. National economic interests, international characteristics of the shipping trade, the obligation to respect the global interest in the protection and preservation of the marine environment – all result into

the need for developing and adopting solid legal instruments, both at international and national levels.

Bangladesh is yet to have any comprehensive legislation for prevention of marine pollution or protection of marine environment in particular. However, the principal environmental and maritime legislation that are related to marine environmental protection in some way or other are as follows:

3.6.1 The Territorial Waters and Maritime Zones Act, 1974

This Act was laid down to provide for the declaration of the territorial waters and maritime zones and other maritime jurisdictions of the country. Under this Act the government was empowered to determine the limits of the territorial waters and the baseline from which the limits of the territorial sea shall be measured. The Act also enables the government to declare the limits of contiguous zone, exclusive economic zone, conservation zones and continental shelf, and makes provisions for the management of maritime activities within the territorial waters and maritime zones.

Section 8 of the Act empowers the government to take appropriate measures for preventing and controlling marine pollution and preserving the ecological balance in the marine environment.

Under the Territorial Waters Act a set of rules called the 'Territorial Waters and Maritime Zones Rules, 1977' was laid down for regulating the shipping and seabed activities together with conducts of persons or vessels within the territorial sea and other maritime zones and for the imposition of penalties for breach of such rules. The Rules do not provide for anything specific for protection and control of marine pollution and preservation of ecological balance.

3.6.2 Port Authority Ordinances and Port Act

Neither the Chittagong Port Authority Ordinance, 1976 nor the Mongla Port Authority Ordinance, 1976 or the Mongla Port Authority (Amendment) Ordinance, 1982/1987 contain any laws or rules for prevention of marine pollution.

The Port Act of 1908 provides for imposing penalty for throwing rubbish or discharge of oil or oily water. The maximum penalty is Rs. 500/- (USD 11 at the current rate) and in addition to that the polluting person or vessel shall pay any reasonable expenses for clean-up.

A proposed amendment of Section 41 (A) of the Port Act will provide for higher penalty for pollution which is expected to amount to Taka 100,000/- (USD 2200). Also the responsible person or vessel shall be liable to pay the clean-up cost.

3.6.3 The Bangladesh Merchant Shipping Ordinance, 1983

The Ordinance does not contain any specific provisions for prevention of marine pollution. But it provides for claiming compensations for any damage done to the marine environment in Bangladesh waters by a ship.

3.6.4 Bangladesh Environment Conservation Act, 1995

The Bangladesh Environment Conservation Act, 1995 was enacted with a view to providing for conservation and improvement of environmental quality, and controlling and mitigating pollution of the environment. Under this Act the Director General of Department of Environment is empowered to undertake all activities for conservation and enhancing the quality of environment and control, abatement and mitigation of pollution. However, the Act does not make any specific reference to

pollution of marine environment or pollution arising out of shipping activities. The penalty for violating the Act is a maximum of five years of imprisonment or a fine of a maximum of Taka one hundred thousand, or both.

3.6.5 Draft 'Protection of the Marine Environment of Bangladesh Act'

The Department of Shipping prepared this draft legislation to exclusively provide for prevention, control and response in respect of marine pollution in Bangladesh waters. The Act takes into account most of the IMO conventions and makes adequate provisions for penalties, clean-up cost and compensation.

Once passed and enacted, this Act is supposed to extend over the Bangladesh waters and shall include all cases of pollution at sea where Bangladesh waters are likely to be threatened with pollution and to all ships and persons associated with ships within Bangladesh waters or ships involved in act of pollution where Bangladesh waters may be threatened.

The draft Act needs extensive review before it is passed. To this end, inter-ministerial consultations on it has been in progress for the past few years.

3.7 INTERNATIONAL CONVENTIONS

The International Maritime Organisation, The UN specialised agency responsible for maritime affairs, has adopted as many as 40 conventions, protocols and codes covering many aspects of maritime safety and protection of marine environment. However, many of these instruments are mainly for the safety of ships rather than addressing oil pollution in particular.

3.7.1 IMO CONVENTIONS FOR PREVENTING OIL POLLUTION

The most important IMO conventions that are directly related to the prevention of oil pollution at sea and liability and compensation for oil spills are as follows:

- International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), 1954;
- Convention on the Prevention of Maritime Pollution by Dumping of Wastes and Other Matter, 1972 (The London Convention);
- The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78);
- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION Convention), 1969;
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990;
- International Convention on Civil Liability for Oil Pollution Damage, 1969 (Civil Liability Convention);
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (Fund Convention).

3.7.2 RELEVANT CONVENTIONS RATIFIED BY BANGLADESH

Among the above IMO conventions on the prevention of marine pollution, Bangladesh is a party to the following two only:

- a. International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended in 1962, 1969 and 1971 (OILPOL, 1954)

The OILPOL Convention, the first multilateral instrument to be concluded with the prime objective of protecting the environment, entered into force in the year 1958. It

is concerned with the agreement between the contracting governments to prevent pollution of the sea by oil discharged from ships. It deals only with operational pollution from merchant ships and contains the requirements for the operation of ships and their equipment. Subsequent amendments were made to the Convention in 1962, 1969 and 1971 to introduce more stringent regulations.

The OILPOL Convention and its amendments were superseded by MARPOL 73/78. However, it continues to remain valid for Bangladesh as the country has not ratified the MARPOL Convention.

b. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION Convention), 1969

The INTERVENTION Convention clarifies and establishes the rights of a coastal state to take necessary measures on the high seas to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil following a maritime casualty outside its territorial waters.

The Convention was ratified by a large number of countries including Bangladesh and it came into force in 1975. It was modified by the Protocol of 1973 and amendments in 1991 and 1996.

3.8 NATIONAL OIL SPILL RESPONSE ARRANGEMENT

3.8.1 DESIGNATED AUTHORITIES

The Ministry of Environment and Forest is the lead ministry with regard to environmental protection in Bangladesh. But its major role is to plan, review and

monitor environmental initiatives and to ensure that environmental concerns are properly integrated into the national development process. The functions of the Department of Environment, the main technical arm of the Ministry of Environment and Forest, is more directly related to the practical aspects of environmental management like assessment, monitoring, controlling and enforcement. The protection of marine environment, however, has traditionally been considered to be a concern of the Maritime Administration in particular.

The Department of Shipping, the apex executive agency under the Ministry of Shipping, is entrusted with the responsibility to look after matters pertaining to marine environment pollution prevention together with its other regulatory functions. It is supposed to take necessary measures in order to protect the marine and coastal waterways from environmental degradation caused by the operation of vessels, maritime casualties, oil spills etc, and to minimise their harmful impact on the environment of Bangladesh waters. The Director General, Department of Shipping has got the power of intervention on the high seas and is responsible for planning and co-ordinating response activities to control pollution from discharge or spillage of oil or other harmful substances into the marine environment.

3.8.2 CONTINGENCY PLANS

3.8.2.1 National Contingency Plan

So far as it could be ascertained, Bangladesh does not have any national policy for controlling or combating oil spills or other marine environmental emergencies, and no national contingency plan is in place at the moment. It appears that several contingency plans were drafted in the past, but none of them was finalised or implemented.

However, it is understood that there is a national committee for coastal and marine disaster prevention headed by the Ministry of Shipping. The committee is responsible for making arrangements for mobilising all available resources in order to cope with maritime casualties and for planning and co-ordinating effective response. There are two regional committees based in Chittagong and Mongla which are supposed to operate from the port areas. Besides the Maritime Administration, the regional committees include representatives from agencies like Coast Radio Station, Navy, Air Force, Port Authorities etc.

3.8.2.2 Local Contingency Plans

The Ports of Chittagong and Mongla had long been without any documented disaster management plans of their own. Recently two similar oil spill contingency plans were prepared for these two ports. The plans cover only the areas within the statutory limits of the ports and include a list of agencies who are expected to participate in the implementation process. Duties and responsibilities of different agencies and the Port Authorities, and actions to be taken by them are briefly mentioned in the plans. A short list of equipment to be kept on stand-by is also included.

The plans have still remained untried. Minor oil spills are combated at the ports on an *ad hoc* basis.

Chapter 4

A GLARING INSTANCE: THE CASE OF *MT FILOTHEI*

4.1 THE INCIDENT

At daybreak on Tuesday, 26 September 1989 the leading newspapers of Bangladesh – usually replete with news items on disasters, accidents and violence – shocked millions of people of the country with the news of a kind of catastrophe hitherto unknown to most of them.

It was about a case of massive oil pollution in the territorial sea. The first few lines of the report published in the *Daily Ittefaq*, the newspaper with the highest circulation in the country, translates like this:

A vast area of Kutubdia marine zone has fallen victim to pollution due to continuous oil spillage from a ship in the Bay of Bengal. The name of the ship responsible for this spillage is *MT Filothei*. The vessel, laden with 93 thousand tons of crude oil which it was carrying for the Eastern Refinery, anchored in the deep sea in Kutubdia on Sunday last. The oil pollution in the sea was detected around noon on the same day when two ships of Bangladesh Shipping Corporation approached the tanker for lighterage.

The 22-year old 54,323-GRT Cypriot vessel MT Filothei loaded 93,588.6 metric tons of crude oil at Jebeldhana for Eastern Refinery Ltd (ERL), Chittagong, Bangladesh. It arrived at Kutubdia anchorage, 18 nautical miles from Cox's Bazar and 13 nautical miles from Maheshkhali. Immediately after that *MV Banglar Sourabh*, a ship belonging to Bangladesh Shipping Corporation (BSC), arrived at the spot to be alongside the mother vessel to take load. Present on board the Banglar Sourabh were representatives from ERL and BSC, and also draft surveyors. They all found crude oil leaking out of MT Filothei. A thick layer of oil and a long stretch of oil slick were visible in the sea on the starboard side of the vessel. Later the crew of the second lighter ship *MV Banglar Jyoti* also noticed the spill. Both the ships had the sighting recorded on their logbooks.

On behalf of the receivers the ERL representative served a letter of protest to the Master of MT Filothei and held him responsible for the oil spill and for shortage of cargo due to spill.

4.2 FLURRY OF ACTIVITIES

The report published in the newspapers were quick to draw the attention of both Department of Environment (DOE) and Department of Shipping (DOS). The Ministries controlling these agencies, namely, Ministry of Environment and Forest (MOE) and Ministry of Shipping (MOS) also became active and started providing instruction and guidance.

4.2.1 Department of Environment

On the same day that the newspaper reports were published the DOE sent a letter to DOS expressing the concerns of the Ministry of Environment and Forest over the

spill and requesting information on possible legal action to be taken by DOS against the polluting ship. In its letter DOE also mentioned that there was no national legislation for prevention of marine pollution, and in the absence of any appropriate regulations in the 'Environment Pollution Control Ordinance, 1977' the DOE was not in a position to take any actions in this regard.

On the 28 September 1989 the Deputy Director, Department of Environment, Chittagong Division, accompanied by a chemist, visited the polluting vessel in order to conduct on-the-spot investigations. On his way to the vessel he found patches of oil still floating on the sea at different places. He talked to the Master of the ship and collected samples of the oil. It was ascertained that the oil spill had actually started before the ship anchored at Kutubdia, and at the anchorage the spill continued for 29 hours – from 1300 hours on 24 September to 1800 hours on 25 September.

Later the Deputy Director consulted the Public Prosecutor and on the basis of the latter's advice he served a notice on 30 September 1989 to the Master MT Filothei under Section 7 of the Environment Pollution Control Ordinance, 1977 asking him to adopt measures within seven days for cleaning the coastal area of Cox's Bazar and Chittagong to free it from oil pollution caused by the spill from his vessel. It was also mentioned that in case of his failure to comply with the requirements of the notice, penal action would be initiated against him. Copy of this notice, marked as 'most immediate', were sent by special messenger to Commodore Commanding, BNS Isa Khan (Navy Ship); Collector of Customs, Chittagong; Managing Director, Bangladesh Shipping Corporation; Member (Operation), Chittagong Port Authority; Principal Officer, Mercantile Marine Department and others. All the related agencies among these were requested not to issue clearance in favour of MT Filothei until clean-up of the spilled oil had been done by her.

The DOE, in its efforts to assess the magnitude of the pollution damage, requested the Department of Marine Fisheries and Department of Coastal Forests to provide information on the immediate and consequential harms done to the fisheries and forests resources by the oil spill.

In the second week of October 1989 the Department of Environment, being instructed by the Minister for Environment, contacted the Resident Representative of UNDP in Dhaka (who would also act as the representative of UNEP and IMO) and requested for providing assistance for surveying and quantify the extent of damage caused by the spill to resources and environment and for suggesting remedial measures.

4.2.2 Department of Shipping

On 26 September 1989 the Director General, Department of Shipping instructed the Principal Officer, Mercantile Marine Department, Chittagong to investigate into the oil spill incident. Accordingly, investigations were carried out on the next day by an Enquiry Committee comprising the Principal Officer and representatives of ERL and BSC, and the occurrence of the incident was confirmed. The Committee made a thorough inspection of the vessel and arrived at the assumption that the alleged spill was due to the leakage of a centre tank. The Master was advised to check the tanks and take measures to remove the faults. The Committee also observed that the Master should be held responsible for the spill and be penalised.

4.2.3 Ministry of Environment and Forest

The Ministry of Environment and Forest took up the matter as soon as the incident came to its notice. It instructed the DOE to find ways to cope with the situation and also ordered immediate investigation into the spill incident.

The Minister for Environment and Forest, accompanied by the Secretary of the Ministry and the Director of the DOE, visited Chittagong and hold an urgent meeting with the Chittagong Divisional Environmental Advisory Committee on 4 October 1989 with a view to assessing the overall situation. After discussion with representatives from a wide range of agencies and organisations the Minister directed the Advisory Committee headed by the Chittagong Divisional Commissioner to investigate into the incident and assess the environmental impacts caused by the oil spill and to send a report to the Ministry as soon as possible.

The Committee made the following observations:

- a. It was true and correct that an oil spill from MT Filothei occurred during 24 and 25 September 1989 and the total amount of spilled oil was calculated to be 2,247.70 long tonnes;
- b. As a result of the spillage substantial damage of the aquatic resources including fishery in the coastal belt of Chittagong and Cox's Bazar was detected.

The Committee recommended that it was of urgent necessity to constitute an expert committee to survey and quantify the extent of damage caused by the oil pollution to fisheries, forests and other coastal resources and to the environment in general.

Later the Minister had a meeting with the Resident Representative of UNDP in Dhaka and requested him to extend his co-operation for the assessment of the extent of environmental damages done by the oil spill and for adopting remedial measures.

The Ministry of Environment and Forest contacted the International Oil Pollution Compensation Fund to inquire about the possibilities of receiving compensation for

the oil pollution damage done to the coastal area of Bangladesh. In reply the IOPC Fund in its letter of 21 November 1989 clearly mentioned that as the Civil Liability Convention, 1969 and Fund Convention, 1971 were not ratified by the Government of Bangladesh, no compensation was available from IOPC Fund for the pollution damage resulting from the oil spill that occurred in the coastal waters of Bangladesh. IOPC Fund requested immediate ratification of these two conventions by Bangladesh Government in order for it to be eligible for receiving compensation for such oil pollution damage.

4.2.4 The Agencies that Ignored the Spill

The newspaper reports on the oil spill also mentioned the possibilities of its severe negative impacts on the fisheries and forest resources. Therefore it would have been only natural on the part of the Department of Fisheries and the Department of Forestry to realise the gravity of the situation and take immediate steps to assess the extent of threat posed by the oil spill and initiate necessary legal actions against the polluting ship under the country's existing rules. But oddly enough, these two agencies kept almost inactive. Apart from attending meetings of Chittagong Divisional Environmental Advisory Committee, they were not found to be doing much on their on.

4.3 THE QUICK CLEARANCE AND THE SHIP'S DEPARTURE

While a notice had been served to MT Filothei and multifarious activities had begun with a view to assessing the effects of the oil pollution and the extent of damage done by it, the country was stunned by another report published in the *Daily Ittefaq* on 4 October 1989: 'MT Filothei gets clearance from 6 agencies in a single day and disappears.'

The newspaper explained that a foreign ship was normally required to obtain clearance from a total of six agencies including the Mercantile Marine Department. The local agent of the ship procured clearance from all of these six agencies in a single day on 30 September 1989 which was an unprecedented event.

Investigations later revealed that on 30 September 1989 'no objection certificates' (NOCs) were issued in favour of MT Filothei by Mercantile Marine Department, Shipping Master, Commissioner of Taxes, Chittagong Port Authority and Cosmos Shipping Industries Limited (the ship's local agent), and on the basis of those certificates the Customs Authority gave the final clearance to the vessel on the same day for leaving the Bangladesh territorial waters. The ship left the anchorage on 2 October 1989 before daybreak (at 4:00 am).

The Principal Officer, Mercantile Marine Department claimed that copy of the notice issued to MT Filothei by the Department of Environment reached him on 1 October 1989 – after he had issued 'no objection certificate' in favour of the vessel's departure. He said he immediately tried to contact the Director General, Department of Shipping in Dhaka over phone to seek his advice on the matter, but failed. He talked to the Director General next day and according to his instructions cancelled the NOC. But meanwhile, the polluting vessel had already left the anchorage.

After the clearance was cancelled on 2 October 1989 frenzied attempts were made to stop the vessel. The DOS requested Bangladesh Navy and Bangladesh Shipping Company to take necessary steps in order to prevent the ship from going away. The Commissioner of Chittagong Division was requested to send a patrol boat to intercept the vessel. Attempts were made to contact her by BSC, Port Control and Coast Radio; but MT Filothei did not receive or accept any VHF or radio message. All the efforts met with failure.

It may be mentioned that Bangladesh Coast Guard was not yet in existence. Therefore, no regular regime was in place in 1989 for surveillance in order to detect pollution of territorial waters from ships or for taking immediate direct actions against the polluting ships or for pursuing a fleeing vessel. Such measures would generally be taken by Bangladesh Navy if requested by the appropriate authority.

4.4 INVESTIGATIONS DONE BY CHITTAGONG DIVISIONAL ENVIRONMENTAL ADVISORY COMMITTEE

According to the directive given by the Minister for Environment and Forest, the Chittagong Divisional Environmental Advisory Committee carried out elaborate investigations with a view to a. verifying if there really was a oil spill from the MT Filothei, b. determining the extent of damage done to the flora and fauna by the oil pollution and c. identifying the person/persons responsible for the failure to prevent the polluting ship from going away.

The Advisory Committee sent an observation team to the area where the oil spill reportedly took place and collected written statements from all the concerned individuals and agencies. After detailed analysis of the information it accumulated the Committee made the following observations:

- a. A total of 2,247.70 long tonnes of oil spilled from MT Filothei within the territorial waters of Bangladesh;
- b. The oil spill caused extensive damage to the flora and fauna including fishery resources in the coastal region of Chittagong and Cox's Bazar;

- c. The polluting vessel could not be detained due to the negligence on the part of Principal Officer, Marine Mercantile Department, Chittagong; Collector, Customs House, Chittagong and the local officials of Department of Fisheries and Department of Forestry.

The Advisory Committee also recommended that the government should immediately constitute an expert committee with a view to assessing the extent of damage caused by the oil spill to aquatic and coastal resources and to combating pollution.

4.5 THE EXPERT COMMITTEE: THE GRANDIOSE EFFORT THAT ENDED IN DESPAIR

According to the recommendations made by the Chittagong Divisional Environmental Advisory Committee, an Expert Committee was constituted by the Ministry of Environment and Forest on 17 October 1989 for assessing the extent of damage caused to the fishery resources and to flora and fauna in the coastal area of Chittagong and Cox's Bazar due to environmental pollution resulting from the oil spill from MT Filothei. The Committee comprised of experts from a wide range of agencies and institutions, eg, Department of Environment, Mercantile Marine Department, Bangladesh Fisheries Development Corporation, Department of Forestry, Institute of Oceanography of Chittagong University, Eastern Refinery Limited, Bangladesh Navy etc. At a later stage more experts from other organisations were co-opted onto the Committee. The Commissioner, Chittagong Division was appointed Chairman of the Expert Committee.

The Expert Committee formed 8 (eight) Technical Sub-Committees comprising experts from different scientific disciplines. Members of all these Sub-Committees

visited the affected areas in the first week of November 1989 – more than a month after the oil spill took place. They surveyed all the affected sea areas and coastal belt, interviewed fishermen and local inhabitants, and collected a wide range of samples which they started analysing in different laboratories.

The Convenors of the Sub-Committees observed that the oil spill was thought to pose a long-term damage to the environment and therefore it was essential to carry out step-by-step scientific investigations for at least two years for determining the overall nature and extent of damage caused by the oil pollution. They requested the government to provide the Expert Committee with necessary technical assistance and logistical and financial support.

In its interim report submitted to the Ministry of Environment and Forest the Expert Committee stated the following environmental damage resulted from the oil spill:

- a. Towards the end of September 1989 vast film of oil was found floating in an wide sea area near the Cox's Bazar and Maheshkhali coastal regions which was thought to pose severe threat to aquatic animal and plant life;
- b. The spill caused widespread damage to fisheries resources. Large numbers of dead fish (especially *hilsa*) were found floating in many areas and a sharp and abrupt drop in catch was experienced by the fishermen. Fouling of fish spawning areas also took place which threatened to have serious consequences for breeding patterns.
- c. Coastal shrimp culture dependent on seawater suffered extensive damage manifested in a very poor yield that followed;

- d. The oil spill also seriously hit the seabirds. It caused mass deaths of seagulls which were found floating in the sea;
- e. Gross fouling of beaches and seashores by oil was detected. Vast shorelines including the banks of the river Karnaphuli were seriously affected where severe coating of black oil was found on grasslands and plants;
- f. The oil spill had adverse effects on part of the coastal mangrove forests threatening disruption of the ecological balance of the coastal area.

For a couple of months the Expert Committee carried on with its scientific investigations with remarkable enthusiasm. The members of the Technical Sub-committees continued with the laboratory analysis of the samples they collected from the affected area. They were badly in need of a financial grant to support activities related to the collection, preservation and analysis of the samples, and also some transport facilities for travelling between the different laboratories involved. Through the Chairman of the Expert Committee they made an official request to the Ministry of Environment and Forest to provide them with necessary funds and two vehicles. But no necessary steps were taken by the government in this regard. With zealous determination the Sub-committee members started spending money out of their own pockets to meet the expenses and went on hoping that their requirements would soon be met.

The Sub-committees somehow reached the halfway point with their experiments and analysis, and there was still no sign of receiving any financial or logistical support from the government. Repeated requests made by the Expert Committee met with assurances of help and nothing else. Finally, all the constraints and adversities brought the efforts of the Expert Committee to a grinding halt.

Chapter 5

A CLOSER LOOK AT THE FILOTHEI SPILL

The case of MT Filothei demonstrated the fact that a major oil spill can take place any time within the country's territorial waters. At the same time, the state of affairs relating to making an effective response to a catastrophe like this was thrown into stark relief by the incident and the activities that followed it.

A closer look at the post-spill situation, the efforts made by different organisations and agencies, and the results achieved thereby will enable one to assess the degree of success or failure to deal with the pollution incident and also provide a clear insight into the problems that existed and still exist in this regard.

5.1 DETECTION OF THE SPILL

The oil spill from MT Filothei was first detected after the ship arrived at Kutubdia anchorage. The people on board the lighter vessels MV Banglar Sourabh found crude oil leaking out of the 54,323-GRT tanker with a long stretch of oil slick behind it. Investigations later revealed that the spill had actually continued for long 29 hours before the ship anchored at Kutubdia. In the absence of any regular surveillance system for monitoring the territorial waters the spill continued unnoticed for such a long period of time.

5.2 EMERGENCY RESPONSE

An emergency response to a marine environmental pollution incident usually comprises a series of successive activities. It can be examined how successfully these activities were carried out in the case of MT Filothei oil spill.

a. Identify and secure the source of the spill

The leakage of crude oil from MT Filothei was found easily detectable as it was virtually sitting in a pool of oil and no other vessels were there in the vicinity. But it was not readily apparent where the source of the spill was located. And in actual fact, it was never found out either.

The ERL representative present on board the lighter vessel served a letter of protest to the Master of MT Filothei as soon as the spill was detected on 24 September 1989 at about 1430 hours. But no immediate inspection was carried out by a competent authority for identifying the source of the spill. The Principal Officer of the Mercantile Marine Department, Chittagong went on board the polluting ship at 1630 hours on 27 September 1989 – long after the spill had stopped – and made a ‘thorough inspection’ of the vessel. But ‘nothing abnormal was found’ by him. In his report he concluded: ‘... From the daily ullage report of the tanks, it appeared that the wing tanks of the vessel were satisfactory. There may be problems with the centre tanks. So, the Master of MT Filothei was advised to check the tanks to find the leakage. ... The alleged spill could be also due to shipside valve leakage and pumping out of oil and oily bilges.’

The Master of the vessel informed that the spill was ‘due to the oil trapped in the sea chest which came out during the astern movement of the engine in Kutubdia’ – which was obviously not the case.

Once a marine Environmental emergency arises, the most important step to be taken is to secure the source of the spill. But as no immediate inspection of MT Filothei was done and the source of the spill could not be located, securing the oil spill was out of the question. It was reported that the spill continued till 1800 hours on 25 September 1989. The eventual stopping was perhaps due to the fact that there was no oil left for escaping after the lightering was over.

b. Eliminate the potential for a subsequent spill

The unloading of the crude oil aboard the MT Filothei to the lightering vessels automatically eliminated the possibility of a subsequent spill. However, after the inspection of the vessel was done by the Principal Officer, Mercantile Marine Department, the Master of MT Filothei was advised to check the tanks in order to find out the cause of the spill and remove the faults. But no follow-up actions were known to had been taken afterwards. The vessel left Bangladesh waters without undergoing any further investigations.

c. Monitor and Track the Spill

A spill rarely remains confined within a specific sea area. As soon as it enters the water the spilled oil starts moving under the influence of prevailing current and wind and with respect to the topography of the area of the incident. Therefore monitoring and tracking an oil spill is indispensable for mounting an effective response operation and for assessing the extent of damage that may result from the spill. but no immediate steps in this regard were taken after the Filothei oil spill. Consequently, no definite information could be gathered about the movement of the spilled oil. However, at a later stage investigations carried out by the Deputy Director, Department of Environment and the Expert Committee members confirmed that the oil got scattered over a vast area in a rather short period of time.

d. Contain Spill and Protect Resources at Risk

As the next step of the response activity a boom is to be placed around the moving edges of the spill in order to prevent its transportation to places where it may cause damage to resources. This kind of action is not possible to initiate without adequate advance plans and preparations. Obviously, attempts at containing the spill were not even thought of after the Filothei spill.

e. Recover the Spill

Recovery of a spill is an extremely difficult task to accomplish even with prior preparations and planning. In this regard even the best efforts often do not provide effective results. Sometimes recovery operations are supplemented with or even substituted with other response actions like in-situ burning of the oil or application of dispersants to break apart an oil slick into small individual particles for accelerating the process of natural degradation. However, no such operations were undertaken after the Filothei spill which were well beyond the capacity of the concerned agencies in Bangladesh.

f. Clean-up Contaminated Areas

Although most of the oil spilled from MT Filothei apparently spread out into the open sea, a large amount also made its way to the shoreline. Apart from some sections of beaches, a vast area on the west bank of the river Karnaphuli was extensively covered with crude oil. Smothered with oil, the grass and other small plants and shrubs in the area turned absolutely black. But cleaning up of those areas were not simply considered a priority and the problem was left for the nature to take care of.

Most of the emergency response activities mentioned above are actually things to be undertaken within the scope of some sort of contingency plan which is put in place with all necessary provisions with a view to combating marine environmental emergencies. In the absence of any such plan it was only natural that no substantial measures were taken so far as 'emergency response' was concerned.

5.3 ASSESSMENT OF DAMAGE

No immediate efforts were known to have been made after the Filothei spill in order to assess the extent of damage done by it to the marine or coastal resources. The spilled oil was quick to be broken into patches which scattered over a large area by the action of the wind and wave thus making it all the more difficult to follow its impact on the environment and ecology. Tell-tale signs of widespread damage to flora and fauna were however discovered later at many places. Harmful effects like fish-kill, sharp fall in fish-catch, low yield from coastal shrimp-farms, death of seagulls, smothering of seashores and parts of coastal mangrove forests etc were reported from different sources. Far-reaching adverse effects on environment were also feared by many.

But the first concrete efforts towards finding out the extent of damage were not made until more than a month later. The Expert Committee formed by the Ministry of Environment and Forest conducted its first on-the-spot survey and investigation on 26 October 1989. Different samples from land and sea were collected by scientists even later – in the first week of November. This was definitely not going to facilitate the findings as much as it could if the samples were collected earlier.

The scientists on the Expert Committee came up with a plan to carry out investigations for a period of minimum two years to evaluate the nature and extent of damage caused by the oil pollution. They argued that any scientific investigation in

the aquatic medium in particular needed to be conducted over a cycle of 12 months. Each of the three major seasons in Bangladesh – pre-monsoon, monsoon and post-monsoon – has its own characteristics which make the nature change constantly. In the backdrop of this changing natural scenario scientific data was to be collected over a period of 12 months for it to be compared with the data collected in the next 12 months. Especially the process of determining the productivity of the affected area was supposed to involve experiments extending over a considerably long period of time.

In order to carry out all the required investigations and experiments the scientists on the various Technical Sub-committees were in need of some concrete support from the government in the form of laboratory facilities, transports, other logistics, cash grants etc. But apart from some laboratory facilities, the Ministry of Environment and Forest did not or could not make these available to the scientists. Despite repeated requests from the Expert Committee the Ministry maintained a somewhat mysterious silence in this respect. For months the scientists did their utmost to carry on with the investigations and experiments, but at last they gave in. Virtually that was the end of the government's ambitious steps to determine the nature and amount of damage which resulted from the MT Filothei oil spill. As a result, the country was never able to learn about the losses it suffered because of the spill.

5.4 RESTORATION OF DAMAGED RESOURCES

The first step in the restoration phase of a response is of course clean-up operation. But it has already been mentioned that no clean-up operation was carried out after the Filothei spill. Although no concrete assessment of the damage was done, the impact of the spill on the environment and ecology was undoubtedly quite strong. Therefore, some activities were certainly necessary to bring the damage resources or areas back to the conditions which existed before the accident took place. For

example, there was extensive fish-kill in and around the area of accident, and it was perhaps essential to keep fishing activities suspended for some time in order to allow the stocks of affected species to come back to normal.

However, without proper assessment of the damages done by the effects of the spill and in the absence of necessary statistics it was not really possible for the agencies to undertake any restoration activities even if they wanted to. So again it was left to mother nature to restore the damaged resources to their normal state. But nobody knows how long it took her to do the job.

5.5 ACTION AGAINST POLLUTING VESSEL

As mentioned earlier, MT Filothei managed to get its clearance in a single day and immediately left Bangladesh waters. Although the incident of oil spill from the vessel and consequential damage to marine and coastal resources were established beyond any doubt or controversy, absolutely no action could be taken against it.

Following the detection of the incident the ERI representative on board the lightering vessel MV Banglar Sourabh served a letter of protest to the Master of MT Filothei on behalf of the receivers of the crude oil the ship carried and held him responsible for the cause of the spill. But the first and the only attempt to initiate proper legal action against the vessel was made by the Department of Environment. At first DOE did not find itself in a position to take any legal actions against the polluting vessel as the country did not have any national legislation for prevention of marine pollution and the regulations in the 'Environment Pollution Control Ordinance, 1977' were not adequate for the purpose. But later on in consultation with the Public Prosecutor it served a notice to the Master of MT Filothei under Section 7 of the EPC Ordinance, 1977 asking him to adopt measures for cleaning the coastal areas of Cox's Bazar and Chittagong which were polluted by the oil spill from his vessel. It was also

mentioned that failure to comply with this requirement would result into penal action against the Master. Copy of the notice were forwarded to different agencies including the ones responsible for issuing no objection certificates in favour of the vessel.

According to Customs Act the Collector of Customs was the final authority to give clearance to a ship for leaving the port on the basis of NOCs issued by five other agencies, The oil spill incident by MT Filothei was not officially brought to the notice of the Customs Department until 30 September 1989. However, the notice served to the vessels by DOE reached the Collector of Customs on 1 October 1989. But he did not possibly take the matter seriously enough. Despite DOE's request for not issuing clearance to the ship the Customs Department did not take any action to stop the vessel to which it had issued clearance on the previous day. MT Filothei left the Kutubdia anchorage after 18 more hours and it was absolutely possible to stop her if only the Collector of Customs had acted swiftly.

The role played by the Principal Officer, Mercantile Marine Department was even more curious. As instructions given by the Director General, Department of Shipping he led an Enquiry Committee to investigate into the oil spill incident. In his report submitted to the Director General he mentioned that he had informed the Master of the polluting vessel that he (the Master) would be held responsible for the spill and would be penalised accordingly. But on 30 September 1989 the Principal Officer himself issued a NOC in favour of the vessel to facilitate its early departure from Bangladesh. Although it was not likely that he did not realise the gravity of the situation, he issued the NOC without waiting for the Department of Shipping to give its consent.

The Principal Officer, Mercantile Marine Department later explained that MT Filothei was chartered by Bangladesh Shipping Corporation on the basis of a

demurrage of USD 18,800 per day and he was worried about the fact that detention of the ship could have resulted into a claim for a large amount of money. He also argued that no provisions of the Merchant Shipping Ordinance had anything to do with oil pollution from ships in the Bangladesh waters. He added that the sole duty of the Mercantile Marine Department was to examine the certificates of the vessel and issue NOC on the basis of that. As no faults were found with the certificates of MT Filothei, an NOC was issued in favour of it on 30 September 1989. He received copy of DOE's notice late on 1 October 1989 and cancelled the NOC next day only after he was able to contact the Director General, Department of Shipping and got his permission to do so. It was not, however, clear to many as to why he needed permission from the Director General to cancel the NOC which he found himself competent enough to issue it in the first place without the DG's approval.

It may be mentioned that MT Filothei was the only vessel which managed to get its clearance in a matter of hours – five NOCs and the final clearance all in a matter of a single day. The same procedure took at least two days for each of the six other ships that obtained their clearance from the same authorities in the same month. Although no evidence was established, the whole business could not but stink of foul play.

5.6 COMPENSATION FOR OIL POLLUTION

Bangladesh suffered heavy losses of its marine and coastal resources because of the MT Filothei oil spill, but it received absolutely nothing in compensation from any quarters. The attempt to detain and penalise the polluting ship by Department of Environment turned into a virtual mockery when the vessel was allowed to obtain its clearance to leave Bangladesh waters immediately after it was served a notice by DOE. Then just before the ship disappeared without any difficulty, the Principal Officer, Mercantile Marine Department, in a faint attempt to cling to the possibility of being in a position to claim compensatory damages some time in the future, issued

a letter to the Master and the local agent of the ship that they would be held liable to full compensation for any damage caused by the environmental pollution resulting from the oil spill from MT Filothei.

But, as discussed earlier in this chapter, proper assessment of the damage caused by the effects of the spill could never be finished by the scientists and the country could not come up with any concrete statistics on the basis of which claims for compensation could be filed.

As for compensation from international sources, Bangladesh was not simply eligible to receive any as it was not a party to the key international conventions that governed the liability and compensation for oil spills from laden tankers – the Civil Liability Convention, 1969 and Fund Convention, 1971. The IOPC Fund, while approached by Bangladesh Ministry of Environment and Forest for possible assistance, advised the government to take immediate steps to ratify these two conventions in order to be eligible for obtaining such compensation in the future.

Chapter 6

MAJOR AREAS OF CONCERN AND TASKS AHEAD

The whole attempt to assess Bangladesh's performance with regard to the Filothei spill episode could really be boiled down into a single statement: the country was not at all prepared for handling an oil spill or a marine environmental emergency in general.

The catastrophe took the country by surprise and it could not succeed in mounting an effective response to the incident. In fact, not to put too fine a point on it, the role Bangladesh played was on the whole little more than that of a helpless spectator.

Of course the authorities concerned seemed to take the matter very seriously and initiated, albeit not quickly enough in all respects, a lot of efforts in various directions. The flurry of activities that ensued was rather impressive in the beginning, but all the efforts somehow died away with the passage of time.

The closer look at the Filothei oil spill incident in the previous chapter points up many of the problems and difficulties that hindered the country from effectively addressing the important issues with regard to emergency response to the incident. Curiously enough, although its now about a decade since the Filothei incident, apart from one or two major steps the overall situation still remains pretty much the same.

In this chapter attempts will be made to assess the shortcomings and weaknesses of the existing marine environment protection framework in Bangladesh and to identify the essential areas that should be taken care of by Bangladesh in order to be able to deal with accidental oil pollution incidents in particular and marine environmental emergencies in general.

6.1 LEGISLATION

Implementation of environmental laws and regulations is regarded worldwide as one of the most effective methods of tackling major problems in the process of environmental management. Without a solid legal basis any pollution control measure is always under the threat of being rendered null and void.

6.1.1 EXISTING LAWS AND REGULATIONS IN THE MARITIME SECTOR

As mentioned earlier, Bangladesh does not have any comprehensive legislation for the preservation of marine environment or prevention of marine pollution. Some of the provisions of the existing rules in maritime sector make provisions only for the regulation of acts of wilful and serious marine pollution, but do not provide for sufficiently large penalties. The penalties provided for under these rules cannot be considered a sufficient deterrent to prevent vessels from discharging oil or other pollutants into the marine environment. On the other hand, there are no specific provisions in these rules regarding clean-up or compensation for marine pollution resulting from accidental spills.

6.1.2 BANGLADESH ENVIRONMENT CONSERVATION ACT, 1995

The only legislation that exclusively deal with protection and improvement of environmental quality, and controlling and mitigating pollution of the environment is the 'Bangladesh Environment Conservation Act, 1995'. It deals with all types of pollution, but none of its provisions make any specific reference to marine environment pollution or pollution resulting from shipping activities. In the absence of any other dedicated legislation in the field of marine environment protection some of the provisions of the Environment Conservation Act can be regarded as generally applicable to a case concerning marine pollution incident. But the immense complexities, special technicalities and the typical need for a very quick response which a marine pollution incident generally involves are extremely likely to defeat the very purpose of such application of this Act.

6.1.3 DRAFT 'PROTECTION OF THE MARINE ENVIRONMENT OF BANGLADESH ACT'

The need for a comprehensive legislation specifically for the protection of marine environment did not however go unnoticed by the concerned authorities in the country. The draft legislation prepared by Department of Shipping called the 'Protection of the Marine Environment of Bangladesh Act' has now been under close scrutiny of the government for some time. This new legislation is supposed to exclusively provide for prevention, control and response with respect to marine pollution, both wilful and accidental, in Bangladesh waters. Once enacted, it would adequately deal with all aspects of marine pollution incident including prevention, control, clean-up and compensation. It would also give effect to most of the relevant IMO Conventions and make provision for sufficiently large deterrent penalties.

As for enforcement, the Director General, Department of Shipping would be responsible for implementing the provisions of this Act and any rules and policies formulated under it. However, if the statutory powers under the Act wholly rest with the Director General, Department of Shipping, there could be some problems with regard to jurisdiction. It is almost certain that the newly-formed Coast Guard will play a major role in controlling and combating marine pollution in the near future. Therefore specific authority for enforcement of relevant provisions of the Act should be given to Director General, Department of Coast Guard especially with regard to surveillance, intervention and initiating penal actions against offenders.

6.1.4 RATIFICATION OF INTERNATIONAL CONVENTIONS

Marine pollution is an international problem. Because of the international nature of the shipping trade marine pollution from ships affects numerous nations all over the world. The best way to tackle this ubiquitous problem is therefore to introduce and implement measures on an international level. The measures evolved by IMO to this end are contained in international treaties called conventions. (In order to have an effective system for oil pollution prevention, preparedness and response, it is necessary for a country to become party to these conventions and incorporate their provisions in her national laws and regulations.)

IMO conventions deal with marine pollution in a number of ways. These include: a. Preventing operational pollution by introducing anti-pollution measures into the design, equipment and operation of ships; b. Reducing accidents by introducing and enforcing strict standards and navigational procedures; c. Reducing the consequences of accidents by introducing measures designed to lessen the amount of pollution resulting from an accident; d. Adopting measures to enable victims of pollution

incidents to be provided with compensation; and e. Helping implementation, eg by providing technical and other assistance to governments in developing contingency plans.

However, the anti-pollution conventions can be categorised in two major groups considering the broad purposes they serve. While a group of conventions aim at preventing operational or accidental pollution of marine environment, the other group provide measures to ensure that adequate compensation is paid to those who suffer losses because of pollution incidents.

6.1.5 CONVENTIONS BANGLADESH NEEDS TO RATIFY

Both the conventions that Bangladesh is party to belong to the first category, but the country is yet to ratify the most important of the conventions for the prevention of pollution from ships – the MARPOL 73/78 Convention. On the other hand, it ratified none of the conventions that govern liability and compensation for oil spill damages. In the circumstances there is an urgent need for Bangladesh to ratify the following conventions:

- a. The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)

MARPOL 73/78, which is perhaps the most important international agreement on the subject of marine pollution, deals with prevention, mitigation and control of both operational and accidental pollution from ships. It entered into force in 1983 and effectively superseded OILPOL, 54. It however deals not only with oil, but with all

forms of marine pollution except the disposal of land-generated waste into the sea by dumping. The six annexes to the Convention deal respectively with oil, noxious liquid substances carried in bulk, harmful substances carried in packages, sewage, garbage and air pollution from ships.

Oil pollution may arise both from maritime accidents and normal tanker operations. It may also result from wilful discharges. A maritime administration attempting to prevent oil pollution from all these sources must have adequate regulatory power to control shipping in its territorial waters. This can successfully be achieved through ratifying the MARPOL convention.

Bangladesh is not yet a party to the Convention and hence cannot exercise any power under its provisions with regard to pollution by foreign ships in her waters. But ironically, the country's own ships engaged on international voyages have to comply with the requirements of the Convention. Ratification of the Convention will empower Bangladesh to prevent ships from pumping pollutants into its territorial waters.

Apart from wilful discharge of oil into sea, accidental pollution in many cases simply occur due to acts of omission or lack of reasonable care on the part of shipowners or people in charge of operation of ships. Once it becomes a party to MARPOL, Bangladesh will be in a position to effectively control foreign ships operating in her waters and take actions against any ships that do not meet the standards laid down in the Convention.

However, there are problems to be solved before Bangladesh can proceed to ratify the MARPOL Convention. As pointed out in the 1995 Task Force Sub-committee Report on the Prevention of Pollution from Ships for the Protection and Preservation of Coastal and Marine Environment of Bangladesh:

The ratification will put her coastal general cargo and tanker vessels and inland tanker vessels out of operation for they are not fitted with the required oil pollution prevention equipment. It is estimated that about two hundred and fifty vessels of different kinds will be affected by the implementation of MARPOL 73/78. Measures to determine the technical requirements for the task of fitting new oil pollution prevention equipment to this number of vessels and its full financial implication should be undertaken prior to any ratification of the Convention. Besides, reception facilities are to be developed in the ports of Chittagong and Mongla.

b. International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990

The OPRC, 1990 Convention is designed to help governments to combat major oil pollution incidents posing a threat to the marine environment, coastline or other related interests of states. It entered into force in May 1995. The purpose of the Convention is to 'facilitate international co-operation and mutual assistance in preparing for and responding to a major oil pollution incident and to encourage states to develop and maintain an adequate capability to deal with oil pollution emergencies' (IMO NEWS, Number 1:1997, page 15).

One of the most important aspects of the Convention is that the contracting governments agree to co-operate and to provide assistance if requests are made by other parties in the event of oil pollution emergencies.

Under the Convention the contracting governments are required to establish a national system for responding promptly and effectively to oil pollution incidents.

The system should include a national contingency plan, designated national authorities and operational focal points responsible for oil pollution preparedness and response, reporting and handling requests for assistance.

The Convention also calls for stockpiling of oil spill combating exercise and development of detailed plans for dealing with oil pollution incidents. The ships of contracting states are required to carry shipboard oil pollution emergency plans. The Convention also obliges ships, offshore units, aircrafts, seaports and oil handling facilities to report oil pollution incidents to the nearest coastal states or competent national authority and advise neighbouring states at risk.

In order to establish an efficient system for responding and effectively to accidental oil pollution incident it is essential for Bangladesh to become a party to the OPRC Convention. It is also important from the point of view of ensuring regional and international assistance at the time of need. Dealing with major oil spills all by itself is well beyond the ability of Bangladesh and it simply cannot afford to be prepared for the 'worst probable scenario'.

There are of course major implications for the country of becoming a party to the Convention. As Bangladesh has to start from the scratch in order to fulfil the requirements under the Convention, it will entail mobilisation of funds, manpower, equipment, technology and expertise.

c. International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969

The Civil Liability Convention is the first of the two IMO Conventions that deal with liability and compensation for oil spills from ships carrying oil. It forms the basic structure on which the regimes of liability and compensation for oil pollution damage

from ships are based. It entered into force in 1975. The purpose of the Convention is 'to ensure that adequate compensation is available to persons who suffer oil pollution damage resulting from maritime casualties involving oil-carrying ships' (A Summary of IMO Conventions, February 1998, page 35).

The damages covered by the CLC are those resulting from the escape or discharge of oil as well as the expenses for preventive measures taken by the responding authorities to mitigate damage. The Convention places the liability for such damage and the onus of paying compensation on the owner of the ship from which the polluting oil escaped.

The Convention also lays down the principle of strict liability for the shipowner (ie, liability even when the owner has not been guilty of actual fault), and require ships to maintain liability insurance or other financial security. However, the shipowner is normally entitled to limit his liability in respect of any one incident to approximately USD 160 per ton of the ship's gross tonnage up to a ceiling of USD 16.8 million for each incident.

With respect to the justification of ratification of the Convention by Bangladesh, a very important point to note is that the CLC covers pollution damage occurring in the territory or territorial sea of a contracting state – it does not cover pollution from a vessel flying the flag of a contracting state or carrying oil cargo belonging to a contracting state. Therefore it is extremely necessary for Bangladesh to ratify the Convention in order to be eligible for receiving adequate compensation in the case of losses suffered from a big oil pollution incident like the Filothei oil spill. By doing so the country would be able to ensure that tankers entering its territorial waters have necessary insurance to cover adequate compensation and to meet the costs of clean-up etc should a major pollution accident occur.

Ratification of this convention is not likely to cause any major problem for Bangladesh. There would be a requirement for checks to be made to make sure that vessels do carry certificate of insurance. However, the job could be incorporated in the inward clearance procedure.

d. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Fund Convention), 1971

The Fund Convention, which is supplementary to the Civil Liability Convention, established a regime for providing additional compensation to the victims of oil pollution. It entered into force in 1978. The Convention set up the International Oil Pollution Compensation Fund (IOPC Fund) to administer the system of compensation. The IOPC Fund is financed by contributions levied on the importers of oil in contracting states.

'The main functions of IOPC Fund is to provide supplementary compensation to victims of oil pollution damage in member states who cannot obtain full compensation for the damage under the applicable CLC' (IOPC Funds Annual Report 1996). Under the Fund Convention victims of oil pollution can claim additional compensation which is beyond the level of the shipowner's liability. Besides, the Fund will be liable to pay the full amount of compensation due when there is no shipowner liable under the CLC, or the shipowner liable is incapable of meeting his liability. The second main function of the Fund Convention is to indemnify the shipowner or his insurer for a portion of the shipowner's liability under the CLC.

Ratification of the Fund Convention will enable Bangladesh to receive adequate compensation for damage suffered by it in the event of major oil pollution incident. It may also receive assistance from IOPC Fund in the form of personnel, material, credit facilities etc for making measures against such pollution damage.

The only discouraging factor in this regard seems to be the concern about the amount of contribution to be paid to IOPC Fund. However, examination of the yearly contribution paid by Fund member states points out that the amount of estimated levy per ton of 'contributing oil' is indeed very small. In fact, compared to the immense benefits for the victims of oil pollution and the possibility of recovering response costs, the amount of contribution to be paid to the Fund is insignificant.

6.2 PREVENTIVE MEASURES AGAINST OIL SPILLS

While oil spills from ships simply will continue to occur, efforts to prevent them in the first place should never stop. 'The money spent the correct the problem after they occur is nearly always many times greater than what would have been required to prevent the disaster' (Sampson, 1998). The same goes for the efforts that are put to prevent a spill and to tackle a spill and its far-reaching effects on the environment.

6.2.1 ACCIDENTAL POLLUTION DURING PORT OPERATIONS

Port areas carry the highest risk of accidental oil pollution from ships. In fact minor spills resulting from port operations are quite common in the ports of Chittagong and Mongla. Port operations in the oil receival terminals involve a greater risk than that in a general terminal. Spills in a port generally occur during the handling of bunker

or in the course of loading/unloading operation of oil products in an oil receival terminal.

Maintenance of a proper and technically sound ship/port interface is central to avoiding or preventing accidental oil pollution during port operations. Use of good-quality hoses, pipelines and equipment should be ensured and proper care should be taken to avoid tank overflow.

During oil cargo transfer operations connections and expansion joints of the pipeline should be tightly secured and scuppers should be properly plugged. Drip trays and slop tanks can be used to collect leaked oil and salvage pumps should be employed to suck up overflow from tanks. Clear signals should be agreed between the bunkering/loading people and the ship. It is a good idea to keep frequent watch on pipelines and flanges and also over the ship's side for traces of oil in the water. Another important thing is to set up oil booms by ship's side in order to prevent the spreading of the oil.

6.2.2 MARITIME ACCIDENTS

Oil spills often result from accidents like collision, allision or grounding. Accidents may take place both in port areas and at high sea. However, the majority of oil spills are reported to happen in ports during terminal operations, while approximately 60 per cent of serious casualties to sea-going vessels occurs in port waters (IMO, 1988). Accidents in port areas are more frequent due to traffic concentration, mooring manoeuvre, passage through narrow or shallow channels or movement in the vicinity of the coast. Accidental spills can be controlled by evaluating how and why the past

accidents occurred and then implementing procedures to reduce the chances of similar accidents happening.

Preventive measures to reduce accidents include appropriate port design, adequate lights and electronic aids, use of high-powered tugs and efficient pilotage services. With the increasing traffic and shipping activities, both the ports of Chittagong and Mongla are in need of expansion of terminals and bunkering facilities and improvement and better maintenance of navigational channels. Dredging capabilities should be strengthened and programmes should be undertaken for the dredging of the Karnaphuli and the Pussur channels and the two portheads for increasing the draft.

Another important thing is to have efficient vessel traffic services. All vessel movements should be monitored and controlled by a central vessel traffic management system capable of providing accurate information on the position and movements of vessels in the outer anchorages, along the channels and in the ports. Organising advance planning of traffic movement with sailing plans, allocation of space and time etc can significantly lower the possibility of accidents in the port areas.

It is also essential to organise adequate training for the personnel for increasing operational efficiency and developing institutional capabilities for keeping safety.

6.2.3 ACCIDENTS RESULTING FROM NATURAL DISASTERS

Bangladesh coastline is frequently battered by severe cyclonic storms and tidal surges that often cause heavy damage to both life and property. Major oil spills may result from the grounding of an oil tanker, platform fracture or collision between

vessels during these storms. While it is impossible to totally eliminate the possibilities of this danger, appropriate precautionary measures can certainly avoid major accidents.

Fortunately enough, in recent years Bangladesh has made significant progress towards setting up an efficient system for making accurate meteorological forecast using advanced remote sensing technology. The weather office these days is capable of providing detailed report on a cyclonic storm approaching Bangladesh coast while it is still far away out over the deep sea. Normally this allows the concerned agencies and the general public enough time to take necessary measures for protecting life and property. This resulted into a sharp drop in the extent of damage that the country would earlier experience.

Whenever there is a danger of a cyclone sweeping the coastal area, the ports of Chittagong and Mongla should take prompt actions to avert possible accidents. Advance warnings should be issued to all the vessels in the ports or at the outer anchorages. Cargo handling operations should be immediately suspended. If the vessels stay in ports there is a chance of damage caused by collision during the storm. Therefore all the vessels should immediately be ordered out of the port areas and asked to move to outer anchorages for safety. It is also essential for the operations departments to be in constant contact with the ships and provide necessary information and advice.

6.3 OIL SPILL RESPONSE ARRANGEMENTS

The Department of Shipping, the principal executive body under the Ministry of Shipping, is not only responsible for the safety of maritime navigation and the safety of ships, it is also supposed to have a leading role in preventing marine pollution

from ships. The Director General, Department of Shipping is responsible for the implementation and enforcement of the international conventions and agreements related to safety at sea as well as the ones related to prevention of marine pollution. However, protection of marine environment has always been a secondary concern for the Department of Shipping or for the maritime administration in general. As a result, Bangladesh has never had a well-defined or documented national oil spill response arrangement in place. The government could not even come up with a national policy for controlling or combating oil spills or other marine environmental emergencies.

6.3.1 SURVEILLANCE, INTERVENTION AND INSPECTION

It is very important for maritime and environmental administrations responsible for controlling marine pollution to detect and identify pollution incidents within the shortest possible time. Failure to do so would often result into failure to mount an effective response.

At present no regular surveillance is carried out in the port areas, territorial sea or exclusive economic zone of Bangladesh for detecting marine pollution incidents. Surveillance of shipping lanes and territorial sea is essential for detecting violations of the discharge provisions of the anti-pollution rules as well as accidental spillage. In the absence of adequate vigilance and proper regulatory control pollution from ships continues unabated in Bangladesh waters.

The draft Marine Environment Protection Act contains provisions for the Coast Guard to assist in the surveillance of Bangladesh waters for detecting marine pollution and protection and management of all marine resources and marine

environment in the Bangladesh EEZ. On the other hand, the statutory duties of the newly-established Coast Guard as prescribed in the Coast Guard Act, 1994 charge it with, *inter alia*, the responsibilities to carry out surveillance against environment pollution activities in Bangladesh waters and take preventive measures. In the circumstances, Department of Shipping and Department of Environment should consider delegating the total functions of surveillance and enforcement to the Coast Guard.

Although Bangladesh is a party to the Intervention Convention, 1969, no national legislation has so far been laid down to reflect the requirements of this convention. The primary reason for this is perhaps the fact that there was no specific agency or mechanism for implementing the provisions of the Convention. Now that the Coast Guard has come into being, measures should be taken to incorporate the provisions of the Intervention Convention in the national law and necessary authority should be delegated to the Coast Guard to intervene on the high seas. Besides, the Coast Guard should be given necessary power to go on board and inspect any ship within Bangladesh waters for the purpose of ascertaining the circumstances relating to any alleged discharge or escape of oil or any other pollutant.

6.3.2 CONTINGENCY PLANNING

It is never possible to fully eliminate the threat of a oil spill where oil is produced, stored, transported or utilised. So preparedness for this kind of environmental emergency cannot be ignored. Without preparedness in advance no amount of expertise, manpower or equipment can effectively cope with the chaotic situation that immediately follows a major disaster.

In the absence of effective contingency planning for oil spill incidents, precious time is fruitlessly lost and the marine environment is subjected to limitless degradation. 'Once the incident has occurred, the extent of the damage most often relates exponentially to the amount of time that it takes to make an effective response to control, contain and clean-up the spill. Without effective contingency planning, relatively minor environmental emergencies can have long term, serious negative effects' (Sampson, 1998). Therefore it is of paramount importance for Bangladesh to develop an effective contingency plan and a well-trained and organised response team to combat environmental emergencies arising out of accidental oil spills from ships.

6.3.2.1 National Contingency Plan

The coastal region of Bangladesh under threat of accidental oil pollution from ships can be considered as a high-risk area because of the diverse human activities and the presence of environmentally sensitive resources of ecological, commercial and subsistence value. Therefore it is important to plan for the worst probable consideration and take a comprehensive view of all that is needed to be put in place in order to quickly and effectively respond to an accident.

An effective national contingency plan for responding to accidental oil pollution in this region must consist of a number of indispensable elements. First, the plan must contain basic information on both the expected nature of spill and the zones and resources in need of protection. This should include information on vessels carrying oil, lightering ships, and installations like oil receipt terminals, pipelines etc. Specific and detailed information on the type and quantity of oil carried or handled in the area should be included. Information on the population and property in the coastal area and on tourism spots, fishing areas, shrimp breeding grounds, bird nesting areas, mangrove forests etc should also go into the plan. Details of local

tides, currents, prevailing winds and climatic conditions throughout the year should all be carefully noted and considered. After identification of all the resources at risk, priorities for protection should be established by properly evaluating the related advantages and disadvantages.

The second most important element is the definition of institutional and personal responsibilities. Especially in the case of longer spills combined efforts of a host of different individuals, agencies and organisations are required to take effective response measures. It is therefore important to have a pre-defined response organisation with a clear command structure for effective execution of the plan and efficient use of resources. While the Department of Shipping can be designated as the leading agency, the duties and responsibilities of all the response agencies and individuals should be adequately specified and the chain of command should be clearly defined. The responsibilities should include setting up a response centre, mobilisation of resources, communications, emergency evaluation, planning of response operations, task distribution, on-scene management and co-ordination etc.

Thirdly, The plan must address the provision of the necessary response equipment and manpower for carrying out an effective response. It must ensure immediate availability of a group of trained supervisors and necessary on-scene workers and the right kind and amount of response equipment. The plan should also ensure proper financial support and appropriate logistic structure.

The contingency plan must also include response plans and strategies for different kinds of emergencies. Detailed guidelines on procedures and recommendations for action should be laid down clearly. Procedures for prompt reporting of pollution incidents and notification of key agency officials as well as the appropriate government authorities should be defined in the plan.

6.3.2.2 Local Contingency Plans

'Contingency plans should be developed beginning at the local level and working up to the national plan' (Sampson,1998). A national contingency plan alone cannot address all possible disasters. Actually the absence of local plans with details for action at the local level may render the national contingency plan almost useless.

Ports can play a significant role in protecting the marine environment in Bangladesh against oil pollution. In the event of an oil spill each port authority is responsible for the protection of its own waters and installations. Besides, the port authorities can assume a very important role in combating or cleaning an oil spill within the scope of the national contingency plan.

As was mentioned earlier, in Bangladesh the two sea-ports, Port of Chittagong and Port of Mongla, have recently been provided with two similar oil spill contingency plans covering the areas within the statutory limits of the ports. Both of these ports have the potential to cause significant adverse impact on environmental resources within the rivers on which they are situated including the resources in and around the estuaries. But the brief contingency plans that have been put forward are 'policy statements rather than any practical response plan' (Environmental Audit of Inland Water Ports, Seaports and Ship-related Facilities in Bangladesh, 1997). Besides, those were never tried or put to test. These superficial plans should immediately be replaced with full-fledged contingency plans incorporating all the necessary practical elements needed to effectively and efficiently respond to oil pollution/spillage incidents in port areas.

In the event of small-scale spill in a port area the local contingency plan would be activated by the concerned Port Authority. The national contingency plan would apply only to larger or catastrophic spills in or outside port areas.

6.3.3 COAST GUARD

In the recent past the creation of Coast Guard has been the single most important practical step taken toward ensuring protection of marine environment of Bangladesh. The Coast Guard organisation called the Department of Coast Guard was set up under the Ministry of Home Affairs in 1995 following the enactment of the Coast Guard Act, 1994 in December 1994. The main objectives of the Department are to ensure safety of the territorial waters and maritime zones of Bangladesh and protection national interests in these marine areas.

Section 7 of the Coast Guard Act contains a list of functions that have been assigned to the Coast Guard. The Coast Guard is required to take requisite measures to preserve and protection the marine environment and also to prevention and control marine pollution. Among its multifarious duties the following three directly relate to the protection of the country's marine environment:

- a. To carry out regular surveillance in the territorial waters of Bangladesh;
- b. To guard against polluting activities in the territorial waters and take measures to prevent such activities;
- c. To enforce any warrant or order issued by a court or any other competent authority with regard to a vessel or a person on board a vessel sailing in the territorial waters of Bangladesh.

Responsibility for the co-ordination of measures to combat pollution of the sea on account of accidental oil spills has long rested with the Department of Shipping. But as is evident from the earlier discussion, not much real progress has been made on the ground to create a viable organisation with requisite capability to tackle this problem. Now it is hoped that the Coast Guard would be designated as the lead

agency responsible for the operational response to marine environmental emergencies in Bangladesh waters.

However, the Coast Guard does not yet quite seem to be prepared to actively assume all the responsibilities it is entrusted with. The organisation is still without the manpower and resources it needs in order to be fully operational. For example, although according to its approved plan it was supposed to be provided with a fleet of 12 (twelve) patrol vessels by the year 1995-96, it is yet to acquire any of them. The only vessels that the Coast Guard are now in possession of for its operational activities are two old vessels procured on loan from Bangladesh Navy.

6.3.4 SUPERVISION AND CO-ORDINATION

Especially in the case of large spills combined efforts of a host of different individuals, agencies and organisations are required to take effective response measures. In order to mount a quick and effective response a large number of agencies must interact with each other very closely and efficiently. Without proper awareness and understanding in advance at the top level between all the participating agencies and organisations it is simply impossible to act in concert with each other at the hour of need. Therefore it is essential to establish an apex committee for the prevention and response to marine pollution accidents by whom the national contingency plan would be initiated.

The members of the committee should include representatives from all the agencies and organisations whose participation the contingency plan may entail, such as, Maritime Administration, Department of Environment, Port Authorities, Coast Guard, Petroleum Corporation, Shipping Corporation, Fisheries Department,

Bangladesh Navy, Police, Health Department etc. This will ensure closer involvement of all the competent organisations, facilitating pooling of resources and personnel for response operation and improve flow of information between all the parties involved. No such national body exists at the moment.

✓ 6.3.5 EDUCATION AND TRAINING

'Contingency plans are only as good as the people who must implement them' (Sampson, 1998). The human factor is indeed the most important thing with regard to successful implementation of a contingency plan. The organisation, manpower and equipment can effectively meet the challenge of dealing with an environmental emergency only when the right kind of knowledge and expertise are added to them. Therefore, preparedness for oil pollution emergencies requires comprehensive education and training programme for the people involved in the implementation of the contingency plan.

One of the major tasks for the authority in charge of the national contingency plan is to assess the needs for education and training and then to decide on proper programmes by examining the training capabilities available within organisations or on national level. If necessary, ways and means should be explored for advanced and up-to-date education and training on regional and international level. It may be mentioned here that in recent years a good number of officials from different organisations in the maritime sector of Bangladesh have graduated from the World Maritime University in Sweden. Many of them received high-level training in the area of marine environment protection. Their knowledge and expertise can be of considerable use for designing appropriate training courses for the people involved in oil spill response activities.

Tabletop exercises, limited simulation exercises, or fully operational large scale exercises involving large number of participants including the general public should be carried out from time to time. These are also useful for testing the adequacy of a contingency plan. The full knowledge of the tasks being carried would also enhance motivation.

6.3.6 CREATING AWARENESS

'Human resource development is a crucial requirement not only to build up technical knowledge and capabilities, but also to create new values to help individuals and nations cope with rapidly changing social, environmental and development realities' (World Commission on Environment and Development, 1987). Issuing elaborate legislation or laying down detailed rules and strict regulations is not enough to achieve the objectives of an administration. The key factor is the implementation or enforcement of those laws and regulations through a group of people totally committed to the cause they are supposed to serve.

Commitment to the prevention of pollution of the seas can only emanate from proper understanding, awareness and belief of the value of the marine environment with regard to the very existence and the well-being of the present and future generations. But it is a fact that in Bangladesh most of the people serving in the maritime sector manifest a rather lackadaisical approach to protecting marine environment. Their values and attitudes towards environment and development clearly lack the willingness to protect this valuable asset. It is strongly felt that the government must help provide direction and motivation in forming proper values that would stress individual and joint responsibilities towards the protection of marine environment.

6.3.7 ERADICATING CORRUPTION

Although it is obligatory for the government to maintain an honest, efficient, committed and professional public service, there is no denial of the fact that corruption is far from being rare in Bangladesh. In fact there are some public offices and organisations where corrupt practices have allegedly become institutionalised. The Maritime Administration is not a total exception either. A section of the officials entrusted with the duty of enforcing laws and regulations within the scope of maritime safety administration has long been suspected to be engaged in weaving an insidious web of corruption. But the authorities were never found to be serious enough in its intent to purge the administration of these corrupt officials.

Whatever plans or activities are undertaken by the government for the preservation of marine environment or protection of Bangladesh waters from spills in particular, all the efforts are bound to be rendered useless unless all the officials responsible for the enforcement of related laws and regulations discharge their duties with honesty and sincerity. To ensure this, urgent steps are needed to combat possible corruption in the sector. The government must deal with all corruption cases with utmost seriousness and take stern actions against people with persistent ill repute.

6.3.8 REGIONAL AND SUB-REGIONAL CO-OPERATION

Mounting adequate response to a large scale oil spill is often beyond the capabilities of any one country. Besides, climate, marine living resources, and pollution do not respect political boundaries – an oil spill can often have severe transboundary implications. Therefore regional marine environmental emergency response arrangements are considered as an essential and valuable way of effectively

combating major spillage of oil or other hazardous materials. Above all, it is an economical way of supplementing national response arrangements.

Such arrangements are in force or under the process of development in many parts of the world within the context of the Regional Seas Programme of the United Nations Environment Programme (UNEP). Bangladesh is one of the member countries covered by the South Asia Marine Pollution Emergency Action Plan, although the Plan does not yet include an approved national marine pollution contingency plan of Bangladesh.

6.3.8.1 Joint Action Plan with India

Bangladesh is bounded by India on three sides – the west, the north and the east. The two countries share the common regional seas (Bay of Bengal) and common ecological systems including the living resources of inland, coastal and offshore waters. The *Sundarbans*, the single largest contiguous block of mangrove forest in the world bordering the Bay of Bengal, stretches from the south-western part of Bangladesh to the south-eastern part of India. The Port of Mongla is situated right beside the Sundarbans.

India has got a fairly competent Maritime Administration with proficient arrangements for preservation of her marine environment and marine pollution prevention. She is party to most of the important international conventions relating to prevention of pollution from ships and has got necessary national legislation for the protection and preservation of her marine environment.

The Indian Coast Guard was founded back in 1977 and it started functioning as an independent para-military service in the next year. It has got three Regional Headquarters, a good number of District Headquarters and Stations covering almost all the coastal districts. The Coast Guard is adequately equipped with a large number of ships, helicopters and aircrafts.

As part of its responsibilities to protect the maritime and other national interests in the maritime zones, the Indian Coast Guard is entrusted with the duties to take necessary measures to preserve and protect the marine environment and to prevent and control marine pollution. The responsibility for co-ordination of measures against marine pollution by oil spills was transferred from Director General of Shipping to the Coast Guard in 1982. The Coast Guard has drawn up detailed contingency plans to combat oil spills at sea and has got stocks of pollution control equipment and chemicals.

On the other hand, Bangladesh is still in the process of finalising its key legislation for protection of marine environment. It is yet to ratify most of the important IMO conventions relating to prevention of pollution from ships. Bangladesh Coast Guard organisation is still in its infancy and a national contingency plan for combating oil spills is yet to come into existence. The country also lacks in resources, knowledge and expertise needed to tackle even a small sized oil spill emergency in its territorial waters.

While Bangladesh remains clearly vulnerable to the dangers of oil spills, the situation is neither quite safe for India as a close neighbour. A major oil pollution incident occurring in or around Mongla or Chittagong Port or in the adjacent waterways is most likely to cause environmental damage to both the countries' marine and coastal resources. In the event of such a disaster close co-operation and sharing of efforts

between the two countries are crucial for responding to the incident quickly and effectively.

In order to ensure effective mutual co-operation at the hour of need the two countries may design an action plan to enhance both the countries' national capability. The plan should primarily concentrate on the combating procedures for tackling an oil spill emergency, but it can also address more broad-based issues like monitoring of the marine environment along the oil tanker routes, capacity building in terms of development of trained and skilled manpower, augmentation of critical equipment for monitoring and combating of oil spills and working out effective contingency plans at national and regional levels.

6.3.8.2 Action Plan under South Asia Co-operative Environment Programme

Within the framework of the Regional Seas Programme of the United Nations Environment Programme (UNEP) the South Asia Co-operative Environment Programme (SACEP) has formulated a Plan of Action for the protection of the marine and coastal environment of the South Asian Seas Region, in line with the provisions of Chapter 17 of Agenda 21. The Plan covers the marine and related coastal environment including international waters adjacent to five states in South Asia, namely, Bangladesh, India, Maldives, Pakistan and Sri Lanka.

The objective of the Action Plan is to protect and manage the marine environment and related coastal ecosystems of the region. This objective includes the promotion of sustainable development and sound management of regional marine and coastal resources by:

- a. Establishing and enhancing consultations and technical co-operation among the states of the region;
- b. Emphasising the economic and social importance of the resources of the marine and coastal environment; and
- c. Establishing a regional co-operation network of activities concerning concrete subjects/projects of mutual interest for the whole region.

Priority programmes that have been selected for implementation by SACEP member states under the Action Plan include one called 'Development and Implementation of National and Regional Oil and Chemical Spill Contingency Planning'. The programme includes the following activities:

- a. Updating the South Asian Marine Pollution Emergency Plan;
- b. Risk Analysis and assessment of infrastructure requirements for pollution emergencies, and development of mechanisms for implementation of the Plan;
- c. Assistance in developing and updating National Marine Pollution contingency plans;
- d. Preparation of national training and manpower development plans for marine environmental monitoring, response and combat including surveillance of oil spills and information collection and management;
- e. Collection, storage and dissemination of data through SACEP;
- f. Assistance in the development of national legislation where necessary; and
- g. Preparation of technical guidelines and dissemination to member states.

The activities identified under the Plan will be implemented mainly on project basis. The active participation and co-operation of the South Asian Seas states in the programmes are basic prerequisites for the success of the Action Plan.

As regards protection of its marine environment against oil pollution and capacity building for responding to oil spill incidents, Bangladesh can be immensely benefited from actively participating in the implementation of the programmes mentioned above.

Chapter 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

There is no denial of the fact that Bangladesh waters has been under the constant threat of accidental oil pollution from ships. Also it is evident that oil spills can play havoc with the country's marine and coastal environment by inflicting widespread and lasting damage on it. Such damage can also cause the economy of the country to suffer enormous losses.

But in spite of these facts the subject of protecting the marine environment against threats of pollution originating from shipping activities were never paid the kind of attention it deserves. It has always been, in most ways, a secondary concern for the Maritime Administration in Bangladesh. As a result, the country still continues to be in an absolutely vulnerable position with respect to oil pollution dangers.

In order to avert oil spill disasters in Bangladesh waters and to cope with the dangers and harmful effects of such spills, the country must initiate proper measures in different related areas. Apart from dealing with accidental oil pollution incidents, many of these steps would also help tackle marine environmental emergencies in general.

One of the basic problems in the maritime sector in Bangladesh is the existence of outdated maritime legislation, or the lack of it. The existing legislation is neither comprehensive nor sufficient to tackle the growing need for the protection of its territorial waters from pollution. The present laws and regulations in the maritime sector do not provide for adequate deterrent to possible polluters. Country's concern for accidental oil pollution from ships is not yet adequately matched by appropriate preventive and remedial legislation and its enforcement. This deficiency therefore needs to be addressed and rectified.

The need for effective legislation for environment protection has been recognised in the current Five Year Plan of the government. One of the development goals and objectives of the Fifth Five Year Plan is the 'protection and preservation of environment by putting in place adequate regulatory regimes and effective institutions...'. The legislation should be of a type that can be readily amended and expanded to fully address the developing and changing situations. It should also be in full conformity with relevant international laws and conventions.

As the pollution of the world's oceans has become a matter of increasing international concern, IMO has introduced measures for reducing marine pollution from ships on an international basis. A large number of international conventions adopted under the auspices of IMO are concerned with the prevention of marine pollution caused by shipping activities. In fact, reducing oil pollution from ships – both accidental and operational – is one of IMO's most important functions. In order to be benefited from its achievements in this field a country must ratify the relevant conventions.

While Bangladesh is party to two conventions dealing with prevention of operational or accidental pollution of marine environment, it has not ratified the most important convention of this category – the MARPOL 73/78 Convention. Besides, the country

is yet to ratify the key international conventions that govern liability for oil spill damages and provide measures to ensure payment of adequate compensation to those who suffer losses because of oil pollution incidents. As a result, it is not eligible to claim or receive any compensation for oil spill damages.

MARPOL is by far the most important international agreement which deals with prevention, mitigation and control of both operational and accidental pollution from ships. Bangladesh is in urgent need of ratifying this convention in order to be able to exercise power under its provision for effectively controlling foreign ships in her waters with regard to pollution prevention. Necessary preparatory measures in this respect should be initiated without delay. Similarly, it is of utmost importance for Bangladesh to ratify the three conventions that govern liability and compensation, namely: a. International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990; b. International Convention on Civil Liability for Oil Pollution Damage, 1969 (Civil Liability Convention); and c. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (Fund Convention).

Of course there are some implications, both major and minor, for the country of becoming a party to these conventions. However, the associated tasks are not really impossible to accomplish and the related problems are not insurmountable. IMO has an effective programme of technical assistance which is designed to help Governments enforce conventions and other instruments. This can be of tremendous help to Bangladesh – especially with regard to putting the requirements of the conventions into force.

The efforts that are put to tackle a spill and the damages it does to the environment are generally much greater than the efforts that would have been required to prevent the spill in the first place. There are three possible sources of accidental oil pollution

from ships in Bangladesh waters. First, spills may and do occur from normal operations at the ports. While oil receipt terminals carry a greater risk of large spills during loading/unloading operation, minor spills are rather common in both general and oil terminals which result from handling of bunker. Secondly, oil spills may result any time from maritime casualties. Because of traffic concentration at Chittagong Port chances of accidents in the port area is quite high. The risks are even higher because of regular movement of oil tankers and associated lightering activities. The third major threat of accidental oil pollution in Bangladesh waters are posed by natural disasters. The entire Bangladesh coast including the Chittagong and Mongla Ports are frequently swept by fierce cyclonic storms. Vessels caught in these powerful cyclones run major risks of maritime casualties.

It is not possible to totally eliminate the possibilities of accidents leading to oil pollution, but appropriate preventive measures can certainly lower the risks to a considerable extent. With the accelerated pace of foreign trade and economic growth The traffic through the ports has been steadily increasing. This necessitates modernisation and expansion of port facilities for the sake of safer port operations. Better structural design, sound ship/port interface and efficient monitoring system are extremely essential especially with regard to oil receipt terminal. To prevent accidents action is also needed for application of proper technology and sound management practices to reduce navigational and human error in vessel operation. On the other hand, appropriate precautionary measures are needed for avoiding major spills which may result from accidents caused by natural disaster.

Bangladesh does not have a national policy for controlling or combating oil spills, neither it has a well-defined or documented national oil spill response arrangement in place. Although the Ministry of Environment and Forest is the lead ministry concerning environmental protection, the responsibilities for the protection of marine environment has traditionally been considered to be lying with the Maritime

Administration in particular. However, the Department of Shipping, the principal executive body under the Ministry of Shipping in charge of Maritime Administration, was never found to be very enthusiastic about having a leading role in preventing marine pollution from ships. It has been concerned mainly with regulatory functions regarding safety of maritime navigation and safety of ships. y-

In order to mount an effective response it is essential to detect and identify pollution incidents without delay. But no regular surveillance is carried out in the Bangladesh waters for detecting marine pollution incidents. On the other hand Bangladesh is not really in a position to intervene on the high seas mainly because no national legislation has been laid down to reflect the requirements of the Intervention Convention, 1969.

A very significant step taken by Bangladesh in the recent past towards ensuring protection of marine environment was the establishment of the Department of Coast Guard. Among other responsibilities, the Coast Guard has been entrusted with the duties of carrying out regular surveillance against environment pollution activities in the territorial waters of Bangladesh and of taking measures to prevent such activities. But the draft Marine Environment Protection Act contains provisions for the Coast Guard to 'assist' in the surveillance of Bangladesh waters for detecting marine pollution. Now as the appropriate kind or organization the Coast Guard really deserves to be entrusted with the total responsibilities of surveillance and enforcement of preventive measures. It should also be given the necessary authority to intervene on the high seas and to inspect ships within Bangladesh waters for the purpose of investigating cases of wilful discharge or accidental spills of oil. Besides, it would be appropriate to designate the Department of Coast Guard as the lead agency for operational response to marine environmental emergencies. It is also essential to immediately equip the Coast Guard with all necessary resources in order to enable it to carry out its functions.

So far as the threats of accidental oil pollution from ships are concerned, the coastal region of Bangladesh is a high-risk area because of diverse human activities and the presence of environmentally sensitive resources of ecological, commercial and subsistence value. But Bangladesh has no national contingency plan in place for combating oil spills or any other marine environmental emergencies. As for local contingency plans, the ports of Chittagong and Mongla have got two similar oil spill contingency plans which cover the areas within the statutory limits of the ports. Those are considered to be absolutely inadequate and superficial in nature.

Without proper preparedness it is never possible to effectively cope with environmental emergencies when they occur. In the absence of efficient and well-tried contingency planning for oil spill incidents, precious time is lost for nothing and severe damage is done to the environmental resources. Therefore it is extremely essential for the country to develop national contingency plan for effectively and efficiently responding to catastrophic marine environmental emergencies including oil pollution. The untried and superficial contingency plans of the ports of Chittagong and Mongla needs to be replaced with full-fledged contingency plans which can be activated by the Port Authorities in the event of small-scale spills within the port areas.

Marine pollution control and response measures involves a multidisciplinary and multi-organizational effort. There is an urgent need to establish a national committee on the prevention and response to marine pollution accidents primarily for the supervision and implementation of the national contingency plan. The committee should be headed by the Minister for Shipping and should include members from the agencies and organizations likely to be required to participate in a combined effort to respond to marine environment pollution emergencies. It should be a permanent body with its secretariat located in the Ministry of Shipping.

Preparedness for oil pollution emergencies entails a level of knowledge and training which is sufficiently high to enable the human element to be in control while responding to an incident. The organization, manpower and equipment can effectively deal with environmental emergencies only when they are sufficiently supported by the right kind of knowledge and expertise. For successful implementation of the country's national contingency plan education and training programme need to be developed for the people involved in the implementation of the contingency plan.

A large number of people working in the country's maritime sector manifest lack of understanding, awareness and belief of the value of the marine environment. This not only leads to negligence in protecting this valuable asset, but in many cases it gives way to corrupt practices. It is strongly felt that the authorities should help create awareness and enhance motivation among the people concerned. Also it is extremely essential to rid the Maritime Administration of officials who are allegedly open to corruption.

It is clearly recognised and established that regional and sub-regional co-operation is crucial for development and implementation of successful actions in the protection of marine environment against large scale accidental oil spills from ships. Such co-operation also strengthen regional and national capacity building and offers an important avenue for harmonising and adjusting measures to fit the particular ecological, environmental and institutional circumstances.

Like many other countries Bangladesh cannot be expected to be capable of mounting an adequate response to a major oil pollution incident all by itself. Besides, spills occurring in the waters of a country in the region are very much likely to have certain transboundary implications affecting common ecological systems and resources of other neighbouring countries. Therefore attempts should be made by Bangladesh to

formulate a joint action plan with India for ensuring effective mutual co-operation in the event of disastrous spills and also for co-operation in national capacity building. Besides, the country should actively participate in the implementation of activities identified in the Plan of Action formulated under the South Asian Co-operative Environment Programme (SACEP) of United Nations Environment Programme.

7.2 RECOMMENDATIONS

- National legislation and regulations pertaining to the protection and management of the marine and coastal environment, which are at various stages of development, should be reviewed, and where necessary, laid down, updated or strengthened. They should cover all aspects of marine pollution prevention, control, clean-up and compensation;
- The effective enforcement of national legislation related to the protection of marine and coastal resources should be ensured;
- Bangladesh should consider immediate ratification of at least four international conventions dealing with oil pollution – namely, MARPOL, OPRC, CLC and Fund Convention – and incorporate their provisions in the national legislation in order to set up a comprehensive regime of oil pollution prevention, preparedness, response and mechanism for compensation;
- The Government should consider seeking technical assistance from International Maritime Organization, United Nations Environment Programme and other relevant organizations to help implement the provisions of international conventions and instruments for the protection of marine environment;

- With a view to controlling accidental oil spills a comprehensive study should be conducted to evaluate how and why the past accidents occurred, and on the basis of the finding of the study appropriate measures should be taken and procedures should be implemented in order to reduce the risks of accidents;
- The Department of Shipping should initiate measures to formulate an appropriate national policy for controlling and combating oil spills;
- Under the new 'Marine Environment Protection Act' necessary authority should be delegated to Coast Guard with regard to surveillance of Bangladesh waters against environmental pollution incidents, intervention on high seas and initiating penal action against offenders. The Coast Guard should also be designated as the lead agency responsible for the operational response to marine environmental emergencies in Bangladesh waters and be properly equipped with necessary resources;
- The Ministry of Shipping, in conjunction with other related Ministries and agencies, should develop an effective national contingency plan and a well-trained and organised response team to combat marine environmental emergencies including accidental oil spills from ships;
- The present contingency plans of Chittagong Port Authority and Mongla Port Authority, which are by no means any practical response plans, should be immediately replaced with proper contingency plans incorporating all the necessary elements needed to effectively and efficiently respond to environmental emergencies within the port areas;
- A national committee for the prevention and response to marine pollution incidents should be established with the primary objective of supervision and

implementation of the national contingency plan. Headed by the Minister for Shipping it should include members from different relevant agencies and organizations to ensure combined and well-coordinated response effort;

- The authorities in charge of the national contingency plan should ensure development of comprehensive education and training programmes which are geared up to all the specific activities covered by the contingency plan;
- The Government should take up programmes to provide direction and motivation to people engaged in maritime sector in order to imbue them with proper values that would stress individual and joint responsibilities towards the protection of marine environment;
- The Government should take urgent steps and stern measures to combat corruption that allegedly prevails in the marine administration;
- The Government of Bangladesh should take steps to promote the idea of sub-regional and regional co-operation for sharing of effort for effectively responding to possible major oil pollution incidents in the Bay of Bengal and for addressing broad-based issues like national capacity building for monitoring and combating of oil spills and working out proper contingency plans at national and regional level.

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