Pacific Ocean Pollution Prevention Programme

STRATEGY and WORKPLAN

"For Cleaner Seas in the Pacific Islands Region"

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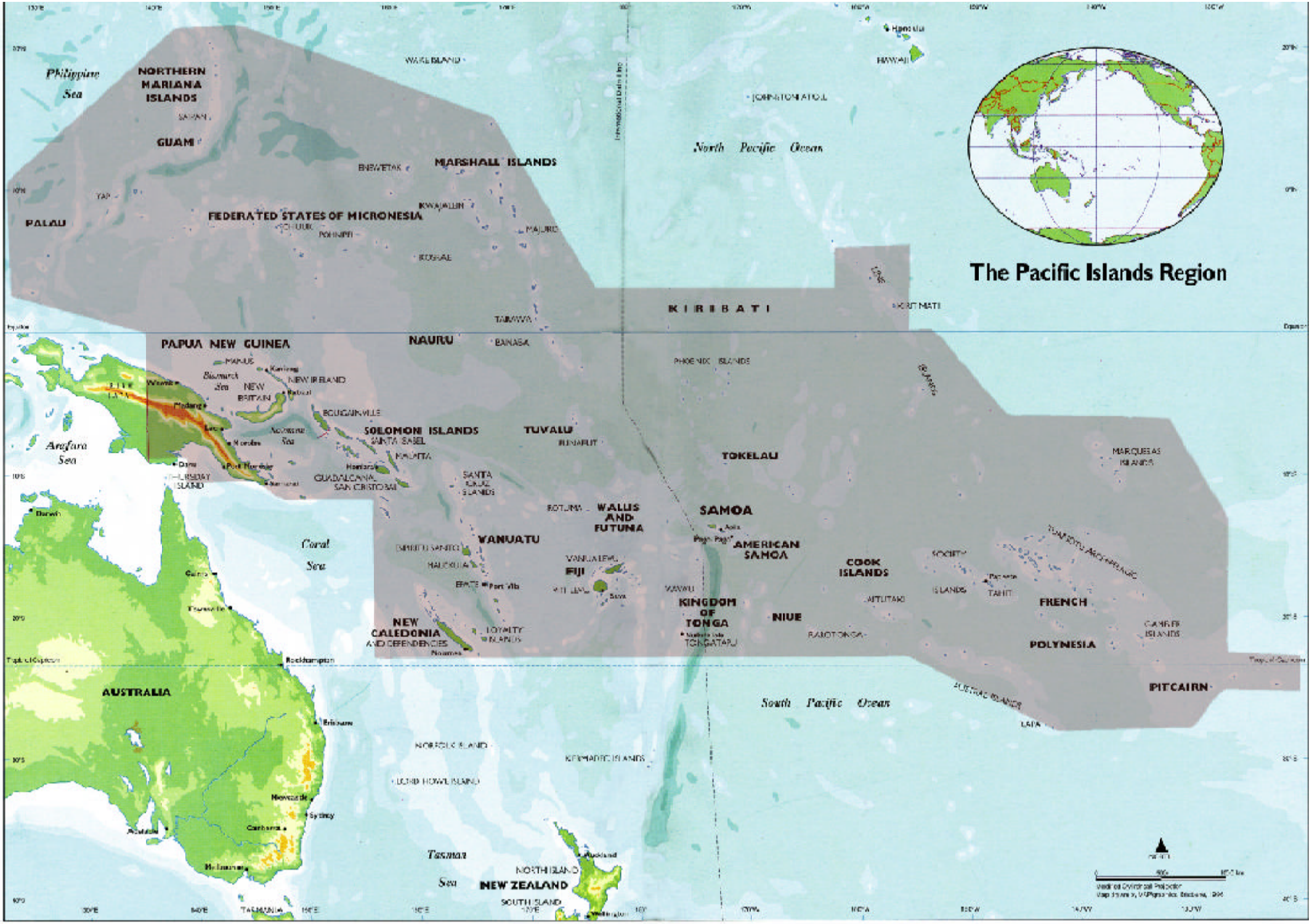
Pacific Ocean
Pollution Prevention Programme

Strategy and Workplan

Ocean realm

"The Pacific islands maintain resource access rights and management responsibilities over 30 million square kilometres of ocean—equivalent to the combined land areas of Canada, China and the USA. The total population of the Pacific islands is only 6.7 million people, and only 2.6 million if the largely inland population of Papua New Guinea is excluded. There are at least 11 square kilometres of ocean for each and every (non-Papua New Guinea) Pacific islander. Jurisdictionally, the sea is nearly 200 times more significant to the average Pacific islander than it is to the average global citizen." (Adams et al 1995)

Figure 1 The Pacific islands region—SPREP island members



FOREWORD

In a region comprised almost entirely of ocean, the health of the marine environment is fundamental to the health of all aspects of the entire Pacific islands region. Marine pollution is recognised as one of the three major threats to the world's oceans, along with habitat destruction and over-exploitation of marine resources.

Over 50 per cent of marine pollution comes from land-based sources. Priority must be given to improving land-use management and the management of wastes, chemicals and other pollutants on land that can impact on marine environments.

The United Nations Environment Programme's (UNEP) Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), provides an international framework to address land-based sources of marine pollution. The South Pacific Regional Environment Programme (SPREP) is responsible for coordinating the GPA in the Pacific islands region.

While it is estimated that less than 20 per cent of marine pollution comes from ship-based sources, the environmental impacts of shipping can be severe. The IMO coordinates the international framework to address shipping safety and ship-sourced marine pollution, in accordance with the broad aims of "Safer Shipping–Cleaner Oceans".

As a regional subset of IMO's global efforts and in part to implement the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and related protocols (SPREP Convention), SPREP has prepared the Pacific Ocean Pollution Prevention Programme (PACPOL). PACPOL aims specifically to address ship-sourced marine pollution in the Pacific islands region, through, amongst other things, assisting countries to become members of IMO and to implement the various IMO conventions that deal with marine pollution.

In the Pacific islands, as elsewhere, it is vital that programmes such as PACPOL are developed using a bottom-up approach, where the needs and priorities of the recipient countries are clearly identified and effectively addressed. Every effort has been made to achieve this during the development of PACPOL.

The support and involvement of the shipping, port, oil and waste management industries is also vital to the successful implementation of such a programme. Accordingly, PACPOL seeks links between governments and industry in order to address marine pollution in the region.

The importance of coastal and marine environments to every aspect of the lives of Pacific islanders cannot be overstated, and the impacts of pollution constitute a major concern for Pacific island peoples.

The importance of shipping to the Pacific islands also can not be overstated. Shipping is the major form of transport for the delivery and export of goods and materials in the region, and is fundamental to the conduct of modern economies in Pacific island countries. The ongoing development of the shipping industry must be fostered, whilst also ensuring that precious coastal and marine environments are not compromised by shipping activities.

PACPOL presents a significant opportunity for Pacific island countries to take a major step forward to protect our ocean from marine pollution. It was endorsed and approved by all SPREP member countries at the tenth SPREP intergovernmental meeting in Apia, September 1998. We commend this important programme to all stakeholders.

Tamari'i Tutangata
Director, SPREP

William O'Neil
Secretary General, IMO

CONTENTS

LIST OF ACRONYMS

AIP	Australian Institute of Petroleum
AMSA	Australian Maritime Safety Authority
ANZECC	Australia New Zealand Environment and Conservation Council
APEC	Asia Pacific Economic Cooperation
API	American Petroleum Institute
APP	Association of Pacific Ports
CIDA	Canadian International Development Agency
COMSEC	Commonwealth Secretariat
CMC	Center for Marine Conservation
CROP	Council of Regional Organisations in the Pacific (formerly SPOCC)
C–SPOD	Canada–South Pacific Ocean Development Program Phase II
EMP	Environmental Management and Planning (Division of SPREP)
FFA	Forum Fisheries Agency
ForSec	South Pacific Forum Secretariat
FSM	Federated States of Micronesia
GEF	Global Environment Facility
GESAMP	(United Nations) Group of Experts on the Scientific Aspects of Marine Protection
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities
IMO	International Maritime Organization
INTERVENTION	International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969
ITCP	Integrated Technical Cooperation Programme (of IMO)
ITOPF	International Tanker Owners Pollution Federation
London Convention	Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 as amended by the Protocol of 1996
LOS	(International) Law of the Sea
MARPOL	International Convention for the Prevention of Pollution from Ships 1974 as amended by the Protocol of 1978
MPA	Marine Pollution Adviser
MPPO	Marine Pollution Project Officer
NATPLAN	National Marine Spill Contingency Plan
NEMS	National Environmental Management Strategies
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation 1990
ORCP	Oceania Regional Contingency Plan (United States of America)
ORRT	Oceania Regional Response Team (United States of America)
PACPLAN	Pacific Islands Regional Marine Spill Contingency Plan

PACPOL	Pacific Ocean Pollution Prevention Programme
PACPOLPatrol	Pacific Islands Regional Marine Pollution Surveillance System
PACRep	Pacific Islands Regional Marine Spill Reporting Centre
POLREP	Pollution Report
RMP	Regional Maritime Programme (of SPC)
SOPAC	South Pacific Applied Geoscience Commission
SPACHEE	South Pacific Action Committee for Human Ecology and Environment
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
SPREP Convention	Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and related protocols
SPREP Convention (Dumping Protocol)	Protocol for the Prevention of Pollution of the South Pacific Region by Dumping
SPREP Convention (Pollution Protocol)	Protocol concerning Cooperation in Combating Pollution Emergencies in the South Pacific Region
SRF	Ship Repair Facility
TNC	The Nature Conservancy
UNCLOS	United Nations Conferences on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
US	United States (of America)
USA	United States of America
USP	University of the South Pacific
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

Background

As island states located within the world's largest ocean, the member countries of SPREP are overwhelmingly dependent on shipping. Despite the benefits and necessity of shipping, this human use of the ocean can also cause a range of sometimes severe environmental impacts. Such impacts include (but are not restricted to):

- introduced marine species;
- marine spills (oil and other hazardous materials);
- discharge of ships' waste (oil, sewage and garbage); and
- impacts from the development and operation of ports.

The Pacific is particularly susceptible to shipping impacts and has a current lack of regional and national capacity to address these issues. In direct recognition of this situation, SPREP has developed and is implementing PACPOL.

PACPOL's aim is to maintain, protect and enhance the quality of coastal and marine environments in the Pacific islands region by minimising ship-sourced marine pollution. PACPOL seeks to achieve this aim through, amongst other things, assisting Pacific island countries to become members of the International Maritime Organization (IMO) and implement IMO conventions.

Organisations involved

- SPREP: overall responsibility for development, delivery and management of the programme, through Marine Pollution Adviser.
- IMO: coordination with its global programmes and seed-funding for project implementation.
- COMSEC: funding SPREP Marine Pollution Adviser's salary.
- FORSEC: policy coordination and cooperation with Petroleum Programme.
- FFA: cooperation with its surveillance programme and collaboration on education/awareness raising targeting foreign fishing fleet.
- SPC: cooperation with its Regional Maritime Programme.
- SOPAC: potential collaborator and consultant.
- USP: potential collaborator and consultant.
- Regional oil and shipping industries: general cooperation and assistance to the programme.

Countries involved

- Canada under C–SPOD Phase II: bulk funding for programme development and project implementation (see below).
- Fourteen Pacific island countries: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu: recipients of PACPOL assistance.
- Eight Pacific island territories: American Samoa, French Polynesia, Guam, New Caledonia, Northern Mariana Islands, Pitcairn, Tokelau, Wallis and Futuna: linkages with PACPOL.
- Four SPREP developed country members: Australia, France, NZ, USA: supporters of PACPOL.

Duration

- Phase I: programme development: 12 months (completed during 1998).
- Phase II: project implementation: five years (1999–2004).

Projects to be implemented

C–SPOD funding (US$660,000) for 1999–2001 calendar years:

- initial three-year engagement of a Pacific island national as Marine Pollution Project Officer, to assist the Marine Pollution Adviser; training position aimed at assuming the programme management function;
- completion of a marine pollution risk assessment for the region;

- development of a regional marine spill contingency plan (PACPLAN) and assistance to countries to develop national marine spill contingency plans (NATPLANs);
- annual PACPOL regional workshops, including:
  - training in marine spill response (based on IMO model course);
  - regional marine spill response exercise (desk-top scenario);
  - regional PACPOL coordination meeting.
- establishment of a regional marine pollution surveillance system (PACPOLPatrol);
- marine pollution education and awareness raising campaigns.

IMO funding (US$220,000) for 1998–2000 calendar years:

- funding first and assisting second annual PACPOL workshops (ITCP project H03 RAS/97/309);
- marine pollution legislation for Pacific island countries (ITCP project H03 RAS/97/310);
- improving ships' waste management in Pacific island ports (ITCP project H03 RAS/98/317, includes US$25,000 from Australia).

SPREP in-house (some operations funding from C–SPOD budget):

- establishment of Regional Marine Spill Reporting Centre (PACRep);
- marine pollution module for tertiary education institutions;
- marine pollution module for maritime training institutes;
- environmental management guidelines for Pacific island ports;
- effective representation of the region at IMO.

Currently unfunded (April 1999):

- marine pollution education video;
- marine pollution education kit for schools;
- introduced marine species risk assessment;
- surveys for introduced marine species in Pacific island ports;
- regional spill response equipment strategy;
- coastal resource mapping;
- marine spill trajectory modelling;
- review of impacts of marine oil spills on Pacific island environments;
- environmental audits of regional oil terminals;
- country-specific projects (as identified in the PACPOL Workplan);
- recurrent costs of administering PACPLAN and PACRep.

ACKNOWLEDGEMENTS

The following organisations and individuals are thanked for their valuable contributions to the development of PACPOL:

- The Commonwealth Secretariat for funding the position of Marine Pollution Adviser at the South Pacific Regional Environment Programme.
- The Canadian International Development Agency for funding the development of PACPOL and the implementation of some PACPOL projects, through the Canada–South Pacific Ocean Development Program Phase II (C–SPOD). C-SPOD projects are coordinated by the South Pacific Forum Secretariat and LGL Limited, Canada. They are developed and implemented by participating regional organisations and ensure equality and balanced benefits for all Pacific islanders.
- The International Maritime Organization for contributing to the development of PACPOL and for committing seed-funding for the implementation of some PACPOL projects, through the IMO Integrated Technical Cooperation Programme (ITCP) .
- The Regional Maritime Programme of the Secretariat of the Pacific Community, the Forum Fisheries Agency, the South Pacific Applied Geoscience Commission, the Marine Studies Programme of the University of the South Pacific and the South Pacific Forum Secretariat for reviewing the draft of PACPOL and being key partners for its implementation.
- The governments and administrations of all SPREP member countries, through relevant agencies, for contributing to the development of PACPOL by facilitating identification of country needs and priorities and reviewing the draft of PACPOL, and for being key partners for its implementation.
- The shipping, port and oil industries, as represented by individual companies and the Australian Institute of Petroleum and the International Tanker Owners Pollution Federation Ltd, for reviewing the draft of PACPOL and being key partners for its implementation.
- Staff at SPREP for reviewing the draft of PACPOL.

The PACPOL Strategy and Workplan was developed by the SPREP Marine Pollution Adviser with the assistance of the parties acknowledged above.

Introduction and background

The importance of coastal and marine environments to every aspect of the lives of Pacific islanders cannot be overstated. The impacts of marine pollution, including ship-sourced pollution, constitute a major concern for Pacific island people.

1.1 The region

The term "Pacific islands region" is used in PACPOL to describe that area of the Pacific Ocean encompassing the island countries and territories of Micronesia, Melanesia and Polynesia, excluding Rapa Nui (Easter Island) Ao-te-aroa (New Zealand) and Hawaii. The countries and territories which comprise the Pacific islands region are all members of SPREP (Figure 1). Australia, France, New Zealand and the USA are also members of SPREP but are not considered part of the Pacific islands region for the purposes of technical assistance under PACPOL. They are important supporters of PACPOL.

Within this region exists a diversity of physical and biological environments, from large, high, jungle-clad continental islands in the west to rugged volcanic outcrops and isolated, low-lying coral atolls throughout the north and east. The total combined land area of these islands constitutes a mere 550,000 square kilometres, spread across a huge 30 million square kilometres of ocean. Coastal and marine environments are therefore extremely important.

Coastal and marine environments are typified by coral reefs and seagrasses throughout the entire region, with mangroves extending as far east as Samoa. Village-based subsistence fishing forms a mainstay of virtually all regional societies, and modern commercial uses of these environments, such as coastal and marine-based tourism and commercial fishing, form the major components of most regional economies.

The importance of coastal and marine environments to every aspect of the lives of Pacific islanders cannot be overstated. The impacts of marine pollution, including ship-sourced pollution, constitute a major concern for Pacific island people.

1.2 Shipping in the region

The Pacific islands have an extremely rich maritime heritage. The islands themselves were first populated by what are arguably the greatest mariners in human history. In pre-European times the Pacific islanders navigated wooden canoes held together with coconut fibre across thousands of kilometres of open ocean, with nothing but the stars and their intimate knowledge of the sea to aid navigation. Today, this seafaring tradition is continued, with several island countries, such as Kiribati and Tuvalu, being suppliers of seamen to the regional and global shipping fleet.

There are also the epic voyages of European exploration, with seafarers such as Magellan, Tasman, Cook and Bligh carving their places in history with their own outstanding feats of navigation. World War II heralded another major chapter in maritime history. Some of the largest naval battles ever fought took place in the Pacific (with their subsequent pollution).

In modern times, as island states located within the world's largest ocean, the island members of SPREP are overwhelmingly dependent on shipping for economic survival. Shipping in the region can be grouped into the following broad categories:

- transit shipping: ships which pass through the region without stopping, en-route to other destinations;
- international shipping (as distinct from transit shipping): ships calling at the major ports of the region from outside the region, either with incoming cargo or tourists (cruise ships) or to take out exports;
- regional shipping: ships trading (both cargo and passengers) between the countries and territories within the region;
- domestic shipping: ships trading (both cargo and passengers) within each country in the region;
- foreign fishing fleet: fishing vessels from distant water fishing nations operating within the region;
- domestic fishing fleet: fishing vessels from the Pacific islands themselves;
- miscellaneous: special purpose vessels such as warships, research vessels, tourist vessels and private yachts and pleasure and fishing craft.

Whilst to date a systematic, quantitative assessment has not been carried out, it is likely that transit shipping constitutes the largest component in terms of size of vessels, tonnage carried and frequency of voyages. At time of publication, details of shipping routes and shipping lanes, including types and tonnages of cargo carried and frequency of voyages, have not been accurately mapped for the region.

1.3 Marine pollution in the region

Despite the benefits and necessity of shipping, this human use of the ocean can also cause a range of sometimes severe environmental impacts. These include (but are not restricted to):

- the translocation and introduction of marine species across environmental barriers attached to ships' hulls and within ships' ballast tanks;
- shipping accidents resulting in sometimes catastrophic releases of oil and possibly other contaminants;
- the discharge of ships' wastes, including waste oil and plastics and other garbage into the sea;
- the dumping of wastes other than ships' wastes at sea (as defined by the London Convention);
- the leaching into the sea of toxic chemicals from anti-fouling paints on ships' hulls; and
- coastal and marine environmental impacts from the development and operation of ports which serve the shipping industry.

Compared to other regions of the world, the Pacific is probably relatively free of marine pollution. This may be due to the huge area of the region and the relatively low intensity and small size of ships (apart from transit shipping) servicing the region. Nevertheless, there are some serious pollution "hot spots" in the region, including the highest levels of tributyl tin measured in port sediments anywhere in the world (Maata 1997).

Although data is lacking, characteristics of ship-sourced marine pollution in the region may be as follows:

- water and sediments in many ports in the region are severely polluted (as described above);
- marine debris, especially from the foreign fishing fleet, appears to be a major problem in some areas (Noughton, pers comms 1999);
- the provision of ships' waste reception facilities in regional ports is generally inadequate;
- World War II saw major oil pollution incidents throughout the region (for which the environmental impacts and recovery have never been properly assessed);
- groundings and sinkings of vessels, especially fishing vessels, are extremely common in the region (Preston et al 1997);
- the accuracy of navigation charts, the standards of navigation aids and the standards of maritime training may not be as high in the region as other parts of the world;
- the introduction of foreign marine species, including by transit shipping undertaking reballasting at sea (in order to protect countries outside the region) could be a major problem, but has not been assessed; and
- the capacity of Pacific island countries and territories to prevent and respond to shipping impacts is currently limited, and most countries do not have adequate pollution prevention and response plans.

The IMO, as the United Nations agency with global responsibility for shipping matters, considers the Pacific islands as an "Area of Concern". Most Pacific island countries have not adopted the various IMO conventions relating to the protection of the marine environment (Appendix I).

1.4. The development of PACPOL

Cooperative, multilateral programmes to address marine pollution have been in place in many other regions for some years now, including the Baltic Sea, Caribbean Sea, Indian Ocean, the Mediterranean Sea and the East Asian Seas. The need for a similar initiative in the Pacific islands region has long been recognised by IMO and SPREP. This need is reflected in the National Environmental Management Strategies (NEMS) that have been prepared by most island member countries with assistance from SPREP.

In response to this need, during the early 1990s IMO assisted SPREP to prepare the SPREP/IMO Strategy and Work Programme for the Protection of the Marine Environment in the South Pacific Region (SWPPMESPR, or more simply the SPREP/IMO Strategy). This was published in 1993. Unfortunately, for various reasons, the SPREP/IMO Strategy was not implemented.

The development of PACPOL stems directly from a revision and updating of the SPREP/IMO Strategy, and represents a concerted effort to resurrect this strategy and proceed with project implementation.

Development of PACPOL was undertaken during the 1998 calendar year by the SPREP Marine Pollution Adviser with funding from COMSEC and CIDA, under C–SPOD. It involved the following general activities:

- preparation of a draft PACPOL Strategy and Workplan, based on the SPREP/IMO Strategy;
- circulation of this to all stakeholders for review and comment—stakeholders included the IMO, all SPREP members, other regional organisations and the shipping, port and oil industries;
- a consultation and fact-finding mission to member countries and other stakeholders;
- a review of a similar regional marine pollution strategy in the Caribbean, to identify useful lessons for the Pacific;
- presentation of the proposed PACPOL Strategy and Workplan to the tenth SPREP meeting (September 98), at which it was approved and endorsed;
- submission of funding proposals to C–SPOD and IMO, resulting in funding approval;
- production and publication of the final Strategy and Workplan (this document), based on responses from stakeholders to the draft and findings of the consultation visits, ready for implementation.

PACPOL Strategy

The aim of PACPOL is to maintain, protect and enhance the quality of coastal and marine environments in the Pacific islands region by minimising ship-sourced marine pollution.

2.1 Aim and objectives

The aim of PACPOL is:

To maintain, protect and enhance the quality of coastal and marine environments in the Pacific islands region by minimising ship-sourced marine pollution.

The objectives of PACPOL are:

- to assess the current and potential risks of ship-sourced marine pollution in the Pacific islands region;

- to assist SPREP island members to develop better capacity to effectively prevent and respond to shipping incidents and marine pollution, including:
  - increasing membership of IMO and adoption and implementation of MARPOL and other international marine pollution conventions;
  - increasing adoption and implementation of the SPREP Convention Pollution and Dumping Protocols;
  - developing regional and national marine pollution contingency plans and associated activities and systems;
  - targeting projects to address identified high priority marine pollution problems.

2.2 Underlying principles

The PACPOL Strategy is based on the following underlying principles:

- The programme is based on the assessment that the marine environment in the Pacific islands region is relatively unpolluted, and that the best approach is to keep it this way. However, the programme does recognise that there are specific areas in the region that are severely polluted, and that there is an ever-present risk of a major marine spill, especially from transit shipping.

- The programme is based on the premise that prevention is better than cure, but recognises that despite best efforts, incidents and accidents can always occur. Contingency plans are therefore needed to supplement pollution prevention efforts.

- The programme reflects the needs and priorities of Pacific island countries and territories, and is fully endorsed and actively supported by all SPREP members.

- The programme seeks to implement the global marine pollution regulatory regime, as administered by IMO, at the regional level, and provides a vehicle for the implementation of international activities to address marine pollution in the region. The programme also seeks to implement, in part, regional agreements such as the SPREP Convention and its protocols.

- The programme is regionally coordinated and integrated with other related programmes and initiatives, and includes collaboration between SPREP and other regional organisations which are members of the Council of Regional Organisations in the Pacific (CROP–formerly known as SPOCC).

- The programme is endorsed and supported by the private sector, in particular the oil, shipping and port industries, and seeks to encourage private sector solutions to marine pollution. The private sector must be fully integrated into regional and national marine pollution contingency plans.

- The programme recognises the current limitations on the capacity of Pacific island countries to manage marine pollution, and seeks to address these through capacity building and institutional strengthening, with a long-term view to self-sufficiency in marine pollution management.

- The programme will minimise the use of external expertise and consultants. It will use traditional expertise and adopt regionally relevant and culturally appropriate methods to reduce marine pollution wherever possible, while recognising that marine pollution is a 'western' problem that often requires 'western' solutions.

- The programme will incorporate gender considerations throughout.

- Whilst the overriding aim of PACPOL is protection of coastal and marine environments from ship-sourced marine pollution, the vital role of shipping in the region and the need for the shipping industry to further develop will be considered at all times.

2.3. Geographical scope

The geographical scope of PACPOL is the Pacific islands region, defined as the coastlines and all marine waters within the 200 nautical mile limits of the 22 Pacific island countries and territories which are

members of SPREP (SPREP island members—Table 1 and Figure 1).

SPREP island members are grouped into two categories: the 14 independent and semi-independent countries (Pacific island countries) and the eight territories (Pacific island territories—Table 1).

In addition to the SPREP island members, there are four developed countries which are also members of SPREP (Table 1). They do not constitute part of the Pacific islands region, but play a vital role in supporting PACPOL.

2.4. Technical scope

2.4.1. Definition of ship

For the purposes of PACPOL "ship" is defined as any vessel used by humans for transport, commerce, recreation or any other purpose on the sea, including but not restricted to all types and sizes of cargo vessels, passenger vessels, fishing vessels, research vessels, naval vessels, barges, boats, yachts, launches, dinghies and canoes. PACPOL is designed to address marine pollution from all vessel types.

2.4.2. Definition and types of marine pollution

Marine pollution is defined by the United Nations' (UN) Group of Experts on the Scientific Aspects of Marine Protection (GESAMP) as: "the introduction by humans, directly or indirectly, of substances or energy to the marine environment resulting in deleterious…effects".

PACPOL is designed to address ship-sourced marine pollution, in particular:

- marine spills (oil and other hazardous materials);
- ships' waste (oil, sewage and garbage/marine debris);
- introduced marine species;
- the development and operation of ports.

PACPOL does not address marine pollution from land-based activities, atmospheric fallout and other non-ship sources.

2.5. Institutional arrangements

A regional programme consisting of a range of different projects to be implemented over several years, in a large number of developing countries spread

Table 1 SPREP member countries and territories

SPREP island members		SPREP developed country members
Pacific island countries	**Pacific island territories**	
Cook Islands	American Samoa	Australia
Fiji Islands	Northern Mariana Islands	France
Kiribati	French Polynesia	New Zealand
Marshall Islands	Guam	United States of America
Federated States of Micronesia	New Caledonia	
Nauru	Pitcairn Islands	
Niue	Tokelau Islands	
Palau	Wallis and Futuna	
Papua New Guinea		
Samoa		
Solomon Islands		
Tonga		
Tuvalu		
Vanuatu		

throughout a huge expanse of ocean, cannot be successful without adequate institutional arrangements. The institutional arrangements for PACPOL include mandate, programme management and human resources, funding, sectoral and organisational linkages and reporting requirements, as outlined below.

2.5.1. Mandate

The mandate for PACPOL is derived from a number of sources, including:

- The National Environmental Management Strategies (NEMS) developed by Pacific island countries with assistance from SPREP, which identify the need to further develop capacity in the area of marine pollution management.
- The Convention for the Protection of the Natural Resources and Environment in the South Pacific Region (SPREP Convention) and in particular its Dumping and Pollution Protocols. These require parties to develop and implement regional, cooperative programmes and arrangements to address marine pollution (NB: Not all SPREP members are party to the SPREP Convention or its protocols, see Appendix I).
- The international Law of the Sea (LOS), in particular the following:
  - Article 43. Navigational and safety aids and other improvements and the prevention, reduction and control of marine pollution;
  - Article 194. Measures to prevent, reduce and control pollution of the marine environment;
  - Section 2. Global and Regional Cooperation;
  - Article 204. Monitoring of the risks or threats of marine pollution;
  - Section 5. International Rules and National Legislation to Prevent
  - Reduce and Control Pollution of the Marine Environment;
  - Section 6. Enforcement.
- The various IMO and related marine pollution conventions, including:
  - the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL);
  - the International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC);
  - the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1969 (Intervention Convention);
  - the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, as modified by the Protocol of 1996 relating thereto (London Convention or LC).

(NB: Not all SPREP members are party to the United Nations Convention on the Law of the Sea (UNCLOS) or IMO pollution conventions, see Appendix I.)

- The SPREP Workplan 1998–2000, approved by the ninth SPREP intergovernmental meeting and including a Waste Management, Pollution Prevention and Emergencies component.
- The tenth SPREP intergovernmental meeting held in Apia, Samoa, in September 1998, which endorsed and approved PACPOL for implementation.
- Supporting comments received from SPREP member countries, international and regional organisations and the private sector during the development of PACPOL in 1998.

In addition, at the ANZECC/APEC Asia-Pacific workshop on Ship-based Pollution held in Townsville, Australia, in April 1998, PACPOL was endorsed as the regional programme to address ship-sourced marine pollution in the Pacific islands (a sub-set of the broader Asia-Pacific region).

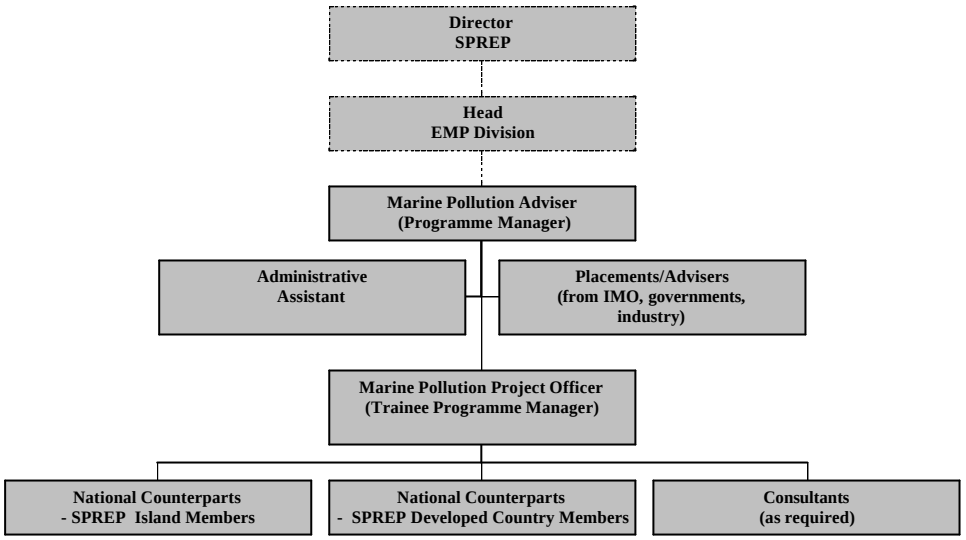
2.5.2. Programme management and human resources

Responsibility for the development and ongoing management of PACPOL rests with the SPREP technical secretariat in Apia, Samoa. The programme falls under the Waste Management, Pollution Prevention and Emergencies area of the Environmental Planning and Management (EMP) Division.

SPREP's responsibility includes managing the implementation of PACPOL projects and ensuring the delivery of outputs and benefits to SPREP island members, securing and managing funding for PACPOL projects and reporting progress to SPREP members, donors and other stakeholders. The following human resources are required for the full implementation of PACPOL:

- three full-time positions at the SPREP office in Samoa, consisting of:
  - Marine Pollution Adviser;

Figure 2 PACPOL staff resourcing



  - Marine Pollution Project Officer;
  - Administrative Assistant;
- External Placements/Advisers at SPREP;
- part-time National Counterparts in each SPREP member country and territory;
- consultants as required.

Director SPREP and Head EMP Division: These are core SPREP positions which allocate a small percentage of time to the overall supervision of PACPOL as part of corporate management functions.

Marine Pollution Adviser: Undertakes the role of PACPOL Programme Manager. Commenced duties in January 1998. Funded by COMSEC until the end of 1999. Possible extension to the end of 2000. Resourcing to be secured thereafter.

Marine Pollution Project Officer: Assists the Marine Pollution Adviser. A training position, aimed at eventually assuming the programme management role. The Project Officer is expected to commence in mid to late 1999 and is funded by C–SPOD until mid to late 2003. Resourcing to be secured thereafter.

Administrative Assistant: A part-time Administrative Assistant (approximately 20 per cent time) is provided by EMP.

Placements/Advisers: As PACPOL proceeds, SPREP will invite technical experts from external organisations such as IMO, developed country governments and industry to undertake placements at SPREP, at source-party cost, to assist with human resourcing and enhance organisational links.

PACPOL National Counterparts: PACPOL National Counterparts in each Pacific island country will assist with the delivery and implementation of projects within countries. PACPOL National Counterparts in each Pacific island territory and SPREP non-island member will coordinate links with and support for PACPOL.

PACPOL National Counterparts may vary between countries and territories. Ideally they should comprise the head of the national maritime administration, who may delegate to another individual or administration. The maritime administration should be supported in this role by the environment administration and SPREP National Focal Point (if different).

Appendix II lists these for each SPREP member. For significant issues, communications between SPREP and PACPOL National Counterparts should be directed via the SPREP National Focal Points.

The time spent by PACPOL National Counterparts on PACPOL projects should be part of the relevant officers' normal workload, provided by each national/territorial government as support-in-kind for PACPOL, along with logistical, organisational and other in-country assistance to PACPOL projects.

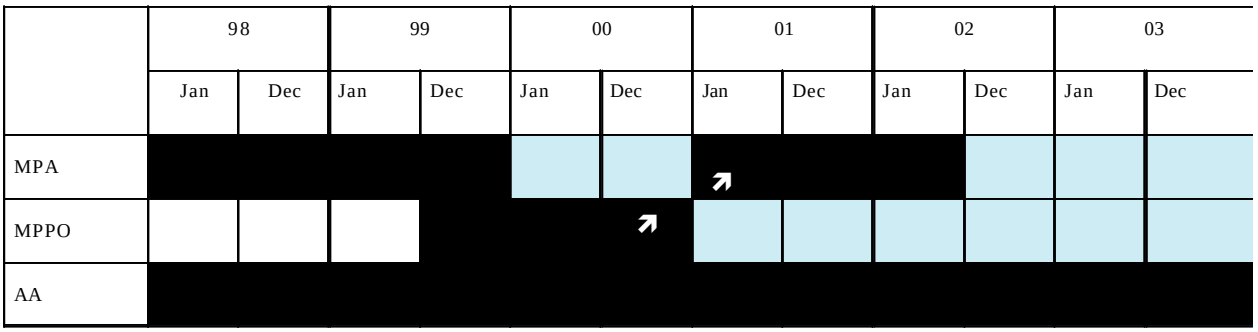
Consultants: Consultants will be engaged as required and include personnel from other CROP organisations for projects that are to be implemented jointly. Pri-

vate sector consultants will be engaged on a commercial contractual basis. Joint projects with other CROP organisations will be conducted under project-specific letters of understanding.

Successional plan

Once the Project Officer succeeds the Adviser, a new Project Officer should be recruited to allow an ongoing, long term successional capacity within the programme. Funding for this successional plan is not yet secured. The need for additional staff time in the administrative support area, including the possibility of a full-time position, should be monitored and met as PACPOL proceeds. SPREP is committed to identifying and securing ongoing, long-term resourcing for marine pollution personnel and providing the necessary in-house support and services.

Table 2 PACPOL staff resourcing—five year successional plan



MPA = Marine Pollution Adviser. MPPO = Marine Pollution Project Officer. AA = Adminstration Assistant

= Funding secured (at April 99)

= Funding not secured (at April 99)

↗ = MPPO assumes MPA position

2.5.3. Funding

At April 1999, the majority of funding for PACPOL has been provided as follows:

COMSEC:	Marine Pollution Adviser emoluments for two years (1998–1999) plus approximately US$8,000 equipment and regional travel contribution.
C–SPOD:	US$45,000 for programme development in 1998. US$660,000 for the implementation of selected high priority projects over three years (1999–2001—refer Workplan).
IMO:	US$220,000 for the implementation of three specific projects (refer Workplan).

Table 3 Primary funding sources for the implementation of PACPOL

Item	Funding Source
Office accommodation/services for Marine Pollution Adviser, Project Officer and Admin. Assistant	SPREP
Computer, office furniture and equipment for Marine Pollution Adviser	COMSEC
Computer, office furniture and equipment for Marine Pollution Project Officer	C-SPOD
Salary for Marine Pollution Adviser	COMSEC (98/99 only, to be secured thereafter)
Salary for Marine Pollution Project Officer	C-SPOD (99-01 only, to be secured thereafter)
Salary for Admin. Assistant (20% time)	SPREP
Operational budget (travel, communications etc)	COMSEC, C-SPOD, IMO
Project implementation budget (including administration.)	C-SPOD, IMO (+ support from industry)
National Counterparts/in-country support	SPREP Members

Long-term staff resourcing, eleven regional projects and six country-specific projects remain unfunded (refer Workplan). As currently funded projects are implemented, further resourcing for remaining projects will need to be identified and secured. Potential sources include:

- additional funds from C–SPOD and IMO;
- SPREP non-island members (Australia, France, New Zealand and USA);
- aid programmes of other countries, in particular Japan and the United Kingdom, which have well-developed maritime sectors and marine pollution management capabilities;
- international organisations, including the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).

2.5.4. Sectoral and organisational linkages

It is vital that PACPOL is not just a SPREP initiative but is truly a regional programme, coordinated and consistent with other regional and international activities relating to marine pollution. PACPOL links with the following organisations and programmes:

International Maritime Organization (IMO)

The IMO is a key partner in PACPOL. IMO is the United Nations agency responsible for the international maritime regulatory regime. IMO administers a number of international conventions relating to maritime safety and pollution prevention (Appendix I). IMO also manages an Integrated Technical Co-operation Programme (ITCP), under which technical assistance and seed-funding is provided to developing countries to further IMO's global goals of "Safer Shipping—Cleaner Oceans".

Assisting Pacific island countries to become members of IMO and to adopt and implement relevant IMO conventions is a major objective of PACPOL. A general Memorandum of Understanding (MOU) has been signed by IMO and SPREP which in effect gives SPREP observer status at IMO meetings. This provides a mechanism for representation of the Pacific islands region as a whole at such meetings. A specific MOU has also been signed between IMO and SPREP for the delivery of ITCP projects in the region by SPREP, through PACPOL.

Secretariat of the Pacific Community (SPC)

SPC is an intergovernmental organisation with similar membership to SPREP (with the addition of the United Kingdom) which provides technical assistance to member countries in all areas of social and economic development.

SPC runs a Regional Maritime Programme (RMP) which focuses on two key areas: the development of maritime training in the region, including implementation of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW); and assisting member countries to develop maritime legislation in accordance with IMO conventions.

PACPOL has been developed in close consultation with SPC's RMP, and some PACPOL projects will be implemented jointly between SPREP and SPC, in particular the development of marine pollution legislation for Pacific island countries (Project CL1) and the development of a marine pollution education module for regional maritime training institutes (Project EAR 5).

South Pacific Forum Secretariat (ForSec)

ForSec is an intergovernmental, regional organisation with its members drawn from the fourteen independent and self-governing Pacific Island countries and includes Australia and New Zealand. ForSec programmes are aimed at promoting regional cooperation among member states through trade, investment, economic development, and political and international affairs.

ForSec management of a Regional Natural Disaster Relief Fund and the works of the Petroleum Adviser are of direct relevance to PACPOL. In addition ForSec is the regional coordinating partner agency for C-SPOD, the primary funding source for PACPOL.

PACPOL will link closely with ForSec's petroleum activities to ensure that environmental and pollution issues related to the petroleum industry are addressed in a cooperative and consistent manner.

ForSec also has a role in donor coordination and has been charged by CROP to coordinate the CROP Regional Strategy through working groups. As such they have a role in ensuring that PACPOL is coordinated with other regional partners, in particular through the Marine Sector Working Group.

Forum Fisheries Agency (FFA)

FFA is a technical agency of the Forum island countries that offers advice on the sustainable management and development of the offshore fisheries resources, in particularly the four major Tuna species.

FFA's role in PACPOL is to assist SPREP with those PACPOL projects which relate to the fishing industry, including:

- education projects which target the fishing industry (Project EAR 1), and
- developing regional fisheries surveillance and enforcement arrangements to include marine pollution surveillance and enforcement (Project MS 6).

South Pacific Applied Geoscience Commission (SOPAC)

SOPAC is a regional organisation whose primary role is to assist Pacific island countries with the exploration and exploitation of mineral resources, but which has also developed technical expertise in a number of natural resource management areas, including in the coastal and marine fields.

SOPAC's role in PACPOL is as a potential collaborator or consultant, to implement those PACPOL projects that may require the scientific and technical expertise possessed by SOPAC, consistent with SOPAC's other activities and commitments (e.g. Project RA 1).

University of the South Pacific (USP)

USP is the premier regional tertiary education and research institution, with a significant marine studies programme. USP's role in PACPOL is as a potential collaborator or consultant to implement those PACPOL projects that may require the scientific and technical expertise possessed by USP, consistent with USP's other activities and commitments (e.g. Project IMS 2).

Oceania Regional Response Team (ORRT)

ORRT is an interagency team comprising US Federal, State and Local government agencies chaired jointly by District 14 of the US Coast Guard in Hawaii and Region 9 of the US Environmental Protection Agency in San Francisco. ORRT advises on response planning and actual responses to marine spills in the Pacific islands which are under some form of US jurisdiction. These comprise the Territory of American Samoa, the Territory of Guam, the State of Hawaii and the Commonwealth of the Northern Mariana Islands.

ORRT has developed an Oceania Regional Contingency Plan (ORCP), which provides the framework for the response to marine spills in these jurisdictions. It is vital to ensure linkages between ORCP and the broader Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN), being developed under PACPOL. Such linkages should include mechanisms for the provision of assistance by the US and its Pacific island jurisdictions to non-US islands, and vice versa.

Oil, shipping and port industries

Involvement of the private sector, in particular the oil, shipping and port industries, is vital to the success of PACPOL. The support and cooperation of

industry, including assistance with the resourcing of projects, will continue to be developed throughout the implementation of PACPOL.

Individual oil companies are important sources of support-in-kind for the annual PACPOL workshops and marine spill response training, and must be integrated into regional and national contingency plans.

The Association of Pacific Ports (APP) is a networking organisation for port authorities in the region. The APP has shown a growing interest in the environmental considerations of port planning, development and management, and is an important partner for the implementation of PACPOL projects relating to ports.

Non-government organisations

There are four main environmental NGOs active on a regional or semi-regional basis in the Pacific islands region: Greenpeace, The Nature Conservancy (TNC), the South Pacific Action Committee for Human Ecology and the Environment (SPACHEE) and the World Wide Fund for the Conservation of Nature and Natural Resources (WWF).

None of these currently run significant programmes of direct relevance to PACPOL, although Greenpeace is very active on the issue of carriage of nuclear materials by ships and the marine dumping of nuclear waste. Greenpeace is also campaigning for the abolition of Flags of Convenience, or ship registries which do not require compliance with the international regulatory regime administered by IMO.

Links and cooperative projects will be developed with regional NGO's throughout the implementation of PACPOL. PACPOL National Counterparts are responsible for in-country links with NGOs at the national level.

2.5.5. Reporting requirements

As part of its programme management responsibilities, the SPREP Secretariat will regularly report on progress with the implementation of PACPOL to SPREP members, to programme donors, to other regional organisations, the IMO, the regional oil, shipping and port industries and the community in general. This will be achieved through:

- the normal SPREP reporting process to members, including publication and distribution of the SPREP Annual Reports;
- the reporting requirements of individual funding arrangements with programme donors;
- presentations at relevant meetings, conferences, workshops and seminars; and
- the regional news media.

PACPOL Workplan

The PACPOL Workplan forms the "backbone" of the programme, outlining the projects that need to be implemented in order to reduce ship-sourced marine pollution in the region.

3.1. Introduction

The PACPOL Workplan forms the "backbone" of the programme, outlining the projects that need to be implemented in order to reduce ship-sourced marine pollution in the region. The Workplan describes both regional projects and country-specific projects, and outlines the time frame for their implementation.

The projects contained within the Workplan reflect the needs and priorities of Pacific island countries, as identified through country consultations during the development of PACPOL in 1998.

The Workplan is presented in tabular form. Further details for each project are contained on individual project sheets in Appendix III for regional projects and Appendix IV for country-specific projects. The project sheets provide the basis for a project document for each project.

3.2. Regional projects

Regional projects are those which address marine pollution problems that are common to the whole region and generally apply to all Pacific island countries. In some instances initial pilot phases may be undertaken in only a limited number of countries. Regional projects are grouped into the following categories (in no particular order):

- Staff Resources (SR) projects
- Risk Assessment (RA) projects
- Education and Awareness Raising (EAR) projects
- Conventions and Legislation (CL) projects
- Introduced Marine Species (IMS) projects
- Marine Spill (MS) projects
- Ships' Waste (SW) projects
- Port (PO) projects.

Workplan Table 1 summarises regional projects.

3.3. Country-specific projects

Country-specific projects are those which are specifically required by a particular Pacific island country to address marine pollution in that country, given its particular circumstances. Country-specific projects are unique to individual countries, and were identified through country consultations during the development of PACPOL in 1998.

Workplan Table 2 summarises country-specific projects.

Most countries did not identify country-specific projects during the consultation phase, and therefore are not listed in Workplan Table 2. All of the regional projects in Workplan Table 1 apply at the national level and therefore are not repeated in this section.

Workplan Table 1 Regional projects

(For details on each project refer to project sheets in Appendix III)

Project Area	Project Code & Title	Description	US$	Funding (at 4/99)	Time-line	Priority
Staff Resources (SR)	SR 1: Extension of Marine Pollution Adviser (MPA)	Extend contract by 12 months (to end 2000) to ensure programme implementation. Secure future resourcing.	70K/yr	Not secured	12 months	V. High
	SR 2: Marine Pollution Project Officer	Employ regional counterpart to assist MPA, receive training and assume MPA's position. Secure future resourcing.	155K/3yrs	C-SPOD: 99-01	3 yrs initially	V. High
Risk Assessment (RA)	RA 1: Marine Pollution Risk Assessment	Describe/map shipping patterns and identify high risk areas throughout the region and within each island country.	100K	C-SPOD	1 yr (3-5 yr review)	V. High
Education/Aware--ness Raising (EAR)	EAR 1: Visual Materials	Produce visual materials for marine pollution awareness raising, including posters, stickers, brochures/ pamphlets.	60K	C-SPOD	1 yr Ongoing	High
	EAR 2: Marine Pollution Video	Produce video for marine pollution education.	60K	Not secured	6 months	Low
	EAR 3: Marine Pollution Education Kit for Schools	Develop/produce marine pollution education kit for primary/secondary schools.	30K	Not secured	6 months	Medium
	EAR 4: Marine Pollution Module for Tertiary Education Institutions	Develop/produce marine pollution education module for USP marine studies course.	In-house	SPREP in-house	6 months	Medium
	EAR 5: Marine Pollution Module for Maritime Training Institutes	Develop/produce marine pollution education module for regional maritime training institutions.	In-house	SPREP in-house	6 months	High
	EAR 6: Media Strategy	Develop & implement media strategy for PACPOL.	In-house	SPREP in-house	Ongoing	High
Conventions & Legislation (CL)	CL 1: Marine Pollution Legislation for Pacific Island Countries	Assist each Pacific island country to implement national marine pollution legislation, consistent with IMO conventions, through a regional model.	60K	IMO	2 yrs	V. High
	CL 2: SPREP Convention Protocols	Update the 2 SPREP Convention Protocols to ensure consistency with OPRC and London Conventions.	30K	SPREP core budget	1 yr	
	CL 3: IMO Conventions	Assist Pacific island countries to become party to, ratify and implement IMO marine pollution conventions.	CL1.	Through CL1	Ongoing	V. High
	CL 4: IMO Representation	Ensure effective & cost-effective representation of region at relevant IMO meetings, as required.	5K/yr	C-SPOD	Ongoing	Medium
Introduced Marine Species (IMS)	IMS 1: IMS Risk Assessment	Assess the risk of IMS entering each Pacific island country through shipping.	500K	Not secured	18 months	High
	IMS 2: IMS Surveys	I. Determine the presence/absence, distribution and impacts of IMS in Pacific island countries. II. Start with pilot study.	I. 1. 2M II. 100K	Not secured	I. 5 yrs II. 1 yr	High
Marine Spills (MS)	MS 1: Spill Prevention Review	Review current spill prevention measures in all Pacific island countries and recommend improvements.	100K	Not secured	6 months	V. High
	MS 2: Marine Spill Contingency Plans	Update/develop marine spill contingency plans for the region (PACPLAN) and each Pacific island country (NATPLANS).	75K	C-SPOD	1 yr Ongoing	High
	MS 3: Annual PACPOL Workshops	Hold an annual PACPOL regional workshop: ·Training in marine spill response ·Regional desk-top exercise. ·Regional coordination meeting.	50K/ yr	98: IMO 99: IMO/C-SPOD 2000: C-SPOD Not secured thereafter	Annual, Ongoing	High

Workplan Table 1 Regional projects (cont'd)
(For details on each project refer to project sheets in Appendix III)

Project Area	Project Code\Title	Description	US$	Funding (at 4/99)	Time-line	Priority
Marine Spills (MS) continued:	MS 4: Regional Equipment Strategy	Review spill response equipment needs in each country and develop strategy.	70K	Not secured	6 months	V. High
	MS 5: PACRep	Establish a regional marine spill reporting centre and database to provide information to support management.	In-house	SPREP, C-SPOD	Set up: 3 months Ongoing	Medium
	MS 6: PACPOLPatrol	Establish a regional marine pollution surveillance system, utilising existing fisheries surveillance programme and routine civil flights.	Set up: 5K	C-SPOD	Set up: 6 months Ongoing	Medium
	MS 7: Coastal Resource Mapping	Provide a coastal resource map for each Pacific island country (3 pilot projects first).	Pilot: 300K All: 2M	Not secured	Pilot: 18 months All: 5 yrs	Low
	MS 8: Marine Spill Trajectory Modelling	Provide spill trajectory models for a limited number of high risk areas in each Pacific island country for use in spill response planning (3 pilot projects first)	Pilot: 300K All: 2M	Not secured	Pilot: 18 months All: 5 yrs	Low
	MS 9: Review of Impacts of Marine Oil Spills on Pacific Island Environments	Provide regionally relevant data on the impacts of marine oil spills by reviewing impacts of and recovery from known spills in the region to date.	150K	Not secured	1 yr	
Ships' Waste (SW)	SW1: Improving Ships' Waste Management In Pacific Islands Ports	Review adequacy of ships' waste reception facilities against IMO criteria in all Pacific island countries. Develop action plan for facilities.	150K	IMO Australia	1 yr	V. High
	SW 2: Coastal Clean-ups	Extend Centre for Marine Conservation (CMC) International Coastal Clean-up to as many Pacific island countries as possible.	In-house	SPREP, CMC, countries	Ongoing	Medium
Port Project (PO)	PO 1: Environmental Management Guidelines for Pacific Island Ports	Develop regional environmental management guidelines for use by ports.	In-house	SPREP, C-SPOD	6 months	High
	PO 2: Environmental Audits of Regional Oil Terminals	Audit a sample of regional oil terminals.	50K	Not secured	6 months	High

Workplan Table 2: Country-specific projects
(For details on each project, refer Project Sheets in Appendix IV).

Country	Project Code\Title	Description	US$	Funding	Time-line	Priority
Fiji (FJ)	FJ 1: Suva Harbour Marine Pollution Management Plan	Develop and implement an integrated management plan to address all sources of marine pollution in Suva harbour.	1M*	Not secured	Develop: 1 yr Ongoing	Urgent
	FJ 2: Vuda Point Contamination Survey	Assess potential contamination of sediments and seafood species at Vuda point.	150K*	Not secured	6 months	High
Federated States of Micronesia (FSM)	FSM 1: Okat Harbour Environmental Management Plan	Develop and implement an integrated management plan to address all sources of marine pollution in Okat harbour, Kosrae State.	100K	Not secured	Develop: 1 yr Ongoing	Medium
Niue (NI)	NI 1: Beveridge Reef Resource Survey	Develop marine resource inventory and monitoring baseline for Beveridge Reef, which is at risk from pollution from ship groundings.	50K	Not secured	18 months	Medium
Solomon Islands (SI)	SI 1: Removal of Oil from WWII Wrecks	Remove remaining oil from WWII wrecks in Iron Bottom Sound.	TBD**	Not secured	TBD**	High
Tuvalu (TV)	TV1: TBD**	During PACPOL consultations, Tuvalu expressed interest in country-specific projects to address particular marine pollution issues in their jurisdiction. Details to be developed upon country-mission by PACPOL staff, which was unable to be undertaken during 1998.	TBD**	Not secured	TBD**	TBD**

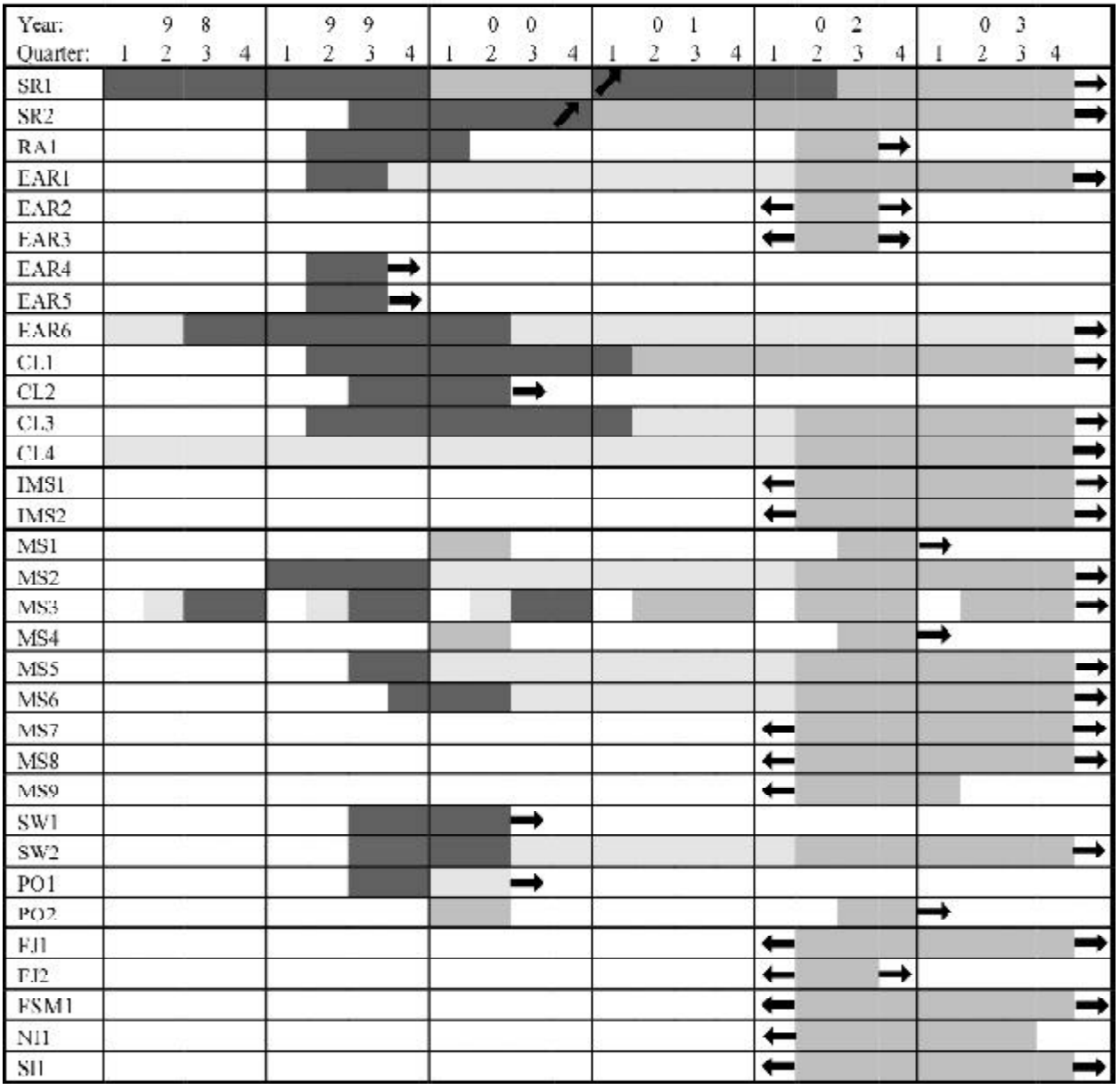
* Developmental costs only. Implementation budget to be determined.
** TBD = To be determined.

3.4. Time frame

Phase One, the development of PACPOL, was completed in 1998. Phase Two, implementation of PACPOL projects, covers a five-year time frame, from early 1999 until the end of 2003.

Highest priority projects, as initially funded by C–SPOD and IMO, will be implemented in the first three years (1999–2001). Implementation should be reviewed by all stakeholders at the end of this period. Remaining projects may be implemented in 2002–2003, subject to this review, additional resources and evolving country needs, priorities and capacity.

Workplan Table 3 Project implementation timelines (indicative only, April 1999)



No project tasks planned.

Tasks planned and resourced.

Tasks planned at reduced levels and resourced.

Tasks planned but not resourced.

MPPO assumes MPA position.

Ongoing requirement for work in this area.

Project commencement could be bought forward if funds available/Workplan permits.

At the end of the first five-year period, the success or otherwise of PACPOL should be reviewed by all stakeholders who should appoint and resource a review committee for the task. The programme may then be further developed for the post-2003 period.

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Appendices

Appendix I

Marine Pollution Conventions in SPREP Member Countries (at April 1999)

Countries	IMO	UNCLOS	MARPOL	OPRC	CLC 92	FUND 92	HNS	INTVN.	LC	LC 96 Prot.	SPREP Conv.	SPREP Dump. Prot.	SPREP Pol. Prot.
Cook Is		x									x	x	x
Fiji	x	x	x					x			x	x	x
Federated States of Micronesia		x									x	x	x
Kiribati									x				
Marshall Is	x	x	x	x	x	x		x	x		x	x	x
Nauru	x	x									x	x	x
Niue													
Palau		x									x	x	x
Papua New Guinea	x	x	x					x	x		x	x	x
Samoa	x	x									x	x	x
Solomon Is	x	x							x		x	x	x
Tonga		x	x	x				x	x				
Tuvalu			x								x	x	x
Vanuatu	x		x	x	x	x		x	x	x			
Australia	x	x	x	x	x	x		x	x	x	x	x	x
France	x	x	x	x	x	x		x	x	x	x	x	x
New Zealand	x	x	x		x	x		x	x		x	x	x
United States of America	x		x	x				x	x		x	x	x

A key objective of PACPOL is to work towards complete filling of the above table, thereby establishing a standardised regulatory regime for ship-sourced marine pollution in the Pacific islands region.

NB: Table only indicates whether a country is a party to a convention. It does not indicate whether a country has ratified or implemented the convention domestically. Also, the table does not show to which annexes and/or protocols of each convention countries may also be party (except LC 96 Protocol and SPREP Convention Protocols). For further details refer to the IMO web site (http://www.imo.org) or enquire at SPREP. Pacific island territories are not shown explicitly, although many are covered through convention membership by the SPREP non-island member with which they are associated.

Appendix II

PACPOL Contacts in SPREP Member Countries and Territories (April 1999)

(The preferred PACPOL National Counterpart in each country/territory is the head of the national maritime administration, who may delegate to another individual or administration. The maritime administration should be supported in this role by the environment administration and SPREP National Focal Point (if different). For significant issues, communications from SPREP to PACPOL National Counterparts should be directed via the SPREP National Focal Points. Port authorities and oil companies in each country/territory are also important PACPOL contacts, but are not listed).

Country/Territory	1. Maritime Administration	2. Environment Administration	3. SPREP National Focal Point
Cook Is	Director of Marine Ministry of Tourism & Transport PO Box 61, Rarotonga Ph (682) 28810 Fax (682) 28816	Director Environmental Services Ministry of Works, Energy & Physical Planning PO Box 371, Rarotonga Ph (682) 21256 Fax(682) 22256 Resources@environment.org.ck	Secretary Ministry of Foreign Affairs and Immigration PO Box 105, Rarotonga Ph (682) 29347 Fax (682) 212 47 seefa@foraffairs.gov.ck
FSM	Secretary Department of Transportation, Communication and Infrastructure PO Box PS2, Palikir, Pohnpei Ph (691) 320 2865 Fax (691) 320 5853 transfm@mail.fm	Secretary Department of Economic Affairs PO Box PS 70, Palikir, Pohnpei Ph (691) 320 2646 Fax (691) 320 5854	Secretary Department of Foreign Affairs PO Box PS 123, Palikir, Pohnpei Ph (691) 320 2613 Fax (691) 320 2933
Fiji	Director Marine Department PO Box 328, Suva Ph (679) 315 266 Fax (679) 303 348	Director Department of Environment Ministry of Urban Development, Housing & Environment PO Box 2131, Suva Ph (679) 211 545 Fax (679) 303 515	Permanent Secretary Ministry of Urban Development, Housing & Environment PO Box 2131, Suva Ph (679) 211 416 Fax (679) 303 515
Kiribati	Director of Marine Ministry of Information, Communication & Transport Betio, Tarawa Ph (686) 26003 Fax (686) 26572	Permanent Secretary Ministry of Environment & Social Development PO Box 234, Bikenibeu, Tarawa Ph (686) 28211 Fax (686) 28334 mesd7@tskl.net.ki	Permanent Secretary Ministry of Foreign Affairs PO Box 68, Bairiki, Tarawa Ph (686) 21342 Fax (686) 21466
Marshalls	Contact via 2.	General Manager Environmental Protection Agency PO Box 1322, Majuro Ph (692) 625 3035 Fax (692) 625 5202	As per 2.
Nauru	Contact via 3.	Contact via 3.	Secretary Department of External Affairs Republic of Nauru Ph (674) 444 3100 Fax (674) 444 3105
Niue	Director Public Works Department Alofi Ph (683) 4193 Fax (683) 4223 Email mochpwd@mail.gov.nu	Director Community Affairs Office PO Box 77, Alofi Ph (683) 4019 Fax (683) 4391 takainoiu@mail.gov.nu	Secretary to Government Premier's Department PO Box 40, Alofi Ph (683) 4200 Fax (683) 4232 external@mail.gov.nu
Palau	Chief Division of Transportation Ministry of Commerce and Trade PO Box 1471, Koror Ph (680) 488 2559 Fax (680) 488 5129	Executive Officer Environmental Quality Protection Board PO Box 100, Koror Ph (680) 488 1630 Fax (680) 488 2963 epqb@belau.com	Minister of State Office of the Minister PO Box 100, Koror Ph (680) 488 2509 Fax (680) 488 2443
PNG	Secretary Maritime Division Department of Transport & Civil Aviation PO Box 1489, Port Moresby Ph (675) 321 1866 Fax (675) 321 4968	Secretary Department of Environment & Conservation PO Box 6601, Boroko Ph (675) 325 0180 Fax (675) 325 0182	As per 2.

Samoa	Secretary Ministry of Transport PO Box 1607, Apia Ph (685) 22744 Fax (685) 25206	Director Department of Lands, Survey and Environment Private Mail Bag, Apia Ph (685) 25019 Fax (685) 23176	Secretary Ministry of Foreign Affairs PO Box L1859, Apia Ph (685) 63333 Fax (685) 21504 mlai@samoa.net
Solomons	Marine Department Ministry of Transport, Works and Aviation PO Box G32, Honiara Ph (677) 22942 Fax (677) 23798	Chief Environment & Conservation Officer Environment & Conservation Division Ministry of Forests, Environment & Conservation PO Box G24, Honiara Ph (677) 21521 Fax (677) 21243	As per 2.
Tonga	Secretary Ministry of Marine & Ports PO Box 144, Nukualofa Ph (676) 23168 Fax (676) 24267 Email marports@kalia.to	Secretary Ministry of Lands, Survey & Natural Resources PO Box 5, Nukualofa Ph (676) 23210 Fax (676) 23216	As per 2.
Tuvalu	Director Marine & Port Services Ministry of Works, Energy and Communications Vaiaku, Funafuti Ph (688) 20725 Fax (688) 20790	Secretary Ministry of Natural Resources & Environment Private Mail Bag, Funafuti Ph (688) 20102 Fax (688) 20113	Secretary to Government Office of the Prime Minister Private Mail Bag, Funafuti Ph (688) 20801 Fax (688) 20819
Vanuatu	Commissioner of Maritime Affairs Vanuatu Maritime Authority PO Box 45, Port Vila Ph (678) 23410 Fax (678) 23405	Head- Environment Unit Ministry of Lands and Natural Resources Private Mail Bag 063, Port Vila Ph (678) 25302 Fax (678) 23565 Email environment@vanuatu.gov.vu	Director-General Ministry of Lands and Natural Resources Private Mail Bag 007, Port Vila Ph (678) 25302 Fax (678) 25165
American Samoa	Supervisor U.S. Coast Guard Marine Safety Detachment P.O. Box 249, Pago Pago, 96799 Ph (684) 633-2299 Fax (684) 633-1933	Director American Samoa Environmental Protection Agency Office of the Governor Pago Pago Ph (684) 633 2304 Fax (684) 633 5801	As per 2.
French Polynesia	Principal Commissioner Marine Nationale (French Navy) Secteur Postale 91325 00204 Armees, Tahiti Ph (689) 465 587 Fax (689) 465 056	Charge Delegation a l'Environment BP 4562, Papaeete, Tahiti Ph (689) 432409 Fax (689) 419253 delenv@mail.pf	Special Adviser for Foreign Affairs Department of External Relations BP 2551 Papaeete, Tahiti Ph (689) 5347 28 Fax (689) 432011
Guam	Commanding Officer U.S. Coast Guard Marine Safety Office Guam PSC 455, Box 176 FPO, AP 96540-1056 Ph (671) 339-2001 Fax (671) 339-2005	National SPREP Representative Guam Environmental Protection Agency 15-6101 Mariner Ave, Tiyan, Barrigada Ph (671) 472 8863 Fax (671) 477 9402	As per 2.
New Caledonia	Director Department of Merchant Marine & Marine Fisheries Boite Postale 36 98845 Noumea Ph (687) 272 626 Fax (687) 287 286	Contact via 3.	SPREP Correspondant Government Delegate for New Caledonia and Wallis/Futuna French High Commission BP M2 Noumea Ph (687) 272822 Fax (687) 272 828

Country/Territory	1. Maritime Administration	2. Environment Administration	3. SPREP National Focal Point
Northern Marianas	Supervisor U.S. Coast Guard Marine Safety Detachment Emergency Operations Center Capitol Hill Saipan MP 96950-5000 Ph (670) 233-9495 Fax (670) 233-9493	Director Division of Environmental Quality P O Box 1304 Saipan MP 96950 Ph (670) 664 8500 Fax (670) 664 8540 deq.director@saipan.com	SPREP Contact Caller Box 10007 Saipan MP 96950 Ph (670) 664 2200 Fax (670) 664 2211
Pitcairn	N/a	N/a	First Secretary (Press & Public Affairs) British High Commission PO Box 1812, Wellington New Zealand Ph (64) 4 4726 049 Fax (64) 4 711 974
Tokelau	Contact via 2.	Director Department of Natural Resources & Environment Atafu, Tokelau Ph (690) 21227 Fax (690) 2108	As per 2.
Wallis & Futuna	Contact via 3.	Contact via 3.	Prefect (SPREP Correspondent) Chief Territorial Administrator Mata-utu Ph (681) 722 952 Fax (681) 72 324
Australia	Executive Manager International Relations Australian Maritime Safety Authority GPO Box 2181 Canberra City ACT 200. Ph (61) 2 6279 5614 Fax (61) 2 6279 5009 michael.julian@amsa.gov.au	Director International Unit Department of the Environment and Heritage Level 5, NCC House 16 Moore St, Canberra Ph (61) 6 6274 1388 Fax (61) 6 6274 1858 richard.bomford@ea.gov.au	High Commissioner Australian High Commission Apia, Samoa Ph (685) 23411 Fax (685) 23159 o'callaghan@dfat.gov.au
France	Contact via 3.	Contact via 3.	Deputy Permanent Representative French Delegation to the Pacific Community BP 8043, Noumea, New Caledonia Ph (687) 261 600 Fax (687) 261 266 jpgaltier@spc.org.nc
New Zealand	Divisional Manager Marine Environment Protection Maritime Safety Authority of New Zealand PO Box 27006, Wellington Ph (64) 4 473 0111 Fax (64) 4 473 1245 mike.patrick@msa.govt.nz	Secretary Ministry for Environment PO Box 10362, Wellington Ph (64) 4 473 4990 Fax (64) 4 471 0195 mno@mfe.govt.nz	High Commissioner New Zealand High Commission Beach Road, Apia, Samoa. Ph (685) 21711 Fax (685) 20086
USA	Chief Marine Safety Division District 14 US Coast Guard 300 Ala Moana Blvd Honolulu HI 96850 Ph (1) 808 541 2114 Fax (1) 808 541 2116 tricc@d14uscg.mil	Manager Pacific Insular Area Programs United States Environmental Protection Agency 75 Hawthorne Street (CMD-5) San Francisco CA 94105 Ph (1) 415 744 1559 Fax (1) 415 744 1604 lovelace.norm@epamail.epa.gov	Science Affairs Officer OES/OA/MLP, Room 5805 Department of State 2201 C Street NW Washington DC 20520 Ph (1) 202 647 3883 Fax (1) 202 647 9099 AlcantaraRR@state.gov

Appendix III

Project Sheets for Regional Projects

In order to develop a programme which effectively addresses marine pollution it is necessary to first have a picture of shipping patterns, including shipping lanes, shipping types, cargoes carried and shipping frequencies and intensities, plus the locations and descriptions of ports. This would allow a marine pollution risk assessment to be conducted. One project will be undertaken under PACPOL to address general risk assessment: Project RA1 Marine Pollution Risk Assessment for the Pacific Islands Region

PACPOL PROJECT SHEET

Project RA1: Marine Pollution Risk Assessment for the Pacific Islands Region

Introduction

There is currently no information available in a consolidated form describing shipping patterns throughout the Pacific islands region that would allow identification and assessment of marine pollution risks.

Without such information it is not possible to identify high risk and/or problem areas and develop focused, prioritised actions to address these areas. Such a risk assessment forms an essential, fundamental starting point for PACPOL.

Aims

The risk assessment aims to:

- identify, describe, quantify and map shipping patterns in the Pacific islands region,
- identify, describe and map marine pollution hazards in Pacific island ports,

in order to collate and present data to help identify high risk areas for shipping accidents/marine pollution incidents.

Scope

The assessment will be conducted at three scales:

- the Pacific islands region as a whole;
- within the 200 nautical mile limit of each Pacific island country/territory;
- for each capital/major port within each country/territory.

The assessment will apply to all ships as defined by the International Convention on the Prevention of Pollution from Ships 1973 and its Protocol of 1978 (MARPOL 73/78) and its annexes, and will include fishing vessels from distant water fishing nations.

Outputs

The project outputs will comprise:

- a GIS map of the Pacific islands region displaying:
  - shipping lanes,
  - cargo types and tonnages carried,
  - shipping frequencies and intensities,
  - locations and descriptions of all ports, especially oil loading/unloading operations,
  - identification of mid-ocean ballast exchange/ reballasting sites and
  - identification of high risk areas for shipping accidents/marine pollution incidents;
- a GIS map of each Pacific island country/territory displaying the above within the 200 nautical mile limit of each country/territory;
- a GIS map of each capital/major port in each country/territory identifying and describing high risk areas for shipping accidents/marine pollution incidents within each port.

Methods

- The study will be done by a consultancy on contract to SPREP.
- Methods to be used will be proposed by the consultancy and assessed/approved by SPREP prior to commencement.
- Methods should include obtaining and analysing data from national maritime and port authorities, shipping companies and shipping agents.
- Data and maps to be updateable every two years.

Budget

US$100,000

Time frame

Twelve months from contract signing.

Education and Awareness Raising (EAR) projects

Education and awareness raising is one of the most effective tools in environmental management. Once stakeholders become aware of environmental values, the impacts that human activities can have on these values and the options available to reduce/eliminate these impacts, they are more likely to become committed to protecting the environment. Education and awareness raising is widely recognised as being more effective than legislation and enforcement as an environmental management tool.

Marine pollution education programmes have been under development and implemented in many countries outside of the region for some time (e.g. Australia, USA). Whilst the products of these programmes may be useful for some applications in the Pacific islands, they may not always be regionally relevant nor culturally appropriate.

A concerted and sustained marine pollution education and awareness-raising programme which is customised for use in the Pacific islands region and targets the full range of stakeholders is required as a high priority under PACPOL.

Six projects will be undertaken under PACPOL to improve marine pollution education and awareness raising in the Pacific islands region. These are:

- Project EAR 1: Visual materials
- Project EAR 2: Marine pollution education video
- Project EAR 3: Marine pollution education kit for schools
- Project EAR 4: Marine pollution education module for tertiary education institutions
- Project EAR 5: Marine pollution education module for maritime training institutes
- Project EAR 6: PACPOL Media strategy.

PACPOL PROJECT SHEET

Project EAR 1: Visual Materials

Introduction

Visual materials such as posters, stickers, decals and brochures have been used effectively in general environmental education efforts for many years. There are currently few, if any, such materials addressing marine pollution in a Pacific islands context. Development of a coordinated set of visual materials linked by a common theme and style would be most useful for marine pollution education and awareness raising, as well as general marketing and publicising of PACPOL.

Aim

To stimulate commitment by all stakeholders to reducing/eliminating marine pollution in the Pacific islands region by raising awareness about the impacts of marine pollution and the options available to reduce/eliminate these impacts.

Scope

- This project applies to all Pacific island countries and the outputs could be used by island territories.
- The visual materials will target a broad audience, with a priority given to foreign fishing fleet crews and mariners.

Outputs

- The visual materials will comprise a range of outputs, including posters, stickers, decals, brochures and booklets.
- These outputs must be regionally relevant and culturally appropriate, and have a distinct Pacific islands flavour whilst getting the desired messages across to the target audiences effectively.
- Outputs will be produced in a variety of languages where beneficial and cost-effective.

Methods

- Outputs will be produced as a coordinated package by consultancies on contract to SPREP.
- Methods will be proposed by the consultancies and reviewed/approved by SPREP.
- Methods will include consultations with FFA for materials which target the fishing industry.

Budget

US$60,000

Time frame

- All initial outputs will be produced within six months of commencement.
- Implementation throughout the five year PACPOL implementation period, with annual reviews and reprints as required, subject to funding.

PACPOL PROJECT SHEET

Project EAR 2: Marine Pollution Education Video

Introduction

The use of videos is a proven and popular tool in environmental education and presents a useful medium for marine pollution education as they can be readily used by all stakeholders, including seafarers on board ships. Videos also provide an opportunity for corporate sponsorship through advertising, especially by relevant industries such as the shipping industry, manufacturers of boating and fishing equipment and the manufacturers of marine pollution equipment.

Aim

To stimulate commitment by all stakeholders to reducing/eliminating marine pollution in the Pacific islands region by raising awareness about the impacts of marine pollution and the options available to reduce/eliminate these impacts.

Scope

- This project applies to all Pacific island countries and the output could be used by island territories.
- The video will target the full range of stakeholders, including school students, school teachers, university students, coastal communities and villages, the shipping industry (including mariners), the fishing industry, non-government organisations, women's groups and all levels of government.

Outputs

- A simple video, using entertaining/easily comprehensible approaches, outlining the sources and impacts of and solutions to marine pollution.
- The video must be regionally relevant and culturally appropriate, and have a distinct Pacific islands flavour whilst getting the desired messages across to the target audiences effectively.
- In the first run, 10,000 will be produced in English, in both PAL and NTSC.

Methods

- The video will be produced by a consultancy on contract to SPREP.
- Methods to be used will be proposed by the consultancy and reviewed/approved by SPREP.
- The option of corporate sponsorship will be explored in developing the video.

Budget

US$60,000

Time frame

- Video production within six months of contract signing.
- Implementation and annual reviews throughout the five-year PACPOL implementation period.
- Reproductions as required (subject to funding).

PACPOL PROJECT SHEET

Project EAR 3: Marine Pollution Education Kit for Schools

Introduction

In order to gain long-term benefits from environmental education it is important to target the emerging generations who will be taking up positions in industry and government in future years. Environmental education as a formal part of school curriculums is a relatively recent phenomenon in the region, and generally does not include an explicit marine pollution component at this time. Targeting school students as part of marine pollution education and awareness raising is a high priority under PACPOL.

Aim

To stimulate commitment by primary and secondary school students to reducing/eliminating marine pollution in the Pacific islands region, by raising awareness about the impacts of marine pollution and the options available to reduce/eliminate these impacts.

Scope

- This project applies to all Pacific island countries and the output could be used by island territories.
- This project targets both primary and secondary schools.

Outputs

- Development of a marine pollution education kit, with exercise workbooks and other teaching/ learning resources (including outputs of projects EAR 1 and 2) for use by regional education systems.
- The kit must be regionally relevant and culturally appropriate, and have a distinct Pacific islands flavour whilst getting the desired messages across to the target audiences effectively.
- Kits will be produced in a variety of languages where beneficial and cost-effective.

Methods

- The education kit will be produced by a consultancy on contract to SPREP.
- Methods to be used will be proposed by the consultancy and reviewed/approved by SPREP.
- Methods will include significant consultation with regional education administrations, teachers' groups and the SPREP general environmental education programme.

Budget

US$ 30,000

Time frame

- Development of the education kit will be completed within six months of contract signing.
- Implementation, annual reviews and periodic updates throughout the five year PACPOL implementation period (subject to funding).

PACPOL PROJECT SHEET

Project EAR 4: Marine Pollution Module for Tertiary Education Institutions

Introduction

Many graduates of science, geography and other courses in tertiary education will take up positions in industry and government where they may be directly responsible for or involved in the management of marine pollution in the region. It is vital to ensure that these graduates have adequate skills and qualifications (capacity) to undertake such roles. Ensuring that regional tertiary education courses include appropriate marine pollution component is therefore an important part of PACPOL.

Aims

- To stimulate commitment by tertiary students to reducing/eliminating marine pollution in the Pacific islands region by raising awareness about the impacts of marine pollution and the options available to reduce/eliminate these impacts.
- To provide students in relevant tertiary courses with the basic qualifications to assist marine pollution management positions in relevant organisations upon graduation (capacity building).

Scope

This project applies to all Pacific island countries and the output could be used by island territories.

Outputs

- A review of regional university/other tertiary courses identifying opportunities to insert/further develop a marine pollution education component (e.g. in science and geography).
- Development of a marine pollution education module, with teaching/learning resources, for use by regional tertiary education systems.

Methods

- The review of tertiary courses and development of a marine pollution education module will be conducted as two sequential phases, internally at SPREP by PACPOL staff.
- Methods will include significant consultation with regional tertiary education administrations, lecturers' groups and the SPREP general environmental education programme.

Budget

SPREP in-house (PACPOL staff time and minor materials).

Time frame

- Review of tertiary courses and development of the marine pollution education component within six months of commencement.
- Implementation and annual reviews throughout the five year PACPOL implementation period (subject to funding).

PACPOL PROJECT SHEET

Project EAR 5. Marine Pollution Module for Maritime Training Institutes

Introduction

As the individuals who actually do the polluting, and/or who are responsible for preventing pollution (as the case may be), seafarers are perhaps the most important target audience for the marine pollution education and awareness raising programme.

There are a number of maritime training institutes in the region, from which seafarers are provided to both the regional and international shipping fleets. Most maritime training curriculums in the region include some coverage of marine pollution. However, an important task for PACPOL is to ensure that such coverage is providing maximum results in terms of reducing/eliminating pollution from ships.

Aims

- To stimulate commitment by maritime students to reducing/eliminating marine pollution in the Pacific islands region, by raising awareness about the impacts of marine pollution and the options available to reduce/eliminate these impacts.
- To provide maritime students with the qualifications necessary to reduce/eliminate maritime pollution from their operations once they commence employment as seafarers.

Scope

This project applies to all Pacific island countries and the output could be used by island territories.

Outputs

- A review of regional maritime training courses identifying opportunities to insert/further develop a maritime pollution education component.
- Development of such a component, with teaching/learning resources, for use by regional maritime training institutes.

Methods

- The review of maritime training courses and development of a marine pollution module will be conducted internally at SPREP by PACPOL staff.
- Methods will include significant consultation with SPC RMP, regional maritime training institutes and the SPREP general environmental education programme.

Budget

SPREP in-house (PACPOL staff time and minor materials). Support from SPC RMP.

Time frame

- Development of marine pollution module within six months of commencement.
- Implementation and annual reviews throughout the five-year PACPOL implementation period.

PACPOL PROJECT SHEET

Project EAR 6: PACPOL Media Strategy

Introduction

Newspapers, radio and television provide important media for general awareness raising. A comprehensive media strategy will be developed for PACPOL and implemented throughout the region.

Aim

To make maximum use of the news media as a tool for raising general awareness throughout the Pacific islands region about marine pollution and the activities of PACPOL.

Scope

The PACPOL media strategy will apply to all forms of the news media throughout the Pacific islands region plus Australia and New Zealand. It will cover all PACPOL activities.

Outputs

Development and implementation of a media strategy which effectively raises awareness throughout the region about marine pollution and the activities of PACPOL.

Methods

The PACPOL media strategy will be developed in-house by SPREP media staff, in close consultation with PACPOL staff.

Budget

SPREP in-house (PACPOL and media staff time and minor materials).

Time frame

- Strategy be developed within one month of commencement.
- Implementation and monthly reviews throughout the five year PACPOL implementation period.

Conventions and Legislation (CL) projects

Regulation of the shipping industry by government is an important tool for setting and maintaining standards, particularly in relation to crew conditions, safety and environment protection. Because shipping is an international, global industry, it is essential that regulatory regimes are also international, and that consistent standards are applied globally.

IMO has developed a number of international conventions which provide a standardised regulatory regime for the shipping industry. Several of these conventions regulate marine pollution. The status of international marine pollution conventions in SPREP member countries is contained in Appendix I. Some important ones are:

- The International Convention for the Prevention of Pollution from Ships 1973 as amended by the Protocol of 1978 (MARPOL).
- MARPOL regulates the design and operation of ships in relation to six types of marine pollution, through six annexes. These are:
  - Annex I Oil
  - Annex II Noxious liquid substances
  - Annex III Harmful packaged substances
  - Annex IV Sewage
  - Annex V Garbage
  - Annex VI Air emissions.
- The International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC).
  - OPRC provides a regime for international cooperation in the response to oil spills from ships. OPRC is currently being developed further to include spills of hazardous materials and chemicals from ships. Within the Pacific islands region, the Protocol covering Cooperation in Combating Pollution Emergencies of the SPREP Convention provides a regional equivalent of OPRC.
- The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, as amended by the Protocol of 1996 (London Convention).
  - This Convention, as amended by the 1996 Protocol, prohibits the dumping of wastes at sea, except for a restricted list of specified substances, and provides a regime for the environmental assessment and management of those substances which may be dumped. It applies to wastes which are loaded onto vessels for the purpose of dumping at sea, and not to wastes generated by the day-to-day operation of vessels. The latter are covered by MARPOL. Within the Pacific islands region, the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping of the SPREP Convention provides a regional equivalent of the London Convention (although it is currently not consistent with the London Convention and its 1996 Protocol).

Four projects will be carried out under PACPOL to assist countries with conventions and legislation:

- Project CL1: Marine Pollution Legislation for Pacific Island Countries
- Project CL 2: Updating of the SPREP Convention Protocols
- Project CL 3: Ratification/implementation of IMO Conventions
- Project CL 4: Representation of the Pacific Islands Region at IMO.

PACPOL PROJECT SHEET

Project CL1: Marine Pollution Legislation for Pacific Island Countries

Introduction

International conventions are of no use if they are not implemented within national jurisdictions by domestic legislation. If Pacific island countries are to be able to effectively reduce marine pollution, they must have effective regulatory regimes. Many Pacific island countries are not parties to, have not ratified and/or have not implemented IMO marine pollution conventions.

It is not absolutely necessary for countries to ratify such conventions in order to regulate marine pollution. Several Pacific island countries have already developed marine pollution legislation. Even if these countries are not party to or have not ratified relevant IMO conventions, it is essential that such legislation is totally consistent with these conventions. This will ensure that shipping in the region is subject to the same regulatory regime as other parts of the world, and will facilitate future ratification and implementation of IMO conventions by these countries.

Aim

To improve the protection of coastal and marine environments in the Pacific islands region by ensuring that each Pacific island country has effective national marine pollution legislation consistent with relevant international marine pollution conventions.

Scope

- This project will apply to all Pacific island countries.
- The legislation will apply to all ships and types of marine pollution as defined in Section 2.4 of PACPOL.

Outputs

- A review of the current status of marine pollution legislation in each Pacific island country, including whether such legislation exists, if it does whether it is consistent with the relevant international conventions and whether it is consistent with the regional model.
- Development of Model Marine Pollution Legislation that is consistent with the relevant international conventions for use by Pacific island countries to develop their national legislation.
- Provision of technical assistance to Pacific island countries to draft marine pollution legislation consistent with the regional model, or if they already have marine pollution legislation, to update such legislation should it not be consistent with the regional model.

Methods

The project will be undertaken collaboratively by SPREP and SPC through the SPREP Marine Pollution Adviser and Legal Officer and the SPC Regional Maritime Legal Adviser.

Budget

US$60,000 plus support-in-kind from SPREP and SPC RMP.

Time frame

Two years from date of commencement.

PACPOL PROJECT SHEET

Project CL 2: Updating of the SPREP Convention Protocols

Introduction

As stated above, the Protocol covering Cooperation in Combating Pollution Emergencies of the SPREP Convention provides a regional equivalent of OPRC and the Protocol for the Prevention of Pollution of the South Pacific Region by Dumping of the SPREP Convention provides a regional equivalent of the London Convention. Neither of these protocols is currently consistent with the international conventions that they are intended to implement in the region.

Aim

To facilitate implementation of the OPRC and London Conventions in the Pacific islands region by ensuring that the respective protocols to the SPREP Convention are consistent with these two international conventions.

Scope

This project will apply to the two protocols of the SPREP Convention.

Outputs

Amendments to the two protocols of the SPREP Convention to bring them into line with the OPRC and London Conventions (and its 1996 Protocol) respectively.

Methods

This project will be undertaken by a working group from SPREP, New Zealand and IMO.

Budget

US$30,000 (plus in-house support-in-kind from SPREP, New Zealand and IMO).

Time frame

Twelve months from commencement.

PACPOL PROJECT SHEET

Project CL 3: Ratification/implementation of IMO Conventions

Introduction

Once each Pacific island country has passed integrated marine pollution legislation which is consistent with IMO marine pollution conventions, it will be much easier for these countries to adopt, ratify and implement these conventions, thereby further strengthening their ability to effectively regulate marine pollution.

Aim

All Pacific island countries join IMO and adopt, ratify and implement all IMO marine pollution conventions.

Scope

This project applies to all Pacific island countries that are not IMO members and/or have not adopted, ratified or implemented all IMO marine pollution conventions (refer to Appendix I).

Outputs

Membership of IMO and ratification and implementation of IMO marine pollution conventions by all Pacific island countries.

Methods

- Much of project CL1 will be aimed at delivering the outputs of this project. In addition, every opportunity will be taken by SPREP to lobby Pacific island countries to join IMO and adopt/ratify/implement IMO marine pollution conventions through all PACPOL projects and awareness raising mediums and events.
- Technical assistance and advice will be provided to countries as requested.

Budget

CL 1 plus SPREP in-house staff time.

Time frame

Ongoing throughout implementation of PACPOL.

PACPOL PROJECT SHEET

Project CL 4: Representation of the Pacific Islands Region at IMO

Introduction

The Pacific islands region currently has limited representation at IMO. Several countries, such as Fiji, Solomon Islands and Vanuatu are members of IMO. Whilst some such as Vanuatu maintain permanent representation at IMO meetings, many find it difficult to send delegates due to limited resources versus the expense of travelling to IMO headquarters in London.

SPREP has signed a Memorandum of Understanding with IMO which allows observer status at IMO meetings, but generally does not attend meetings, also due to a lack of resources.

This limited representation by the region at IMO means that the international regulatory regime for shipping has developed and is developing largely without consideration of the interests of the Pacific islands. This can sometimes have disadvantages and may cause negative impacts in the region.

Aim

Effective and cost-effective representation of Pacific islands' interests at IMO.

Scope

This project applies to all Pacific island countries and only those IMO activities that relate to marine pollution.

Outputs

An international regulatory regime for shipping which reflects the needs of the Pacific islands region, and which does not disadvantage or cause inadvertent impacts on the region.

Methods

- Representation of Pacific islands' interests is most appropriately carried out by individual IMO member countries themselves. However, regional organisations such as SPREP can assist as observers at IMO meetings, disseminating information to SPREP member countries, and presenting statements on behalf of member countries.
- SPREP PACPOL staff can assist with this role.
- A vital role of this representative will be to canvas views from all Pacific island countries prior to IMO meetings, to ensure effective representation of these views at IMO and to report back to countries after meetings.
- In selecting which IMO meetings to attend, SPREP will carefully consider the relevance of the meeting agenda and the likely benefits for SPREP member countries versus the costs of attendance. In the interests of cost-effectiveness, only highest priority meetings of direct relevance to member countries will be attended.

Budget

US$5,000/year (ongoing).

Time frame

Ongoing.

Introduced Marine Species (IMS) projects

Introduced marine species (IMS) constitute a major threat to marine biodiversity, fisheries, aquaculture and even human health. Shipping, via ships' ballast water and hull fouling, is a major vector for the introduction of foreign marine species. No work has been done to date to address this issue in the Pacific islands region, despite the fact that it may constitute the major threat to the marine environment from shipping in the region. Two projects are proposed to address the IMS issue in the Pacific islands region:

- Project IMS 1: Introduced Marine Species Risk Assessment for the Pacific Islands Region (IMS Risk Assessment)
- Project IMS 2: Surveys for Introduced Marine Species in Pacific Islands Ports (IMS Surveys).

PACPOL PROJECT SHEET

Project IMS 1: Introduced Marine Species Risk Assessment for the Pacific Islands Region

Introduction

Whilst some work has been done in the region on introduced marine species (IMS) in relation to non-shipping vectors such as aquaculture (Eldridge 1994), shipping-related IMS have not been addressed at all. In order to develop a programme which effectively addresses IMS in the region, it is necessary to first identify high risk and/or problem areas and develop focused, prioritised actions to address these.

Aim

To assess the risk of IMS in the Pacific islands region via shipping.

Scope

All Pacific island countries, all ship types and both ballast water and hull fouling as vectors.

Outputs

- For each shipping lane in the region, identification of mid-ocean ballast exchange locations (especially relating to transit shipping), including times, frequencies and volumes of discharge.
- For each port in the region, characterisation of the deballasting cycle, including locations, times, frequencies and volumes of ballast water discharged, and description of any hull-cleaning practices.
- For each port in the region, identification of its full set of source ports from which ships arrive.
- For each port in the region, development of an environmental similarity matrix with its set of source ports from which ships arrive.
- For each port in the region, identification of a target list of foreign marine species that pose the highest risk of being introduced.
- For each Pacific island country, a statement on the risk of IMS occurring via shipping.
- Critical discussion of and recommendations stemming from the above.

Methods

- This project will be undertaken by a consultancy on contract to SPREP.
- Methods to be used will be proposed by the consultant and assessed/approved by SPREP.
- Methods to include use of the outputs of RA1 and Hilliard and Raaymakers (1997).
- The project may be staged, with a small sample of pilot study ports addressed first.

Budget

US$500,000.

Time frame

The project will be completed within 18 months of contract signing.

PACPOL PROJECT SHEET

Project IMS 2: Surveys for IMS in Pacific Island Ports

Introduction

It is necessary to obtain a picture of the current extent and impacts of existing introduced marine species throughout the region. This will provide management with an understanding of the extent and severity of current introductions, allow management responses (if any) to be formulated, and complement the work under Project IMS 1.

Aims

- To determine the presence/absence of IMS in the Pacific island ports, including, if possible, the vector by which any IMS found may have arrived.
- To assess the impacts of any IMS in the region.
- To recommend management responses to any IMS in the region

Scope

This project will apply to all main ports in Pacific island countries.

Outputs

For each Pacific island country, a report on a survey for IMS in each country, including:

- literature review and survey results (including species lists and GIS maps of distribution)
- assessment of impacts of any IMS found
- recommendations for management action and further monitoring
- Building of capacity at USP for future surveys.

Methods

- This project will be carried out by a consultancy on contract to SPREP. The consultancy will include relevant regional expertise such as the Marine Studies Programme at USP, the Bishop Museum in Hawaii and James Cook University of North Queensland. The latter two will undertake capacity building for the former throughout the project.
- Survey methods outlined in Hewitt and Martin 1996 will be used as a model for the field surveys.
- Field surveys will be preceded by literature reviews for each Pacific island country.
- Three pilot studies will be conducted initially.

Budget

- Initial pilot studies: US$300,000.
- Remaining surveys: US$2 million.

Time frame

- Initial pilot studies: 18 months from commencement.
- Remaining surveys: three years from date of commencement.

Marine Spills (MS) projects

Major shipping accidents resulting in catastrophic oil spills are probably the most familiar form of marine pollution to the general public, enhanced by the comprehensive media coverage usually afforded such events. However, they are not necessarily the worst form of marine pollution. Some would argue that the environmental impacts of introduced marine species, which are usually irreversible, are far worse than the impacts of oil spills, from which ecosystems will eventually recover over time.

In many areas, especially enclosed ports and busy shipping lanes, low-level, chronic oil pollution from regular small-scale spills and discharges of waste oil is a more serious problem than major oil spills. In addition to oil, there is a whole range of chemicals and hazardous materials that are carried by ships, which can cause severe impacts if spilt into the marine environment.

Although shipping levels and quantities of oil and hazardous materials carried in the Pacific islands region are low compared to other areas of the world, the risks of shipping incidents resulting in spills is still a major concern. Because many Pacific islands are so small, and because their populations are highly dependent on coastal and marine environments, even a relatively small spill can have significant negative impacts on Pacific island communities. Ten projects are proposed to address Marine Spills (MS) from shipping in the Pacific islands region:

- Project MS 1: Marine Spill Prevention Review
- Project MS 2: Regional and National Marine Spill Contingency Plans
- Project MS 3: Annual PACPOL Workshops
- Project MS 4: Regional Spill Response Equipment Strategy
- Project MS 5: Regional Marine Spill Reporting Centre (PACPRep)
- Project MS 6: Regional Marine Pollution Surveillance System (PACPOLPatrol)
- Project MS 7: Coastal Resource Mapping
- Project MS 8: Marine Spill Trajectory Modelling
- Project MS 9: Review of Impacts of Marine Oil Spills on Pacific Island Environments.

PACPOL PROJECT SHEET

Project MS 1: Marine Spill Prevention Review

Introduction

Because of inherent limitations in the ability to protect the environment once a pollutant has been spilt into the sea, PACPOL places the highest priority on measures to prevent marine spills from occurring.

Most measures for preventing marine spills are aimed at preventing shipping accidents, such as groundings and collisions, and therefore relate to shipping safety. In addition, accidents during the transfers from ship to shore and shore to ship are a major source of marine spills.

Through Project MS 1, PACPOL seeks to review current arrangements for the prevention of marine spills in the region and recommend ways of improving such arrangements.

Aim

To reduce the frequency of marine spills in the Pacific islands region by improving marine spill prevention measures in the region.

Scope

This project will address all measures to prevent marine spills from shipping in all Pacific island countries, including:

- oil/hazardous cargo loading/unloading operations/ procedures
- vessel fuelling operations/procedures
- domestic and regional vessel design standards
- crewing standards
- provision of navigation aids
- pilotage requirements
- Port State Control capabilities.

Outputs

A report reviewing the current status and standard of marine spill prevention measures in the Pacific islands region, as listed under scope, with recommendations for any improvements required in each Pacific island country.

Methods

- This project will be carried out by a consultancy on contract to SPREP.
- Methods will be proposed by the consultancy and reviewed/approved by SPREP.
- Methods to include significant consultation with SPC RMP, national maritime administrations and shipping and oil companies in Pacific island countries, including country visits.

Budget

US$100,000

Time frame

This project will be completed within six months of contract signing.

PACPOL PROJECT SHEET

Project MS 2: Regional and National Marine Spill Contingency Plans

Introduction

While priority must be given to spill prevention, it is also necessary to have a capability to respond to marine spills should they occur. Some Pacific island countries have developed contingency plans, however in many cases these have not been updated, exercised or communicated to relevant agencies.

Aim

To improve marine spill response capabilities in the Pacific islands region, by developing a regional contingency plan and assisting Pacific island countries to develop national plans.

Scope

- Contingency plans will be developed and implemented for both the regional and national levels.
- Consistent with world's best practice, these plans will cover spills of all types of pollutants (not just oil) into marine waters from all sources (not just shipping).

Outputs

- A Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN). This will contain, amongst other things, broad aims and objectives, underlying spill response philosophies and priorities, roles and responsibilities of relevant organisations, regional and supra-regional linkages and mechanisms for accessing regional and supra-regional assistance.
- A National Marine Pollution Committee in each Pacific island country, comprising representatives of all relevant government organisations plus the shipping, port and oil industries.
- SPREP Guidelines and Template for National Marine Spill Contingency Plans (SPREP NATPLAN Guidelines), for use by countries in developing NATPLANs. Technical advice and assistance, and financial assistance (US$5,000 per country) for Pacific island countries to develop and implement NATPLANs.

Methods

- PACPLAN and the SPREP NATPLAN Guidelines will be developed in-house by SPREP in consultation with SPREP member countries and territories, IMO and the oil industry.
- NATPLANs will be developed in-country by the marine pollution committees formed in each country. SPREP will provide technical assistance and a reimbursement grant of US$5,000 per country to these committees, as NATPLANs are completed and submitted to SPREP.

Budget

US$75,000.

Time frame

- PACPLAN and SPREP NATPLAN Guidelines completed within 12 months of commencement.
- Development of NATPLANs will depend on individual countries.

PACPOL PROJECT SHEET

Project MS 3: Annual PACPOL Workshops

Introduction

The development of regional and national capabilities to effectively respond to marine spills requires training, exercises and coordination. During the 1980s and until 1992 SPREP, IMO and Australia held biannual workshops in both Fiji and Australia to train personnel from Pacific island countries in marine spill response. No such workshops have been held since 1992. PACPOL will resurrect regional marine spill response training and combine it with annual exercising of the regional marine spill contingency plan (PACPLAN) and a regional coordination meeting, through annual workshops.

Aims

To improve the protection of coastal and marine environments in the Pacific islands region, by:

- training personnel from Pacific island countries in marine spill response
- exercising PACPLAN
- improving regional coordination in marine spill response matters.

Scope

- The workshops will cover the response to spills of all forms of hazardous substances from all sources into the marine environment.
- The training course is based on the IMO Level 2 Model Course, and targets middle-management personnel from government environmental and maritime administrations and the oil industry. It is designed to provide a general but reasonably detailed overview of all aspects of spill response.
- The one-day desk-top exercise and one-day coordination meeting will involve personnel from all SPREP member countries and territories.

Outputs

- A four day marine spill response training course for 50 trainees.
- A one-day desk-top exercise of a regional response to a major marine spill under PACPLAN.
- A one-day regional PACPOL coordination meeting.

Methods

The annual PACPOL workshops will be organised by SPREP PACPOL staff. The venue will rotate to a different Pacific island country each year.

Budget

US$50,000 per workshop. Support-in-kind from the government and oil industry in the host country and SPREP developed countries.

Time frame

Six days in late October each year. Ongoing (subject to funding).

PACPOL PROJECT SHEET

Project MS 4: Regional Spill Response Equipment Strategy

Introduction

Marine spill contingency plans are of little value if appropriate equipment is not available to respond to the spill. Whilst equipment is necessary, caution must be exercised to ensure that any investment of capital funds results in the most suitable equipment for the task and circumstances. The sustainability of such investment, including training, storage and maintenance, needs to be considered carefully.

Often simple, low-cost options utilising locally available products can be more effective and appropriate than expensive high technology. For example, chicken feathers, coconut husks or kapok wrapped with a fishing net can be used as a basic oil absorbent boom.

The option of sharing equipment through centralised regional resource centres, or accessing existing resource centres around the region, needs to be explored as a cost-effective way of providing major items of equipment in the event of a spill.

Aim

To improve marine spill response capabilities in the Pacific islands region, through the identification of regionally appropriate equipment arrangements.

Scope

This project applies to all Pacific island countries, and includes regional arrangements for access to resource centres in Pacific island territories and SPREP developed countries.

Outputs

- A review of current spill response equipment needs in all Pacific island countries, considering likely spill scenarios, local conditions and capacity to operate, store and maintain such equipment.
- Development of a regional equipment strategy, which identifies the most cost-effective way of providing for each country's needs (including opportunities for use of local resources and access to regional arrangements).
- The strategy will be provided to countries, the oil industry and major donors to pursue provision of the identified equipment needs on a bilateral basis.

Methods

- This project will be undertaken as a consultancy on contract to SPREP. Methods used will be proposed by the consultancy and reviewed/approved by SPREP. Methods to include country visits.
- Three experts will each be assigned to one of the three subregions of Micronesia, Melanesia and Polynesia (the region is too large to be covered by a single expert).

Budget

US$70,000.

Time frame

The project will be completed within six months of commencement.

PACPOL PROJECT SHEET

Project MS 5: Regional Marine Spill Reporting Centre (PACRep)

Introduction

An underlying principal of PACPOL is that you need to measure in order to manage. At present, data on the sources, frequencies, locations and types of marine spills in the region is generally unavailable. This makes it difficult to assess where the problem areas are located and to target management action.

Development of a Regional Marine Spill Reporting Centre would allow a database to be built, thereby providing useful information to management, including performance indicators to assess the effectiveness of PACPOL projects in reducing spills. It would also assist more effective coordination of regional and supra-regional assistance to Pacific island countries.

Aim

To improve marine spill response capabilities in the Pacific islands region, by providing data on marine spills in the region for use by management.

Scope

This project applies to all types of marine spills (not just oil) from all sources (not just shipping) in all Pacific island countries.

Outputs

- Development of a standardised marine Pollution Report (POLREP) for completion by spill response agencies in each Pacific island country, and forwarding to SPREP in the event of a spill, for entry into the PACPRep database.
- Establishment of the PACPRep database at SPREP.
- Annual reporting of data to Pacific island countries and other stakeholders for use by management.

Methods

- This project will be undertaken in-house at SPREP by PACPOL staff.
- Methods will include evaluation of similar spill reporting centres and databases in other countries (e.g. OILSPILL database developed by AMSA).
- Individual countries will be responsible for completing and submitting POLREPs.

Budget

SPREP in-house (staff time).

Time frame

- Establishment of PACRep will completed within three months of commencement.
- Reporting, recording and analysis will be ongoing.

PACPOL PROJECT SHEET

Project MS 6: Regional Marine Pollution Surveillance System (PACPOLPatrol).

Introduction

Effective responses to marine spills and other marine pollution (e.g. discharges of ships' garbage), including effective enforcement action, require a surveillance system. Such a system can also provide data on the sources, frequencies, locations and types of marine spills in the region for use by management, as per Project MS 6. There is currently no concerted surveillance system targeting marine pollution in the region.

Aim

To improve marine pollution management in the Pacific islands region by providing an effective marine pollution surveillance system to assist enforcement and other management efforts.

Scope

All types of marine pollution from all ship types in all Pacific island countries.

Outputs

Development of a Regional Marine Pollution Surveillance System (PACPOLPatrol) which utilises existing surveillance platforms and programmes (e.g. aerial surveillance by regional airforces, FFA/SPC fisheries surveillance and observer programmes, routine civil aviation and Pacific patrol boats programme). This system to include:

- development of a quick reference flip-chart; "Aerial Surveillance Guidelines for Marine Pollution in the Pacific Islands Region";
- training of aerial surveillance personnel in marine pollution surveillance;
- a system for voluntary participation by civil aviation as opportunistic observers;
- development of mechanisms for the rapid reporting of observed pollution incidents to enforcement and response authorities;
- development of a standardised marine Pollution Report (POLREP) for completion by surveillance personnel and submission as required.

Methods

- Developmental tasks and coordination will be undertaken in-house at SPREP by PACPOL staff.
- Initiation and coordination of the system, and training of observers, will piggy-back on the annual aerial surveillance meetings managed by FFA.
- Implementation of the system will piggy-back on existing surveillance and observer programmes.

Budget

US$5,000 for initiation meeting plus ongoing support-in-kind from SPREP and participating parties.

Time frame

Ongoing.

PACPOL PROJECT SHEET

Project MS 7: Coastal Resource Mapping

Introduction

Useful tools in marine spill response are maps showing the locations of coastal and marine resources that might be impacted by or used in the response to a spill. Such maps can be used to assess priorities for protection and to better plan the response. Coastal resource maps can be produced either as hard-copy maps or in electronic form on a computerised Geographic Information System (GIS).

Coastal resource mapping is highly advanced in many countries, not only for marine spill response but also general coastal resource management. Some coastal resource mapping has already been done for some Pacific islands.

Aim

To improve marine spill response capabilities in the Pacific islands region, by providing coastal resource maps for use in spill contingency plans.

Scope

This project applies to the entire coastline of all Pacific island countries.

Outputs

For each Pacific island country, a coastal resource map, both in hard copy and GIS, showing the spatial and temporal distribution of all biological, cultural heritage, recreational, commercial and industrial resources and infrastructure, environmental sensitivity gradings, protection priorities, chemical dispersant use/non-use zones and spill response equipment and priorities.

Methods

- This project will be undertaken as a consultancy on contract to SPREP.
- Methods to be used will be proposed by the consultancy and reviewed/approved by SPREP.
- Maximum use is to be made of all existing data, including resource maps from other programmes.
- Whilst coastal resource maps will ultimately be generated for the entire coastlines of all Pacific island countries, the consultancy will propose undertaking three pilot projects to begin with (to be determined).
- Standardised terms, symbols and classification systems, such as those outlined in IPIECA/IMO publication Sensitivity Mapping for Oil Spill Response 1996, shall be used.

Budget

- Initial pilot studies: US$300,000.
- Remaining surveys: US$2 million.
- Total: US$2.3 million.

Time frame

- Initial pilot studies: 18 months from commencement.
- Remaining surveys: three years from date of commencement.

PACPOL PROJECT SHEET

Project MS 8: Marine Spill Trajectory Modelling

Introduction

The use of computerised hydrodynamic models to simulate the dispersal of marine spills has been under development for over a decade. They provide a useful tool for predicting the likely trajectory of a spill under given conditions. Such models can be linked to GIS coastal resource maps to provide an indication of the resources likely to be impacted under a particular spill scenario.

It should be noted that such models are limited by the quantity and quality of physical data available to verify and calibrate the model. The main benefit is for pre-spill planning, rather than assisting a real-time response. For any given site, such as a port or high risk shipping lane, a range of spill scenarios under differing weather conditions can be modelled and the likely impacts predicted. This information can then be fed into the marine spill contingency plan for the area, allowing better planning, more accurate establishment of response priorities, predetermination of response options and pre-positioning of equipment. Generally, such models currently do not exist for the Pacific islands region.

Aim

To improve marine spill response capabilities in the Pacific islands region, by providing spill trajectory models for high risk areas, for use in spill contingency plans.

Scope

This project applies to all Pacific island countries, but models will only be developed for high risk areas (ports and busy shipping lanes).

Outputs

A three dimensional marine spill trajectory model, linked with the coastal resource map developed under Project MS 7, for each high risk area in each Pacific island country.

Methods

- This project will be undertaken by a consultancy on contract to SPREP.
- Methods will be proposed by the consultancy and reviewed/approved by SPREP.
- Methods will include an initial review of any existing models and the availability of physical oceanographic data, collection of high priority oceanographic data where needed, development, testing and implementation of the models and training of regional personnel in the use of the models.

Whilst models will ultimately be generated for high risk areas in all Pacific island countries, the consultancy will propose undertaking three pilot projects to begin with (to be determined).

Budget

- Initial pilot studies: US$300,000.
- Remaining models: US$2 million.

Time frame

- Initial pilot studies: 18 months from commencement.
- Remaining models: Three years from date of commencement.

PACPOL PROJECT SHEET

Project MS 9: Review of Impacts of Marine Oil Spills on Pacific Island Environments

Introduction

Perceptions of the impacts of marine spills, including oil spills, on marine and coastal environments vary widely. Baker (1990) reports that impacts of oil spills can range from total devastation of mangrove forests through to actual short-term enhancement of growth rates in some marsh plants.

An increased understanding of the environmental impacts of marine oil spills is essential to improved spill response. The impacts of oil spills on Pacific island environments have generally not been investigated. Management must rely on data from other areas which may not be applicable to conditions in the Pacific. Varying conditions in different areas can significantly influence the impacts of spills. Caution must be exercised when transposing research findings from one area to another.

Aim

To improve the response to marine oil spills in the Pacific islands region by providing a better understanding of the impacts of such spills on Pacific island environments.

Scope

This project will address the impacts of oil spills on all Pacific island coastal/marine environments.

Outputs

A report presenting aims, methods, results, critical discussion and management recommendations.

Methods

- This project will be conducted by a consultancy on contract to SPREP.
- Methods will be based on a review of spills that have occurred in the region to date, including the significant oil pollution that occurred in some areas of the Pacific during the World War II.
- The project will not include manipulative field experiments.
- Methods used by Duke et al (1998) will be used as a model.

Budget

US$150,000.

Time frame

The project will be completed within 12 months of commencement.

Ships' Waste (SW) projects

Three general types of waste are generated from day-to-day operations on-board ships; waste oil/oily waste, sewage and garbage. Disposal of these wastes into the sea can cause negative environmental impacts.

Discharge of waste oil and oily waste from ships can cause chronic oil pollution which in some areas can have greater impacts than large, one-off oil spills. Ships' sewage can cause degradation of marine water quality and have human amenity and health impacts when discharged untreated, especially in enclosed waterways, ports and harbours.

Ships' garbage, including plastics and fishing gear, contributes to marine debris. Marine debris can have severe impacts on marine life through ingestion and entanglement. Marine debris beaching on islands can greatly reduce the aesthetic and amenity value of coastal areas, with subsequent negative impacts on recreation and tourism. Marine debris can also interfere with shipping operations themselves, entangling propellers and fouling engine cooling water intake systems.

The management of waste oil, sewage and garbage from ships is regulated at the international level by MARPOL Annexes I, IV and V respectively. A key component of these Annexes is a requirement for ships' waste reception facilities to be provided in ports. Two projects will be conducted under PACPOL to address ships' waste in the Pacific islands region:

- Project SW 1: Improving Ships' Waste Management in Pacific Islands Ports
- Project SW 2: Coastal Clean-ups.

In addition, all EAR and CL projects will assist in addressing ships' waste in the region.

PACPOL PROJECT SHEET

Project SW 1: Improving Ships' Waste Management in the Pacific Islands ports

Introduction

If adequate facilities are not provided in ports to receive waste off ships, ships' crews may have little choice but to dispose of this waste by dumping it into the sea. It is therefore necessary to ensure that such facilities are available in the Pacific islands region if ships' waste is to be addressed effectively.

Aim

To improve the protection of coastal and marine environments in the Pacific islands region by developing a regionally coordinated, long-term strategy for the provision of adequate ships' waste reception facilities in each Pacific island country and territory, as appropriate.

Scope

- The project will address garbage and waste oil from all vessels. Generally, it will not address sewage. It will only address sewage from vessels in enclosed, poorly flushed harbour areas with concentrations of vessels, where people live aboard for extended periods.
- The project will cover all Pacific island countries and territories.

Outputs

- A review of the status of ships' waste reception facilities in each country/territory, including:
  - whether such facilities exist and
  - if they do, whether they are adequate in relation to demand and MARPOL requirements.
- A recommended optimum ships' waste management arrangement for each country/territory, based on the IMO publication *Comprehensive Manual on Port Reception Facilities* and the ANZECC publication *Best Practice Guidelines for Waste Reception Facilities in Ports, Marinas and Boat Harbours* (in some cases, especially small atolls, the optimum arrangement may be non-provision of facilities).
- Provision of technical assistance to each country and territory to implement the recommended ships' waste management arrangement.

Methods

- The first two outputs will be achieved through a consultancy on contract to SPREP.
- The consultancy team will undertake a fact-finding mission to each Pacific island country and territory. Three experts will be assigned, one to each of the three subregions of Micronesia, Melanesia and Polynesia (the region is too large to be covered by a single expert).

Budget

US$150,000.

Time frame

Completion within 12 months of contract signing.

PACPOL PROJECT SHEET

Project SW 2: Coastal Clean-ups

Introduction

Monitoring the types, quantities and locations of marine debris that come ashore onto islands can provide useful information to support an improved management response (e.g. better targeted education and enforcement). Linking such monitoring with marine debris clean-ups is useful for actually improving environmental quality and raising awareness about marine debris.

Aim

To reduce the impacts of marine debris in the Pacific islands region by collecting information on the types, quantities and locations of marine debris in the region and conducting clean-ups of marine debris along coastlines in the region.

Scope

This project applies to selected high exposure (sink) coastal sites throughout the region.

Outputs

A marine debris monitoring and coastal clean-up programme for the region.

Methods

- The output will be achieved through efforts by SPREP to extend the Centre for Marine Conservation's (CMC) International Coastal Clean-up to as many Pacific island countries as possible.
- SPREP will facilitate links between CMC and Pacific island countries.
- The marine debris clean-up programmes will be coordinated by the relevant agency in each Pacific island country.

Budget

SPREP and CMC staff time. Staff time and support-in-kind from participating countries.

Time frame

Annual, ongoing event.

Port (PO) projects

The shipping industry could obviously not operate without ports. Ports can be a major source of environmental impacts, both from the concentration of shipping that invariably occurs at ports and from the development and operation of the ports themselves.

Environment protection must form an integral part of modern port management. Integration of environmental considerations into port management is a relatively new concept in the Pacific islands region. Two projects are proposed under PACPOL to address this:

- Project PO 1: Environmental Guidelines for Pacific Island Ports
- Project PO 2: Environmental Audits of Regional Oil Terminals.

PACPOL PROJECT SHEET

Project P0 1: Environmental Guidelines for Pacific Island ports

Introduction

Effective integration of environmental considerations into port management cannot be achieved without a management plan. Most ports in the region do not have an environmental management plan, and guidelines that are regionally relevant and appropriate are not available to assist port authorities with the development of such plans.

Aim

To improve environmental management of ports in the region by integrating environmental considerations into port management.

Scope

This project applies to all Pacific island countries and the outputs can be used by island territories.

Outputs

The publication of Environmental Guidelines for Pacific Island Ports.

Methods

Development of the guidelines will be undertaken in-house by SPREP PACPOL staff, in consultation with APP.

Budget

US$2,000 for publication plus SPREP in-house (staff time).

Time frame

Six months from commencement.

PACPOL PROJECT SHEET

Project P0 2: Environmental Audits of Regional Oil Terminals

Introduction

Oil terminals are most often located within or immediately adjacent to port areas. As major sites for the movement and storage of oil, they are amongst the most significant potential polluters. Prevention of spills from terminals requires adherence to stringent design standards and operating procedures. While major improvements are underway, some oil terminals in the region may not fully comply with minimum environmental standards.

Individual oil companies routinely undertake audits of their terminals, however the results may not always be available to regulators. Governments of Pacific island countries currently have limited capacity to undertake independent audits. External environmental audits of a selected sample of regional oil terminals would assist greatly in determining the current state of compliance, identification of any improvements that might be required and in developing local auditing capacity.

Aim

To improve environmental management practices at oil terminals throughout the region.

Scope

- This project applies to all Pacific island countries.
- Audits will cover compliance with American Petroleum Institute (API) and Australian Institute of Petroleum (AIP) design standards and operating procedures for environmental protection and spill prevention, including ground and groundwater contamination.

Outputs

- An environmental audit report on a selected sample of regional oil terminals.
- Training of personnel from Pacific island countries in environmental auditing.

Methods

- The project will be carried out by a consultant on contract to SPREP, in consultation with oil companies, governments of Pacific island countries and the ForSec Petroleum Adviser.
- The consultant will propose a sample selection of high priority oil terminals. Terminals can only be audited with the full agreement and participation of the relevant oil company.
- The audit team will consist of the consultant, a representative from the relevant oil company and the government of the relevant Pacific island country. The consultant will provide on-the-job training to the latter two personnel in environmental auditing of oil terminals.
- Final reports must be approved by the relevant oil company, government and SPREP.

Budget

US$50,000 plus support-in-kind from oil companies and governments of the relevant countries.

Time frame

Six months from commencement. Update every two years (subject to funding).

Appendix IV

Project Sheets for Country-specific Projects

PACPOL PROJECT SHEET—Fiji

Project FJ 1: Suva Harbour Marine Pollution Management Plan

Introduction

Suva harbour is the main commercial port for Fiji. It provides tanker berths and associated pipelines for the discharge of petroleum products, refuelling berths for vessels and several slipways and ship-repair facilities. It also receives discharges from a major sewage works and an industrialised, urban catchment. Marine spills are a chronic feature of Suva harbour and sediments in some areas are the most polluted in the world. There is an urgent need for an integrated management plan to address this serious situation, as identified through consultations with Fiji during PACPOL development.

Aim

To reduce marine pollution in Suva harbour.

Scope

This project applies to all sources of marine pollution in Suva harbour, from catchment boundaries to shore-side industries to ships at anchor within the harbour.

Outputs

- Delineation of the hydrological catchment boundaries of Suva harbour on GIS.
- Identification and characterisation of all point and diffuse sources of pollution in the catchment.
- Development of source and industry-specific measures to reduce inputs of marine pollution to Suva harbour.
- Publication and implementation of the management plan.

Methods

- This is a major project requiring the establishment of a full-time planning team comprising two technical experts and an administrative assistant for at least the two-year planning phase, accommodated with necessary facilities in Suva, supported by consultants as required.
- An advisory and consultative committee comprising all relevant stakeholders is also required to oversee the project, including the work of the planning team, and provide a conduit for stakeholder consultation and liaison. The existing Fiji National Marine Spill Committee should form the nucleus of this.
- The implementation phase will be ongoing once the management plan is finalised, approved and published, and will require full participation by all stakeholders, including industry.

Budget

- Develop management plan: US$1 million.
- Implement management plan: to be determined during development of the plan.

Time frame

- Develop management plan: two years.
- Implement plan: to be determined during development of the plan.

PACPOL PROJECT SHEET—Fiji.

Project FJ 2: Vuda Point Contamination Survey

Introduction

Vuda Point on the west coast of Viti Levu hosts Fiji's three major oil terminals, comprising the largest oil complex in the region outside of Guam and Papua New Guinea. Vuda is the main distribution point for oil products to many Pacific island countries, and constitutes one of the highest risk areas in the region for marine spills. The area also has major environmental values and sensitivities, including extensive coastal mangroves, inshore and offshore coral reefs and islands, major tourism values both on the coastline and islands and major cultural heritage values. The latter take the form of the site, according to traditional oratory, of the first landing and settlement of Melanesians in Fiji.

Rocky shores, reefs and inter-tidal flats throughout the Vuda area are heavily used by local villagers for subsistence fishing and seafood gathering. During consultations on the development of PACPOL, concerns were expressed by the highest levels of the Fiji Government about the potential for pollution of the marine environment and contamination of seafood species from the terminals. A survey for contamination was requested as a high priority PACPOL project.

Aim

To establish levels of potential contaminants, especially hydrocarbons, in sediments and biota, especially local seafood species, throughout the Vuda area.

Scope

As per aim.

Outputs

- A literature review of any previous pollution studies in the area.
- Field sampling of sediments and biota and laboratory analysis for contamination.
- Establishment of a baseline, with fixed sampling sites (including controls) for future monitoring.
- Publication of a report with sampling results and recommendations for management.

Methods

- This study to be done as a consultancy on contract to SPREP.
- Methods to be proposed by the consultant and reviewed/approved by SPREP.
- Methods to comply with accepted sampling and analysis procedures and provide a useful and meaningful level of detection and statistical rigour of the sampling design.
- Methods to include maximum use, where possible, of facilities at USP.

Budget

US$150,000.

Time frame

One year from commencement.

PACPOL PROJECT SHEET—FSM

Project FSM 1. Okat Harbour Environmental Management Plan

Introduction

In late 1998, a new Ship Repair Facility (SRF), including two slipways and associated workshops, opened in the Okat harbour industrial area on the island of Kosrae, Federated States of Micronesia (FSM).

In addition to its economic and employment values, the SRF also represents a potential source of marine pollution and other environmental impacts in the Okat harbour area. Okat harbour is designated as an industrial zone by the Kosrae State Government and accommodates, in addition to the SRF, a marina for local fishing vessels, the Kosrae international airport, the main seaport facilities for the island, a tuna packing and export facility and petroleum storage and handling facilities.

Despite significant physical modification from these developments, Okat harbour still possesses important environmental values. These include extensive mangroves, seagrasses and coral reefs and fisheries values. Mangroves in Okat harbour include some of the oldest and best developed in Micronesia. A major trochus sanctuary and area of pristine coral reef and seagrasses lies immediately downstream (in terms of prevailing currents) of the industrial facilities in the harbour.

The waters, sediments and marine life of Okat harbour are currently largely unpolluted. Stringent management measures are required to keep the harbour in its current healthy state. An integrated, coordinated EMP for the entire Okat harbour industrial area is required. The benefits of taking an integrated, coordinated and cooperative approach to the development of such an EMP, rather than each industry doing its own thing, include:

- Pollution can occur from all of the facilities in the area. It is pointless to address pollution from one industry, if the adjacent industry is allowed to continue to pollute.
- Increased cost-effectiveness and economies of scale can be achieved if all operations in the area work together rather than in isolation.
- Environmental issues can be addressed more efficiently, in a climate of goodwill rather than conflict. It will also minimise the need for strict regulatory measures. This can only be of benefit to industry, and fits well with the peaceful, community-based nature of life on Kosrae.

Aim

To protect, maintain and improve the environment and natural resources of Okat harbour and its catchment by ensuring that industrial, commercial and other human activity in the area does not cause unacceptable environmental impacts, consistent with the Kosrae State Land Use Plan.

Scope

This project applies to all sources of marine pollution in Okat harbour, from catchment boundaries to shore-side industries to ships within the harbour.

Outputs

- Delineation of the hydrological catchment boundaries of Suva harbour on GIS.
- Identification and characterisation of all point and diffuse sources of marine pollution within the catchment.
- Development of source and industry-specific measures to reduce inputs of pollution to Okat harbour and publication of the management plan.
- Implementation of the management plan.

Methods

- Engage a volunteer, such as from Australian Volunteers Abroad (AVA), to work on development of the plan with a national counterpart from the Kosrae State Government.
- An advisory and consultative committee comprising all relevant stakeholders is also required to oversee the project, including the work of the planning team, and provide a conduit for stakeholder consultation and liaison.
- The implementation phase will be ongoing once the management plan is finalised, approved and published, and will require full participation by all stakeholders, including industry.

Budget

- Develop management plan: US$100,000.
- Implement management plan: to be determined during development of the plan.

Time frame

Develop management plan: one year. Implement management plan: to be determined during development of the plan.

PACPOL PROJECT SHEET—Niue

Project NI 1: Beveridge Reef Resource Survey

Introduction

Beveridge Reef is a large mid-ocean coral reef within the Exclusive Economic Zone of Niue Island. Its pristine, isolated condition represents the most significant marine biodiversity resource for Niue. The reef presents a navigation hazard to passing ships and is therefore threatened by pollution incidents, with groundings of vessels having occurred in recent times. The isolated nature of the reef makes the response to such incidents extremely difficult.

Very little is known about the biological, ecological and resource values of Beveridge Reef. During consultations on the development of PACPOL, the Niue Government requested a project to undertake resource surveys at the reef, so as to assist with assessing its values and vulnerability to shipping impacts, and provide baseline data for future monitoring, including any possible post-incident damage assessment.

Aim

To conduct biological, ecological and resource surveys of Beveridge Reef, so as to assess its values and vulnerability to shipping impacts, and provide baseline data for future monitoring, including any possible post-incident damage assessment.

Scope

As per aim.

Outputs

- A report and data that addresses all elements of the aim.
- Establishment of permanent monitoring sites at Beveridge Reef for use in future monitoring.

Methods

- Standard coral reef survey and monitoring techniques will be used, as outlined in the Australian Institute of Marine Science publication *Survey Manual for Tropical Marine Resources*, second edition, 1997.
- Project funds should be provided to the Niue Department of Fisheries to carry out the project, with assistance from external consultants contracted by the Department as needed, and with advice from the SPREP Coastal Management Programme.

Budget

US$50,000 for initial survey. Further funds for future monitoring.

Time frame

- Eighteen months initially (including planning, winter and summer survey, data analysis and reporting).
- Ongoing monitoring thereafter.

PACPOL PROJECT SHEET—Solomon Islands

Project SI 1: Removal of Oil from World War II Wrecks

Introduction

Waters off the island of Guadacanal in the Solomon Islands were the site of major naval battles during World War II, resulting in numerous sinkings of vessels and naming of the area "Iron Bottom Sound". Many of the war wrecks still contain large quantities of oil. After over 50 years of deterioration, some are beginning to leak and deposit oil residues on Guadacanal beaches. Should one or more of these wrecks suffer major disturbance, such as during a cyclone or seismic activity, a major rupture and release of oil might occur.

The South Pacific Applied Geoscience Commission (SOPAC) is currently (April 1999) mapping all known war wrecks in Iron Bottom Sound for the Solomon Islands Government, with funding from UNDP. Once the locations, likely condition and contaminant status of these wrecks is finalised by the SOPAC study, plans can be developed to remove any remaining oil and other pollutants where feasible. During consultations on the development of PACPOL, the Solomon Islands Government requested a project to do this. They maintain that the owners of the war wrecks (i.e. the US and Japanese Governments) should be responsible for funding this project.

Aim

To prevent further pollution of Solomon Islands' waters and coastlines from World War II ship wrecks.

Scope

All World War II ship wrecks in Solomon Islands waters.

Outputs

Removal of all oil from all World War II ship wrecks where feasible and practicable.

Methods

To be determined. Salvage expertise of US and Japanese Navies could assist to develop this.

Budget

To be determined. Owners of the ship wrecks could pay (polluter pays principle).

Time frame

To be determined.