

SPC 639, 9099 SPC



South Pacific Bureau
for Economic Co-operation



South Pacific Commission



Economic & Social
Commission for Asia and the Pacific



United Nations
Environment Programme

South Pacific Regional Environment Programme

SPREP/Topic Review 11

Original: English

TOPIC REVIEW No.11

MARINE POLLUTION IN THE SOUTH PACIFIC

by

Cruz A. Matos

**South Pacific Commission
Noumea, New Caledonia
June 1981**

This document was prepared by SPC under project FP/0503-79-15 as a contribution to the development of a South Pacific Regional Environment Programme. Its contents, conclusions and recommendations do not necessarily reflect the views of UNEP, ESCAP, SPEC or SPC.

The designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of UNEP, ESCAP, SPEC or SPC concerning the legal status of any state, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

SPREP / Topic Review 11
June 1981

ORIGINAL : ENGLISH

SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME

Noumea, New Caledonia

TOPIC REVIEW

MARINE POLLUTION IN THE SOUTH PACIFIC

by

Cruz A. Matos
Technical Secretariat
Co-ordinating Committee of the Off-shore
Prospecting/South Pacific

MARINE POLLUTION IN THE SOUTH PACIFIC

by

* Cruz A Matos
Technical Secretariat
CCOP/SOPAC

Introduction

The Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Offshore Areas (CCOP/SOPAC) is an intergovernmental body established in 1972 under the sponsorship of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). Its purpose is to develop and promote the investigation of the mineral potential, including petroleum, of the shelves, platforms, and ocean floor, in the South Pacific Ocean.

The member Governments of CCOP/SOPAC are:

Cook Islands
Fiji
Kiribati
Vanuatu
New Zealand
Papua New Guinea
Samoa
Solomon Islands
The Kingdom of Tonga

The CCOP/SOPAC Technical Secretariat was established in 1974 and has its headquarters in Suva, Fiji. The Technical Secretariat is the executive arm of CCOP/SOPAC and its responsibilities include the implementation of the CCOP/SOPAC work programme. Since the Technical Secretariat has no staff, the UNDP Project Manager of RAS/79/074 acts as Technical Secretariat.

The geographical area of interest to CCOP/SOPAC is bounded on the west by Papua New Guinea, on the north by Kiribati, on the east by the Cook Islands and on the south by New Zealand. The work programme area of interest is bounded on the south by Tonga (see fig. 1).

Definition of Pollutants

Marine pollution is defined by the IMCO/FAS/UNESCO/WMO/IAEA/UN/UNEP Joint Group of Experts on Scientific Aspects of Marine Pollution (GESAMP) as the introduction of man directly or indirectly of substances or energy into the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazards to human

* Project Manager, UNDP Project RAS/79/074

health, hindrance to marine activities, including fishery, impairing the quality for use of sea-water and reduction of amenities (GESAMP, 1976). The "substances or energy" referred to are the wastes resulting from the transformation of matter to produce goods or energy. These wastes are inherent to and practically unavoidable in all human activities. Not all wastes are pollutants per se, but only those resulting in "deleterious effects". Wastes from one activity may, ideally, constitute a resource for another activity. Pollution occurs when wastes are not utilized and, in addition, are not assimilated harmlessly by the system into which they are introduced, e.g. the sea.

Types and Sources of pollutants

The report titled "Comprehensive Environmental Management Programme" issued by the South Pacific Commission groups the Pacific marine environmental problems under the following headings:

- small-scale fisheries and coastal resources
- oceanic fisheries
- marine conservation
- disaster protection
- pollution
- catastrophic pollution accidents
- extractive industries
- coastal zone management

Under the general category of pollution the principal sources of marine pollution in the South Pacific are:

- industrial wastes
- domestic wastes
- agricultural wastes
- oil
- dredging wastes
- mining drainage
- soil erosion

During the past three years, the UNDP project has undertaken three 6 month survey cruises in the work programme area. The visual observations of our scientific staff lead us to conclude that the South Pacific is relatively free of man-made pollution except nearshore of the populated South Pacific Islands, a conclusion shared by the scientific staff of the New Zealand Oceanographic Institute based on observations made during their oceanographic cruises. This conclusion is not surprising when one considers that the island systems in the South Pacific region total only about 600,000 square kilometers of emergent land in a vast and surrounding sea that exceeds twenty million kilometers, counting only the sea areas within two hundred nautical miles of land (see table 1).

It is, therefore that generally narrow segment of the shallower ocean edge or coastal area, that is our fundamental problem. As the South Pacific island countries struggle to leave behind an agrarian monoculture and move through the door of development towards more diversified modern economies they are experiencing a formidable, escalating, concentration process encompassing more people in larger urban areas, more and larger ships in bigger and better harbours, larger tankers, bigger concentrations of invested capital in larger industrial facilities, processing centers, power plants, fish canneries and mining enterprises, all in circumscribed locations along the coastline. Worse still the phenomenon has a parallel secondary "concentration effect" producing unprecedented new levels and kinds of waste discharges into the readily accessible nearby marine environment. Even inland development delivers its concentrated wastes to the sea via streams and rivers which normally discharge their water borne pollutants precisely where concentrations were high to start with - i.e. generally in a heavily used harbour. The very coastal areas which people use heavily for fishing, recreation industry and transport and which also contain the natural coral reef, mangrove and sea grass barriers to storm waves protecting towns and cities, harbours, jetties, docks, industrial and processing plants are where waste discharges are being concentrated. What we confront therefore is a large and growing number of competing uses and users in the narrow zone of shallow water, often in one or more specific areas or segments, along the shoreline. But its use as a disposal and processing vehicle for increasing volumes of "wastes which pollute" may become incompatible with other uses.

This is not to say that the open ocean areas are immune to pollution. In fact, offshore oil prospecting and drilling, the much talked about possibility for deep ocean mining of manganese nodules, routine and accidental vessel discharges of oil, nuclear materials, waste disposal practices, and sludge and spoil dumping, all will require careful attention to limit their environmental impact. They should, and in fact do receive high priority by various international and regional bodies whose mandate embraces the res communis aspects of the world's oceans - that is, areas shared by all nations.

But for small island countries it is unimportant (although hardly irrelevant) as to whether the global ocean or even the South Pacific has limits as a receptacle for island waste products which are a miniscule increment in the larger context of the region with its larger and more industrialized Pacific Rim countries. What is important is that small segment of the shallow ocean edge surrounding an island system, which is in daily use by people making a living. What are its limits? Does it have an overload point for any given pollutant or for combinations of pollutants. When will it be incapable of digesting or dispersing additional levels or volumes of waste materials in that one place?

We cannot escape the fact that island coastal towns and cities are expanding commercial, industrial and residential focal points and are growing at a faster rate than rural areas, resulting in increasingly dense concentrations of people and waste generating activity at precisely the same spots on the ocean edge where prior pollution stress has been greatest and where the rate of increase is also greatest.

These are the "pollution prone places" towards which we should direct our immediate attention, mapping them adequately and mounting simple but increasingly extensive base-line studies appropriate in scope and scale to current and projected development, growth and pollution loading. We need information on the kinds of changes taking place as a consequence of human activity and pollutant concentrations in the shoreline areas. When is too much really too much? Who's responsible if the system fails because of an overload, and how do we prevent such a failure? These questions should be addressed by governments and the appropriate UN agencies and other institutions in a far more immediate fashion than has occurred to date.

Suva, Fiji
May, 1981

Table 1

CCOP/SOPAC MEMBER COUNTRIES

COUNTRY	POPULATION (1976)	LAND AREA (Km ²)	LAND AREA PLUS OFFSHORE AREA (Km ²)
Cook Islands	18,112	241	1,388,000
Fiji	585,000	18,272	1,108,000
Kiribati	53,500	567	3,466,000
Vanuatu	99,325	14,763	1,152,000
Papua New Guinea	2,908,000	222,999	2,011,000
Samoa	151,275	2,841	219,000
Solomon Islands	196,823	29,785	1,376,000
Tonga	90,128	699	809,000
Sub-Totals	4,102,163	290,167	11,529,000
New Zealand	3,148,400	268,630	4,766,800
Totals	7,250,563	558,797	16,295,800

Note: Offshore areas estimated from map showing approximate boundaries of EEZ

FIGURE 1

