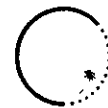


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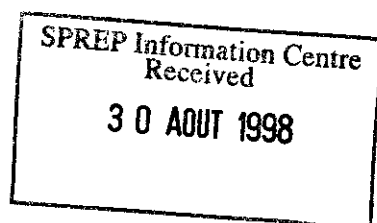
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FRENCH POLYNESIA



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FRENCH POLYNESIA

COUNTRY REPORT

SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME

FRENCH POLYNESIA

FRENCH POLYNESIA AND ENVIRONMENTAL MANAGEMENT

French Polynesia comprises approximately 130 islands, including one hundred of which are atolls and thirty high islands somewhat larger.

In fact, all these islands are very small and many of the mountainous islands are so rugged that a large part of their surface area remains inaccessible.

Under such conditions, natural terrestrial resources are scarce, and require protection and appropriate environmental management.

Despite this need, no "overall environmental policy" exists in French Polynesia for the time being, which, strictly speaking, would imply the definition of priorities concerning the protection of natural resources and their distribution in space, the enactment of comprehensive legislation, and the application of enforcement procedures by a Territorial department especially empowered for this purpose.

However, protection does exist for a certain number of ad hoc problems and only with the passing of years and acquisition of more experience in this field can all actions be integrated to form the core of a general environmental protection policy in the Territory.

I. PRESENT STATE OF ENVIRONMENTAL PROTECTION IN FRENCH POLYNESIA

A certain number of administrative regulations exist for the organisation of environmental protection.

1.1 Protection of flora

This concerns the forestry sector, straying animals and quarantine procedures for plant imports.

- Forestry regulations

Control of wood felling, clearing and bush fires combine nine legal instruments passed by the Territorial Assembly between the years 1942 and 1978.

- Straying animals

Controlled by virtue of a local decree passed in 1936.

- Plant quarantine regulations (imports)

Basically designed to prevent the introduction of plant pests, they also ensure overall protection for flora; combine several decrees, of which the three main ones date from 1924, 1968 and 1965.

1.2 Protection of fauna

This concerns hunting, fishing and the introduction of live animals.

- Hunting regulations

Originally, hunting was controlled by a decree of 1896 applicable to what were then the French Pacific settlements.

This legal instrument was supplemented by two local decrees in 1974 to prohibit wild boar hunting with dogs at certain times of the year, and in 1967 to prohibit the hunting and destruction of all species of birds in French Polynesia.

- Fishing regulations

A decree of 1933 controlling fresh water fishing in the French Pacific settlements was supplemented in 1950 by a local decree concerning the exploitation of certain freshwater fish and shellfish.

- Regulations on the importation of live animals

Two local texts in 1977 and 1978 laid down conditions for the import of live animals in order to prevent introduction of diseases and disturbance of existing ecosystems.

1.3 Protection of the sea against pollution

1.3.1 Definition of risks

Geographically removed from major industrial and commercial zones, French Polynesia is thus in theory a low-risk area nevertheless subject to specific problems by reason of its particular geomorphology (atolls, lagoons) and tropical climate.

Territorial development, at present, places the coastal and lagoon marine environment at risk through

- the concentration of sea traffic and, more particularly, large ships using heavy hydrocarbons as fuel, at the harbour entrance of Papeete,
- jumping of hydrocarbons, and particularly heavy hydrocarbons, during shipping and unloading,
- discharge of urban sewage which can contain highly active products (pesticides, detergents, etc.)
- excess sedimentation in water caused by the acceleration of natural erosion (layout of roads, constructions, etc.) and dredging with excavation of coral marl.

1.3.2 Side effects

Any coastal construction, filling, concrete reef works disturb the lagoon ecosystem and has an adverse effect on :

- normal renewal of water which prevents stratification and over-heating,
- growth of coral essential for reef survival,
- marine wildlife and annual recruitment of young individuals (fish, shellfish, etc.)

In addition, the occurrence of ciguatera (fish poisoning) is often related to foreshore "developments".

1.3.3 Risk areas in the Territory

On the island of Tahiti, the area between FAAA airport and Pointe Venus which includes the harbour and its industrial zone, seems to be exposed to most risks.

The concrete covering of the reef between the passes of Papeete and Taaone will, once completed, increase the confinement of the lagoon waters whilst accelerating the various processes of environmental pollution and retention of toxic elements and pathogenic germs.

The other high islands in the Territory, due to their under-population, are at less risk, but the atolls, on the other hand, are extremely vulnerable since their existence depends solely on the coral metabolism.

1.3.4 Legislation in force

Non enactment of the decree of 12 April 1965 establishing the minimum size of ships other than tankers, which fall subject to the law of 26 December 1964 concerning dumping, limits the scope of the law in Polynesia.

Concerning accidental pollution, the law of 26 December 1964, modified on 16 May 1973 and 2 January 1979 concerning marine pollution by oil, is enforced in the Territory. Hence, since 8 September 1980, an order from the Prime Minister brought about the creation in the French Overseas Departments and Territories of the twofold POLMAR Plan : a POLMAR sea plan and POLMAR land plan, each accompanied by a project for assistance.

However, the International Convention of 12 May 1954 for the prevention of pollution of the sea by oil which is in force in France, has not yet been enforced in the Territory.

Territorial legislation exists for the protection of shorelines, extraction of aggregates and the dumping of chemical products.

1.4 Protection of the marine environment

Protective legislation concerning fishing and aquaculture includes :

- sanitary regulations for aquaculture stations,
- research in the marine environment,
- fisheries and aquaculture regulations for the protection of species,
- rational management of living open-sea and coastal resources.

1.5 Prevention of risks caused by establishments listed as dangerous, noxious and unhygienic

Environmental protection against industrial pollution comes under this provision which enables any activity involving hazards to nature or possible nuisance to the surrounding area to be inspected and investigated.

Legislation applicable in this field emanates from the Territorial Development Code established by a resolution passed by the Territorial Assembly on 8 April 1961.

II. INSTITUTIONS RESPONSIBLE FOR ENVIRONMENTAL PROTECTION

The status of French Polynesia (Law No. 77-772 of 12 July 1977) gives full power to the Territory in environmental matters.

Several territorial administrative departments are presently responsible for enforcing directives and regulations in this field :

- the Department of Public Works,
- the Department of Territorial Development,
- the Department of Rural Economy,
- the Fisheries Department,
- the Department of Public Health.

Together with these territorial departments, some state departments (under direct control of France) are also concerned with environmental protection, namely :

- the Department of Maritime Affairs,
- the Public Security Office.

III. EFFECTIVENESS OF PROTECTION

3.1 Environmental Policy

The preparation of the Eighth Economic and Social Development Plan and the implementation of a Territorial Plan demonstrated the need for a real environmental policy in French Polynesia, which has often been implicit but not clearly defined up till now.

In coming weeks, Territorial leaders will decide on the aims and objectives to pursue in this field which is included in the constituent chapters of the Territorial Plan.

3.2 Legislation in force

Legislation covers virtually every area where the quality of life is endangered.

However, two basic observations should be made :

- in certain well-defined fields, additional legislation would render official action more efficient;
- a merging revision or updating of all environmental texts should be undertaken.

3.3 Enforcement

Administrative arrangements for the implementation of environmental policy are of very variable effectiveness according to the area considered.

More generally speaking, a drastic shortage of monitoring and control staff is to blame for a certain lack of effectiveness. Furthermore, it would seem essential for regulations to be backed up by adequate financial support to ensure their effective and sustained application.

IV. MAJOR ENVIRONMENTAL PROBLEMS AFFECTING DEVELOPMENT ACTIVITIES

These problems can be classified according to the two principal types of environment :

- terrestrial environment,
- marine environment.

4.1 Problems related to the terrestrial environment

Most high islands are so rugged that human settlement has been restricted to the coastal fringe and, consequently, environmental problems related to development are confined to the coastal plain and the lagoon. The inland area is generally protected by its inaccessibility and suffers little degradation.

On the high islands, the main problem is caused by the high population density on the coastal belt which has resulted in the replacement of the valuable indigenous forest, firstly by coconut groves and agriculture, and secondly, in the most populated areas by villages and townships. The second problem is soil degradation, a particularly rapid process under tropical conditions which started in French Polynesia as a result of bush fires or overgrazing. On most of the high islands vegetation on the lower slopes has been completely destroyed by uncontrolled bush fires, usually deliberately started to clear land for agriculture or clean coconut groves. Over vast areas and on the whole surface of several small islands (Mangareva, Tubuai, Bora Bora), the forest has been replaced by bracken heaths and occasionally by denuded zones subjected to active erosion. This phenomenon entails extremely grave consequences, firstly, rapid degradation of soils, thus preventing the rehabilitation of the original forest, secondly, increased water flow causing a reduction of already endangered water resources on most of the small islands, and lastly, the washing away of terrigenous particles into the lagoon thus curtailing its capacity for fish production (filling in of ocean floors and replacement of rock fish by secondary species).

Apart from these two general problems, others of more localised importance exist amongst which should be mentioned :

- desertification of dry zones in the Marquesas Islands, probably due to overgrazing by wild herds (cattle and goats). It does appear, however, that vast areas as yet unaffected by active erosion can still be rehabilitated through afforestation if quick action is taken.
- pollution hazards due to fertilizers and pesticides used for intensive crop production on permeable coral soils directly linked to the lagoon and ocean (Huahine). Although no sign of pollution has as yet been observed, the risk exists.
- depletion of soils under coconuts planted on a coral, which is likely to prevent replanting of coconut groves on the highest parts of the atolls.
- bacteriological pollution of surface water caused by extremely scattered settlement.
- destruction of native birds (never present in large numbers) through the introduction of predators (setting cats loose for rat control in coconut groves). This is extremely serious since birds offer invaluable assistance to fishermen.

4.2 Problems related to the marine environment

These include any form of damage to the sea and coastal zone waters (streams, lakes, lagoon, ocean, etc.). The different problems are summarised in the report drawn up by the Commission, No. 7 of the Symposium on the Sea held in Noumea in September 1979, such as :

- extraction of sand and stone (from the river and sea), with disastrous consequences in French Polynesia;
- the problem of ciguatera fish poisoning;
- discharge of domestic refuse and sewage into rivers and lagoons;
- reclamation works on the public maritime zone;
- dumping of hydro-carbons (including oils from ships) into the sea and under ground;
- overuse of pesticides, fungicides, herbicides, and chemical fertilizers on slopes and coastal plains;
- concrete shore and reef embankments;
- overfishing in rivers and the sea (molluscs, crustaceans, fish, etc.);

- climatic phenomena (currents, tides, temperature, rain);
- natural disasters (cyclones, tsunamis, tidal waves, etc.)
- red sludge (enclosed lagoons), caused by deposits of phytoplankton;
- geographical and geological evolution of the region (Darwin's theory according to which some islands and atolls of French Polynesia will undergo great changes in their terrestrial and marine environments in the more or less distant future).

V. STATUS OF TERRESTRIAL AND MARINE RESOURCES REQUIRING ENVIRONMENTALLY SOUND MANAGEMENT PRACTICES

5.1 Terrestrial resources

5.1.1 Soils

The islands are small and the soil is therefore a natural resource of the utmost importance which calls for sound management, particularly because of the different types of soils encountered. Since no such management policy exist at present, soil use is left to the discretion of land-owners. Consequently, much of the richer, coastal plain soils, is wasted through scattered settlement, industry and leisure activities. In addition, even where farm or forest soils are not put to another purpose, their actual use is generally curtailed by land speculation, and by legal problems arising out of collective ownership.

5.1.2 Fresh water

On the high islands, the narrow and steeply sloping water catchments render surface water resources scarce and subject to wide variations, aggravated by impermeability as a result of deforestation. In addition, this water is often polluted either bacteriologically by straying animals or scattered habitat, or physically by suspended earth particles from erosion. No proper management exists for water resources either.

On the low islands, water resources are exceedingly scarce which constitutes one of the principal limiting factors to development, tourism in particular, until solar stills can be set up.

5.1.3 The indigenous forest

For previously stated reasons, the coastal forest which contained valuable timbers was destroyed with and only a low-altitude forest without any real economic value remains. The latter is, however, relatively well protected. Certain furniture or carving species such as sandalwood, "tou" (Cordia subcordata), and "miro" (Thespesia populnea) still exist in small numbers and are carefully protected against illegal felling.

5.1.4 Wildlife

Apart from invertebrates, terrestrial wildlife is composed of only birds, to which can be added a species of freshwater eel not eaten by the local population, and a fish ("nato") that has become extremely rare because of overfishing. A particularly interesting invertebrate is the freshwater prawn.

The very limited number of native bird species has declined further due to the introduction of the Indian Mynah (Acridotheres tritis) and stray carnivorous domestic animals (cats and dogs). However, this decline is not directly related to development, which has very little impact.

Mention should be made of domestic herds (sheep, goats, cattle, horses) which have run wild and require management since they are having a serious impact on the environment. Wild herds are still numerous in the Marquesas Islands despite increased hunting in recent years.

5.1.5 Flora

High altitude flora is generally fairly well protected by its isolation, but there are several endangered localised species : Scleroteca jayorum of Mont-Marau in Tahiti, and "tiare apetahi" of Mont-Temehani in Raiatea (Apetahia raiateensis) among others.

5.2 Marine resources

The natural balance of an ecosystem can be disturbed by various factors, particularly :

- over-population;
- when increased demand leads to increased fishing to maximum profit whereas available resources are limited. This results not only in depletion of the stock, but also in desertion by populations of the fishing grounds or home islands (as happened on Hikueru, Takume and Takaroa).

For sound management of natural stocks together with rational fisheries and aquaculture development, it is necessary :

- to have an understanding of the natural environment (ecosystems);
- to know the nature and size of the natural stocks exploited (fish, molluscs, crustacea, ota, mother-of- pearl, turtles, cetacea).

before any fishery and aquaculture development programme can be set up, particularly if sustained industrial scale exploitation is planned, comprehensive data must be obtained.

VI. MAJOR DEVELOPMENT TRENDS

6.1 Agriculture

Present policy is firstly based on meeting local needs for the most common food products (subsistence crops, market gardening, citrus fruits, pigs and poultry), and, secondly, on certain export crops, i.e. vanilla, coffee and copra. Vanilla and coffee are only grown on restricted surfaces, unlike coconut which is crucial in the economy of the Tuamotu and Marquesas Islands. Existing coconut groves are usually ageing and should be replanted within the next few years.

6.2 Forestry

French Polynesia is implementing a long-term forestry programme through the Department of Rural Economy which aims at afforesting approximately 900 hectares a year, including 400 hectares of protective planting on eroded lands (with Albizia falcata, Casuarina equisetifolia, ...), 450 hectares of Pinus caribea intended to give self-sufficiency on the Territory in common timber and 50 hectares of furniture and carving woods (Thespesia populnea, Cordia subcordata, Swietenia macrophylla, Albizia falcata).

6.3 Fisheries and aquaculture

There is a general trend towards development in this sector :

- in the lagoon, increased fishing may lead to depletion of living marine resources. Aquaculture development should partly counteract this risk, in particular through the introduction of additional varieties. However, aquaculture requires special monitoring of water quality, increased protection of suitable sites and planned foreshore development.

in fact concern all human activities and automatically require arbitration at the policy-making level. However, should such a body be set up, it should be noted that technical departments would retain final authority in their specific areas of responsibility.

In this connection, it is noted that the relevant body established in France is a Ministry and not a specialised technical department.