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TERRITORY OF  
WALLIS AND FUTUNA

SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME

PRELIMINARY REPORT FROM  
THE ISLANDS OF WALLIS AND FUTUNA

COUNTRY REPORT

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Rapporteur: Mr Vavasseur  
Head of the  
Rural Economy Department

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SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMMEPRELIMINARY REPORT FROM THE ISLANDS OF WALLIS AND FUTUNAI. THE TERRITORY'S ENVIRONMENT POLICY AND ITS IMPLEMENTATION1.1 Policy

On 24 July 1979, the Territorial Assembly of Wallis and Futuna adopted a "Long-term Economic and Social Development Plan", the principal aims of which are as follows:

- CHAPTER 1 - To promote an agricultural policy suited to the Territory's potential;
- CHAPTER 2 - To make the most of the islands' marine resources;
- CHAPTER 3 - To optimise handicraft and tourist resources;
- CHAPTER 4 - To open the islands to the outside world, by putting into effect a dynamic policy of improving sea and air communications;  
  
To provide the islands with a modern telecommunications network;
- CHAPTER 5 - To develop the administrative centre (Mata'Utu) and the villages;
- CHAPTER 6 - To renovate housing, taking care to preserve the traditional style of building;
- CHAPTER 7 - To provide training;
- CHAPTER 8 - To define health care and social welfare policies;
- CHAPTER 9 - To protect the natural heritage of the islands;
- CHAPTER 10 - To promote and encourage the preservation of all expressions of culture and tradition;
- CHAPTER 11 - To give the young people of Wallis and Futuna opportunities for self-fulfilment through sport.

This plan, and chapter 9 in particular, takes into account the environment. The importance attached to conservation of the natural heritage is shown in the definition of priorities, thus:

- disposal of urban effluents,
- prevention of sea pollution,
- protection of the coastal zone,
- protection of natural sites (Alofi forest),
- preservation of the historical and human heritage.

The local authorities' awareness of environmental questions has increased as the Territory's facilities and the standard of living of its people have developed.

## 1.2 Legislation

### 1.2.1 Environment law

The status of Wallis and Futuna Islands (as laid down by Law No.61-814 of 29 July 1961) gives the Territory jurisdiction in questions of the environment. The policy to be followed is defined by the local authorities and rendered enforceable by the Head of the Territory who is responsible for applying it.

As all matters relating to land tenure lie exclusively within the jurisdiction of the traditional leaders, the administration's scope of action in respect of regulations concerning the environment is extremely limited, especially as it has few means of ensuring compliance with such regulations.

The basic legislation currently in force comprises:

- plant quarantine regulations: Order No.40 of 22 August 1963 putting into effect decision No.11/63;
- animal quarantine regulations: Order No.179 of 4 December 1981 laying down details of application of the regulations concerning the importation of live animals;
- fisheries regulations: Order No.83 of 24 November 1965 prohibiting the use of explosives or poisons of any kind whatsoever for fishing.

The introduction of legislation on petroleum storage depots is being studied at present.

The extensive cultural and traditional folklore of the islands includes principles relative to the environment that are bound up with the traditional way of life.

Traditional law is applied for the day-to-day settlement of local affairs. But as a result of the population increase and the Territory's exposure to outside influences, traditional law no longer provides a sufficient means of control to preserve the existing land and sea resources.

Supplementary legislation is desirable in respect of town planning and the protection of wooded areas, of the water table, of the water catchments, of the coastal zone, etc.

Two international conventions apply automatically to Wallis and Futuna, France having officially ratified them:

- The "Washington" convention dated 3 March 1973 on international trade in wild flora and fauna that risk becoming extinct, which was ratified by Law No.77-1423 of 27 December 1977;
- The convention on the conservation of nature in the South Pacific, signed at Apia in 1976.

### 1.3 Development Planning

In January 1978, a study was carried out for the Territory on the impact of the following territorial development projects on the Wallis lagoon:

- construction of a petroleum storage depot;
- improving the sanitation of the administrative centre, Mata'Ututu;
- establishing a dump for household refuse;
- dredging for coral rubble and sand.

The Administration has at its disposal a number of studies that should enable it to carry out its development projects with due consideration for matters pertaining to the conservation of nature. They include:

- Etude des sols de Wallis, leurs propriétés et vocations (Survey of the soils of Wallis, their properties and capabilities), by G. Tercinier, May 1960;
- Agro-pedological survey of Wallis, Futuna and Alofi, by ORSTOM, 1981;
- Survey of the lagoon and reefs of Wallis and Futuna and of their potential resources, by the National Museum of Natural History (Paris), 1980;
- Appraisal of aquacultural possibilities, by CNEXO (1), 1981;
- Survey of the water resources of Wallis Island, by ARLAB, 1981;
- Various reports concerning field studies on forestry, botany, geology, entomology, plant and animal health questions.

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(1) CNEXO: Centre national pour l'exploitation des océans (French National Centre for Exploitation of the Oceans).

While the ecological impact of the principal development activities, mainly involving the rural sector (agriculture, animal husbandry, and fishing) can be assessed, the Administration has very limited powers when it comes to supervising the execution of such activities, mostly because it is unable to take any action in respect of land tenure problems affecting territorial development planning.

At the present time, the Territory is not involved in any projects that could cause its environment real problems.

The Territory's development projects are still very modest in scope and do not entail industrial activities.

#### 1.4 Administration

The responsibilities of the Rural Economy Department include agriculture, livestock raising, handicrafts and fishing; and it is the department's officers who ensure that plant and animal quarantine regulations are complied with.

The Health Department is responsible for matters of environmental sanitation.

The police force (Gendarmerie) has responsibility for supervision and inspection in general, in the course of which it may be required to take action to protect the environment (e.g. prosecuting people who fish with explosives).

However, there is no department with overall responsibility for co-ordinating activities connected with the implementation of an environment policy.

Considering the powers the Administration has at present and the kind of development projects that are under way, there does not appear to be an urgent need to set up such a body.

The Territorial Administration has available to it in the Public Works Department and the Rural Engineering Department, specialists in public development works and facilities. Furthermore, it is able to call on the assistance of specialists who are working for various research institutions in New Caledonia.

## II. ASSESSMENT

### 2.1 Main environmental problems

#### (1) Oil Pollution

There is no serious risk of accidental pollution of the sea by oil spills, in view of the type of petroleum products that are imported (light fuel) and the small quantity involved. The opening of the Halalo petroleum storage depot will not change this situation for the risk will remain limited, all necessary precautions having been taken in the planning and construction of the installations.

#### (2) Pollution by urban effluents

None of the villages on Wallis or Futuna has a sewerage system. From the public fountains, which are greatly used, water flows down to the lagoon in ditches. Simple rules for the construction of individual latrines are being advocated in the course of information visits that community health workers make regularly to all villages.

The soils of Wallis and Futuna being very permeable, the flow of urban waste water is very slight. Ditches and trenches carry away excess water from the public fountains as well as rainwater during the rainy season. The effluents do not contain a lot of foreign material, detergents being as yet little used. The fact that the effluents enter the Wallis lagoon at many points means that they are spread out and so the lagoon can absorb pollutants of domestic origin without damage.

A project for drains to carry away rainwater is currently being studied for the administrative centre of Mata'Utu. Particular care will be taken in planning the points of discharge of these storm sewers into the lagoon in order to avoid all risk of silting up through unduly large and concentrated loads of fine sediment.

The villages, both on Wallis and on Futuna, being situated along the coast, the water catchments and wells of the water supply system do not at present run any risk of pollution.

#### (3) Pollution by wandering animals

In the Territory, pigs are very often left to roam completely free. While the fact that they are widely scattered eliminates all risk of pollution by manure, there is no doubt that people's hygiene is affected, and the presence of these animals at low tide on the reef flat, or on the beaches, which are littered with their excreta, does spoil the quality of the environment.

Furthermore, in their search for food, the pigs are gradually destroying the reef flat by removing all living organisms.

They also cause considerable damage to plants, thus obliging people to erect fences around the plots where they grow crops, and around their houses.

(4) Protection of the coastal zone

Futuna being an island with no lagoon, certain portions of the coastline are particularly susceptible to erosion by the sea which means that supportive structures are needed, in particular to protect the coast road which is being built round the island.

Dredging of coral rubble for road maintenance and of sand for building purposes is still done only on a small scale. The National Museum for Natural History has not noted any adverse effects on the lagoon ecosystem near the areas from which these materials are being taken.

(5) Soil conservation

On Wallis, and particularly on Futuna where the relief is very abrupt, many areas have been so badly degraded that the loose top soil, sometimes very little developed and not very thick, has disappeared. This has happened all over the central part of Futuna (two-thirds of the surface area of the island), which is known as the "desert" or "taofa", and where no food crops can now be grown because there is no soil. The present situation of this island is very worrying. It is practically impossible to increase the amount of land being cultivated because of the steep slopes and the fact that the more accessible areas are already being intensively used. The very steeply sloping hillsides should no longer be cultivated by traditional methods (clearing and burning). It is absolutely essential that anti-erosion techniques be used.

(6) Protection of natural beauty spots

The island of Alofi has until now been relatively spared by man because, there being no water points, it was impossible to live there permanently.

The island has the richest and most beautiful forest of the Territory. An inventory of its species is currently being drawn up. The thick natural forest, so far untouched, still covers about a third of the island.

In view of the depth of the soil, which is rarely more than some twenty to thirty centimetres, and the risk of erosion, the sudden destruction of this forest would probably be catastrophic, for to replace it by planting crops or reforestation would be very difficult, if not impossible.

There is no outside pressure which is causing degradation of the environment by destructive exploitation of the natural resources.

## 2.2 Research and monitoring

Regular surveillance of the environment involves the following:

- meteorological recordings,
- monitoring the quality of water in catchments and wells and the variations in the ground-water table of Wallis,
- hygiene in villages and in schools,
- preventive and control measures in respect of imported plant and animal diseases.

At present, there are no problems that need to be examined in greater detail, but it does appear desirable that the following studies, that have been carried out by various specialized bodies, should be regularly brought up to date with a view to detecting any changes that may be occurring in the ecological situation:

- survey of lagoon and reef resources,
- study on the absence of ciguatera,
- assessment of the plant and the animal health status,
- entomological surveys,
- botanical inventory,
- soils survey.

The Territory can, if need be, call on research departments and institutions in New Caledonia to conduct the necessary studies.

## III. MANAGEMENT

### 3.1 Present status of resources

#### (a) Soils

In 1960, ORSTOM carried out a soils survey of Wallis, which it is now updating and expanding to include Futuna and Alofi.

The ferralitic soils that cover more than two-thirds of Wallis are relatively deep, and can be distinguished from each other by their stone content. As the land is fairly flat and cultivated by traditional methods, there is little erosion.

The island of Futuna, however, with its very abrupt relief, has only a small percentage of land that can be used for cultivation. All the central part, known as "the desert" (two-thirds of the area of the island), is at present unusable for growing food crops because of the very shallow depth, or even total lack of soil.

On Alofi, the area available for cultivation is very small and land clearing can be done only if precaution is taken to prevent erosion.



The present-day needs of the population have led to maximum use being made of the best soils for growing food crops; this is done by traditional methods.

In order to meet the needs of the increasing population, cultivation should be made intensive by introducing improved farming methods and in particular the use of fertilizers, once preliminary studies have been carried out.

(b) Water

On Wallis there is almost no surface water. On the other hand, with an average rainfall of 3.25 m a year the ground-water table is very well supplied. The survey of the island's water resources recently carried out by the ARLAB company gave more information about this water-table and made it possible to determine what research should be undertaken for the drilling of new wells.

On Futuna, there are many permanent mountain streams which are fairly evenly distributed over the island. In the catchment areas, soil erosion resulting from the application of badly supervised farming methods causes runoff and evaporation to increase, which in turn reduces the surface flow, even to the extent of causing some streams to dry up in periods of low rainfall.

(c) Crops

The islands of Wallis, Futuna and Alofi are very small in area, and they have a rapidly growing population.

At present the food crops - taro, yam, cassava and banana - grown by traditional methods are enough for the people's requirements. The few plant diseases that exist are kept in check by the plant protection service.

Farming methods must be improved in order to increase yields so that fallow periods can be better observed and at the same time the needs of the increasing population can be met.

The present system of traditional land tenure makes it impossible to develop perennial crops.

Copra production has been given up, and the coconuts are now used mainly to feed pigs.

(d) Livestock

The Territory has only pigs (about 4,000 sows), poultry (5,000 Gallinaceans) and some cattle and horses. All families keep some animals in a casual manner; pigs, which are of great value because of their use in traditional ceremonies, are left to run entirely free or in semi-freedom.

The health of the animals is monitored by the Rural Economy Department which, by virtue of an agreement with the "Institut d'Elevage et de Médecine Vétérinaire des Pays Tropicaux" (Institute for Animal Husbandry and Veterinary Medicine in Tropical Countries), receives assistance from the Institute.

(e) Forest

The forests on Wallis and Futuna have been cut down and damaged to a considerable extent under the pressure of demand for more land for farming, which is cleared by burning. On Alofi, the forest cover still predominates; the primary forest still covers large sectors of the island.

Until the areas that have been replanted with Pinus sp. become productive, the Territory will continue to import nearly all the timber it needs for construction purposes.

The only local species that can be used are those required for building traditional "falés" (houses).

(f) Reefs and lagoons

The Wallis lagoon is naturally poor in coral but very rich in water plants and quite free of ciguatera. Generally speaking, the reef and lagoon environment suffers little harm.

The lack of living madreporic formations means that the molluscs and fish that live in association with such formations are scarce. It appears that, for these particular species, the maximum level of fishing has been reached: according to the survey carried out by the National Museum of Natural History in October 1980 they are now few in number and their average size is small. If stocks of this category of fish are not to be exhausted, fishing in the lagoon must be controlled by regulations and the prohibition on fishing with dynamite must be enforced.

On Futuna, the same survey by the Museum found that there was very considerable overfishing of the apron reef, as a result of excessive use of toxic products.

The slightest shelter of the marine organisms is disturbed or destroyed at low tide by humans or animals.

It is urgent, although perhaps already too late, to control the taking of living organisms from the Futuna reef, especially by prohibiting fishing in certain periods of the year.

(g) Fishing

Although not very intimately involved in the marine environment, the local population obtains the greater part of its proteins from the sea.

The products of the sea that are eaten most are fish (about 75%), but molluscs, crustaceans, echinoderms and turtles also contribute, in varying degrees, to the people's diet.

Fishing is mainly done by line, net, speargun or harpoon. Although it is forbidden to use explosives and poisons in fishing, there are still people who do so. Bottom fishing is on the increase. The Museum has expressed some doubt as to whether the Wallis lagoon will be able to continue providing the trochus that are exported to New Caledonia.

Total fish catches do not show an all-round fall in numbers, but their composition is changing and species caught on the reefs and in the lagoons are now giving way to those caught in deep waters, as a result of the assistance given by the Administration to promote this technique.

In Futuna waters, the use of poison for fishing is dangerous not only in the short run but also in the long run, for as well as destroying the in-shore fish stocks, it also affects the ocean species which must spend certain of their juvenile stages on the apron reef.

(h) Conservation zones, parks and reserves

There are no conservation zones formally designated as such, except for the "Vao Tapu" forests which are under traditional taboos.

The long-term economic and social development plan proposes that the island of Alofi, which is a site of exceptional quality, be protected.

(i) Endangered species

There is as yet no inventory or legislation concerning endangered species. ORSTOM is preparing an inventory of flora. It should be mentioned that flying foxes are becoming rare.

(j) Local sources of energy

The Territory, being of volcanic origin, does not have any fossil fuel resources. Apart from some solar water-heaters, a solar-cell powered aerial navigation beacon on Futuna, and wood-stoves in kitchens, all energy-consuming appliances use imported fossil fuels.

The island of Futuna is interested in a project to establish a small hydro-electric power generating station which would in the near future make it possible to produce all the electricity needed by the island.

(k) Human resources

The health of the Territory's population has improved considerably over the last 10 years. There is a definite decline in the major endemic diseases. The Department of Health has under way a priority campaign against the principal endemic disease, filariasis.

Free medical care and the establishment of a modern hospital and health centres provide the population with very wide medical cover.

School enrolment is compulsory for children between the ages of 6 and 14. The establishment of a junior secondary school and adaptation of the curriculum to provide introductory technical training make it possible for pupils to receive some preparation locally for their working lives.

The secondary school provides the first four years of secondary education. Thereafter, the better pupils can obtain scholarships to continue their schooling up to matriculation level in New Caledonia and their post-secondary studies in metropolitan France.

A pension scheme has been set up for wage-earning workers, and more recently an old age assistance scheme has been introduced for all non-wage-earners over 55 years of age.

The present rapid growth of the population, resulting both from a high birth rate and from the return of Wallis and Futuna migrants because of economic difficulties experienced in New Caledonia, will certainly lead in the near future to rapid changes in people's needs and habits, which the local authorities will have to take into account in order to ensure the Territory's smooth development.

(l) Infrastructure

Much has been done to equip the Territory with the facilities that are essential for its development.

The international airport at Hihifo can receive medium-range and long-range aircraft. The airport at Vele on Futuna is adequate for the small aircraft that provide communication by air in the area.

The two islands have a jetty, which enables them to receive supplies by sea, and an extensive road network, some parts of which on Wallis are paved, while on Futuna the circular coast road is nearing completion.

On Wallis, all the villages now have water and electricity, and this should soon be the case on Futuna also, once the new water catchments and a small hydro-electric power station have been built.

### 3.2 The main development trends

#### 3.2.1 Human Settlements

On Wallis there has been uncontrolled building of houses since the former collective lands were allocated to individual owners. These dwellings are being built without any regard for town planning by people who are anxious to occupy land and to establish family property rights thereon.

On Futuna, there is not enough space in the coastal strip for the villages to expand much, and some of the villagers have therefore moved to the east coast which was uninhabited before a road to it was built.

Increasingly, houses are being built of concrete and corrugated iron, which is not always very satisfactory either from the hygienic or from the aesthetic point of view.

The traditional "falés" are much less often built now, particularly because upkeep of the pandanus tile roofing is difficult.

Both on Wallis and on Futuna, expansion of inhabited areas means using up land space which in turn is prejudicial to the natural balance and to conservation of the Territory's potentialities. While the fact that the dwellings are spread out is an advantage in that it reduces the risk of pollution, it is nonetheless also a problem in that it lessens the profitability of the infrastructures and public works (roads, drinking water, electricity).

#### 3.2.2 Industrial development

No industrial development is being considered at the present time, primarily because of the impossibility of giving potential investors any guarantee regarding land tenure.

#### 3.2.3 Agriculture

Traditional subsistence agriculture will for a long time to come be the only kind practised in the Territory.

The present tendency is to increase yields of specific crops, mainly on Futuna where the rehabilitation of irrigated taro plantations is being encouraged.

A programme to regenerate coconut groves and to develop fruit-tree growing is currently under way.

Assistance is also provided to encourage the establishment and the upkeep of vegetable gardens.

#### 3.2.4 The forest

The increasing amount of land coming under cultivation will, if the traditional leaders cannot curb the present trend, soon lead to disappearance of the natural forest which has already been substantially reduced by burning for the purpose of clearing land.

#### 3.2.5 Fishing and aquaculture

While aquaculture trials are still needed before any project of this kind can be developed, bottom fishing in deep water or on the sea mounts north of Wallis should increase rapidly, thus easing the pressure on the Wallis lagoon and the Futuna reefs.

Deep-water fishing being of very recent introduction, care needs to be exercised regarding the catches now being taken from a stock which is still intact and whose potential is not yet known.

In view of the limited length of the reef slopes on which this kind of fishing can be done, particularly because of the direction of the prevailing winds, the possibility of developing the deep fishing technique must be viewed with caution.

### 3.3 Management methods

#### 3.3.1 Coastal zone

There is no planning or integrated management of the coastal zone.

#### 3.3.2 Strategies to limit the effect of catastrophies

In addition to the services provided by the national police force, the fire brigade, and the hospital, there are two strategies laying down measures to be adopted in the following cases:

- in the event of an air accident (this strategy was developed by the civil aviation department)
- in the event of a cyclone or severe depression.

No POLMAR plan has been set up because of the very limited risk of pollution of the sea.

#### 3.3.3. Regional emergency plans

The Territory can count on assistance from New Caledonia to deal with the effects of any catastrophe that might occur.

Nevertheless it would be interested in setting up regional emergency plans.

#### 3.3.4. Population policies and programmes

In view of the limited potential of the Territory and the difficulty of emigrating to New Caledonia at the present time, a reduction in the population growth rate is desirable. But in practice, the application of any such policy encounters many obstacles.

#### 3.3.5. Plans for land use and zoning

As the Administration has no say in land tenure questions, the drawing up of plans for land use and zoning or any other means of control over land development is impossible. Nevertheless, from the technical point of view, such documents could easily be prepared, drawing in particular on the information provided by existing maps indicating the agricultural capability of the different soils and on the various agro-pedological surveys that have been conducted.

#### 3.3.6. Restoration of degraded areas

The Rural Economy Department endeavours to replant degraded areas when erosion has not removed all the soil and when the traditional leaders permit such action.

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