

IFRECOR

INITIATIVE FRANÇAISE
POUR LES RÉCIFS CORALLIENS

IFRECOR ACTION PLAN ASSESSMENT (2011-2015) Summary

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MINISTÈRE
DES OUTRE-MER



MINISTÈRE DE L'ÉCOLOGIE,
DU DÉVELOPPEMENT DURABLE
ET DE L'ÉNERGIE

IFRECOR ACTION PLAN ASSESSMENT (2011-2015)

SUMMARY

INTRODUCTION

IFRECOR has ended its third five-year phase of its action plan (2011-2015). During this phase, actions were developed under eight themes in line with the focuses of IFRECOR's framework plan and implemented in all or a portion of overseas communities. These themes were therefore called “cross-cutting themes”.

Table 1. Cross-cutting themes of IFRECOR's Phase 3 according to framework plan focus

Focus 1. PLANNING IN ORDER TO PREVENT
<ul style="list-style-type: none">• Strategic Planning and Governance Mechanisms (cross-cutting theme: governance)• Adaptation to Climate Change (cross-cutting theme: climate change)• Valuation of ecosystem services and management choice (cross-cutting theme: socio-economic)• Strengthening networks and effectiveness of the management of marine protected areas or MPAs (cross-cutting theme: MPAs)
Focus 3. HAVING KNOWLEDGE AND UNDERSTANDING IN ORDER TO MANAGE
<ul style="list-style-type: none">• Providing a summary and online information on species and habitats of coral reefs and associated ecosystems (cross-cutting theme: biodiversity)• Monitoring the health of coral reefs and associated ecosystems, the environment and climate changes (cross-cutting theme: observation networks)<ul style="list-style-type: none"><i>1.1. Reef monitoring- a: Global Coral Reef Monitoring Network - b: Reef Check</i><i>1.2a: Seagrass bed monitoring</i><i>1.2b: Mangrove monitoring</i><i>1.3 Physical-chemical quality monitoring</i><i>1.4a. Chemical contaminant monitoring</i><i>1.4b. Natural contaminant monitoring</i><i>1.5. Climate change monitoring</i><i>2. Database</i>• Developing methods and mapping tools (cross-cutting theme: mapping)
Focus 4. INFORMING, TRAINING AND EDUCATING IN ORDER TO CHANGE BEHAVIOUR
<ul style="list-style-type: none">• Building on and promoting achievements/Communicating and sharing knowledge (cross-cutting theme: communication)

Local committees and IFRECOR's National Committee led implementation of these actions. The National Committee met 11 times during this period: three times in National Committee meetings, four times in Permanent Committee meetings and four times in technical meetings.

MAIN CROSS-CUTTING THEME

RESULTS

Several outstanding results of IFRECOR's stage 3 can be noted:

- In the area of **biodiversity**, all the local communities compiled a number of inventories and studies on coral reefs to help improve knowledge on biodiversity and the functioning of overseas coral reefs. Also under the cross-cutting theme of biodiversity, and with the active collaboration of many communities, the French national museum of natural history's collecting and recording of all biodiversity data advanced a great deal during this phase. The number of data on overseas coral reef marine species on the national natural heritage inventory website of the French national museum of natural history has increased from 1,200 in 2012 to 86,000 at present. This has considerably improved the transmission and sharing of knowledge.
- As regards the **cross-cutting theme of adaptation to climate change**, the guide to climate change impacts on infrastructure in coastal areas and tropical seas for elected officials was issued, earning considerable praise at the COP21, and the Climate Change Observatory received information for several of the indicators chosen. This cross-cutting theme has worked hard to disseminate IFRECOR's work in international meetings.
- The **socio-economic** cross-cutting theme was particularly productive. It helped evaluate the socio-economic value of services rendered by marine ecosystems (coral reefs, mangroves and seagrass beds) in overseas France and for the first time gave them an overall value at national level. It produced significant work in publishing a guide of best practices for environmental impact studies on coral habitats in overseas France. Work on this theme also led to the development of a method for determining the dimensions of offsetting measures in coral reefs. Lastly, this theme raised IFRECOR's profile internationally, as IFRECOR moderated a number of workshops in colloquia and other international events.
- The **MPA** cross-cutting theme helped to consolidate work on dashboards evaluating the effectiveness of protected marine area management. To date, this has been one of the rare projects conducted on indicators, thresholds and implementation of an operational dashboard to help managers in their daily management tasks. Six educational managed marine areas (EMMA1) have been established in the Marquesas. This new concept of developing schools'

management of coastal marine areas is growing and is to be deployed nationally and even internationally. In addition to work financed under IFRECOR, the pilot programme pursued its support role in creating and managing MPAs. At present, marine protected areas² cover more than 16% of French overseas waters.

- The **observation network** cross-cutting theme issued a publication taking stock of nearly 15 years of coral reef monitoring in overseas France and of the health of coral reefs in overseas France in 2015. The **Reef Check network** (participatory reef monitoring network) was strengthened considerably.

- Long supported by IFRECOR, the reef check database, CoReMo, developed by ARVAM-PARETO, had to be abandoned because it was not compatible with national standards. It has been replaced by the reef database compiled by IFREMER, now operational in the Indian Ocean with plans to be extended to cover other oceans.

- For the first time within IFRECOR, **seagrass beds and mangroves**, ecosystems associated with coral reefs, were more closely integrated in projects. Work to establish networks to observe seagrass beds and mangroves in overseas France, although not as extensive as initially planned, helped establish solid foundations for their development in Phase 4. Networks of actors have been set up and typologies, protocols and indicators are being studied. Pesticide studies revealed a widespread contamination of reef biotas in our overseas communities by herbicides which pose a concerning medium-term threat to the health of ecosystems, and therefore to future biodiversity of contaminated reef biocoenoses.

- The Palme IFRECOR created by the **communication** cross-cutting theme during this phase was awarded to ten projects led by overseas elected officials. This theme also produced a number of communication tools: exhibitions, several brochures and pamphlets on IFRECOR, and summaries and information on socio-economic valuation studies and those relating to climate change for policymakers. This theme led all of the events related to the 15th anniversary of IFRECOR (2015-2016), with several outstanding events such as the colloquium held at the National Assembly, on the initiative of the deputy from New Caledonia, Philippe Gomez, and with the support of the *Maison de Nouvelle Calédonie*, and the final resitutation symposium held at the *Maison des Océans* in July 2016. The website was overhauled and information on the cross-cutting themes, local plans and new documentary database was added (an average of 10,000 hits a month).

- The **mapping** cross-cutting theme produced a guide on a harmonized approach to commissioning and creating a map of coral reef habitats in French communities, an implementing guide for managers. The harmonized project for mapping mangroves in

¹ A coastal marine area managed by students in a school

² Adhering to the definition of the environment code (French Act of 2006 and ministerial order of 2011)

overseas France, begun in October 2013, helped produce a first practical guide to mapping mangroves in overseas France (2015) that has developed, among other things, an innovative methodological protocol to follow for calculating the surface area of mangroves in overseas France.

- With the aim of increasing its support to its projects and encouraging new forms of public-private collaborations, IFRECOR wanted to develop **corporate sponsorship**. The only concrete action thus far is an agreement with Air Caraïbes, but initial contact has been made with several companies thanks mainly to a sponsorship event. Some of them are interested and more contact is expected to be made in Phase 4.
- The **French Association for Coral Reefs (ACOR)** issued a substantial publication taking stock of French research on coral reefs and associated ecosystems and presenting the latest research developments in several areas.

LOCAL PLANS

All the overseas communities have developed many activities regarding coral reefs and their associated ecosystems over the past five years. However, given the different procedures for delegating financing, they report on their activities differently, either on all of the actions they have conducted (overseas departments whose IFRECOR funds are included in an overall financial budget devoted to biodiversity - BOP113) or more specifically on activities financed by IFRECOR (Pacific communities). As a result, there is considerable variation in reporting. Too numerous to mention in full, below are some of the main activities reported by overseas communities (and not necessarily financed by IFRECOR).

In the area of knowledge of biodiversity, many biodiversity inventories added knowledge about molluscs, sponge, crustaceans, algae, echinoderms in Guadeloupe and Saint Martin, hydroids and bryozoans in Martinique; holothurians in Wallis; a coral species presumed to be extinct was found in Martinique and is now being studied rigorously; the Scattered Islands were the headquarters of many fact-finding missions during phase 3 and the results were highly valued (scientific publications, review colloquium in Paris).

The ZNIEFF inventory³ was updated in several communities: Martinique, Mayotte - 16 sites.

Many studies also concern the structure of populations and the functioning of ecosystems: sharks in Guadeloupe and Réunion, Nassau groupers in Martinique, mangroves in Mayotte and Europa Island,

vigorous fish recruitment in the Scattered Islands, Mayotte and Réunion; huge numbers of marine macrofauna in habitats and connectivity between lagoon areas in Mayotte; evaluation of the recruitment and coral mortality in New Caledonia; and a study on coral reproduction in French Polynesia. Coral diseases were studied in Réunion and in New Caledonia. A National Action Plan concerning sea turtles in the southwest Indian Ocean was crafted.

Knowledge tools were developed: a Martinique coast and sea portal, a digital tool for identifying marine invertebrates in Martinique, a map of seagrass beds in Mayotte, the drafting of 150 habitat information sheets to be used as a tool for rapid recognition and a guide on birds in New Caledonia, a guide on molluscs in Mayotte, a guide for identifying coral and a mapping database and shark observatory in French Polynesia.

As regards marine protected areas, it is important to mention the creation of the first marine nature reserve in Martinique in 2014, Mayotte Marine Nature Park in 2010, and Glorieuses Marine Nature Park in 2012, with the latter two benefitting from a management plan. A nature park of the Coral Sea was also created in New Caledonia. A five-year management plan for the Réunion National Marine Nature Reserve was adopted in 2013, covering almost all activities on coral reefs and their associated ecosystems. Europa Island was listed as a RAMSAR site and the French Southern and Antarctic Territories are seeking the island's classification as a national nature reserve. The connectivity of Indian Ocean marine protected areas was studied. New Caledonia has compiled a study on MPA financing capacities.

Every effort is being made to **fight against invasive species** in Antilles with the introduction of an action strategy for lion fish (informing the public, establishing an observer network, organizing catches, recipe books) and with work on sargassums that periodically invade the coast.

There are many different ways that **pressures and degradation are being curbed**: extensive work in Guadeloupe to prevent/offset impacts of the Grand Port Maritime de La Guadeloupe; a study on the carrying capacity of the lagoon area of the Petite Terre reserve. In Mayotte original experimental work on the mangrove's role in the bioremediation of domestic waste water is being pursued. Polynesia conducted a study on the pesticide levels in phanerogams and seaweed (*Halophila and Caulerpa*). Reservoirs to limit the inputs of muddy water in the lagoon were created in Wallis and Futuna and monitoring missions were strengthened.

³ Natural areas of ecological interest for fauna and flora

Several communities installed buoys to protect the reefs from mooring (Martinique, Mayotte, New Caledonia)

In Mayotte, several studies were conducted by the Mayotte Marine Nature Park to better define fishing activities (shellfish gathering on the shore, fishing with a net, traditional and alternative fishing techniques, fishing reserves). In Guadeloupe stocks of conches, which are very endangered, were estimated.

Coral reefs have been monitored for many years in all the communities: Global Coral Reef Monitoring Network or GCRMN, Reef Check, the network of reserves in Guadeloupe, and monitoring of the vitality of fringing reefs in Mayotte. In the Scattered Islands, a network of a total of nearly 80 stations spread over the five islands was established and the islands are newly positioned as a climate change observatory.

In addition to Reef Check, local networks of volunteer observers are growing in Mayotte within the framework of the Mayotte Natural Marine Park, in Réunion (lagoon guards) as part of nature reserve work, and in New Caledonia, with Pala Dalik, the network of Caledonian volunteers.

In addition there have been all the studies and checks conducted under the Water Framework Directive, most often in connection with IFRECOR.

Ecosystems are also actively being restored, with an experimental programme of replanting staghorn coral (*Acropora cervicornis*) and elkhorn coral (*Acropora palmata*) in Martinique, the restoration of mangroves in Mayotte, and the transplantation of seagrass beds of marine phanerogams in Guadeloupe. Operation Planugwa in Guadeloupe is particularly innovative, catching gametes of the Scleractinian species *Montastrea annularis* and *M. faveolata* in collection devices attached to the colonies. Fertilization, larval development then attachment of larva on artificial structures are conducted in aquariums before the attachment structures are returned to the sea.

Awareness raising is at the core of IFRECOR actions. Among the many activities and products completed, some examples include “Action Corail” in Guadeloupe, which for several years has been raising public awareness, educational tools for schools (Guadeloupe) and users (Martinique, the Scattered Islands in the museum area of the French Southern and Antarctic Territories), the “A l'école du récif” (reef school) seminar and the educational posters on the impact of climate change on coral reefs in Polynesia and coral reef information pamphlets for middle school students in the Wallis and Futuna Islands.

Documentary films were produced in Mayotte (“Quand le corail blanchit”), in the Scattered Islands,

in Guadeloupe, in Martinique and in French Polynesia, which has made a very effective information video.

Underwater paths now exist in most communities (Réunion, Martinique, Guadeloupe) and are making a special contribution to this information campaign and public awareness-raising. Mayotte is training and educating young Mahoran teams in scuba diving, reef ecology and reef monitoring. In Polynesia, “BULA HONU, suivons les tortues marines du Pacifique” is an educational project monitoring the route of several sea turtles equipped with satellite transmitters conducted with children from all over the South Pacific and metropolitan France.

On the basis of information we have at our disposal, the distribution of local actions conducted during phase 3 in the six focuses of the IFRECOR framework plan is not balanced ⁴(see diagram): most of the financing supports focuses 3- research (27%) and reef monitoring (36%) and 4 -education, awareness-raising, training (16%) of the framework plan. Not much has been invested in other focuses (diagram on financing percentages of IFRECOR and ministries (Ministry of Ecology, Sustainable Development and Energy and Ministry of Overseas France in the different focuses).

The other members of the National Committee also took action: the French National Research Institute for Sustainable Development (**IRD**) and the French Research Institute for Exploitation of the Sea (**IFREMER**) actively participated in certain cross-cutting themes: The communication cross-cutting theme with the IRD's MARECO teaching pack for children, the observation network cross-cutting theme with IFREMER's development of the Indian Ocean reef database, the biodiversity cross-cutting theme with a strong IRD New Caledonia commitment, IFREMER's management of a project on MPA dashboards.

The French Association for Coral Reefs (**ACOR**) has issued a very well documented and extensive publication on research in France, also taking stock of the most recent research developments in the many areas affecting coral reefs and associated ecosystems, with the collaboration of several researchers. The International Union for Conservation of Nature (**IUCN**) issued a publication on the biodiversity and conservation in French overseas communities and developed a biodiversity strategy in Mayotte. The World Wildlife Fund (**WWF**) has led sponsorship work and is invested in several actions in New Caledonia, French Polynesia and the Indian Ocean. The French Underwater Studies and Sports

⁴ Please note that this calculation is based on the distribution of financial sums for activities in the four communities for which we have enough information to determine this distribution (Guadeloupe, Martinique, Mayotte and New Caledonia).

Federation (**FFESSM**) has collaborated closely with the IUCN to organize an underwater photo competition. The National Nature Protection Society (**SNPN**) disseminates knowledge on this type of ecosystem and the urgency of its conservation in its review "*Le Courrier de la Nature*", with the publication of some 25 articles on coral reefs since the creation of IFRECOR.

IFRECOR'S ADDED VALUE

IFRECOR's added value is therefore wide-ranging:

- An overall improvement of knowledge about coral reefs and associated ecosystems;
- Creating innovative products relating to climate change, the evaluation of ecosystemic services and the economic value of coral reefs and associated ecosystems, offsetting issues, mapping methods, and evaluation of MPA management;
- The inclusion of mangroves and seagrass beds in IFRECOR activities;
- Efforts to structure and align tools, including in monitoring and organizing data;
- Networking of actors working in the area of coral reef and associated ecosystems;
- Professionalisation with regard to communication, international outreach (particularly at political level via the Palme IFRECOR) and sponsorship strategy;
- The international echo: with greater consideration given to coral reef problems in international and regional organizations and forums and more inclusion of coral reef issues in national financing programmes.

