IFRECOR contributes actively to inform and raise awareness among different audiences (general audience and reef users, students and children, elected representatives and decision-makers), on the importance of coral reefs, their associated ecosystems and the need to preserve the services they provide. The means of action are numerous and varied at a national and local community scale, and aim to engage concretely this public in the protection and management of these ecosystems. To this end, IFRECOR will use the necessary means to develop a true national communication policy and will commit to develop project sponsoring.

Some previous flagship actions will be continued and strengthened.

CONVERT YOUNG PEOPLE INTO PROTECTION ACTORS : EDUCATIONAL MANAGED MARINE AREAS.

An « educational marine area » is a small coastal maritime zone, close to a school, managed in a participatory way by primary school students. It is about a pedagogical innovative project developed in the Marquises (French Polynesia) in 2012 and supported by IFRECOR. The procedure is labeled by the Polynesian government who, throughout CD2P2, authorized the French government to spread it nationally. The extension in overseas territories and in mainland France is being done progressively, with an experimental pilot phase during the 2016-2017 school year. IFRECOR supports this deployment in the overseas, where 4 schools have been selected in the pilot phase: Martinique, Guadeloupe, Mayotte and Reunion Island.

REINFORCE LOCAL ELECTED REPRESENTATIVES’ COMMITMENT: « LA PALME IFRECOR.»

Launched in 2011 and developed in cooperation with the partnership of Mayors of France, the « Palme IFRECOR » contest rewards and values remarkable actions and policies in the preservation and long term management of coral ecosystems, established as an initiative of overseas’ elected representatives. IFRECOR will pursue this initiative to encourage local decision-makers to reinforce their actions in terms of long term protection and sustainable management of reefs and associated ecosystems.

SUPPORT TERRitories COMMUNICATION ACTIONS:

IFRECOR supports actions on communication, awareness and education spread in the overseas, in favor of coral reefs and the associated ecosystems.

THE FIRST EXCHANGE NETWORK BETWEEN THE OVERSEAS REEFS TERRITORIES’ ENVIRONMENTAL ACTORS: IFRECOR is placed under the co-presidency of the ministers in charge of ecology and overseas territories, respectively. Its governance, innovative, is built on the will to gather all the overseas reef territories and actors concerned by these ecosystems, nationally and locally. It has the support of a national committee and a network of 9 local ones. Its actions are part of a national action plan, adopted in 2000 and divided into five yearly implemented programs (2000-2005, 2005-2010 and 2010-2015). The fourth action plan was set in 2016. It has been implemented by IFRECOR’s members and the local committees, with the cooperation of national and international experts.

IFRECOR’S 4TH ACTION PLAN ADDRESSES FRANCE’S INTERNATIONAL AND NATIONAL ENGAGEMENTS.

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THE STATE OF OUR OVERSEAS CORAL REEFS

The state of French overseas coral reefs is contrasted, depending on the protection of the reefs and the demographic pressure applied.

1. It is generally doing well in the Pacific territories (New Caledonia, French Polynesia and Wallis), except for localized degradations caused by pollution, sedimentation by phytoplankton and Die-off that affects low coral cover in the Tuamotu Archipelago, isolated in the Indian Ocean.

2. It is in a worse condition in Reunion Island and the Antilles, where the population evolution translates into losses of coral cover, reduction of reef area and loss of coastal lagoons, equivalent to 10% of their overall planetary surface. This ranks France in 4th place in terms of global coral reef surface. It is generally doing well in the Pacific territories (New Caledonia, French Polynesia and Wallis), except for localized degradations caused by pollution, sedimentation by phytoplankton and Die-off that affects low coral cover in the Tuamotu Archipelago, isolated in the Indian Ocean.

3. As stated in article 113 of the French Law for biodiversity, nature and landscapes in 2011, “for stopping the loss of overseas biodiversity and preserving its favorable role in the adaptation of the territories to climate change, the State has set the following goals, … (1) To implement an action plan for the protection of 50% of mangroves by 2020, (2) To elaborate, within the framework of IFRECOR and based on a report on the health of coral reefs and their associated ecosystems carried out every five years, an action plan contributing to the protection of 75% of overseas’ coral reefs by 2023”.

SOME KEY FIGURES

- 95% is the significant part of the French maritime area represented by overseas territories;
- 60,000 km² is the surface covered by overseas coral reefs and lagoons, equivalent to 10% of their overall planetary surface. This ranks France in 4th place in terms of global coral reef surface;
- 30% is the significant part of the world’s geomorphologic diversity found in French reefs;
- 4 times more fish and 3 times more mollusks: French portrait is a rich one in the Hexagon’s and Cosmo’s columns combined;
- 3,3 billion euros: is the annual value of services provided by French coral ecosystems.

The significant surface covered by reefs and associated lagoons, representing 10% of the geomorphologic diversities and the 30% of the geographical coverage, in 3,3 billion euros, makes France, thanks to its overseas territories, one of the first coral countries of the planet.

THE WORLD'S LARGEST REEF: REEFS IN THE PACIFIC

The words “reef” and “coral” are often confused. “Reef” refers to the coral communities themselves, whereas “coral” is a freshwater mollusk that has taken on a new role as the reef builder. It is generally doing well in the Pacific territories (New Caledonia, French Polynesia and Wallis), isolated in the Indian Ocean, where 4 schools have been selected in the pilot phase: Martinique, Guadeloupe, Mayotte and Reunion Island.

The state of French overseas coral reefs is contrasted, depending on the protection of the reefs and the demographic pressure applied.

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THE WORLD’S LARGEST REEF: REEFS IN THE PACIFIC

The words “reef” and “coral” are often confused. “Reef” refers to the coral communities themselves, whereas “coral” is a freshwater mollusk that has taken on a new role as the reef builder.
To better protect coral reefs from human threats, the Global Coral Reef Monitoring Network (GCERM) has been developed by the International Coral Reef Initiative (IFRECOR). This network aims to support the implementation of a financing mechanism for the protected areas and for biodiversity conservation.

**MANGROVE NETWORK**

The mangrove network is being developed as part of the overseas territories' environmental policies. The network aims to support the implementation of a financing mechanism for the protected areas and for biodiversity conservation. The network will focus on the development of a national monitoring system and on the establishment of a network of experts and practitioners to monitor the health of mangrove ecosystems.

**SEA GRASS BEDS NETWORK**

The sea grass beds network aims to mobilize a community of experts to develop a national monitoring system and to establish a network of experts and practitioners to monitor the health of sea grass beds. The network will focus on improving the capacity of coastal managers to manage sea grass beds and to make decisions based on sound scientific data.

**CONTRIBUTE TO DECREASE HUMAN THREATS DAMAGING CORAL REEFS**

In order to address the threats facing coral reefs, IFRECOR focuses on the actions that can have an impact on coral ecosystems (such as road projects, port installations, hotel infrastructures, etc.). For this kind of projects, it is proposed to work on environmental impact assessment, on compensatory measures to be developed as part of the "avoid, reduce and offset the impacts" sequence (ERC: éviter, réduire et compenser les impacts), and on ecological engineering techniques within the marine environment.

**IMPROVE THE QUALITY OF ENVIRONMENTAL IMPACT ASSESSMENT STUDIES IN THE REEF ENVIRONMENT**

A guide for good practices for impact studies in the coral environment has been drafted and edited during IFRECOR's 2011-2015 action program. Based on this guide, actions will be deployed in the field of training and communication (dissemination platform) on the practical conduct of environmental impact assessment.

**DEVELOP THE "MERCICOR" APPROACH IN ORDER TO AVOID, REDUCE OR OFFSET THE IMPACTS**

IFRECOR proposes to adapt to the coral environment a theoretical model on the sizing of compensatory measures: the "MERCICOR" tool (M. Pinault, S. Pichon and N. Pascal, 2015). This model will be disseminated, explained, tested, validated and adjusted through the concrete experiences of project planning and training of overseas actors.

**IDENTIFY AND PROMOTE GOOD PRACTICES FOR ECOCENOW ENGINEERING IN THE REEF ENVIRONMENT**

A record of ecological engineering techniques and a monitoring of innovative ones, of maritime infrastructures eco-design and good practices to enhance overseas, will be developed and made available on the IFRECOR website. Furthermore, the guide on ecological restoration in coral environment (M. Poncher, 2003) will be updated and a workshop will bring together experts in order to produce a critical analysis of developed engineering techniques, based on overseas experiences feedback.

**MONITOR AND MITIGATE CLIMATE CHANGE IMPACTS**

Climate change will have a considerable impact on coral reefs: the speed of oceanographical condition changes (increase in water temperature and acidification) makes coral adaptation difficult. 2100 projections, if the Kyoto Protocol is not ratified, show that coral reefs will be in very poor condition and that some of them may disappear. Yet, invasive marine species are still spreading, making the situation even more critical. In order to protect coral reefs, IFRECOR proposes to include coral reef observation in the 2006-2010 and 2011-2015 action programs. The objective is to ensure its sustainable management and to initiate a pilot study on the measurement of a territory's vulnerability to climate change, with the objective of designing a plan for adaptation.

**ENSURE THE CONTINUED EXISTENCE AND THE DEVELOPMENT OF THE OBSERVATORY FOR CLIMATE CHANGE (NOG)**

A climate change observatory has been developed during IFRECOR's 2006-2010 and 2011-2015 action programs. The objective is to ensure its sustainability, to develop it and to support it. The observatory was based on a participatory network involving experts and stakeholders. The observatory is now being developed in collaboration with the French biodiversity agency as part of the main European directive on water (DCE: Directive cadre sur l'Eau) and on the Water Framework Directive (WFD ; DCE: Directive cadre sur l'Eau).

The observatory will consist of a monitoring network of coral reefs overseas. The IFRECOR 2011-2015 action program has recently led to initiate a monitoring network of seagrass beds on the one hand, and mangroves on the other hand. The objectives of the 2014-2016 actions program aim to extend and strengthen these networks, with collaboration with the French biodiversity agency as part of the national and local scale. The objective is to better protect them.

**MONITORING THE EVOLUTION OF ECOSYSTEMS TO BETTER PROTECT THEM**

The observation networks, which inform the decision makers about the evolution of the ecosystems' status, are important tools for guiding public policies. The regular assessment of the status of reefs and associated ecosystems will guide to draw up the action plan for the protection of 79% of overseas coral reefs by 2021 (law of 8/08/2016).

In the context of the Global Coral Reef Monitoring Network (GCERM), France has long been engaged in the development of a network for monitoring the coral reefs overseas. The IFRECOR 2011-2015 action program has recently led to initiate a monitoring network of seagrass beds on the one hand, and mangroves on the other hand.

The objective is to provide the network members with a tool to evaluate the impact of climate change on the health status of coral reefs and to assess the effectiveness of the measures implemented in the field.

**REINFORCE KNOWLEDGE FOR A BETTER MANAGEMENT**

The management of coral ecosystems must be based on solid data and scientific approaches. For this, IFRECOR proposes to continue supplying the climate change impact observatory with the support of the network of experts. IFRECOR will commit to identifying the most appropriate research framework in which the work will be then pursued.

**REEF MAPPING**

Mapping is an essential tool for the management of territories. IFRECOR proposes several guides for managers.

Two guides on mapping tools for coral reef management, one about coral habitat mapping, the other one on uses and pressures on coral reefs, will be finalized and validated in the context of overseas workshops. Within these guidelines, and as requested by the managers, thematic maps (habitats, uses, pressures …) will be produced in pilot sites and then included in the Sextant map database (http://sextant.ifremer.fr).

**REED RED LIST OF CORALS**

The ICN Corals Research is for monitoring the evolution of the diversity of these species at a global scale. It provides valuable insight for public authorities before considering regulatory protection of certain species.

It is proposed to establish two regional red lists of reef-building coral for the Indian Ocean and the Antilles. The activities will consist in identifying the list of species to be evaluated and assure a pre-evaluation of their status; these evaluations will be validated in a collegial way in regional workshops, in order to consolidate and publish the results. These workshops will be made available to the State's authorities who would like to pursue the steps towards the regulatory protection of the most threatened species.

**INVASIVE EXOTIC SPECIES**

Invasive exotic species are one of the main causes of biodiversity erosion in overseas territories. Consequently, the lion fish in the Caribbean is considered today as one of the main threats to the coral ecosystems in the invaded islands. Yet, invasive marine species are still very poorly known.

A situation analysis in each of the territories will be carried out and published, based on the contributions of a network of experts and a bibliographical analysis. It will allow to adapt the actions to the territories, to support the adaptive management of marine ecosystems and to strengthen the monitoring stations’ network. The objective is to collect data characterizing the state of seagrass beds, to include them in a database and to contribute to the 5-year assessment of the health status of coral reefs.

**SEAGRASS BEDS NETWORK**

The “seagrass beds” network aims to develop a national monitoring system and to establish a network of experts and practitioners to monitor the health of seagrass beds. The network will focus on improving the capacity of coastal managers to manage seagrass beds and to make decisions based on sound scientific data.

**DIVERSIFY FINANCING DEDICATED TO REEFS AND ASSOCIATED ECOSYSTEMS’ PROTECTION**

Many recent studies have confirmed that total funding for the protected areas and for biodiversity conservation must be considerably increased to achieve the national and internationally agreed targets. IFRECOR thus proposes to support research on innovative financing mechanisms.

Based on successful experiences conducted abroad, IFRECOR proposes a pilot experiment for the development of financing mechanisms overseas.

**PUBLIC-PRIVATE PARTNERSHIP AND PAYMENTS FOR ENVIRONMENTAL SERVICES OF INTEGRATED COASTAL MANAGEMENT IN SAINTE LUCE, MARTINIQUE**

Built in partnership with the Sainte Luce municipality, the project aims to support the implementation of a financing mechanism (payment for environmental services – PES) at the Sainte Luce coastal protection services (management of coastal erosion, protection of coastal habitats, etc.) and a shared governance (public-private co-management) for the creation of a coastal and marine managed area within the Sainte Luce community.

Further pilot experiments could later be identified.