



**STRATEGIC GUIDANCE DOCUMENT
FOR THE RESILIENCE
OF NEW CALEDONIA'S CORAL REEFS
AND ASSOCIATED ECOSYSTEMS (RCEA)**



Great Barrier
Reef Foundation



AGENCE NÉO-CALÉDONIENNE
DE LA **BIODIVERSITÉ**



PROVINCE DES ÎLES LOYALES



PROVINCE NORD



PROVINCE SUD



NOUVELLE
CALÉDONIE

Preamble



The lagoons of New Caledonia form one of the three most extensive reef systems in the world, with an exceptional variety of coral and fish. They are also home to several iconic or endangered marine species, such as turtles, whales and dugongs. This **richness and beauty** has been recognised as having **outstanding universal value**, with the lagoons being designated as a UNESCO World Heritage Site in 2008.

Our lagoons are also a source of food and income for New Caledonians, an economic benefit coupled with a particular cultural importance, especially in the Kanak view of the ocean.

Although our reefs are still well preserved, human pressures and climate change are increasingly threatening their long-term survival.

It is therefore our duty to preserve this heritage.

In New Caledonia, many people are working hard to preserve our lagoons, and we must continue these efforts by building a **common, shared vision**.

The global **Resilient Reefs** Initiative aims to support New Caledonia in this ambition, by promoting environmental resilience and community involvement.

The new Caledonian Biodiversity Agency, which pilots the Initiative locally, has mobilized local communities, local and international partners in the co-construction of a "**strategic guidance document for the resilience of New Caledonia's coral reefs and associated ecosystems**". This common framework, the result of a participatory approach, is intended to guide the management portfolios and initiatives of the various stakeholders.

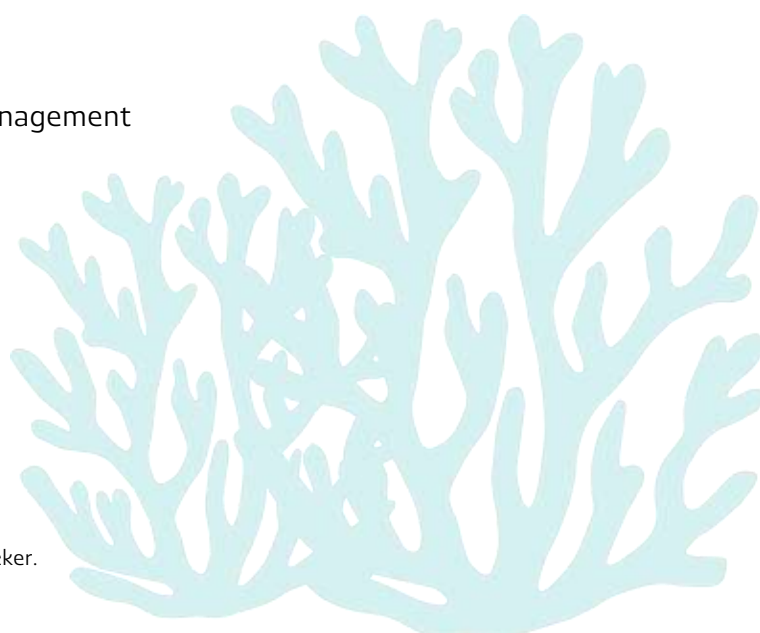
We invite you to discover it, share it and, above all, **contribute to its collective implementation**.

A handwritten signature in black ink that reads 'Katidjo'. The signature is stylized and includes a horizontal line underneath the name.

Jérémie Katidjo Monnier, president of the ANCB

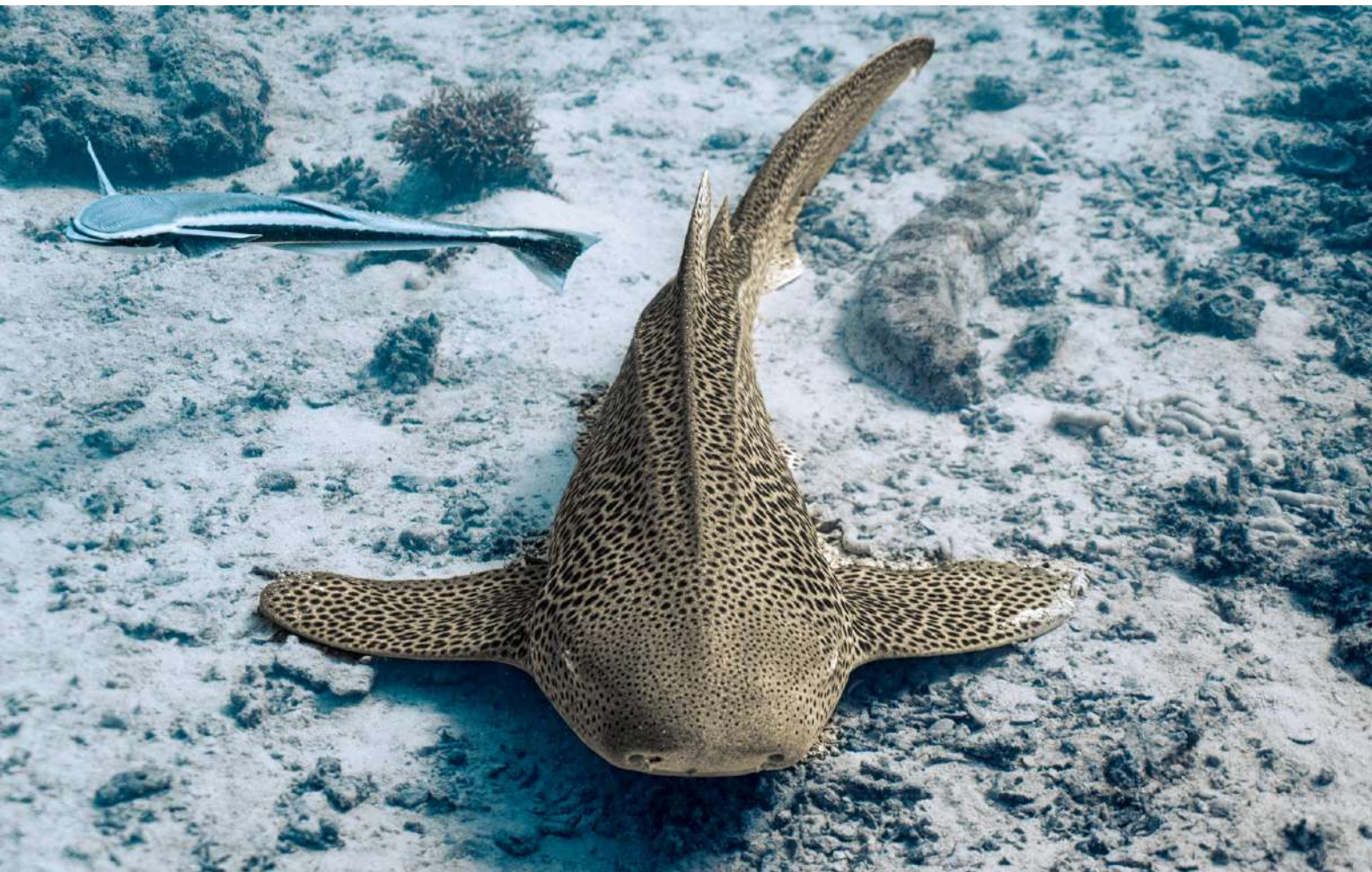
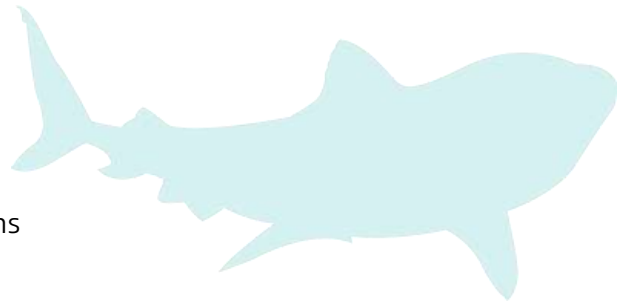
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Abbreviations

ANCB	New Caledonian Biodiversity Agency
SC	Steering Committee
CRO	Chief Resilience Officer
MC	Monitoring Committee
GBRF	Great Barrier Reef Foundation
Gov NC	Government of New Caledonia
RRI	Resilient Reefs Initiative
NC	New Caledonia
LIP	Loyalty Islands Province
NP	Northern Province
SP	Southern Province
RCEA	Coral Reefs and Associated Ecosystems
RR	Resilient Reefs
WH	World Heritage





**THE RESILIENT REEFS
INITIATIVE:
A GLOBAL
INITIATIVE**

Coral reefs are vitally important ecosystems, home to 25% of marine life in the oceans. They **protect our coasts** from storms and erosion and provide us with **food, jobs, cultural links and leisure activities**. Yet coral reefs around the world are under threat. Around **75% of coral reefs are threatened** by a combination of local and global pressures.

At the 2016 UNESCO World Heritage Marine Site Managers' Conference, managers expressed the urgent need for a comprehensive and sustained programme of action to **build resilience in marine sites**, in order to maintain the long-term health of coral reefs and associated ecosystems (RCEA). The Resilient Reefs Initiative is a direct response to this request from managers.



**Belize Barrier
Reef Reserve**



**Ningaloo Reef,
Australia**



**Rock Islands Southern Lagoon,
Palaos**



**Lagoons
of New Caledonia**

Launched in 2018 by the **Great Barrier Reef Foundation** (GBRF), the Resilient Reefs Initiative (RRI) is a global partnership that brings together **local communities, reef managers and resilience experts** to develop new solutions to adapt to the effects of climate change and local threats.



Great Barrier
Reef Foundation

It recognises that the communities that depend on these reefs are under threat and must be part of the solution, and that managers need additional resources to adapt their management approaches to meet the multiple challenges.

The Initiative covers **four pilot UNESCO World Heritage sites**: Belize, Palau, Ningaloo (Australia) and **New Caledonia**.

PARTNER SITES



The Initiative is supported by an **international consortium** of partners, including UNESCO, The Nature Conservancy's Reef Resilience Network, Columbia University's Center for Resilient Cities and Landscapes, and global environmental engineering consultant AECOM. The project is funded by the BHP Foundation



These global partners each bring **unique expertise and support** to the pilot sites. Their role is to help build the capacity of the Initiative's partner sites, support the development of integrated solutions to the challenges facing each site, and share the knowledge and lessons learned from the Initiative with reef managers around the world.

The implementation of the Initiative includes the following for each pilot site:

- Funding and support for a **Chief Resilience Officer (CRO)** to coordinate the Initiative at the local level.
- The development of a **reef resilience strategy** to support the coordinated design and implementation of projects, policies or partnerships that have a significant impact in addressing the effects of climate change and local threats.
- **Action funding** of around 850,000 Australian dollars with over three years of **capacity building** and project design support to implement the priority actions of this strategy.
- Access to the **global network of experts** offering the best scientific knowledge and management practices available to support the sites.



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**THE RESILIENT REEFS
INITIATIVE
IN NEW CALEDONIA:
OPPORTUNITIES**

Local governance of the Initiative

Local support for the RRI by the ANCB



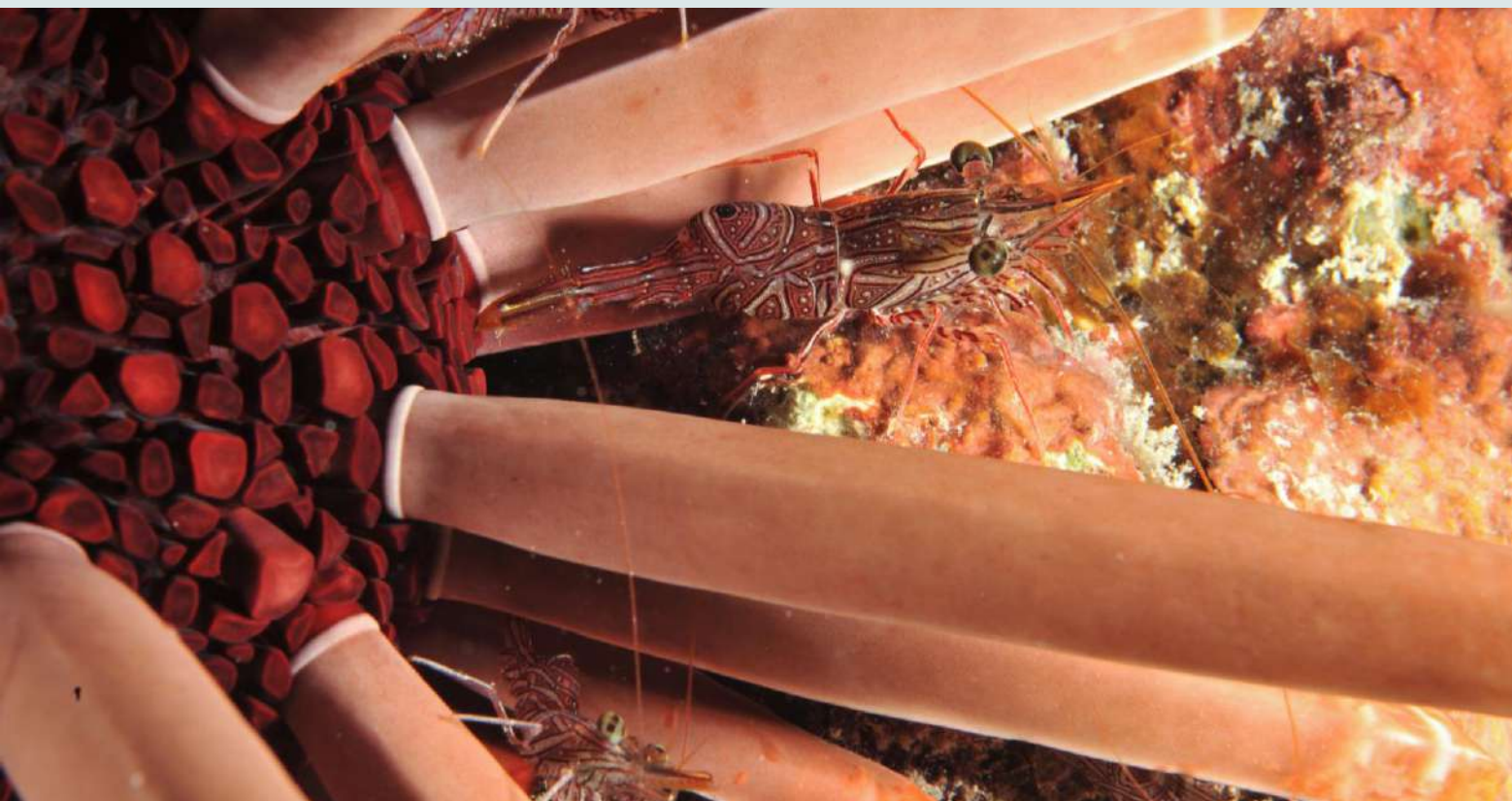
As early as 2018, GBRF spoke to the key reef management stakeholders in New Caledonia to identify the structure that could carry the Initiative locally. The choice fell on the **New Caledonian Biodiversity Agency (ANCB)** because it is a **country-level structure involved in the preservation of biodiversity**, whose governance includes all the managing authorities and the main players involved in environmental management in New Caledonia.

The ANCB is a platform for the co-construction of common ambitions to preserve our natural heritage. It supports environmental policies and **has been involved for several years in preserving the region's reef ecosystems.**



Through its **Marine pole**, the ANCB coordinates the Resilient Reefs Initiative, the management of the World Heritage site, the French Coral Reef Initiative (IFRECOR), the dugong action plan and, the turtle action plan.

The Chief Resilience Officer (**CRO**) works closely with local governance stakeholders and GBRF.



Monitoring and steering committees

The local team in NC and GBRF



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© GBRF



The Monitoring Committee (MC)

It is made up of reef **managers** (the Government of New Caledonia, the Loyalty Islands Province, the Northern Province and the Southern Province), the **French government, associations, NGOs, research** bodies, the **Customary Senate** and others. It defines the main orientations of the Initiative locally and works on developing the strategy and defining the actions.



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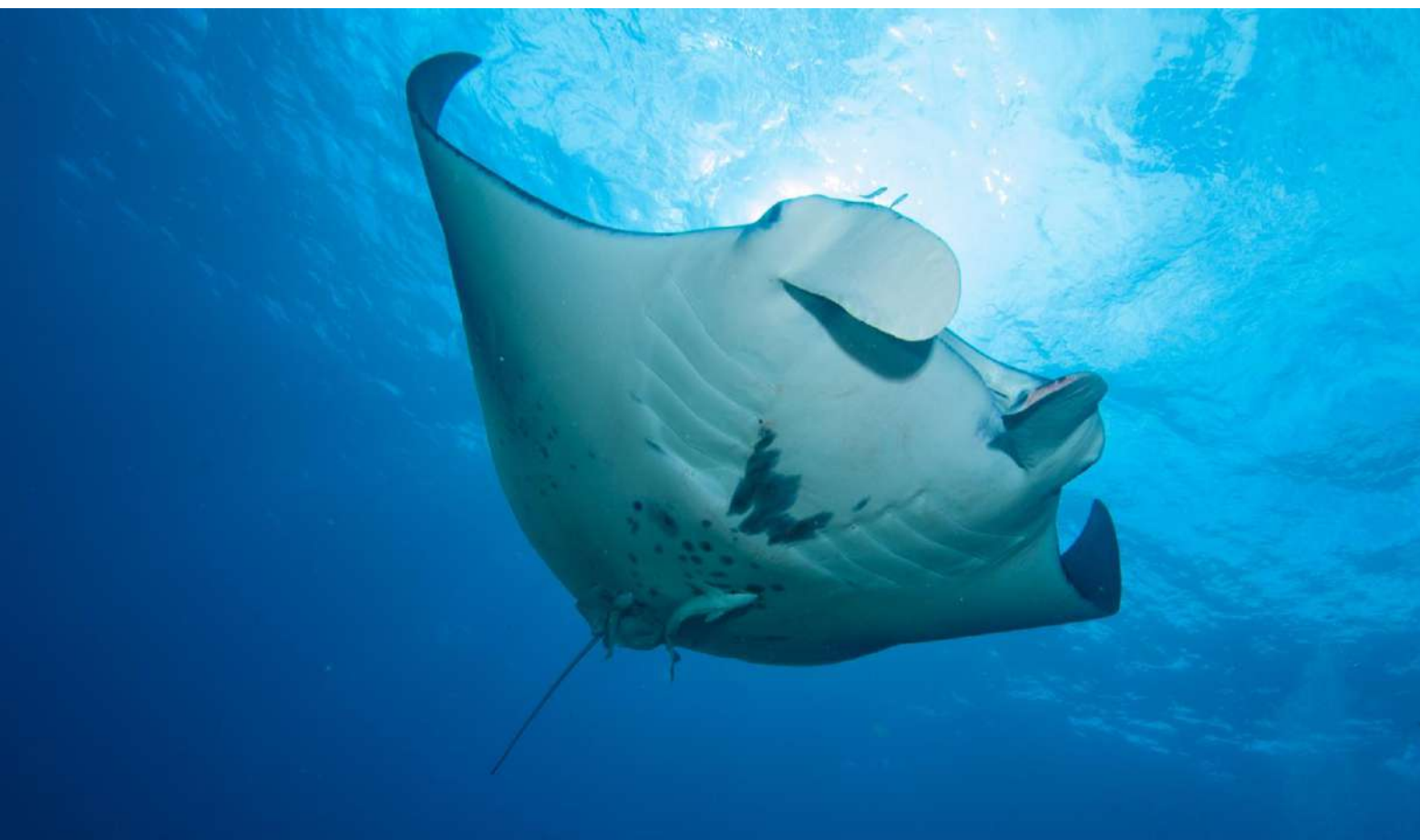
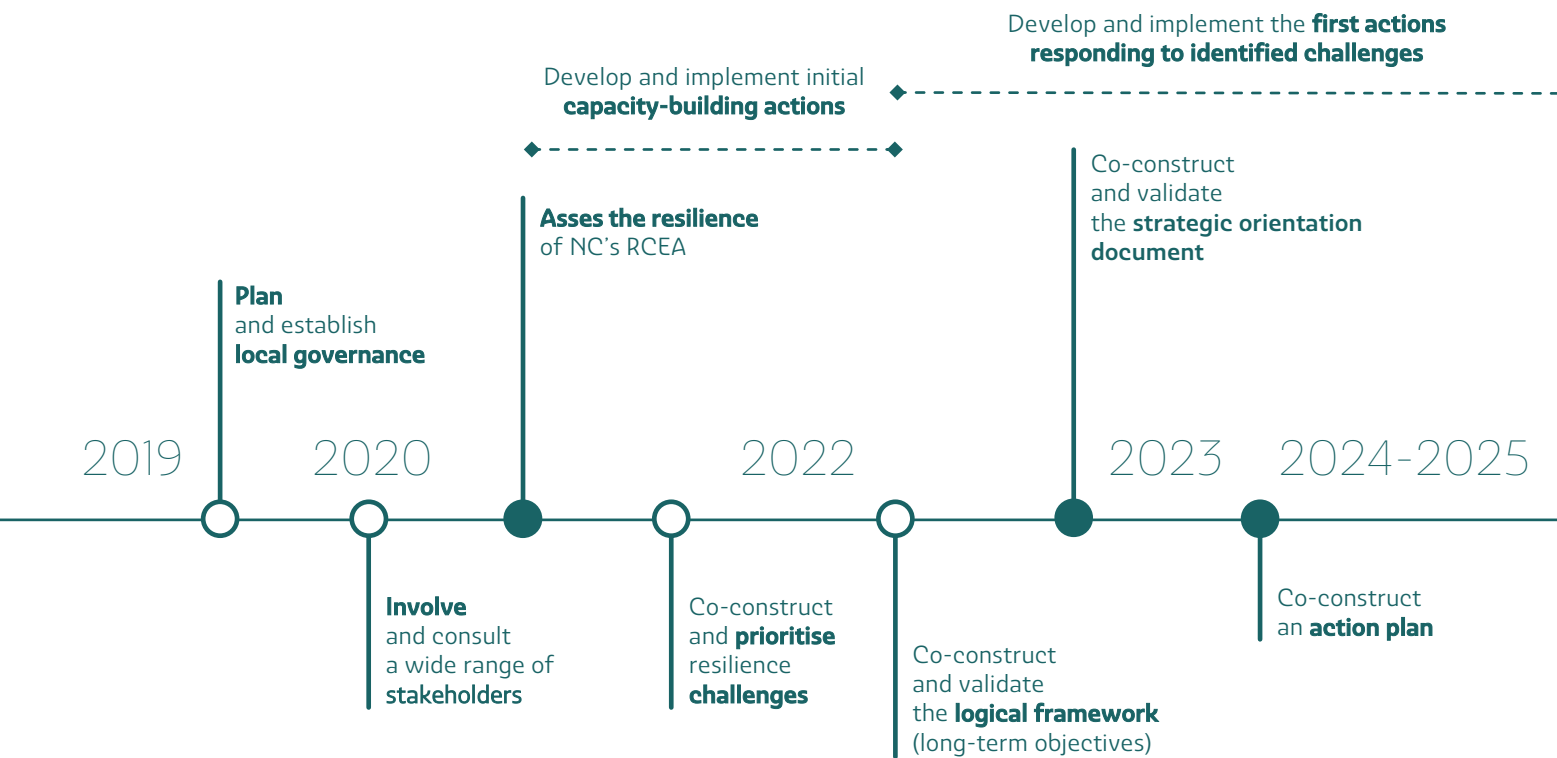
The Steering Committee (SC)

A **steering committee** (SC), comprised of elected representatives and representatives from local authorities, is established to validate the major stages of the project, in collaboration with the monitoring committee.



Chronology of the Resilient Reefs Initiative

The Initiative is divided into **7 key stages**, leading to the **development and implementation of a strategic orientation framework for the resilience of coral reefs and associated ecosystems**:

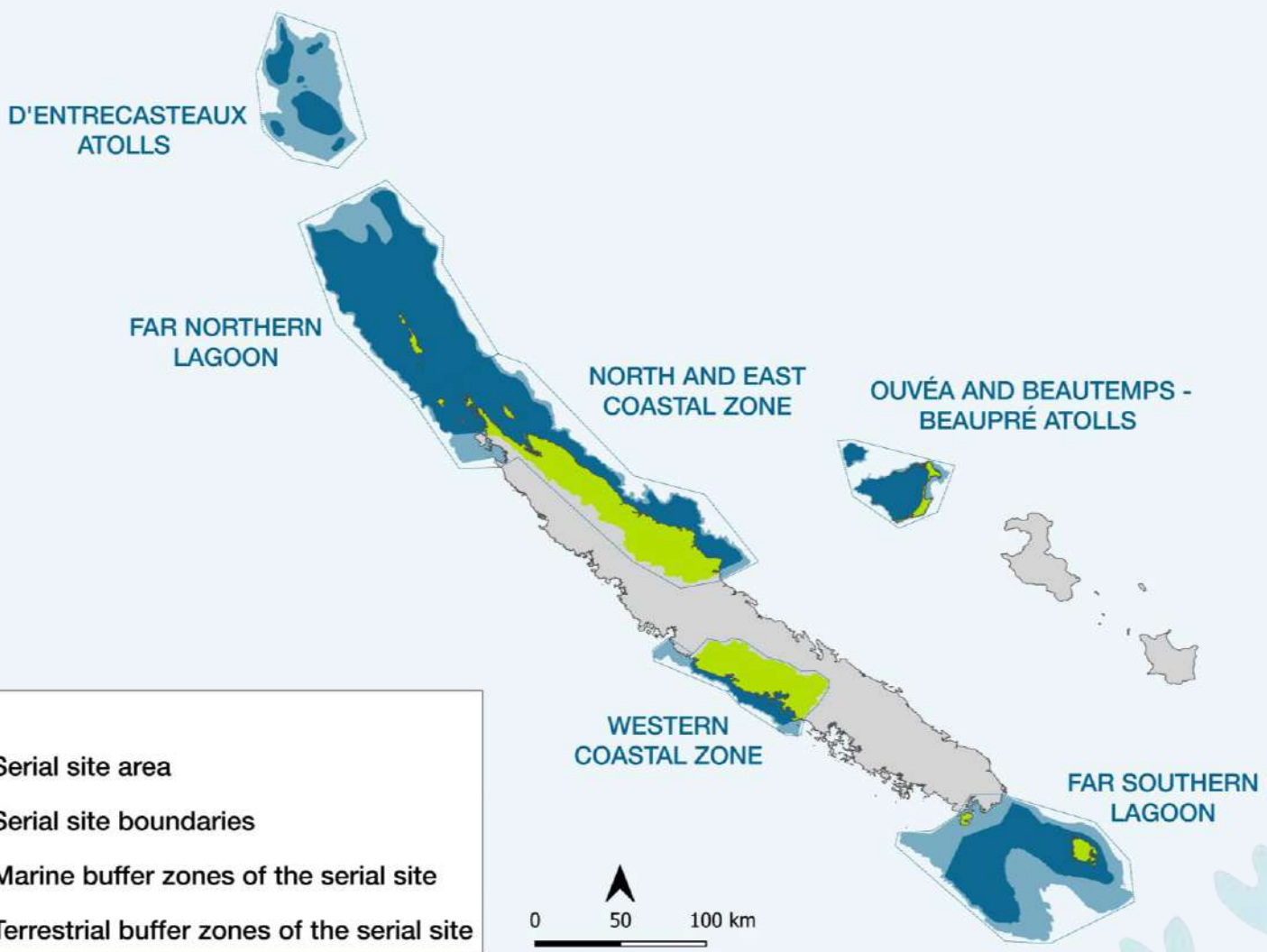


Challenges in New Caledonia

Exceptional reefs

New Caledonia has been selected as a pilot site for the exceptional characteristics of its World Heritage (WH) **serial site "New Caledonian lagoons: reef diversity and associated ecosystems"**: its outstanding universal value, the strong link that communities have with the reefs (culture, leisure, economy, etc.), and its pre-existing participatory governance systems. This site is made up of 6 zones and represents 60% of the territory's reefs. However, the Resilient Reefs Initiative has extended its scope to cover all the territory's reefs.





From a whole-of-ecosystem perspective, the New Caledonian serial site is in a **good state of conservation**: the associated biological and ecological processes have been maintained, which currently guarantees its integrity ^[1]. Similarly, the New Caledonian reef health assessment (2016-2020) reveals that there has been no major disturbance to the reefs ^[2].

[1] Wantiez L (2018). Synthesis of the report *État du bien inscrit au patrimoine mondial de l'UNESCO entre 2006-08 et 2012-14*. Conservatoire d'espaces naturels Nouvelle-Calédonie, University of New Caledonia. 223 pages.

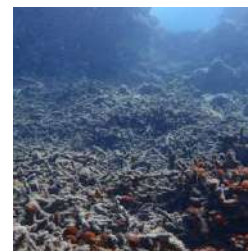
[2] Bilan 2021 de l'état de santé des récifs coralliens, herbiers marins et mangroves des outre-mer français, Documentation Ifremer.

However threats are increasing

Despite an overall satisfactory state of conservation, New Caledonian reefs are subject to increasing anthropogenic and natural pressures. The results of reef monitoring carried out as part of the Coral Reef Monitoring Network (RORC) show that around 23% of **reefs are deteriorating**.

These recent changes in New Caledonian reefs have mainly been determined by large-scale disturbances linked to **extreme climatic events** (cyclones, thermal stress). In addition to these global pressures, **sediment plumes** linked to soil erosion and reef lagoon **fishing** significantly affect local reefs. While exerting a moderate pressure overall, these factors have varying impacts, some of which are strong locally ^[3].

Climate change poses a major threat to coral reefs and the communities that depend on them. It is estimated that 70-90% of the world's coral reefs will experience repeated bleaching episodes at +1.5°C. The lagoons of New Caledonia could experience **bleaching twice a decade from 2031 and once a year from 2040** in a very high emissions scenario ^[4].



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Terrigenous sedimentation is also a major pressure on our reefs. It results from the erosion of watersheds caused by bushfires, mining, invasive species, urbanisation, and agriculture ^[3].



[3] Bilan 2021 de l'état de santé des récifs coralliens, herbiers marins et mangroves des outre-mer français. Documentation Ifremer.

[4] Heron et al. 2017. Impacts of Climate Change on World Heritage Coral Reefs: A First Global Scientific Assessment. Paris, UNESCO World Heritage Centre.



Some coastal reefs are subject to significant **fishing pressure**. Non-commercial fishing often accounts for a significant proportion of catches.

Even if the impact of **tourism** is still limited, it may represent a significant pressure in certain sectors or in the long term (e.g. cruise passengers on the Ile des Pins or in the islets of the Far Southern Lagoon).



Coastlines are also affected by **coastal erosion** (particularly in Ouvéa and on the east coast), which impacts coastal communities.

Reefs can regenerate naturally following pressure, but the **accumulation of several pressures** weakens their resilience. Some reefs struggle to regenerate following cumulative pressures, such as cyclones or heat waves coupled with outbreaks of **crown of thorns starfish** (coral-eating starfish).

Strengthening the resilience of New Caledonia's reefs as a whole is therefore essential, and ecosystem-based management is not sufficient to deal with these growing and unprecedented threats. New Caledonia's reefs are impacted by multiple pressures requiring adapted and adaptable management responses based on resilience.

Complex governance and participative management

Responsibility for managing New Caledonia's reefs is shared between the **3 local authorities** (LIP, NP and SP) and one institution (the **Government** of New Caledonia). There are also **partners** involved in the discussions: the French government and its agencies, associations (such as the World Heritage management committees), local and international NGOs, research institutes, councils, consultancies, etc.



These partners, engaged through a **highly participative and consultative approach**, are a specific feature and strength of the area. Nevertheless, this concentration of players in such a small area also generates a multitude of initiatives and working groups, which tend to **complicate management and disperse efforts and resources**.



A strategy for New Caledonia's coral reefs and associated ecosystems

Today, environmental managers and players agree on the need to pool and **optimise efforts and resources** in view of the climate emergency.

In collaborating with all the players involved, **RRI has drawn up a strategic guidance document for the resilience of New Caledonia's marine ecosystems and communities. For the first time, a single framework has been developed for the RCEA.**

This strategic orientation document presents a shared, country-wide vision, enabling everyone to work towards a common goal.

It is intended to serve as a **basis for any planning document** or new initiative. It is a **flexible, non-binding framework that complements and enhances the public policies** of each local authority.

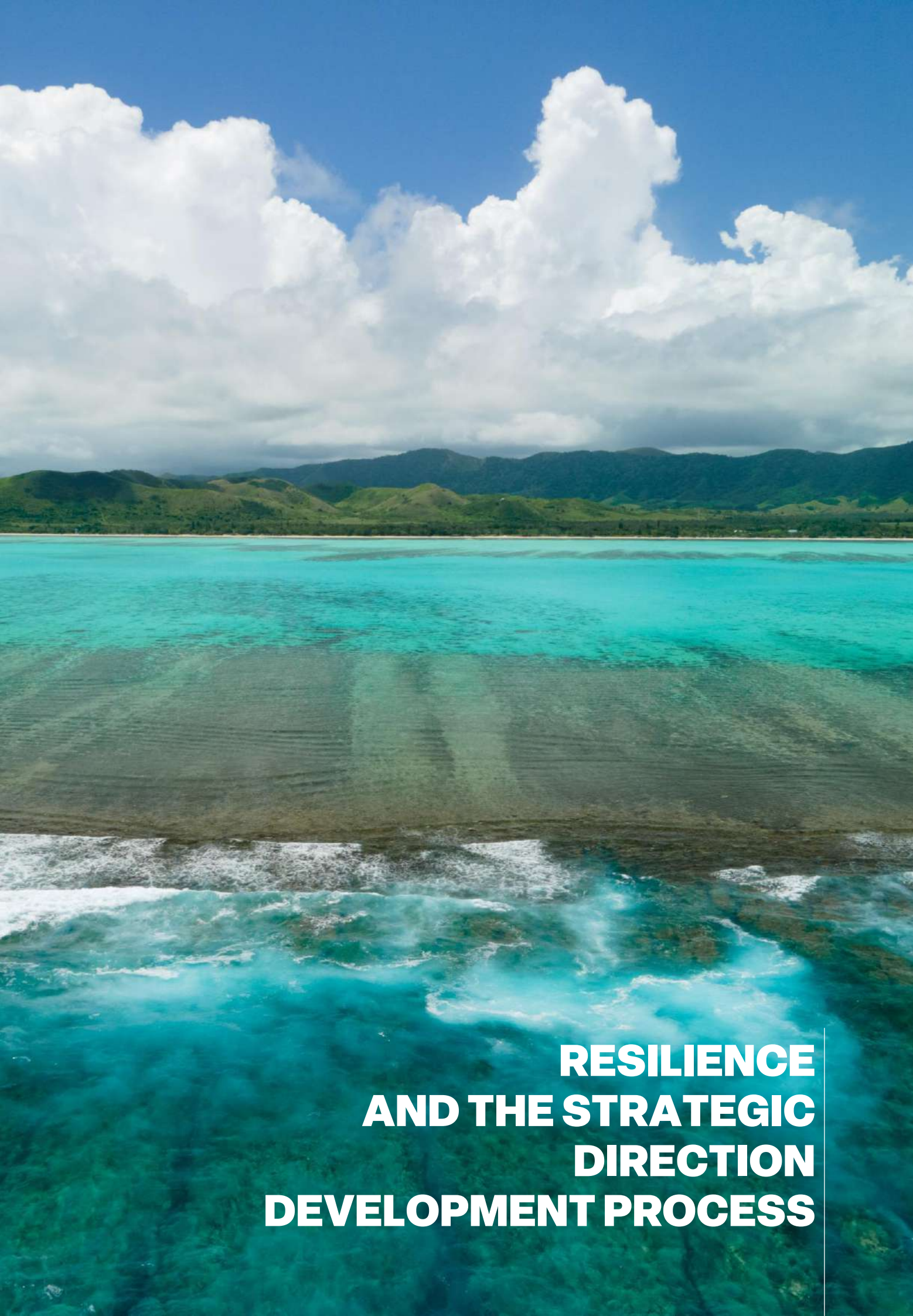
This strategic framework:

- Enables the implementation of coherent management actions at the country level which **strengthen the resilience of RCEA.**
- Encourages **a greater number of stakeholders to coordinate and contribute to actions.**
- Facilitates the search for **external funding**, by assuring interested donors that the projects developed meet objectives which have resulted from a **co-design process.**

The rest of the document presents:

- The **process** undertaken for drawing up the strategic orientation document;
- The **strategic framework** developed: themes divided into Challenges, which in turn have long-term objectives identified;
- **Action sheets** describing the initial actions financed by the Initiative.





**RESILIENCE
AND THE STRATEGIC
DIRECTION
DEVELOPMENT PROCESS**

What is resilience?

Resilience is defined as the ability of a system to **maintain key functions** and processes in the **face of disturbance** by resisting, recovering or adapting to **climate change** and local pressures (Holling 1973, Nyström et Folke 2001, Folke et al. 2010).



The resilience assessment framework

To help communities and reef managers adopt a **holistic approach**, the Initiative has developed a '**Reef Resilience Framework**'. This management tool integrates reef resilience by assessing risks, vulnerabilities and interdependencies along three dimensions: **ecosystems**, the **communities** that depend on them and the **organisations that govern them**.



Ecosystem: preserving ecosystem services

Community: maintaining or improving community well-being

Governance: maintaining strong and effective governance to support these objectives

This framework is intended to be used by all the partners in the Resilient Reefs network. It provides a common basis and a **common language**, encouraging **sharing and collaboration** between the various pilot sites, managers, experts and other partners around the world.

A RESILIENT MARINE ECOSYSTEM...



... is robust in the face of natural disasters and local disturbances

... helps to protect communities from natural disasters

... supports sustainable tourism, recreational and cultural activities



... supports biodiversity, in particular species of ecological, cultural and economic importance

... is capable of evolving and adapting in environmental conditions while retaining its essential functions

THE RESILIENCE OF ECOSYSTEMS IS ENHANCED BY...

Reducing local pressures to ensure that ecosystems are as healthy as possible
Preserving species, habitats and their key functional processes
Strong legislative and regulatory protection and effective management

Resistance



Helping ecosystems to recover (e.g. restoration)
Connectivity with healthy source populations
Sustained reproduction and recruitment

Recovery



Maintaining a diversity of species, genes and habitats
The development of resistant species
Supporting the evolutionary potential of reefs

Adaptation



A RESILIENT COMMUNITY...

... is able to maintain its values while continually evolving in the face of change

... is aware of and anticipate current and future pressures

... maintains its livelihood in the face of economic shocks

... is fair and can meet everyone's basic needs



COMMUNITY RESILIENCE IS FOSTERED BY...



Resistance

- Robust infrastructure and services
- Comprehensive, integrated planning
- Access to adequate resources



Recovery

- Diversifying the economy and livelihoods
- Community cohesion, cooperation and management support
- Effective emergency planning and management



Adaptation

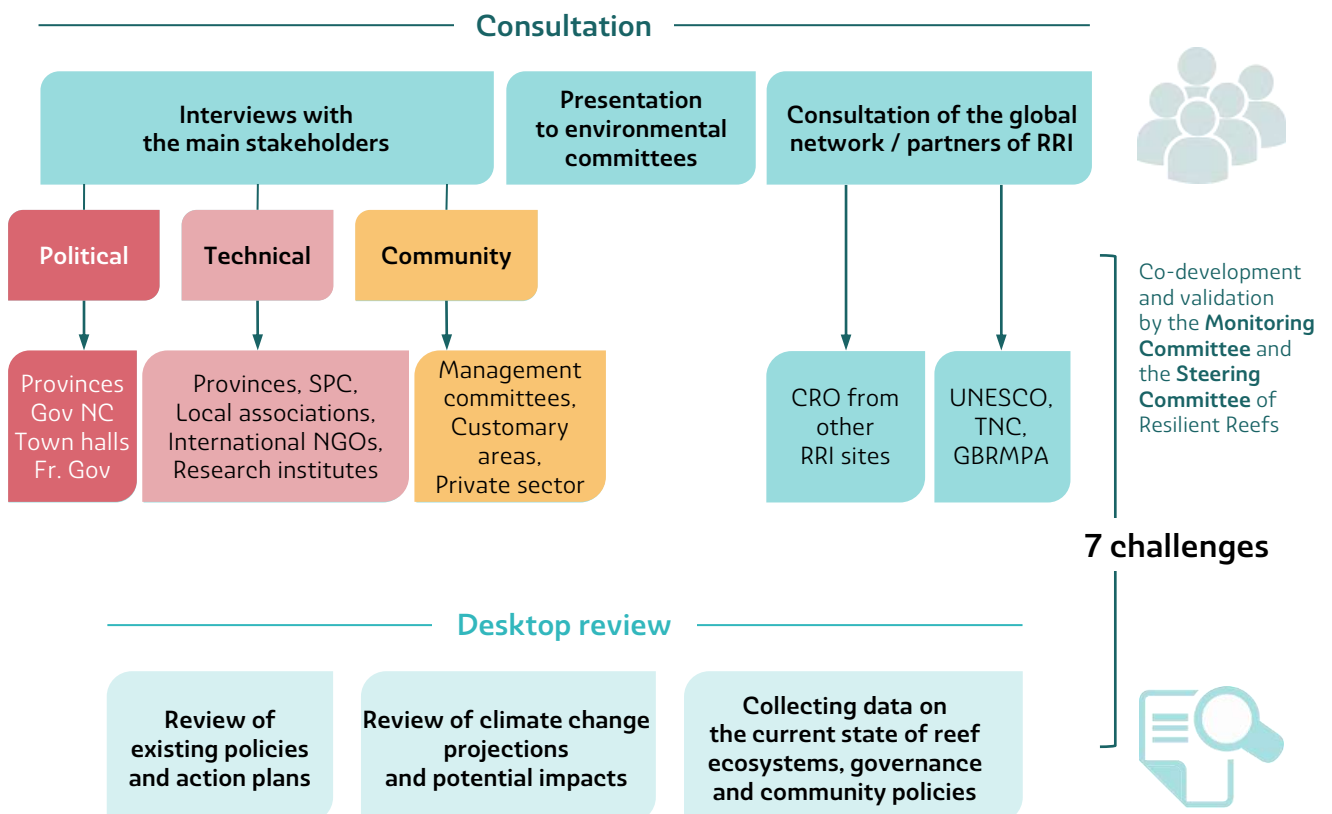
- Collective learning, experimentation and innovation
- Participative and collaborative decision-making
- Shared goals and objectives
- Flexible and adaptative management approaches

Resilience assessment of RCEA

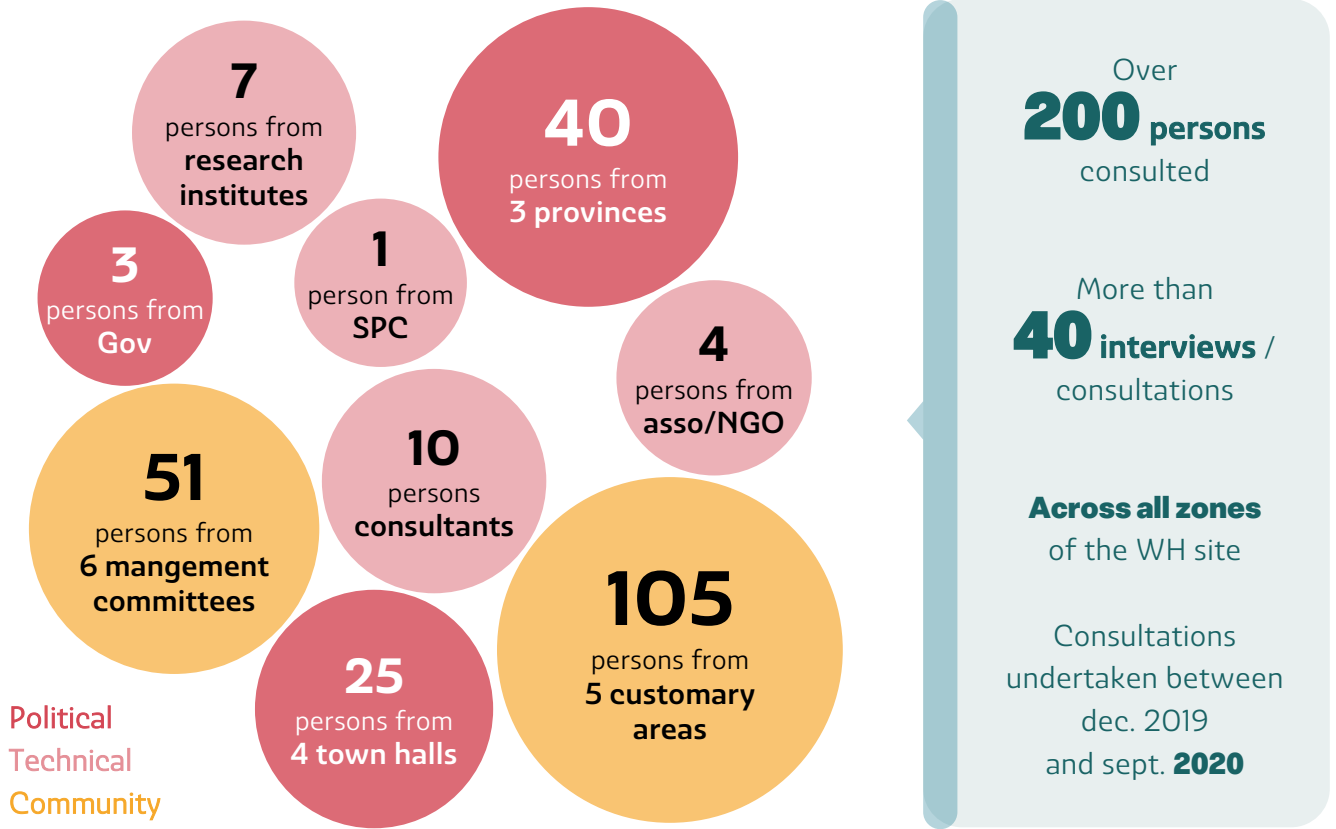
The resilience assessment provides an **overview of the resilience capacity of coral reefs and associated ecosystems and New Caledonian communities.**

Carried out in 2020, it provided a solid basis for identifying the **critical resilience challenges** affecting or likely to affect the area. It is based on a **literature review** and **extensive stakeholder consultation** to understand their perceptions of the resilience of NC's lagoons.

RESILIENT ASSESSMENT IN NEW CALEDONIA



Over **200 stakeholders** were actively involved in this assessment:



The perspectives of local communities were taken into account by conducting **interviews** with associations (including WH management committees) and representatives of customary areas as part of the resilience assessment. The **management committees** are representative groups of local stakeholders, most of whom are volunteers: fishers, farmers, local people, institutions, associations, tourist operators, etc. They collaborate with their local authority, which oversees area management, to ensure the preservation of the site's integrity.



The consultative process highlighted several major challenges for the management of marine ecosystems, including:

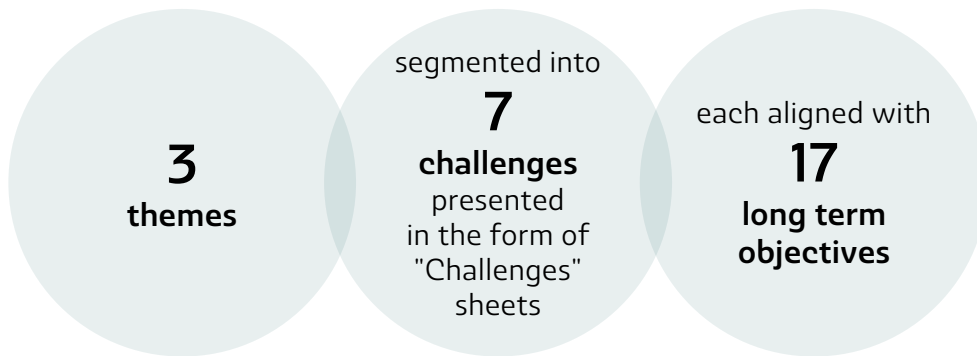
- While a robust foundation of **scientific** data exists, its **integration into decision-making and the implementation of management measures is not yet sufficient**. Conversely, the **needs of managers are not always adequately considered in the development of research projects**.
- While New Caledonia possesses significant expertise in participatory environmental management, achieving a delicate **balance between stakeholder preferences and available resources remains challenging**.
- Reef managers acknowledge the **complexity of governance**, attributed to the division of environmental responsibilities among three local authorities. A strategy is essential to deliver a coherent and coordinated national response, considering the unique frameworks and characteristics of each region, while simultaneously strengthening existing links and forging new ones.





**STRATEGIC
DIRECTION
FOR THE RESILIENCE OF RCEA
IN NEW CALEDONIA**

The resilience assessment led to the formulation of a logical framework, comprising:



This framework serves as a reference for devising concrete and targeted actions.

In order to promptly execute the **initial actions outlined in the strategy**, RRI created a dedicated fund accessible through a **call for proposals directed at members of the MC**. The selection process for these actions adhered to both local governance and that of the Resilient Reefs Initiative. Actions aligned with the priority long-term objectives were suggested and prioritized by the members of the MC, endorsed by the SC, and subsequently submitted to a jury comprised of the Initiative's international partners (GBRF, UNESCO, AECOM, The Nature Conservancy's Reef Resilience Network, Columbia University). A **capacity-building fund**, along with **two calls for proposals** (December 2022 and June 2023), has facilitated the financing of **12 actions** in New Caledonia to date.



The strategic orientation document is organized into **7 "Challenges" sheets**, each detailing the context, risks, and threats specific to New Caledonia, along with the expected results arising from the strategy's implementation and the corresponding long-term objectives. Subsequent **sheets** detail the initial **actions** undertaken for each challenge

THEME 1

Marine and coastal ecosystems



Challenge 1.1 – Marine ecosystems

LONG-TERM OBJECTIVES

- 1.1 - 1 Enhance understanding** of coral reefs and associated ecosystems and iconic species, the impacts of climate change on these ecosystems, and their resilience capabilities.
- 1.1 - 2 Assess and monitor** the health of RCEA and iconic species.
- 1.1 - 3 Maintain the extent and structural complexity** of RCEA (protect, manage, and restore habitats and species) to:
 1. ensure their functional relationships provide ecosystem services to communities
 2. support their carbon sequestration capacity.
- 1.1 - 4 Preserve and strengthen** New Caledonian populations of threatened iconic marine species.



Challenge 1.2 – Coastal erosion

LONG-TERM OBJECTIVES

- 1.2 - 1 Improve knowledge** of the effects of climate change on coastal erosion in New Caledonia and monitor its evolution.
- 1.2 - 2 Protect the coastline** against erosion by improving the state of coastal ecosystems (acting as a natural buffer against climatic events).

THEME 2

Local pressures on marine ecosystems

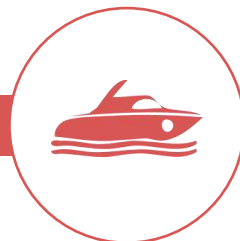
Challenge 2.1 – Use of marine resources



LONG-TERM OBJECTIVES

- 2.1 - 1** Conduct **management-oriented monitoring and research** to assess:
1. the state of fish communities, habitats and target fish species;
 2. fishing pressure;
 3. the effect of climate change on fishing;
 4. management efficiency.
- 2.1 - 2** Move towards **controlled use** of fisheries resources and sustainable fishing practices to reduce their direct or indirect impact on ecosystems.

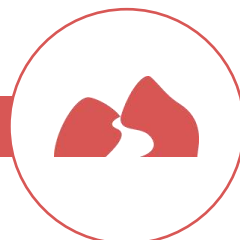
Chal. 2.2 – Recreational and commercial activities



LONG-TERM OBJECTIVES

- 2.2 - 1** **Assess and monitor** the pressures associated with recreational and commercial marine-based activities.
- 2.2 - 2** Move towards **sustainable practices and controlled management** of recreational and commercial activities in order to reduce their direct or indirect impact on ecosystems.

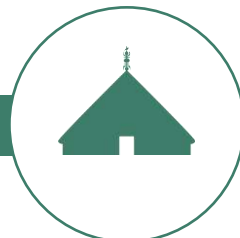
Challenge 2.3 – Catchment areas



LONG-TERM OBJECTIVES

- 2.3 - 1** **Evaluate the pressures and threats** associated with terrigenous inputs, map them spatially, and prioritise them. **Improve knowledge** of the state of catchment areas and expected changes in relation to climate change.
- 2.3 - 2** **Preserve and restore** catchment areas on a large scale and promote best management practices on land and freshwater resources to reduce soil erosion and the amount of sediment and nutrients entering the lagoon.

THEME 3

Resilient governance**Chal. 3.1 – Adaptive and collaborative management**

LONG-TERM OBJECTIVES

- 3.1 - 1** Better **coordinated and collaborative management**.
- 3.1 - 2** Systematically **take climate change into account** in strategic documents and management plans.
- 3.1 - 3** **Develop management and planning tools** for maritime areas, rapid reaction plans, etc.
- 3.1 - 4** **Integrate socio-economic and cultural considerations** into management, planning and activities relating to coral reefs and associated ecosystems.

Challenge 3.2 – Raising awareness

LONG-TERM OBJECTIVE

- 3.2 - 1** **Raise public awareness of climate change** and **marine conservation** and engage the public in climate change adaptation, conservation and participatory science.

Summary of projects funded

THEME 1

Marine and coastal ecosystems



1.1 – Marine ecosystems

SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
1.1 - A	Track Changes: Assessing the resilience of marine ecosystems and support for their sustainable management	ANCB	IRD	Resilient Reefs	In progress (2023-2025)
1.1 - B	OREANET II: Running and developing the participatory network for Crown Of Thorns Starfish (COTS) census in NC	ANCB	IRD	Resilient Reefs	In progress (2023-2024)
1.1 - C	WINREEF: Updating of genetic markers for thermo-tolerance in corals	ANCB	IRD, CNRS	Resilient Reefs	In progress (2023-2025)

1.2 – Coastal erosion



SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
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Summary of projects funded

THEME 2

Local pressures on marine ecosystems



2.1 – Use of marine resources

SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS



2.2 – Recreational and commercial activities



SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
2.2 - A	Feasibility study for the sustainable financing of Protected Areas in the Southern Province	SP, GBRF	Blue Cham	Resilient Reefs	Completed (2020-2021)

2.3 – Catchment areas



SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
2.3 - A	Workshop on the management of fresh water and catchment areas in the Northern Province	ANCB, NP	GIE Océanide, SENSE, ETHYC'O	Resilient Reefs	Completed (2020)
2.3 - B	Controlling fires to reduce sedimentation in the lagoon	ANCB	CI	Resilient Reefs	In progress (2023-2024)

Summary of projects funded

THEME **3** **Resilient governance**



3.1 – Adaptive and collaborative management

SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
3.1 - A	Workshop to train managers in the Climate Change Adaptation (CCA) tool	ANCB, GBRF	TNC, ANCB, UNC	Resilient Reefs	Completed (2021-2022)
3.1 - B	Support for the revision of the Environmental Management Plan for Hienghène, WH site, North and East Coastal Zone	GBRF, ANCB	AECOM	Resilient Reefs	Completed (2022-2023)
3.1 - C	Training to support the integration of Resilience-Based Management in the Environmental Management Plans for the WH site	GBRF, ANCB	AECOM, GBRF, ANCB, TNC	Resilient Reefs	Completed (2022-2023)
3.1 - D	SEACLOPEDIA: Determination of the key areas in the NC RCEA and development of a monitoring guidance document	ANCB	OEIL	Resilient Reefs	In progress (2023-2026)

3.2 – Raising awareness



SHEET	ACTIONS	PILOT	OPERATOR	FUNDER	STATUS
3.2 - A	Turtle days 2021 on the Isle of Pines	SP	Turtle com	Resilient Reefs	Completed (2021-2022)
3.2 - B	Elaboration of a communication strategy on coastal erosion and marine submersion in NC	ANCB, DIMENC /OBLIC	Lincks	Resilient Reefs	Completed (2022-2024)

Guidance for interpreting the "action" sheets

The "action" sheets present the projects that have been completed, are underway or are planned, and which directly address the Challenges set out in the strategy. They are classified according to the Challenge to which the action primarily relates, even if several actions are cross-cutting.

The actions presented below correspond to those financed by the RRI. New sheets may be added as and when new actions are implemented within the framework of this strategic orientation document.

The action sheets are composed as follows:

- 1 File number
- 2 Status of the action at the time of publication (completed, in progress, coming)
- 3 Title of the action
- 4 Icon depicting the action's primary challenges
- 5 Stakeholders
- 6 Description
- 7 Objectives
- 8 Provisional timetable
- 9 Budget
- 10 Expected results
- 11 Additional information on the action
- 12 Perspectives

1

3.1-C

→

Completed

2

4

3 Training to support the integration of Resilience-Based Management (RBM) in the Environmental Management Plans (EMP) for the WH site

6 **Description**

ANCB, GBRF, AECOM and TNC cooperated to offer training to support the revision of Environmental Management Plans (EMP) by integrating resilience-based management (RBM). Managers, consultancies, scientists, and other local and international partners were also brought together to collaborate on the revision.

As a first step, an online course on RBM was delivered. In parallel, AECOM carried out a preliminary analysis of each selected EMP. Finally, a 2.5-day workshop was held on climate change, adaptive management, the effectiveness of stakeholder engagement, the link between research and management, the development of resilient actions and the search for concrete perspectives on the EMPs.

7 **Objectives**

The aim was to encourage the integration of RBM and climate change into the Mature EMPs of local authorities, by offering managers practical tools and forums for exchange and discussion with various local and international stakeholders in reef management.

5 **Pilots**
GBRF, ANCB

Operators
AECOM, GBRF, ANCB, The Nature Conservancy (TNC)

Partners
Managers: OFB, CORTEX, BioEko, IRD, CNRS, BHFF

Beneficiaries
Managers: DAFE, OFB, IRD, CNRS, BioEko, CORTEX, Littoralys, GIE Océanide

8 **Provisional timetable**

Budget
809,000 XPF
(RR)
+ RR network expertise (AECOM, TNC)

9

10 **Results**

Thanks to this workshop, the managers acquired a wealth of knowledge (impact of climate change, resilience-based management, international case studies, etc.). They came away with recommendations (reducing and diversifying actions, better integrating climate change, etc.), tools (prioritising actions/objectives based on criteria, assessing the impact of an action, summary table of the impacts of climate change in NC, etc.) and perspectives (improving management/scientific links, avoiding over-solicitation of stakeholders, etc.) that they will be able to apply when revising their next EMPs.

Researchers and consultancies were able to contribute their knowledge and expertise, express their points of view and gain a better understanding of the needs of managers. A real working synergy was created between the key players in reef conservation (managers, researchers and consultancies), who rarely work together.

>>> For more information: [ANCB link](#)

11 **Perspectives**

Following this workshop, additional needs and support were identified to continue the support provided by the Resilient Reefs Initiative in the revision of management plans in New Caledonia. Additional training courses are planned in addition to the workshop.

70 STRATEGIC GUIDANCE DOCUMENT FOR THE RESILIENCE OF NEW CALEDONIA'S RCEA

THEME 1

MARINE AND COASTAL ECOSYSTEMS

1.1

Marine Ecosystems



Challenge 1.1

Marine ecosystems



Context

New Caledonia's marine ecosystems (reefs, seagrass, mangroves) are monitored and are generally in **good health**. However, at some sites coral cover, habitat diversity, and species are in **decline** ^[5,6]. The health of seagrass and mangroves is less understood. Large-scale coral bleaching episodes are currently infrequent compared with other regions of the world, and the reefs appear to be resilient to climate change (regeneration has been observed after bleaching episodes).



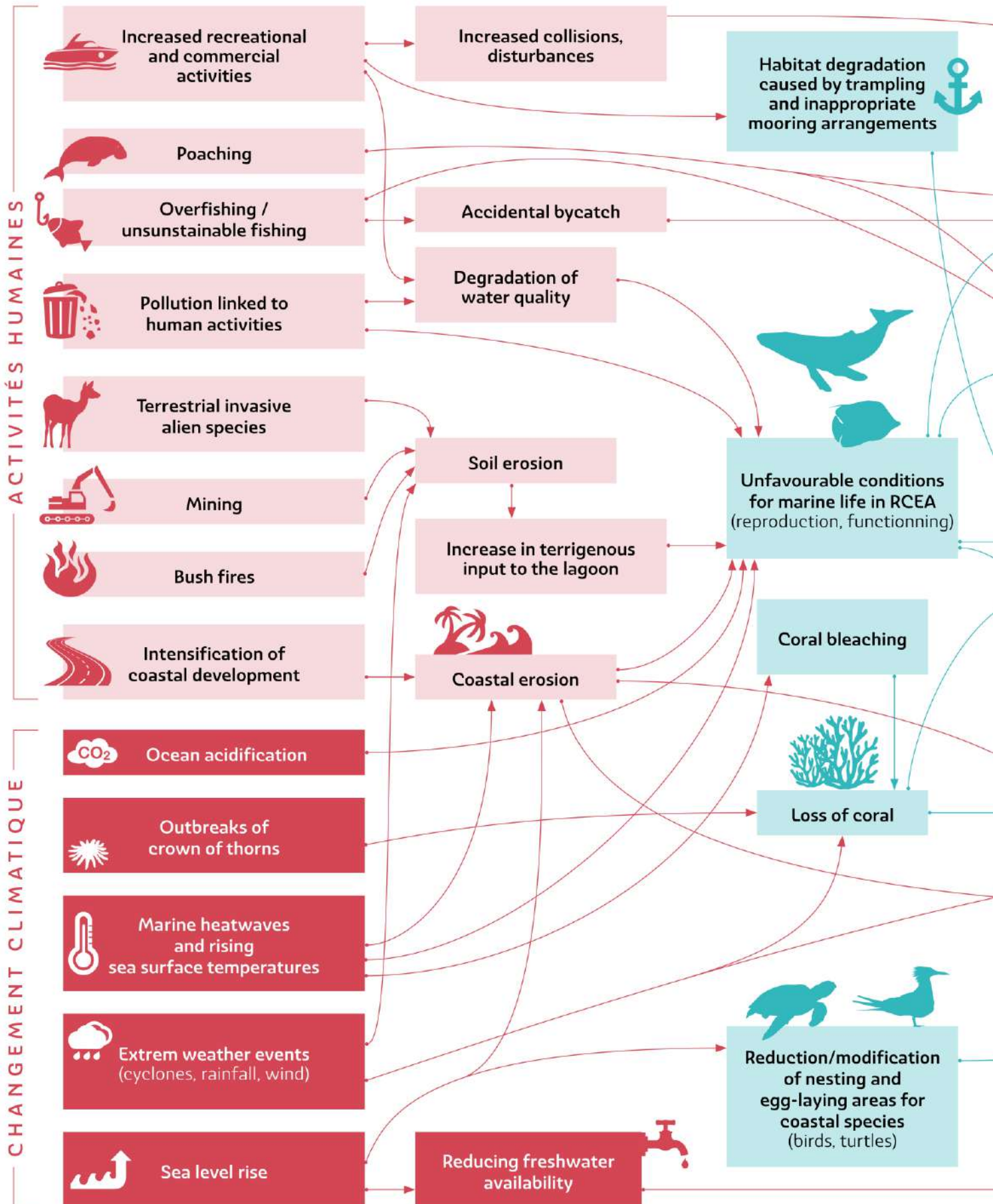
Some iconic species, including **protected species** (humpback whale, sea turtle, dugong, ray, shark, napoleon wrasse, snapper) **are threatened in New Caledonia**. There can be conflicts of use and a discrepancy between regulations and fishing practices (traditional, subsistence, or recreational). The impact of **poaching** on protected species is also an alarming reality. For example, the dugong is still eaten in New Caledonia despite bans and the species' recent classification as Endangered on the IUCN Red List.

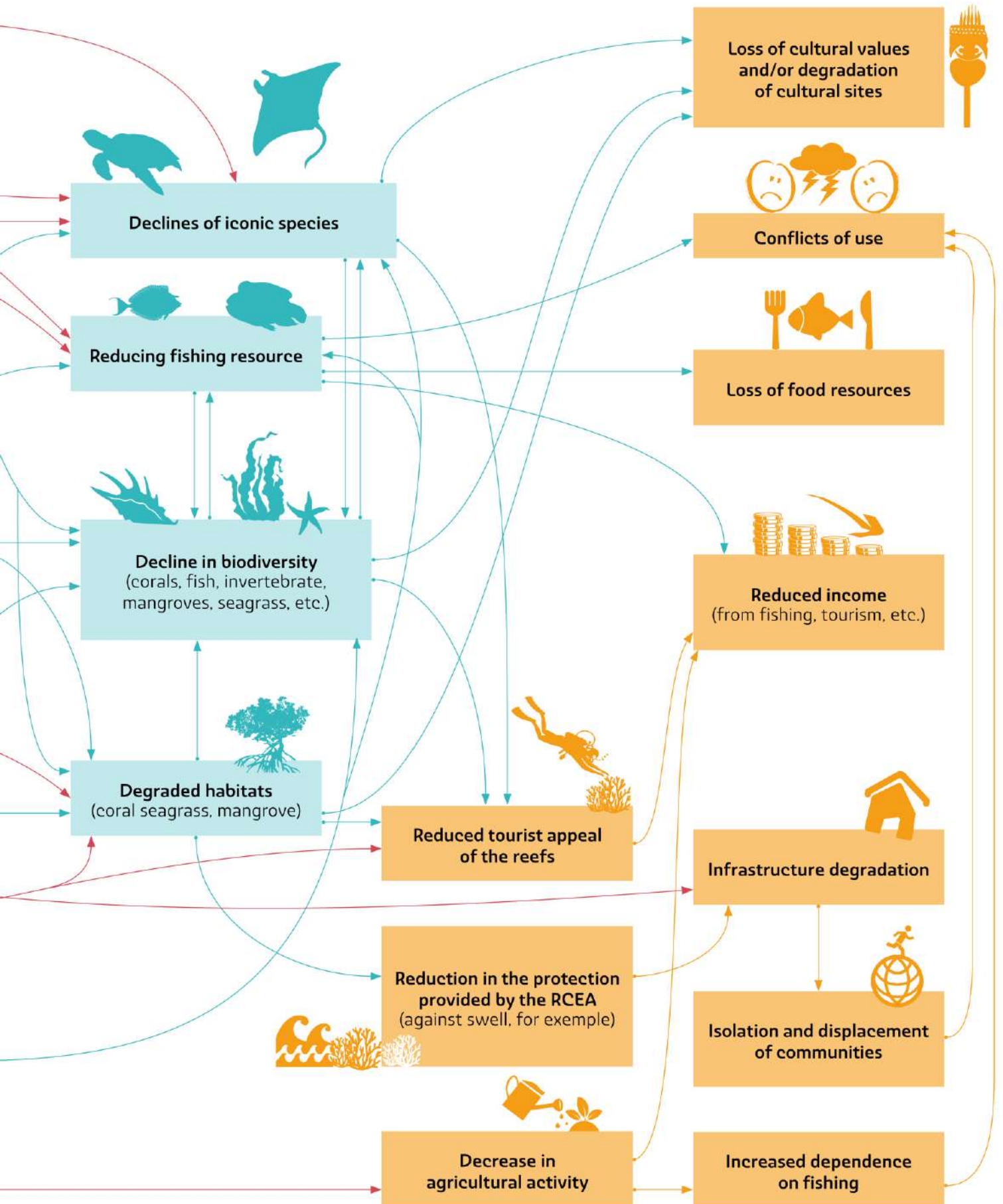
Risks and threats

The following chain of impacts shows the many **natural and anthropogenic pressures** on marine ecosystems, accentuated by **climate change** ^[6]. These disturbances modify the living conditions of coral reefs and associated ecosystems and reduce their capacity to resist, adapt and recover from these events, which ultimately impacts the **communities**. Therefore, it is necessary to conserve and better understand these marine ecosystems.

[5] Bilan 2021 de l'état de santé des récifs coralliens, herbiers marins et mangroves des outre-mer français, Documentation Ifremer.

[6] 6^e IPCC report, Extracts from fact sheets on the Pacific prepared by the Australian National University, 2021.







Expected results

Marine ecosystems will be capable of recovering and adapting to climate change and local pressures. Iconic species will be preserved, and their populations well conserved. All marine ecosystems will retain their essential functions and provide communities with the ecosystem services they need: fishing, recreation, tourism, traditional events, and other activities.

1.1

Long-term objectives

- 1.1 - 1 **Enhance understanding** of coral reefs and associated ecosystems and iconic species, the impacts of climate change on these ecosystems, and their resilience capabilities.
- 1.1 - 2 **Assess and monitor** the health of RCEA and iconic species.
- 1.1 - 3 **Maintain the extent and structural complexity** of RCEA (protect, manage, and restore habitats and species) to:
 - 1. ensure their functional relationships provide ecosystem services to communities
 - 2. support their carbon sequestration capacity.
- 1.1 - 4 **Preserve and strengthen** New Caledonian populations of threatened iconic marine species.





Track Changes: Assessing the resilience of marine ecosystems and support for their sustainable management

Description

This project is part of a country-wide programme based on a collaborative, scientific approach aimed at collating all the available data on the main habitats (reefs, mangroves, and seagrass). The goal is to produce assessments of their health and provide guidance and support for effective management. The project will, firstly, assess the long-term trajectories of four components (corals, fish, invertebrates, and megafauna). Secondly, it will characterise the main environmental and anthropogenic stress factors and estimate the critical thresholds leading to ecological changes. Throughout the project and on a regular basis, the findings will be passed on to the managers during dedicated working group meetings to actively involve them and disseminate the acquired knowledge.

Objectives

The project aims to assess the health and resilience of New Caledonia's coastal marine ecosystems. It seeks to examine how these ecosystems respond to global changes, pinpoint suitable management options, and provide valuable insights for decision-makers. The outcomes of the project will enable the identification of areas experiencing decline and those conducive to sustaining ecosystems and associated species. This diagnosis information is crucial to the management of the coastal environment in New Caledonia.

Pilot

ANCB

Operator

Institute of Research for Development (IRD)

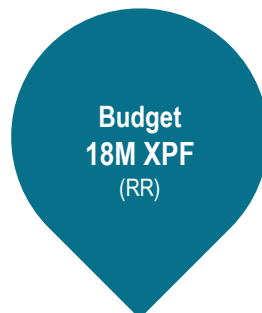
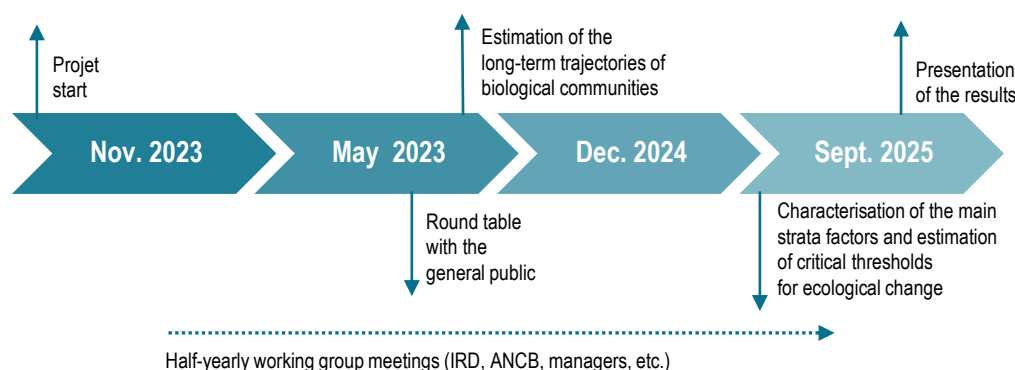
Partners

Local authorities, public institutions, research bodies, universities, mining companies, consultancies, local and international NGOs, etc.

Beneficiaries

Managers, research institutes

Provisional timetable



Expected results

At the end of the project, habitat distribution maps, estimates of species community trajectories and critical thresholds of ecological change at the scale of New Caledonia will be produced. Reef managers and key players will receive recommendations for managing coastal marine ecosystems.

This project draws on data from a wide range of partners (research, marine heritage monitoring, the mining industry, etc.). It will bring together years of data acquisition to provide a new understanding of the functioning of coastal marine ecosystems in New Caledonia.

>>> For more information: [programme page](#).

Perspectives

Based on the results and tools provided, managers will be able to better manage NC's coastal marine ecosystems and will be able to detect major ecological changes so that they can act as quickly as possible.





OREANET II: Running and developing the participatory network Crown Of Thorns Starfish (COTS) census in New Caledonia

Description

Crown Of Thorns Starfish (COTS) are corallivorous sea stars that can destroy large areas of coral during outbreaks. OREANET II follows on from the OREANET project (2015-2017), which launched a participatory COTS census network to detect outbreaks at a lower cost. The platform brings together data obtained from citizens, and dives are used to validate explosion observations. However, management actions to limit this risk are still infrequent and COVID-19 has reduced the network's visibility.

Initially, bilateral interviews will be held with the key players involved in managing this risk to understand the management bottlenecks and identify scientific gaps and needs. Subsequently, the participatory network will be relaunched through a communication plan. The project will be co-constructed in workshops with a working group.

Objectives

This project aims to: 1) relaunch the network of participatory monitoring and census of COTS in NC, which lost visibility following the COVID-19 crisis; 2) raise public awareness of the COTS risk and 3) provide knowledge and raise managers' awareness of the risk so that it can be prioritised, and management actions put in place.

Pilot

ANCB

Operator

Institute of Research for Development (IRD)

Partners

Northern Province management committees, managers, The Lagoon Aquarium (ADL), OEIL, RORC

Beneficiaries

Managers, Local population

Provisional timetable



Budget
5,163,808 XPF
 (RR)
2,6M XPF
 (IFRECOR)
 + cofinanced
 IRD

Expected results

The COTS participatory monitoring network will be relaunched and made permanent. Local people will be made aware of the risk of COTS and managers have the knowledge they need to manage this risk and implement management measures.

Perspectives

The managers will be in possession of the latest knowledge on the COTS risk. This is an opportunity for them to refine and/or develop concrete management actions to be implemented on the ground.





WINREEF: Updating of genetic markers for thermotolerance in corals

Description

The WINREEF project is a Franco-Swiss-Australian collaboration studying thermotolerant coral markers in 3 regions: the west coast of New Caledonia (NC), Chesterfield-Bellona (BC), and the Australian Great Barrier Reef (GBR), the two largest coral reefs in the world. Coral sampling field missions have been carried out in NC and BC, and coral DNA has been extracted. Sampling on the GBR was carried out in advance as part of the [Australian initiative](#). After sequencing, a global analysis will be carried out to identify genetic markers of resistance to thermal stress and draw up maps of the probability of adaptation of reefs in the three regions. The predictive maps will be refined using field data acquired through participatory networks, in particular those from the large CORTEX network in NC.

Objectives

Climate change, with the increasing frequency and intensity of marine heatwaves, is threatening the sustainability of the world's reef biodiversity. It is against this backdrop that WINREEF aims to map thermotolerance markers on the reefs of NC and the GBR and to assess their flux between the three regions studied to identify areas of conservation concern. The acquisition of knowledge on a regional scale will contribute to reef management adapted to NC, with the protection of these 'reservoir' zones.

Pilot

ANCB

Operators

Institute of Research for Development (IRD), National Center for Scientific Research (CNRS)

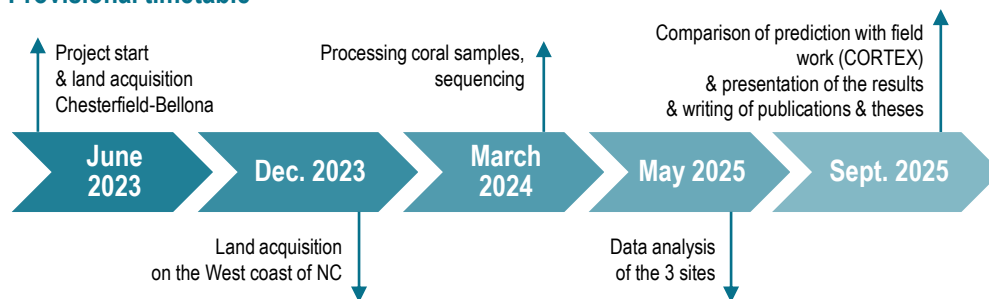
Partners

University of NC, CORTEX, The Australian Institute of Marine Science, Swiss Federal Institute of Technology in Lausanne (EPFL), Natural Park of the Coral Sea, Armed Forces of NC, etc.

Beneficiaries

Managers, scientific community

Provisional timetable



Budget
4,760,000 XPF
(RR)
+ cofinanced
IRD, CNRS

Expected results

The project will produce maps of the probability of coral adaptation to increased water temperature for the three regions studied (west coast of NC, BC and GBR), as well as their inward and outward connectivity. This study will highlight any transfer of these markers between the reefs studied and identify any reservoir zones.

Perspectives

The long-term aim of this project is to add to the [DRAPEAU](#) tool, which is currently being developed and is already familiar to managers and will bring together a wealth of predictive information needed for reef management.

The project complements the CORALL initiative, which brings together six countries and territories in the South Pacific, including Vanuatu, whose reefs are a potential source of recruits for NC, and projects underway in the French [West Indies](#) and [the Indian Ocean](#). The overall aim is to develop DRAPEAU on a global scale as a support tool for the concerted management of coral reefs.



THEME 1

MARINE AND COASTAL ECOSYSTEMS

1.2

Coastal Erosion



Challenge 1.2

Coastal erosion



Context

Coastal erosion is the result of natural events such as heavy rainfall, rising sea levels, wind or currents, combined with human activities such as the degradation of natural coastal habitats or heavy pressure on the backshore (cars, trampling, embankments, sand removal, etc.). **The effect is accentuated when coastal ecosystems** (reefs, seagrass and mangroves) **are no longer able to provide a natural buffer** against erosion. Coastal erosion weakens the coastline, threatening the well-being of coastal communities and ecosystems. In 2022, 46% of New Caledonia's coastline was eroding, 35% was accreting and, 19% was stable ^[7].

In New Caledonia, **70% of the population lives less than a kilometer from the coast**, and communities depend on coastal ecosystems for their livelihoods, culture and environment. Coastal erosion is, therefore, a major concern.

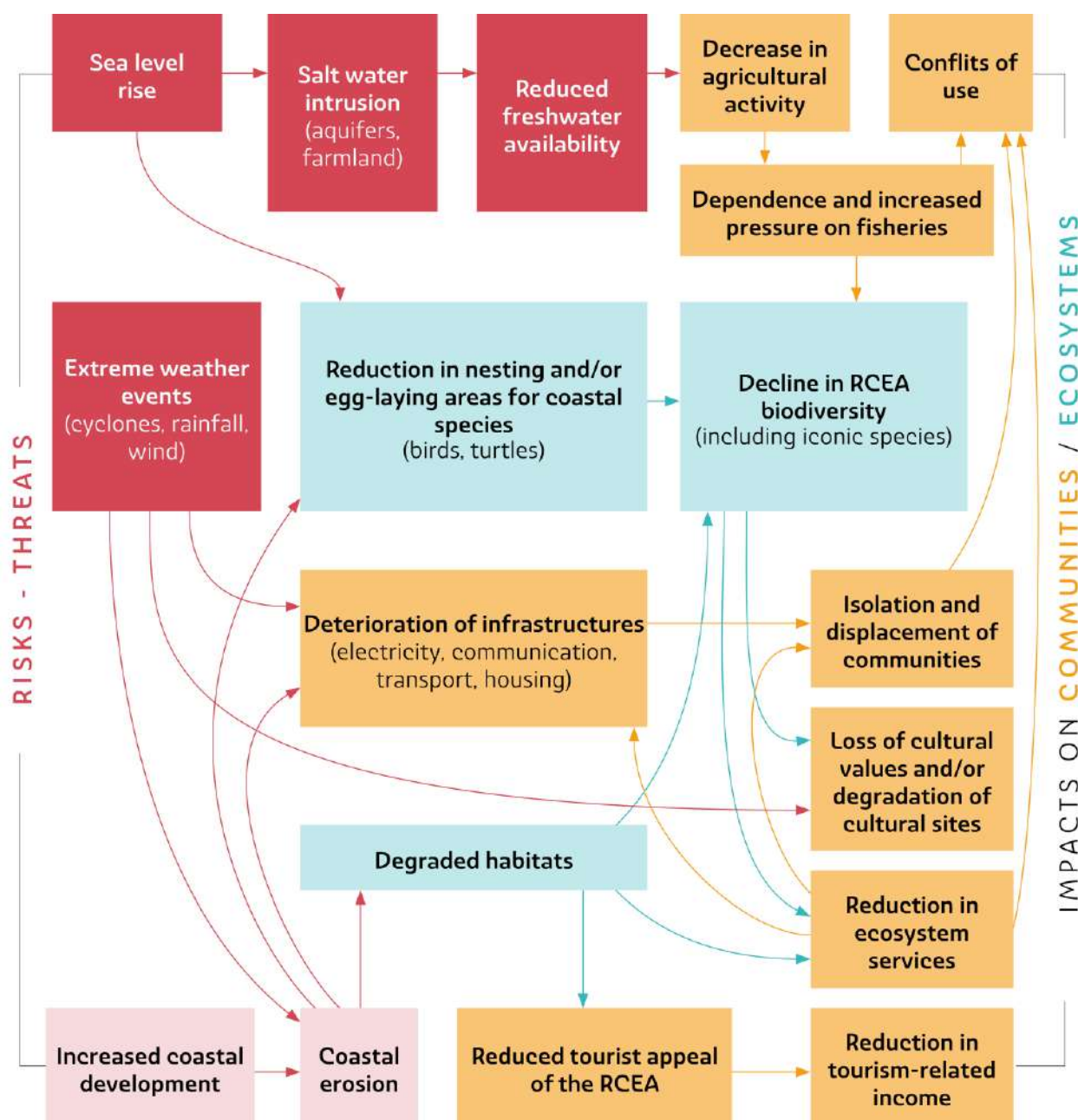


[7] M. Garcin, M. Vendé-Leclerc, N. Valentini (2022) - Observatoire du Littoral de Nouvelle-Calédonie (OBLIC) – Bilan des actions 2020-2022. Report BRGM/RP-71652-FR. 111 p., 80 fig., 12 tab.



Risks and threats

As a result of climate change and population growth, coastal areas are subject to a number of pressures:



Population displacement is becoming a **major concern** and a real risk. The lack of knowledge about the future impacts of climate change in NC makes it **difficult to anticipate and mitigate** its consequences.



Expected results

The state of coastal ecosystems (acting as a natural protection against climatic events) will enable coastal communities to maintain their way of life while preserving their means of subsistence and access to natural resources. **Coastal erosion** will be limited, controlled, or anticipated, and coastal communities and species will be sustainably protected or managed.

1.2

Long-term objectives

- 1.2 - 1 **Improve knowledge** of the effects of climate change in coastal erosion in New Caledonia and monitor its evolution.
- 1.2 - 2 **Protect the coastline** against erosion by improving the state of coastal ecosystems (acting as a natural buffer against climatic events).



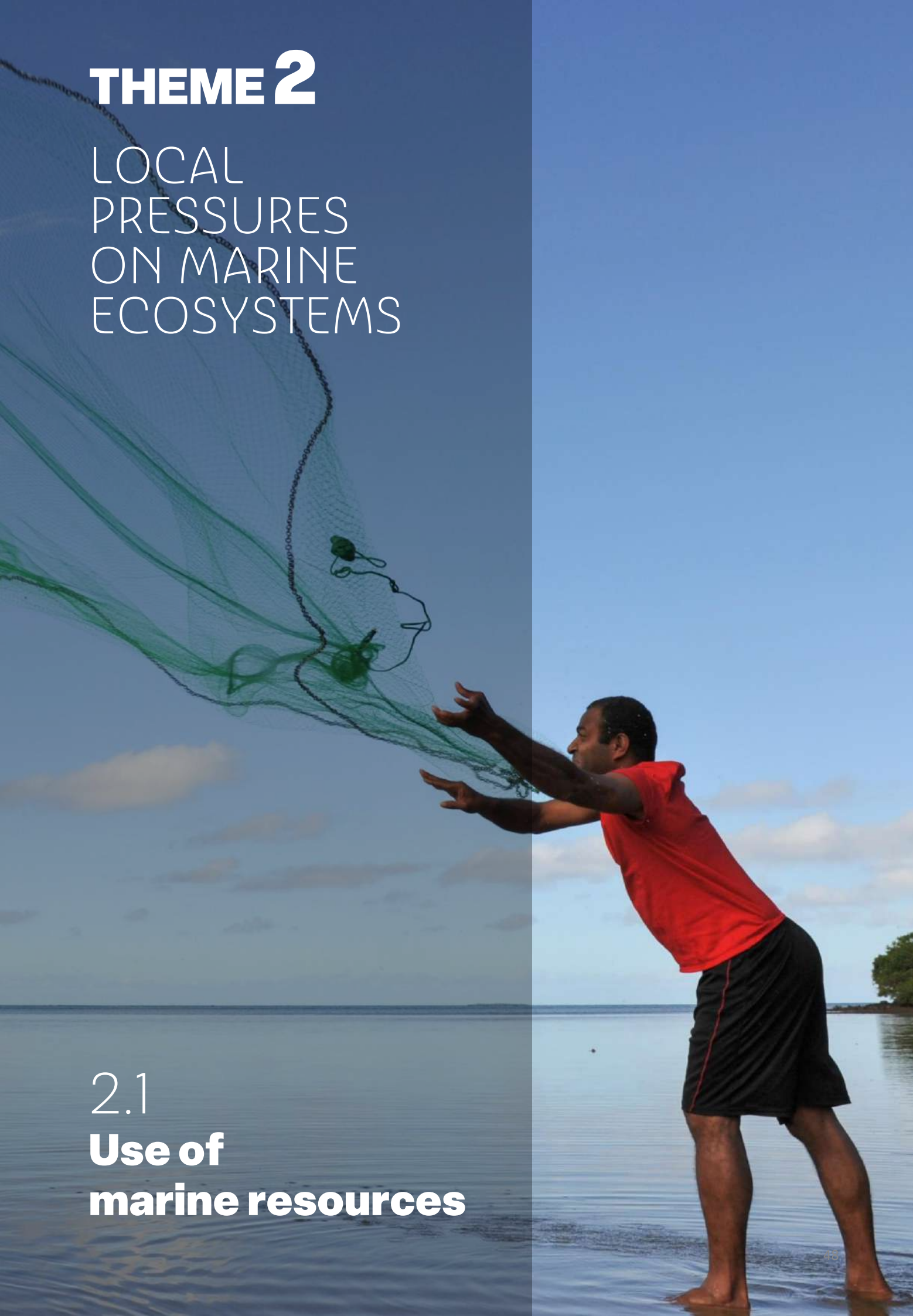
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THEME 2

LOCAL PRESSURES ON MARINE ECOSYSTEMS

2.1

Use of marine resources





Challenge 2.1

Use of marine resources

Context

Some of the **impacts of reef and lagoon fishing** are noticeable in NC's lagoons: there is strong fishing pressure on certain species such as clams, sea cucumbers, humpback parrots, trocas and mangrove crabs^[8]. However, current monitoring of lagoon reefs shows that this pressure is often localised, generally on sites close to populated areas^[8].

Little is known about the state and pressure of fishing on marine resources in NC, despite the fact that coastal populations are heavily dependent on subsistence fishing.

There are a wide range of fishing practices, including food fishing, fishing for traditional ceremonies (mourning, weddings, etc.) and recreational fishing. Harvesting is difficult to estimate because **there is currently little monitoring of non-commercial fishing** (although it is predominant in NC), compared with commercial fishing^[9]. There appear to be conflicts of use for certain species and a discrepancy between regulations and fishing practices.



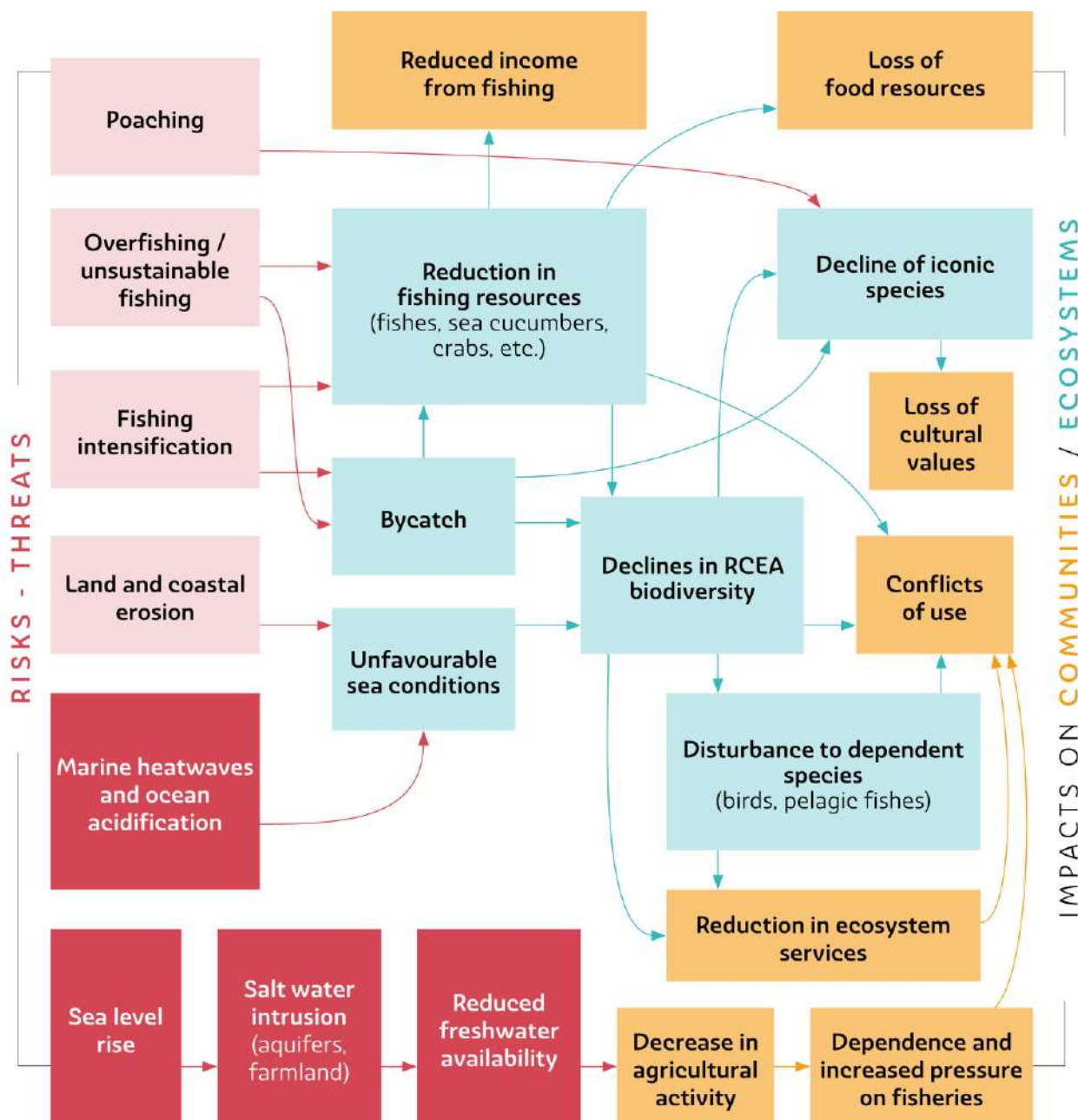
[8] Wantiez L (2018). Synthesis of the report *État du bien inscrit au patrimoine mondial de l'UNESCO entre 2006-08 et 2012-14*. Conservatoire d'espaces naturels Nouvelle-Calédonie, University of NC. 223 pages.

[9] Faure C., Bouard, S. Brouillon J., Guillemot N., Wickel A., Van Wynsberge, Sabinot C (Coord.), 2022. Synthesis of the final report *Projet USAGE Pêche – Estimer les captures issues de la pêche non professionnelle rurale en Nouvelle-Calédonie*. 63 pages.



Risks and threats

Environmental changes are causing modifications to stocks and the structure of ecological communities, impacting fishing and people's livelihoods and cultural practices.



Ignorance of these changes and the current state of stocks and fishing pressure exposes marine resources to **unsustainable exploitation**, making it impossible to maintain their **ecological functions or to meet needs of local populations**.



Expected results

Marine resources will be harvested sustainably, enabling us to meet the needs of populations while maintaining their ecological functions.

2.1

Long-term objectives

2.1 - 1 Conduct management-oriented **monitoring and research activities**

in order to evaluate:

1. the state of fish populations, habitat and target fish species;
2. fishing pressure;
3. the effect of climate change on fishing;
4. management efficiency.

2.1 - 2 Move towards **controlled use** of fisheries resources and sustainable fishing practices to reduce their direct or indirect impact on ecosystems.

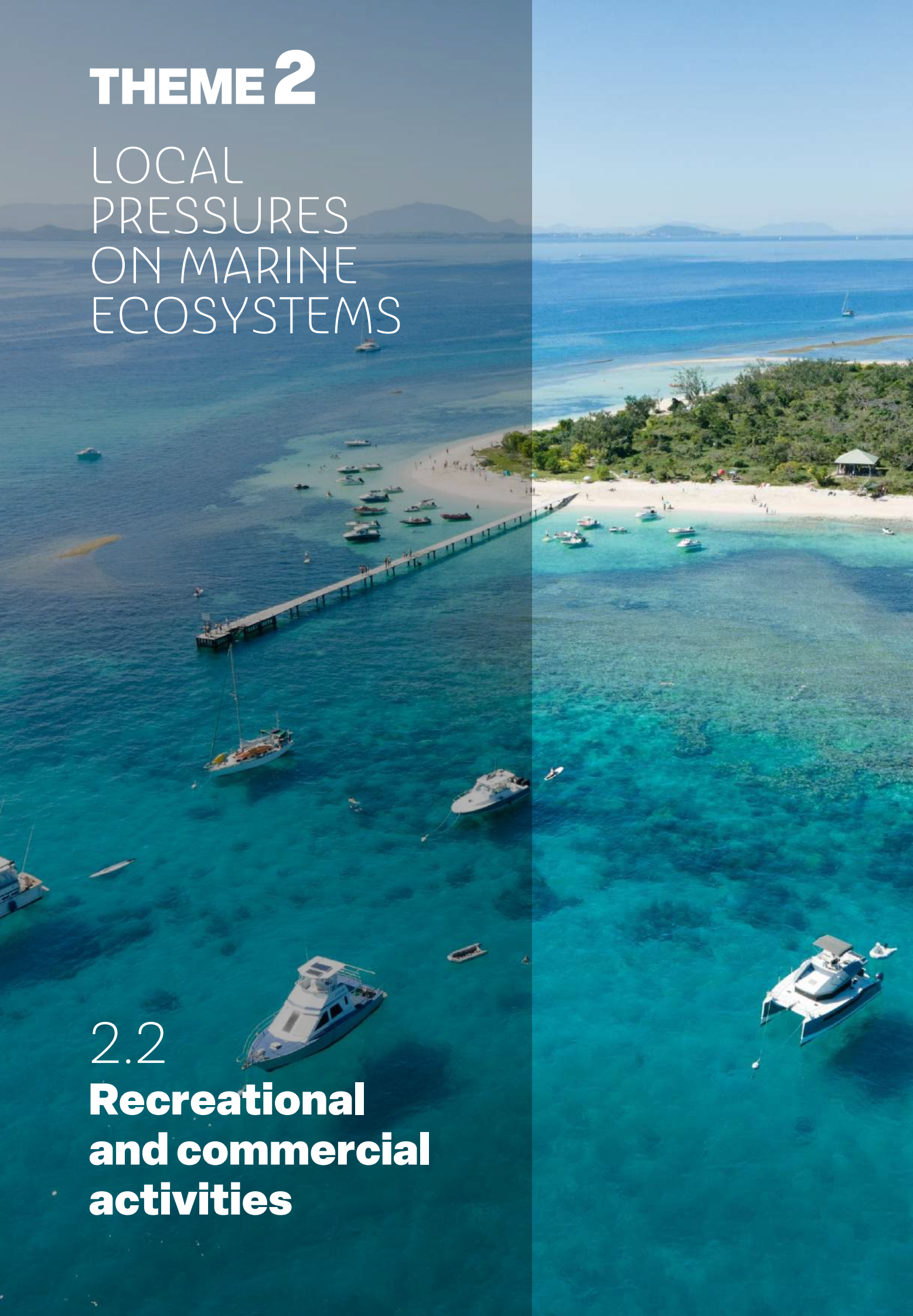


THEME 2

LOCAL PRESSURES ON MARINE ECOSYSTEMS

2.2

Recreational and commercial activities



Challenge 2.2



Recreational and commercial activities

Context

Excessive and unregulated recreational and commercial use of the sea (swimming, diving, water sports and activities, shipping, yachting, etc.) can **damage habitats** and lead to **social conflict**.

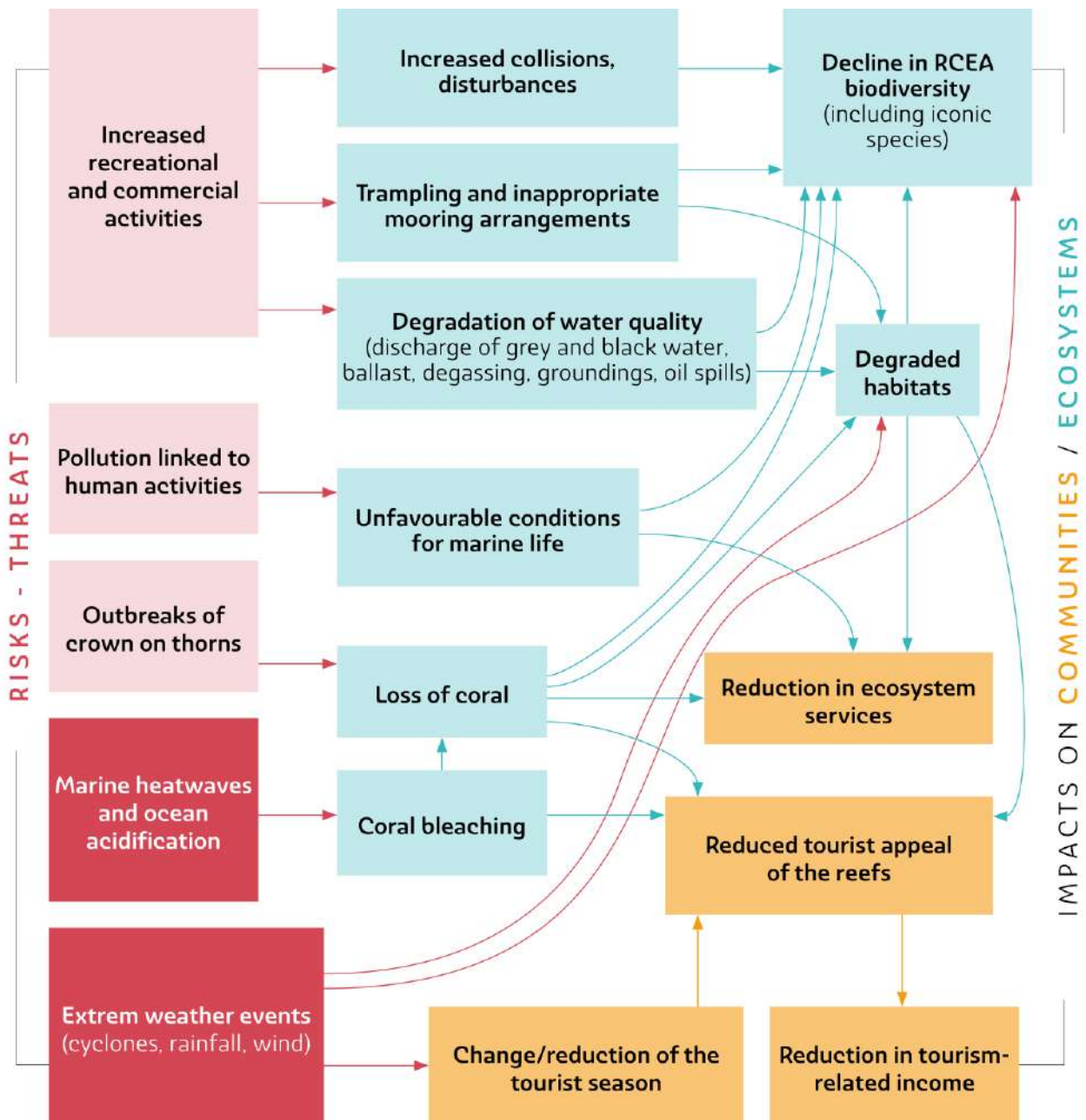
Tourism remains a sector with development potential for NC, but it must be done in a **sustainable and inclusive manner**. The COVID-19 pandemic has revealed the strong dependence of certain operators and communities on coral reefs, raising questions about the tourism and recreational approaches and the management of visitor numbers. In addition, there are **few or no regulations governing marine pollution**, particularly discharge from local boats or ships in transit (waste, black water, grey water, ballast water, bilge water).





Risks and threats

Despite appearing relatively free from the pressures associated with marine resource use, New Caledonia is still affected by factors such as increased trampling of fringing habitats, inappropriate anchorage use, and other conflicts that are likely to persist or arise.



Degraded ecosystems reduce the attractiveness of marine-based activities and affect the income of the communities and businesses that depend on them.



Expected results

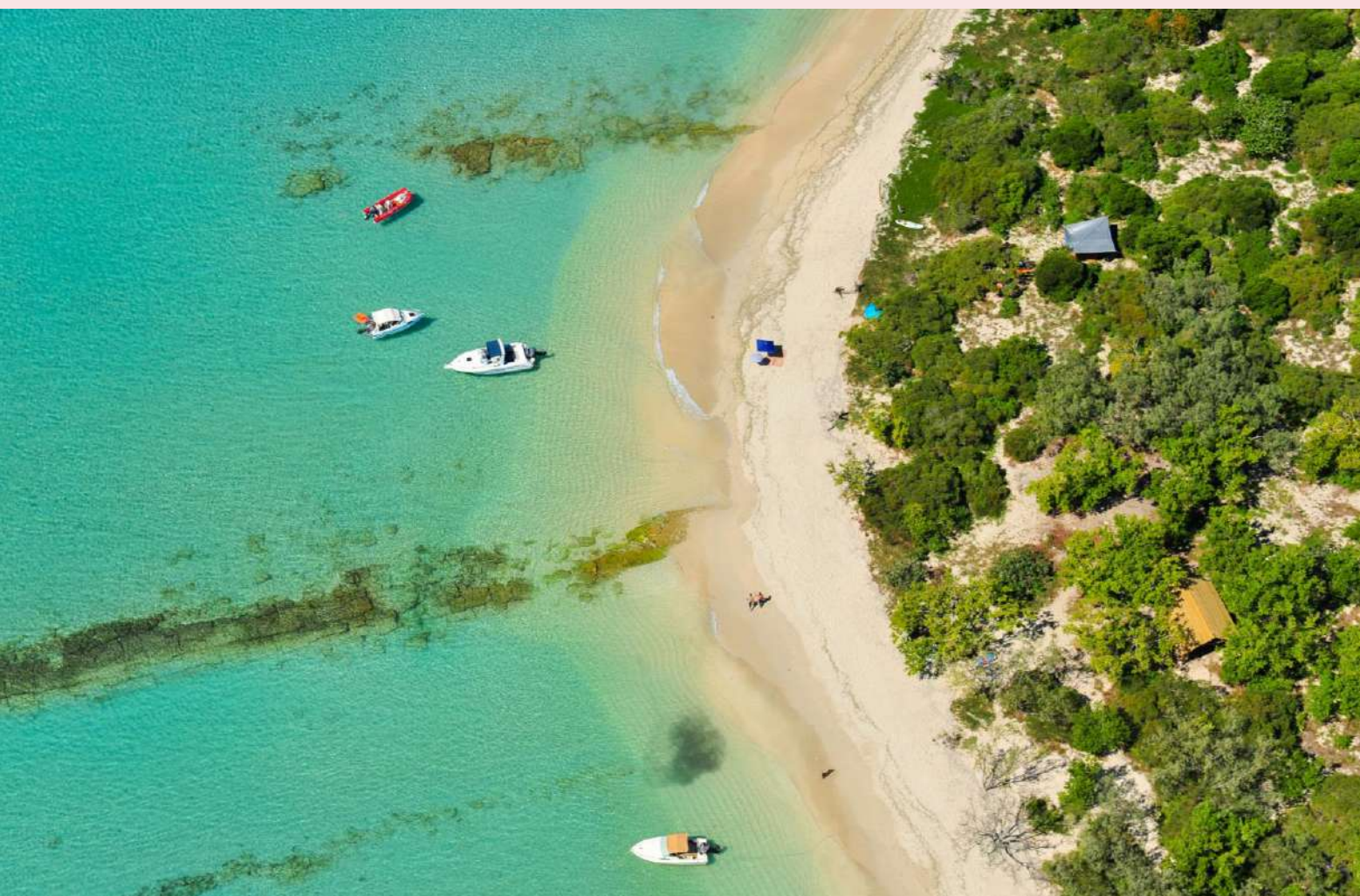
Recreational and commercial activities (swimming, diving, water sports, maritime transport, yachting, etc.) will be sustainable, resilient and do not harm the ecosystem.

2.2

Long-term objectives

2.2 - 1 Assess and monitor the pressures associated with recreational and commercial marine-based activities.

2.2 - 2 Move towards sustainable practices and controlled management of recreational and commercial activities to reduce their direct or indirect impact on ecosystems.





Feasibility study for the sustainable financing of Protected Areas (PAs) in the Southern Province

Description

Several Southern Province's proposed Protected Areas have been studied with a view to setting up a sustainable eco-participation scheme. This study included:

- identification of a priority site for the implementation of sustainable financing,
- a cost-benefit analysis describing potential revenues and associated implementation costs,
- a benchmarking study on the introduction of levies.

Objectives

This study was commissioned by the SP. Its aim was to assess the financial impact of introducing an eco-tax on PA. The study provides a new analysis that can be used as a basis for implementing the financing mechanism.

Pilots

GBRF,
Southern Province

Operator

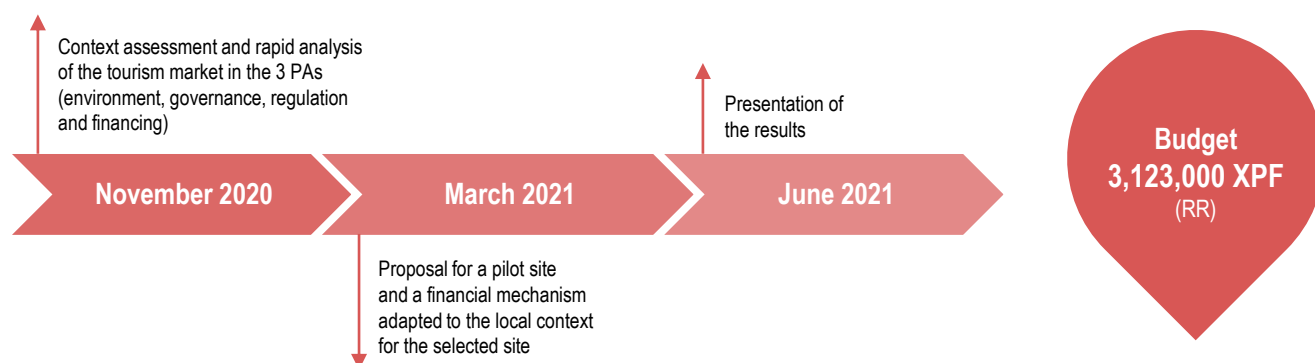
Blue Cham

Partner

ANCB

Beneficiaries

Southern Province



Results

The first phase of the study provided an overview of the statistics (number of visitors, etc.) relating to the three selected PAs (Far Southern Lagoon, Western Coastal zone, and Park of Grand Nouméa). It then presented data on current tariffs and the regulatory context. The Park of Grand Nouméa appears to be the most favourable site for introducing a fee, i.e. a mechanism for collecting funds from different types of users.

The second phase of the study proposed a strategy for implementation of this fee for the park of Grand Nouméa.

Perspectives

The Southern Province plans to implement the eco-contribution of the PAs studied in consultation with the economic and political players.

This action also envisages the development of an online tool for managing the funds generated by this financing.





THEME 2

LOCAL PRESSURES ON MARINE ECOSYSTEMS

2.3 Catchment areas



Challenge 2.3

Catchment areas



Context

Because the watersheds are located upstream of the reefs, their proper management is essential to protect coral reefs and associated ecosystems. In New Caledonia, **watershed degradation** is mainly due to bush fires, mining and invasive species. The soil inputs caused by this erosion are a source of **chemical, biological and/or physical pollution**, impacting the health and resilience of coral reefs and associated ecosystems (via increased sedimentation) as well as the ability of local communities to access drinking water.

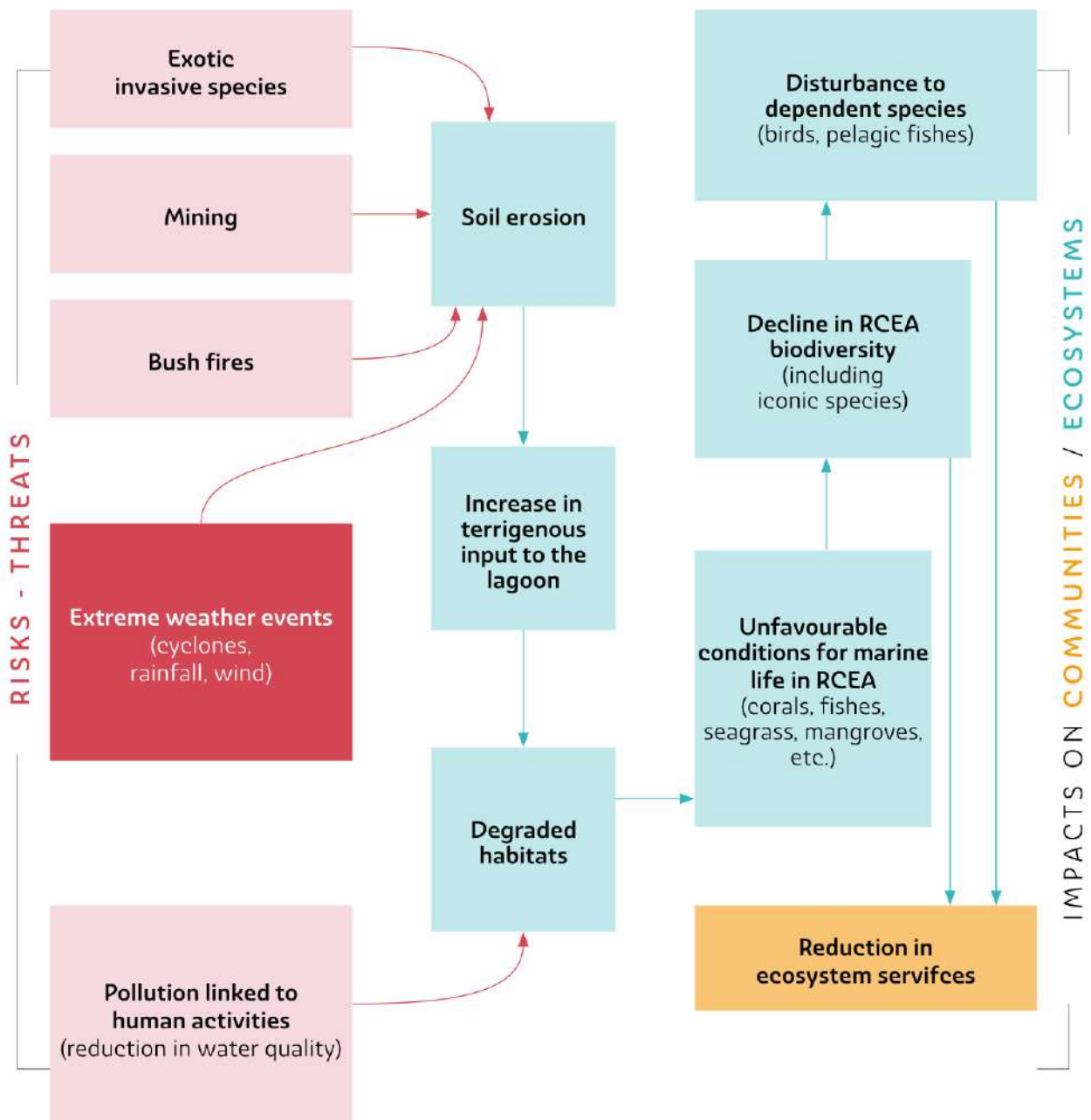
The resilience assessment highlighted a **lack of integrated and coordinated management of the catchment areas**, the need to **identify the catchment areas at risk** and where management measures should be prioritised.





Risks and threats

Heavy rainfall and the intensification of extreme events linked to **climate change are increasing soil erosion** and, therefore, terrigenous inputs to the lagoon. This contributes to the degradation of coral reefs and associated ecosystems and the reduction in associated ecosystem services.





Expected results

The **catchment areas** will have forest ecosystems and plant cover in good condition, limiting pollution and terrigenous inputs to marine ecosystems.

2.3

Long-term objectives

2.2 - 1 Evaluate the pressures and threats associated with terrigenous inputs, spatially map and prioritise them.

Improve knowledge of the state of catchment areas and expected changes in relation to climate change.

2.2 - 2 Preserve and restore catchment areas on a large scale and promote best management practices on land and freshwater resources to reduce soil erosion and the amount of sediment and nutrients entering the lagoon.





Workshop on the management of fresh water and catchment areas in the Northern Province

Description

A workshop on freshwater and watershed management was held for managers in the Northern Province. This three-day workshop included theoretical contributions from various specialists and practical exchanges between the various participants, both in the field and in the classroom. The idea was to build a common, cross-disciplinary culture encompassing the geographical, biological, ecological, social, cultural, legal and other aspects of the water environment.

Objectives

The main objective of this workshop was to consolidate the capacity of managers in the North Province to manage freshwater, in particular rivers, in relation to the environment and catchment areas.



Pilots

ANCB,
Northern Province

Operators

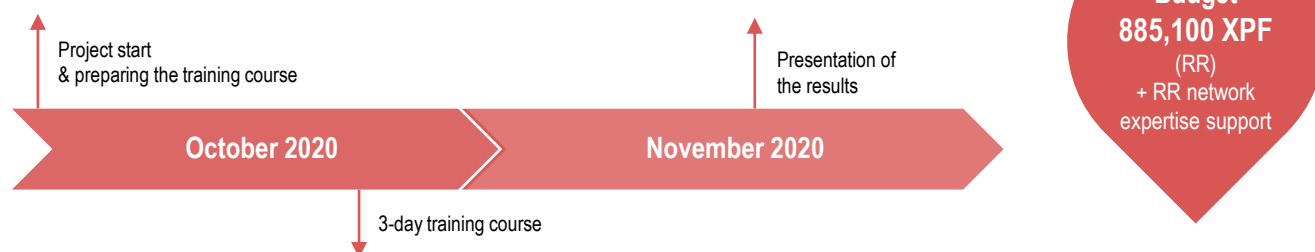
GIE Océanide,
SENSÉ,
ETHYC'O

Partners

NC Agronomic Institute (IAC),
Environmental Observatory
(OEIL),
Center for Environmental
Initiation (CIE)

Beneficiaries

Northern Province



Results

At the end of the three-day workshop, the managers consolidated their knowledge of catchment areas and watercourses, how they function, their ecology and their biology, and strengthened several skills:

- understand and integrate the perspective and uses of local stakeholders in freshwater management;
- identify the pressures on watercourses, develop an environmental monitoring system for freshwater and a maintenance protocol;
- identify the various stakeholders, their role, their rights and their legitimacy with regard to watercourses.

The workshop improved participants' understanding of the multiple and complex interactions between human pressures, the state of river basins and watercourses, and the consequences for the environment and human life. It also enabled participants to better identify the experts to be mobilised on specific subjects relating to watercourses and catchment areas.

Perspectives

The overarching aim is for these concepts and tools to be applied concretely in water and catchment management policies. It is vital that the managers and experts present at the workshop continue to share their experiences and disseminate their knowledge within their institutions.



Controlling fires to reduce sedimentation in the lagoon

Description

Initially, the project will run participatory workshops to build the capacity of local players in fire management and to mobilise traditional and popular knowledge about indigenous or endemic fire-retardant species.

Following consultation with local communities, laboratory analyses will be carried out to characterise the flammability and combustibility of the species identified.

Finally, technical support will be provided to set up these vegetated firebreaks. A best practice guide will be shared for the implementation of vegetated firebreaks, and the lessons learnt will be disseminated to all those involved in fire management in NC.

Objectives

This project aims to identify and characterise the flammability and combustibility of native and/or endemic species that could be used as plant firebreaks. By limiting the spread of fires and therefore, the area burnt (currently 10-50,000 ha/year), soil erosion will be reduced, thereby reducing the sediment input to the lagoon, a major cause of coral destruction.

Pilot

ANCB

Operator

Conservation International (CI)

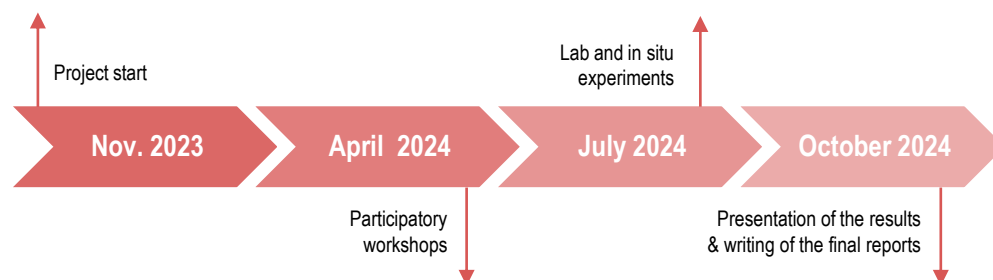
Partners

City of Mont-Dore,
Provinces, Customary senate,
local NGOs (Red Ground,
Caledoclean,
Conseil de l'Eau, etc.),
Management committees,
DSCGR, INRAE,
IAC, IRD, etc.

Beneficiaries

Local communities,
managers

Provisional timetable



Budget
3,600,000 XPF
(RR)
+ cofinanced
CI



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Expected results

At the end of this project, a protocol for setting up vegetated firebreaks using species specific to New Caledonia will be developed. Documentation on the behaviour of fire around pyro-retardant formations will also be available.

Perspectives

Following this project, support and promotion for the installation of vegetated firebreaks in New Caledonia should be continued. It might be interesting to measure the impact of these firebreaks on the sediment supply to the lagoon and compare the results obtained in the laboratory with those obtained in vivo.

THEME 3

RESILIENT GOVERNANCE

3.1 Adaptive and collaborative management



Challenge 3.1

Adaptive and collaborative management



Context

The **large number of initiatives and action plans** relating to the management of the marine environment **makes it difficult to pool means and resources** and, therefore, to implement them in an effective and coordinated manner. Added to this is the lack of monitoring and evaluation of the impact of these projects. This limits the ability of managers to learn lessons and adapt their actions to climate change and local pressures.

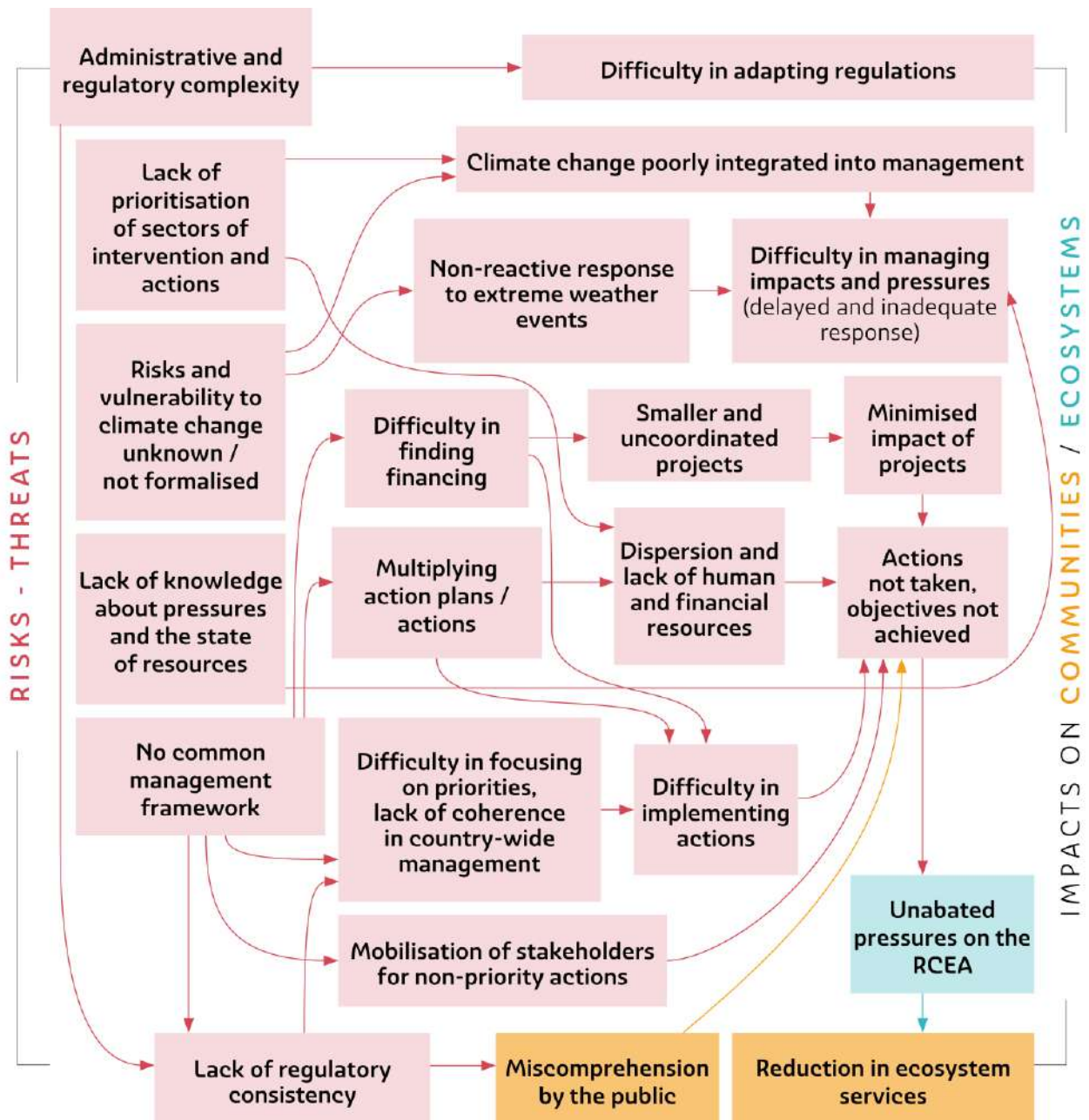
Resources, particularly human resources, **remain insufficient** for optimum implementation. This is in spite of the substantial resources managers invest in both implementing participatory management, as well as in existing strategies and action plans to protect coral reefs and associated ecosystems.





Risks and threats

Dispersed management resources and insufficient knowledge hamper adaptive management and reduce the effectiveness of the actions implemented. Local communities have varying capacities to respond to threats to ecosystems. Management also lacks responsiveness and proactivity in the face of climatic events.





Expected results



Management will be **adaptive** and proactive, and human and financial resources are **shared** to ensure that actions are implemented as effectively as possible.

3.1

Long-term objectives

- 3.1 - 1** Better **coordinated and collaborative management**.
- 3.1 - 2** Systematically **take climate change into account** in strategic documents and management plans.
- 3.1 - 3** **Develop management and planning** tools for maritime areas, rapid reaction plans, etc...
- 3.1 - 4** **Integrate socio-economic and cultural considerations** into management, planning and activities relating to coral reefs and associated ecosystems.





Workshop to train managers in the Climate Change Adaptation (CCA) tool

Description

Managers were trained in the Climate Change Adaptation (CCA) tool. The project was carried out in two phases. Firstly, future trainers from New Caledonia (ANCB and UNC) were guided through a training course inspired by a Reef Resilience Network (RRN) course and given by two experts.

The ANCB and UNC then ran a two-day, face-to-face workshop to train managers in the use of the CCA tool and to test its practical application to actions arising from their environmental management plans. The managers worked on one action to revegetate the Poé coastline, and another action to eradicate invasive exotic plant species and revegetate islets of less than 30 ha.

Objectives

- To help managers understand climate trends and projections so they can take climate change into account in their current and future management actions.
- Strengthen managers' skills in resilience-based management.
- Develop an action incorporating the principles of resilience-based management.

Pilots

ANCB,
GBRF

Operators

The Nature
Conservancy (TNC),
University of NC (UNC),
ANCB

Partner

Reef Resilience Network
(RRN)

Beneficiaries

Managers



Budget
1M XPF
(RR)

Results

At the end of the workshop, the managers increased their knowledge of climate change and integrate it into their environmental management plans. New resilient actions were also developed. In addition, New Caledonia now has key management players trained in the CCA tool.

Perspectives

The current and forthcoming review of all the action plans for the listed property is a great opportunity to use this new tool to design new actions in a resilient way.

The provinces seized this opportunity, as the CCA tool has since been used to revise the Touho and Poindimié (North and East Coastal Zone) environmental management plans in the North Province and to revise the plan for the Grand Lagon Sud in the South Province. A presentation of this tool and its application was given during the workshop to help revise the management plans in 2023 (see sheet [3.1-C](#)).

To extend and sustain its use, it would be necessary for those who have been trained to share their knowledge with colleagues, and for the tool to be more widely distributed to other players.





Support for the revision of the Environmental Management Plan for Hienghène, WH site, North and East Coastal Zone

Description

With the support of an international expert on integrating resilience into management plans (AECOM), the Resilient Reefs Initiative organised a one-day workshop to support the revision of the future management plan for Hienghène (Northern Province). As this process had already begun, the support focused on the draft of the future plan, the possibilities for simplifying it and developing actions.

The action plan was analysed in advance by AECOM using the reef resilience framework. Following this, the workshop provided an opportunity to discuss with managers and make recommendations on how gaps in communication, monitoring, evaluation, and funding could be filled.

Objectives

This action aims to integrate more resilience-based thinking and action on climate change into the next management plan for Hienghène and into the planning process.

Pilots

GBRF,
ANCB

Operator

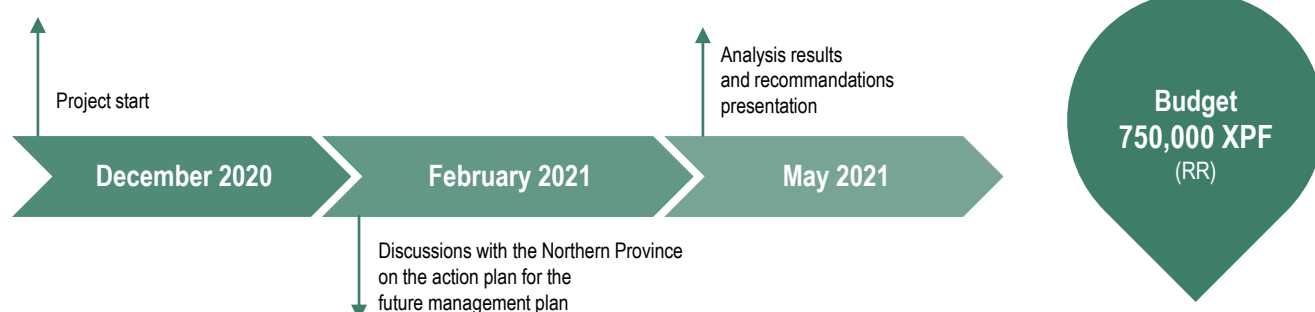
AECOM

Partners

Reef Resilience
Network (RRN)

Beneficiaries

Northern Province



Results

The preliminary analysis identified and communicated to managers the distribution, impact, gaps, and duplications in terms of actions across the dimensions and attributes of the reef resilience framework, as well as opportunities to deliver actions with greater co-benefits. Diagrams show the distribution of actions according to theme, resilience attribute and action owner.

Recommendations were made to the Northern Province to improve the effectiveness of the public consultation process and to better scale the actions according to the human and financial resources available. Finally, the method used enables the resources and means available to be matched to the proposed actions.

Perspectives

AECOM's analysis highlighted the need for managers to improve their knowledge of the impacts of climate change at the scale of the WH site, to better integrate them into the design and implementation of actions. This analysis will also help guide discussions between the provincial departments concerned and integrate more actions linked to the preservation of the ecosystem.

For this reason, the Resilient Reefs Initiative used this action to develop additional training on integrating resilience into the revision of management plans, aimed at all managers in the area. This training course was held in July 2023 (see sheet [3.1-C](#)).





Training to support the integration of Resilience-Based Management (RBM) in the Environmental Management Plans (EMP) for the WH site

Description

ANCB, GBRF, AECOM and TNC cooperated to offer training to support the revision of Environmental Management Plans (EMP) by integrating resilience-based management (RBM). Managers, consultancies, scientists, and other local and international partners were also brought together to collaborate on the revision.

As a first step, an online course on RBM was delivered. In parallel, AECOM carried out a preliminary analysis of each selected EMP. Finally, a 2.5-day workshop was held on climate change, adaptive management, the effectiveness of stakeholder engagement, the link between research and management, the development of resilient actions and the search for concrete perspectives on the EMPs.

Objectives

The aim was to encourage the integration of RBM and climate change into the future EMPs of local authorities, by offering managers practical tools and forums for exchange and discussion with various local and international stakeholders in reef management.

Pilots

GBRF, ANCB

Operators

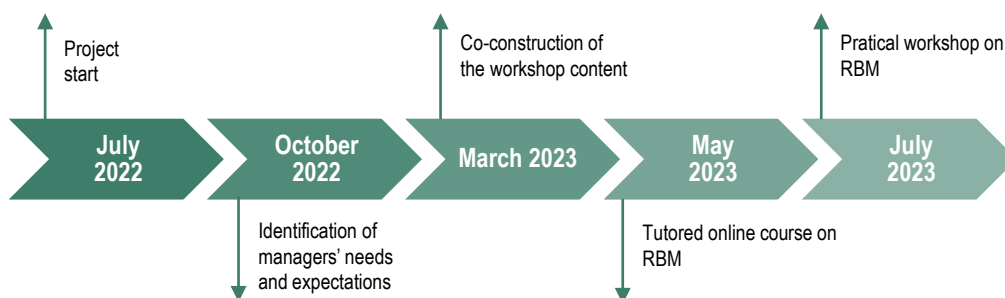
AECOM, GBRF, ANCB,
The Nature Conservancy
(TNC)

Partners

Managers, OFB, CORTEX,
BioEko, IRD, CNRS,
BHP Fondation

Beneficiaries

Managers, DAFE, OFB, IRD,
CNRS, BioEko, CORTEX,
Littoralys, GIE Océanide



Budget
809,000 XPF
(RR)
+ RR network expertise
(AECOM,
TNC)

Results

Thanks to this workshop, the managers acquired a wealth of knowledge (impact of climate change, resilience-based management, international case studies, etc.). They came away with recommendations (reducing and diversifying actions, better integrating climate change, etc.), tools (prioritising actions/objectives based on criteria, assessing the impact of an action, summary table of the impacts of climate change in NC, etc.) and perspectives (improving management/scientific links, avoiding over-solicitation of stakeholders, etc.) that they will be able to apply when revising their next EMPs.

Researchers and consultancies were able to contribute their knowledge and expertise, express their points of view and gain a better understanding of the needs of managers. A real working synergy was created between the key players in reef conservation (managers, researchers and consultancies), who rarely work together.

>>> For more information: [ANCB brief](#).

Perspectives

Following this workshop, additional needs and support were identified to continue the support provided by the Resilient Reefs Initiative in the revision of management plans in New Caledonia. Additional training courses are planned in addition to the workshop.





Determination of the key areas in the NC RCEA and development of a monitoring guidance document (SEACLOPEDIA)

Description

The project is divided into two main phases. The first is a diagnosis of NC's RCEA (catchment areas and marine environment), during which the pressures and levels of ecological interest will be cross-referenced to identify the key areas. Current monitoring of coral reefs and associated ecosystems will also be characterised in a final stage. Each stage will be submitted for validation by the working group set up at the start of the project. The second phase of the project aims to co-develop a guidance document for monitoring NC's RCEA. It will be based on the results of phase I and regular meetings with the working group to co-construct and validate this document.

There is, therefore, a great deal of work involved in co-construction with the key players in the management of NC's RCEA throughout the project so that the final policy document is the fruit of a vision shared by all the partners.

Objectives

The aim of this project is to develop a guidance document that will optimise RCEA monitoring on a national scale, which will be co-constructed and accepted by management stakeholders. This document will make it possible to improve the coordination and standardisation of RCEA monitoring strategies in the region to avoid redundancies and gaps.

Pilot

ANCB

Operator

Environmental Observatory of NC (OEIL)

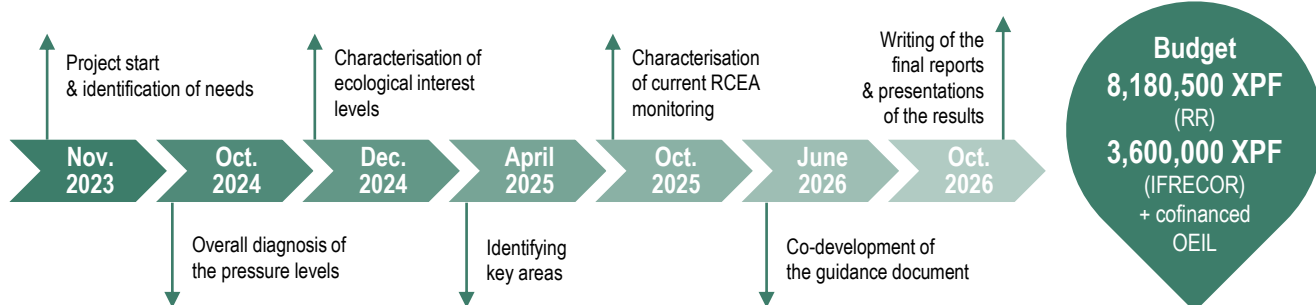
Partners

Managers, DAFE, OFB, IRD, IFREMER, University of NC, National Center for Technological Research (CNRT), WWF, Conservation International (CI), etc.

Beneficiaries

Managers

Provisional timetable



Expected results

Phase I of the project will produce an inventory of the current situation and cartographic atlases of the pressures, challenges and issues facing NC's RCEA. A country-level guidance document will be co-developed with the main stakeholders in RCEA management.

Perspectives

At the end of the project, it will be important to discuss the continuity of the working group, as well as the ownership and updating of the guidance document developed. The inventory reflects the current situation at a given point in time, and will need to be updated as and when significant data is produced.



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THEME 3

RESILIENT GOVERNANCE

DES TRÉSORS POUR L'HUMANITÉ

En 1972, l'UNESCO établit une liste de biens irremplaçables constituant la première Liste du « patrimoine mondial ».

Pour y figurer, les sites doivent avoir une valeur universelle exceptionnelle et satisfaire à au moins un, des dix critères de sélection.



Il existe deux grandes catégories de biens inscrits :

Les BIENT CULTURELS :

Monuments remarquables par leur architecture ou par leur importance dans l'histoire de grande diversité de sites (par exemple) :

Les BIENT NATURELS :

Espaces protégés par leur beauté ou le savoir de leur faune et/ou flore (tels que le Grand Canyon de Grand Canyon, mais également des sites géologiques ou biogéographiques de Grand Canyon).



En 2020, 1 121 biens sont inscrits sur la Liste du « patrimoine mondial » : 802 sont des biens culturels, 317 sont naturels et 2 sont mixtes.

En effet, certains sites sont inscrits pour leur valeur universelle exceptionnelle, notamment pour leur valeur scientifique, culturelle, esthétique ou naturelle exceptionnelle.

« Organisation des Nations Unies pour l'éducation, la science et la culture » (UNESCO) a été créée en 1945, l'objectif de « contribuer au maintien de la paix et de la sécurité en créant, par l'éducation, la science et la culture, la collaboration entre les nations ».

Conservatoire
d'espaces naturels
Nouvelle-Calédonie

3.2

Raising awareness

Challenge 3.2

Raising awareness



Context

In New Caledonia, **civil society is aware** of environmental issues and **involved in management** through World Heritage management committees and associations. These committees are largely voluntary, which demonstrates the commitment of communities to managing their ecosystems. However, coordination and efficiency within these groups could be improved.

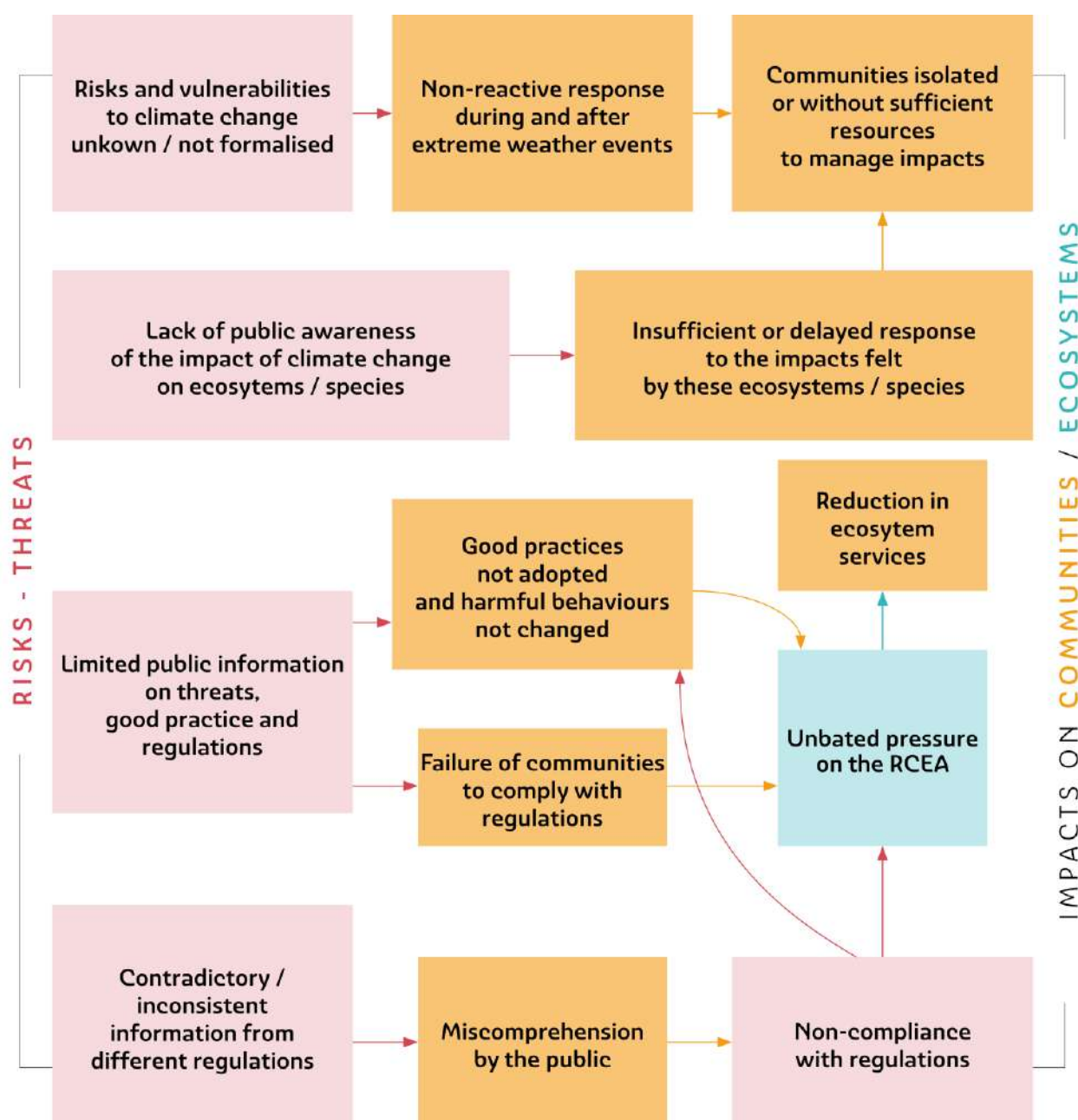
The public is aware of some of the effects of climate change, particularly coastal erosion and rising sea levels. However, **communities dependent on coral reefs and associated ecosystems are relatively unprepared** to adapt to extreme events and the future impacts of climate change on these ecosystems.





Risks and threats

Communities are **not sufficiently informed about the effects of climate change**, and its impacts can significantly affect those who are unprepared. Extreme climatic events **will have a greater impact because of people's lack of preparation**. The communities' dependence on coral reefs and associated ecosystems for their livelihoods increases their vulnerability to the impacts of climate change.





Expected results



Communities will be made **aware** of the effects of climate change and are prepared for the risks.

Communities will be aware of the effects and risks of climate change and are supported in their adaptation, mitigation, and transformation initiatives (reduction of carbon footprint and sustainable use of resources, projects to diversify sources of income, etc.).

3.2

Long-term objective

3.2 - 1 Raise public awareness of climate change and marine conservation, and engage the public in climate change adaptation, conservation and participatory science.





Turtle Days 2021 on the Isle of Pines

Description

The "Turtle Days" were organised in July 2021 on the Isle of Pines. The 3-day event was attended by players from all over the region, including the other management committees invited for the occasion. The Thio management committee, which organised the Turtle Days in 2020, handed over the torch to the Isle of Pines management committee.

Day 1 was devoted to a workshop to review the management plan for the Far Southern Lagoon. This day was used to establish a diagnosis of the state of health of marine and terrestrial habitats and fishery products in order to identify the area(s) most affected by fishing pressure. Day 2 was devoted to raising awareness of turtles and the marine environment among schoolchildren. Day 3 offered the general public presentations and activities by scientific associations and other stakeholders on these different themes.

Objectives

The aim of Turtle Days is to reconcile environmental protection with the maintenance of traditions for the sustainable management of sea turtles. To achieve this, up-to-date scientific knowledge about marine turtles is brought to the tribes so that they can exchange information based on a common knowledge base. They also help to involve local people and raise their awareness of turtles and the issues at stake from a very early age and to initiate a dialogue between the generations.

Pilot
SP

Operator
Turtle com

Partners
ANCB, GBRF, Kwenyï mangement committee, IRD, The Lagoon Aquarium (ADL), Bwără marine turtle association, Center for Environmental Initiation (CIE), Pala Dalik, WWF, Symbiose

Beneficiaries
SP, local populations of Isle of Pines and other management committees



Budget
3,800,000 XPF (RR)
Global budget: 7M XPF

Results

At the end of the event, eight tribes from the Isle of Pines signed a memorandum of understanding with the Southern Province on derogatory sea turtle fishing. These protocols define the precise customary events and authorised catch quotas with the aim of reconciling traditional use and sustainable management of sea turtles..

>>> For more information: [Historic agreement to protect turtles](#)

Perspectives

The Southern Province plans to continue discussions on derogation for sea turtle fishing in other key sites for the preservation of these species.





Elaboration of a communication strategy on coastal erosion and marine submersion in New Caledonia

Description

An synthesis of coastal risks in New Caledonia was drawn up based on bibliographical research and interviews with key partners. Based on this work, a communication strategy was developed, proposing objectives for each target audience, key messages and tools, as well as implementation methods for effective communication on the risks of coastal erosion and marine submersion in New Caledonia.

Objectives

This communication strategy aims to support the communication initiatives and actions of local partners. It is the basis for a second phase of implementation of some of the actions identified. Using the strategy as a basis, it will be easier to identify project promoters, and communication actions on these themes will be coordinated rather than redundant.

The aim of this strategy will be to encourage the development of a coastal risk culture in New Caledonia in order to:

- encourage communities to develop their skills,
- promote community preparedness and adaptation to climate change and future coastal risks,
- support and strengthen the resilience of these communities.

Pilots

ANCB,
Coastal Observatory
of New Caledonia
(OBLIC) / DIMENC

Operator

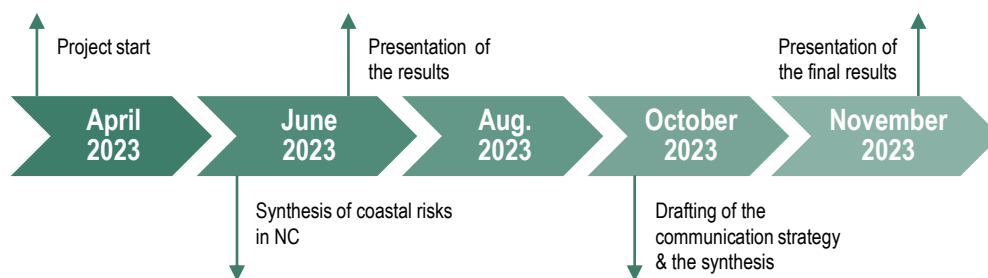
Lincks

Partner

Pacific community (SPC)

Beneficiaries

OBLIC, managers
and general public



Budget
1,400,000 XPF
(RR)

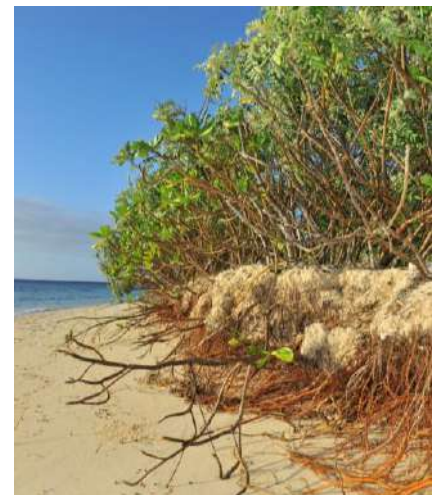
Results

Thanks to this strategy, OBLIC and other stakeholders now has an action plan to implement to communicate effectively and in a coordinated manner on coastal erosion and marine submersion.

Perspectives

The actions and communication tools proposed at the end of this service could be deployed by OBLIC/DIMENC or other key partners.

This will require the search for funding allocated to the implementation of the actions, or even the remuneration of a coordinator dedicated to this task.





**PERSPECTIVES
AND THANKS**

Perspectives

The **actions financed** by the Resilient Reefs Initiative throughout the territory will continue until the end of 2025. Around 61 million Pacific francs (~ **850,000 Australian dollars**) will have been invested in New Caledonia to finance actions to strengthen the resilience of the reefs and the communities that depend on them.

The strategic guidance document for the resilience of New Caledonia's RCEA is the first common framework created at the national level. It could be consolidated by drawing up a five-year action plan to meet the priority objectives shared by the local authorities. This action plan could be built by involving an even wider range of stakeholders through a forum. This would make it **easier to implement the strategy in practice, examine the issues in greater depth, and identify joint actions and potential sponsors**. The success and sustainability of this strategy depend on its ownership and the involvement of as many local players as possible.

In order to maintain this exceptional natural heritage and enable future generations to enjoy it, it is essential that all stakeholders, at all levels, work together to combat the various threats and ensure the resilience of the lagoon and its communities.

Acknowledgements

The **strategic directions and actions** presented in this document are the result of 4 years of joint development with numerous **local and international partners** as part of the Resilient Reefs Initiative.

This collaborative effort was very fruitful, thanks in particular to the diversity of the participants (organisation, origin, skills), each contributing their expertise in their specialist field.

We'd like to take this opportunity to thank them all!

Partenaires locaux



Partenaires internationaux





AGENCE NÉO-CALÉDONIENNE
DE LA **BIODIVERSITÉ**



Great Barrier
Reef Foundation