



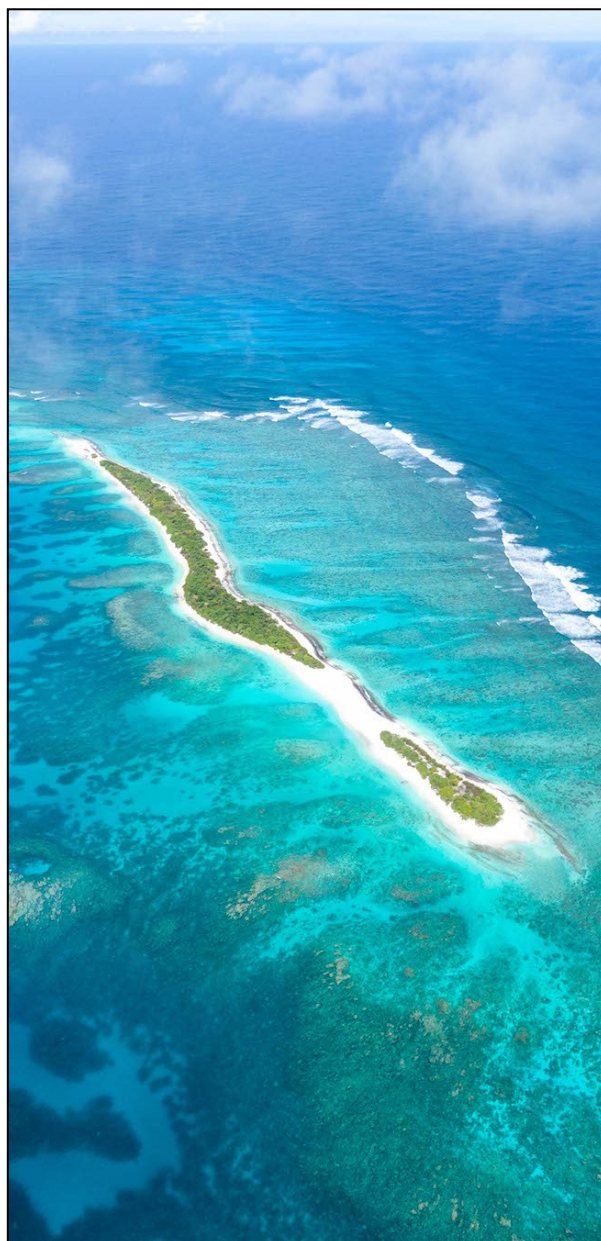
RESCCUE



CLIMATE CHANGE IN THE RESCCUE PROJECT

KEY MESSAGES

- ✓ The varied nature and sometimes no obvious link to climate change in RESCCUE activities required a clarification of the chosen approach, which is related to the reduction of vulnerability and the deployment of “adaptation-relevant” activities.
- ✓ This approach has been validated by the usefulness of what has been achieved. The tools deployed to define and assess the project's contribution to adaptation have met with mixed success.
- ✓ The project never had to choose, in practice, between nature-based solutions (NbS) and "hard" solutions. In the particular context of the project's pilot sites, the social process that is at the heart of NbS implementation seems to clearly outweigh a more technical approach typical of hard solutions, to the point where NbS can be requalified for nature (and people!) -based solutions.
- ✓ The low use of climate science in RESCCUE raises important questions that can only be addressed through enhanced collaboration between the development community and climate scientists.



MOTU, GAMBIER ARCHIPELAGO, FRENCH POLYNESIA

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TO BE OR NOT TO BE... A CLIMATE CHANGE ADAPTATION PROJECT

The objective of the RESCCUE project was to increase the resilience of Pacific Island Countries and Territories (PICTs) to climate change. As SPC's first carbon-neutral project (see Box 1), it aimed to support climate change adaptation through Integrated Coastal Management (ICM), resorting especially to economic analysis and innovative economic and financial mechanisms.

The activities co-constructed with the concerned populations and authorities at the beginning of the project on the seven pilot sites in Fiji, New Caledonia, French Polynesia and Vanuatu, proved to be extremely diverse. Moreover, their link with climate change sometimes seemed tenuous: for example, waste management, the regulation of invasive species or the creation and management of protected areas. Early in the project, an important question arose: was climate change a veneer of modernity applied to activities that were certainly necessary, but at the same time "traditional" in the field of the environment and independent of climate change? Or did the RESCCUE project approach, its logical framework, its tools and activities really make it a climate change adaptation project?



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Far from a purely theoretical issue, the question is crucial:

- In terms of aid accountability: RESCCUE funding is part of financial and capacity transfers from North to South which are a cornerstone of international climate negotiations. Beneficiaries are therefore entitled to know whether such a project may or may not be included in the adaptation funding pillar of these negotiations.
- On the other hand, the concerned Pacific populations, who face or will face the severe impacts of climate change, need to know if such a project really helps them to increase their resilience.
- Finally, communicating the results of the project, learning lessons and sharing them widely requires a clear framework in this area so that collective learning is not parasitized by doubt.

To inform this non trivial issue, different tools and approaches have been mobilized.



BOX 1: RESCCUE, SPC'S FIRST CARBON-NEUTRAL PROJECT

As part of a pilot phase of implementation of SPC's social and environmental responsibility policy – eventually adopted in 2018 – RESCCUE became in 2017 the first carbon-neutral project of SPC.

The project team indeed wanted to take responsibility for the 400 tonnes of CO₂ emitted over five years of implementation, whether through the travel of various partners, activities, energy consumption of offices etc. The process involved a three-pronged approach:

- Avoid greenhouse gas emissions which can be avoided, notably by not travelling unnecessarily
- Minimize emissions that cannot be avoided by choosing, for example, to organize regional meetings near an airport hub, or by choosing caterers who work with local products;
- Compensate for residual emissions that cannot be avoided or reduced through a partnership with the Nakau Forest Conservation Program in Fiji and Vanuatu.

Several SPC projects are now following this example.

THE RESCCUE APPROACH TO CLIMATE CHANGE IN THE FIELD

Resilience of populations and ecosystems

Rather than spending too much time on questions such as "is creating a marine protected area an adaptation action, even if it is not based on any particular climate projection?", the approach chosen in RESCCUE favoured the reduction of vulnerability as perceived by local populations. The latter referred mainly to the degradation of their environment.



RA PROVINCE, FIJI

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A simple logic was then put at the heart of the RESCCUE approach:

- Relieving ecosystems of non-climatic pressures (pollution, overexploitation, invasive alien species and habitat destruction);
- To reduce their vulnerability (and increase their resilience) to climate change;
- And that of the populations that depend on them, through ecosystem services.



CORAL RESTORATION, NORTH EFATE, VANUATU

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All project activities were considered to positively affect the resilience of the populations. According to the distinction proposed by Doswald et al.¹ RESCCUE was about implementing "adaptation-relevant" activities rather than adaptation activities strictly speaking, since they were not based on climate projections and associated risks of impacts at the local level.

¹ Doswald et al. 2014. Effectiveness of ecosystem-based approaches for adaptation: review of the evidence base. *Climate and Development* 6(2).

Vulnerability reduction assessment and knowledge synthesis

In order to "take seriously" this approach based on vulnerability reduction, it was necessary to provide the means to verify whether the project activities really contributed to reducing the vulnerability perceived by the populations concerned.

RESCCUE chose to use a simple, low-cost, readily available and internationally recognized Vulnerability Reduction Assessment² (VRA) methodology: "VRA is designed to measure the changing vulnerabilities of communities, and to be comparable across vastly different projects, regions, and contexts, making it possible to determine if a given project is successful or unsuccessful in reducing climate change vulnerability. Based on vulnerability as perceived by concerned populations, it documents a project's contributions to adaptation as well as its broader contributions to reducing vulnerability and enhancing resilience."



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The VRA was therefore implemented at the beginning and the end of the project at each pilot site, as part of the initial diagnosis and the final report. It was accompanied in each case by a bibliographical summary of the available knowledge about the expected impacts of climate change according to the different scenarios of greenhouse gas emissions³.



MANGROVES DEGRADED BY CYCLONE WINSTON, RA PROVINCE, FIJI

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² Drosch AC, Gaseb N, Kurukulasuriya P, Mershon A, Moussa N, Rankine D, Santos A. 2008. [A guide to the Vulnerability Reduction Assessment](#). UNDP working paper, Community-Based Adaptation Programme.

³ See e.g. documents regarding French Polynesia: [initial diagnosis](#) for Moorea and [knowledge synthesis](#).

Integration into the logical framework and ICM plans

As the logical framework is a key tool in project management, it was decided to make it explicit in terms of adaptation to climate change ("adaptation-explicit"), which was initially not the case. This has been done both at the level of expected outcomes and indicators. For example, the development and implementation of ICM plans being a cornerstone of the project, it was stipulated in the logical framework that all these plans would explicitly incorporate the climate change adaptation objective, i.e. that they themselves would be "adaptation-explicit". For example, we can refer to the ICM plans developed in the provinces of Ra and Kadavu in Fiji, or in the Gambier in French Polynesia.

Ecosystem-based adaptation and nature-based solutions

Given the intervention logic explained above, RESCCUE was about implementing ecosystem-based adaptation and nature-based solutions (EBA and NbS, see Box 2). These two notions were spontaneously associated with the project by stakeholders involved.

However, the degree to which project activities have been consistent with the definitions of these two concepts has varied widely. For example, the activities of waste management or invasive species regulation, designed with real but somewhat vague climate concerns, have been globally relevant from the point of view of ecosystem-based adaptation and nature-based solutions (EbA-and NbS-relevant). Mangrove replanting or watershed restoration activities on the other hand have been very directly related to these two concepts.



HUNTER FROM THE TIPWOTO ASSOCIATION, TOUHO, NEW-CALEDONIA

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BOX 2: DEFINITIONS OF ECOSYSTEM-BASED ADAPTATION AND NATURE-BASED SOLUTIONS

“Ecosystem-based adaptation uses biodiversity and ecosystem services in an overall adaptation strategy. It includes the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt to the adverse effects of climate change.”

Source: CBD. 2009. Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change. CBD Technical Series N° 41, Montréal, Canada.

Nature-based Solutions (NbS) are defined by IUCN as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

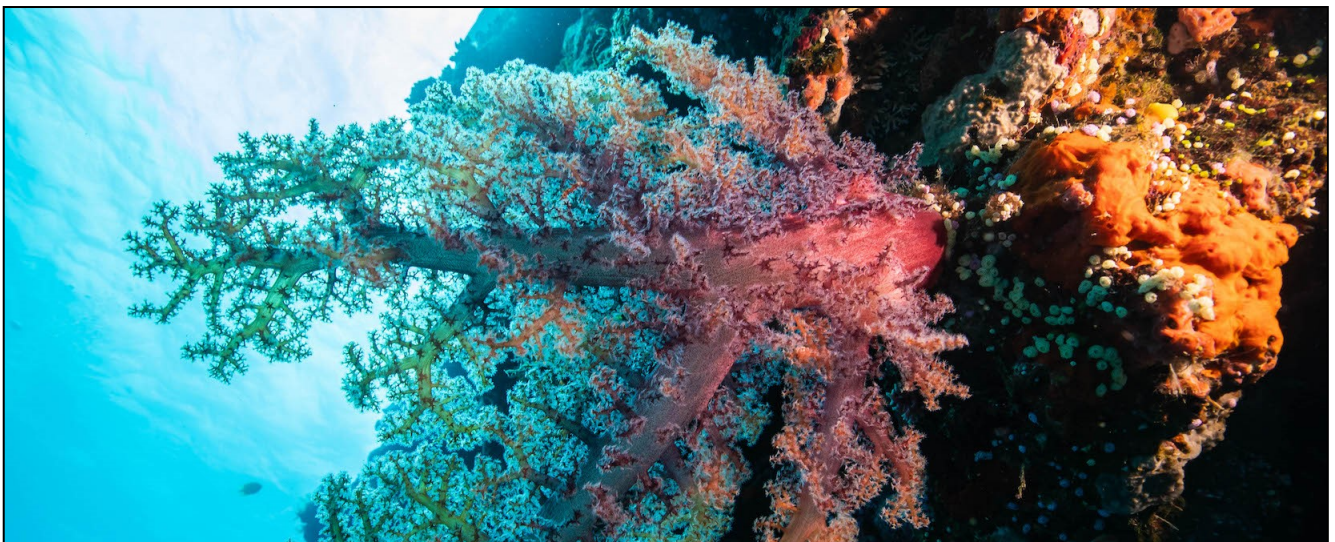
Source: <https://www.iucn.org/commissions/commission-ecosystem-management/our-work/nature-based-solutions>

AT THE INTERNATIONAL LEVEL

In addition to its field activities, RESCCUE worked internationally by participating in scientific projects and sharing its field experience in various fora, first and foremost COPs of the climate change convention.

Oceans 2015 Initiative

The objective of this initiative was to provide negotiators and other stakeholders at the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) with key information about what outcomes of international negotiations involved for the oceans. The initiative was led by the National Center for Scientific Research (CNRS), Pierre and Marie Curie University (UPMC) and the Institute for Sustainable Development and International Relations (IDDRI). The RESCCUE team coordinated work on options for action against climate change and ocean acidification, building among other on past and ongoing climate change adaptation projects in the Pacific.



VATU-I-RA MARINE PARK, FIJI

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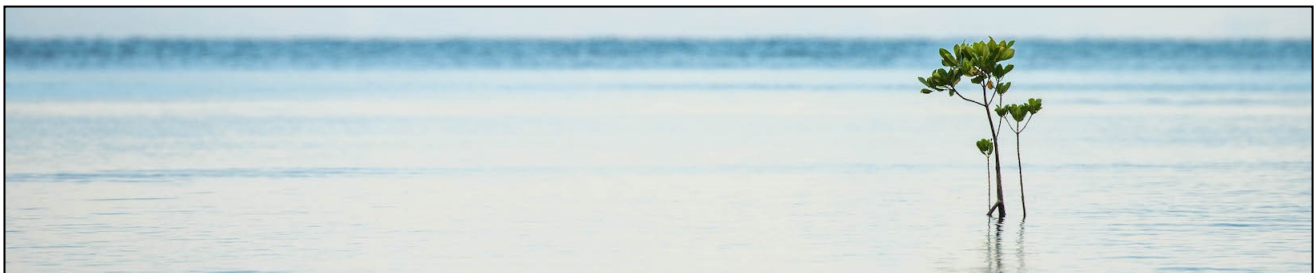
Different products came out of the initiative:

- Prior to COP 21, the main report of the Oceans 2015 initiative was [published by Science](#), its key messages synthesized in [a policy brief](#) published by IDDRI and [an animated video](#). In particular, the results showed very contrasted impacts for most ecosystems between scenarios at +1.5 or +2 and + 4 °C. the report also observed that the number and effectiveness of available solutions are decreasing as the concentration of CO₂ in the atmosphere increases.
- After COP 21, another article, [published by Nature Climate Change](#), summarized the impacts of the Paris Agreement on oceans based on nationally determined contributions.

Ocean Solutions Initiative

Following the success of the Oceans 2015 Initiative, the RESCCUE team participated, at the invitation of IDDRI and Pierre and Marie Curie University, in a systematic and comparative evaluation of potential "solutions" to climate change based on oceans (effectiveness, feasibility, co-benefits, disadvantages, cost-effectiveness and governability).

With the aim of contributing to the 6th IPCC report, the Ocean Solutions initiative resulted in the publication of [a scientific article in *Frontiers in Marine Science*](#). [A policy brief](#) and [an animated video](#) were also produced.



MANGROVE SEEDLING, NEW CALEDONIA

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This initiative identified a wide range of ocean-based measures to mitigate climate change and its impacts on marine ecosystems, suggesting an important role for the ocean community in both adaptation and mitigation. While several of these measures have high potential to solve the problem globally, they have too many uncertainties and / or risks of negative collateral effects to be recommended for large scale deployment. Conversely, while most local measures appear to be "no-regret", they do not respond to the challenge on a global scale. The "solution" therefore lies in the combination of global and local measures, some of which can already be deployed on a large scale now.



COP 21

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Participation in climate change COPs

Based on its contributions to these research projects as well as its field activities, the RESCCUE team participated in numerous international events. In particular, they were part of the SPC delegation to COP 21 and 23 of the Climate Convention to share lessons on the realities of climate action in PICTs, the options available, and their conditions and costs of implementation.

WHAT HAVE WE LEARNT?

The project approach is confirmed, but tools have met with mixed success

The vulnerability-based approach, which justifies "adaptation-relevant" activities rather than adaptation activities as such, has been confirmed. It has proved to be sufficiently inclusive to respond to a wide variety of local needs that evolve over time, has allowed the stakeholders involved to exchange easily within the framework of a well-understood logic, and does not seem to have had noticeable perverse effect.

However, beyond the intuition that the activities implemented have reduced the vulnerability of populations of pilot sites to climate change, the use of the tool chosen to measure the reduction of vulnerability⁴ (Vulnerability Reduction Assessment, VRA) did not give full satisfaction. Several explanations, not exclusive of each other, are possible: flaws specific to the VRA tool, lack of resources for the operators in charge of implementing it, "fatigue" of the populations concerned in the face of repeated consultations from project design throughout implementation.



NORTH EFATE, VANUATU

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The integration of climate change in the logical framework of the project as well as in the various ICM plans so as to make them "adaptation-explicit" also offers a mixed assessment. This effort has been fruitful in that it has obliged the various partners not to lose sight of climate change, to consider the overall coherence of the plans and programmes of activities set up in terms of reducing climate change vulnerability, and to question how this global issue should impact them. However, it has not always translated into a strong operational added value, as ICM plans are in the end little affected in their content.

⁴ See e.g. [the case of Fiji](#)

The syntheses of knowledge on the expected impacts of climate change on the pilot sites share this mixed operational record.

Nature (and people!)-based solutions

Contrary to what might have been anticipated, the project never had to choose, in practice, between nature-based and "hard" solutions. Whether it was for example coastal protection in Fiji or watershed management in the Northern Province of New Caledonia, nature-based solutions have imposed themselves. The only hybrid case, the restoration of the Tahiamanu beach in Moorea in French Polynesia, was a combination of revegetation of the top of the beach by native species with re-sanding and the construction of a small under-water structure – a combination deemed the most technically appropriate.



MANGROVE NURSERY, RA PROVINCE, FIJI

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The international debate between nature-based and "hard" solutions to climate change⁵ has therefore not translated into the field. Here again several explanations can be suggested between which we cannot decide: purely theoretical debate swept away by the "local good sense"? Choice of rural pilot sites in which the economic value of the assets to be protected is low? Cost-effectiveness ratio largely favourable to NbS? Well-understood importance of NbS co-benefits? In any case, it seems clear that NbS and hard solutions rely on extremely different social processes. The latter are essentially an engineer approach, technical or even "dehumanized", which results in calls for tenders for works, contracting providers that often come from outside the site to mobilize means not available locally.

⁵ See e.g. <https://www.iddri.org/en/publications-and-events/blog-post/how-can-we-increase-financial-support-nature-based-climate>

NbS, on the other hand, are necessarily implemented by the populations concerned, in a logic where technical optimization often counts less than the associated social mobilization process. The Pacific Island context, characterized by the weight of the subsistence economy, geographic isolation, the importance of tradition, strong customary and community links, may therefore explain the particular appeal for NbS in the Pacific.

This difference between a technical and a social approach of the search for solutions is sufficiently significant on the ground for NbS to be requalified as solutions based on nature ... and people!

A need to investigate and strengthen the use of climate sciences



PEARL FARMING, GAMBIER ARCHIPELAGO, FRENCH POLYNESIA

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The implementation of a project such as RESCCUE is an opportunity to question the contribution of climate sciences (taken in a broad sense) to adaptation to climate change. Implementing adaptation requires improving how climate change is reflected in planning, investment and environmental management practices. In the context of RESCCUE, this meant essentially opting for solutions that incorporate uncertainty rather than optimized solutions based on particular climate projections.

In a manner consistent with, for example, Magnan et al.⁶ (2009) , RESCCUE:

- Institutionalized medium and long-term integrated coastal management planning;
- Promoted "no-regret" strategies, i.e. strategies that are beneficial even without considering the impacts of climate change, and "robust" solutions, i.e. that are relevant to a broad range of future climate change;
- Favoured reversible rather than irreversible strategies, in order to minimize the cost of a bad estimate of climate changes. NbS are emblematic as opposed to hard solutions.

⁶ Magnan, A., Garnaud, B., Billé, R., Gemenne, F., Hallegatte, S. 2009. The future of the Mediterranean: from impacts of climate change to adaptation issues. IDDRI – Ministry of Environment, Paris, 45 p.

In this context, the use of climate sciences has been minimal, not to say nil. Despite initial knowledge synthesis and vulnerability analysis efforts, the project has operated on the basis of a few very general elements: the ocean temperature will increase and its pH will decrease, sea level will rise, rainfall extremes are likely to worsen and droughts to be more severe and last longer, etc. The project's approach, based on vulnerability, has proven pragmatic to avoid the risk of inaction due to an endless quest for increasingly accurate and reliable data at the local level.



AVIFAUNA OF GAMBIER, FRENCH POLYNESIA

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Would an alternative approach, taking climate projections and associated impact scenarios as input, have led to greater efficiency in adaptation? This question remains to be answered in the context of an enhanced collaboration with the scientists concerned.

Perhaps counter-intuitively, the rare "downscaling" works available⁷, often called for by decision-makers and / or put forward by climate scientists as a means of obtaining more precise information that can be used locally, have not proved more easily usable.

What does a 0.3 °C difference in air temperature (between global models and the downscaling) at the end of the century for a given IPCC RCP scenario mean in practice, for which stakeholders facing which decisions? How does a 20% drop in precipitation for a given scenario at the end of the century in the Great South of New Caledonia question project activities - while it is not for example the time horizon of investments to fight against fires?



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⁷ See e.g. Dutheil, C. 2018. Impacts du changement climatique dans le Pacifique Sud à différentes échelles spatiales : précipitations, cyclones, extrêmes. IRD, PhD dissertation.

⁸ See Dutheil 2018, op. cit.

While a projected increase in the frequency and / or intensity of cyclones reinforces the need to prepare for them, does a decline in one or the other decrease this need? These are all questions that reflect the long way to go for more mutually beneficial collaborations between practitioners and climate scientists.



TABU AREA, VANUATU

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What next?

The usefulness and legitimacy of project activities, co-constructed with national authorities and local stakeholders, are not questioned at the end of the project. Overall, they were perceived as "adaptation-relevant". The degree of this relevance is apprehended in a rather vague way, despite the efforts made to refine the analysis. However, it would still seem justified that other projects with similar logic and activities could continue to be funded in the Pacific islands under the adaptation pillar of international climate action.

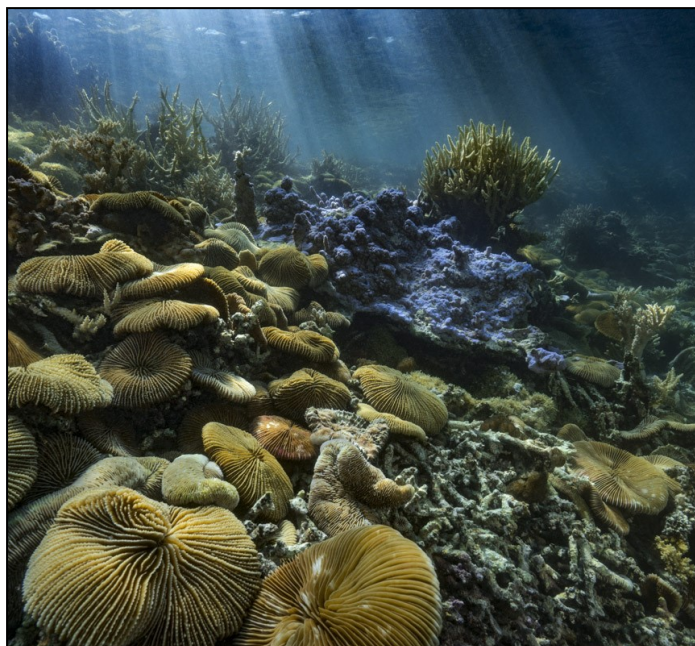


KADAVU, FIJI

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Nevertheless, fundamental questions are looming. While nature-based solutions, which have been at the heart of the project's intervention, rightly represent a priority for many stakeholders well beyond the Pacific, they are grounded on at least two strong assumptions:

- An assumption of effectiveness to increase the resilience of ecosystems, which is debated in the scientific world. What if marine protected areas did little to increase the resilience of coral reefs⁹?
- An assumption of long-term relevance, since their virtue is to be no-regret and robust whatever the future climate. But will the ecosystems considered thrive or even survive, thanks to better local management, facing climate change? What if 70 to 90% of the world coral reefs were bound to die when air temperature increase reaches + 1.5 °C¹⁰, which should happen between 2030 and 2052 if global warming continues at the current pace?



CORAL REEF, FRENCH POLYNESIA

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We cannot conclude this note on the approach of climate change declined in practice by RESCCUE without recalling the compelling need of a drastic and rapid reduction of global greenhouse gases emissions – the only real solution to the existential threat posed by climate change to the Pacific islands.

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⁹ Bruno, J.F., Coté, I., Toth, L.T. 2019. Climate Change, Coral Loss, and the Curious Case of the Parrotfish Paradigm: Why Don't Marine Protected Areas Improve Reef Resilience? *Annual Review of Marine Science* 11:307–34.

¹⁰ IPCC. 2018. Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*