



# Status of coral reef monitoring

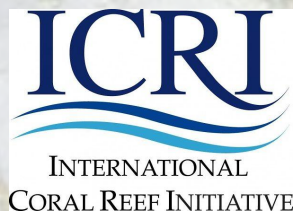
## An assessment of methods and data at the national level

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# Recent findings of the GCRMN consortium and threats to coral reefs

Increasing SST, leading to bleaching, is the most important threat to coral reefs

Global decline of the coral reef cover since 2010

A relative resiliency of the reefs is observed and recovery is possible if the conditions are favorable

The percentage of coral cover and the species richness may confer a degree of natural resistance to increasing SST



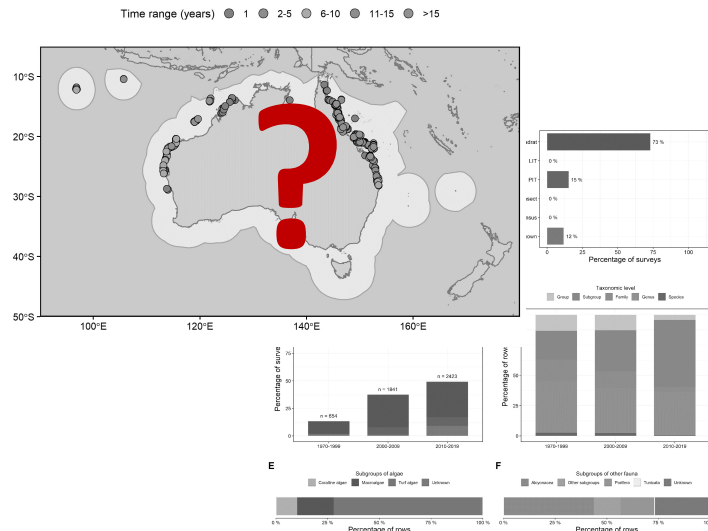
**Importance to properly monitor coral reefs and collect field data that reflect the changes in coral reef communities**



# Providing insight on the data compiled by the GCRMN with respect to the ICRI recommended indicators

1. Provide a quantitative assessment of the data compiled by the GCRMN

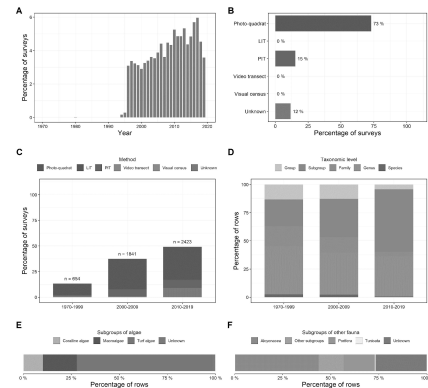
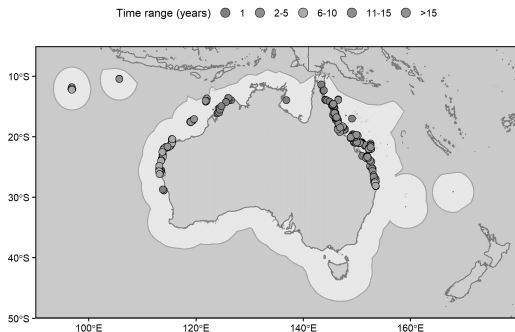
2. Provide an assessment of the status of implementation of the ICRI recommended indicators for 30 countries



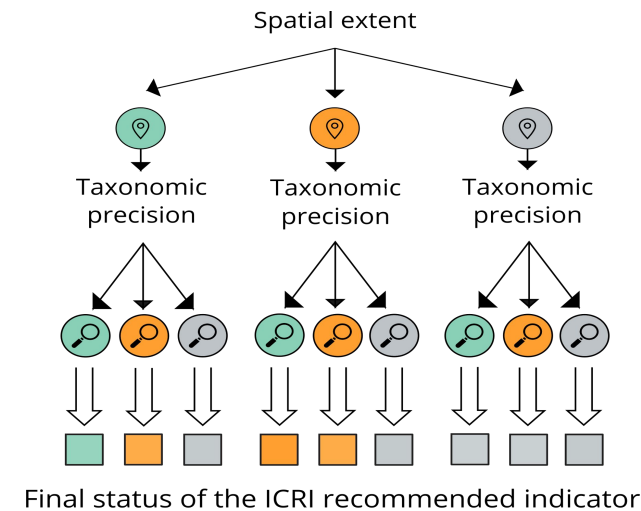
# Methods used to analyse the data and assess the availability of the ICRI recommended indicators at the national level

## 1. Evaluation of the data

- Characterization of the spatial and temporal scale of the monitoring
- Identification of the methods used
- Characterization of the taxonomic resolution of the data



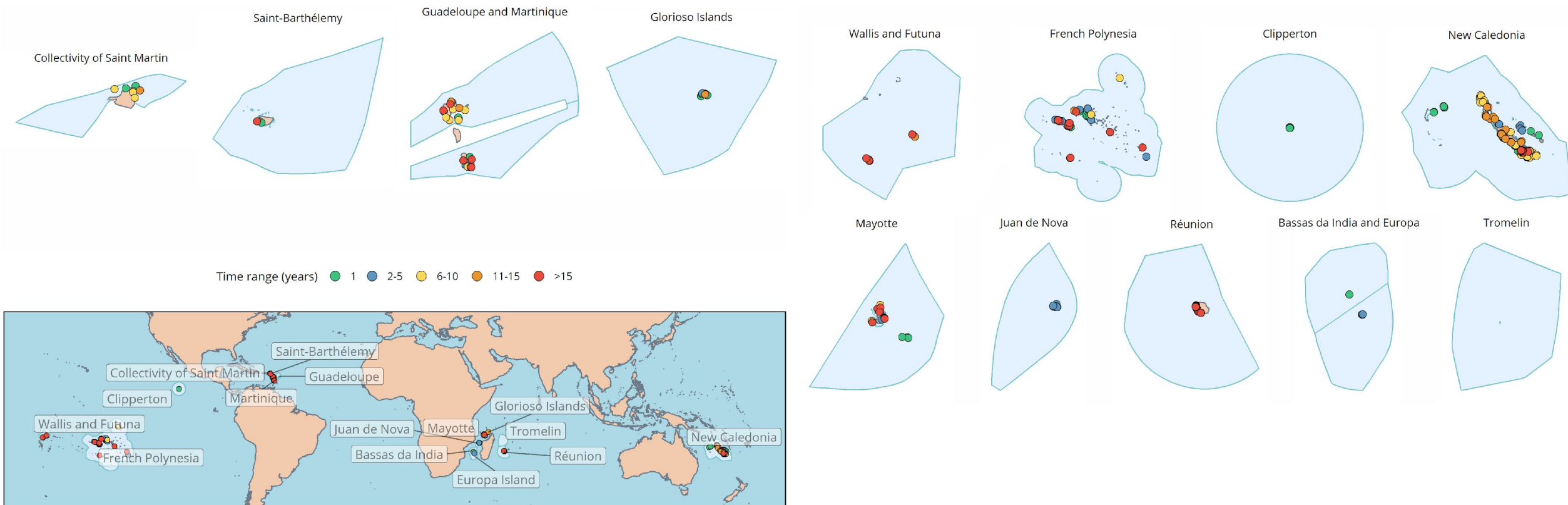
## 2. Identification of four criteria to characterize the ICRI recommended indicators and elaboration of a decision tree based on the value of 2 out of the 4 criteria



Indicator	Available	Not yet available	Unknown
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# The exemple of the French overseas territories

## Description of the available data



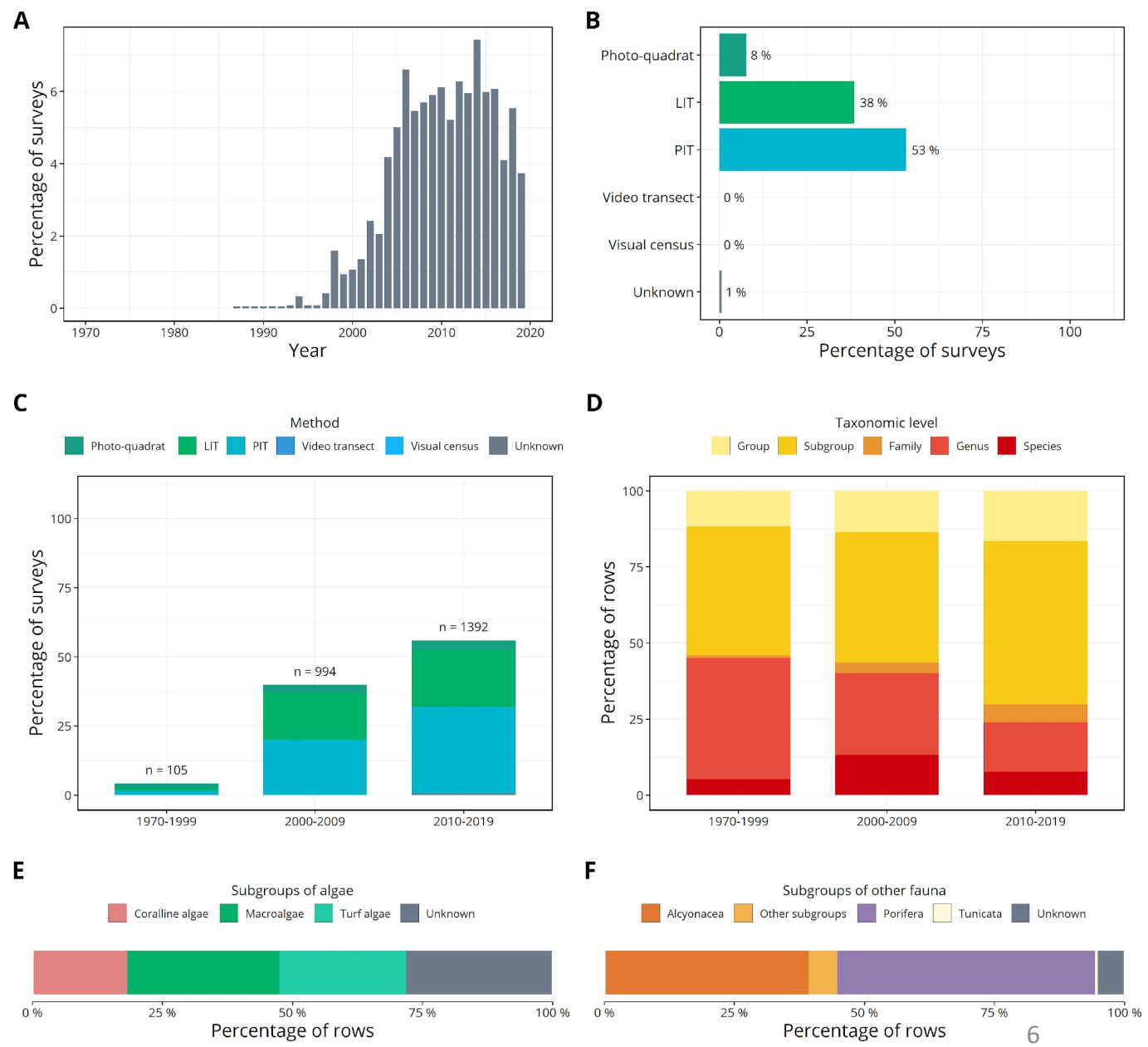
**Figure 1.** Location and duration of monitoring at each site included in the 2020 GCRMN world report database.

# The exemple of the French overseas territories

## Description of the available data

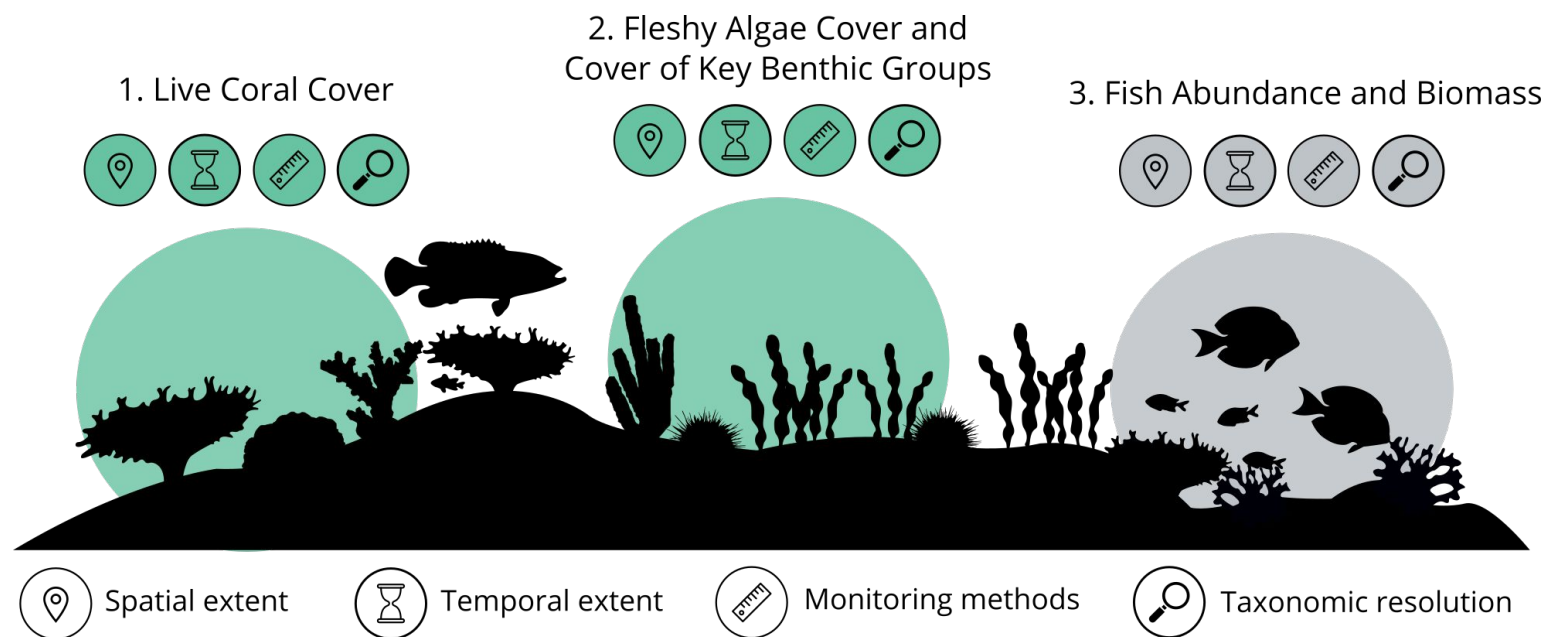
Figure 2.

- A. Percentage of the total number of surveys conducted each year
- B. Percentage of the total number of surveys conducted using each method
- C. Evolution of the use of monitoring methods by time period with the number (n) of surveys conducted during each period
- D. Distribution of taxonomic precision by time period
- E. Proportion of observations made to at least the subgroup level when describing the algae cover
- F. Proportion of observations made to at least the subgroup level when describing the main taxa represented in the group “Other fauna”.



# The exemple of the French overseas territories

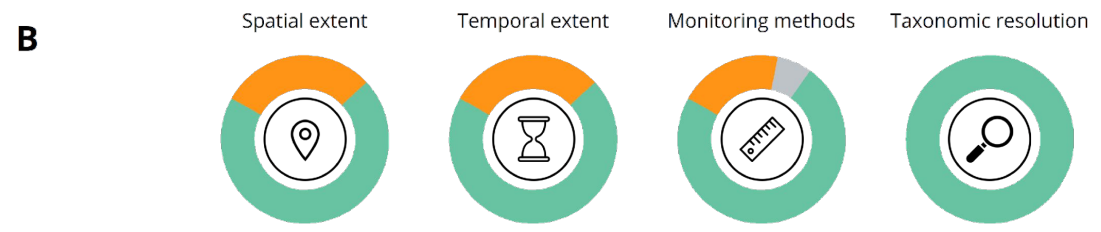
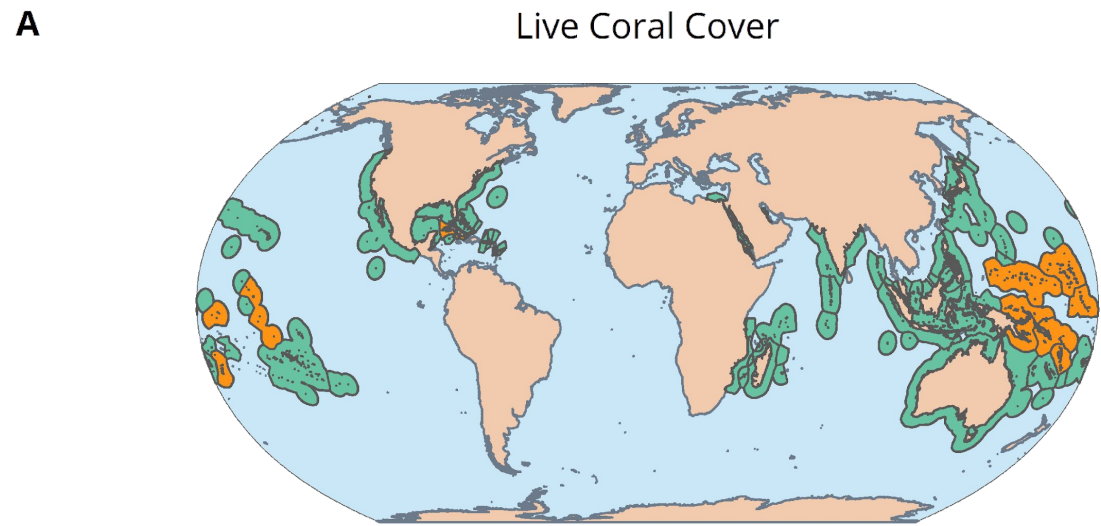
Analysis of the data coverage with respect to the ICRI coral reef indicators and recommendations



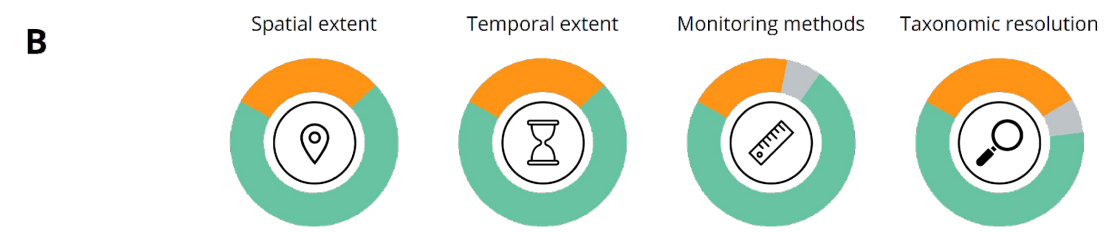
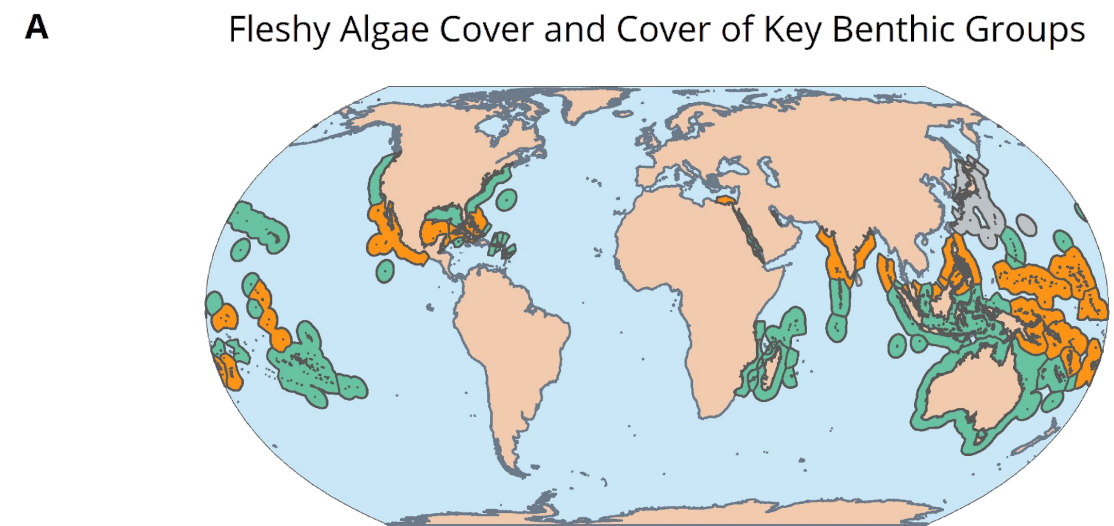
**Figure 3.** ICRI recommended coral reef indicators and their status of implementation at the country level.



# Availability of the ICRI recommended indicators « Live Coral Cover » and « Fleshy Algae Cover and Cover of Key Benthic Groups »



Available at the country level for **21** out of the 30 pilot countries  
Limiting factor: **spatial extent**



Available at the country level for **13** out of the 30 pilot countries  
Limiting factors: **spatial extent and taxonomic resolution**



## Future targets to improve the monitoring of coral reefs

**Issue:** Heterogeneity of the monitoring (monitoring effort, methods used, taxonomic resolution of the data), main obstacle for the inclusion of data in global databases.

### **Solutions:**

- Continue the centralization effort of the data, as some existing datasets were not contributed to the GCRMN.
- Standardize monitoring protocols (at the national level) and include the monitoring of the ICRI recommended indicators in future protocols.
- Prefer the use of image-based methods.
- Increase the taxonomic resolution of the observations to be able to monitor the indicator « Fleshy Algae Cover and Cover of Key Benthic Groups ».