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Evaluating the impact of an awareness campaign using the MARECO teaching toolbox

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DIDEM program

Regional thematic school on the Vulnerability of Reef heritage

Evaluating the impact of an awareness campaign
using the MARECO teaching toolbox

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June 10, 2024 – Blue Economy Research University of Seychelles



Introduction

Coral reefs are facing major threats

Scientific community alert society and decision makers of environmental degradation
BUT these results are often ignored by decision-makers

- **Empowerment of society including young generation** through education and strengthened awareness of coral reef issues
- A **teaching toolbox** has been developed with a goal to disseminate and communicate results of research conducted on coral reefs.



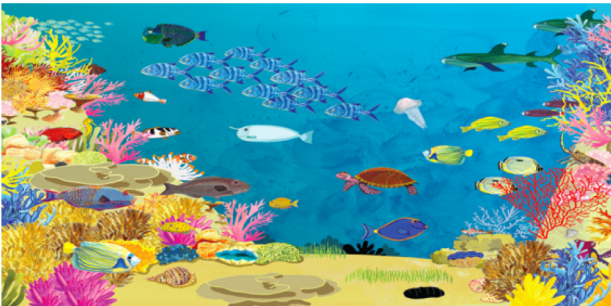
Teaching toolbox MARECO

Coral Reefs in our Hands

Le Récif Corallien entre nos mains

Evaluating the impact of an awareness campaign on the representation of coral reefs for children (7- 8 years, second grade CE2)

Interdisciplinary collaboration





French National Research Institute for Sustainable Development

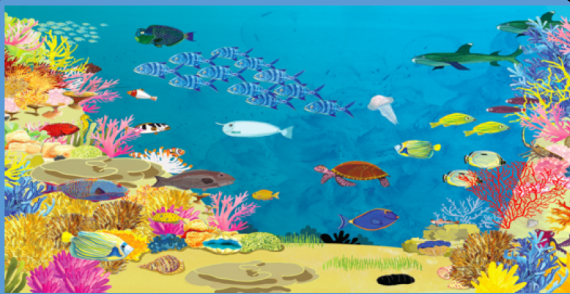


MARECO

Le Récif Coralliens entre nos Mains

The Coral Reef In Our Hands

Scientific directors
Pascale CHABANET & Jocelyne FERRARIS



Album « Les couleurs du récif »
Picture book « The Colours of the Reef »



Jeu de cartes « Les 7 Familles du Récif »
Card game « Coral Reef Happy Families »



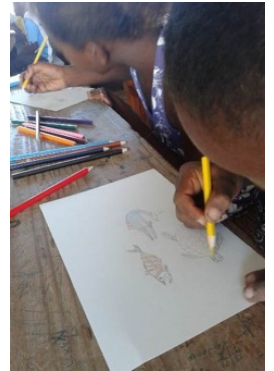
Jeu de plateau « Rendez-vous au récif »
Board game « See You At the Reef »

Methodology

Second grade children (7- 8 years)

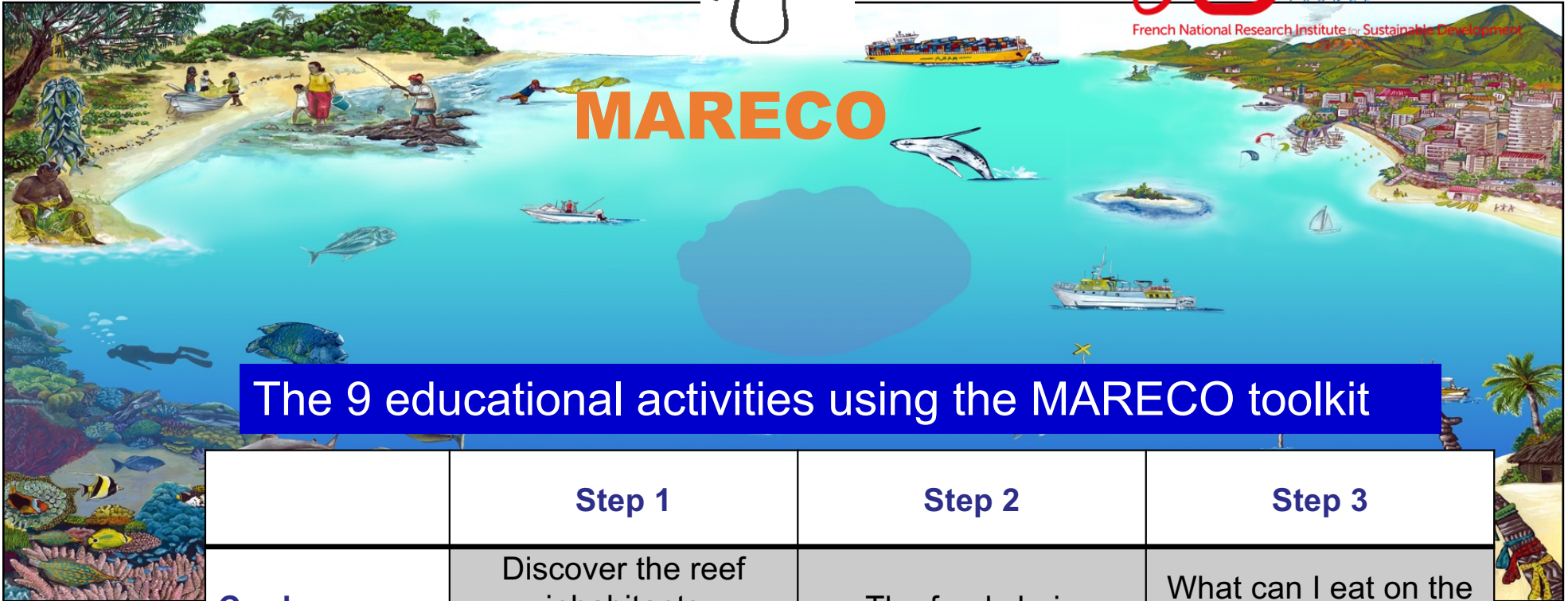
Drawing tasks:

- **1st Step: 1 drawing before using the toolbox**
“Draw the sea” and “Draw the coral reef” (1)
Census and interviews
- **2nd step : 3 activities around MARECO**
20 min each, each game used thrice
The toolbox was left with the teacher for 2 months





French National Research Institute for Sustainable Development



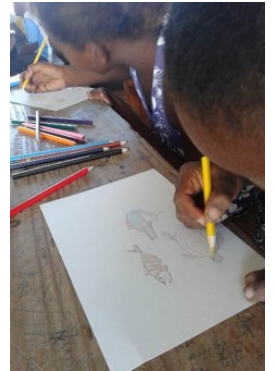
	Step 1	Step 2	Step 3
Card games	Discover the reef inhabitants	The food chain	What can I eat on the reef ?
Picture book	Discover the coral reef ecosystem	The colour of an healthy reef	The pollution of the reef
Board Game	The reef degrades quickly in absence of collaboration	Reef users and their impact on reef	See you at the reef!

Methodology

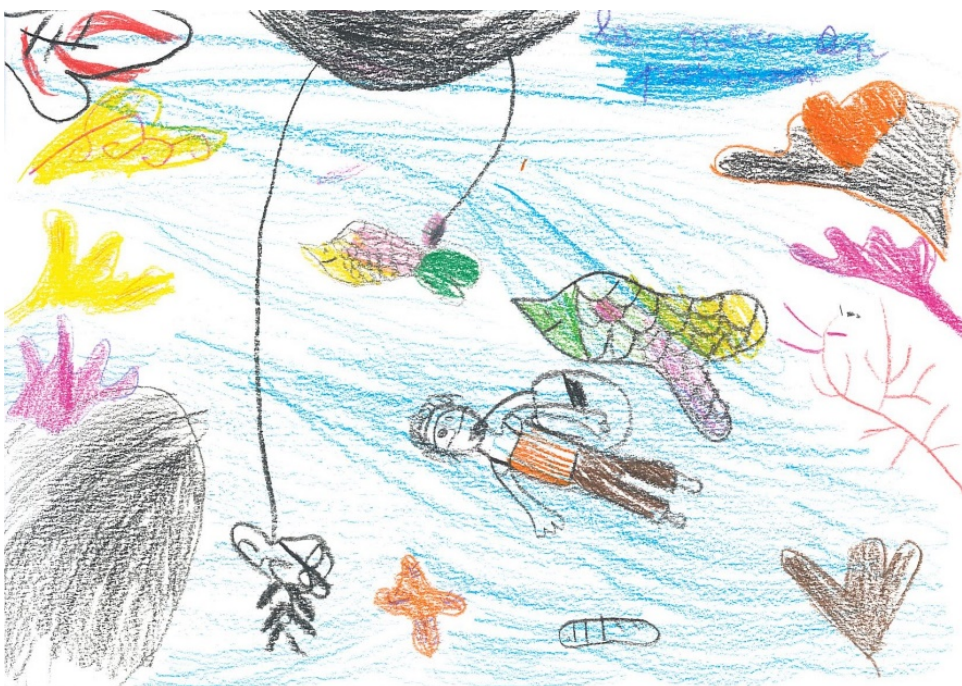
Second grade children (7- 8 years)

Drawing tasks:

- **1st Step: 1 drawing before using the toolbox**
“Draw the sea” and “Draw the coral reef” (1)
Census and interviews
 - **2nd step : 3 activities around MARECO**
20 min each, each game used thrice
The toolbox was left with the teacher for 2 months
 - **3rd step: 1 drawing after using the toolbox**
“Draw the coral reef” (2)
Census and interviews, questionnaires for teachers
- > **1,300 drawings have been done** => analyse how they perceived coral reefs in relation to their own experience and knowledge



Reading grid



Reef 2: Mathilde, école Anatole France, Perpignan

Title: "The sea with fish"

Census: 1 diver, 1 boat, 1 fishing line, flip flop, coral, soft coral, sea cucumber, stones, seaweed, fish, starfish

Themes:

Flora
 Terrestrial fauna
Marine fauna
 Infrastructure
 Earth
 Environment
Human Activities
 Number of colours
 Biological life cycle

Yes
 No
 Yes
 No
 No
 Yes
 Yes
 6/8
 No

Descriptors:

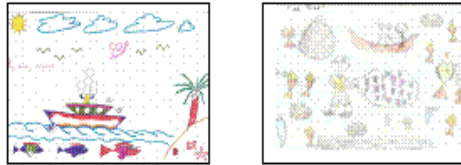
Marine fauna
 Nb of types
 Nb of species
 Nb of individuals
Human Activities
 Nb of people
 Nb of users
 Nb of type of activities
 Nb of technological elements
 Nb type of boats

6
 10
 12

 1
 1
 2
 4
 1

DATA ANALYSIS

Nature representation (drawings, interviews)

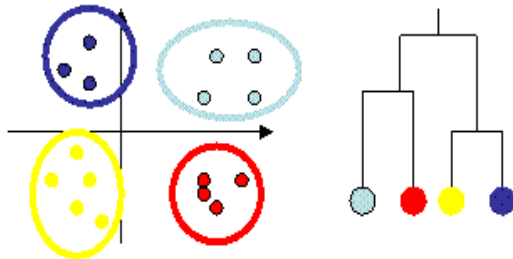


Reading
Grid

Interdisciplinary analyses : anthropology, biology,
ethno-ecology, biostatistics

Qualitative and quantitative analysis of drawings

Comparative analysis



Multivariate
analysis

MARECO impact

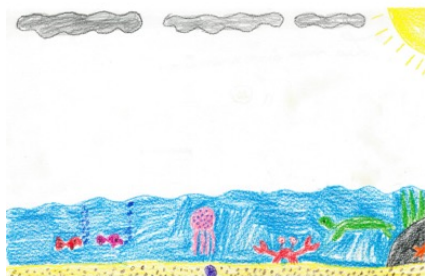


Statistical tests

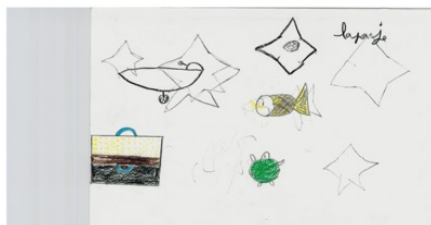
Identification of the representation of children according to different
factors
Changes in knowledge, behaviour, uses, ...

RESULTS

Mer



Récif 1



Récif 2



Hermitage La Réunion



St Pierre La Réunion

Kaweni, Mayotte

Principal Component Analysis

249 drawings (NC) – 9 quantitative variables / coordinates of individuals

Themes:

Flora

Terrestrial fauna

Marine fauna

Infrastructure

Earth

Environment

Human Activities

Number of colours

Biological life cycle

Descriptors:

Marine fauna

Nb of types

Nb of species

Nb of individuals

Nb of colors

Human Activities

Nb of people

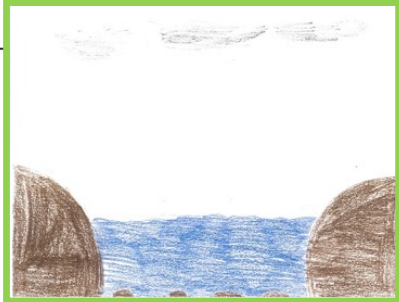
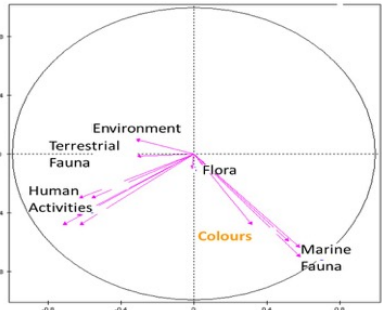
Nb of users

Nb of type of activities

Nb of technological elements

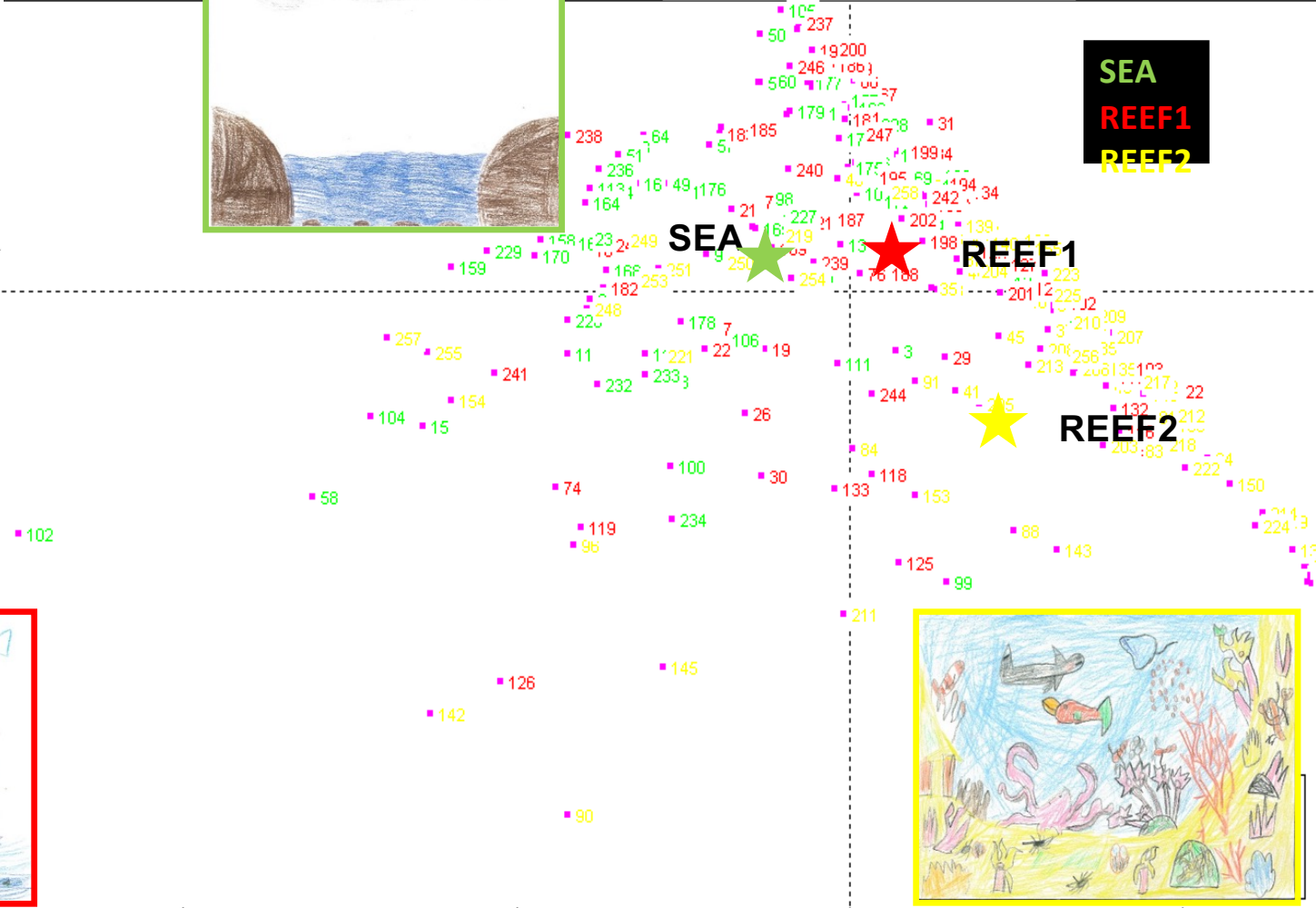
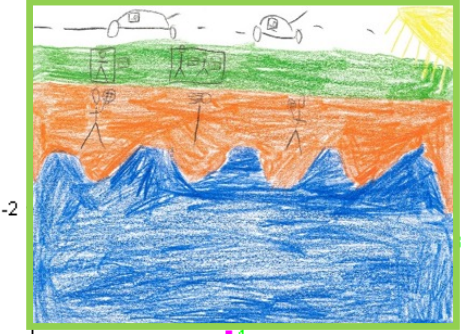
Nb type of boats

Factor 2 = 17.9



New Caledonia

SEA
REEF1
REEF2

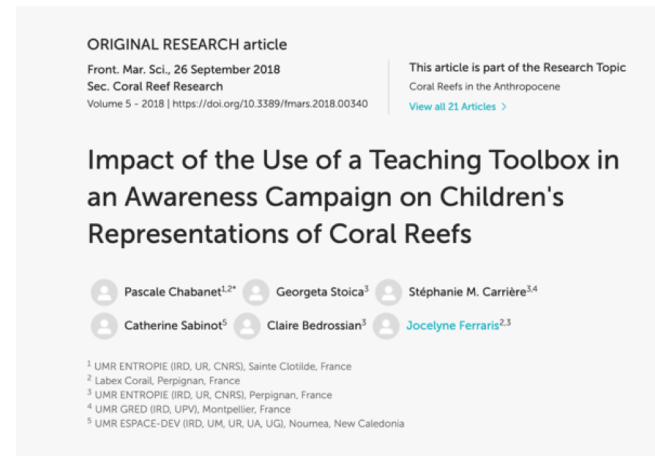


Factor 1 = 25.2%
Facteur 1

Results

- **New Caledonia:** heterogeneity between schools, good knowledge of reefs in "privileged" urban areas *versus* in rural areas with more focus on land
- **Madagascar :** informal education knowledge, children know very well the coral reefs, rich representation of the reef biodiversity in the drawings
- **Mayotte :** an empty sea except some cases (« You told to draw the sea! The sea is blue! »)

To go deeper



Conclusion

Mareco's impact is very clear on children's' representations:

- increased marine biodiversity and number of colours in drawings,
- main effects came from picture book and card game,
- impact of the board game should probably go through role-playing

Next step: Let's go to the sea with the scientists !





Vanuatu, 2007



Mayotte, 2014



Reunion Island, 2024

Thank you for your attention!