Developing Ocean and Climate Change Literacy

South Pacific Style

Carol Young

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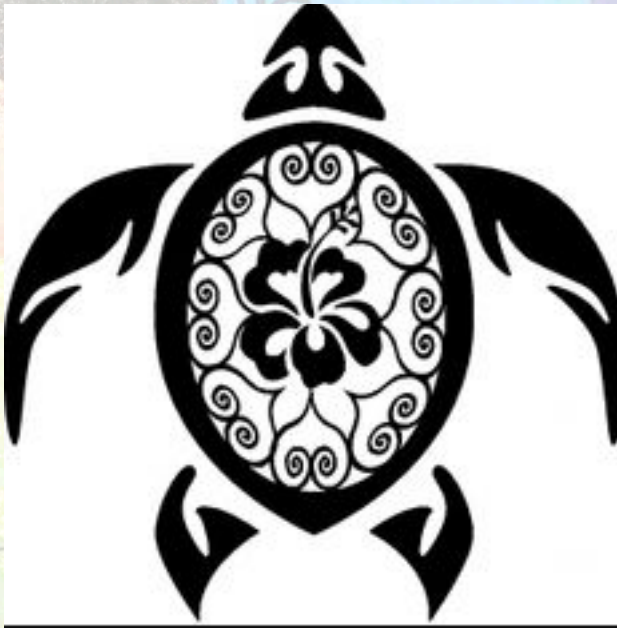


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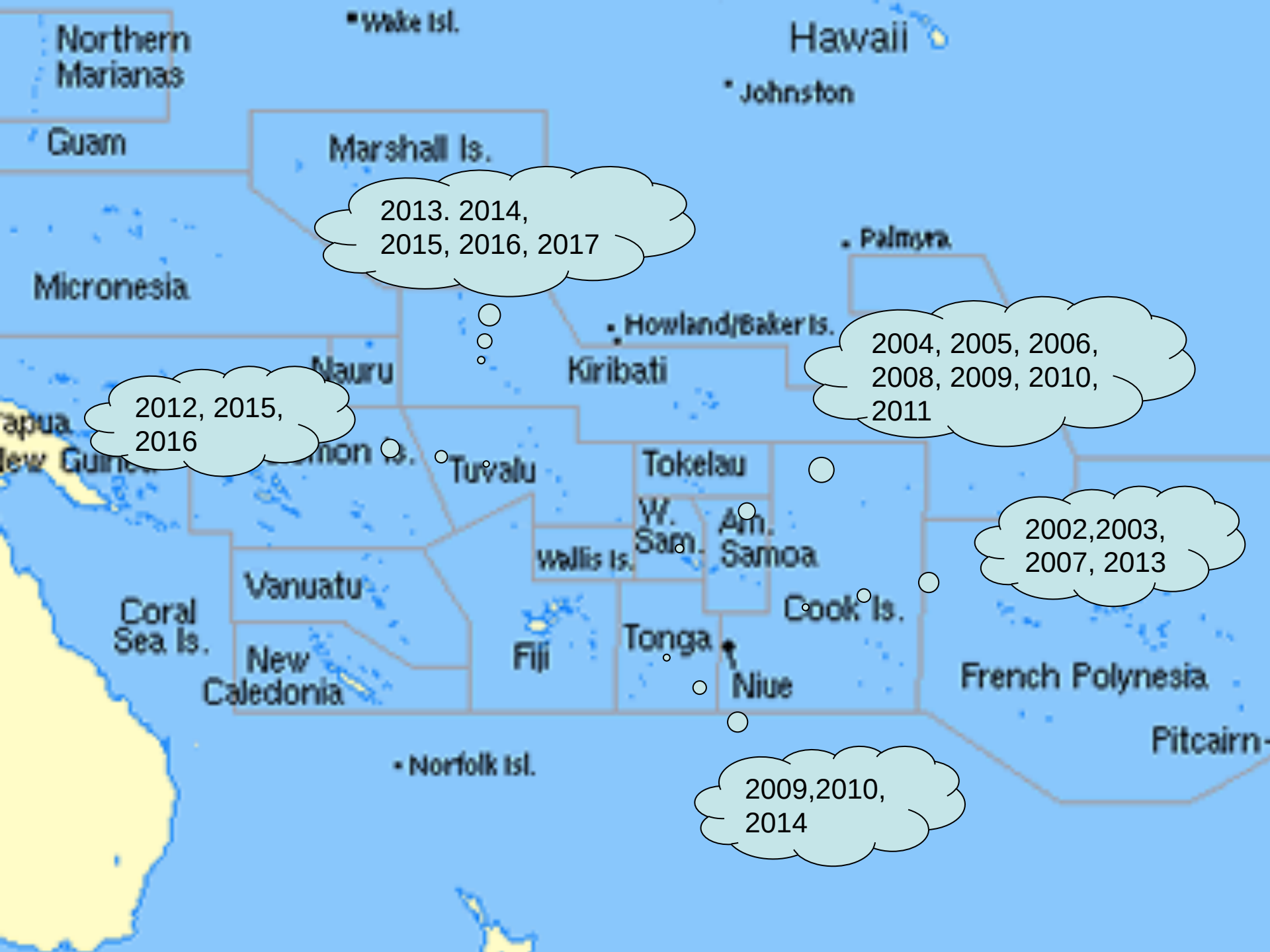
Scientific Educational Resources And Experience Associated with the Deployment of Argo Drifting Floats

An organisation supported by:

- **NIWA**
- **NOAA**
- **NASA**
- **POGO**
- **ARGO**

(Scripps Institute of Technology)

- **UNESCO**
- **SOPAC**
- **IOI**


Northern Marianas
Wake Isl.
Hawaii
Johnston
Guam
Marshall Is.
2013. 2014, 2015, 2016, 2017
Palmyra
Micronesia
Howland/Baker Is.
2004, 2005, 2006, 2008, 2009, 2010, 2011
Nauru
Kiribati
2012, 2015, 2016
Tuvalu
Tokelau
W. Sam.
Am. Samoa
2002,2003, 2007, 2013
Wallis Is.
Vanuatu
Cook Is.
Coral Sea Is.
Fiji
Tonga
New Caledonia
Niue
French Polynesia
Norfolk Isl.
2009,2010, 2014

Our original brief:

- Introduce ARGO floats and the data they produce
- Produce resources for teachers to explain the causes and effects of climate change and sea level rise
- Encourage schools to “adopt a float” and download data

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The Key Tenants:

Adaptable and ongoing

Focus on how children learn.

Develop teacher's knowledge of climate change and the role of the ocean.

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Use workshops that provide opportunities for exploration and discussion:

Provide teachers with ways to use everyday materials to carry out practical activities in their classrooms.

Take into account children's ideas.

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Children see the learning as valuable

Where to start?

- The Water Cycle.
- What is Weather?
- What is Climate?
- Theory and practical components

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With that came ironing out misconceptions.

- Will ocean levels rise when the ice caps melt?
- Ocean currents - how far do they travel?
- Can what happens in the Arctic/Antarctic really affect our weather?
- What is El Nino / La Nina?

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How was the learning split?

- 3 booklets with activities, resources and information.
- Junior Primary: What is Weather?
- Upper Primary: What is Climate?
- Junior Secondary: Oceans and Us.
- Water, Weather and Climate Change
- Blackline Masters

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Lower Primary School Activities

- Does ice lose weight when it melts?
- Puddles
- Where does water go?
- Is there water in air?
- Making Clouds

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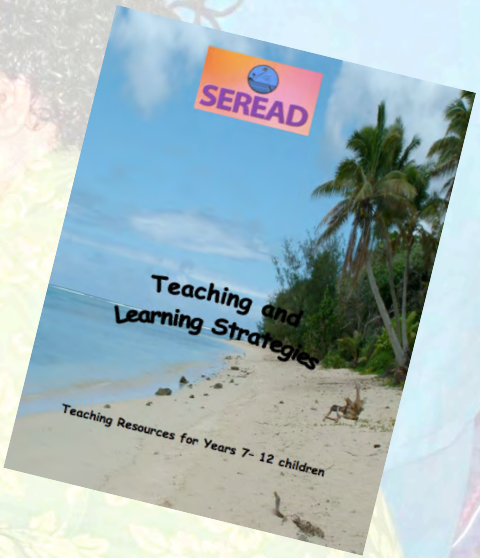
Upper Primary School Activities

- Which heats up faster, land or sea?
- Air on the move
- Which way does heat move in the water?
- Argo floats
- What's on the weather map?



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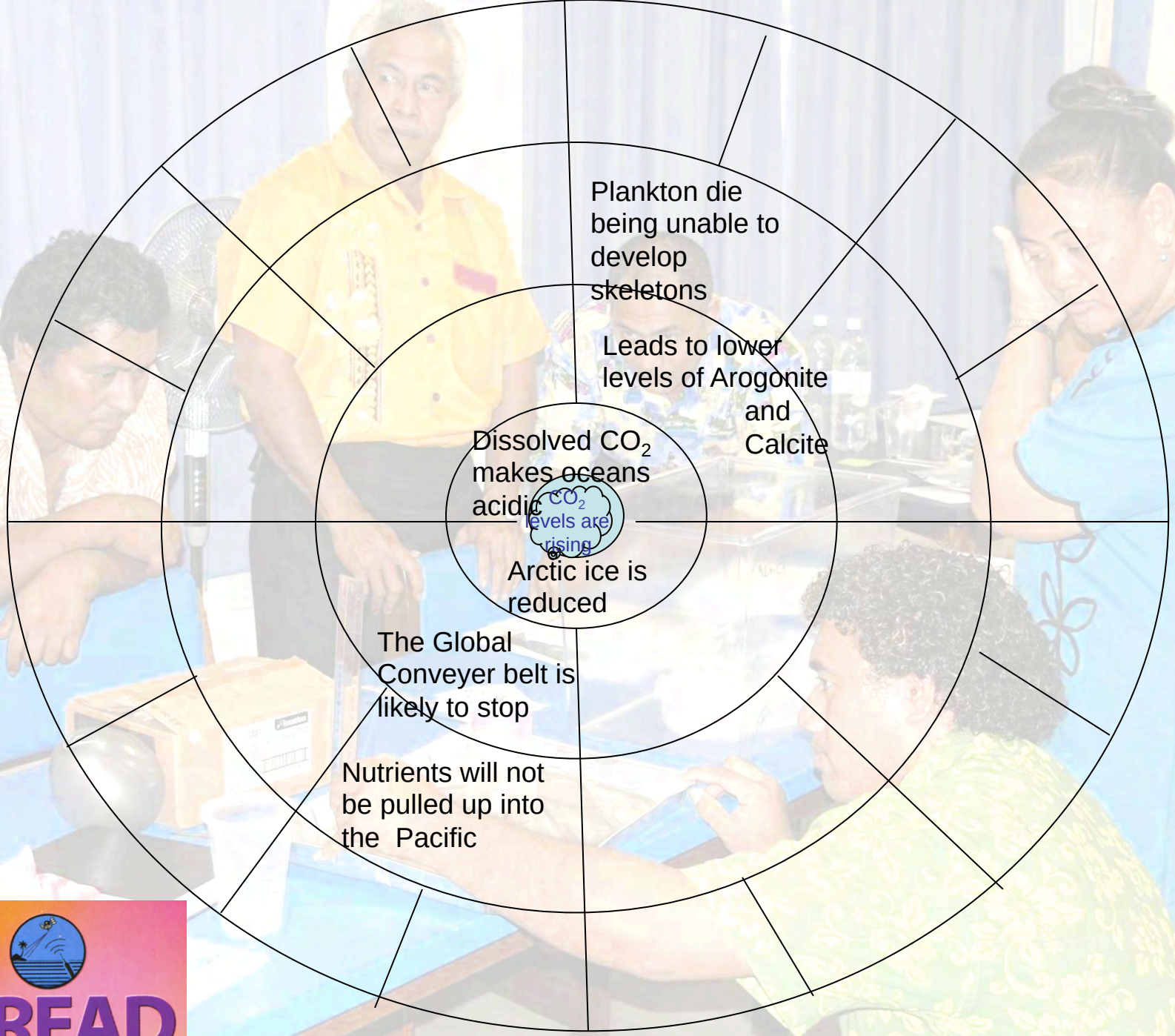
Plankton die being unable to develop skeletons
Leads to lower levels of Arogonite and Calcite
Dissolved CO_2 makes oceans acidic
CO_2 levels are rising
Arctic ice is reduced
The Global Conveyer belt is likely to stop
Nutrients will not be pulled up into the Pacific

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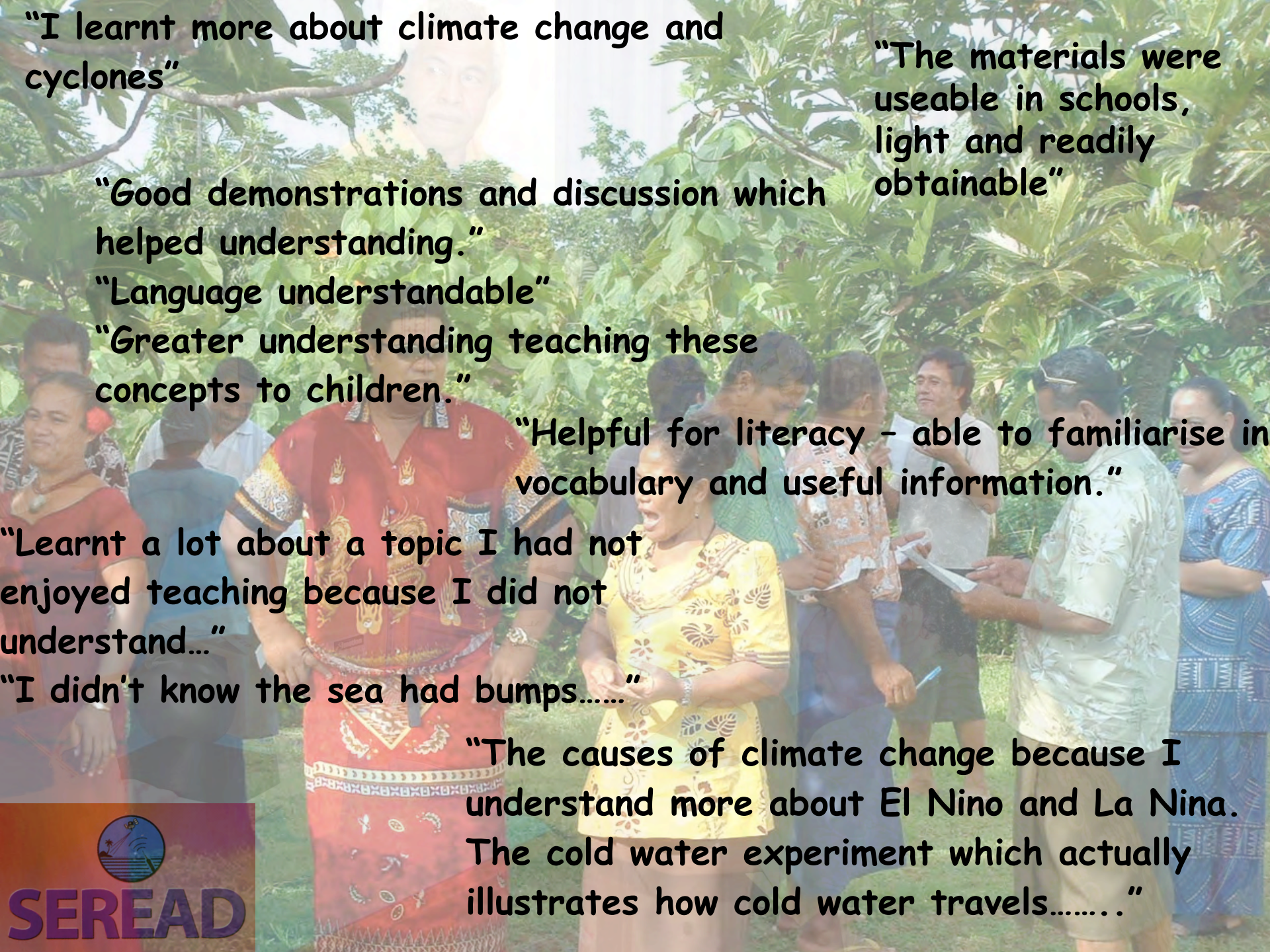
"I learnt more about climate change and cyclones"
"The materials were useable in schools, light and readily obtainable"
"Good demonstrations and discussion which helped understanding."
"Language understandable"
"Greater understanding teaching these concepts to children."
"Helpful for literacy – able to familiarise in vocabulary and useful information."
"Learnt a lot about a topic I had not enjoyed teaching because I did not understand…"
"I didn't know the sea had bumps……"
"The causes of climate change because I understand more about El Nino and La Nina. The cold water experiment which actually illustrates how cold water travels……."
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