Coral Reef
Red List of Ecosystems

International Coral Reef Initiative Online Meeting

14th March 2024

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Applications of the RLE

Conservation : Systematic & Strategic risk assessments
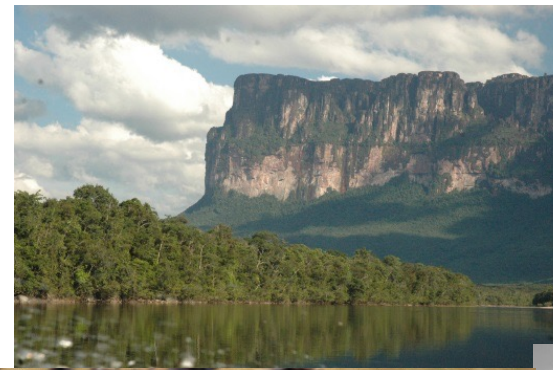 Identify ecosystems at high risk
 Identify key processes & threats
 Enact legislation to protect threatened ecosystems
 Identify management actions

Global environmental reporting : track progress towards achieving international environmental targets – Global Biodiversity Framework Goal A, Target 1 and 15 other targets

Public sector: inform the public about the current state of ecosystems and their future prognosis

The RLE, coral reefs and the KM-GBF

Roles of the Red List of Ecosystems in the Kunming-Montreal Global Biodiversity Framework

Emily Nicholson [1,2,3] ✉, Angela Andrade [3,4], Thomas M. Brooks [5,6,7], Amanda Driver[8], José R. Ferrer-Paris [3,9,10], Hedley Grantham[9,11], Mishal Gudka[1,2,12], David A. Keith [3,9], Tytti Kontula[13], Arild Lindgaard [14],

The role of the RLE in the GBF in relation to concepts, indicators and interpretation

Kunming-Montreal Global Biodiversity Framework
Adopted at COP15, 19 December 2022.

Headline Indicator A2 – Red List of Ecosystems

Vulnerability to collapse of coral reef ecosystems in the Western Indian Ocean

David Obura [1,2] ✉, Mishal Gudka[1], Melita Samoilys[1,3], Kennedy Osuka [1], James Mbugua[1], David A. Keith [4], Sean Porter[5], Ronan Roche [6], Ruben van Hooidonk [7,8], Said Ahamada[9], Armindo Araman[10], Juliet Karisa[11], John Komakoma[12], Mouchtadi Madi[13], Isabelle Ravinia[14], Haja Razafindrainibe[15], Saleh Yahya[16] and Francisco Zivane[17]

Detailed methodology (in Supplementary Material) on how to apply the RLE in coral reef contexts, providing a template for regional adaptation/specification
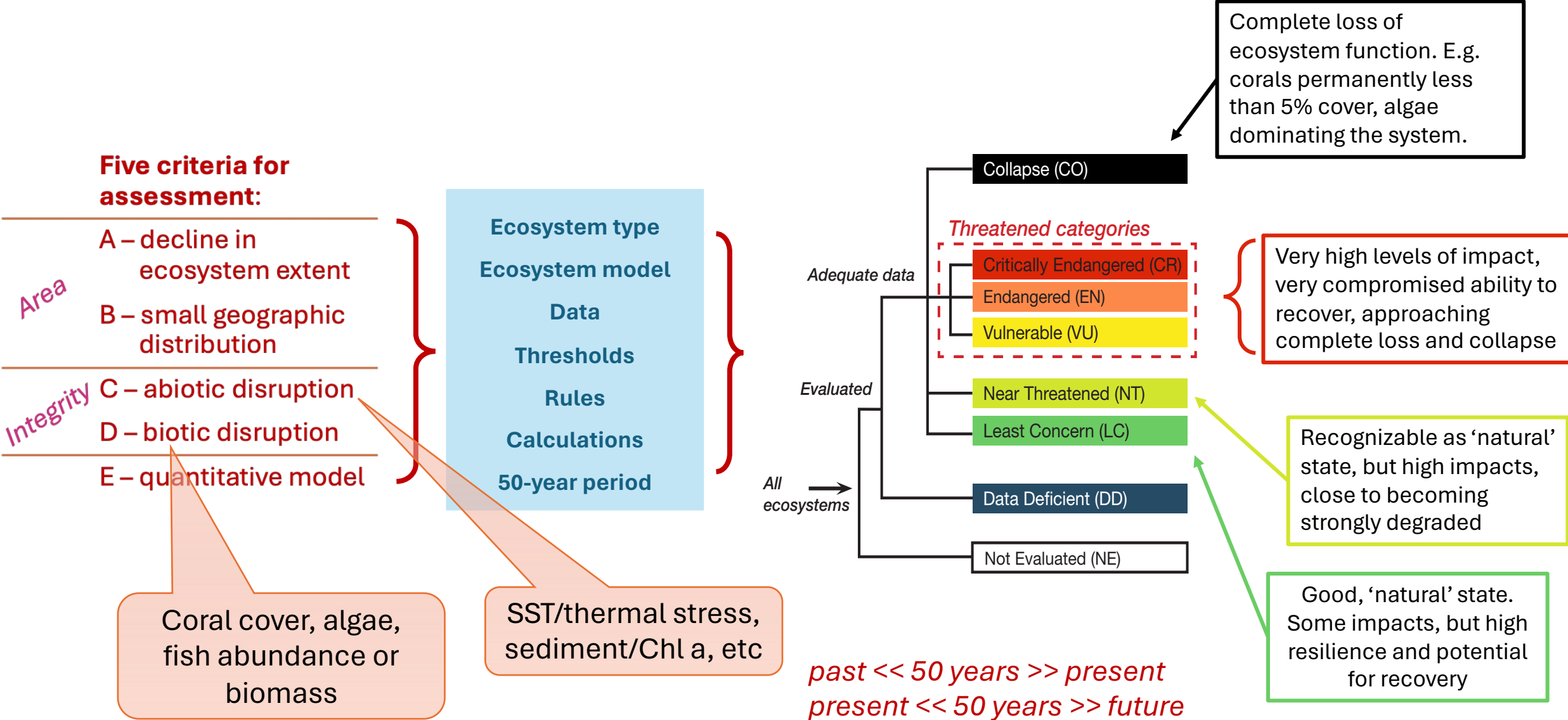
How the RLE Works

Five criteria for assessment:

Area
- A – decline in ecosystem extent
- B – small geographic distribution

Integrity
- C – abiotic disruption
- D – biotic disruption
- E – quantitative model

Ecosystem type
Ecosystem model
Data
Thresholds
Rules
Calculations
50-year period

Coral cover, algae, fish abundance or biomass

SST/thermal stress, sediment/Chl a, etc

Collapse (CO)

Complete loss of ecosystem function. E.g. corals permanently less than 5% cover, algae dominating the system.

Threatened categories
- Critically Endangered (CR)
- Endangered (EN)
- Vulnerable (VU)

Very high levels of impact, very compromised ability to recover, approaching complete loss and collapse

Adequate data

Near Threatened (NT)
Least Concern (LC)

Recognizable as 'natural' state, but high impacts, close to becoming strongly degraded

Evaluated

Data Deficient (DD)

All ecosystems

Not Evaluated (NE)

Good, 'natural' state. Some impacts, but high resilience and potential for recovery

past << 50 years >> present
present << 50 years >> future
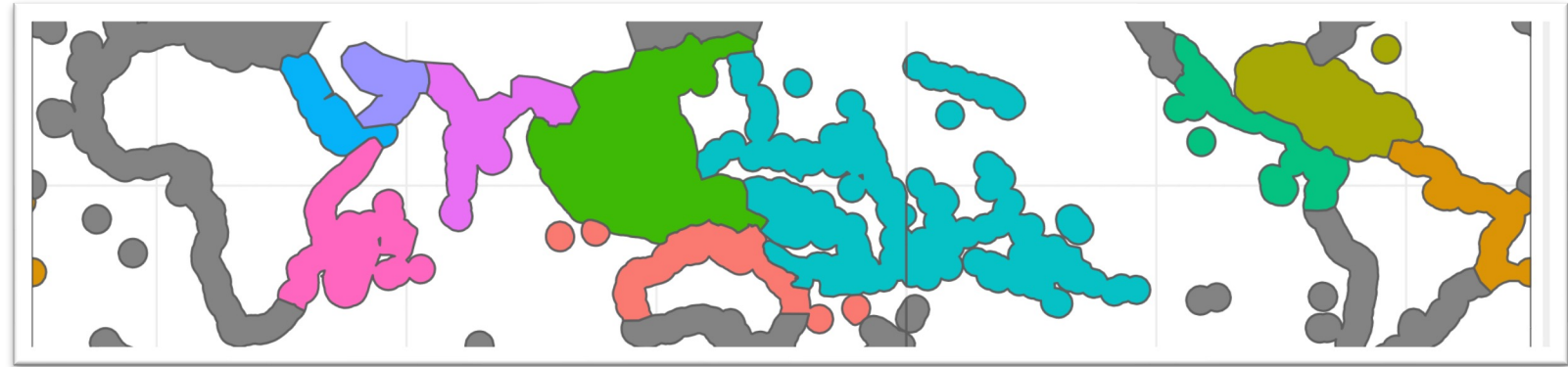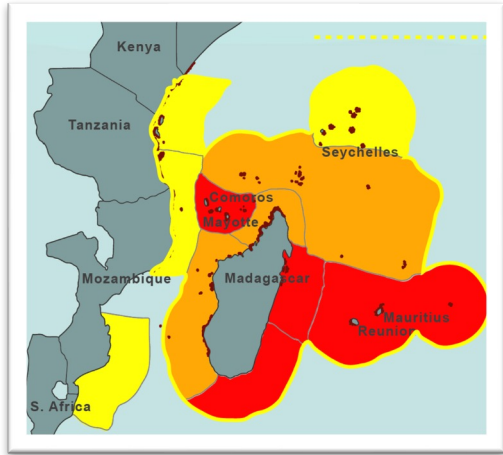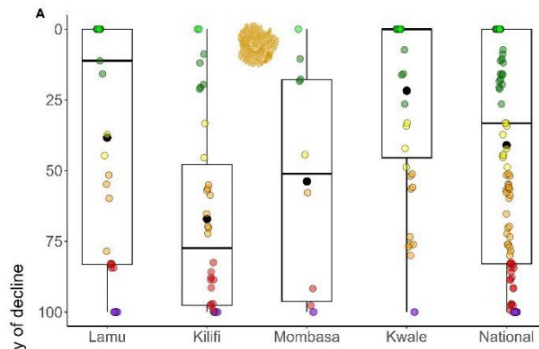
What now?

All ecoregions are in threatened categories
- **VU** – 4 ecoregions ⟶ fishing
- **EN** – 3 ecoregions ⎫
- **CR** – 4 ecoregion ⎬ warming

Regional (WIO)

- WIO analysis completed.

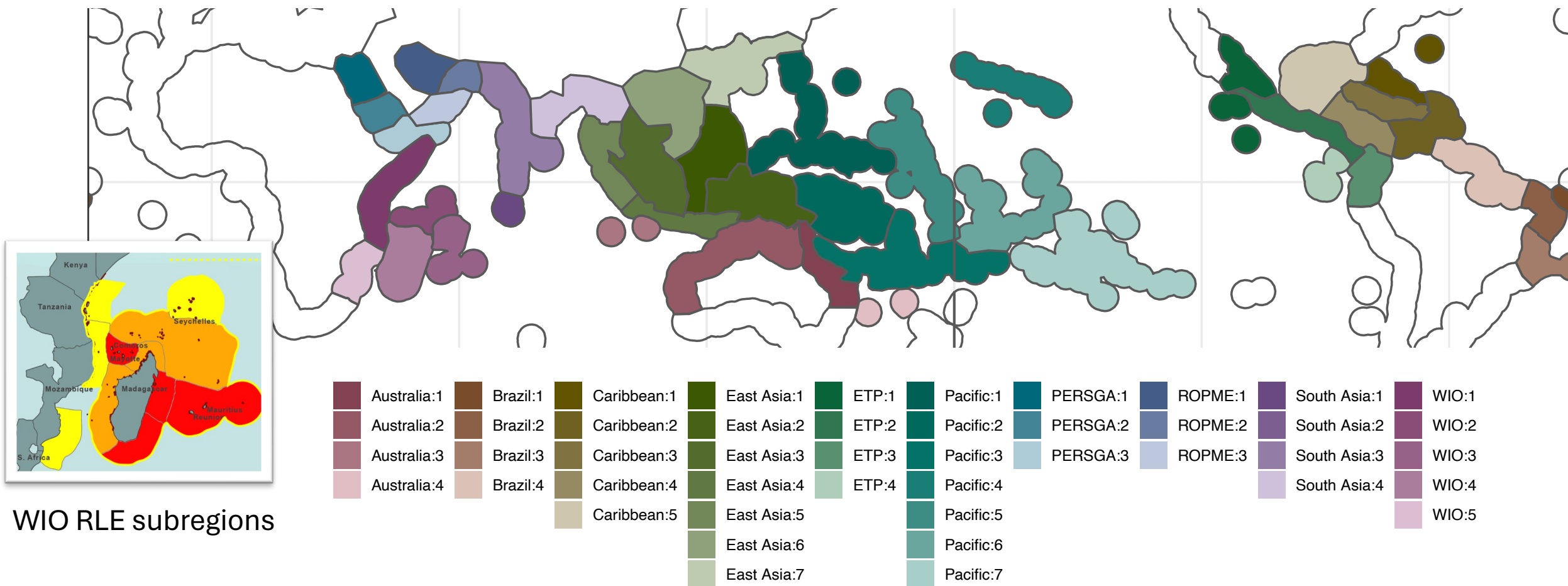- 'National Coral Reef Assessments' underway in – Kenya, Tanzania, Mozambique, Madagascar and Comoros

Global

- Engage with GCRMN global reporting for 2024 (coral, algae; with regional nodes for fish)

- Supplementary work stream to push analysis through RLE code repository -> regional RLE outputs/reports

- Ad-hoc Technical Expert Group developing v. strong metadata/instructions for production of headline indicators (RLE)

  - ??Target to achieve global coverage based on 2024 update??

  - ??Priority support for countries in national reporting to KM-GBF??

GCRMN reg

- These are the subregions used in 2020 (MEOW province <> ecoregion)
- Will it be the same in 2024?
- Do we want some smaller subregions for RLE outputs (as done in WIO – 11 rather than 5)

WIO RLE subregions

Australia:1	Brazil:1	Caribbean:1	East Asia:1	ETP:1	Pacific:1	PERSGA:1	ROPME:1	South Asia:1	WIO:1
Australia:2	Brazil:2	Caribbean:2	East Asia:2	ETP:2	Pacific:2	PERSGA:2	ROPME:2	South Asia:2	WIO:2
Australia:3	Brazil:3	Caribbean:3	East Asia:3	ETP:3	Pacific:3	PERSGA:3	ROPME:3	South Asia:3	WIO:3
Australia:4	Brazil:4	Caribbean:4	East Asia:4	ETP:4	Pacific:4			South Asia:4	WIO:4
		Caribbean:5	East Asia:5		Pacific:5				WIO:5
			East Asia:6		Pacific:6				
			East Asia:7		Pacific:7				