

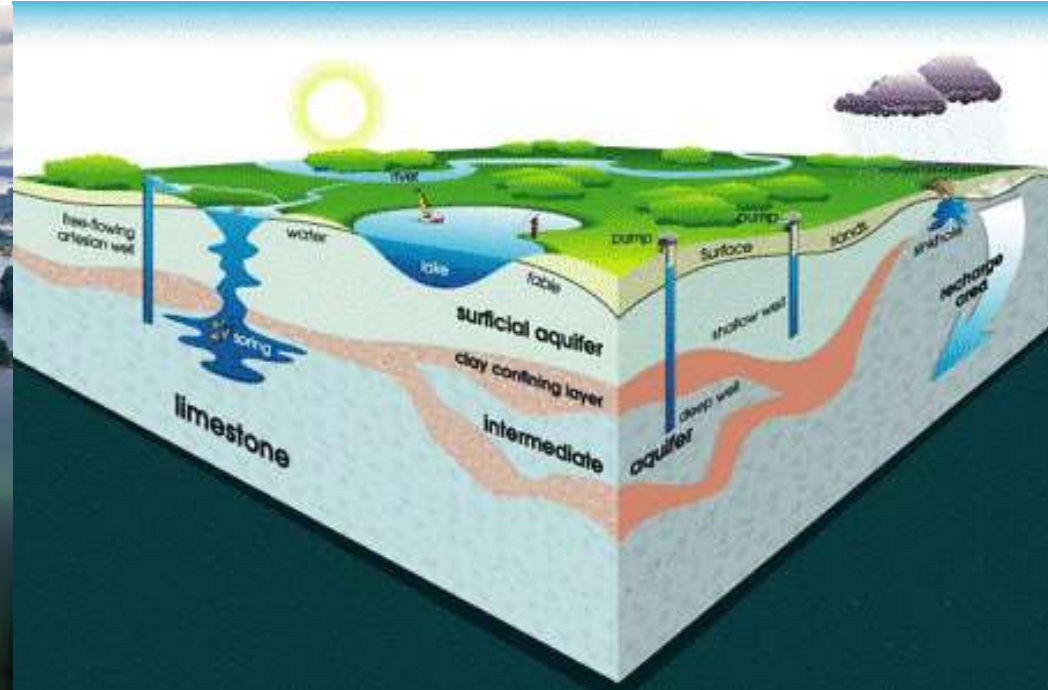


Presentation from
**2016 World Water
Week in Stockholm**

www.worldwaterweek.org

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The challenges of Groundwater Governance in a Transboundary Setting



*Astrid Hillers and Christian Severin
GEF – International Waters
Stockholm Water Week, 2016*



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The GEF and the SDGs



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Groundwater Governance Project – A Global Framework for Action

- **Global Diagnostic on Groundwater Governance:**
Why & Where do we need to act?
- **A Shared Global Vision for 2030:**
What do we want to achieve?
- **Global Framework for Action**
How can we achieve the Global Vision?

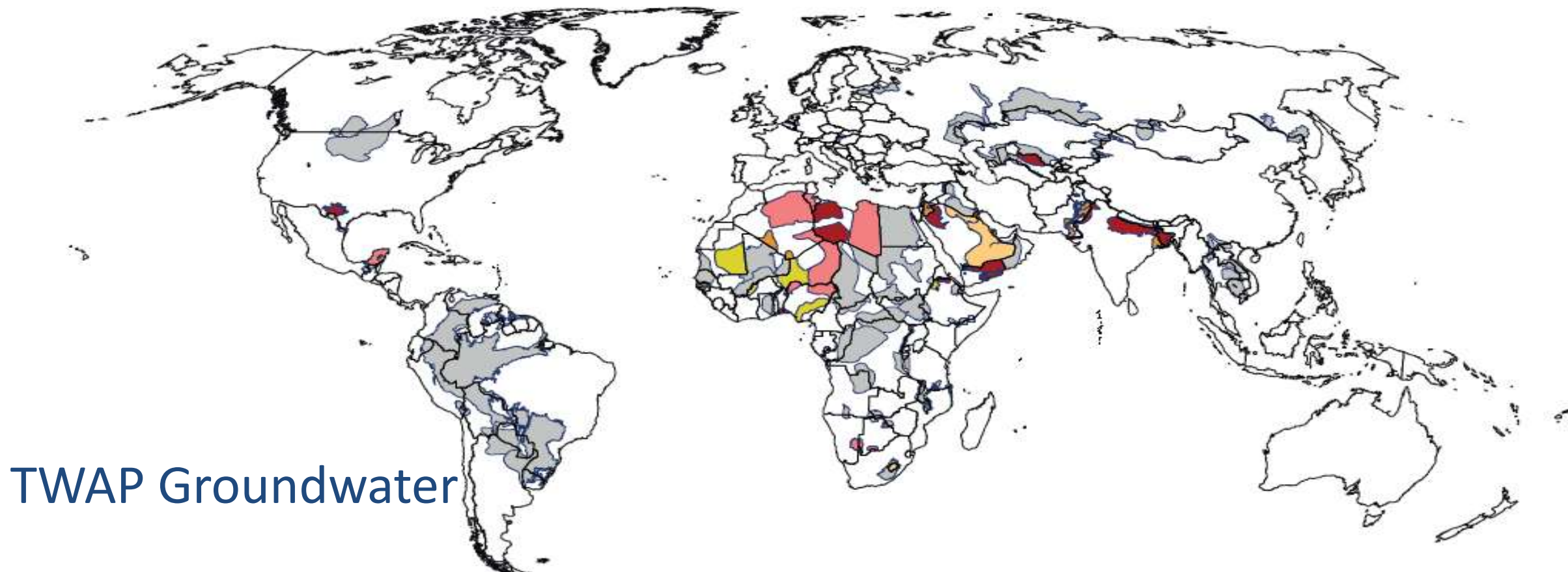


Groundwater Governance
A Global Framework for Action



Hotspots under current and future conditions

In total, 68 out of 258 TBA-country segments extending over 36 TBAs are presented as current and/or future hotspots. Two-thirds of the identified hotspots are located on the African continent and the Arabian Peninsula but segments classified in “very high risk” category are also distributed over Asia and America.



TWAP Groundwater

Hotspots under current and future conditions

- Very high risk (16 country segments)
- High risk (11 country segments)

Hotspots under future conditions only

- Very high risk (15 country segments)
- High risk (16 country segments)
- Groundwater crowding (8 country segments)

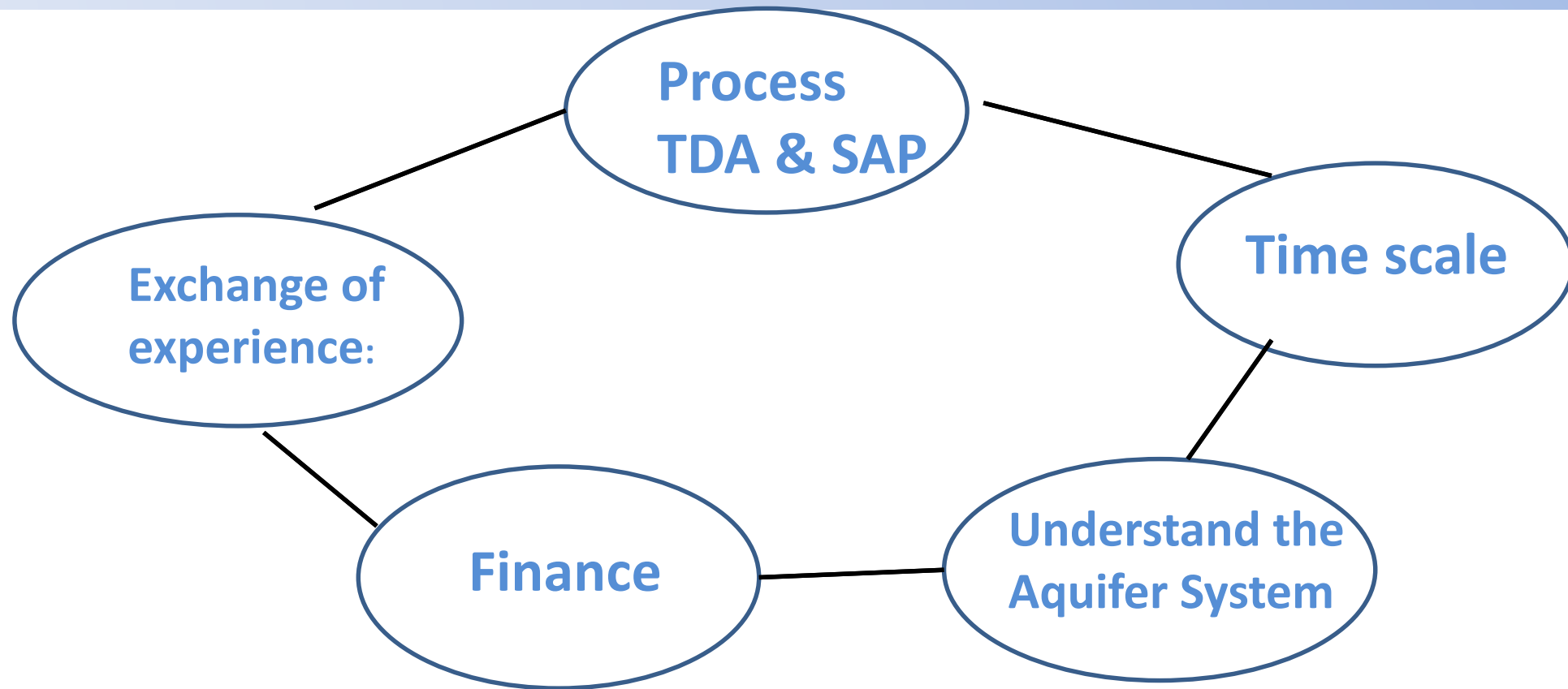
Why cooperate in shared basins?

- Trust
- Capacity
- Information
- Historical Differences
- Power Inequalities
- Political Support
- Sovereignty concerns



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GEF support to governance and management of transboundary basins



Sustainable Groundwater Use

Nubian Aquifer

Nubian Aquifer - Chad, Egypt, Libya and Sudan establish a **long-term framework** for utilizing a key underground water system – established a Joint Authority for the Nubian Aquifer System



http://iwlearn.net/iw-projects/2020/maps_graphics/Nubian%20Sandstone%20Aquifer%20System.kml/view

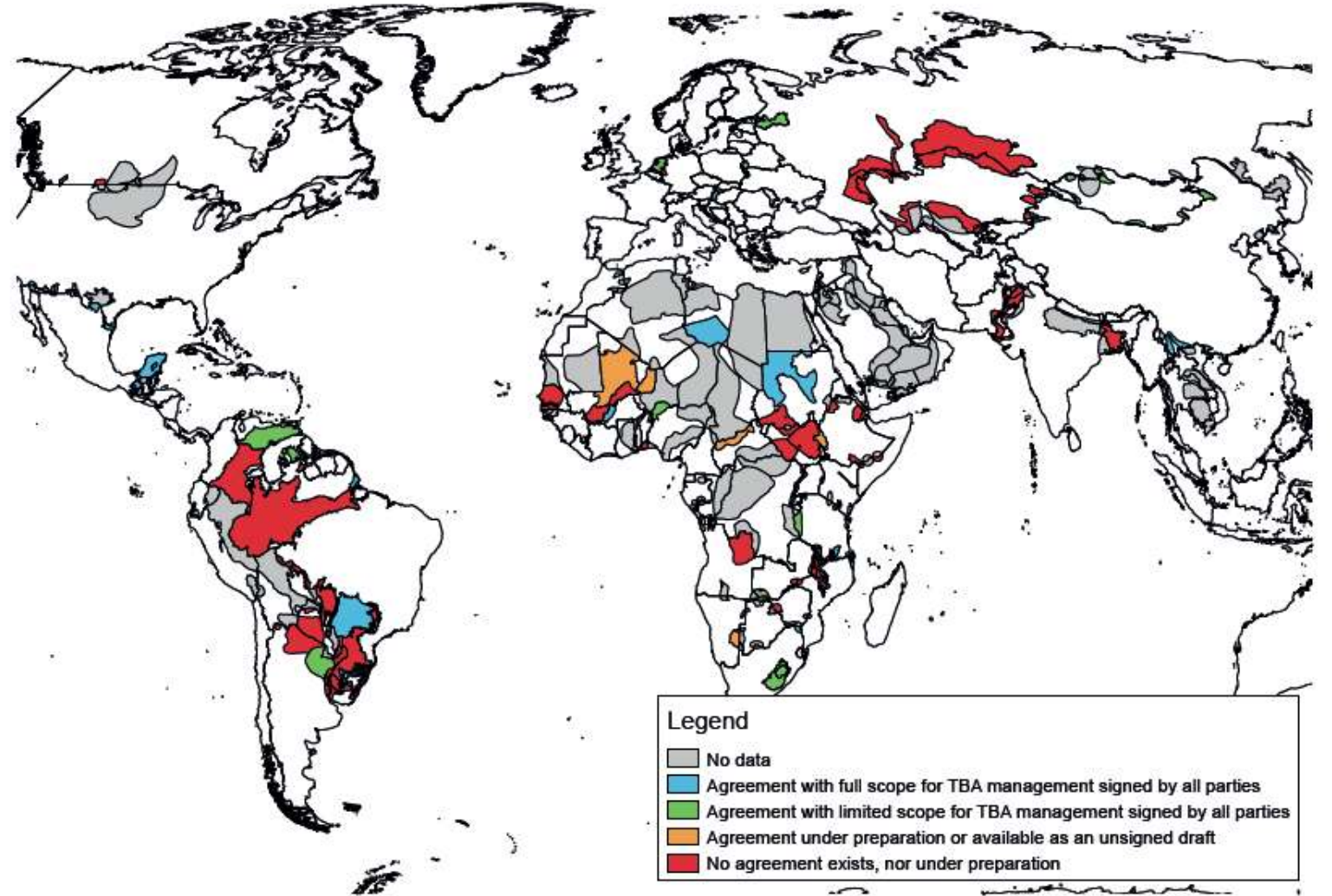
The Nubian Aquifer:



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Reactive vs. proactive

Transboundary legal framework per TBA country segments. In many cases, the data from countries sharing an aquifer are not consistent among all countries. This includes transboundary aquifers that are known to have agreements (e.g. the Guarani Aquifer System, North-western Sahara Aquifer System, Nubian Sandstone Aquifer System and Illumedden Aquifer System). An explanation may lie in the fact that an agreement may not have yet been ratified in all countries involved, and experts may interpret agreements differently, resulting in variations in the answers provided by the different countries sharing the aquifer.



Sustainable Groundwater Use - The Guarani Aquifer: Without preventative measures, uncontrolled pollution in its extraction and recharge areas could threaten the Guarani aquifer, (Argentina, Brazil, Paraguay, Uruguay) which contains sufficient water to supply 360 million people on a sustainable basis.



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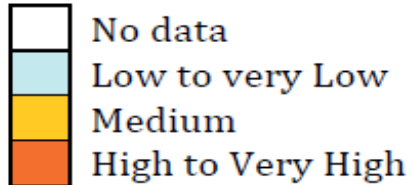
Small Island Developing States (SIDS)



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Assessment of Risk Factors distinguishing Mountainous SIDS and Low-Lying SIDS

- a: Recharge/Capita
- b: Nat. Water Quality
- c: Human GW Dependence
- d: Pollution
- e: Saltwater Intrusion
- f: Population Density



Mountainous SIDS

	a	b	c	d	e	f
Atlantic and Indian Ocean						
Cape Verde	Orange	Yellow	Light Blue	Yellow	Orange	Orange
Comoros	Yellow	Light Blue	Light Blue	Yellow	Light Blue	Orange
Mauritius	Yellow	Light Blue	Light Blue	Yellow	Light Blue	Orange
Sao Tome and Principe	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Orange
Caribbean						
Antigua and Barbuda	Yellow	Light Blue	Light Blue	Orange	Light Blue	Orange
British Virgin Islands	Yellow	Orange	Light Blue	Orange	Orange	Orange
Dominica	Light Blue	Orange	Light Blue	Yellow	Orange	Yellow
Grenada	Orange	Light Blue	Light Blue	Yellow	Light Blue	Orange
Jamaica	Yellow	Orange	Orange	Yellow	Light Blue	Orange
Montserrat	Light Blue	Light Blue	Light Blue	Orange	Light Blue	Yellow
Puerto Rico	Yellow	Light Blue	Light Blue	Yellow	Light Blue	Orange
St Kitts and Nevis	Yellow	Light Blue	Orange	Orange	Light Blue	Orange
Saint Lucia	Yellow	Orange	Light Blue	Yellow	Orange	Orange
Saint Vincent and Grenadines	Yellow	Light Blue	Light Blue	Yellow	Light Blue	Orange
Trinidad and Tobago	Yellow	Light Blue	Light Blue	Orange	Light Blue	Orange
Pacific						
American Samoa	Yellow	Light Blue	Orange	Orange	Yellow	Orange
Belau/Palau	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Orange
C'wealth of N. Marianas	Yellow	Light Blue	Orange	Orange	Orange	Orange
Cook Islands	Yellow	Light Blue	Light Blue	Yellow	Light Blue	Orange
Fiji	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange
French Polynesia	Light Blue	Light Blue	Orange	Light Blue	Light Blue	Orange

Federate States of Micronesia	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Orange
New Caledonia	Light Blue	Light Blue	Yellow	Light Blue	Yellow	Yellow
Niue	Light Blue	Light Blue	Orange	Yellow	Light Blue	Light Blue
Samoa	Light Blue	Light Blue	Light Blue	Yellow	Light Blue	Orange
Solomon Islands	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Yellow
Timor-Leste	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Yellow
Vanuatu	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Yellow

Low-Lying SIDS

Atlantic and Indian Ocean						
Maldives	Orange	Orange	Light Blue	Orange	Orange	Orange
Seychelles	Orange	Orange	Light Blue	Orange	Orange	Orange
Caribbean						
Anguilla	Yellow	Orange	Light Blue	Orange	Orange	Orange
Aruba	Orange	Light Blue	Light Blue	Orange	Light Blue	Orange
Barbados	Orange	Light Blue	Light Blue	Orange	Light Blue	Orange
Netherland Antilles	Orange	Orange	Light Blue	Yellow	Orange	Orange
The Bahamas	Orange	Light Blue	Light Blue	Orange	Orange	Orange
US Virgin islands	Orange	Light Blue	Light Blue	Orange	Orange	Orange
Pacific						
Guam	Light Blue	Light Blue	Orange	Light Blue	Light Blue	Orange
Kiribati	Orange	Light Blue	Light Blue	Orange	Orange	Orange
Marshall Islands	Orange	Light Blue	Orange	Orange	Orange	Orange
Nauru	Yellow	Orange	Orange	Yellow	Orange	Orange
New Caledonia	Light Blue	Light Blue	Yellow	Light Blue	Yellow	Yellow
Tonga	Yellow	Light Blue	Light Blue	Yellow	Yellow	Orange
Tuvalu	Orange	Orange	Light Blue	Orange	Orange	Orange

GEF International Waters

Thank you!

