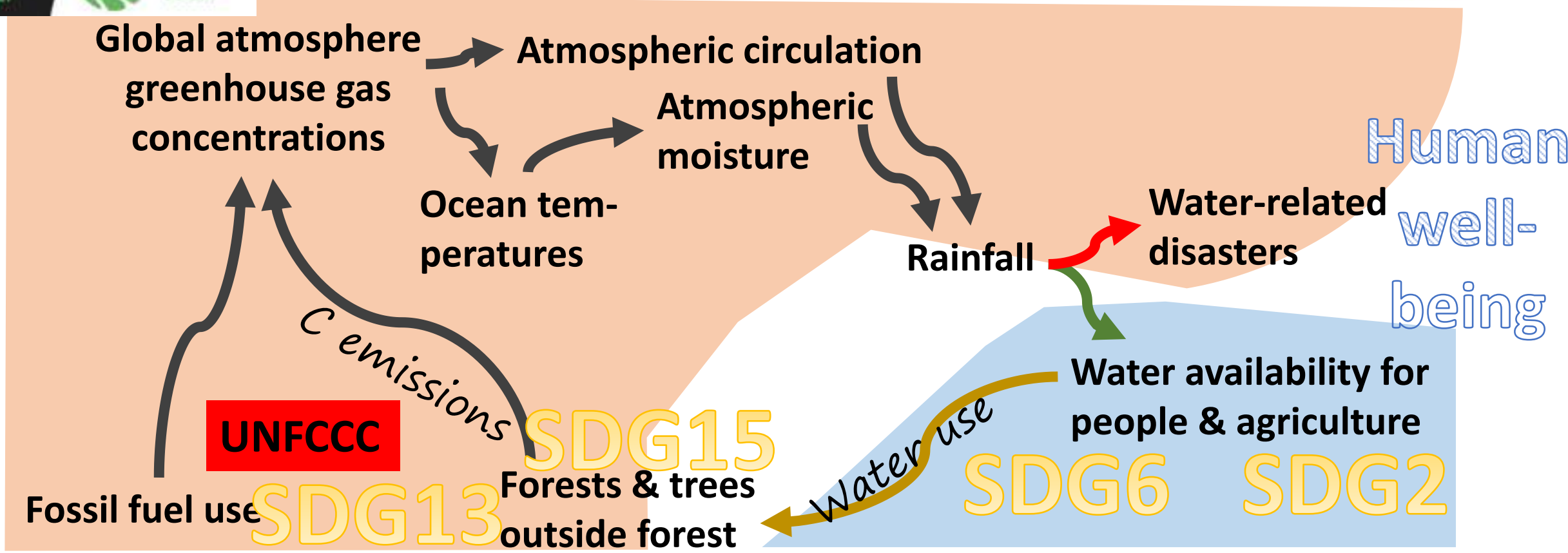


# 'Rainfall recycling' as a landscape function: connecting SDGs 6, 13 and 15

Dec. 19-20, 2017



RESEARCH PROGRAM ON Forests, Trees and Agroforestry



**UNFCCC**

**SDG 13** **SDG 15**

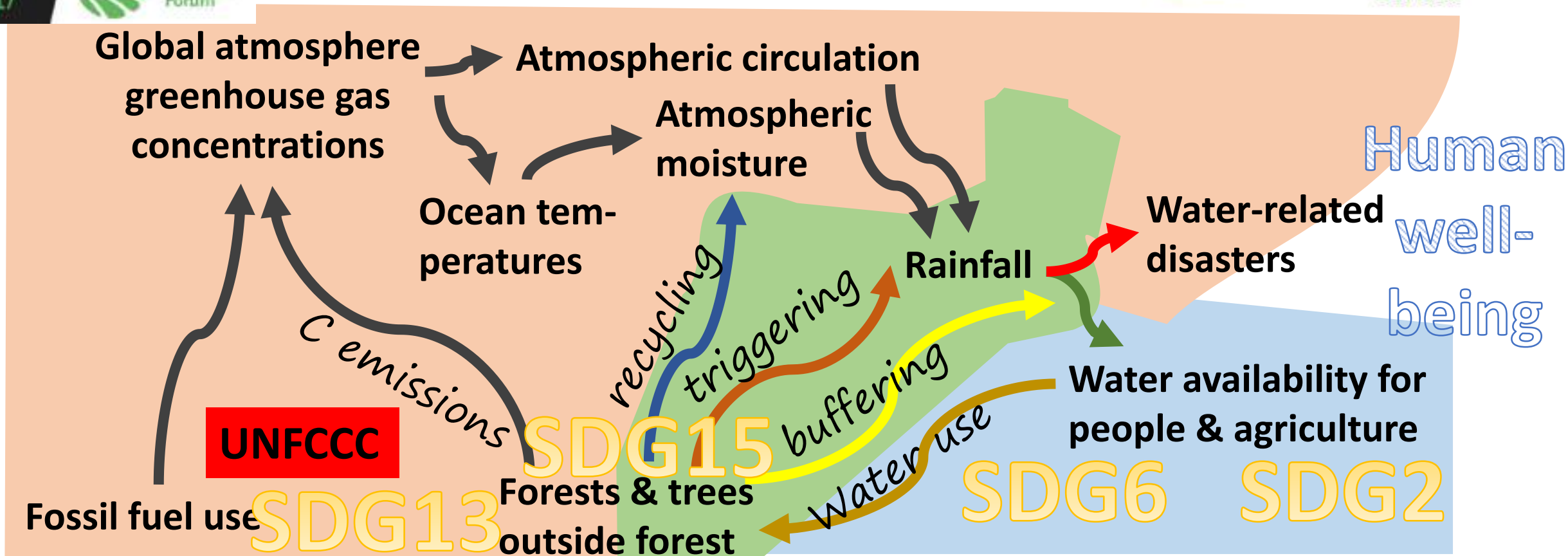
**SDG 6** **SDG 2**

# 'Rainfall recycling' as a landscape function: connecting SDGs 6, 13 and 15

Dec. 19-20, 2017



RESEARCH PROGRAM ON Forests, Trees and Agroforestry



- UNFCCC is mandated to focus on GHG's
- Direct climate effects of trees matter
- Landscape-scale SDG coherence options

- Teleconnections → collective action at continental scales
- Existing blue water agreements & rights miss links to 'drivers'
- Site-specificity of net effects of forests on water for people

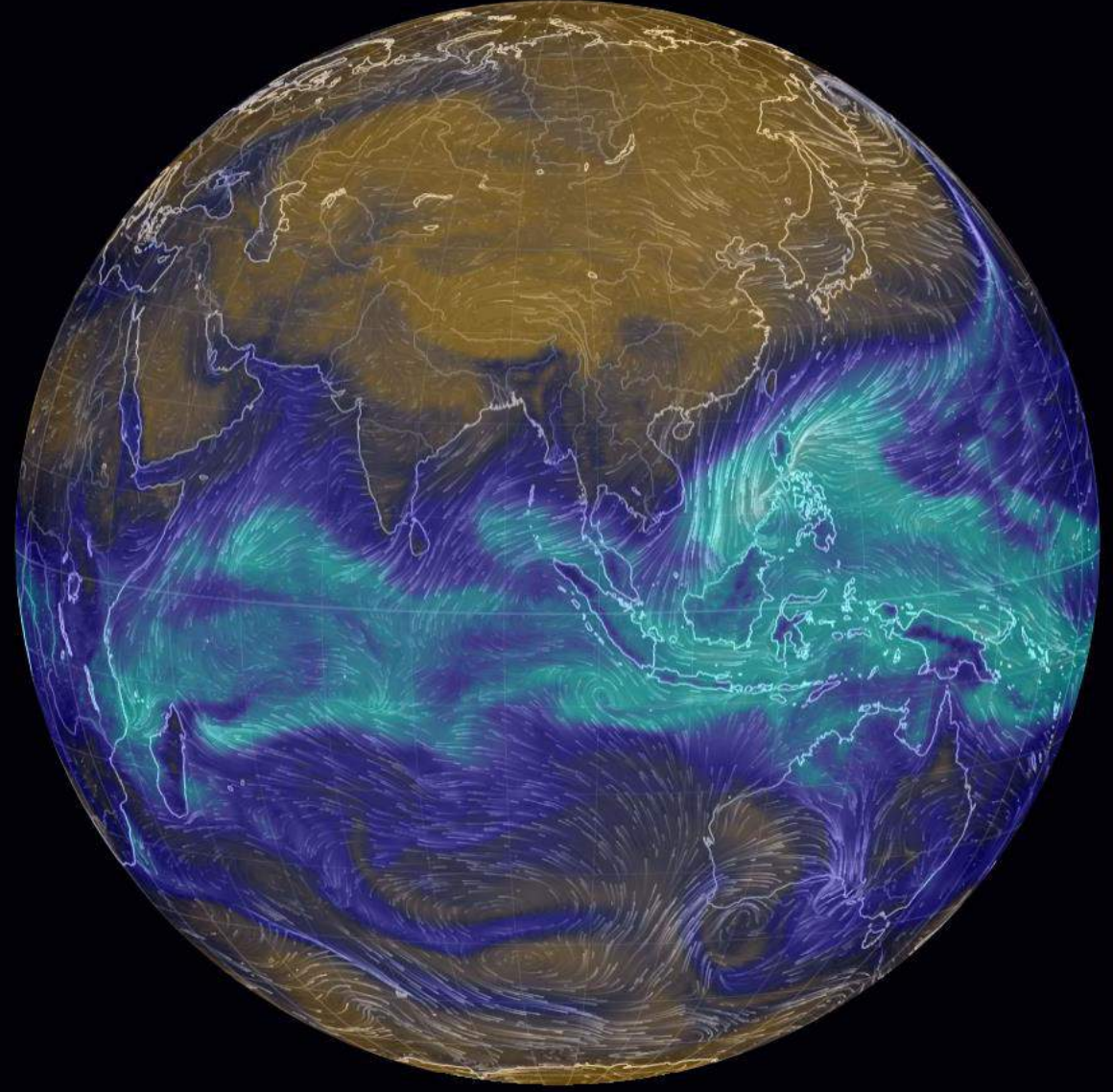
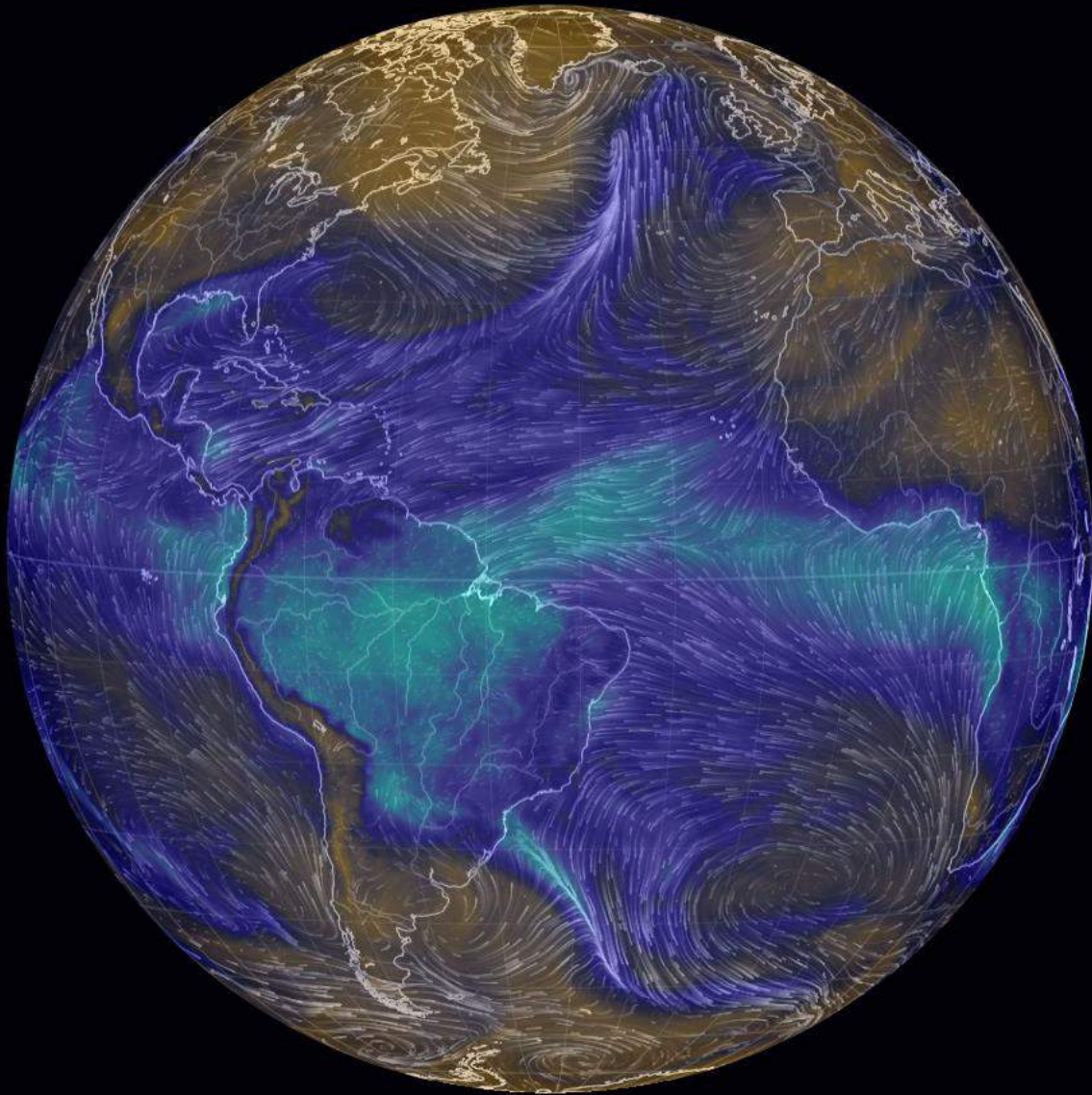


Total Precipitable Water +  
Wind vector at 80 m height

Date | 2017-12-18 10:00 Local  $\rightleftharpoons$  UTC

Data | Wind @ Surface + Total Precipitable Water

Scale |

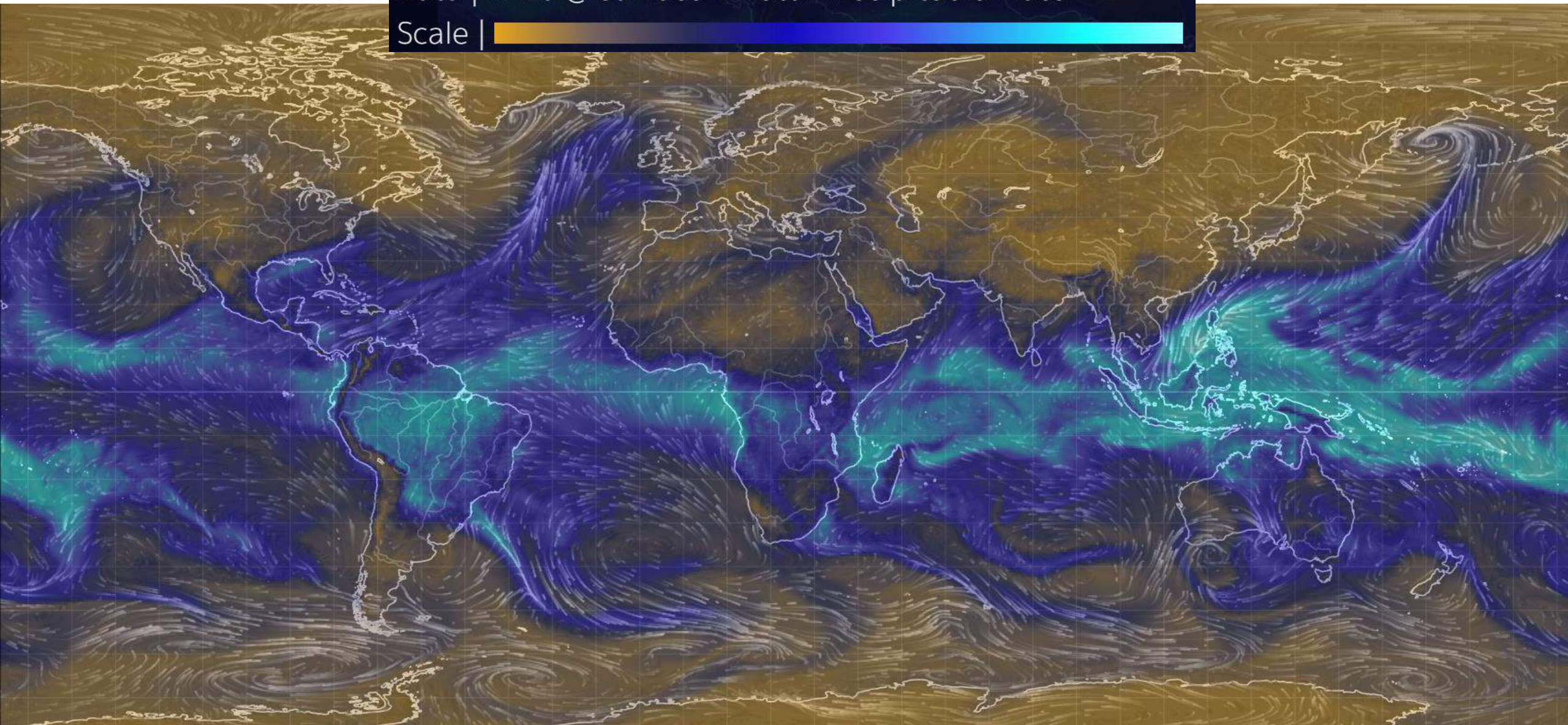




Date | 2017-12-18 10:00 Local ⇌ UTC

Data | Wind @ Surface + Total Precipitable Water

Scale | 

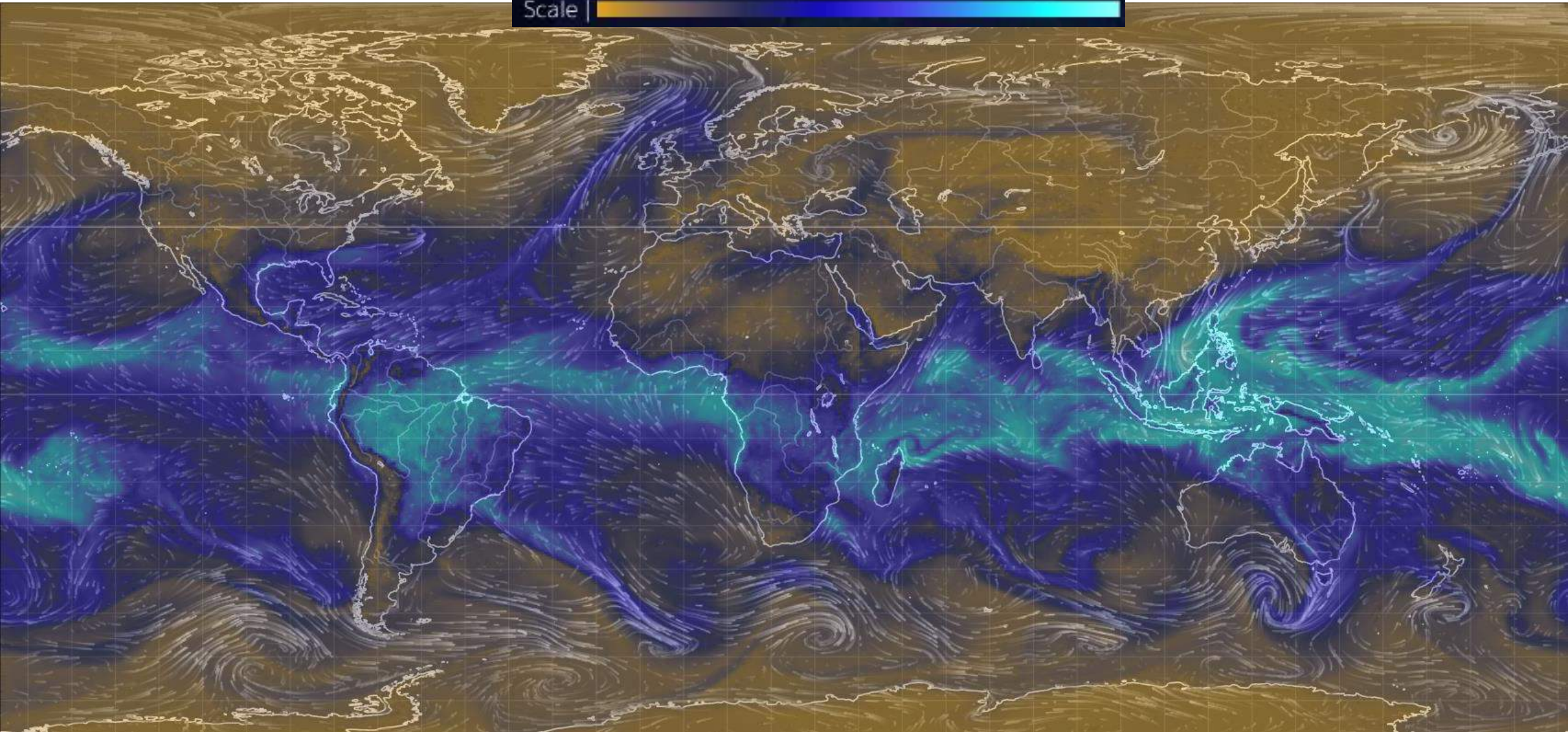


[https://earth.nullschool.net/#current/wind/surface/level/overlay=total\\_precipitable\\_water/equirectangular=-336.85,0.00,218](https://earth.nullschool.net/#current/wind/surface/level/overlay=total_precipitable_water/equirectangular=-336.85,0.00,218)



Date | 2017-12-19 10:00 Local ⇌ UTC

Data | Wind @ Surface + Total Precipitable Water



[https://earth.nullschool.net/#current/wind/surface/level/overlay=total\\_precipitable\\_water/equirectangular=-336.85,0.00,218](https://earth.nullschool.net/#current/wind/surface/level/overlay=total_precipitable_water/equirectangular=-336.85,0.00,218)



Continental precipitation recycling ratio  $\rho_c$

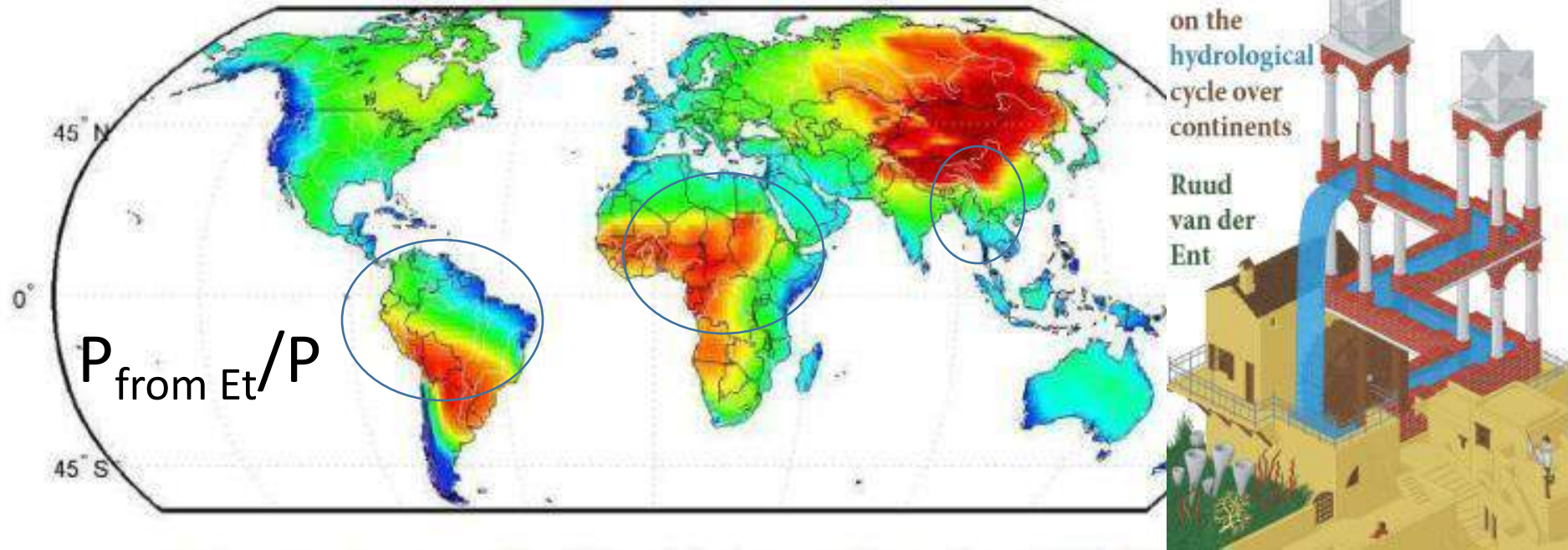


Figure 3. Average continental precipitation recycling ratio  $\rho_c$  (1999–2008).

van der Ent RJ, Savenije HHG, Schaefli B, Steele-Dunne SC, 2010. Origin and fate of atmospheric moisture over continents. Water Resources Research 46, W09525,

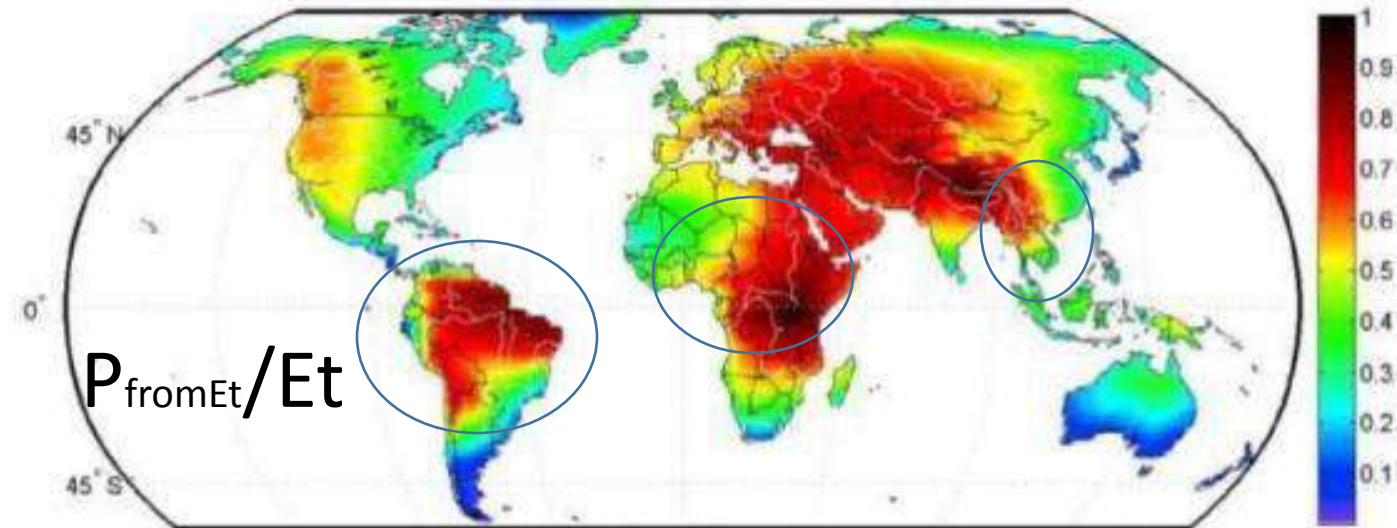


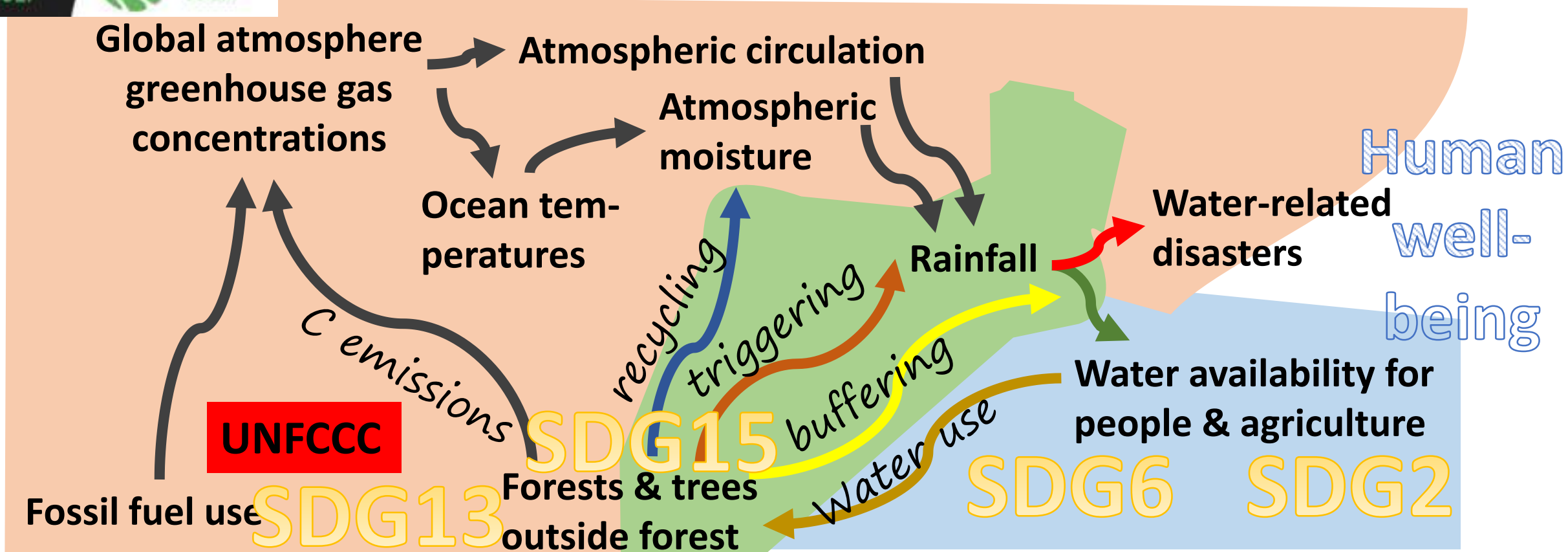
Figure 4. Average continental evaporation recycling ratio  $\varepsilon_c$  (1999–2008).

# 'Rainfall recycling' as a landscape function: connecting SDGs 6, 13 and 15

Dec. 19-20, 2017



RESEARCH PROGRAM ON Forests, Trees and Agroforestry



- UNFCCC is mandated to focus on GHG's
- Direct climate effects of trees matter
- Landscape-scale SDG coherence options
- Teleconnections → collective action at continental scales
- Existing blue water agreements & rights miss links to 'drivers'
- Site-specificity of net effects of forests on water for people