Task 5.6

Transdisciplinary Challenge

Task 5.6 Project outcomes exemplary application challenge [CREAF, 52N, IIASA, IMT] (M22-M23) Use and apply the ConnectinGEO methodology to a multidisciplinary challenge with indicators complicated to observe that might require cooperation between networks and complex observation procedures or data sources. The exact topic will be driven by stakeholders. Relations and links between Global Change, Climate Change, Carbon and Biodiversity as well as links to the planetary boundaries have been suggested as potential scopes. It will conduct the following activities:

- Use the observation inventory analysis and the gap analysis in general, to identify potential stakeholders who can benefit from collaboration between themes. Develop a compelling argument to prioritize across domain target based on results from the work packages.
- Determine stakeholders, develop plans for further research and investigate regional, national and international funding opportunities to cover this gap.
- Analyse cost saving potential through collaboration across previously unrelated domains.

Task 5.6

Transdisciplinary Challenge

Transdisciplinary Challenge

~~Option 1: Urban Coast under climate change and sea level rise~~

~~Option 2: Resilient communities~~

Option 3: Food-Water-Energy Nexus ~~and the phosphate and nitrogen cycles~~

Task 5.6

Food-Water-Energy Nexus

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Food-Water-Energy Nexus

Addressing the food-water-energy nexus under global and climate change:

- assessing food and water security
- impacts of energy on food and water security
- changes in phosphate and nitrogen cycle and food and water security

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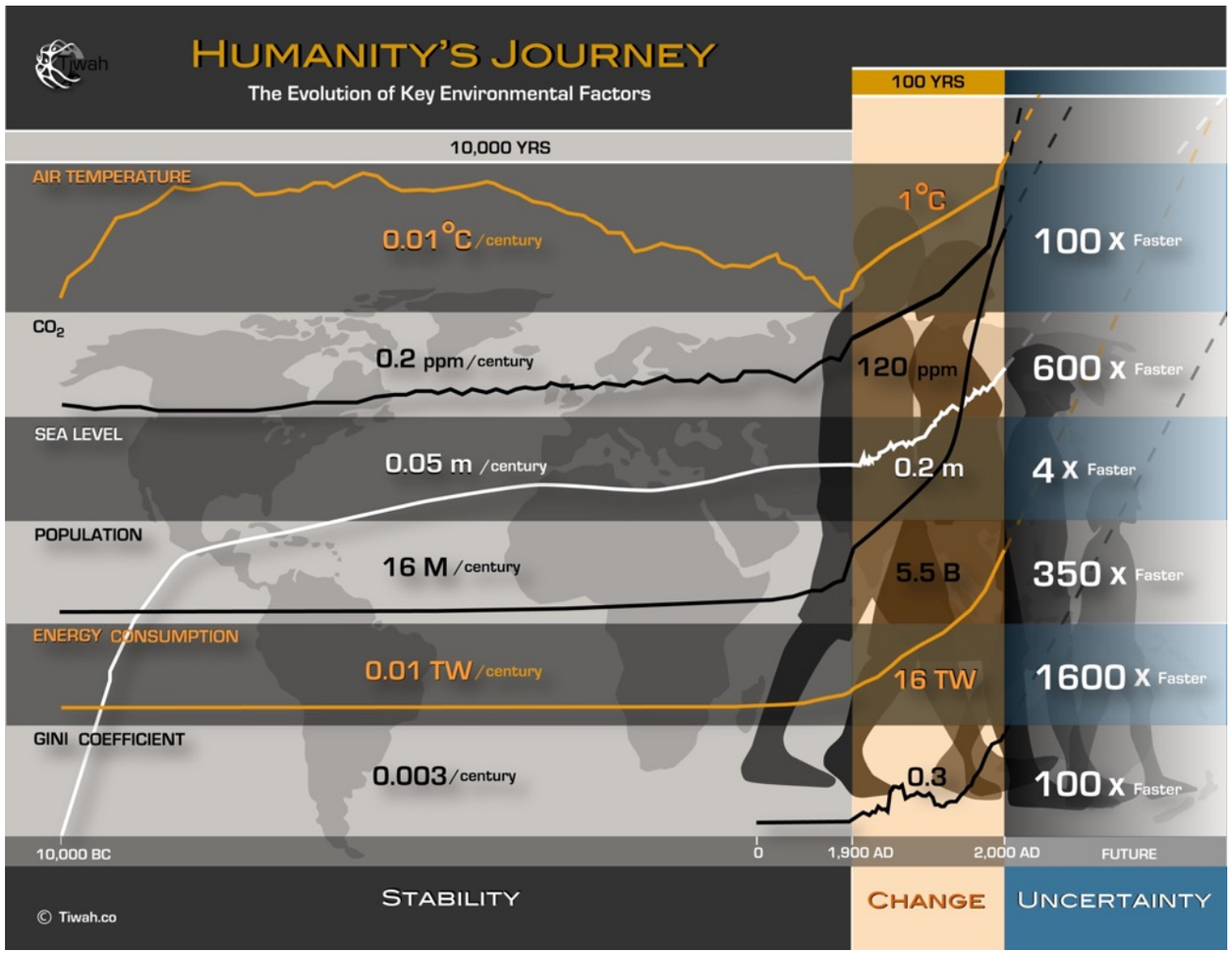

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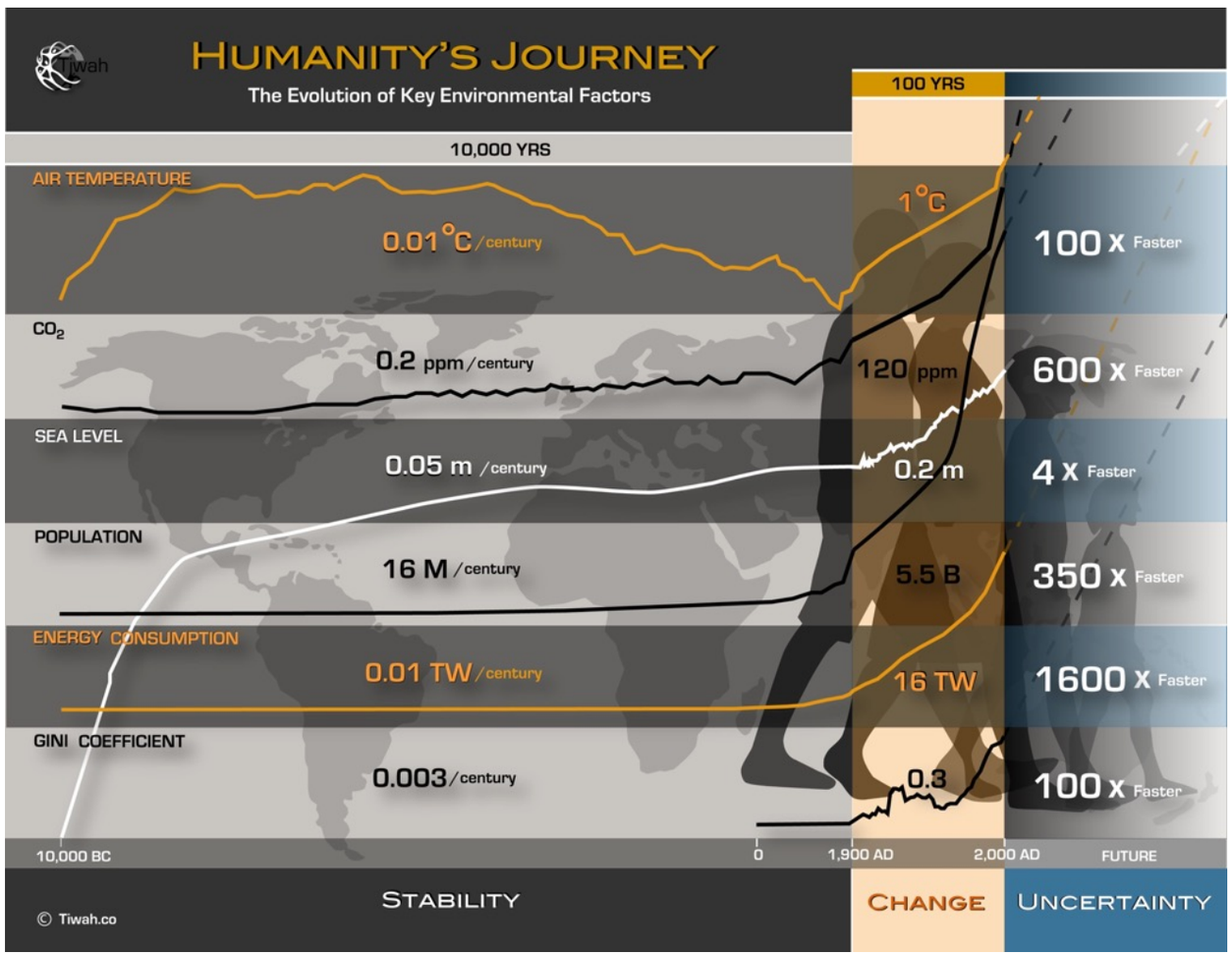

Energy usage increased in the last 100 years 1,600 times faster than on average throughout the Holocene

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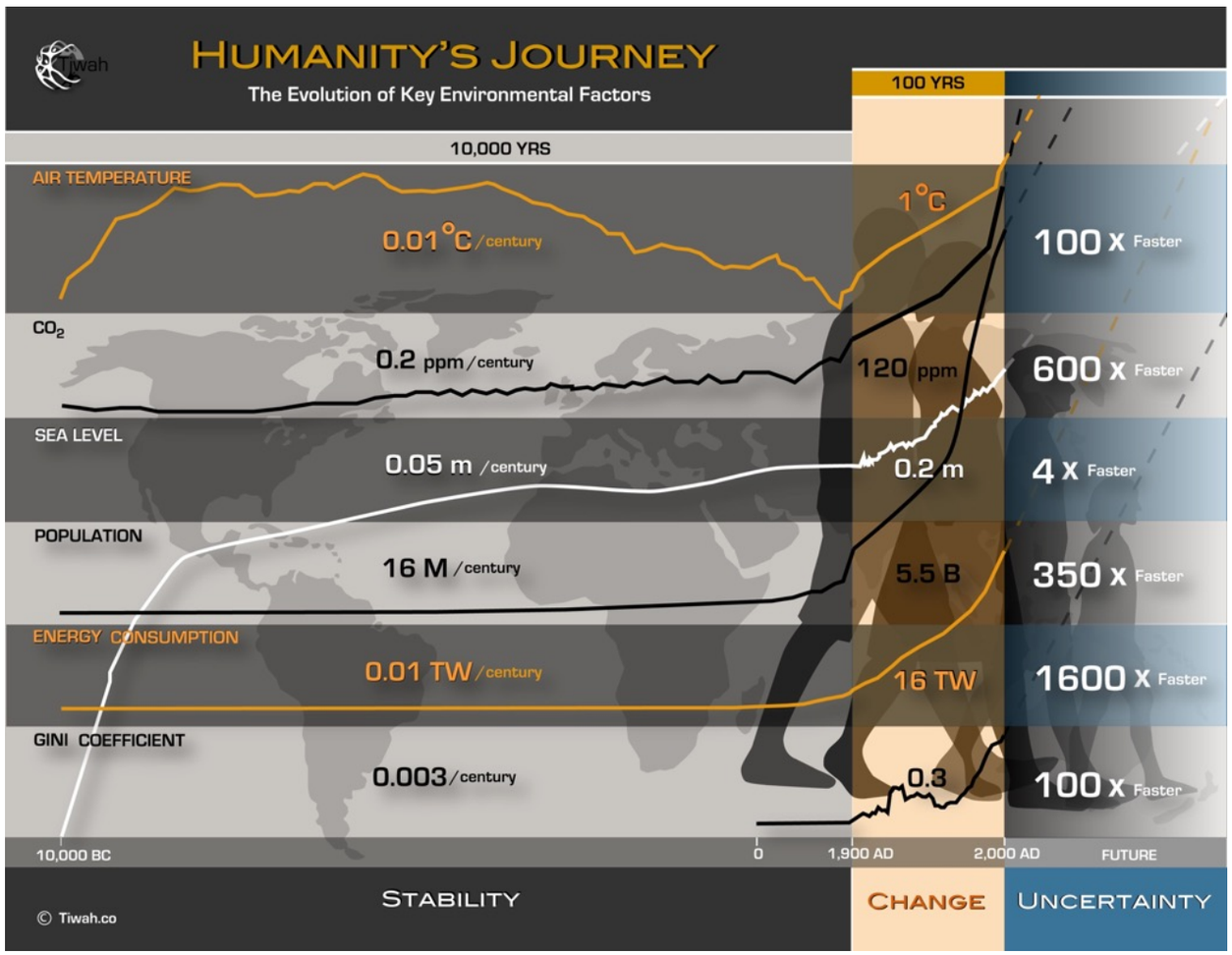

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It sustained a population growth 350 time faster than in the Holocene before

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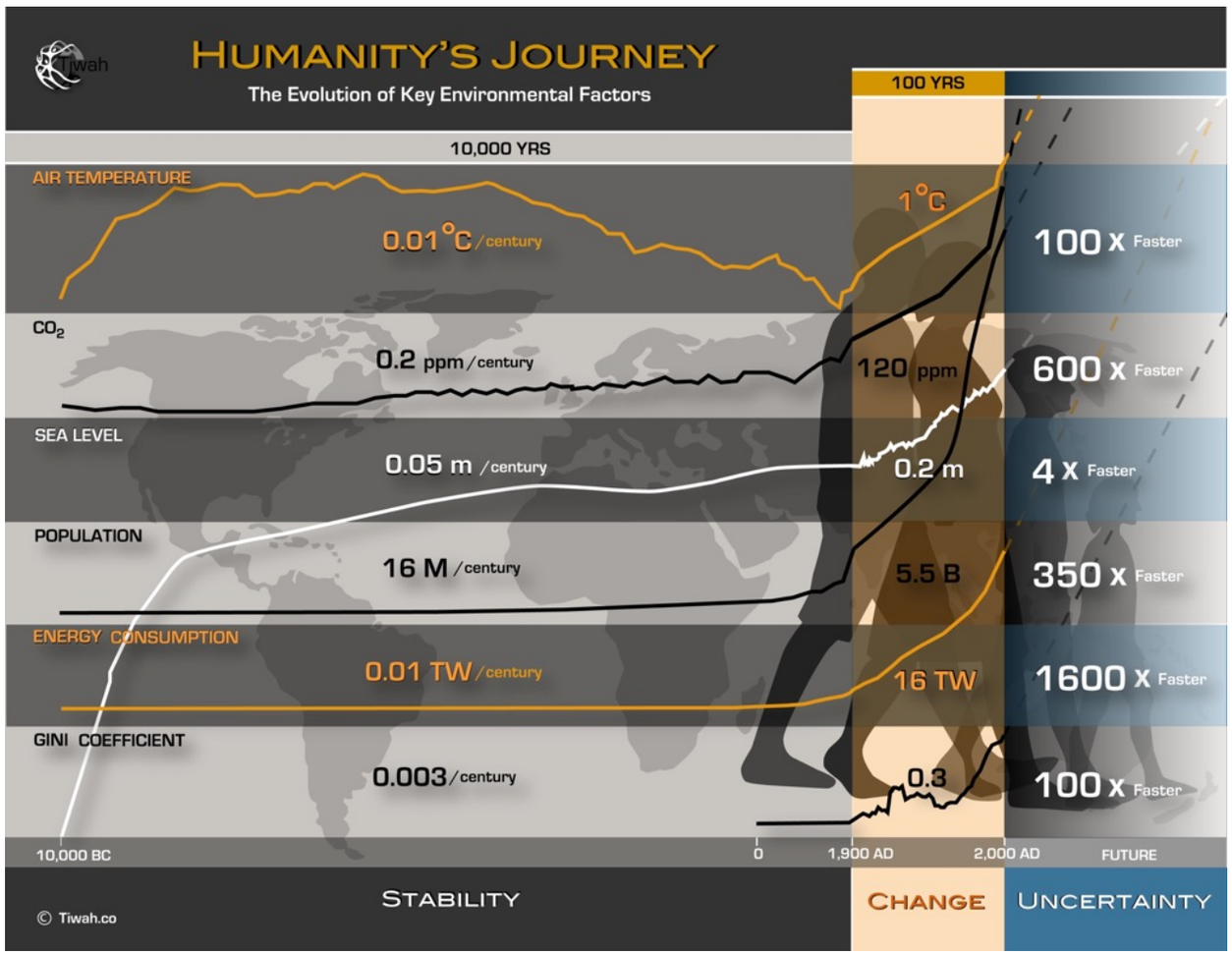

Energy usage increased in the last 100 years 1,600 times faster than on average throughout the Holocene

It sustained a population growth 350 time faster than in the Holocene before

Being based on fossil fuels, it pushed us out of the "safe operating space for humanity"

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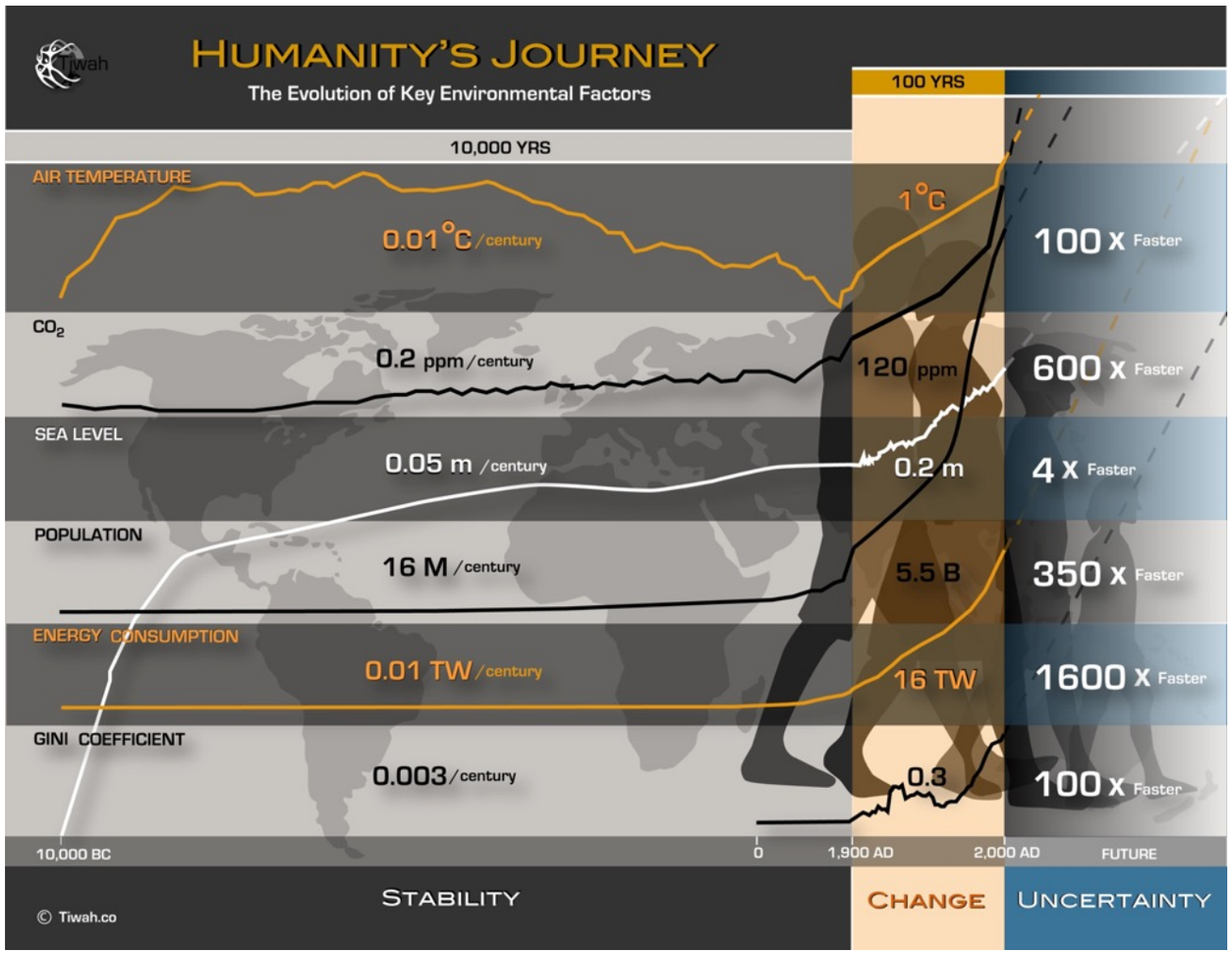

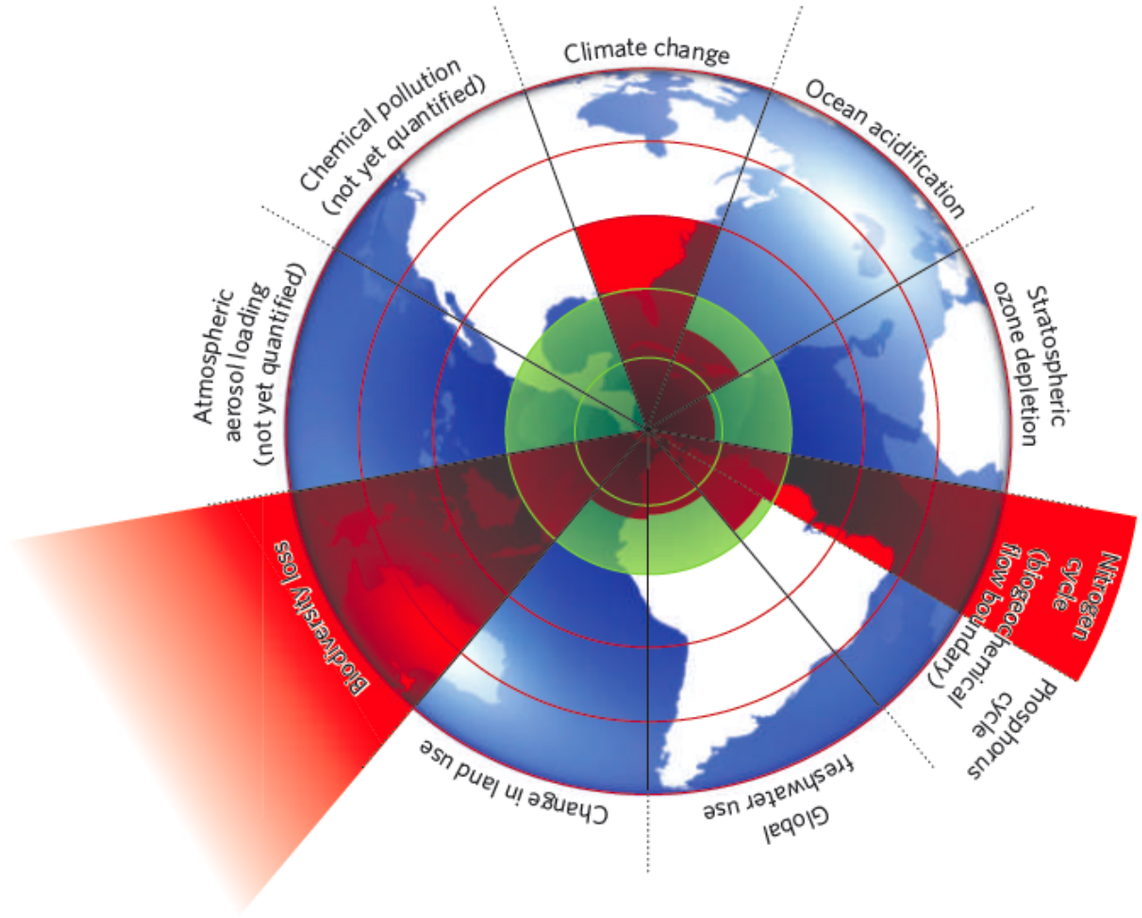

Figure 1 | Beyond the boundary. The inner green shading represents the proposed safe operating space for nine planetary systems. The red wedges represent an estimate of the current position for each variable. The boundaries in three systems (rate of biodiversity loss, climate change and human interference with the nitrogen cycle), have already been exceeded.

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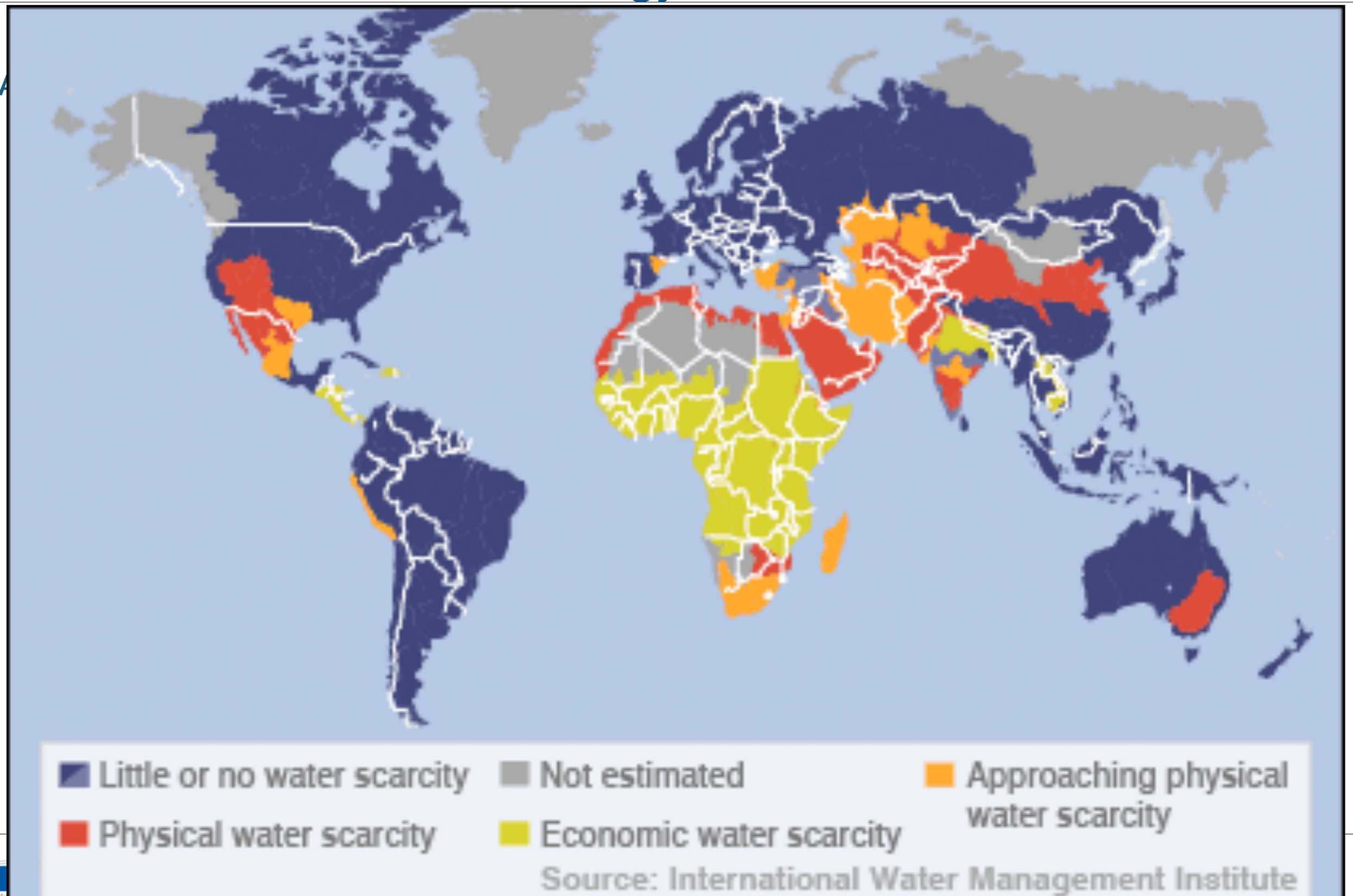

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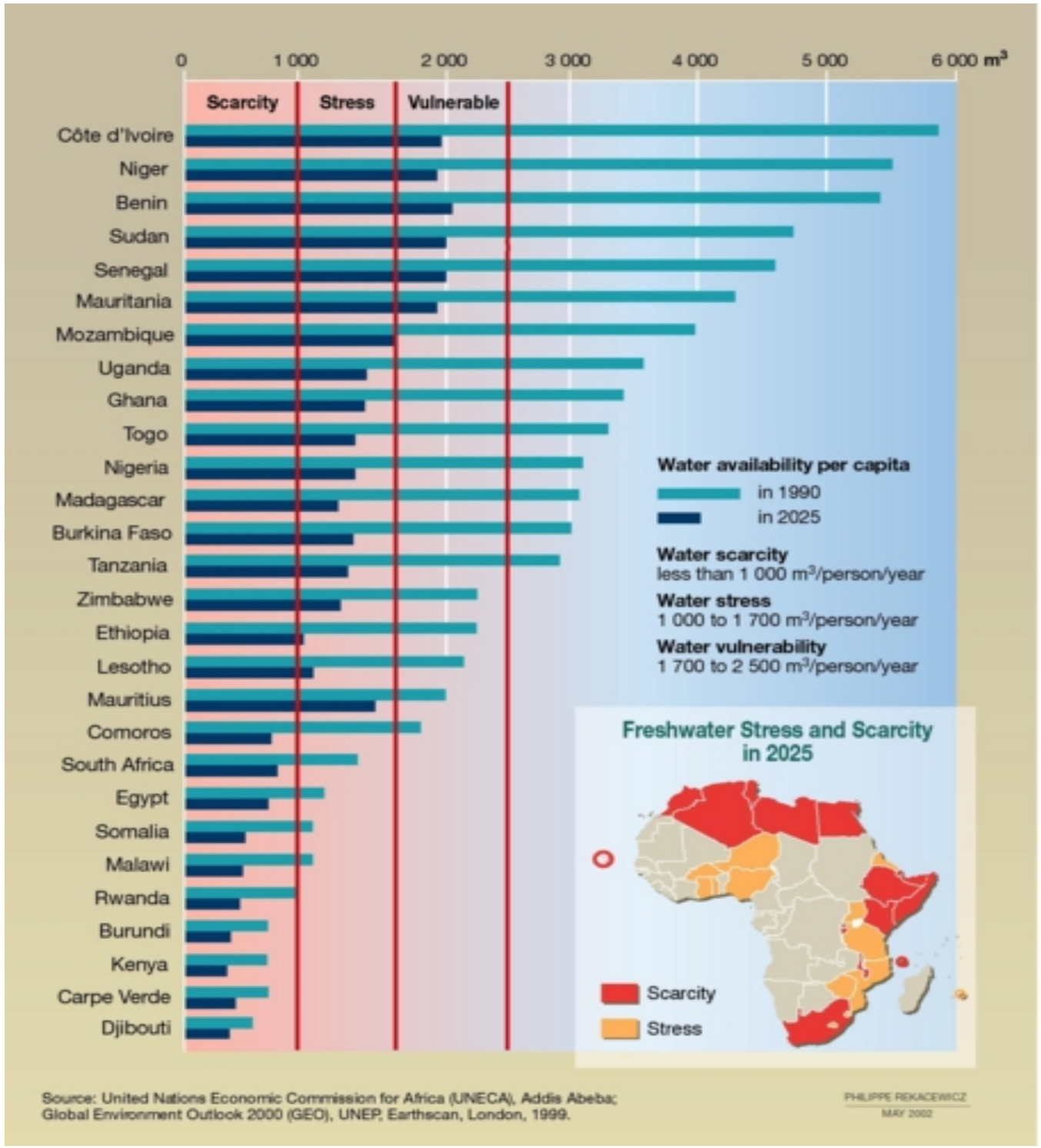

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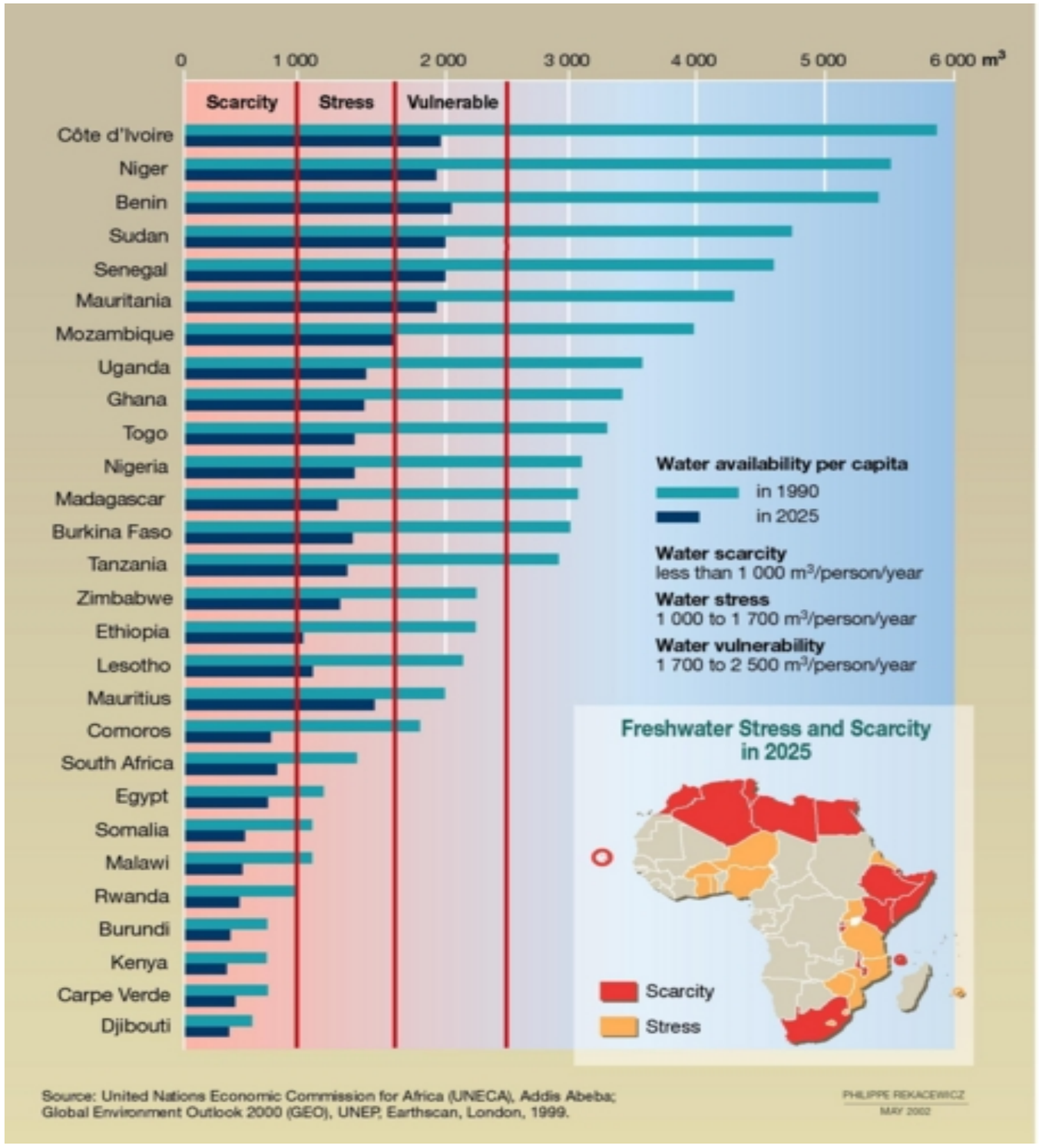

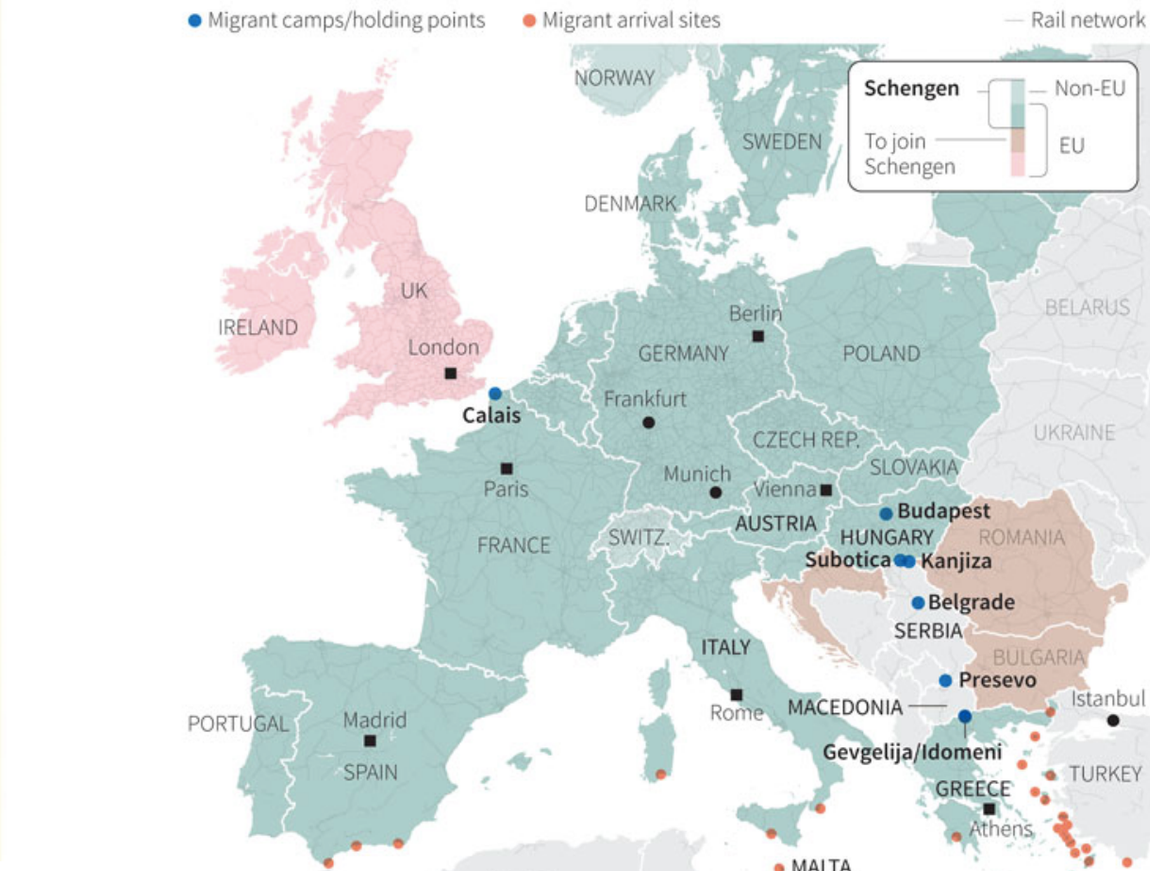

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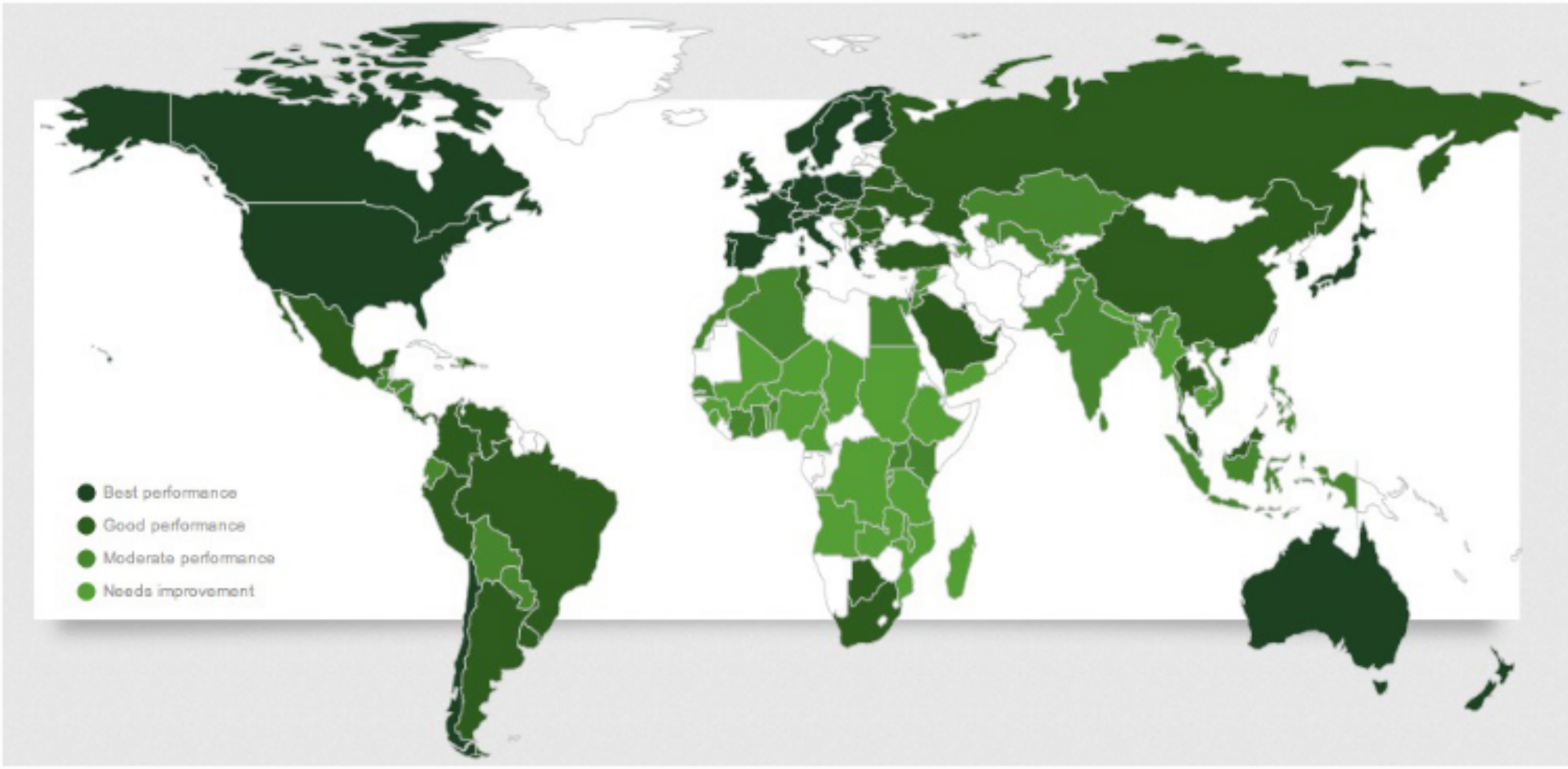

FIGURE 1.

Food Security Index. The MDG of reducing hunger has been achieved in part, but in many regions, food security is still low and people often go hungry. See http://foodsecurityindex.eiu. com

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***Nexus**: a relationship or connection between people or things*

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Energy-Population-Food-Water Nexus

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***Nexus**: a relationship or connection between people or things*

Energy-Population-Food-Water Nexus

***Nexus perspective**: understanding the interdependencies between energy usage and availability, population growth, global change, food security, water security, and the global boundaries*

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Questions:

How can collaboration and coordination through ENEON help to inform about the Energy-Food-Water Nexus and impacts in Europe?

Which SDGs relate to the Energy-Food-Water Nexus and can ENEON help to quantify the indicators for these SDGs?

What ENEON products could support policy making that takes a nexus perspective?