

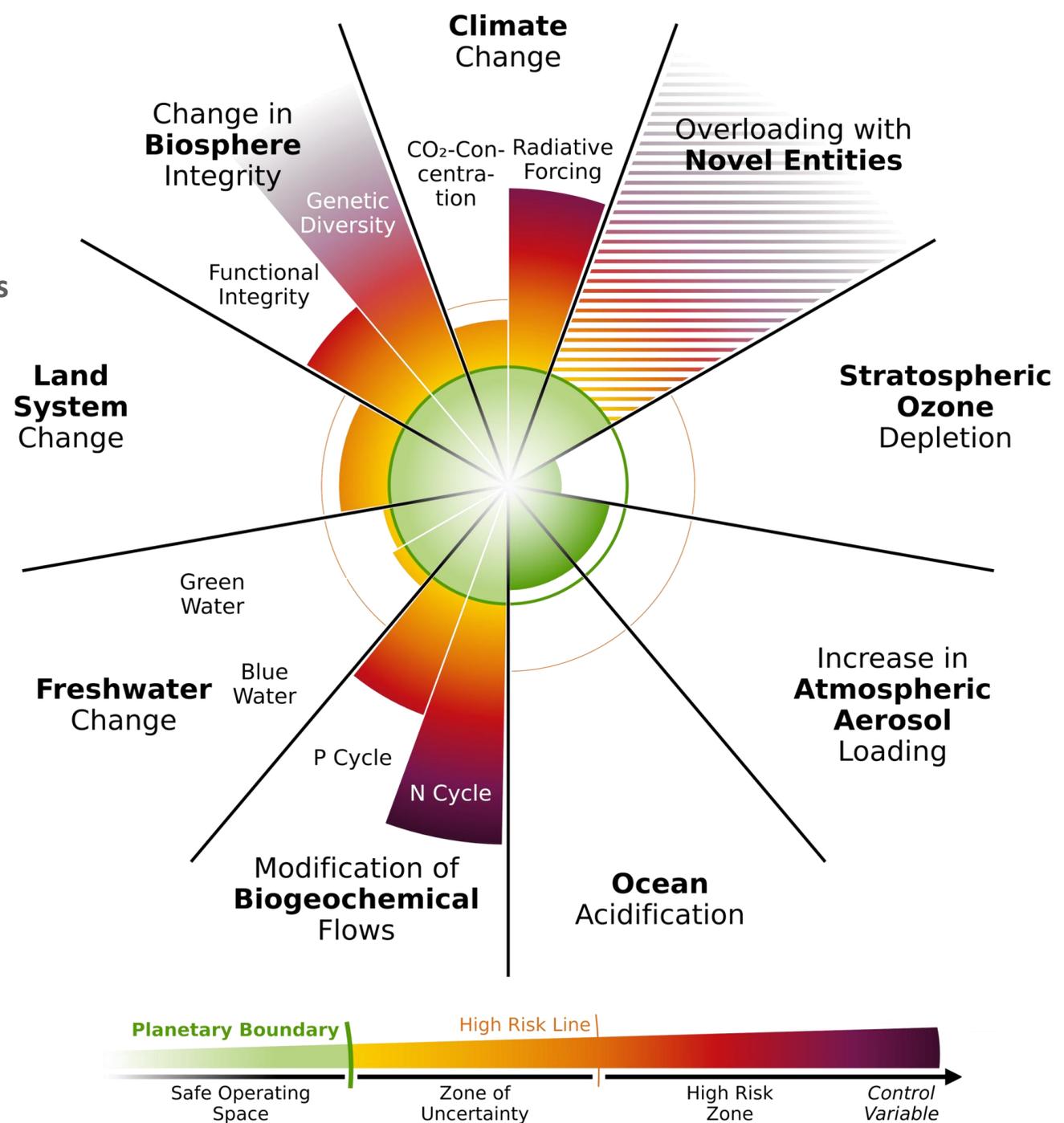
WHAT CLIMATE CHANGE CALLS FOR A CHANGE IN STATISTICS

EXPERIENCE FROM FRANCE: COMMISSION ENVIRONNEMENT ET DÉVELOPPEMENT DURABLE DU CNIS

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CLIMATE AND PUBLIC STATISTICS

1. Understand, quantify, value (or *measure*) and model the point of contact between human societies and ecosystems
 2. Identify and ensure diffusion of damages made to human and non human systems by Climate Change and other threshold breaches
 3. Monitor and adapt public policies for mitigation and adaption
 4. Ensure fair share of the burden
- [Environnement et développement durable - 2023 - 2e réunion - CNIS](#)



UNDERSTAND, QUANTIFY, VALUE, MODEL CONTACT WITH EARTH SYSTEM

■ Most of the work is done by the Scientific Community

- Climate science is rather advanced: data, modelling, forecast and scenarios, high granularity (space, time, events)
- Water, Biosphere, air pollution, aerosols, chemical pollutions, land use and change: need more science
- Models allow to understand interactions

■ Need to quantify bridges

- Climate is easy as it is mostly CO₂ and other GHG
 - GHG integrated models are usual, data not so easy to build but available
 - But, there is more than emissions, complex integration (aerosols, air pollution, clouds, albedo, forest coverage, ...)
- Other topics can be tricky and linked
 - Not one (principal) simple quantity such as CO₂ emissions
 - [Environnement et développement durable - 2024 - 2e réunion – CNIS](#) on water ressource for instance
 - [Environnement et développement durable - 2023 - 1re réunion – CNIS](#) on circular economy and materials flow in an economy
 - [Environnement et développement durable - 2022 - 1re réunion – CNIS](#) on soil assessment
 - [Environnement et développement durable - 2017 - 2e réunion – CNIS](#) on biodiversity

■ Are we quantifying correctly CO₂ and other GHG ?

- CO₂ quantification methods date back to Kyoto Protocol, GHG have been added
- Based on (expert given) average ratio to convert production or consumption flows
 - [Environnement et développement durable - 2019 - 2e réunion – CNIS](#)
- Works well for fossil flows (oil, gas, coal) and CO₂ emissions as long as the material flow is well identified and when aggregated at a large scale (national)
 - Footprint or consumer approach is based on average I/O is mostly unsatisfactory: changing your trade structure is the main lever to reduce your emissions ; changing the average mix of each trading partner; changing technical coef.; only “average policies”, insensitive to regulations, norms, incentives, prices or taxes.
 - Does not work for other sources of GHG emissions (notably agriculture and industry non fossil emissions)
- Does not work when disaggregation of the flow is needed (territorial, sectorial, individual breakdown)

-> that is needed for public policy ! That is a strong demand by users (local authorities) to track their policies; compare to others territories; identify idiosyncratic factors

IDENTIFY DAMAGES

- **Damages are the combination of climate change (alea) impact on human/non human systems through their exposure cross their vulnerability cross their resilience**
 - Calls for an inventory (alea × exposition × vulnerability × resilience) for every owner/user
 - With a special need for dissemination:
 - Each stakeholder needs to know what happens to others: accept burden sharing and coresponsability
 - Each decision maker needs to anticipate, to know what are his possible strategies (long term scenarios) and others strategies (coordination)
 - Some data available
 - Clay extension retraction risks mapped by CEREMA, made available (alea)
 - Information about housing structure (exposition, vulnerability) and costs (resilience) to be shared without manipulation with insurers
 - But a huge work yet to be done (with a huge demand, including methodology)

 - [Environnement et développement durable - 2020 - 2e réunion - CNIS](#)

POLICIES MONITORING AND FEEDBACK LOOP

- **Climate policies (mitigation and adaptation) are extreme public policies,**
 - intending to curb behaviours massively; from 10tCO₂eq to 0 net in 25 years
 - Massive private and public investment
 - Massive innovation and infrastructure building
 - [Environnement et développement durable – 2018 – 1re réunion – CNIS](#) on energy
 - Change in everyday life (sufficiency)
 - [Environnement et développement durable - 2019 - 1re réunion – CNIS](#) on « sobriété »
 - [Environnement et développement durable - 2024 - 1re réunion – CNIS](#) on mobility

- **Acceptability**
 - Need to know why and who for what ?
 - [Environnement et développement durable - 2021 - 1re réunion – CNIS](#) on access to private data
 - Proof of equitable burden
 - Proof of necessity and proportionality of means

- **Accountability**
 - Need to know that public policies were well designed, efficient, and targets were met
 - Who is in charge of what ?

- **Adaptivity**
 - Public policies won't be well designed nor efficient
 - Need to change in real time -> **strong pressure on public statistic system**

FAIR SHARE OF BURDEN

- **Climate change and anthropogenic impact on Earth system**
 - Have different impact on different individuals, communities, and territories
 - As said, need to know, assess, inform
 - But similarly, to compensate

- **Similarly, mitigation policies produces “damages”**
 - At least from the local point of view: need to adapt to impact of policies designed elsewhere
 - Understanding and quantifying, and disseminating that is critical
 - Upcoming “*colloque du CNIS*” on territories and transition