Droit à l'énergie, accès à l'énergie comme condition d'accès aux droits humains essentiels, réponse au changement climatique : où en sommes-nous dans le monde d'aujourd'hui ?

Conférence internationale publique
L'énergie : bien commun de l'humanité ?
Fondation Gabriel Péri 17 mars 2023

NADIA MAIZI, membre du GIEC

Professeure à MINES PARIS – PSL

DirectriceTheTransitionInstitute1.5°

DONNÉES CONTEXTUELLES

Extreme heat

More frequent

More intense

Heavy rainfall

More frequent

More intense

Drought

Increase in some regions

Fire weather

More frequent

Ocean

Warming

Acidifying

Losing oxygen

Photo Credits from left: 1. Luiz Guimaraes 2. Jonathan Ford 3. Peter Burdon 4. Ben Kuo 5. NOAA

Future global climate risks

Heat stress

Exposure to heat waves will continue to increase with additional warming.

Water scarcity

At 2°C, regions relying on snowmelt could experience 20% decline in water availability for agriculture after 2050.

Food security

Climate change will increasingly undermine food security.

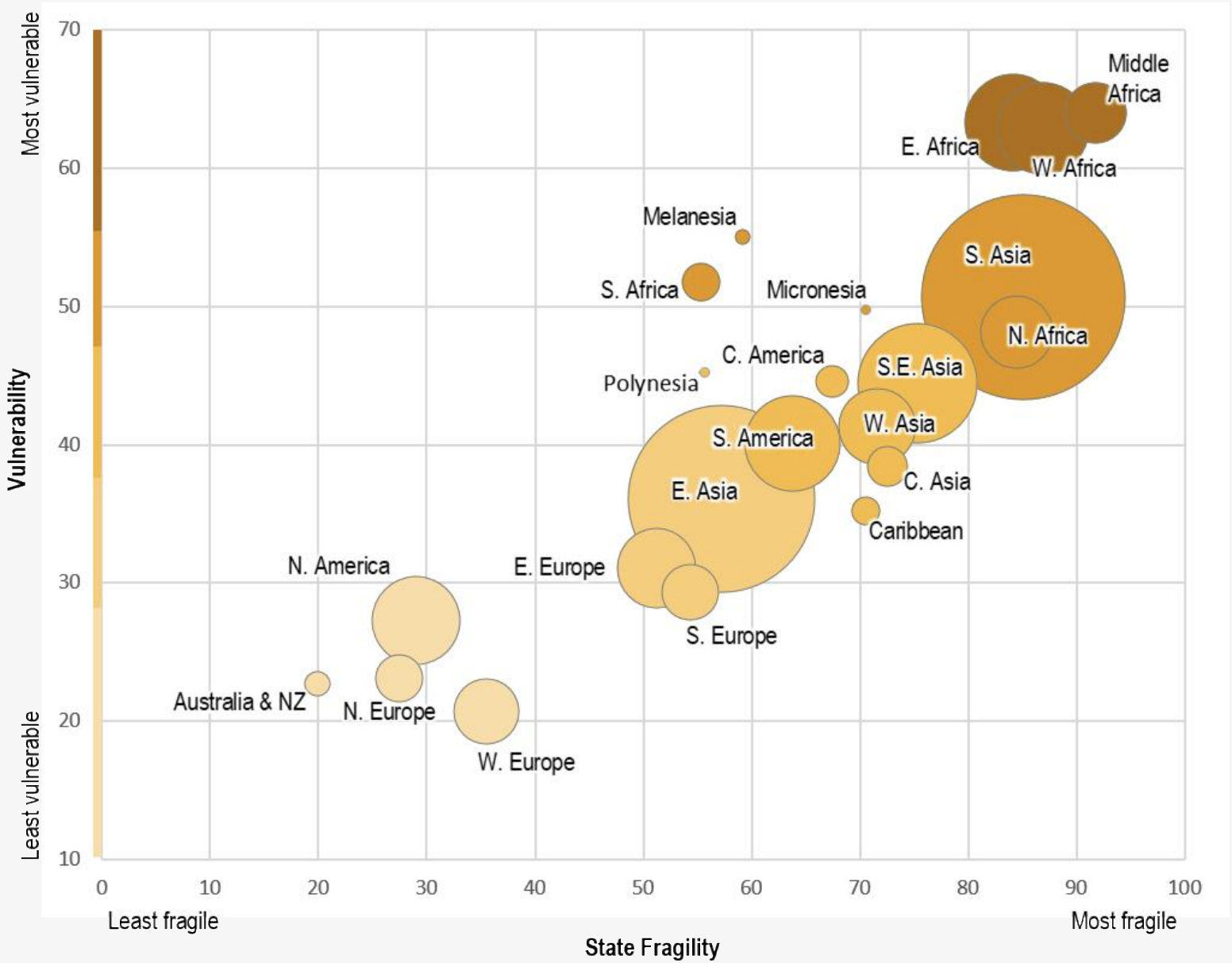
Flood risk

About a billion people in low-lying cities by the sea and on Small Islands at risk from sea level rise by mid-century.

DE L'INJUSTICE CLIMATIQUE

3.3 – 3.6 billion people live in hotspots of high vulnerability to climate change.

Intersectionality issues have been identified



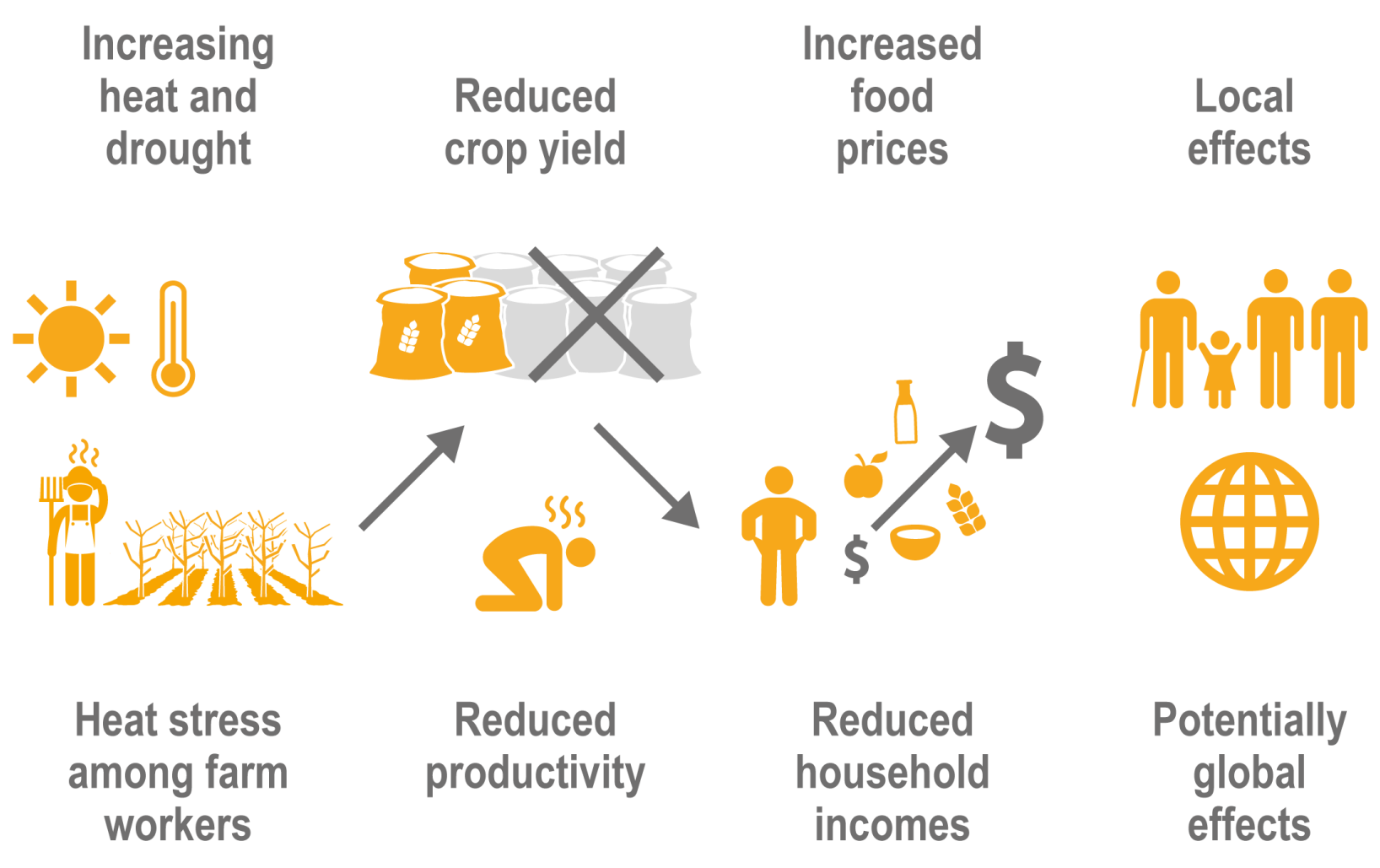
AR6 WGIII Chapter 8 Figure 8.8

Vulnerability in this report is defined as the propensity or predisposition to be adversely affected and encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

[Add / Make edit]

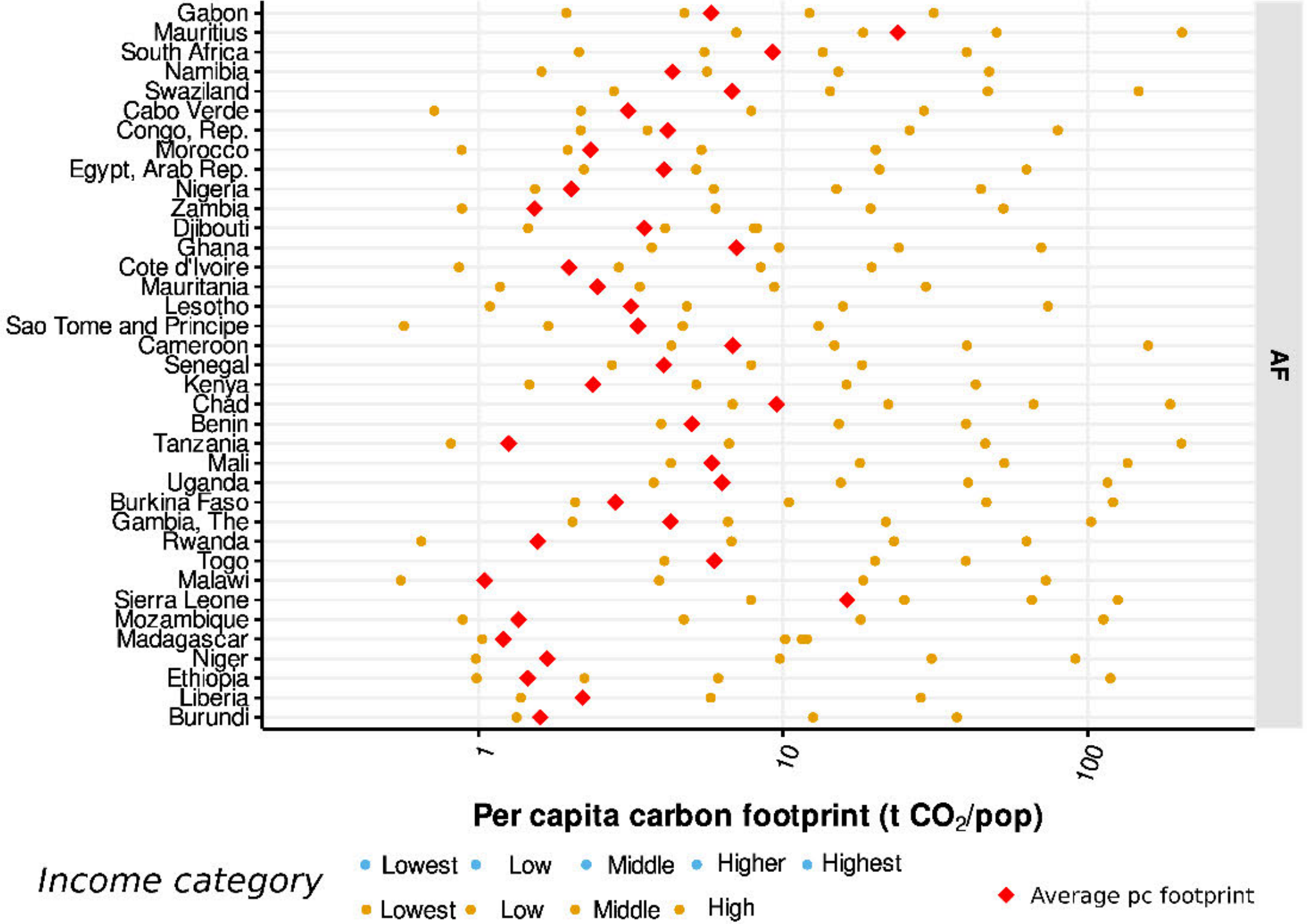
Simultaneous extreme events compound risks

Multiple extreme events that compound the risks are more difficult to manage



DE LA RESPONSABILITÉ

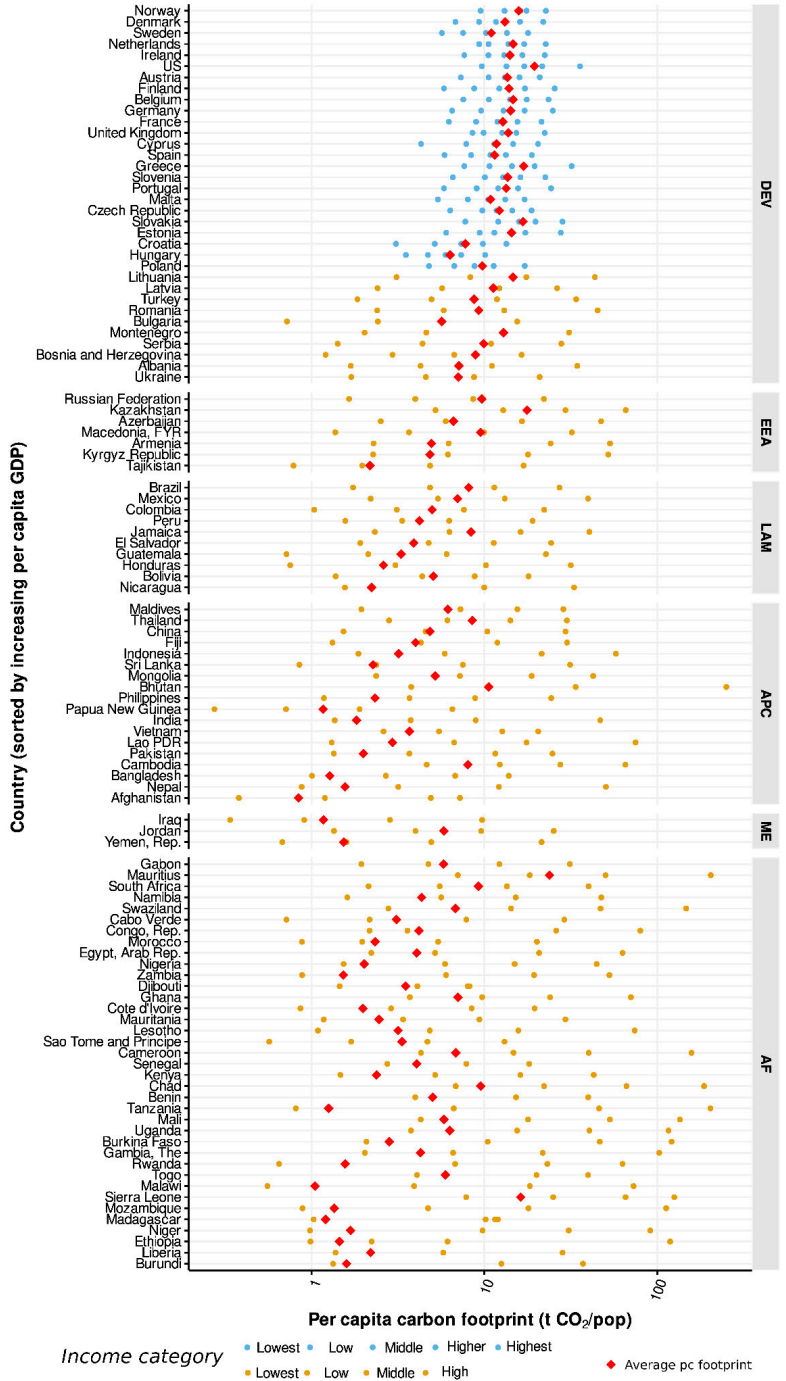
Carbon footprints per capita income and expenditure category for 19 countries ranked by per capita income (consumption-based emissions)



AR6 WGIII Chapter 2 Figure 2.25

« The global wealthiest 10% contribute about 36-45% of global GHG emissions »

AR6 SPM WGIII



CHAPTER 2 FIGURE 2.25

Disparité de l'empreinte carbone mondiale

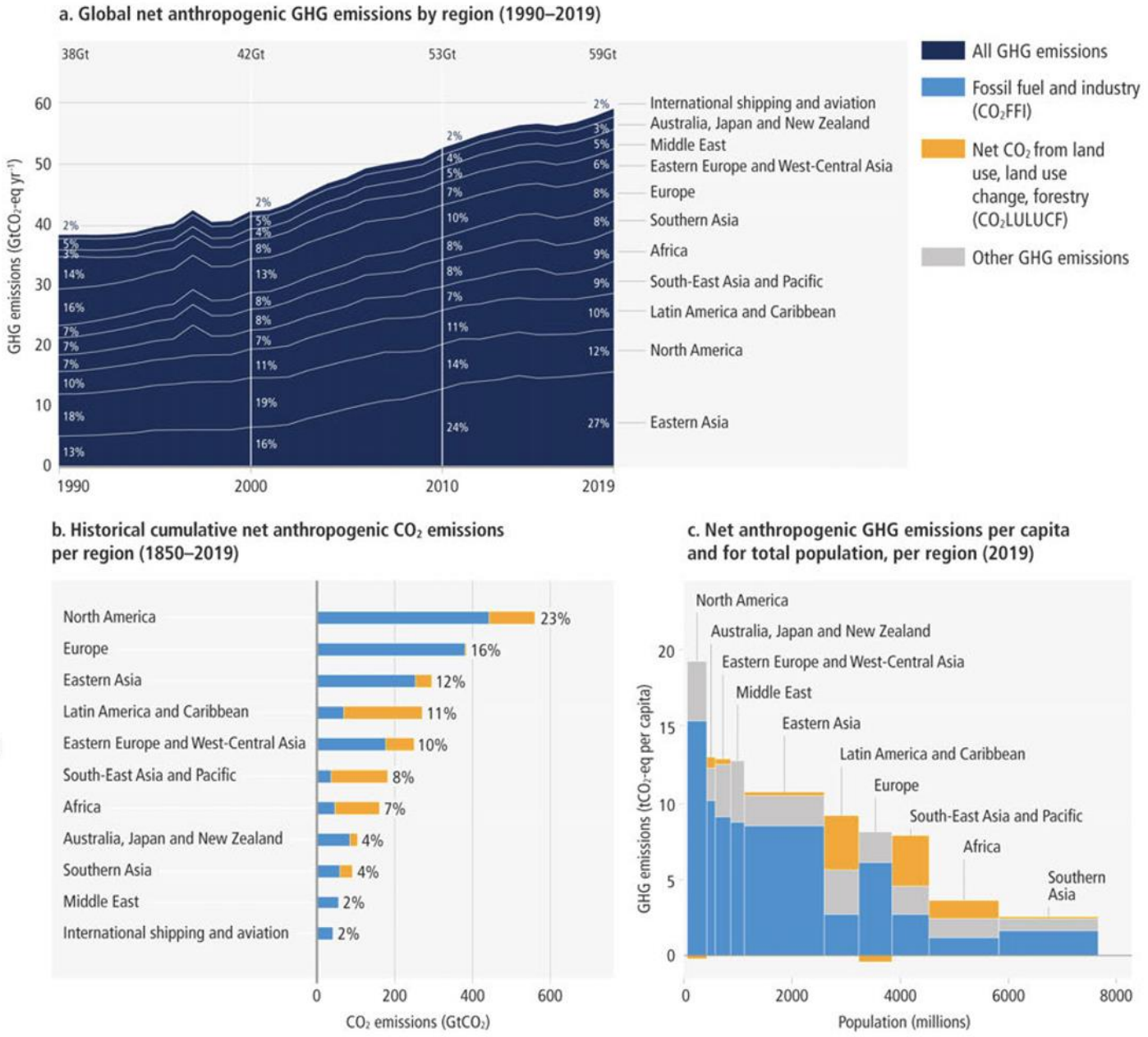
Chapter 2 IPCC AR6 WGIII

Regional contributions to global GHG emissions continue to differ widely.

Variations in regional, and national per capita emissions partly reflect different development stages, but they also vary widely at similar income levels. The 10% of households with the highest per capita emissions contribute a disproportionately large share of global household GHG emissions.

SPM AND FIGURE SPM.2

Emissions have grown in most regions but are distributed unevenly, both in the present day and cumulatively since 1850.



DES SOLUTIONS

Il y a maintenant des options disponibles dans chaque secteur qui permettraient de réduire au moins de moitié les émissions d'ici 2030

Energie

Usage des sols

Industrie

Villes & bâtiments

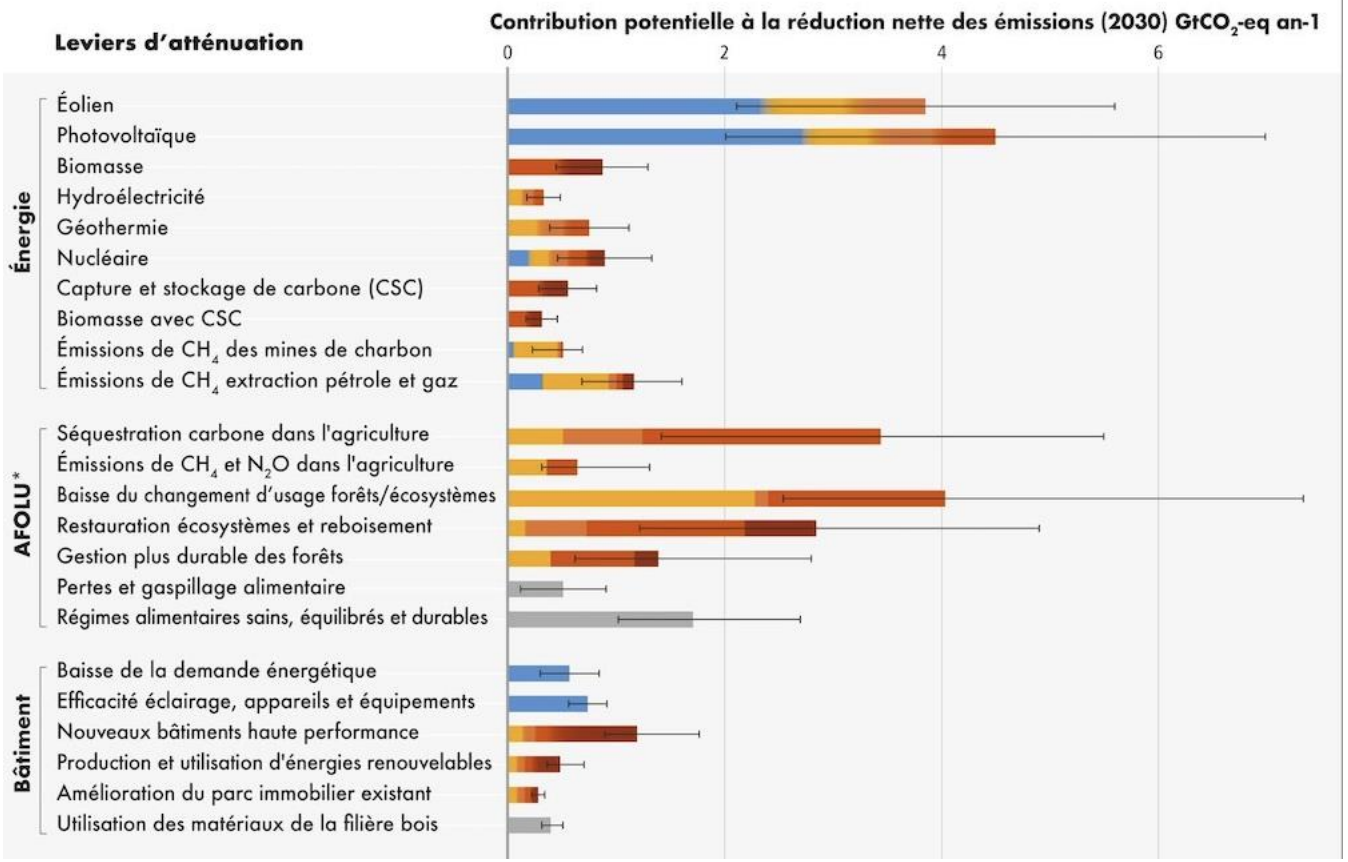
Transports

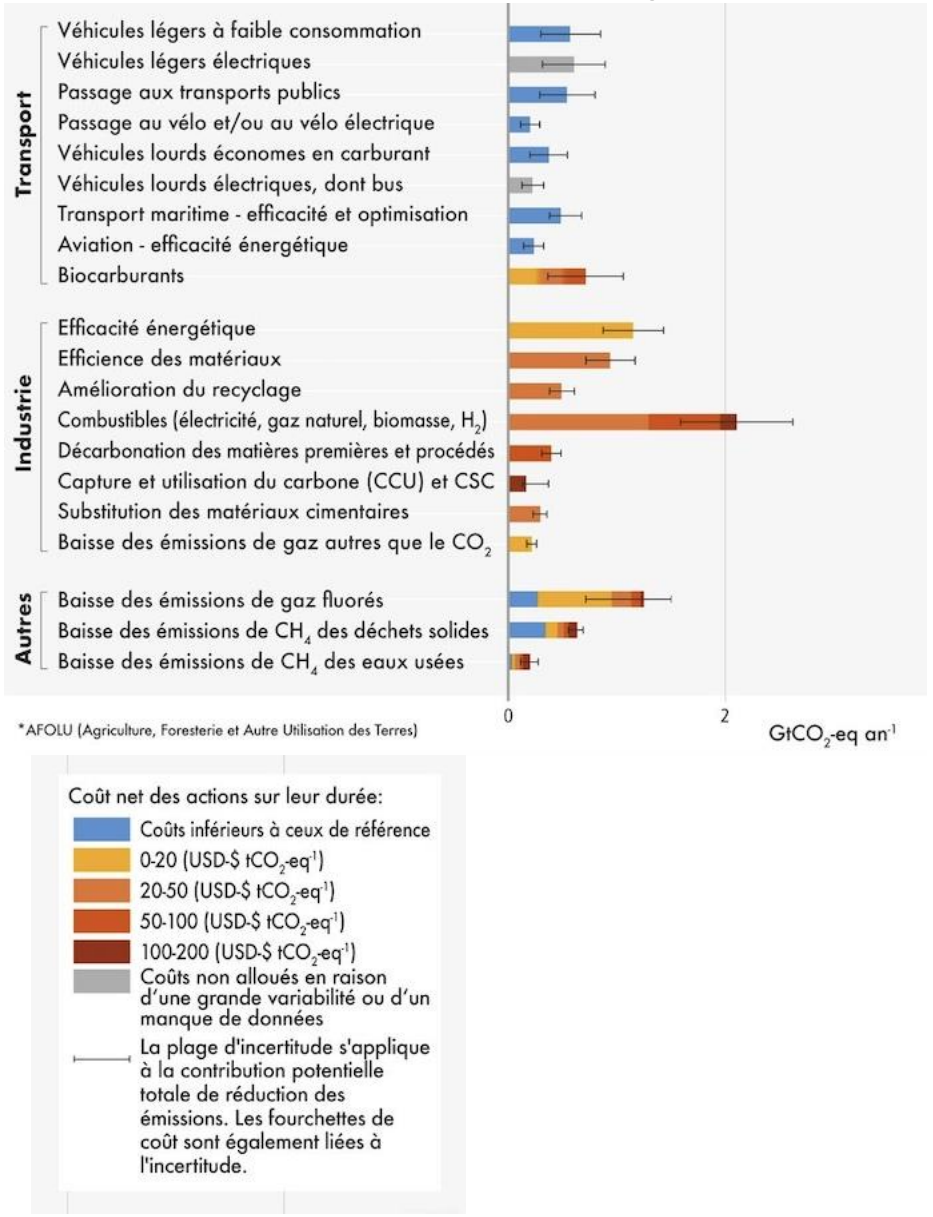
Demande & services

Un potentiel considérable <100USD/tCO2-eq

Figure SPM.7 : Aperçu des leviers d'atténuation avec fourchettes de coût/potentiel de réduction estimés en 2030.

On estime que les nombreuses solutions, déjà disponibles actuellement dans tous les secteurs, offrent un potentiel important de réduction nette des émissions d'ici à 2030. Les potentiels et les coûts relatifs varient selon les pays et sur le long terme, par rapport à 2030.





Potentiels **1) énergies renouvelables, 2) agriculture terres forets, 3) efficacité, 4) non-CO2 et 5) modes de vie**

Energie

Usage des sols

Industrie

Bâtiments et villes

Transports

Demande & services

Energie

- **Transitions majeures** nécessaires pour limiter le réchauffement
- Réduction d'utilisation des énergies fossiles et utilisation de captage et stockage low- or **no-carbon** energy systems
- **électrification** généralisée et amelioration de l'**efficacité**
- **Carburants alternatifs**: e.g. hydrogène and agrocarburants soutenables

Energie | Usage des sols | Industrie | Villes & batiments | Transport | **Demande & services**

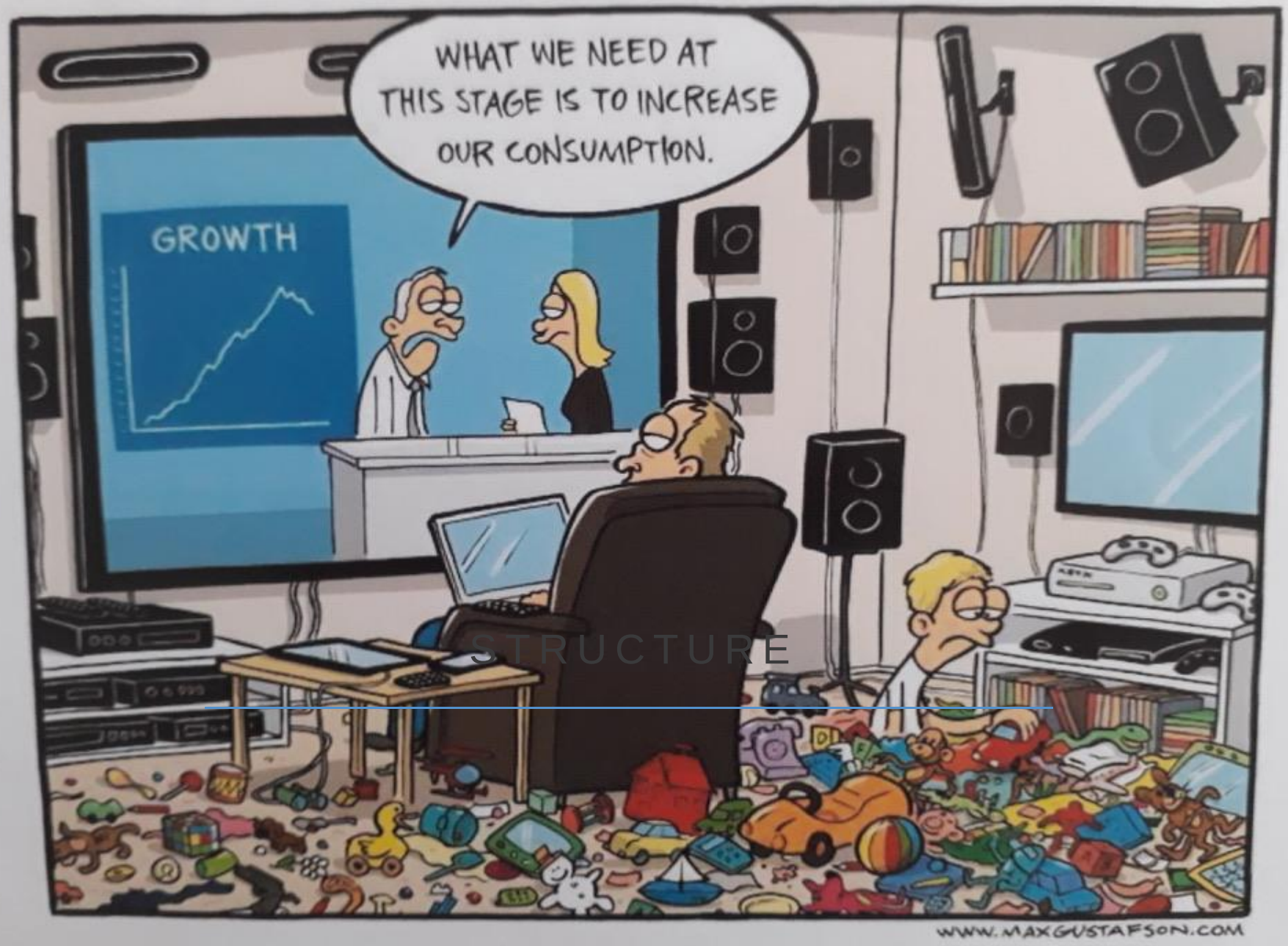
Demande et services

- Potentiel de diminution des émissions de gaz à effet de serre de **40-70% d'ici** 2050
- Marche et vélo, transports électrifiés, diminution des voyages en avion, adaptation des lodgements constituent les plus grandes contributions
- Les changements de modes de vie demandent des changements systémiques dans l'ensemble des sociétés
- **Besoin de logements, énergie, ressources supplémentaires pour assurer le bien-être de certaines personnes**

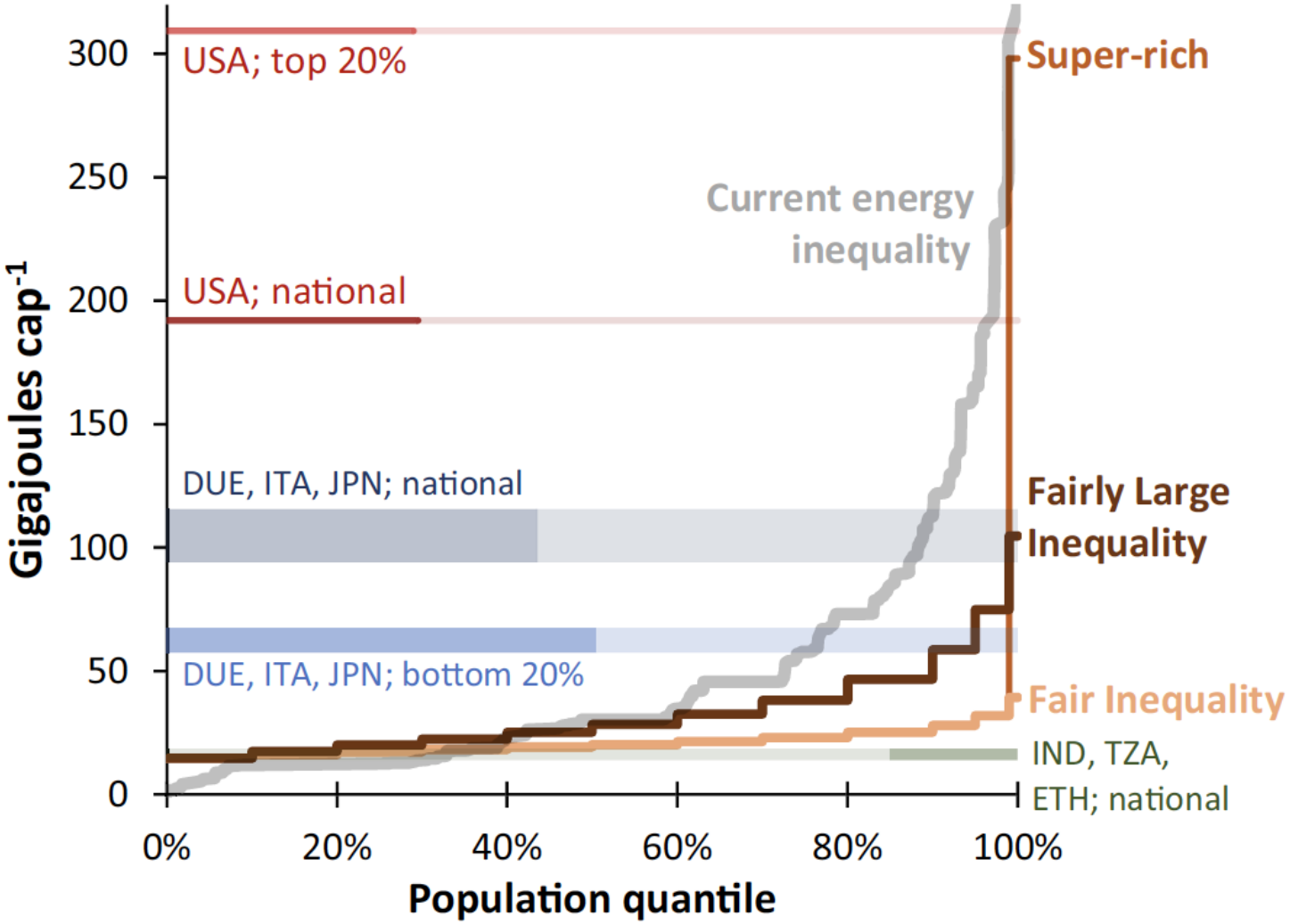
DU BIEN-ÊTRE

« Studies give divergent results on the effect of economic inequality reduction on emissions, with either an increase or a decrease in emissions »

WGIII chapter 3



Estimates of final energy use per capita across global population quantiles in 2050 : Different visions



Decent living standards

Well-being

Norms

Values

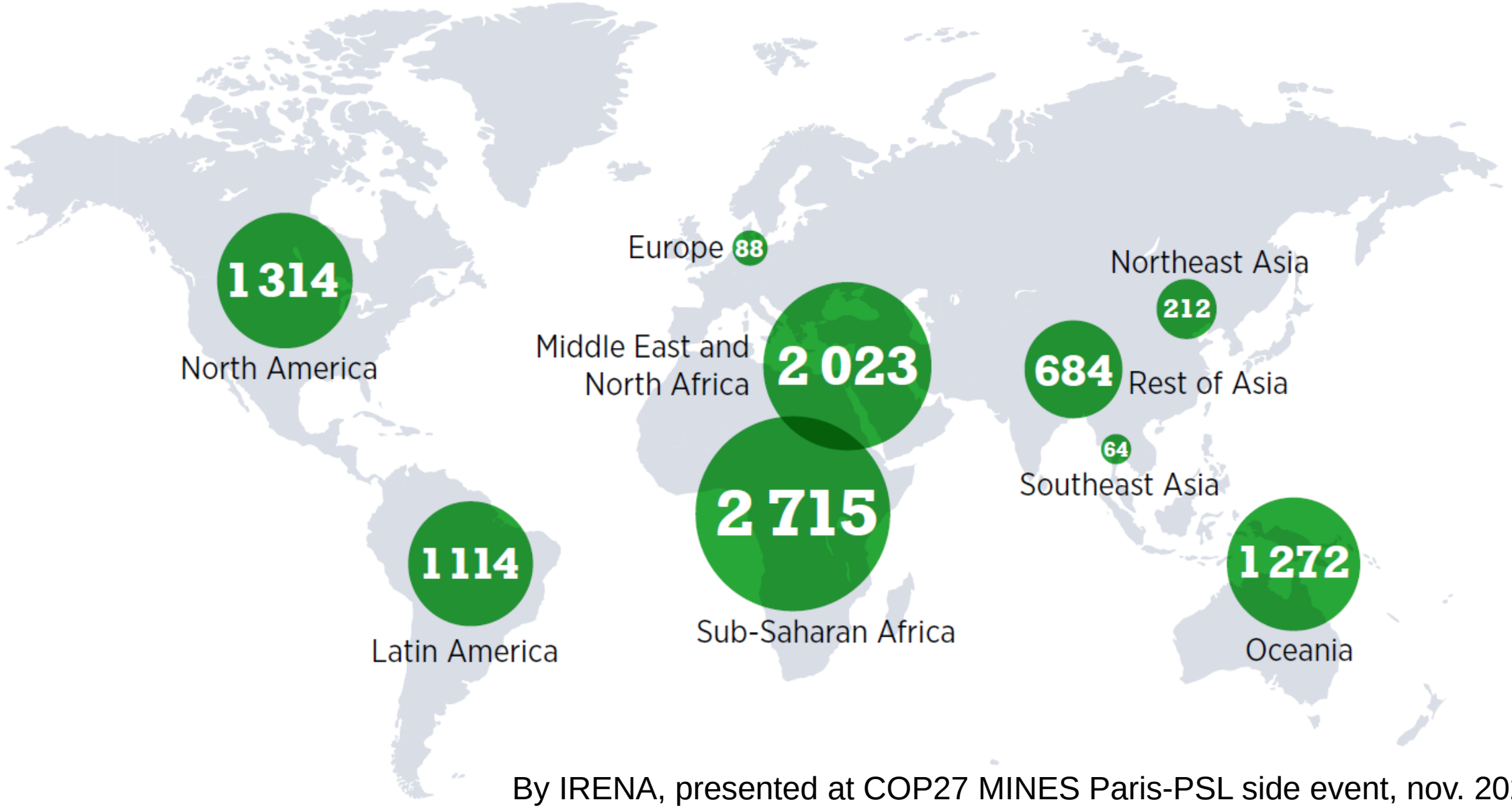
Lifestyles

Final energy per capita in 2050 for the three inequality scenarios, shown averaged across population quantiles for the lowest to highest consumption groups. For comparison the current distribution of final energy is also shown, as well as that for a selection of income groups and countries (from Oswald et al. (2020), but with government & capital energy added). The stepped patterns arise from the distributions produced in the inequality scenarios, which are at a resolution of deciles up to the top decile, which is split into three further groups (see Methods for more details). DUE Germany, ITA Italy, JPN Japan, IND India, TZA Tanzania, ETH Ethiopia.

Millward-Hopkins**, 2022, Nature communications**

DES LEÇONS DU PASSÉ

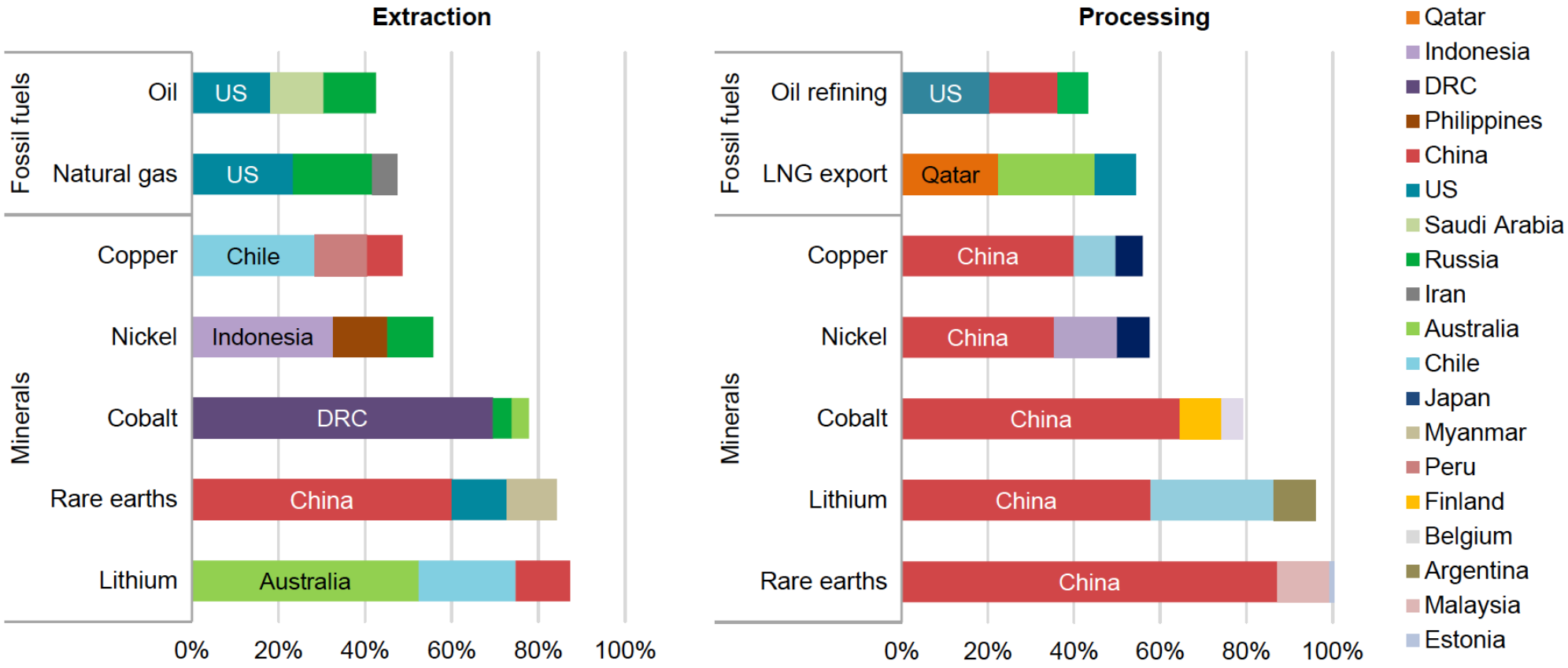
Technical potential for producing green hydrogen under USD 1.5/kg by 2050, in EJ



By IRENA, presented at COP27 MINES Paris-PSL side event, nov. 2022

Production of many energy transition minerals today is more geographically concentrated than that of oil or natural gas

Share of top three producing countries in production of selected minerals and fossil fuels, 2019



Notes: LNG = liquefied natural gas; US = United States. The values for copper processing are for refining operations.
Sources: IEA (2020a); USGS (2021), World Bureau of Metal Statistics (2020); Adamas Intelligence (2020).

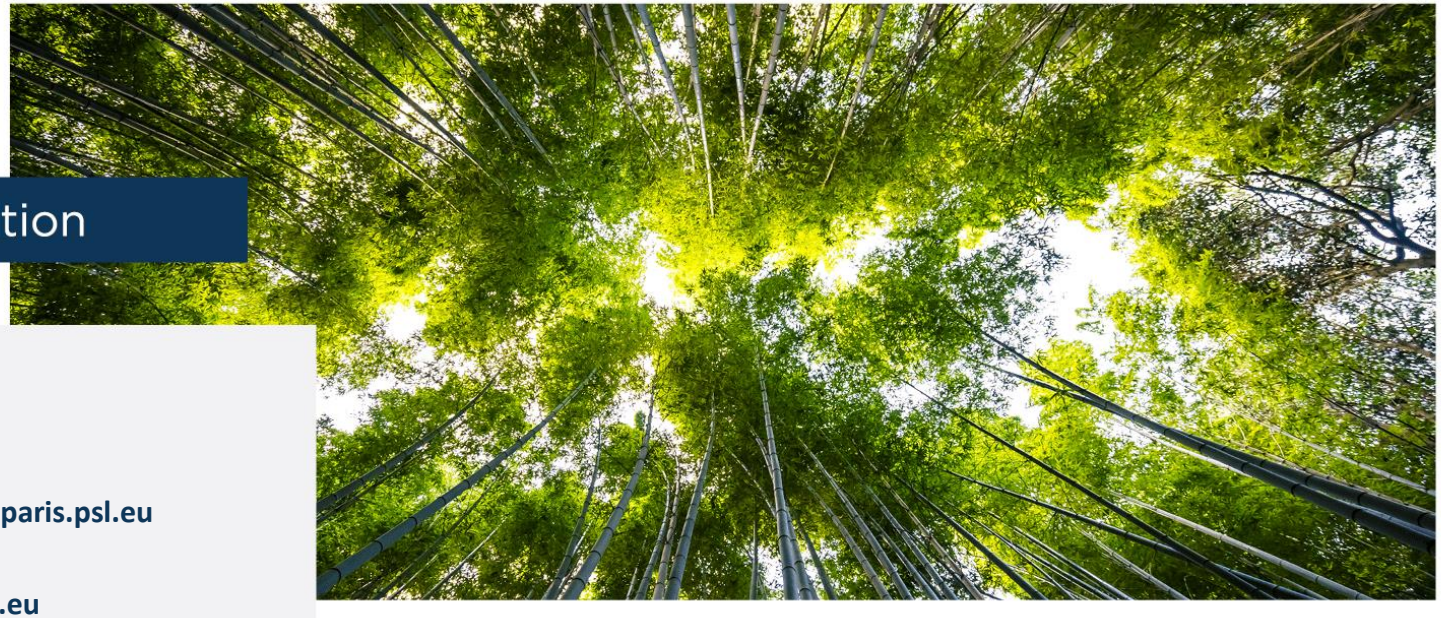
RECOMMANDATIONS

ADOPTER UNE APPROCHE SYSTÉMIQUE ET HOLISTIQUE

pour que les solutions des uns ne soient pas les problèmes des autres

TTI.5° The Transition Institute

L'ambition d'une véritable transition



CONTACT

the-transition-institute.minesparis.psl.eu

tti.5@minesparis.psl.eu

LE CENTRE DE MATHÉMATIQUES APPLIQUÉES - FÉVRIER 2022
PHOTO DE COUVERTURE © USGS ON UNSPLASH

MINES PARIS | PSL | MINES ParisTech FONDATION