

# Population Dynamics and Climate Change

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POPCLIMA (Grant agreement: 101002973)

#### Planetary boundaries and human development



Source: Steffen, W. et al. (2015). Science.

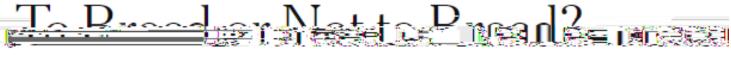












directory and result of productions solitical strife and records some some well blocks for section will be established.

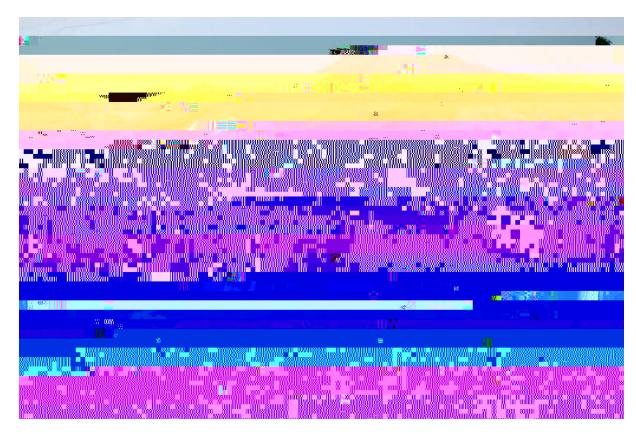




# tonnes 002-equivalent (t 002e) emission



# Does having fewer children really a solution to fight dimate change?

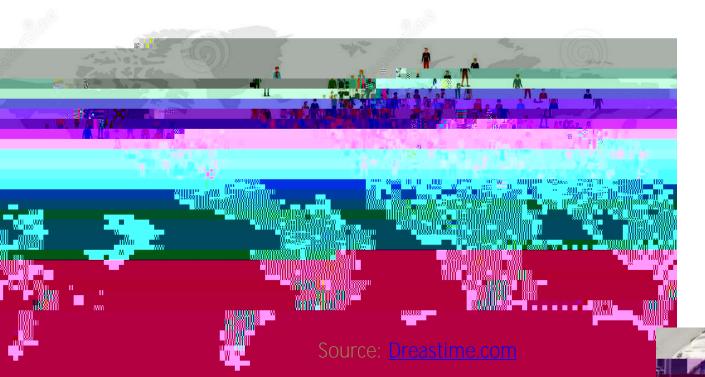


Source: <u>flickr.com</u>.



Source: <u>health.clevelandclinic.org</u>





#### Population impact on the climate

Source: vietnamnet.vn

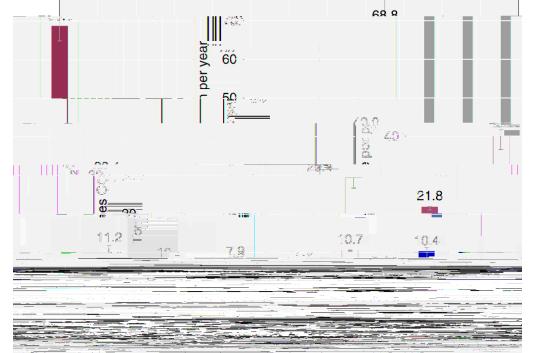
*I* = Human impact on the environment

*P* = Population

A = Affluence (consumption per person)

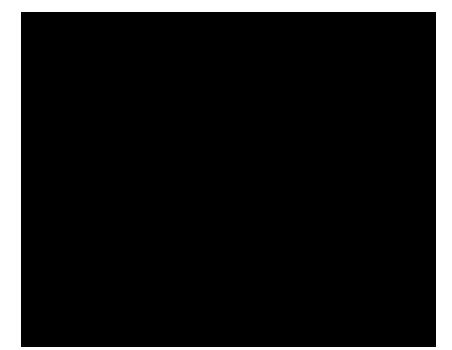
*T* = Technology (impact per unit of consumption)





Per-capita emissions by group in 2019 (160<sub>2</sub>e per capita)



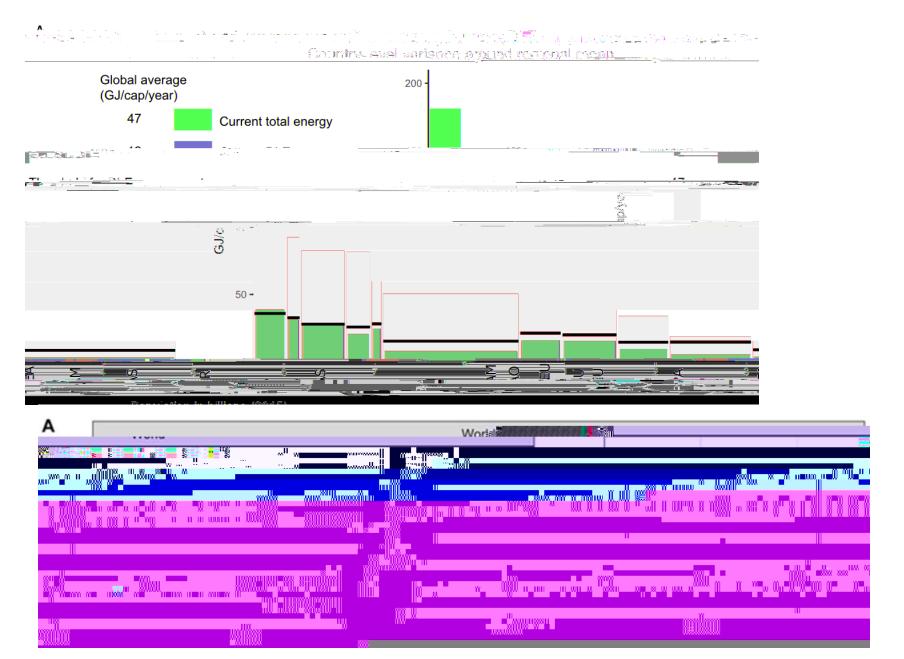


Source: Chancel, L. (2022). *Nature Sustainability*.

Global emissions inequality in 2019: summary table



#### Energy demand to meet Decent Living Standards for all by 2040

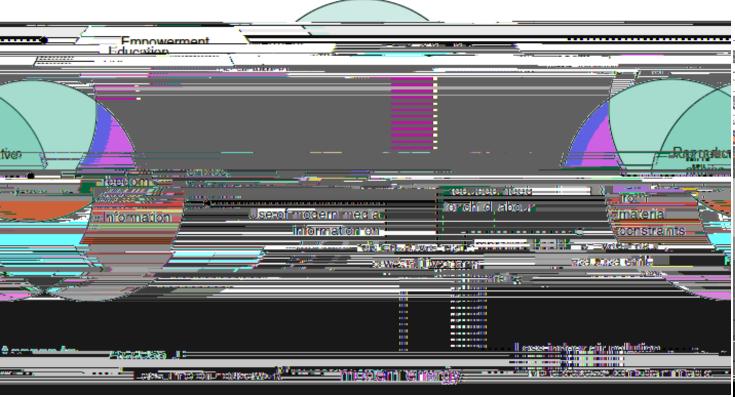


Timeseries of future pathways of decent living energy under a scenario in which decent living is provided to all by 2040 (DLE-2040), and a scenario in which decent living provision is related to economic growth (DLE-GDP), compared to SSP2 and its 2 C (SSP2-26) and 1.5 C (SSP2-19) compatible pathways.

Source: Kirkstra, J. et al. (2021). <u>Environmental</u> Research Letters.

#### transition

Links between modern energy and fertility



Predicted fertility decline from 2015 to 2040 in 25 sub-Saharan African countries



Source: Belmin, C., Hoffmann, R., Pichler, P., Weisz, H. (2021). *Nature Sustainability*.





#### THANK YOU!

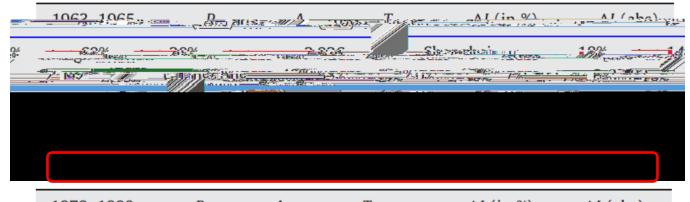
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# Application of IPAT identity: Three main driving forces behind the increase of CO2 emissions in China



Adjustive period of the economy (1963–1965)

Mao's call of '

Rural and urban reforms (1979–1990)

#### Macroeconomicstructural reformssince 1990

Deng's 'socialist market economy' an open door policy for international trade and investment allowing foreign direct investments (FDI)

Source: Feng, K., Hubacek, K., Guan, D.(2009). *Ecological Economics*.

