

Global Carbon Atlas: towards city emissions component

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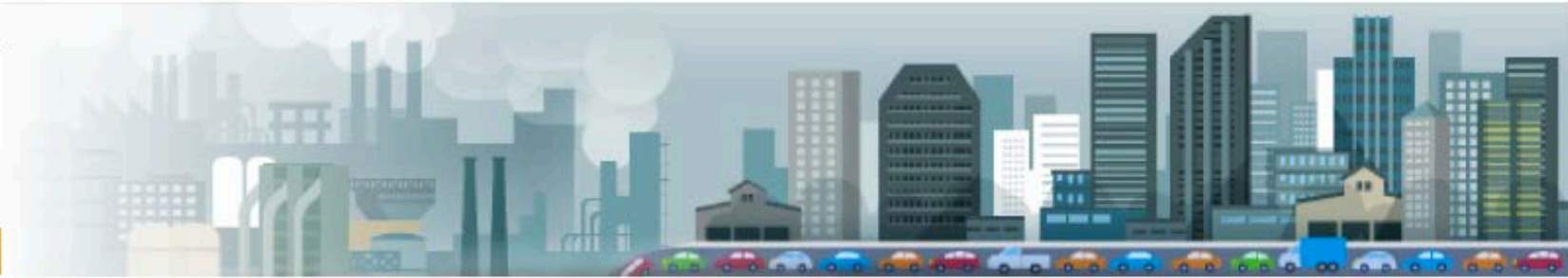
GLOBAL CARBON ATLAS

The Global Carbon Atlas is a platform to explore and visualize the most up-to-date data on carbon fluxes resulting from human activities and natural processes.

Human impacts on the carbon cycle are the most important cause of climate change.

OUTREACH

Take a journey through the history and future of human development and carbon



GO



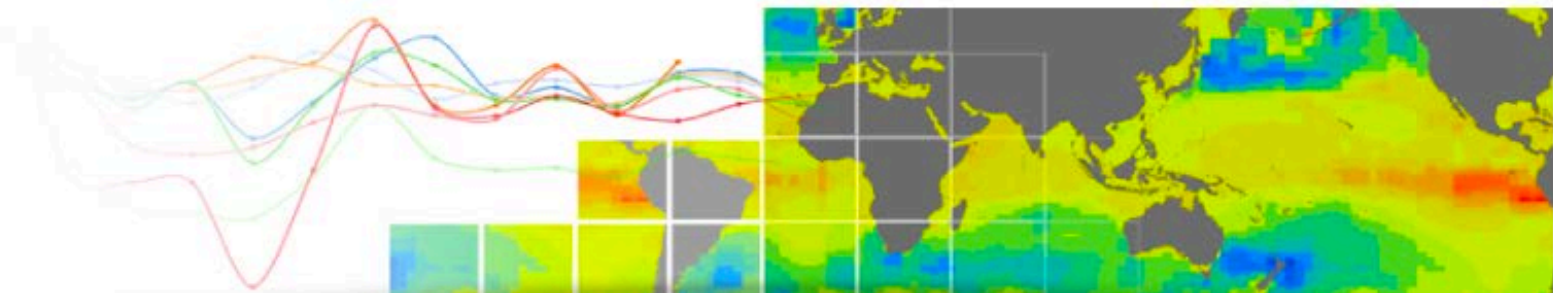
EMISSIONS

Explore and download global and country level carbon emissions from human activity.

GO

RESEARCH

Explore and visualize research carbon data, and get access through data providers



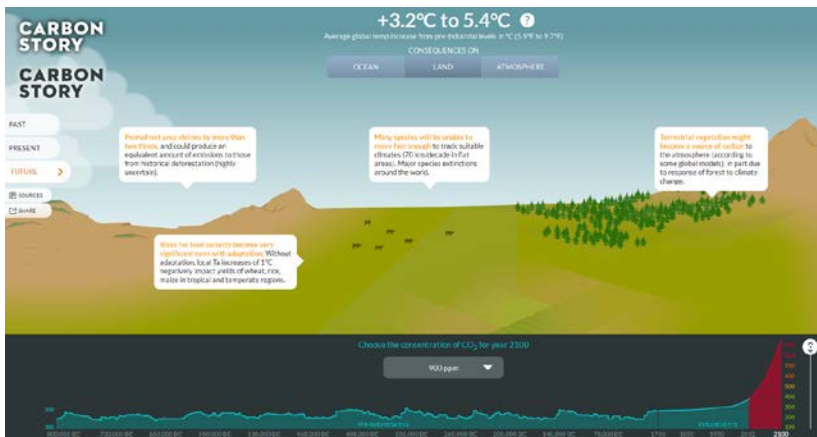
GO



PAST: Cumulative carbon emissions from human activity so far (800,000 BC - present)



PRESENT: Human impact nowadays (sources/sinks/producers/time scale of emissions)



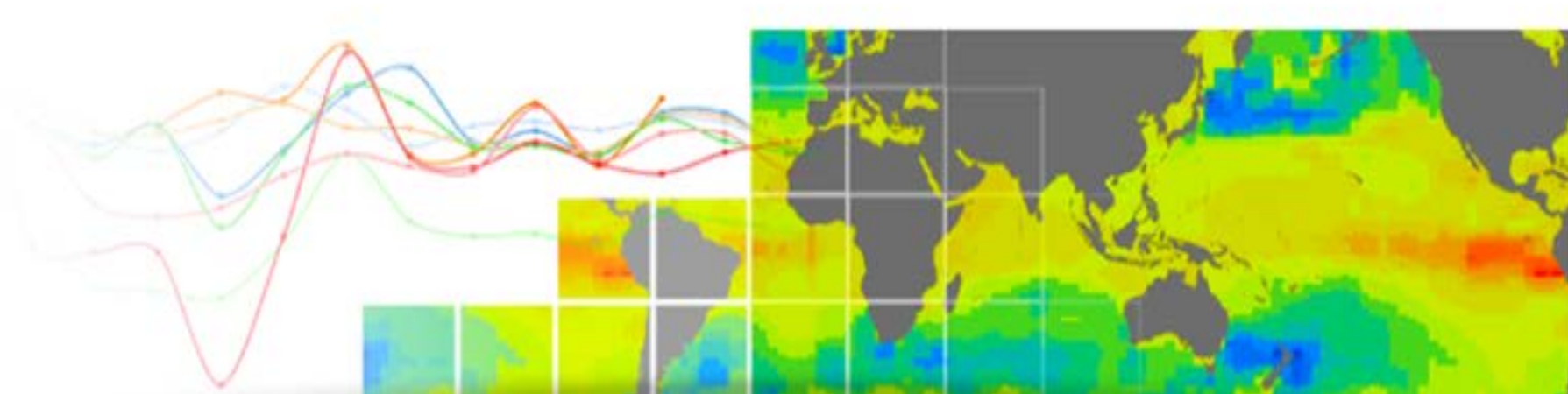
FUTURE: Explore what the next hundred years may look like (RCP scenarios for the ocean, land, and atmosphere).

Provides tools to create custom global and regional maps and time series of carbon fluxes from research models and datasets. It is a collaborative effort built upon contributions from many research institutions worldwide.

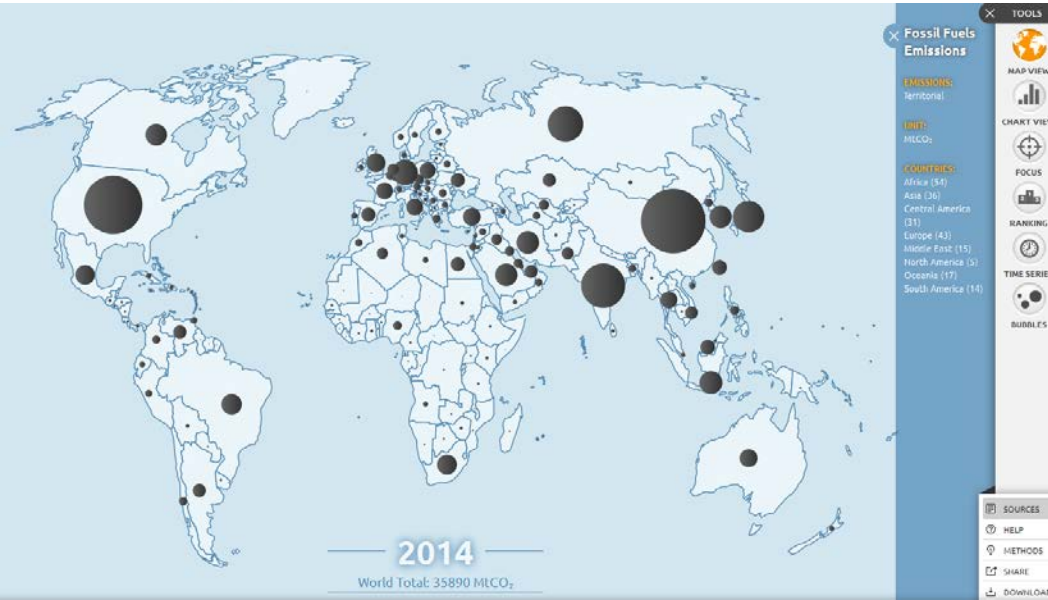
10 atmospheric models

7 land models

6 ocean models



EMISSIONS_Global Carbon Atlas



216 countries

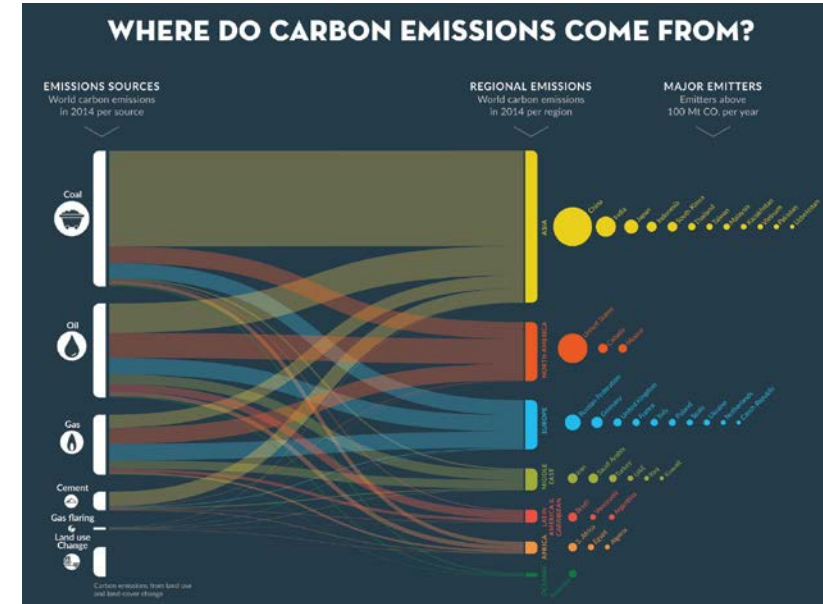
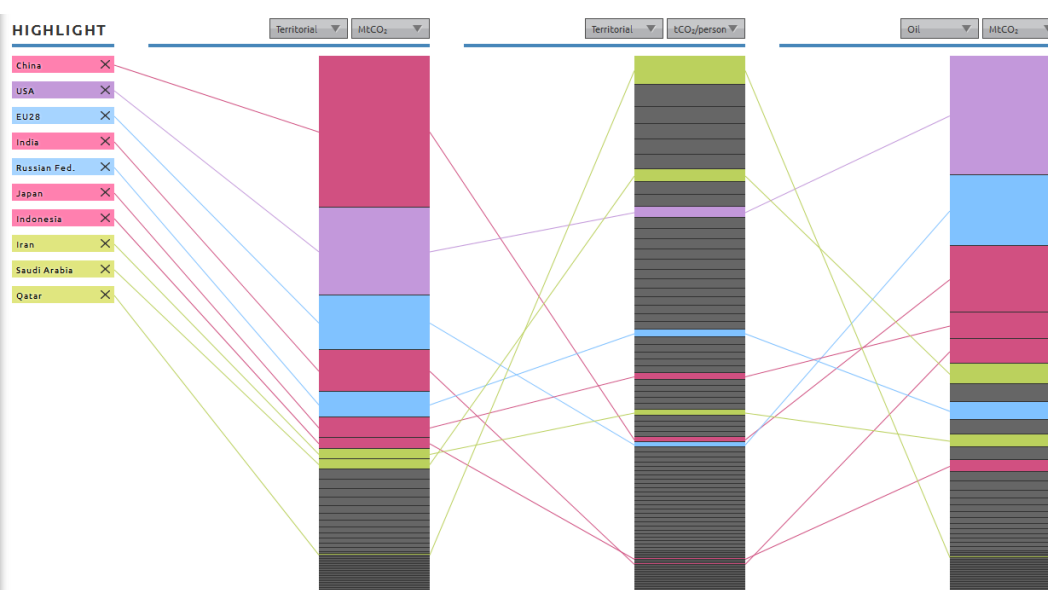
CO₂ emissions for the period 1960 – 2014

Fossil fuel

- Territorial (coal, oil, gas, gas flaring, cement)
- Consumption
- Transfer

Land use change

Units: MtCO₂, kgCO₂/GDP, tCO₂/person



Sept. – Oct. 2016 Regional Carbon Cycle Assessment and Processes (RECCAP)

Sept. – Oct. 2016 Global Methane (CH₄) Budget

Dec. 2016 City Emissions

(!) Challenge to access the emission data at city level with good confidence of data quality.

(!) The C-Atlas is seeking for collaborative framework for creating a global urban GHG emission database (and implied map-based products) elaborated with common methodology and data format.



Conceptual data set for development of web application:

- Focus on municipality-scale analysis (not national-, nor regional-scale)
- Total CO₂ emissions, and CO₂ emissions in different sectors:
 - Commercial: buildings
 - Industry
 - Private/public transportation
 - Residential area and household energy use (electricity production/consumption)
 - First priority for quantifying direct emissions, rather than indirect emissions
- Socio-economic data: population, urban area (administrative or land-cover based), GDP
- Long reporting records (1990s ~)
- Spatial distribution of cities over the Globe
- Up to 10-15 cities (with megacities and some middle size cities - the most common in the future)

THANK YOU!

