



# Are SDGs aligned to manage our planet?

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# Key Sustainable Development Goal (SDG) Questions

- Pursuit of people- & economy-focused SDGs aligned with planet focused SDGs?
- SDGs attentive to critical and emerging planet-scale ecological risks?



# Sustainable Development Goals

GOAL 1 **End poverty** in all its forms everywhere

- GOAL 2 **End hunger**, achieve food security & improved nutrition promote sustainable agriculture

GOAL 3 Ensure **healthy lives & promote well-being** for all ages

GOAL 4 Ensure inclusive & equitable **quality education** & promote lifelong learning opportunities for all

GOAL 5 Achieve **gender equality** & empower all women & girls

- GOAL 6 Ensure availability & sustainable management of **water & sanitation** for all

- GOAL 7 Ensure access to affordable, reliable, sustainable & modern **energy** for all

- GOAL 8 Promote sustained, inclusive & sustainable economic growth, full & productive employment & decent work for all

- GOAL 9 Build resilient infrastructure, promote inclusive & **sustainable industrialization** & foster innovation

GOAL 10 **Reduce inequality** within & among countries

- GOAL 11 Make **cities & human settlements** inclusive, safe, resilient & sustainable

- GOAL 12 Ensure **sustainable consumption & production** patterns

- GOAL 13 Take urgent action to combat **climate change** & impacts

- GOAL 14 Conserve & sustainably use the **oceans, seas & marine resources** for sustainable development

- GOAL 15 Protect, restore & promote sustainable use of **terrestrial ecosystems**, sustainably manage forests, combat desertification, & halt & reverse land degradation and halt biodiversity loss

GOAL 16 Promote **peaceful & inclusive societies** for sustainable development, provide access to justice for all & build effective, accountable & inclusive institutions at all levels

GOAL 17 Strengthen the means of implementation & revitalize the **global partnership** for sustainable development



# SDGs for Managing Our Planet

## ⊙ Ecosphere Targets w/People Impacts

#13 combat climate change & its impacts

#14 Conserve & sustainably use **oceans/seas**

#15 Sustainable use of **terrestrial ecosystems**

*Are ecosphere-focused goals  
& people-focus goals  
compatible?*

## ○ People Targets w/Ecosphere Impacts

# 2 **End hunger**, promote sustainable agriculture

# 6 sustainably manage **water and sanitation** for all

# 7 Sustainable [...] **energy** for all

# 8 Inclusive sustainable **economic growth**

# 9 Sustainable **industrialization**

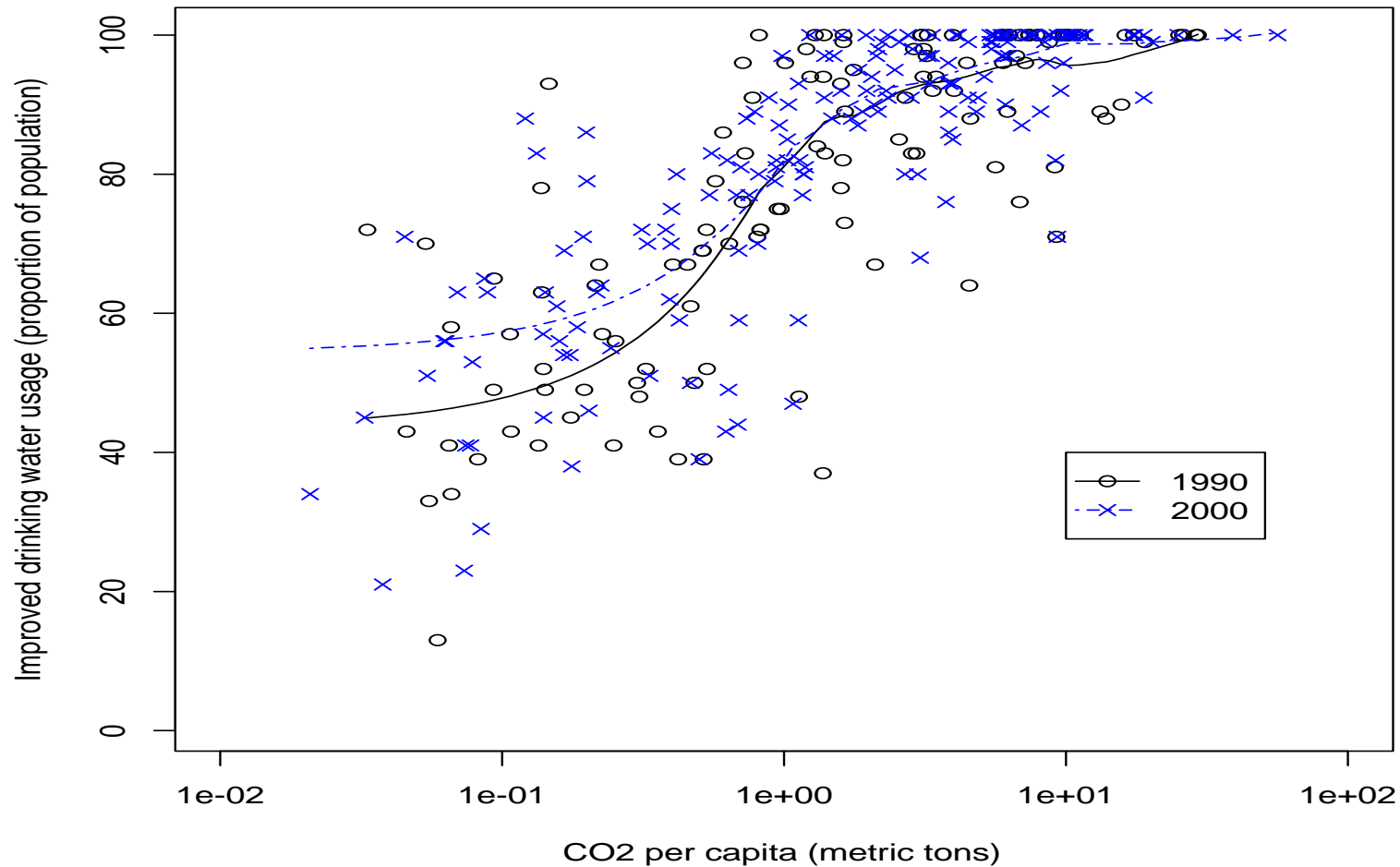
#11 Sustainable **cities and human settlements**

# 12 Sustainable **consumption & production**



# High CO<sub>2</sub> ~ Safe Drinking Water

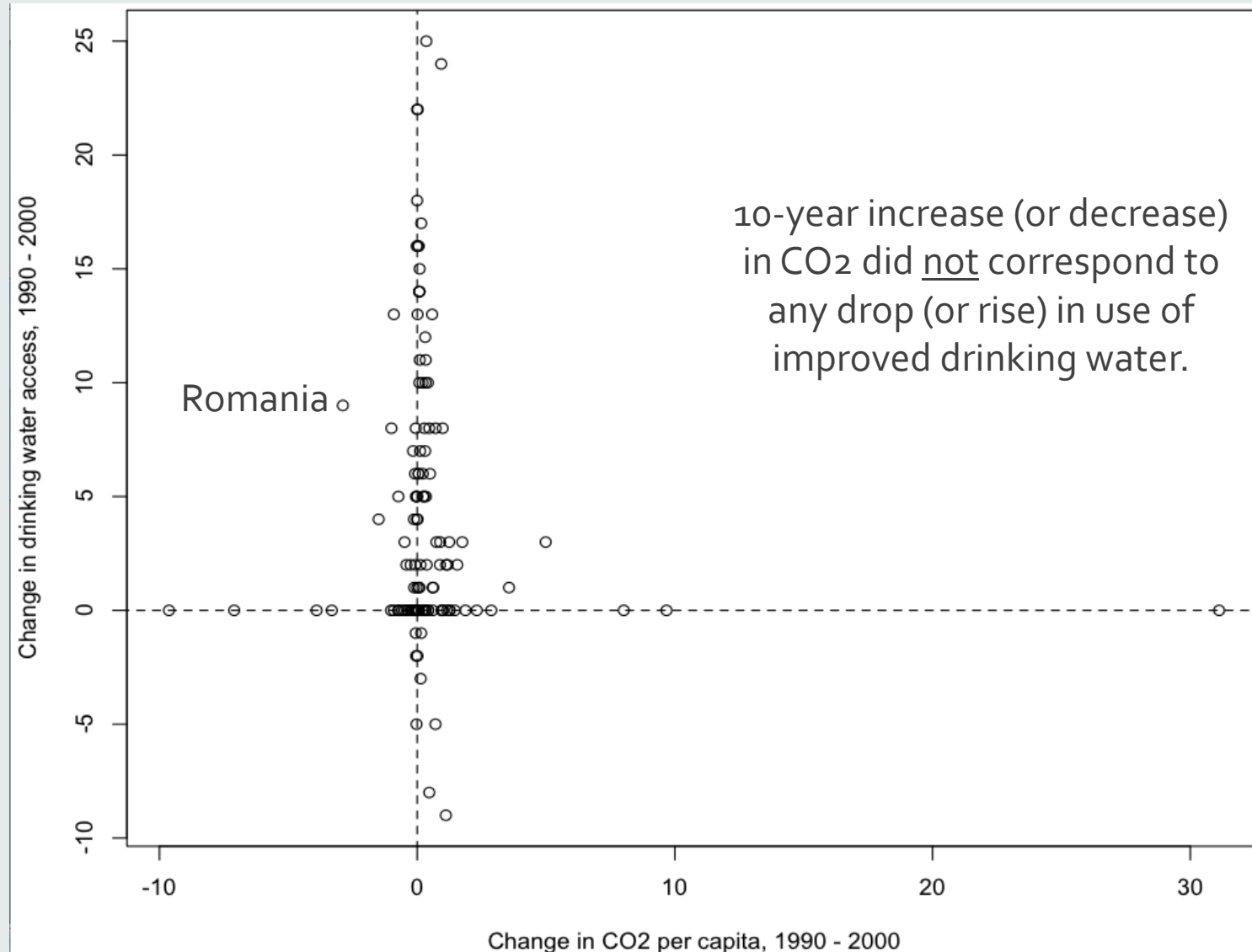
Across nations, higher per capita CO<sub>2</sub> emissions equated with greater use of improved drinking water in both 1990 and 2000





# BUT...

Romania, Lithuania,  
Hungary & Russia  
dropped CO<sub>2</sub>  
per capita while  
increasing water  
access.



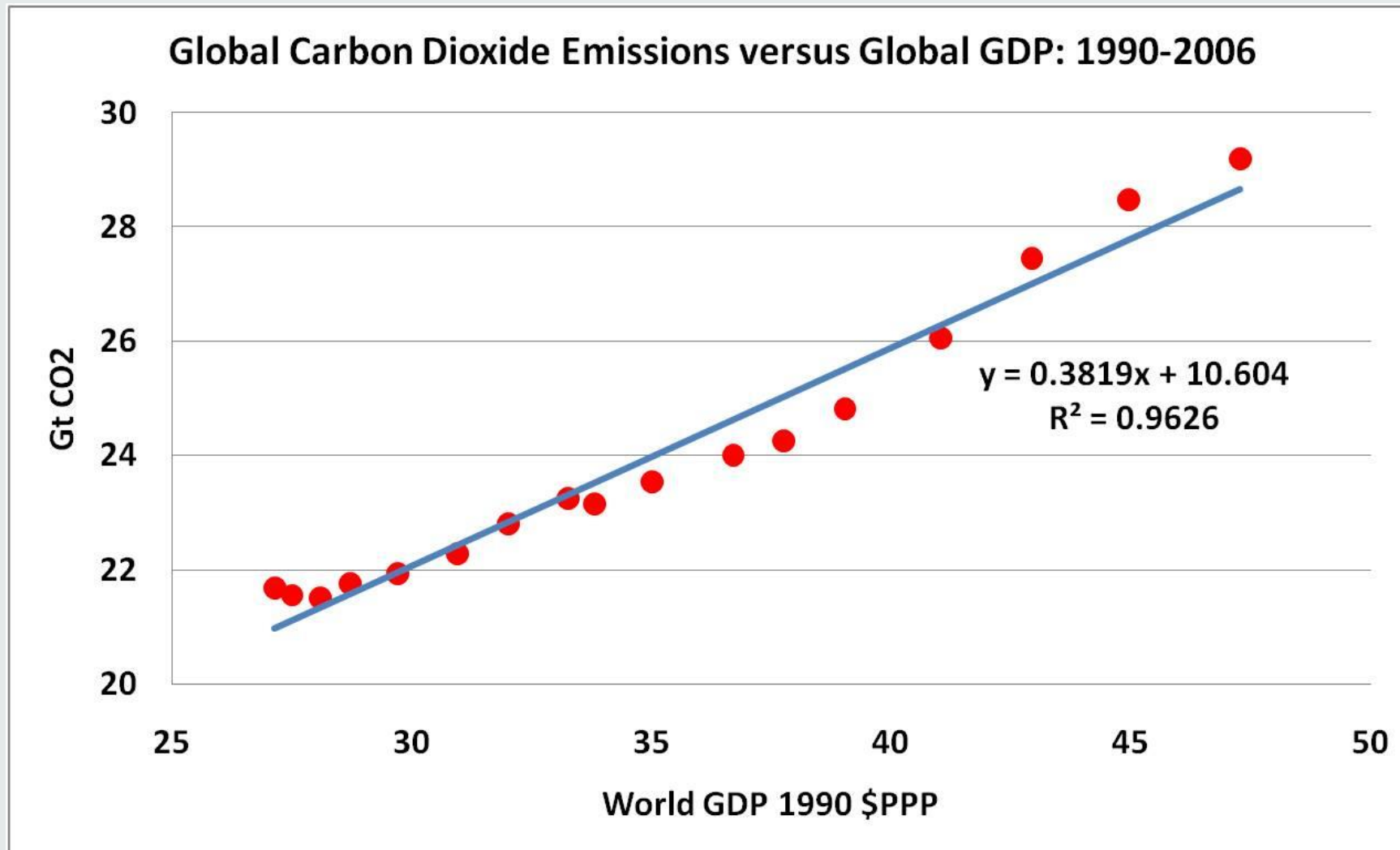


# Few Nations Improved H<sub>2</sub>O & Lowered CO<sub>2</sub> for 1990-2010

NATION	Improved H <sub>2</sub> O	Tot. CO <sub>2</sub>	CO <sub>2</sub> /capita	CO <sub>2</sub> /GDP
Lithuania	+8%	-62%	-54%	-65%
Hungary	+4%	-29%	-26%	-44%
Greece	+4%	+16%	+6%	-23%
Russia	+4%	-36%	-34%	-41%
USA	+1%	+12%	-8%	-32%

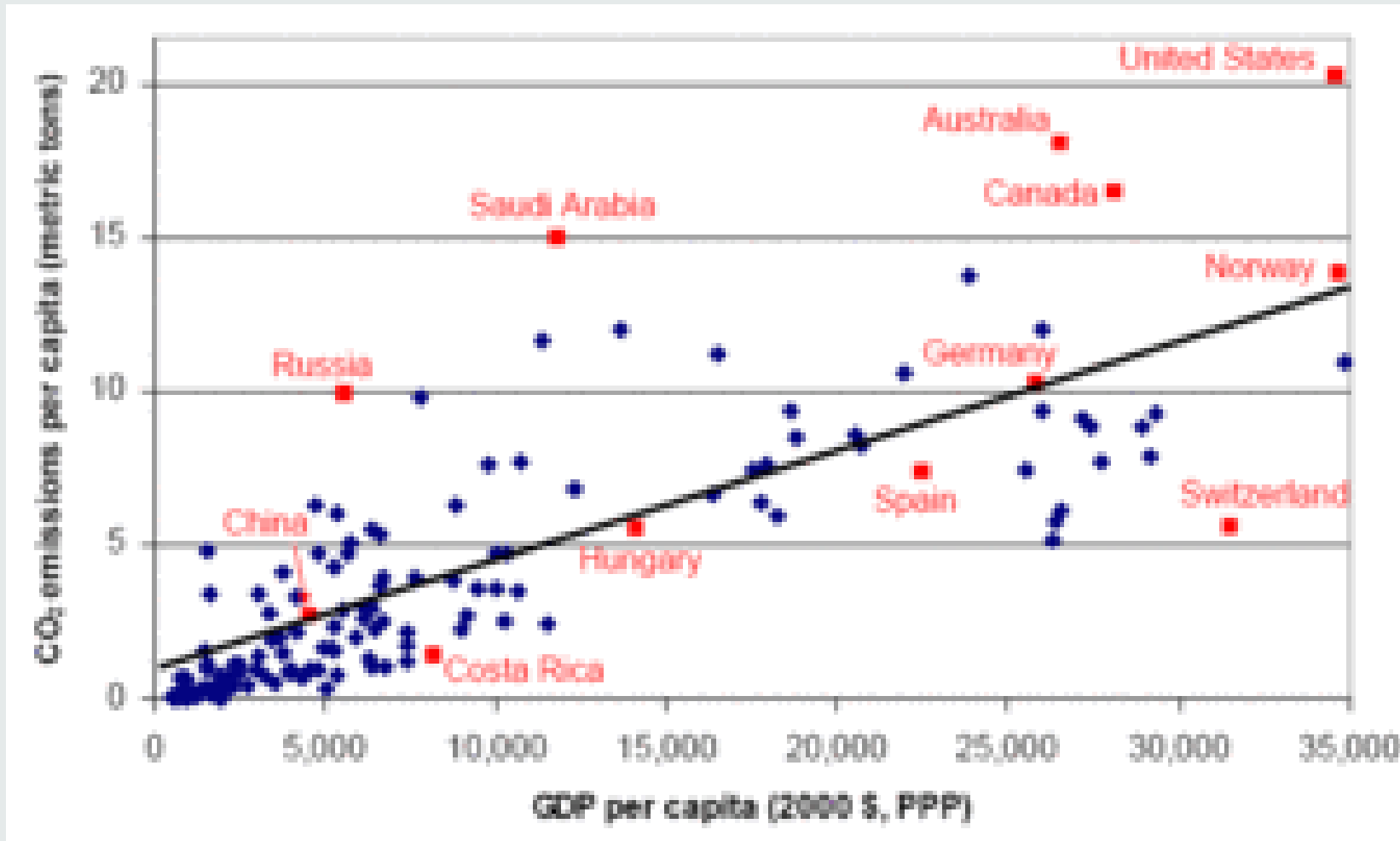


# Global CO<sub>2</sub> ~ Global Economy (GDP)





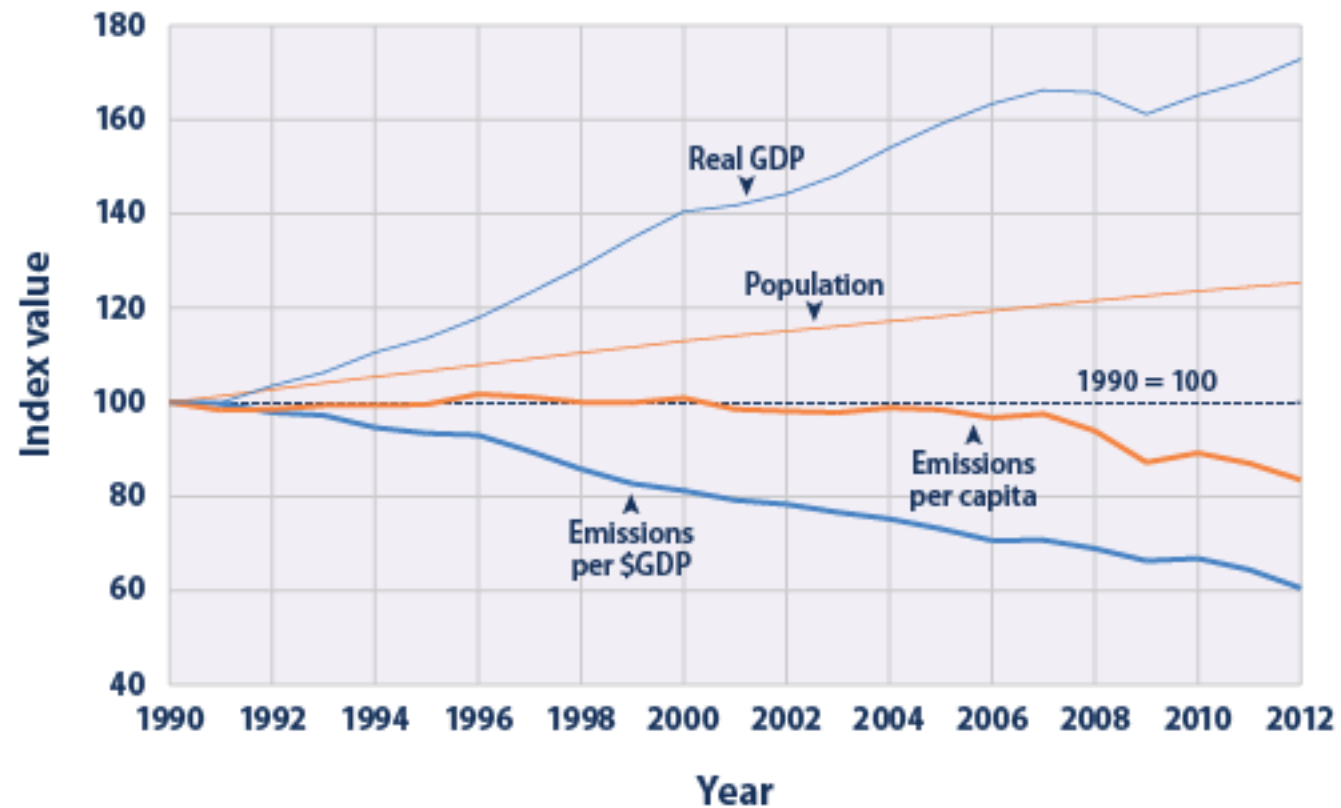
# National CO<sub>2</sub> ~ Economy (GDP) [per capita]





# USA CO<sub>2</sub> ~ Economy Decoupling

**Figure 3.** U.S. Greenhouse Gas Emissions per Capita and per Dollar of GDP, 1990–2012

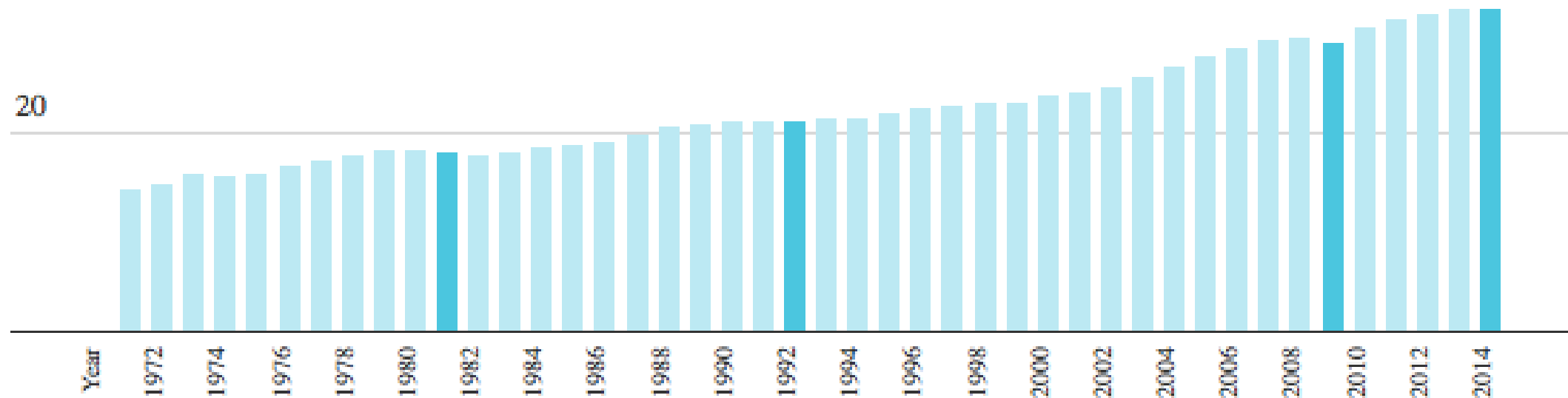




# Global CO<sub>2</sub> Trends – changing in 2010s?

## Global CO<sub>2</sub> emissions 1971-2014 from energy use (billion tonnes CO<sub>2</sub>)

Emissions stalled in 2014 for the first time without a strict economic recession, such as the global financial crisis in 2009



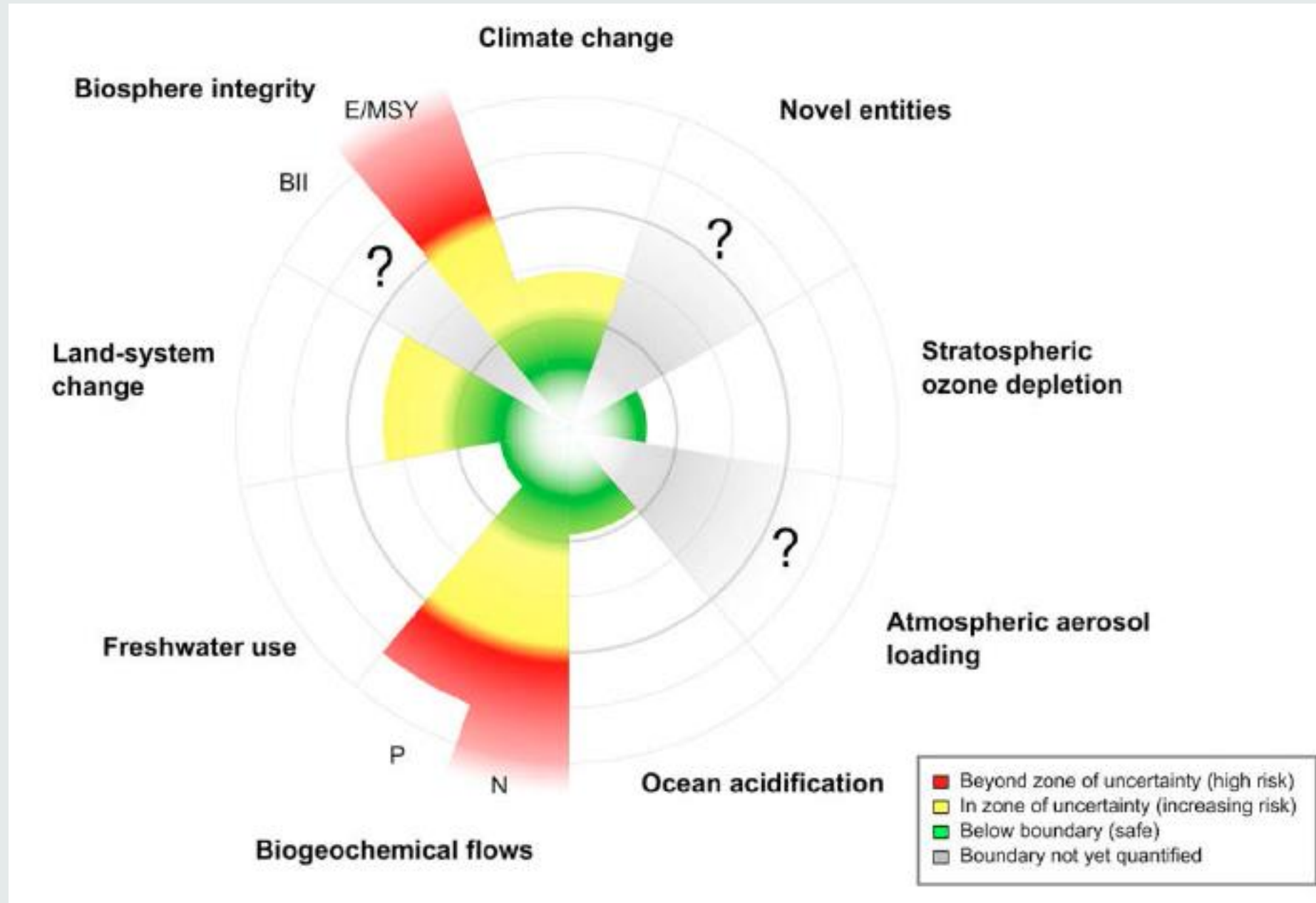


# Early Millennium Development Goals (MDG) Results

1. Nations with high CO<sub>2</sub> emissions score better on certain sustainable development indicators (e.g., safe water access, health, education, gender equality, economy), worse on others (e.g., % employed).
1. Yet from 1990-2000, nations' improvements vis MDG indicators were not readily associated with changes in CO<sub>2</sub> emissions, or vice-versa. They maybe linked but can also be decoupled.
2. For the 1990-2010 period, only 3 of 200+ nations reduced CO<sub>2</sub> AND improved access to safe drinking water.
3. Economic prosperity and CO<sub>2</sub> emissions are historically related but not
4. Nations' simultaneous advancement of both people and planet goals -- like economy/H<sub>2</sub>O and CO<sub>2</sub> -- will require sustained attention.

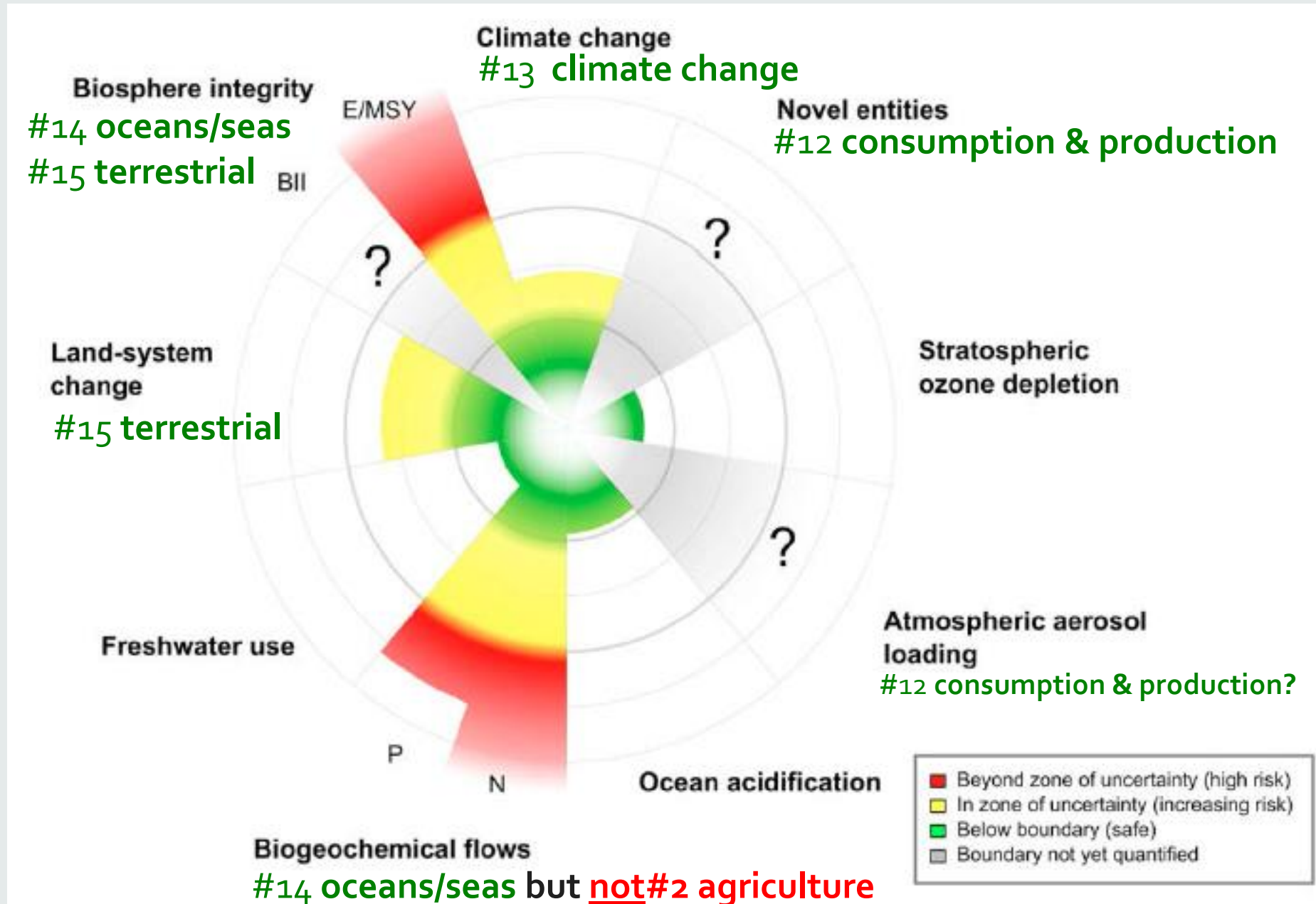


# What about planetary boundaries?





Do SDGs  
address  
*increasing risk*  
& **high risk**  
planetary  
boundaries?





# Findings vs. Planetary Risks

1. Planet-focused SDGs generally attentive to planet-scale risks, however...
2. People-focused SDGs need refinement to align with biogeochemical cycling risks.