



Global Footprint Network®
Advancing the Science of Sustainability

Rīgas meži
September 18, 2025

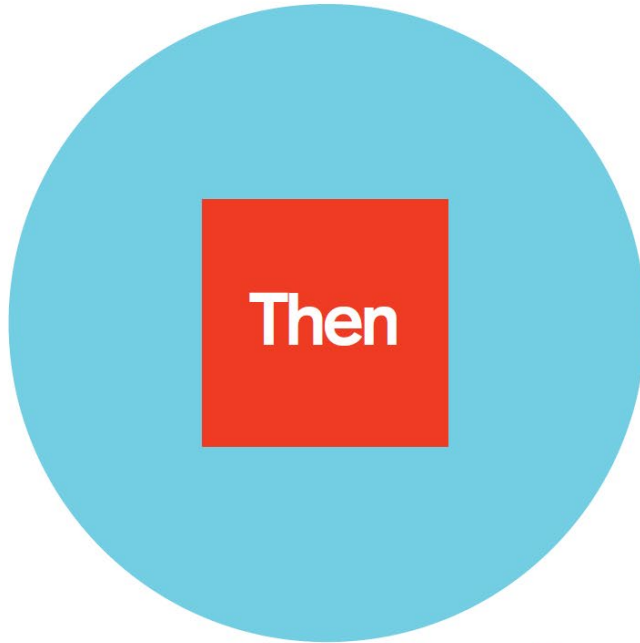
Winning Strategies in the Era of Overshoot

Mathis Wackernagel, PhD



New Context:

This changes the rules of the game



An empty world allows for unlimited production of goods.

■ Economy
● Biosphere



A full world turns the economy into a global auction.

Excessive Metabolism

Where is the opportunity?



Upton Sinclair (~ 1920)

It is very hard to
understand,
if your salary depends on
not understanding.



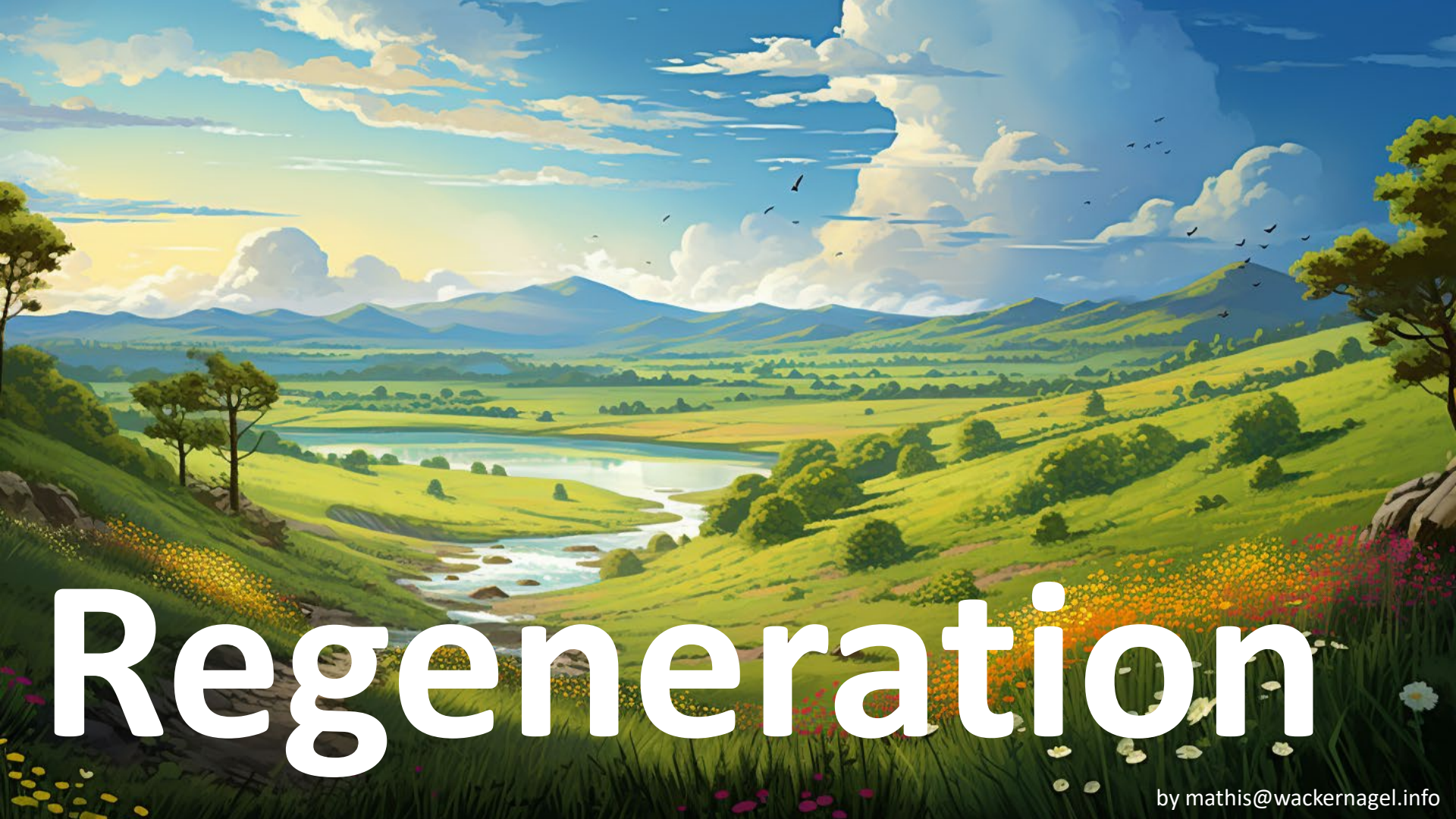
To be effective information needs to be...

1. **factual**
2. **relevant**
3. **empowering**



To be **paralyzing** information needs to be...

1. **factual**
2. **relevant**
3. **dysempowering /
burdensome**



Regeneration

by mathis@wackernagel.info



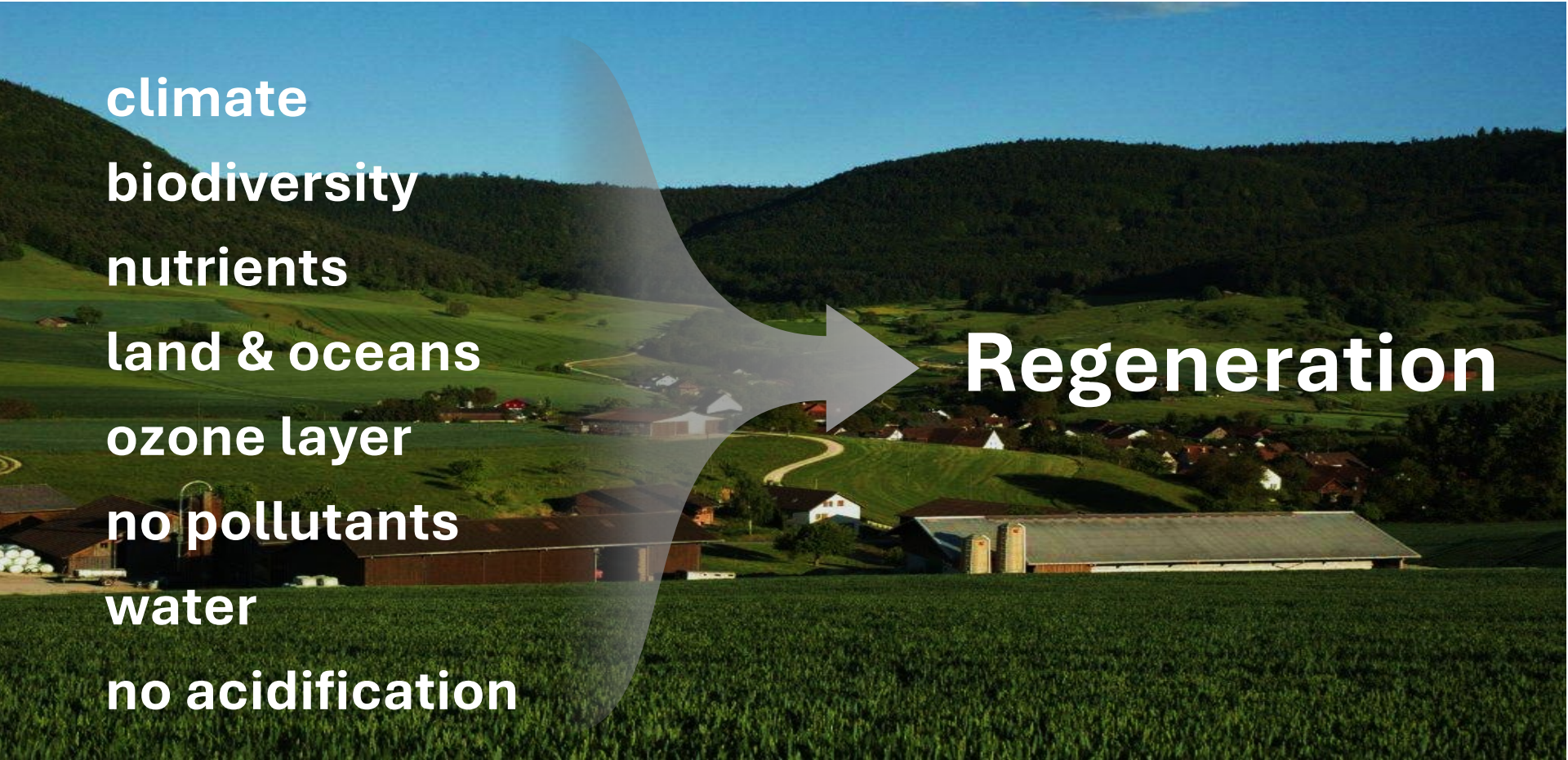
Conditions



Outcome

climate
biodiversity
nutrients
land & oceans
ozone layer
no pollutants
water
no acidification

Regeneration





The Essence: Regeneration

1. Biological resources
2. Fossil fuel use – limited by regeneration
3. Minerals and ores – extracting and concentrating them is limited by energy, which is limited by regeneration

The lens of analysis:

**Competition for
regeneration**

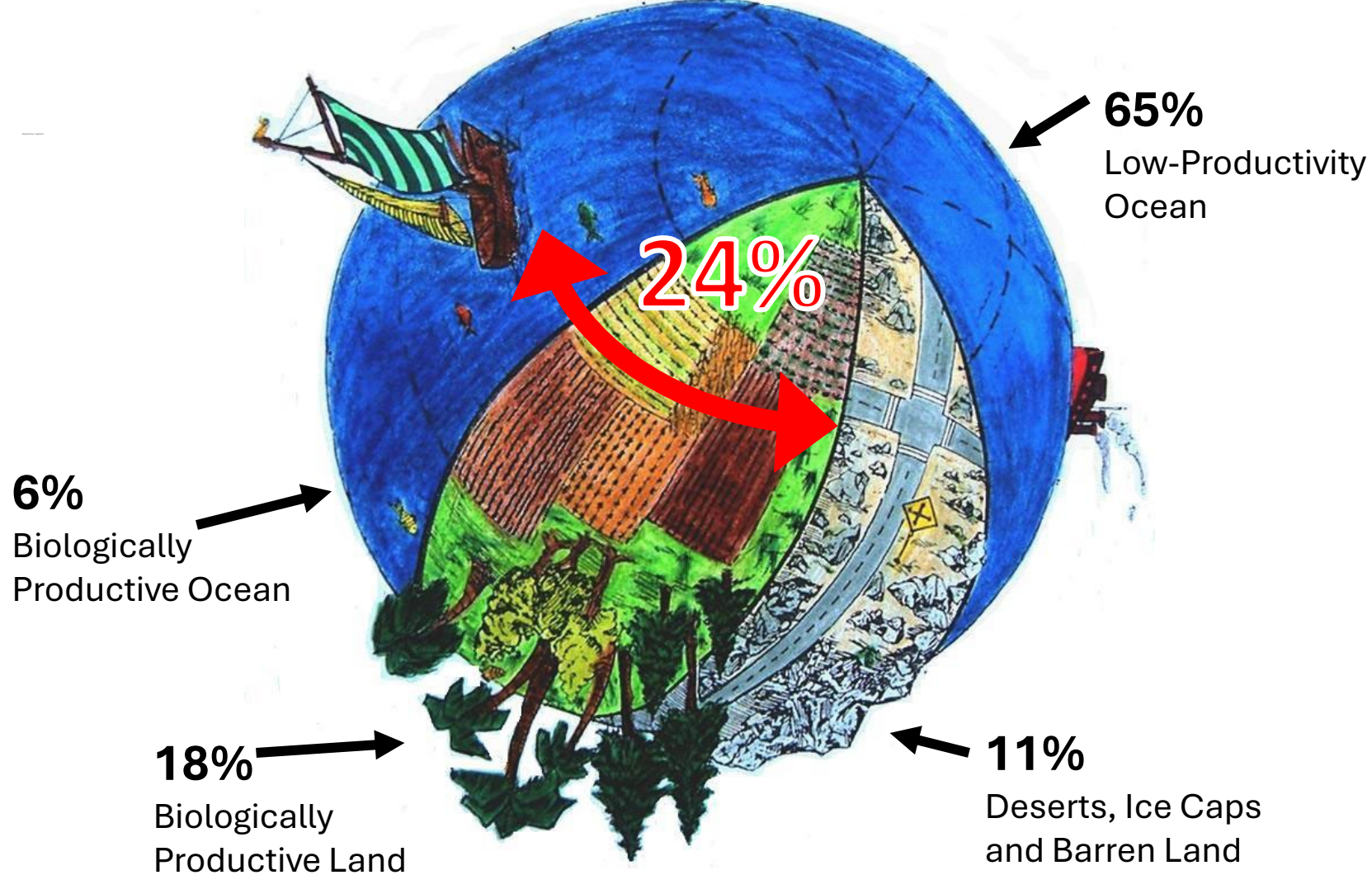
(for biologically productive space)

How to measure Regeneration?

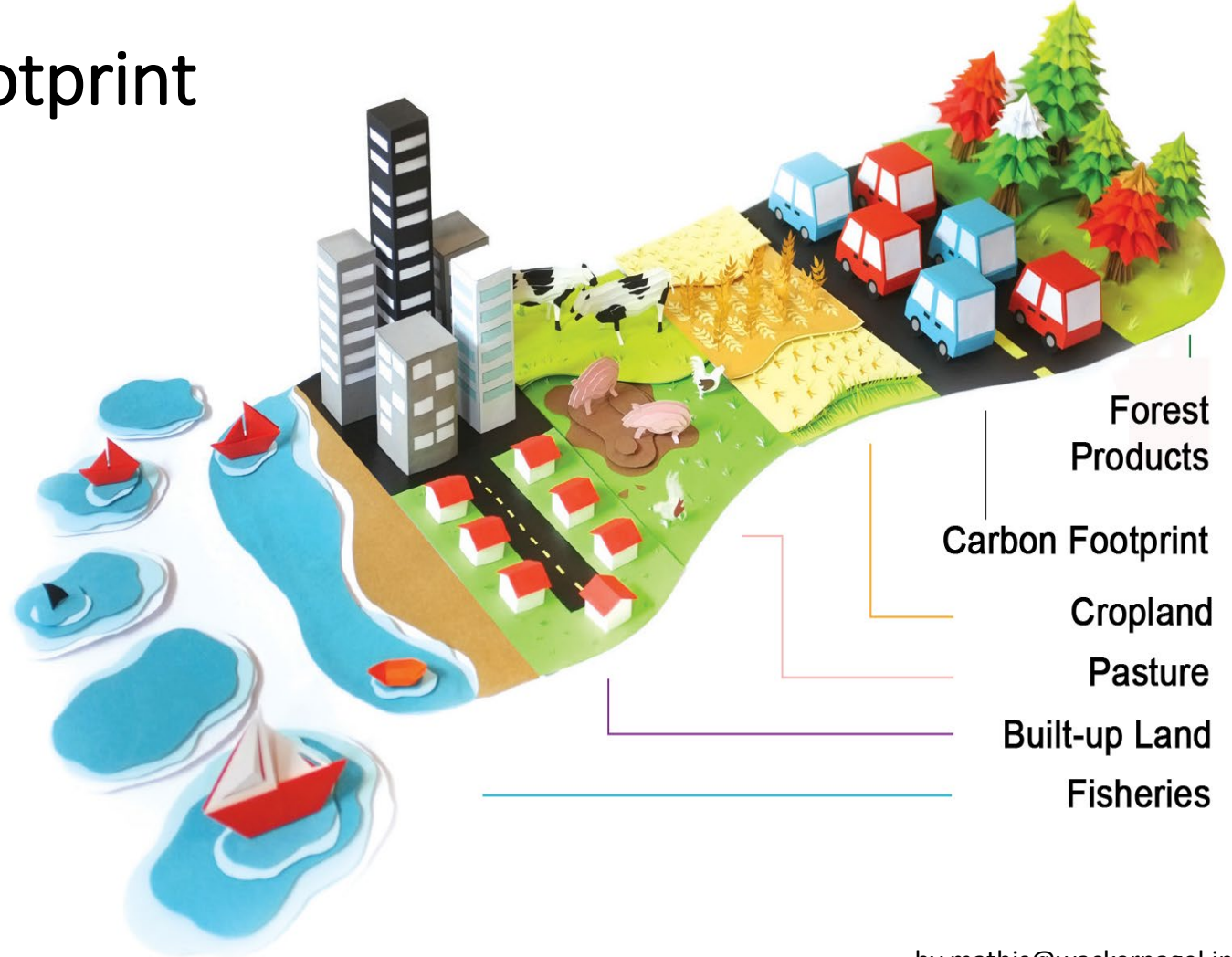


How much nature do we have?

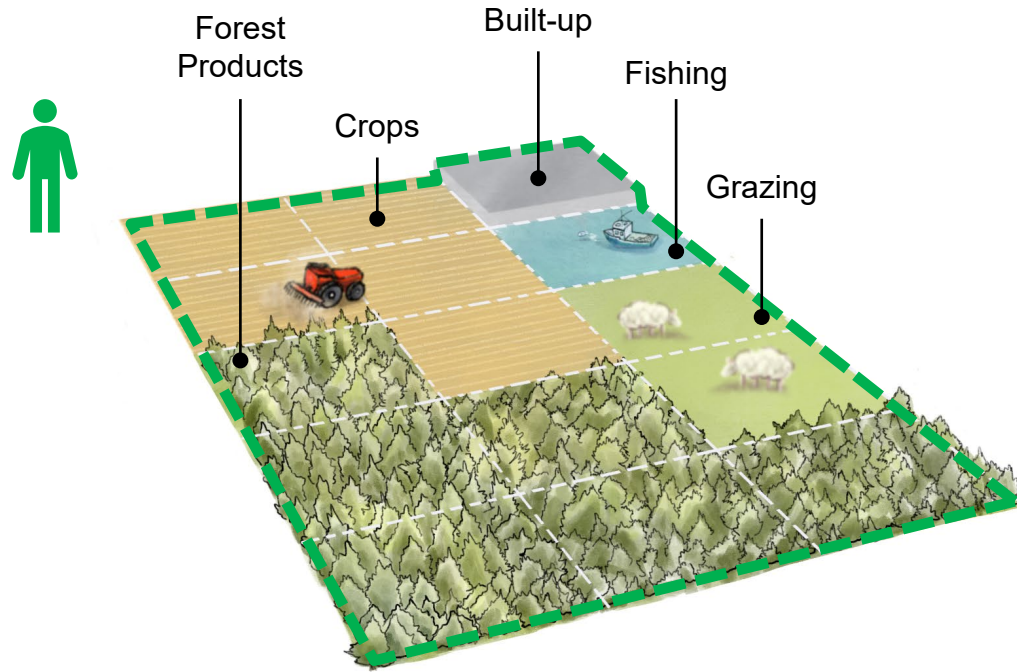
How much nature do we use?



Ecological Footprint

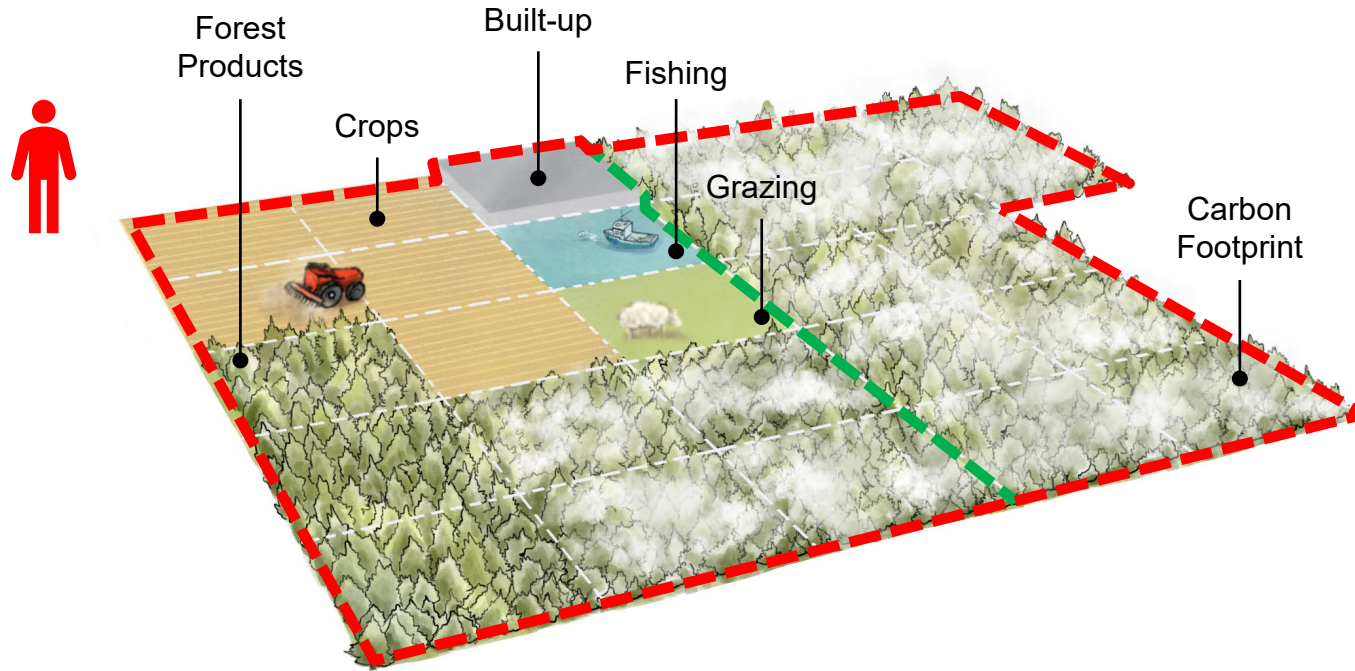


Our biocapacity per person in the world (2025)



$$12.2 \text{ (billion ha)} \rightarrow 8.2 \text{ (billion people)} = 1.5 \text{ (global ha/ person)}$$

Our global Ecological Footprint per person (2025)



21.7 (billion global ha) **➔** **8.2** (billion people) **=** **2.6** (global ha/ person)



Measurement Unit: global hectare (gha)

E.g., **twice** as
productive



2 gha

E.g., **half** as
productive



$\frac{1}{2}$ gha



In 2025, for the world

$$\frac{\text{demand}}{\text{regeneration}} = 1.8$$

During 2025, humanity is using
1.8 Earths.

Therefore in 2025,
Earth Overshoot Day
fell on **July 24th.**



by mathis@wackernagel.info

To preserve biodiversity,
ecologists suggest using only
0.5 Earths.

This is three times less than
our current demand.



data.footprintnetwork.org

www.footprintnetwork.org

www.overshootday.org

www.wackernagel.info

X

LATVIA (2024) (ESTIMATE)

GDP PER PERSON

\$25,116

POPULATION

1,810,240

Biocapacity
per person

9.5

gha

Ecological Footprint
per person

8.0

gha

BIOCAPACITY
RESERVE(+)/DEFICIT(-)

1.5

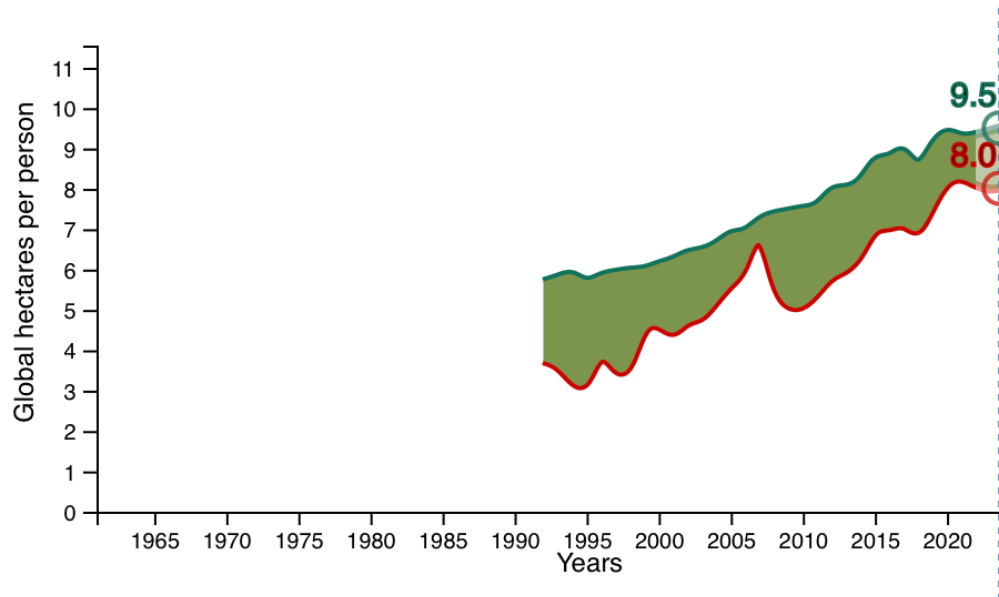
gha

Ecological Footprint and
Biocapacity
From 1961 to 2024
(last 2 years are estimates)

Ecological
Footprint per
person

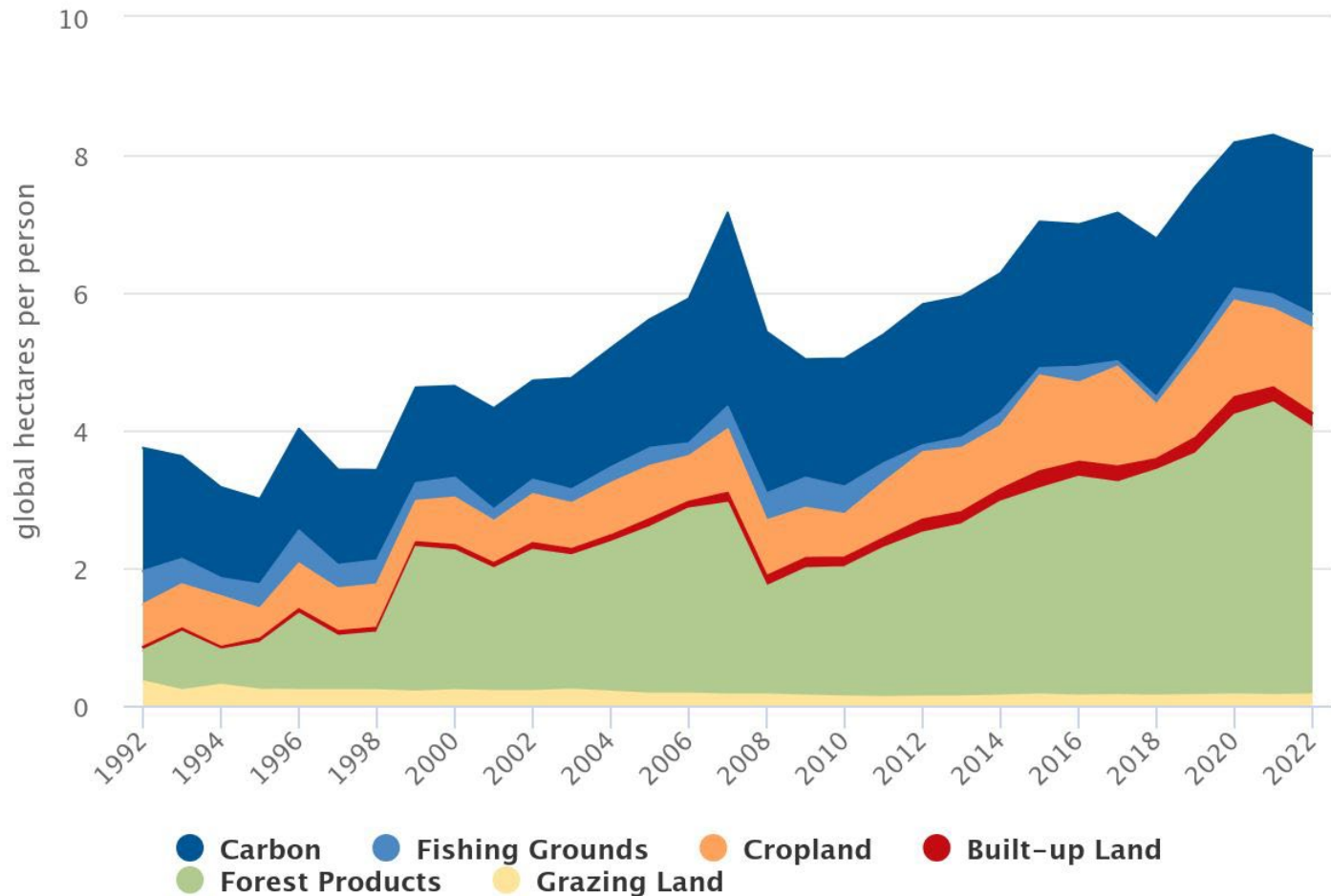
Biocapacity per
person

Learn More



Data Sources: [National Footprint and Biocapacity Accounts 2025 edition \(Data Year 2022\)](#); GDP, International Financial Statistics (IFS); Population, U.N. Food and Agriculture Organization.

Latvia Ecological Footprint by Land Type



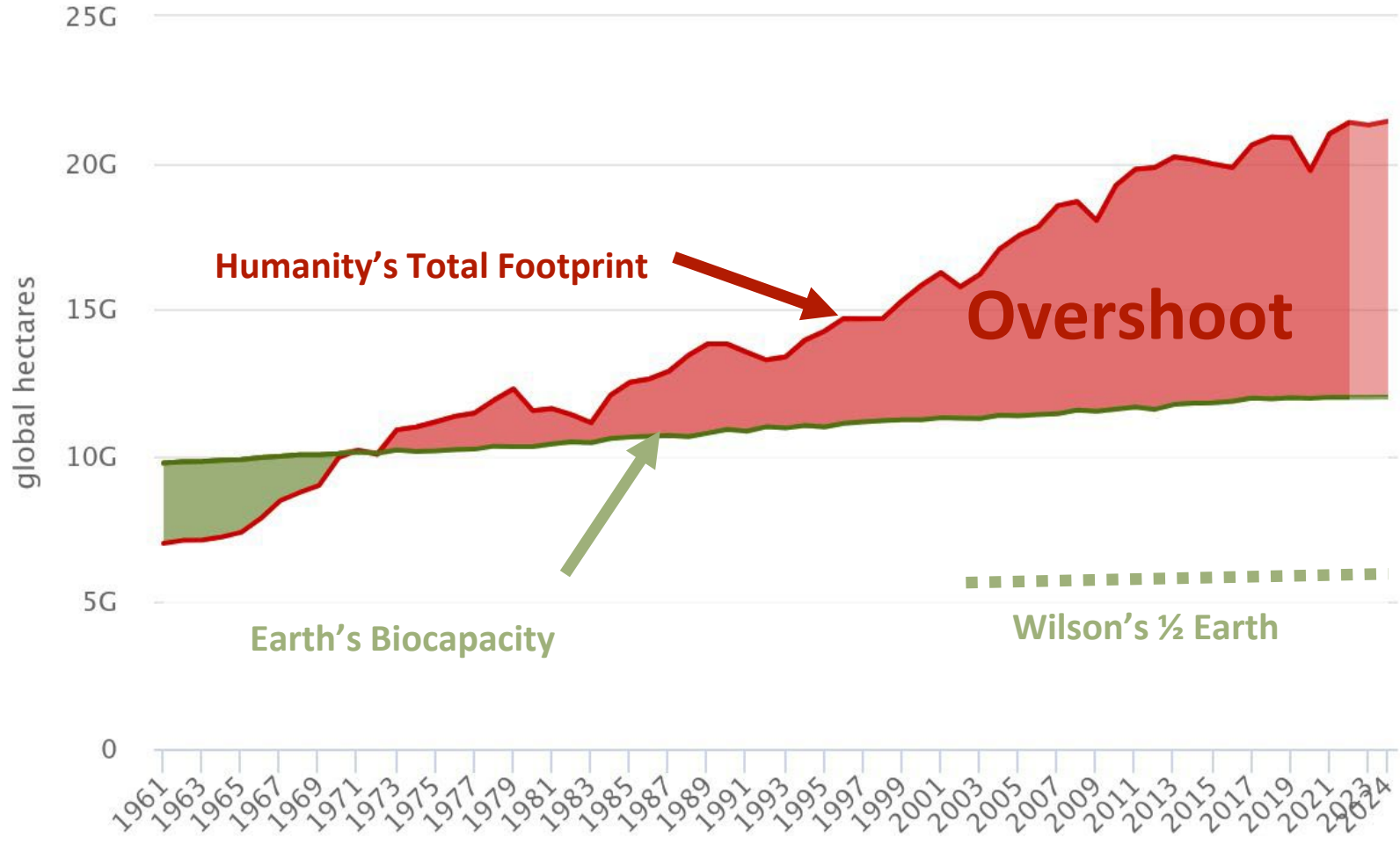
What is the upside?

There is no downside to
better understanding
the trends
that shape our future

a) Economic implications:

Overshoot as Market Failure

World

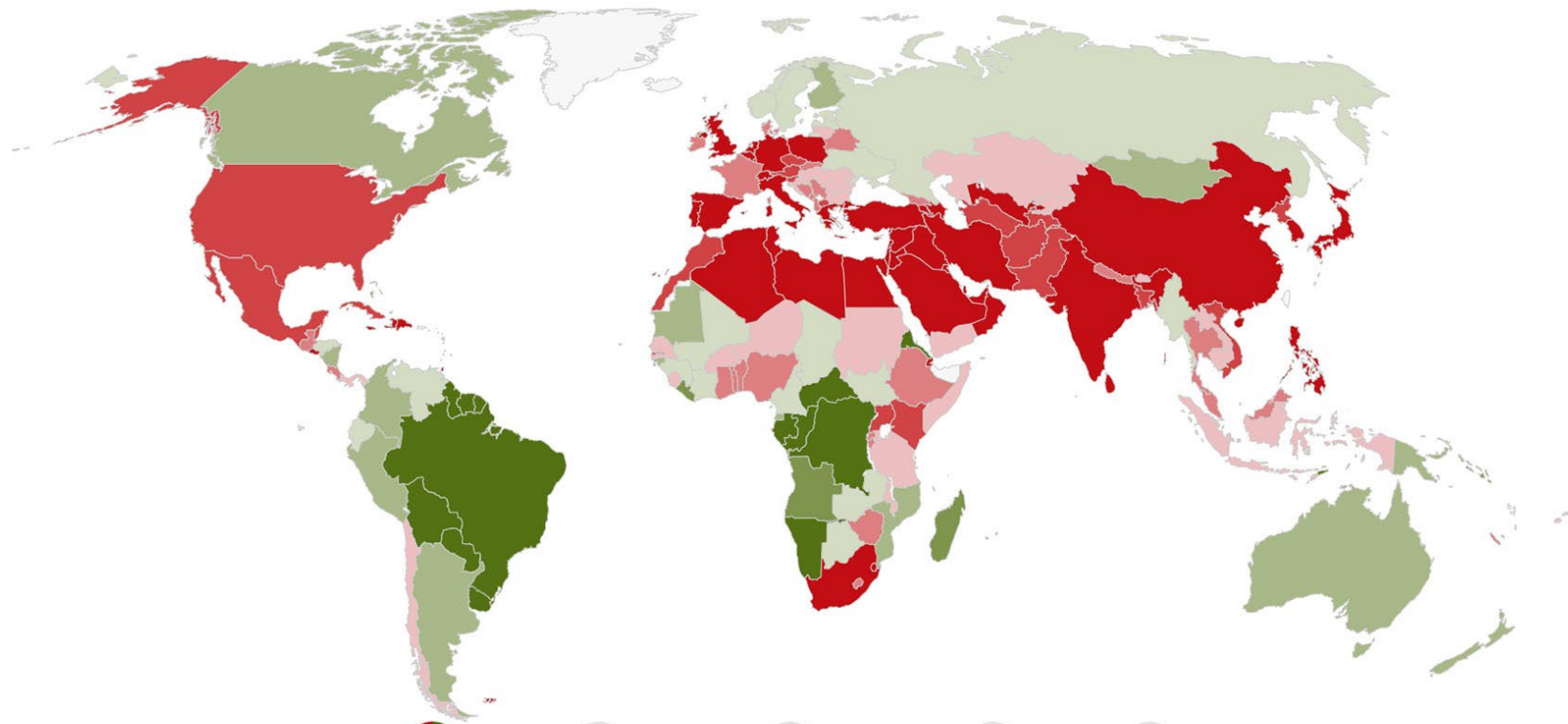


a) Economic implications:

Overshoot as Market Failure

How much higher would the price of products of biocapacity need to be for the demand to go **down to a sustainable level?**

This is a measure of risks and opportunities associated with overshoot



data.footprintnetwork.org



ECOLOGICAL
DEFICIT/RESERVE



TOTAL ECOLOGICAL
FOOTPRINT



ECOLOGICAL FOOTPRINT
PER PERSON



TOTAL BIOCAPACITY



BIOCAPACITY
PER PERSON



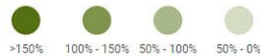
Global Footprint Network®
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ECOLOGICAL DEFICIT/RESERVE

An ecological deficit occurs when the Ecological Footprint of a population exceeds the biocapacity of the area available to that population. A national ecological deficit means that the nation is importing biocapacity through trade, liquidating national ecological assets or emitting carbon dioxide waste into the atmosphere. An ecological reserve exists when the biocapacity of a region exceeds its population's Ecological Footprint.

BIOCAPACITY CREDITORS

BIOCAPACITY GREATER THAN FOOTPRINT



BIOCAPACITY DEBTORS

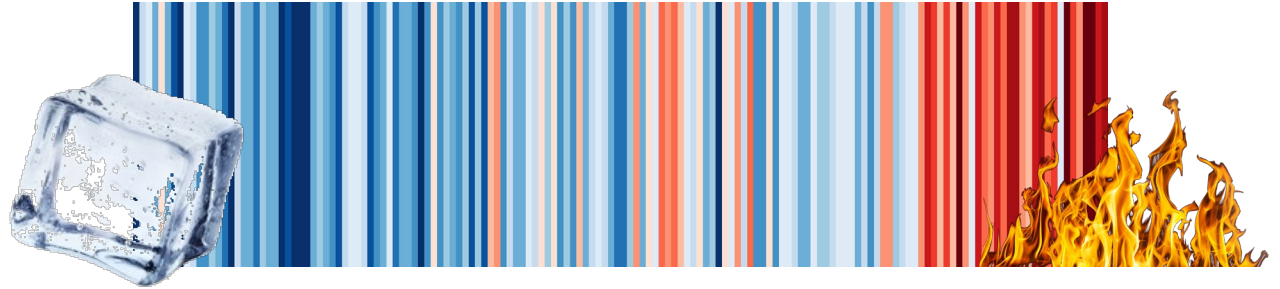
FOOTPRINT GREATER THAN BIOCAPACITY



b) What will be valuable?

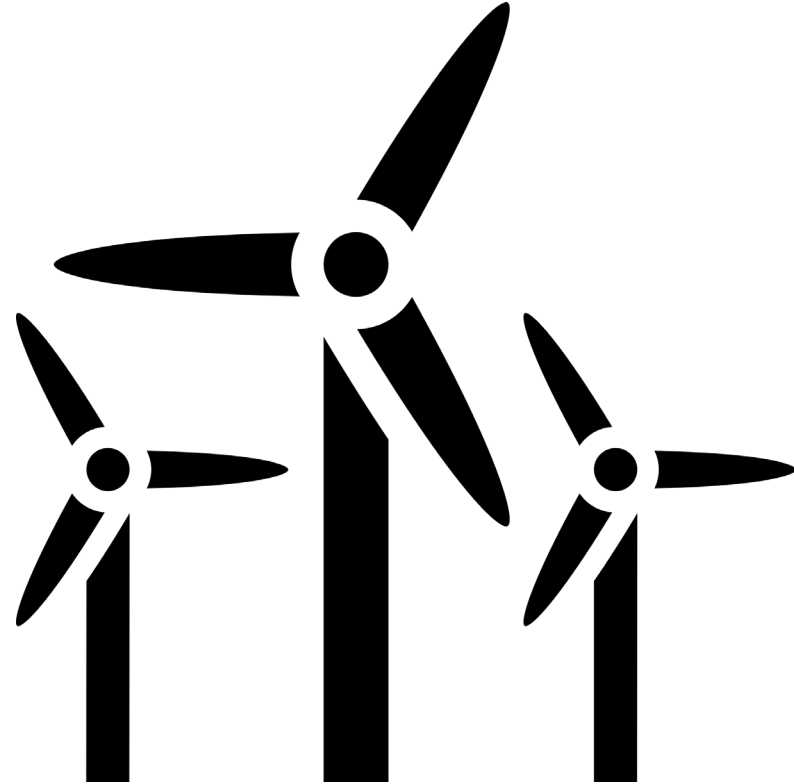
**THIS VITAL PART OF THE FUTURE HAS NEVER
BEEN MORE PREDICTABLE:**

**IN ANY IMAGINABLE SCENARIO, THERE WILL BE
MORE CLIMATE CHANGE & RESOURCE
CONSTRAINTS.**



SO, WHICH ASSETS WILL HOLD VALUE?

Company expands,
overshoot goes up or down?





Strategies for one-planet prosperity

How to build lasting success on our finite planet – July 2021



Premier partner
of Schneider Electric

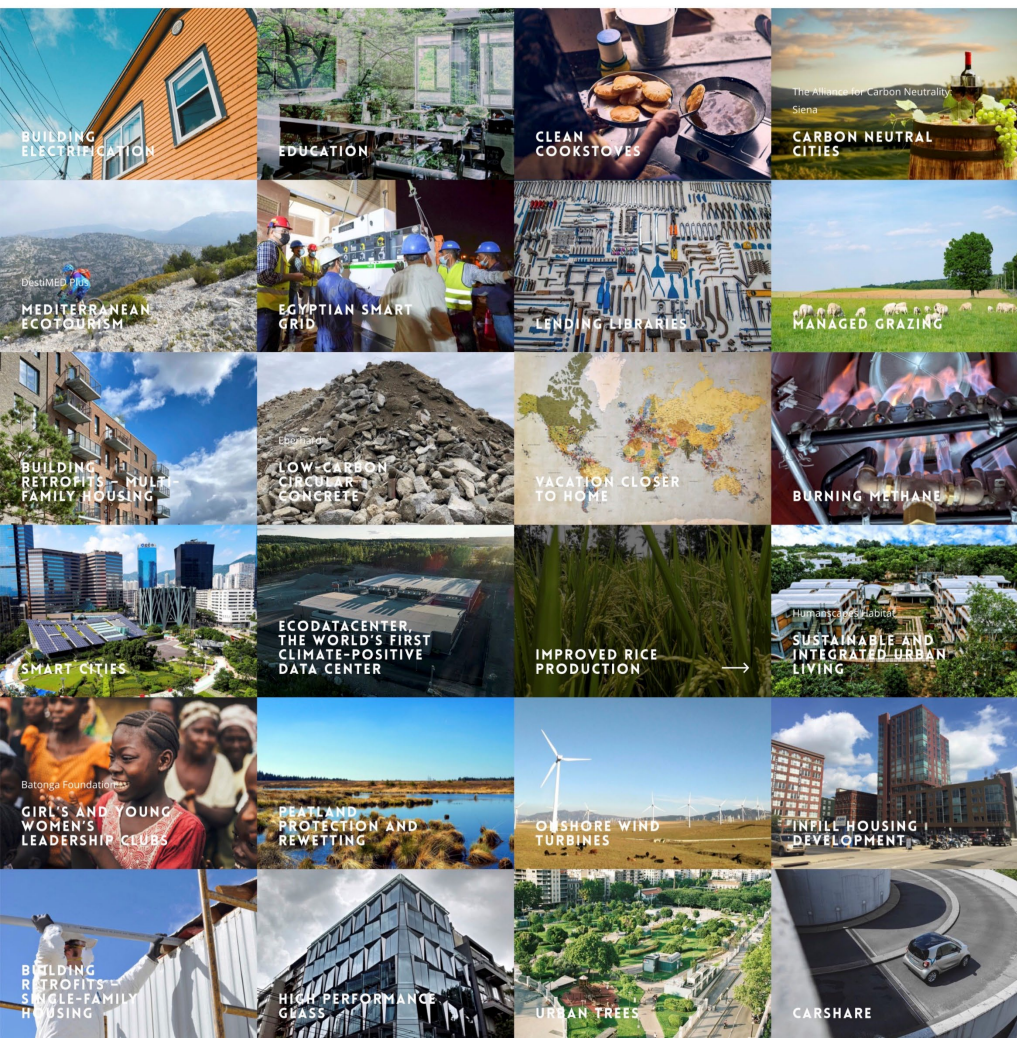


Life Is On



If SE technology was applied cost-effectively worldwide, how much would it move Earth Overshoot Day?

21 days



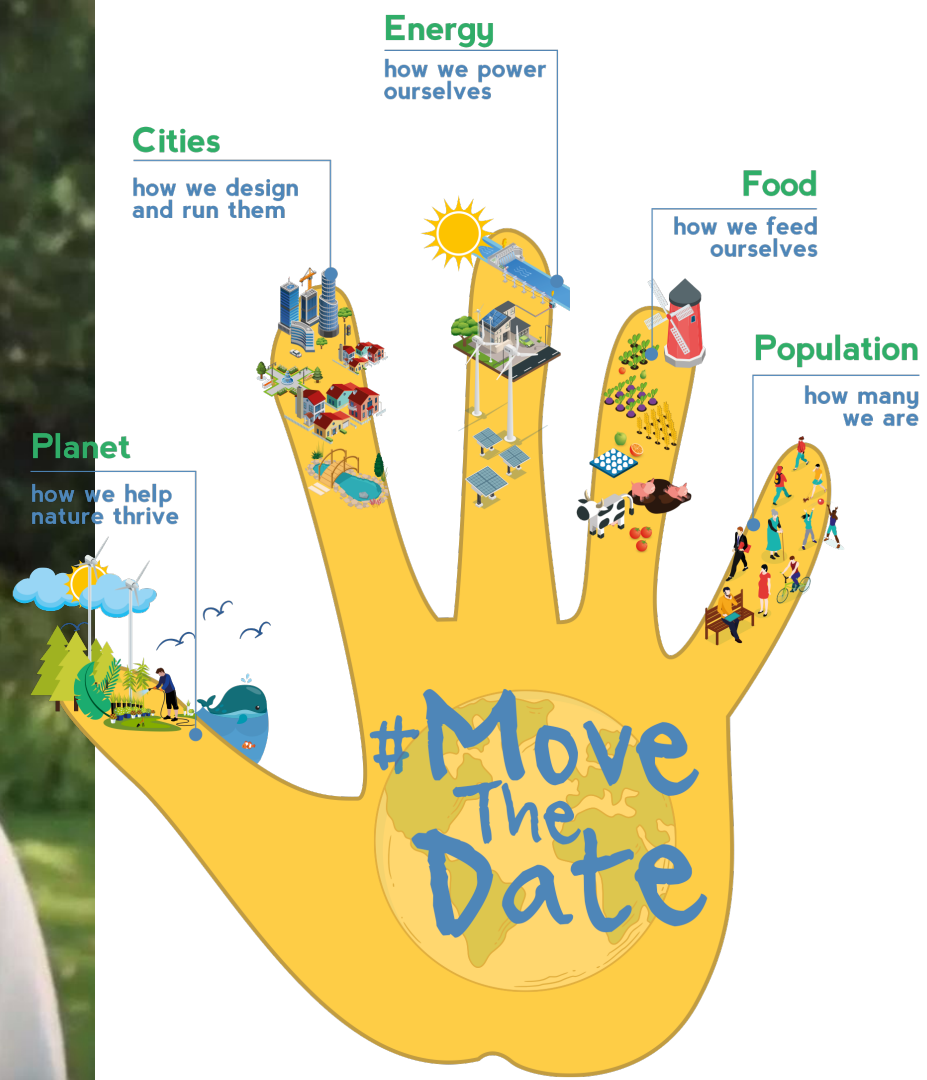
THE POWER OF POSSIBILITY

Many existing solutions are ready to be deployed at scale. They make us more resilient and reduce global overshoot. The earlier companies prepare themselves for the predictable future, the better their chance of thriving.

For Global Footprint Network's selection, visit:
www.overshootday.org/pop



let's #MoveTheDate



Planet

how we help nature thrive



Cities

how we design and run them



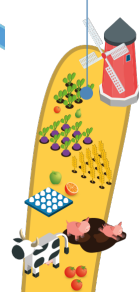
Energy

how we power ourselves



Food

how we feed ourselves



Population

how many we are





Breaking the “free-rider belief”

- Unfortunately, today, most sustainability narratives are noble. Particularly the **climate-related** ones. They embody **free-riding** dynamics.
- The reality is **the pure opposite**. Free-rider is a sideshow. Self-interest is the core.

Lessons

- Overshoot is becoming the dominant context
- Overshoot reduction = value creation
- It is a measurable, strategic driver for communities, cities, companies, countries



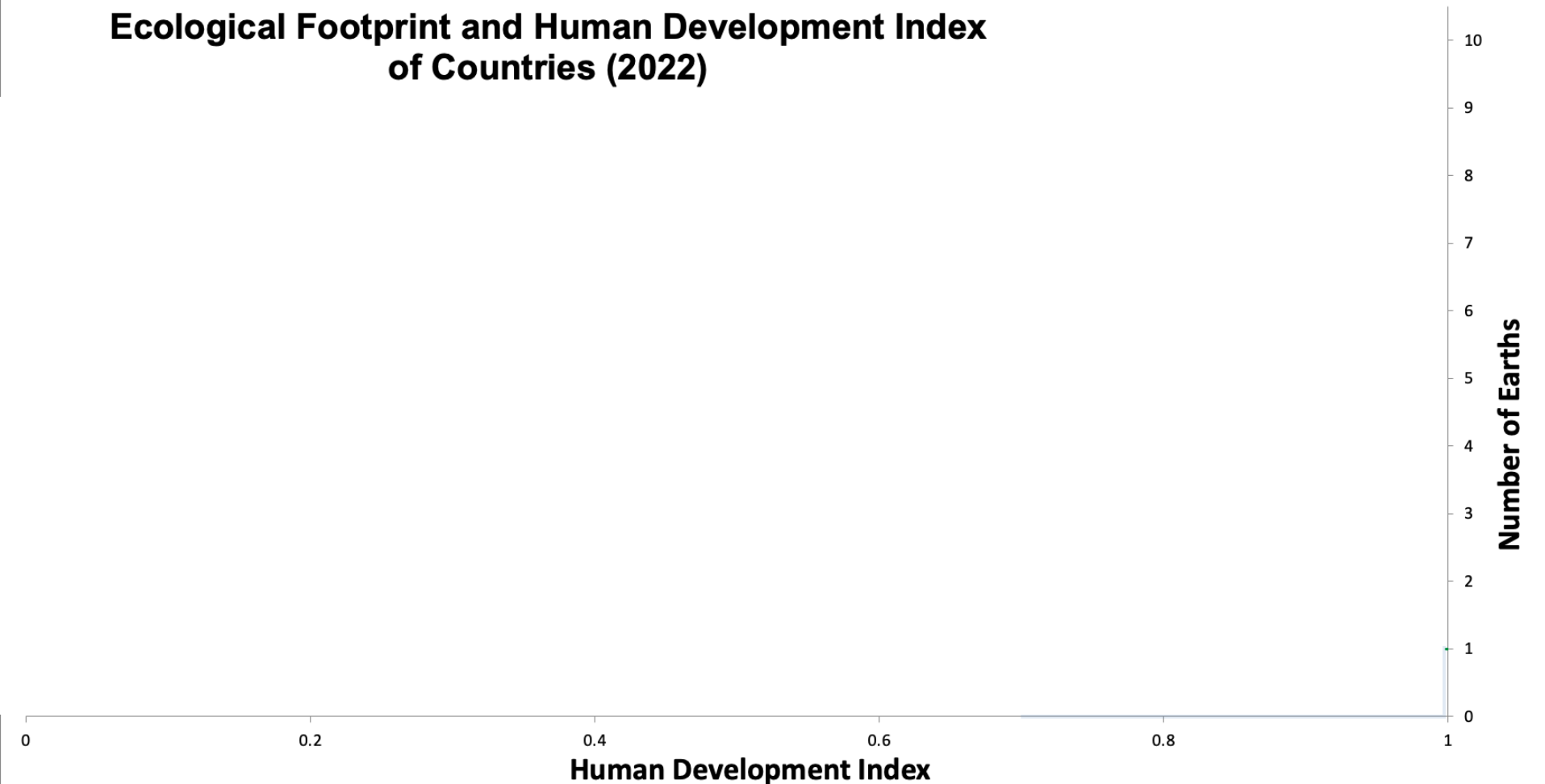
For questions:
mathis@footprintnetwork.org

More background:
www.footprintnetwork.org
www.wackernagel.info



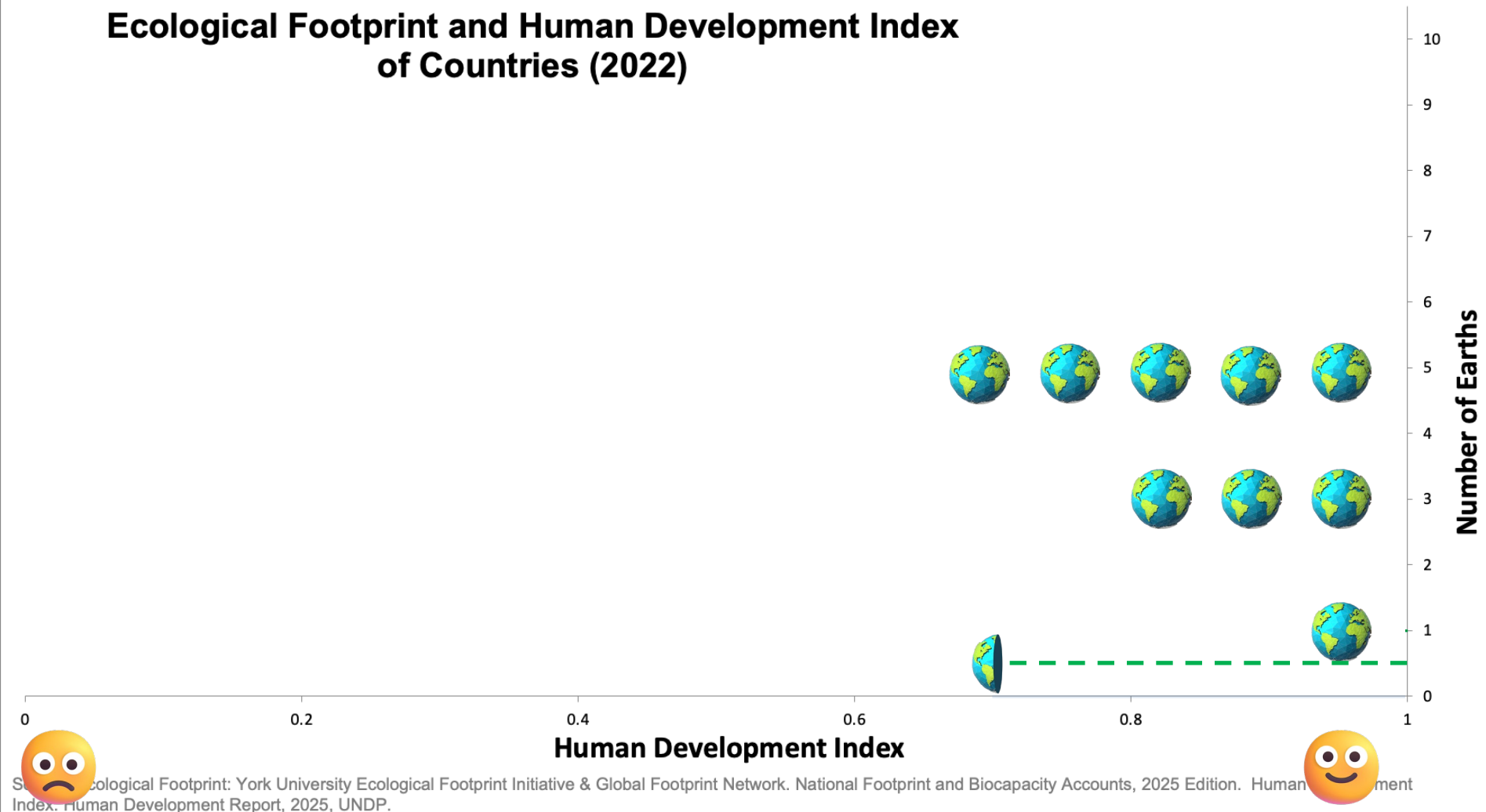
What does this mean for
poverty eradication?

Ecological Footprint and Human Development Index of Countries (2022)



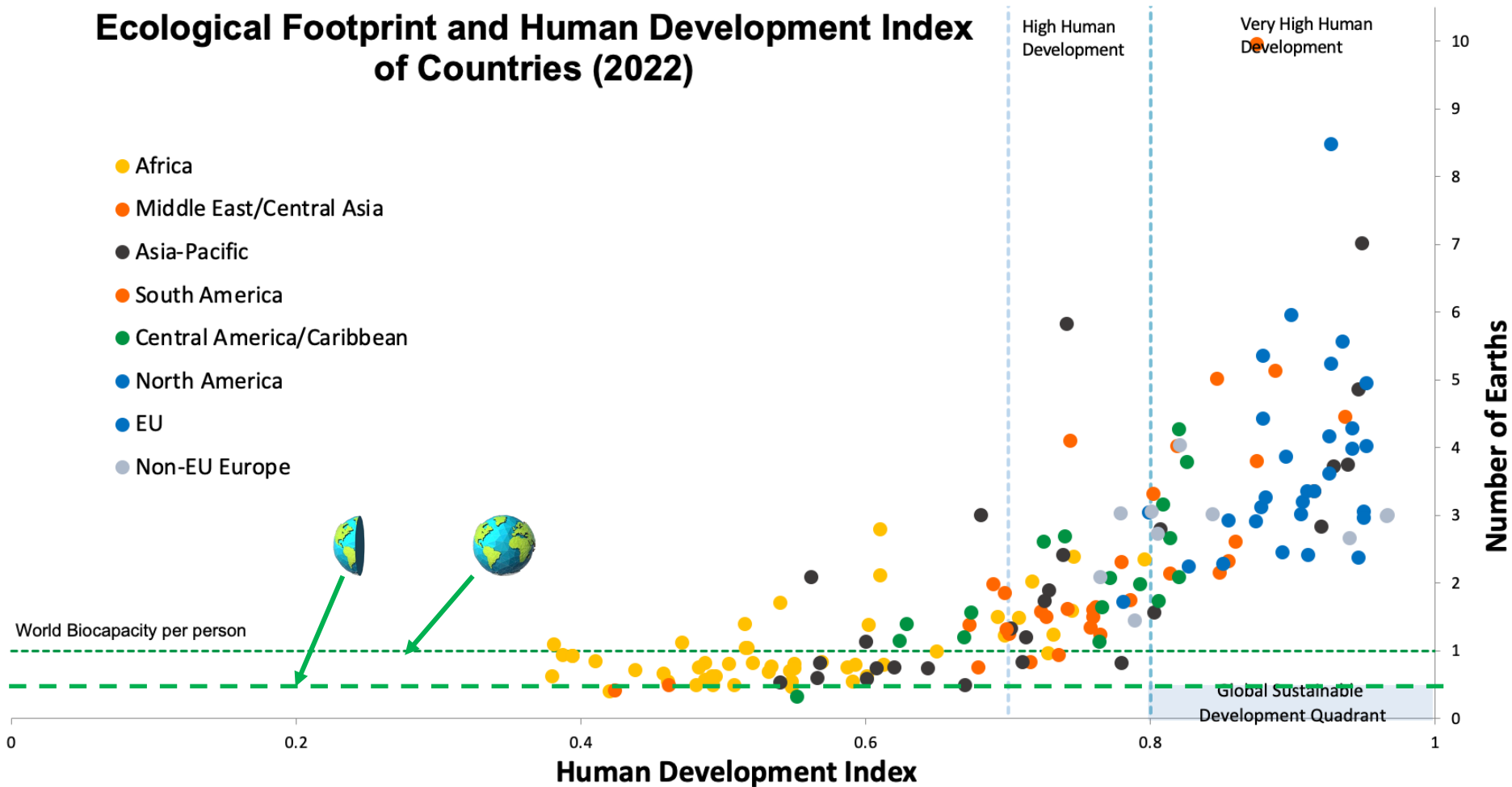
Source: Ecological Footprint: York University Ecological Footprint Initiative & Global Footprint Network. National Footprint and Biocapacity Accounts, 2025 Edition. Human Development Index: Human Development Report, 2025, UNDP.

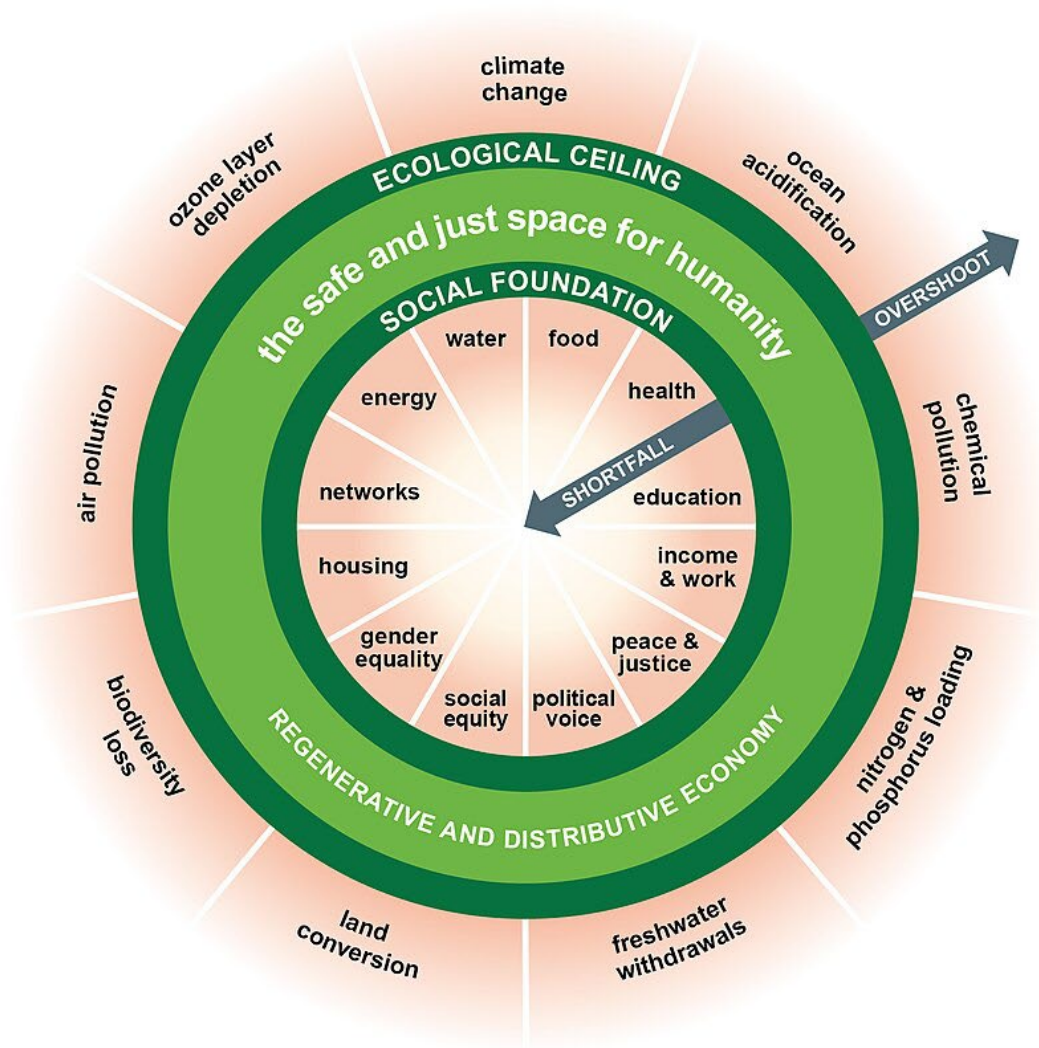
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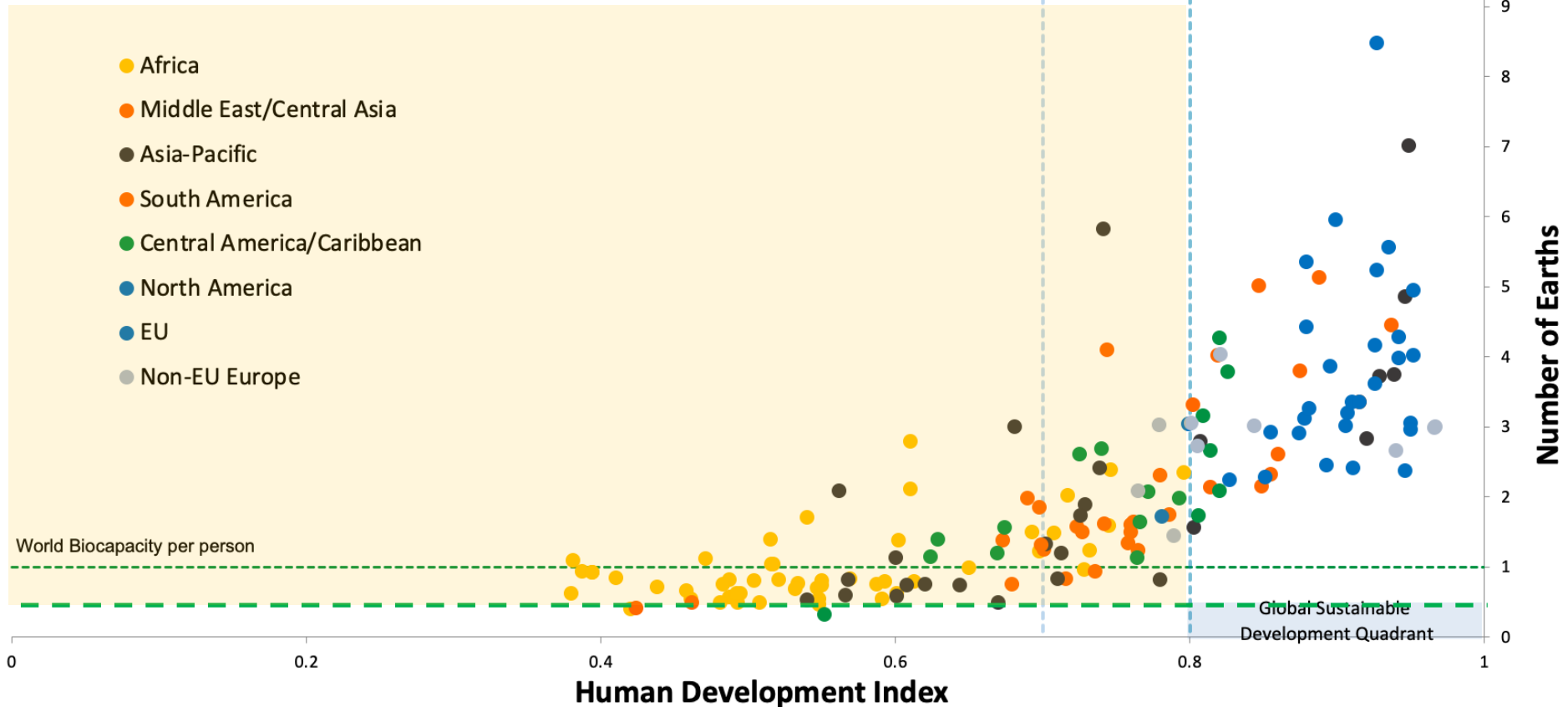
Ecological Footprint and Human Development Index of Countries (2022)

- Africa
- Middle East/Central Asia
- Asia-Pacific
- South America
- Central America/Caribbean
- North America
- EU
- Non-EU Europe

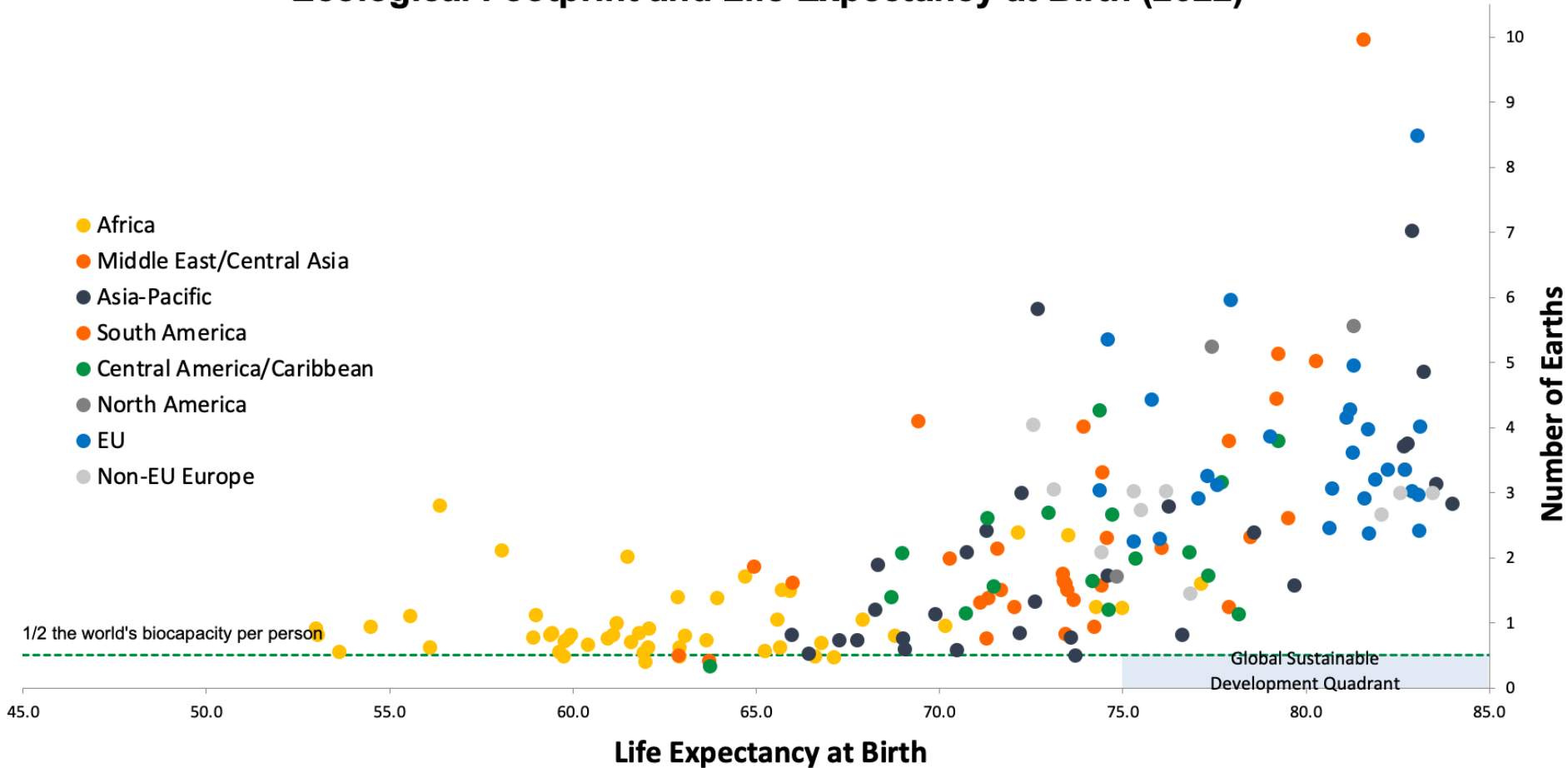




Ecological Footprint and Human Development Index of Countries (2022)



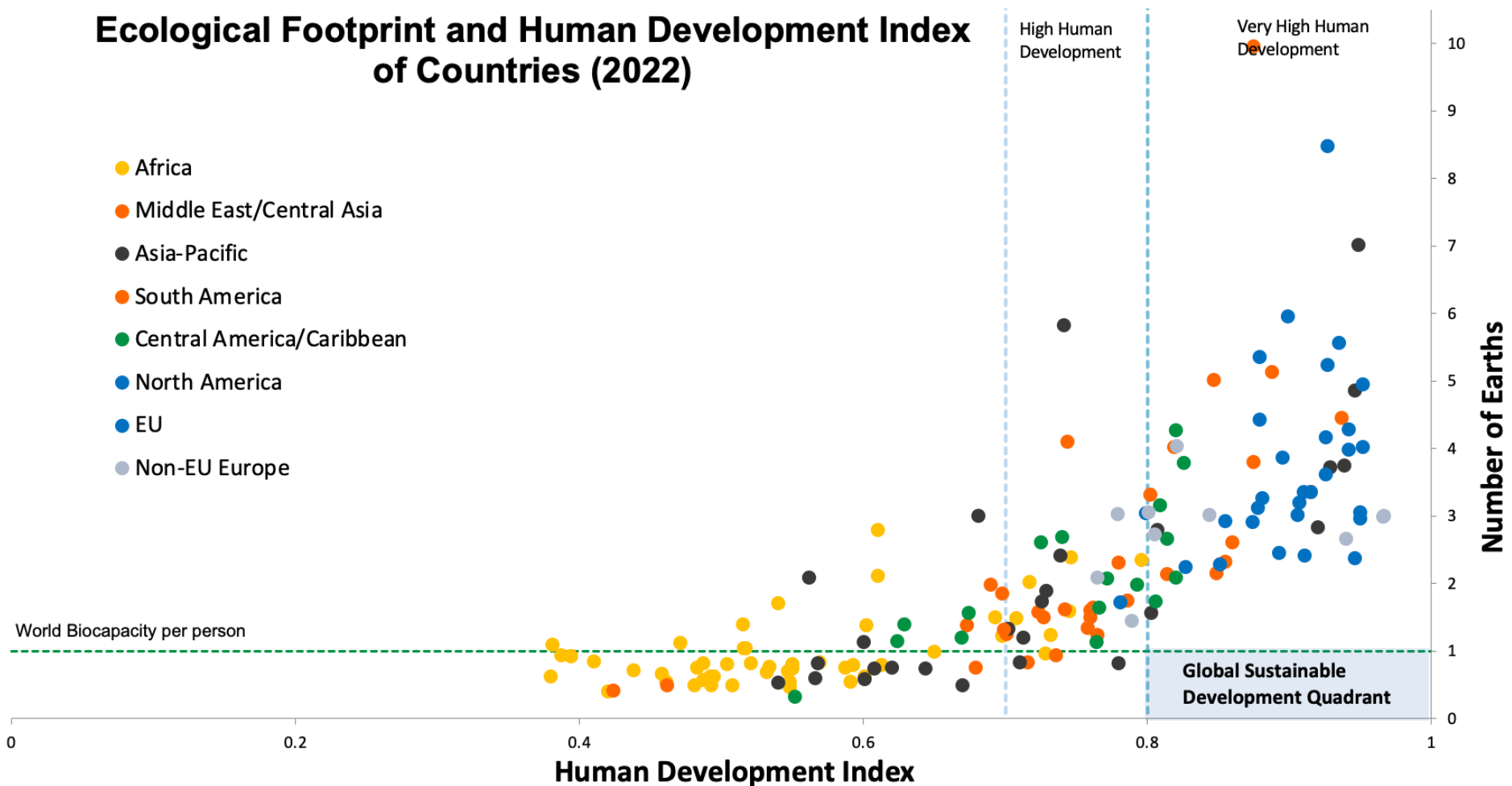
Ecological Footprint and Life Expectancy at Birth (2022)



Source: Ecological Footprint: York University Ecological Footprint Initiative & Global Footprint Network. National Footprint and Biocapacity Accounts, 2025 Edition. United Nations Population Division. World Population Prospects: 2022 Revision

Ecological Footprint and Human Development Index of Countries (2022)

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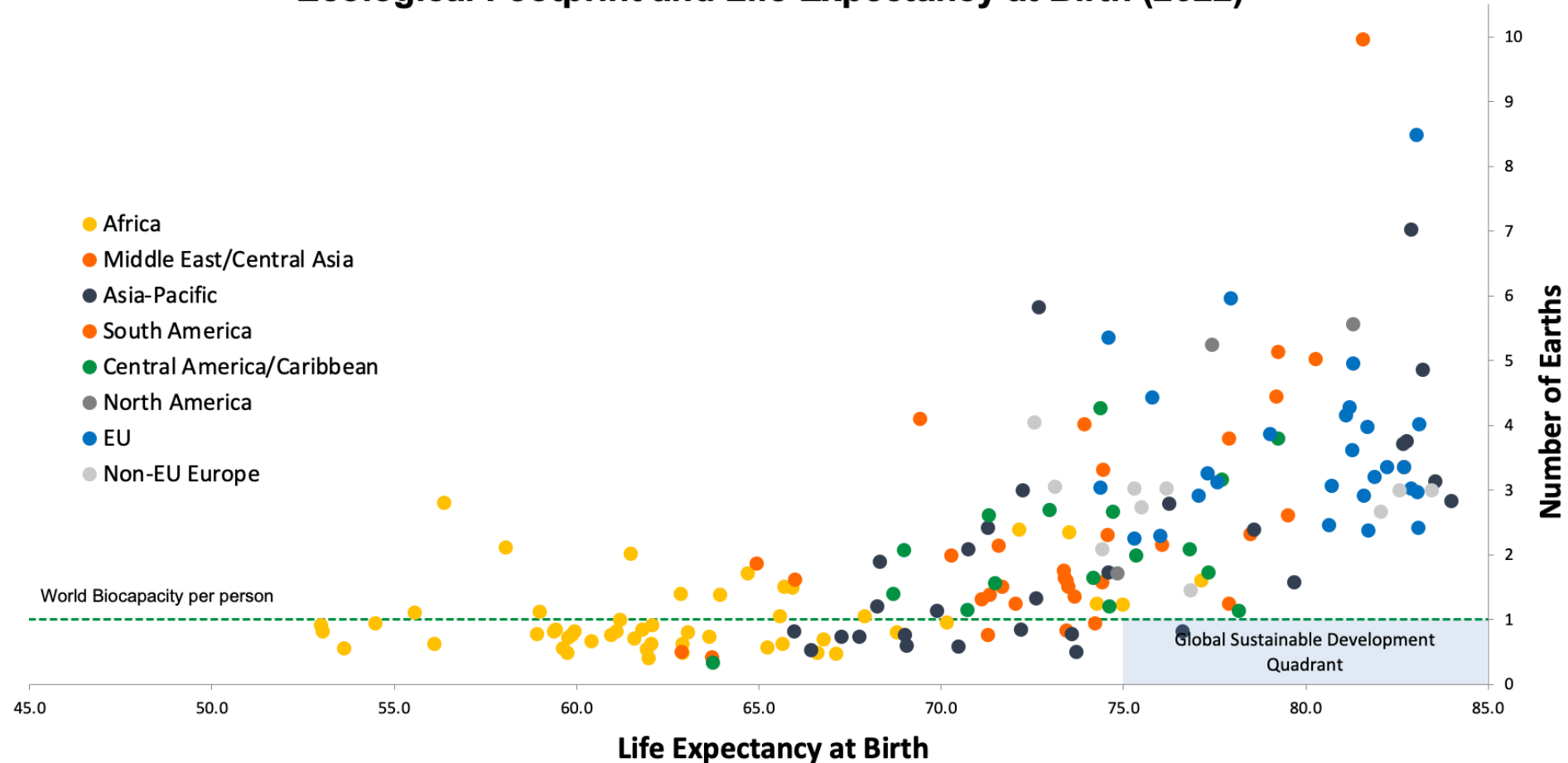
Human Development Index

Number of Earths

World Biocapacity per person

Global Sustainable
Development Quadrant

Ecological Footprint and Life Expectancy at Birth (2022)



Source: Ecological Footprint: York University Ecological Footprint Initiative & Global Footprint Network. National Footprint and Biocapacity Accounts, 2025 Edition. United Nations Population Division. World Population Prospects: 2022 Revision