



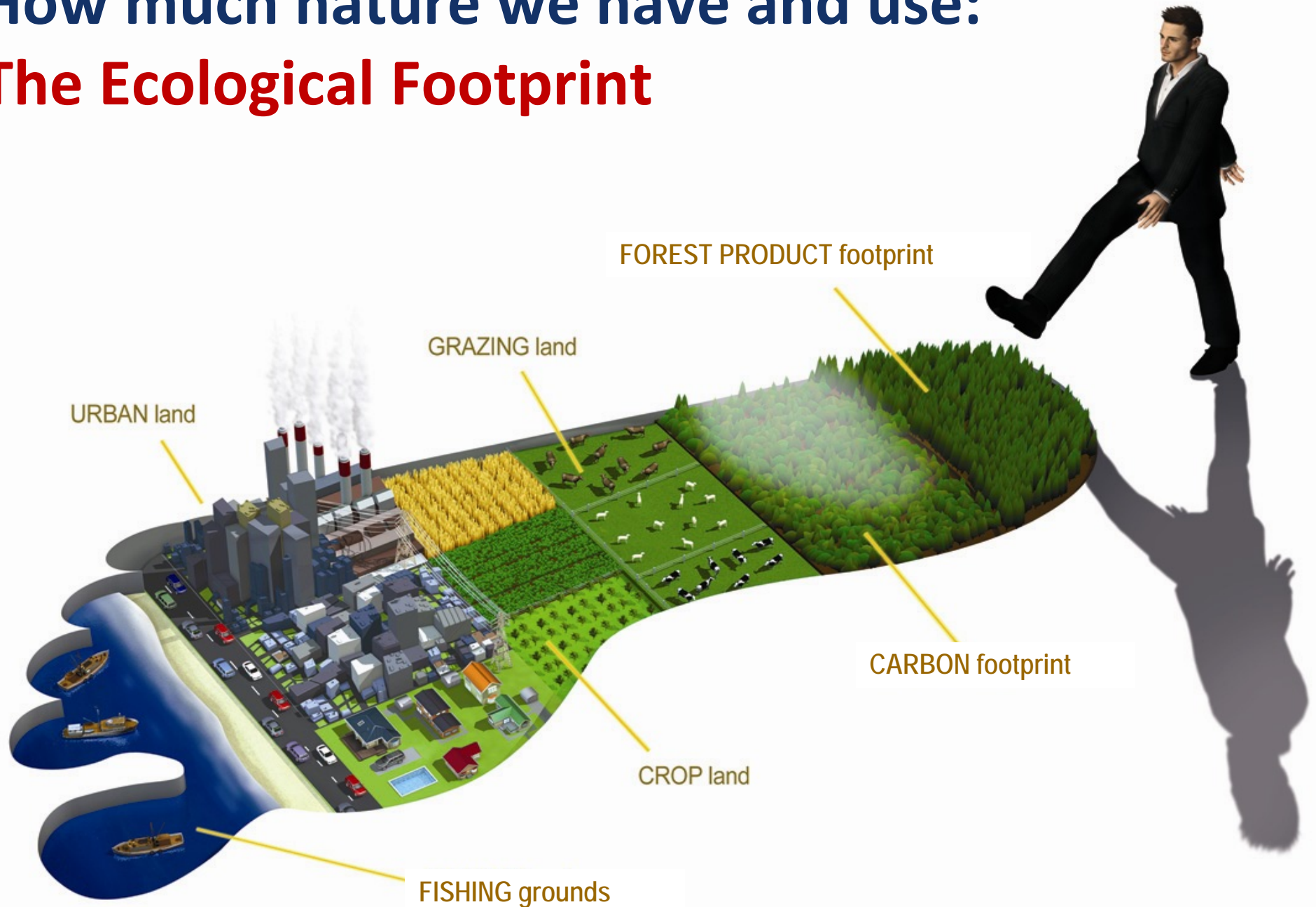
What Are the Economic Implications of Overshoot, if Any?

Mathis Wackernagel, Ph.D.
Global Footprint Network

BI Norwegian Business School
In Celebration of Jørgen Randers
Oslo – May, 2015



How much nature we have and use: The Ecological Footprint



Measurement Unit: global hectare (gha)

For example, if this hectare is twice as productive as a world average, biologically productive hectare. Then it is worth 2 gha.



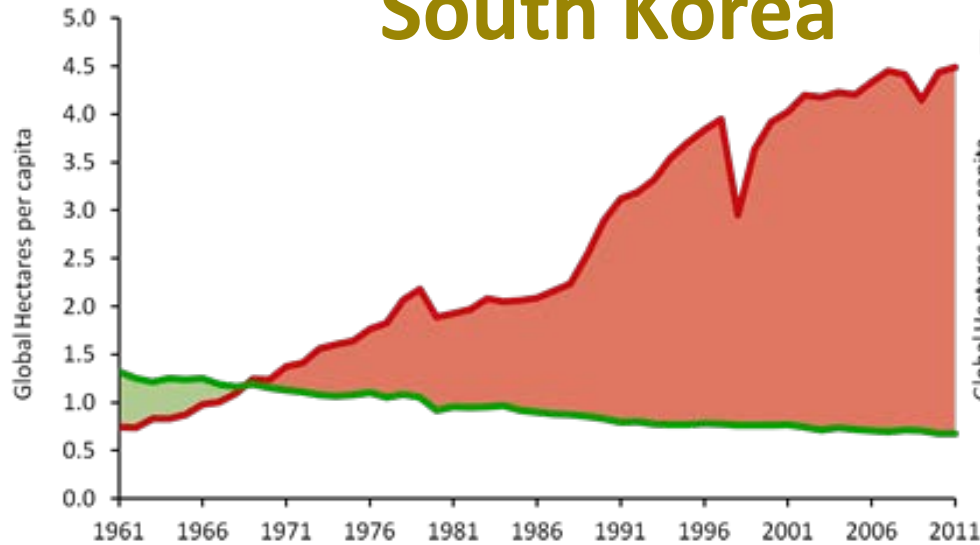
2 gha

For example, if this hectare is half as productive as a world average, biologically productive hectare. Then it is worth ½ gha.

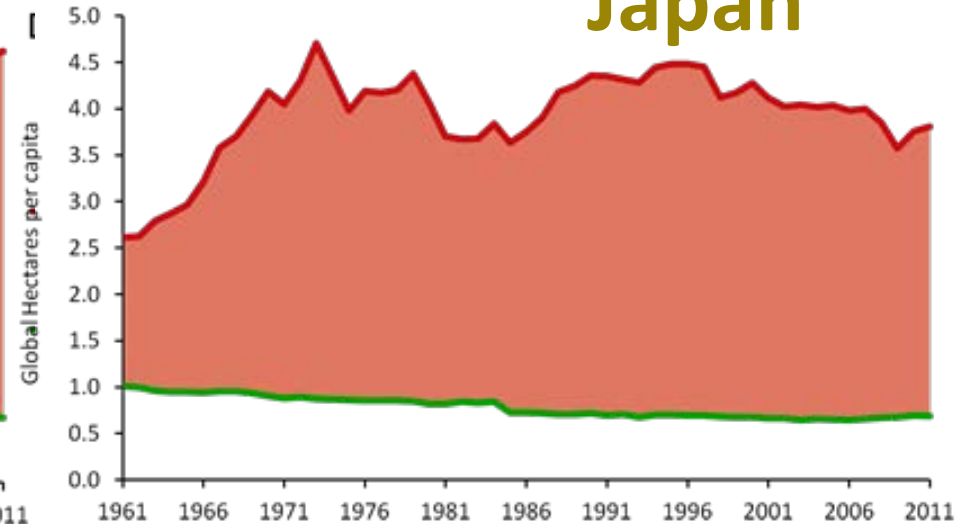


½ gha

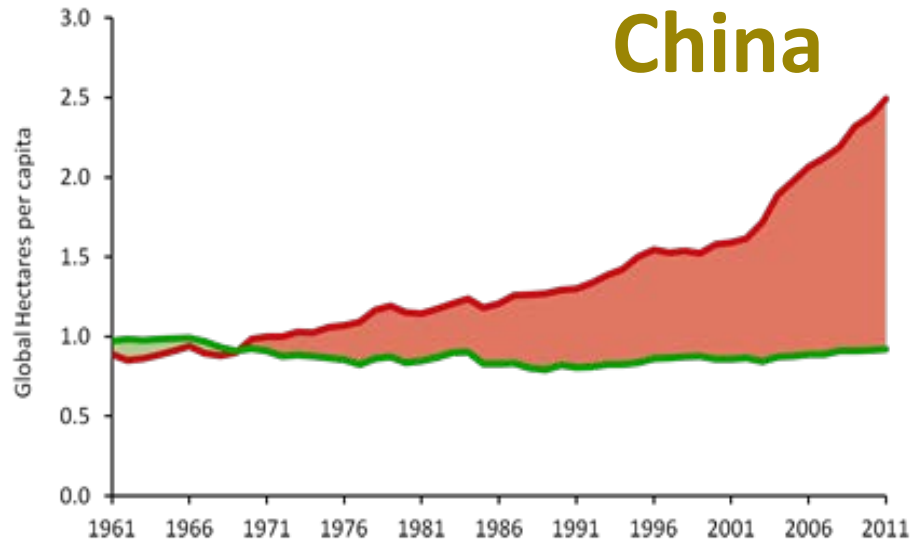
South Korea



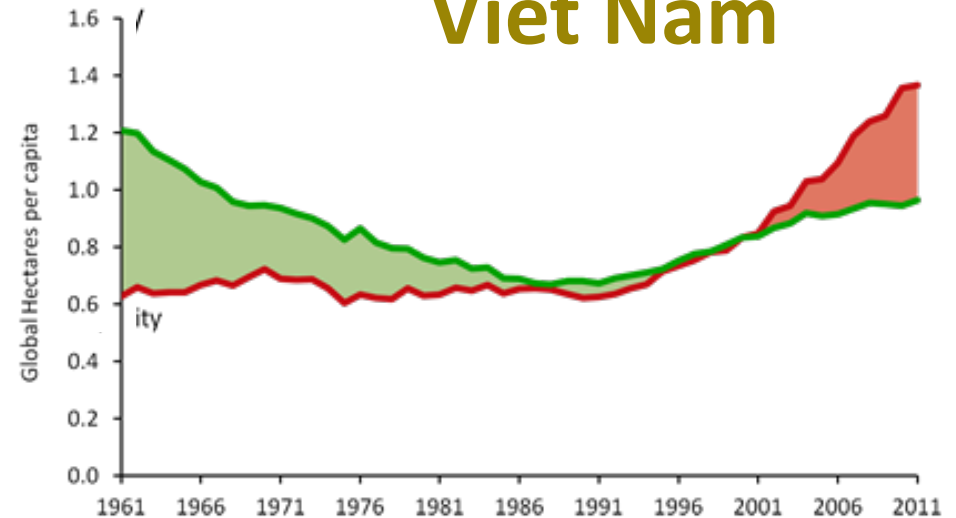
Japan



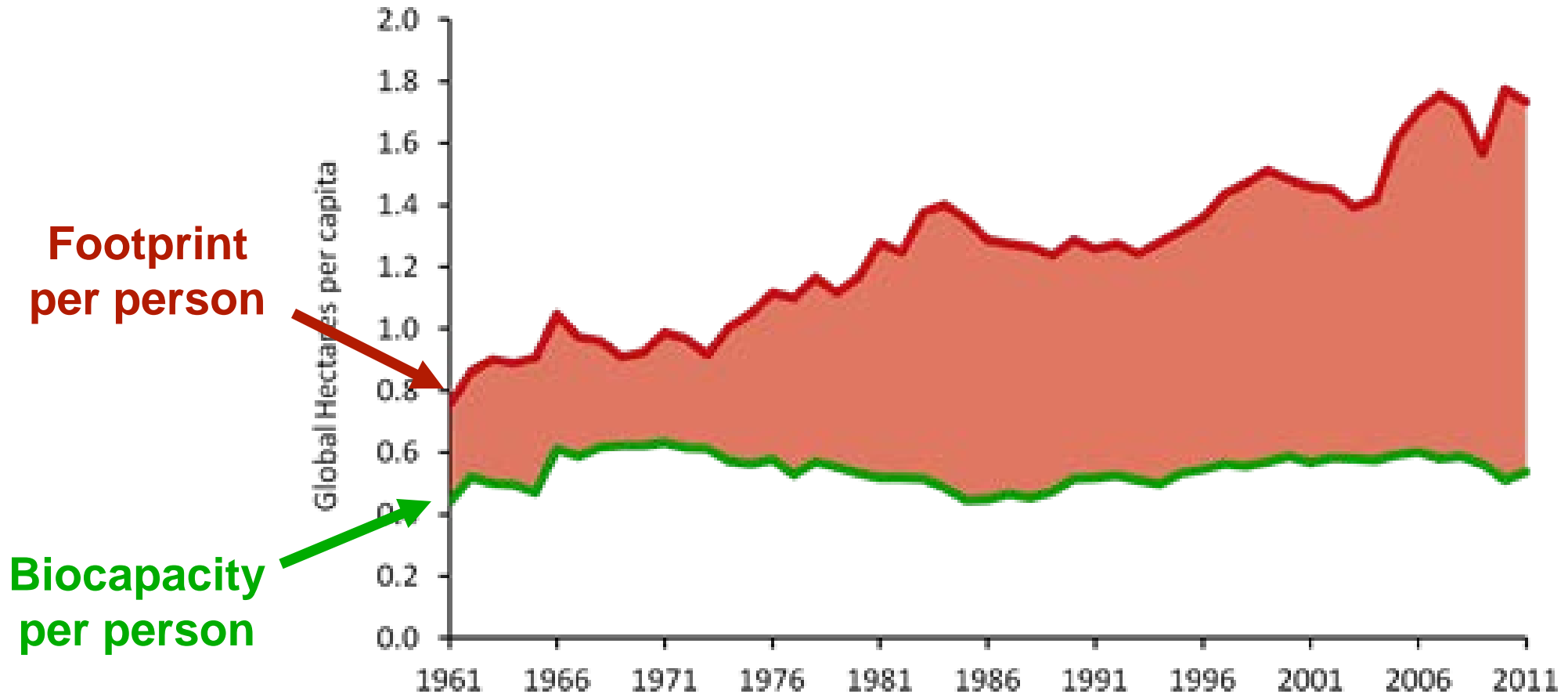
China



Viet Nam

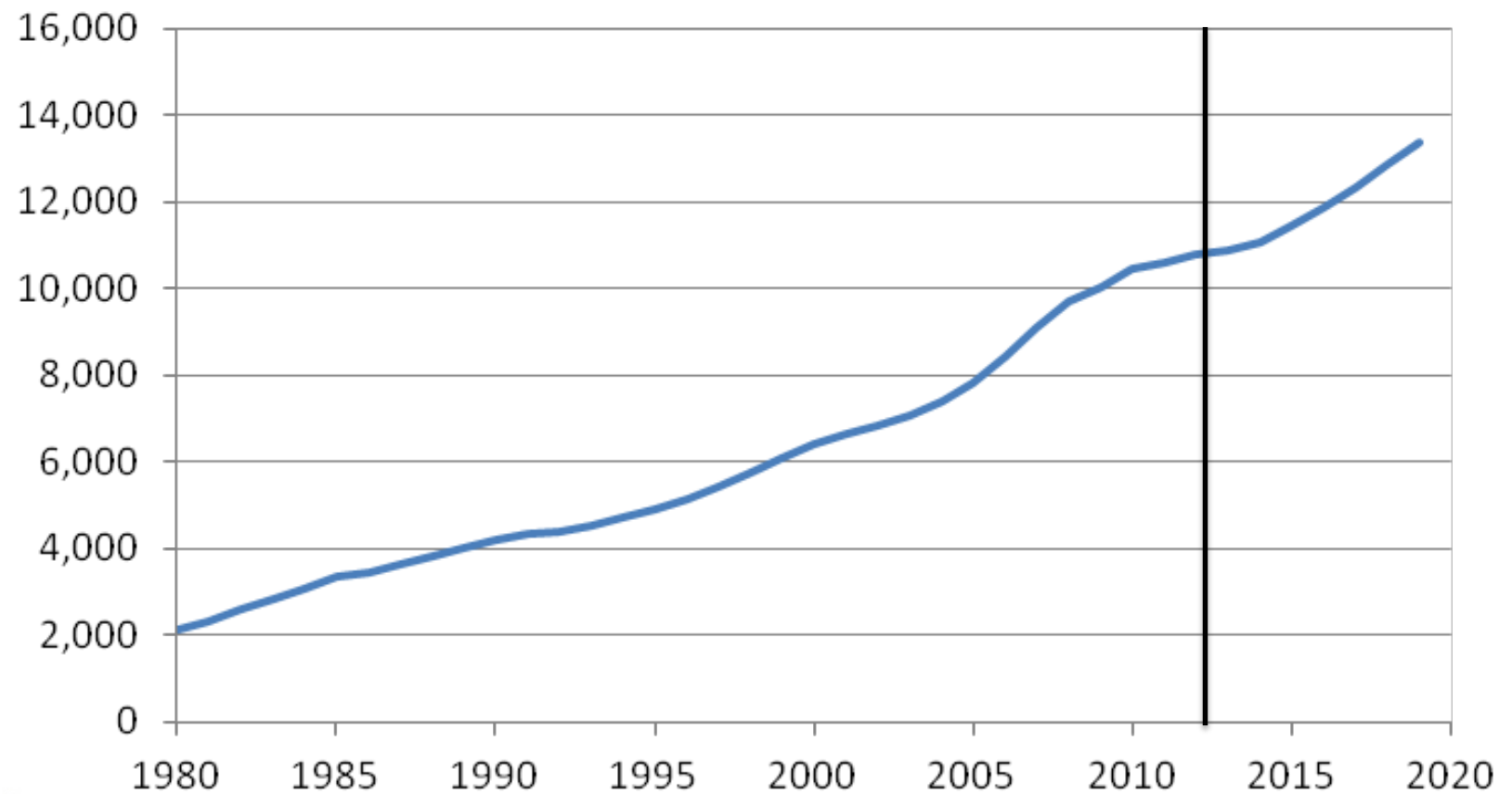


Egypt: Footprint and Biocapacity per person





Egypt's per capita income (ppp \$)



Economic Situation in Egypt after the revolution



Washington Post:

Caroline Freund (a senior fellow at the Peterson Institute for International Economics and former chief economist for the Middle East and North Africa at the World Bank). the country's ailing economy is at the heart of political unrest.

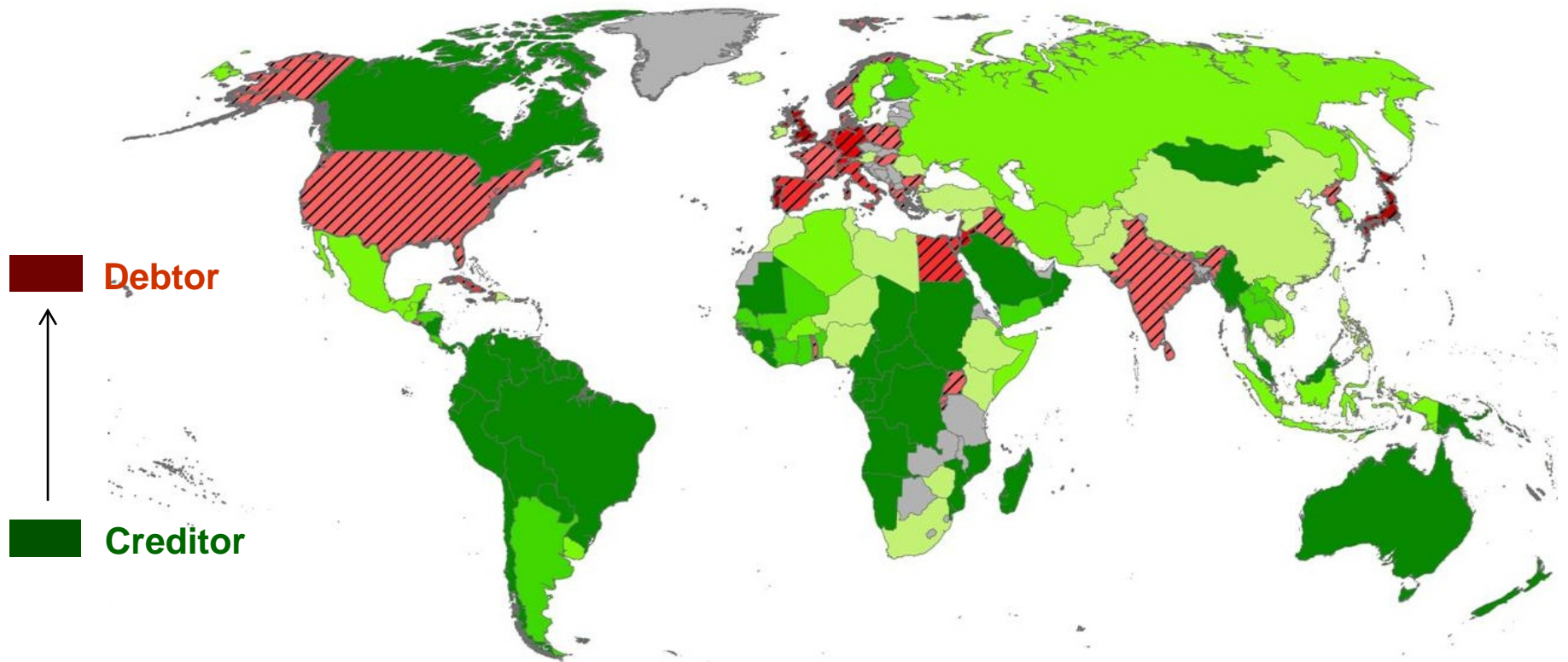
www.dailynewsegypt.com:

Egypt's economy over three years of turmoil

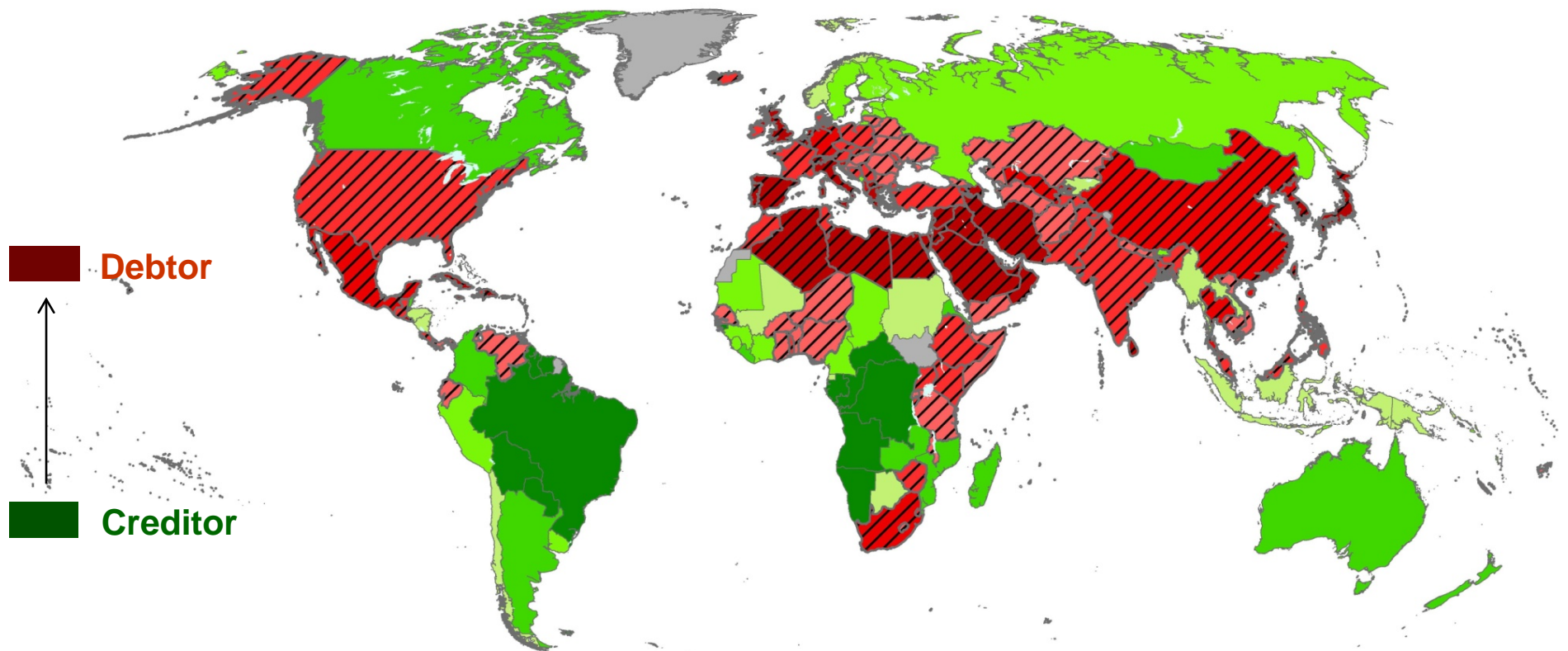
english.alarabiya.net:

President Sisi: Egypt's economic situation is 'very difficult'

Ecological Creditors and Ecological Debtors – 1961

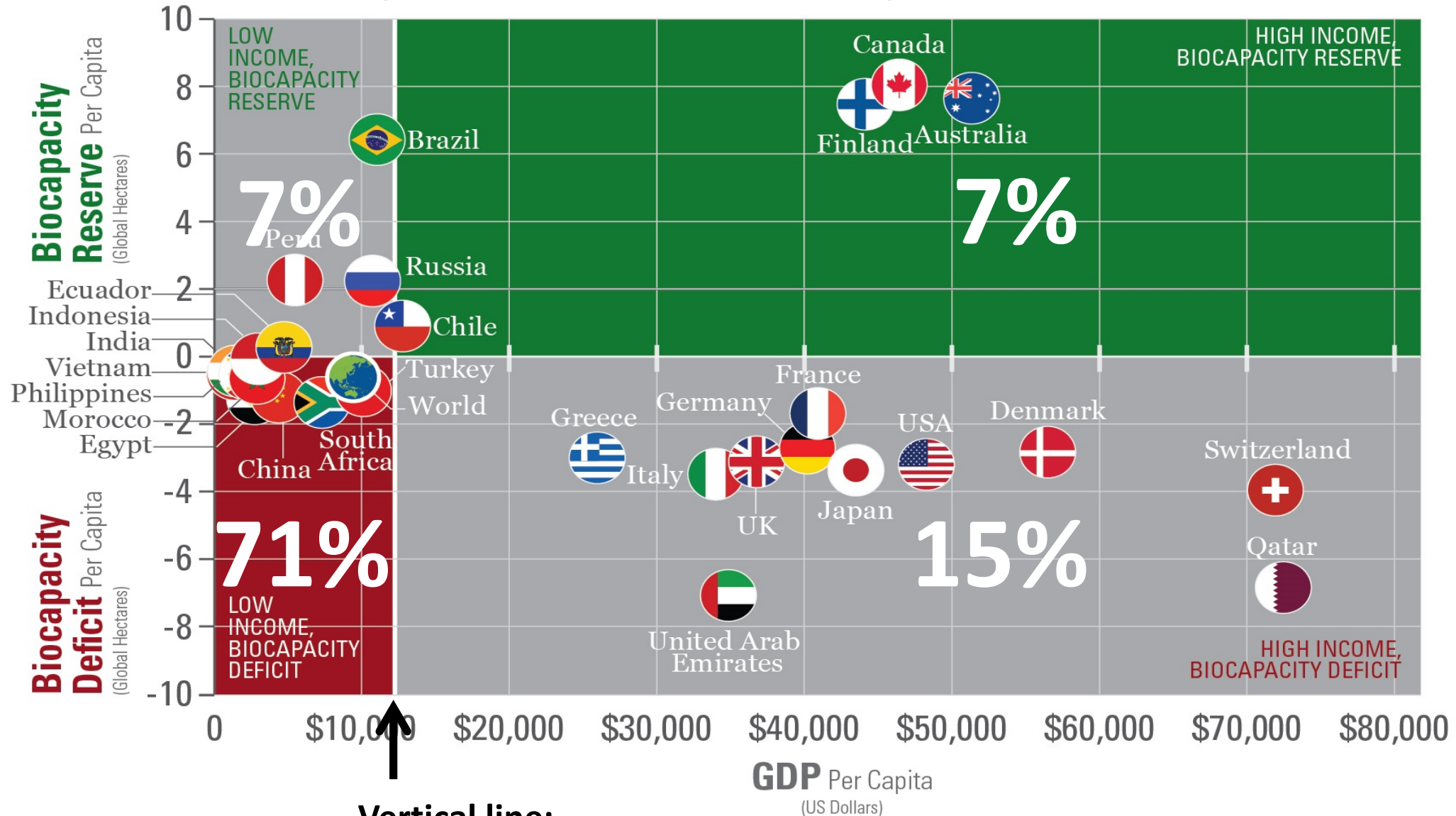


Ecological Creditors and Ecological Debtors – today



$$\frac{\text{Global Footprint}}{\text{Global Biocapacity}} = 1.5$$

**Biocapacity is not everything.
But do you have the \$\$\$ to buy it from somewhere else?**



Natural vs financial capital



1. OK, externalities
2. Liquidity
3. Subsidies – gov want to secure resource access
4. Brand takes all – NC furthest removed from customer
5. Proactive liquidation policies – as income strategy



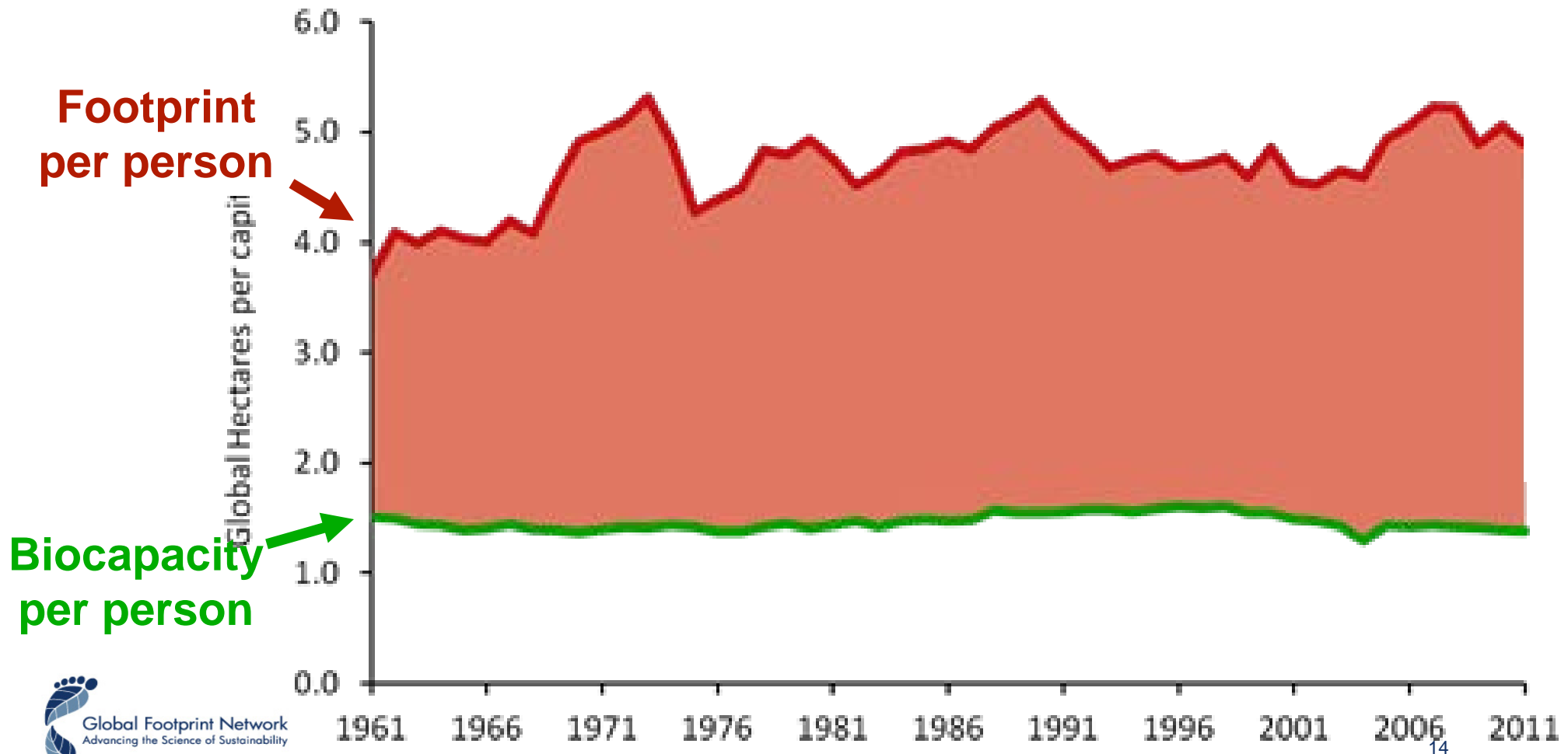
Economic Impact of Resource Overuse



	Over Biotic Resources	using Abiotic Resources
Income (short term, flow) GDP	INCREASES ↑	
Wealth (long-term, stocks)	DECREASES ↓	



Switzerland: Footprint and Biocapacity per person

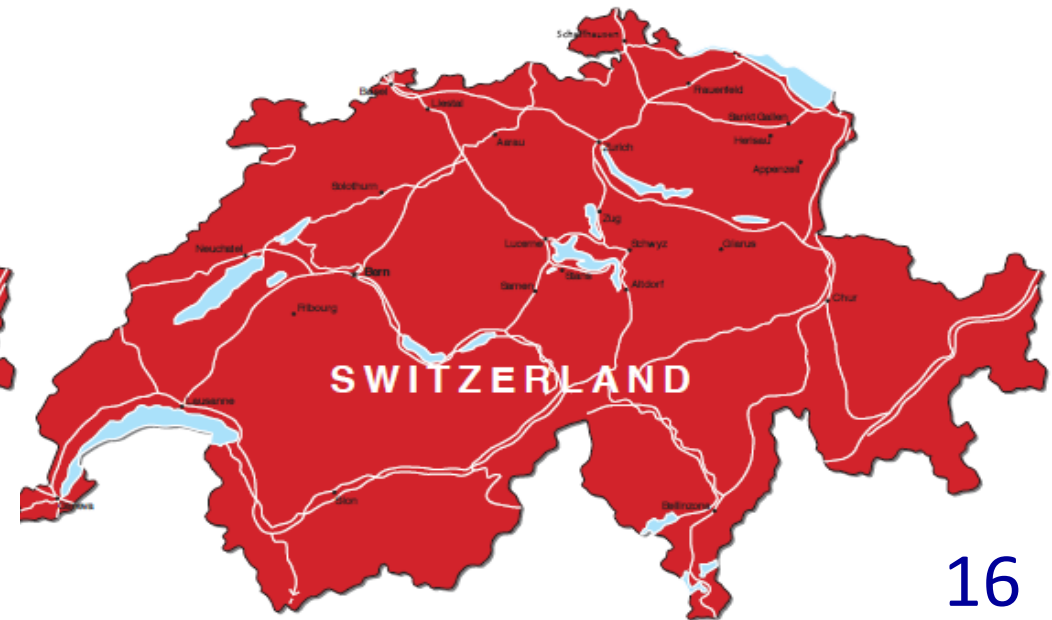
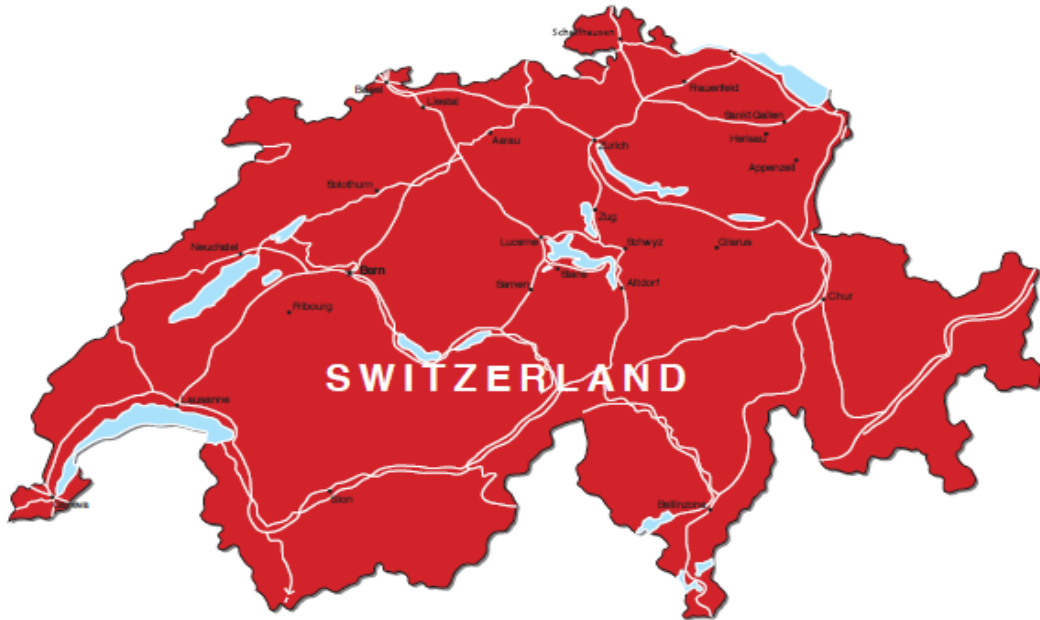
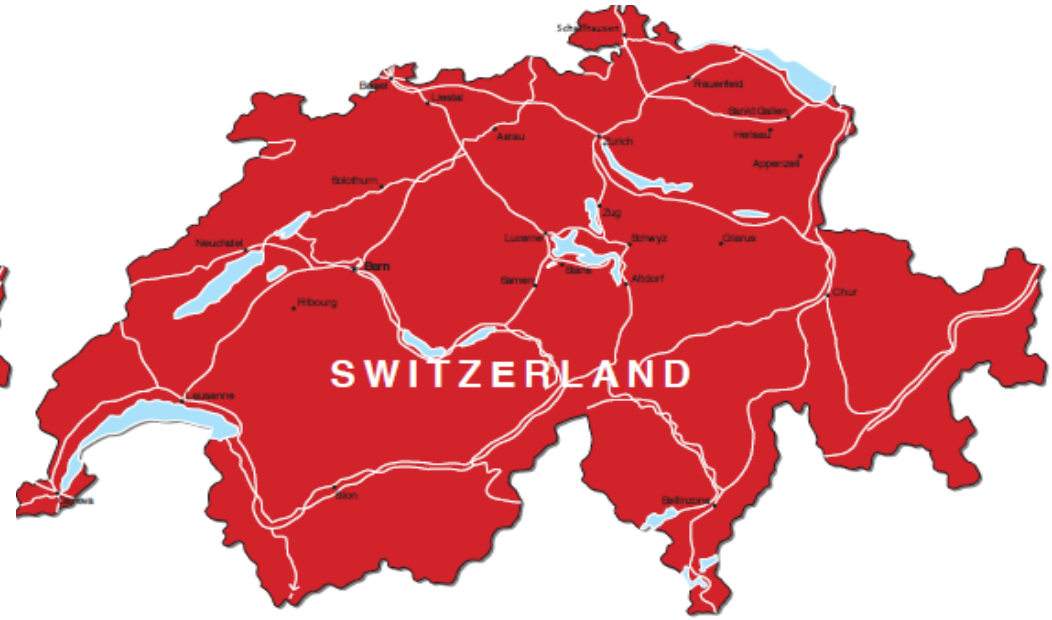
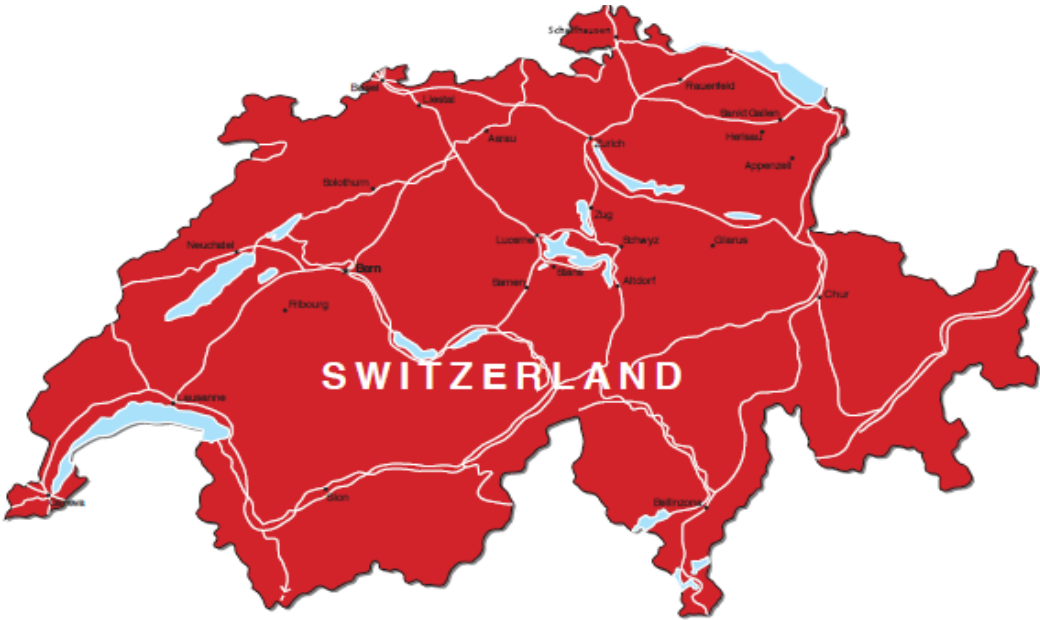


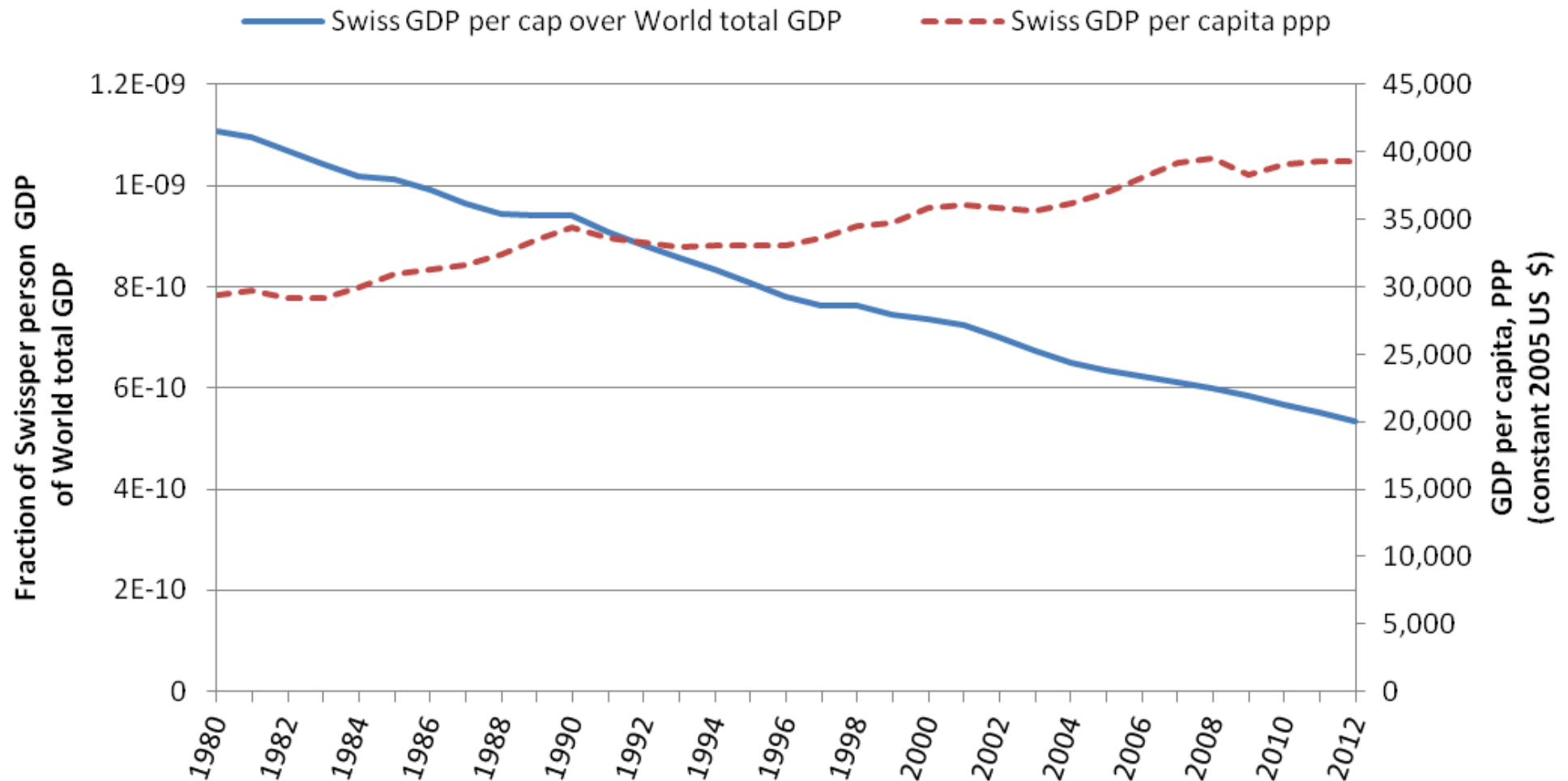


How many Switzerlands do we have?



How many
do we use?





Which view serves you best?



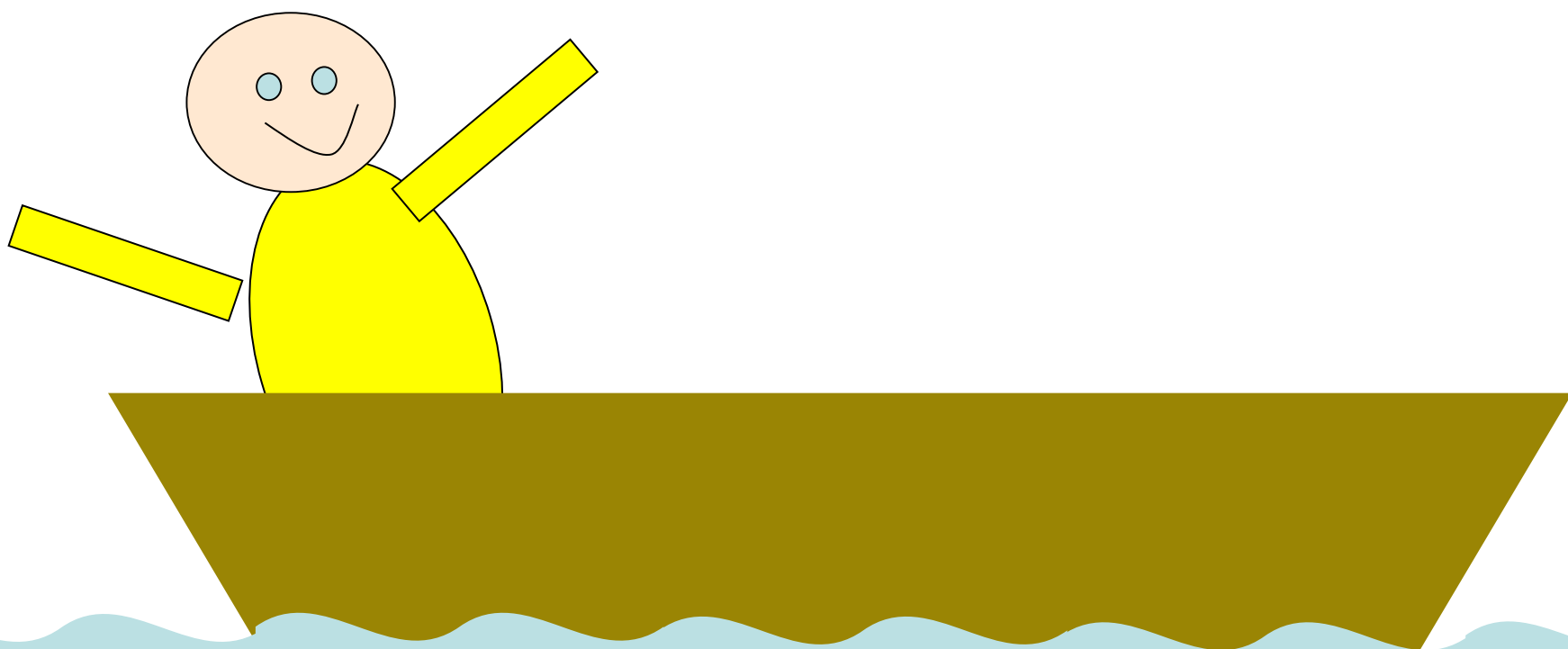
Conclusion

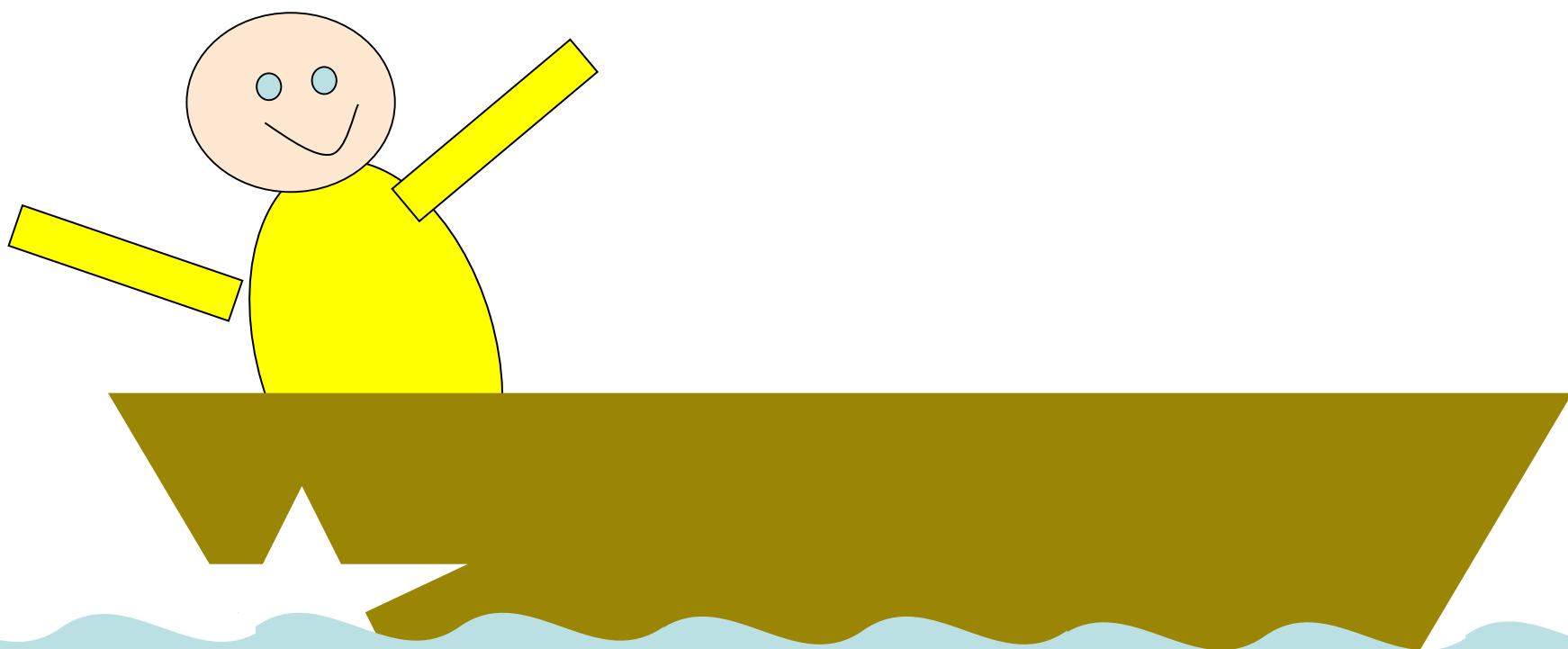


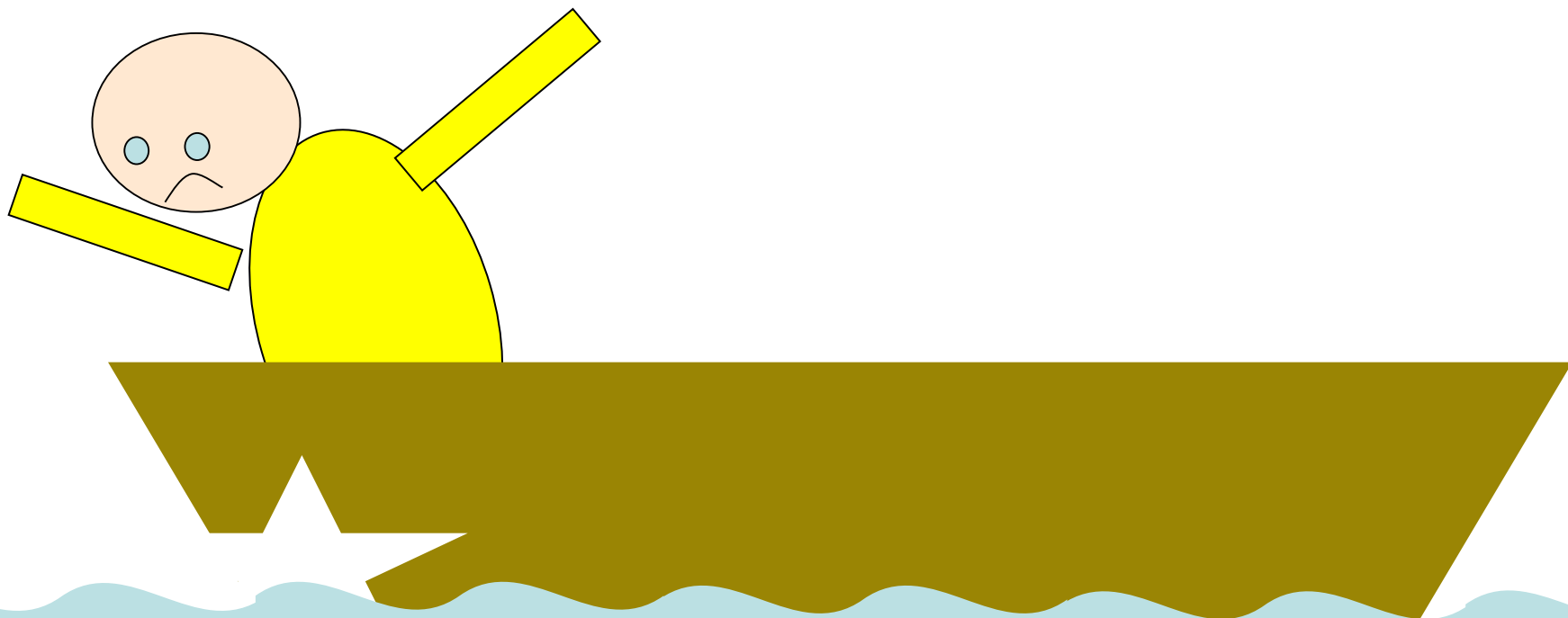
Physical trends can be measured and do not look pretty

Conventional economic measures as used now are blind to any of them ...

...even though same measures could be used to identify growing risks.



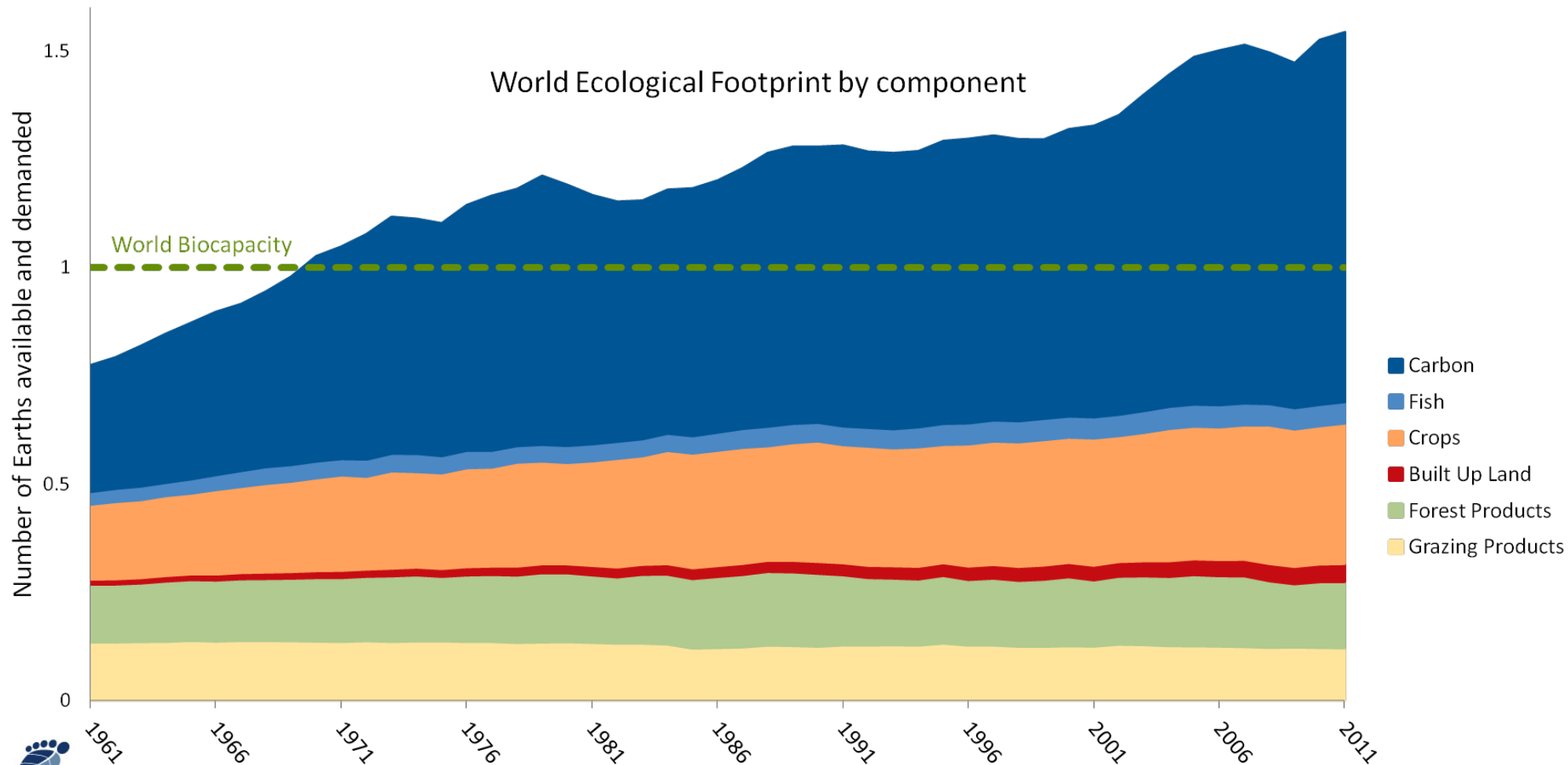




mathis@footprintnetwork.org



World Ecological Footprint by component



What I would expect



If Overshoot (vs. biocapacity deficit) persists, meaning technology or markets do not compensate:

- 1. Effort to get everyday supplies increases (“inflation”).**
- 2. Value of existing assets that depend on supplies decreases (“deflation”).**
- 3. Labor loses vis-à-vis natural capital owners.**

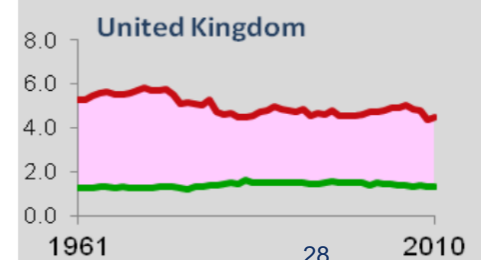
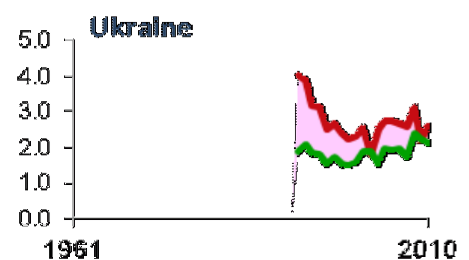
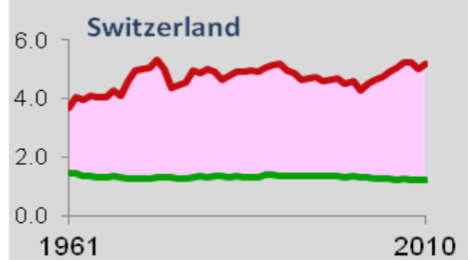
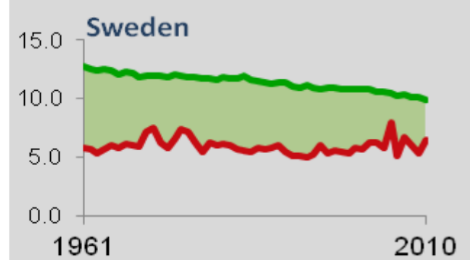
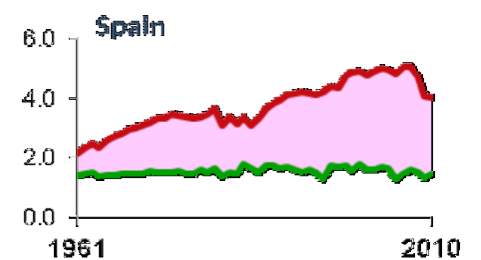
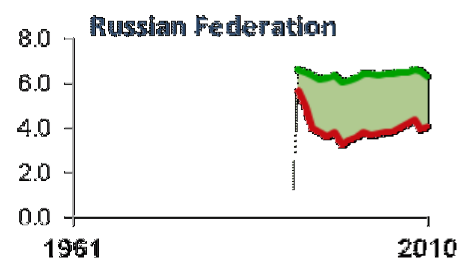
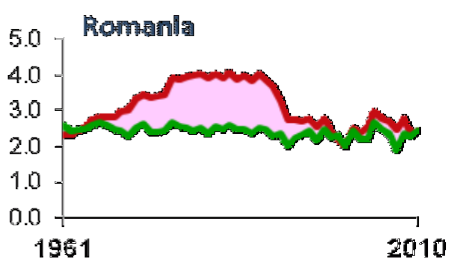
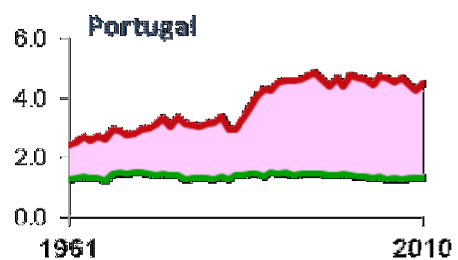
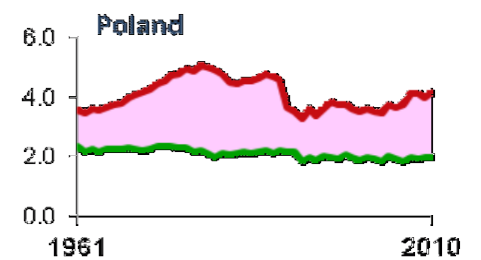
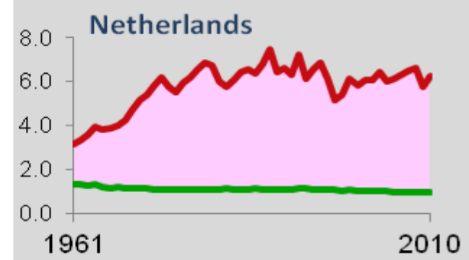
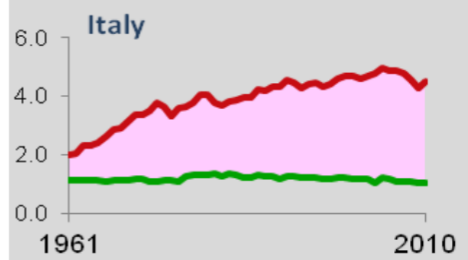
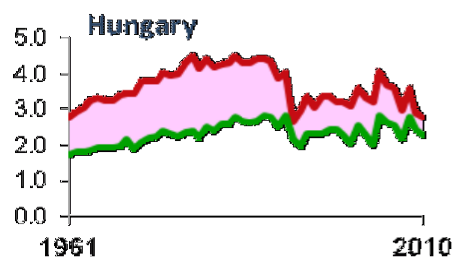
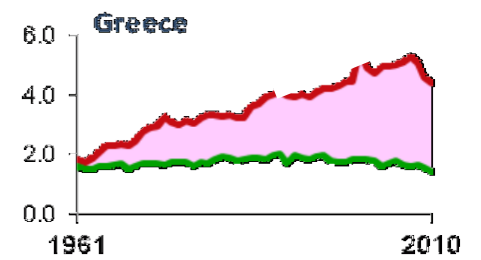
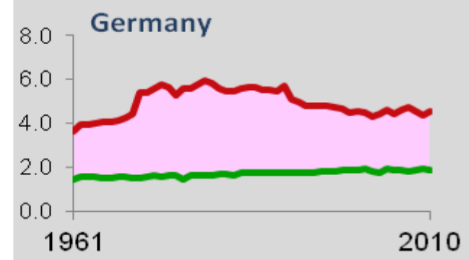
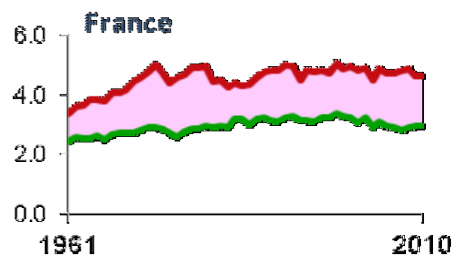
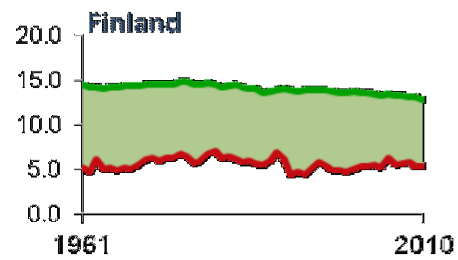
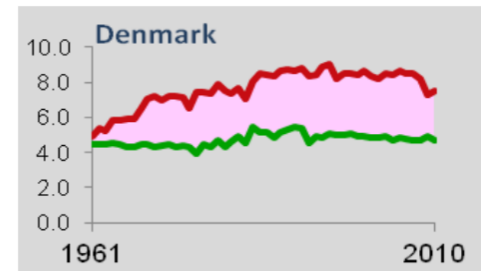
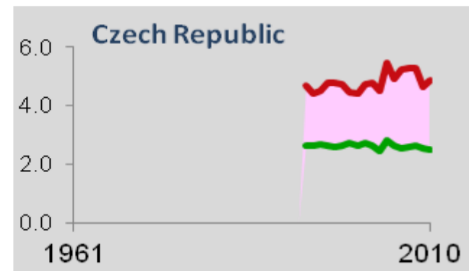
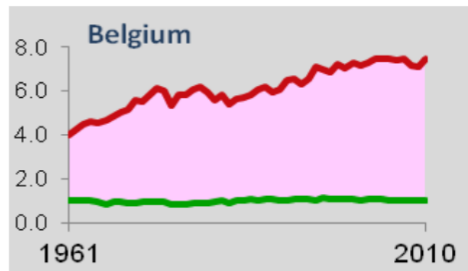
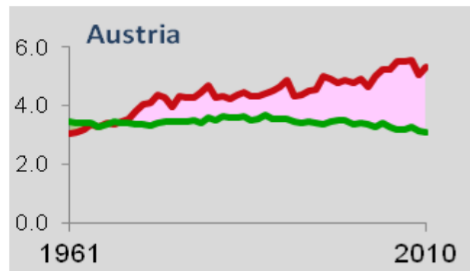
What is the material bottleneck?



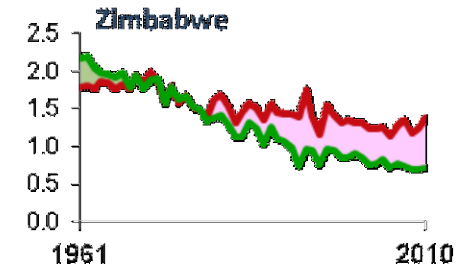
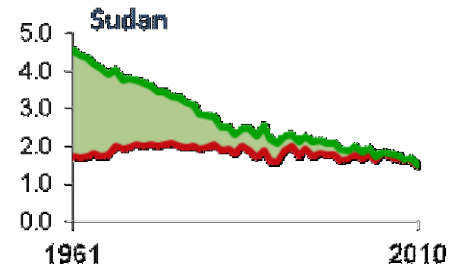
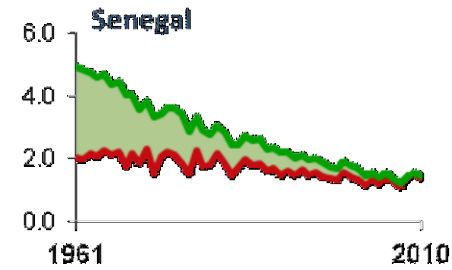
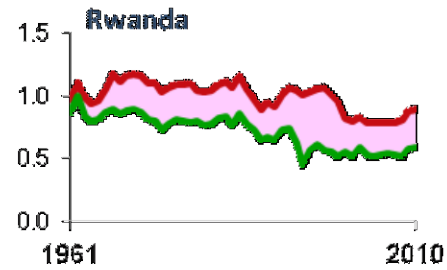
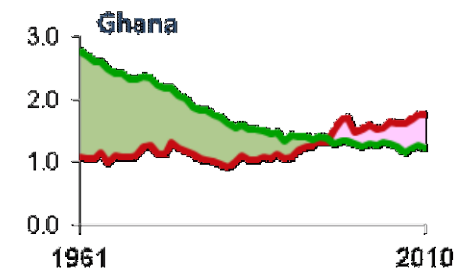
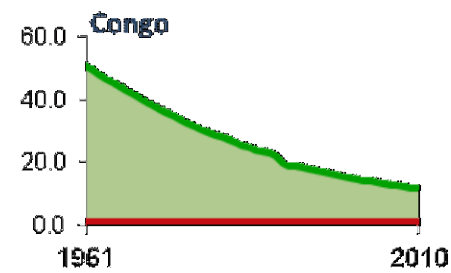
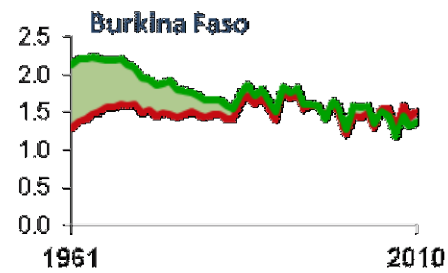
Rare earths?

Fossil fuel?

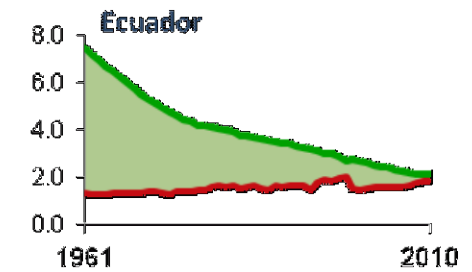
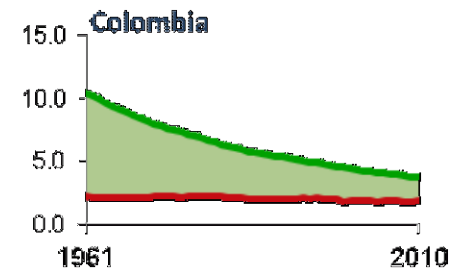
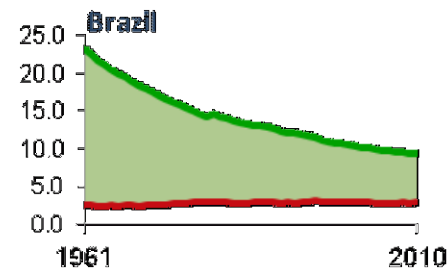
Biocapacity!



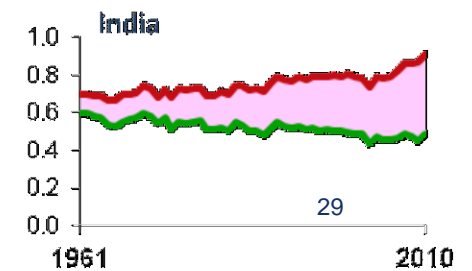
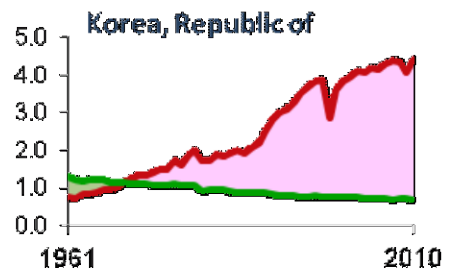
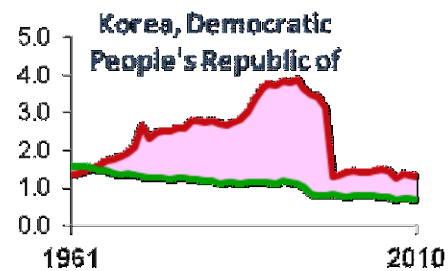
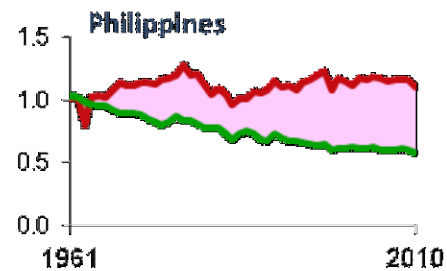
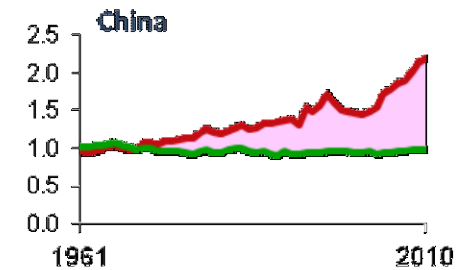
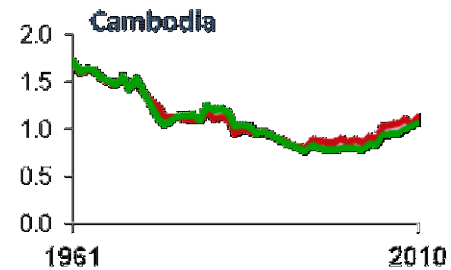
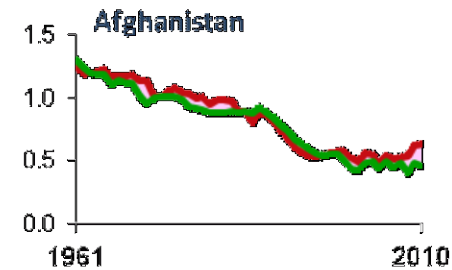
AFRICA

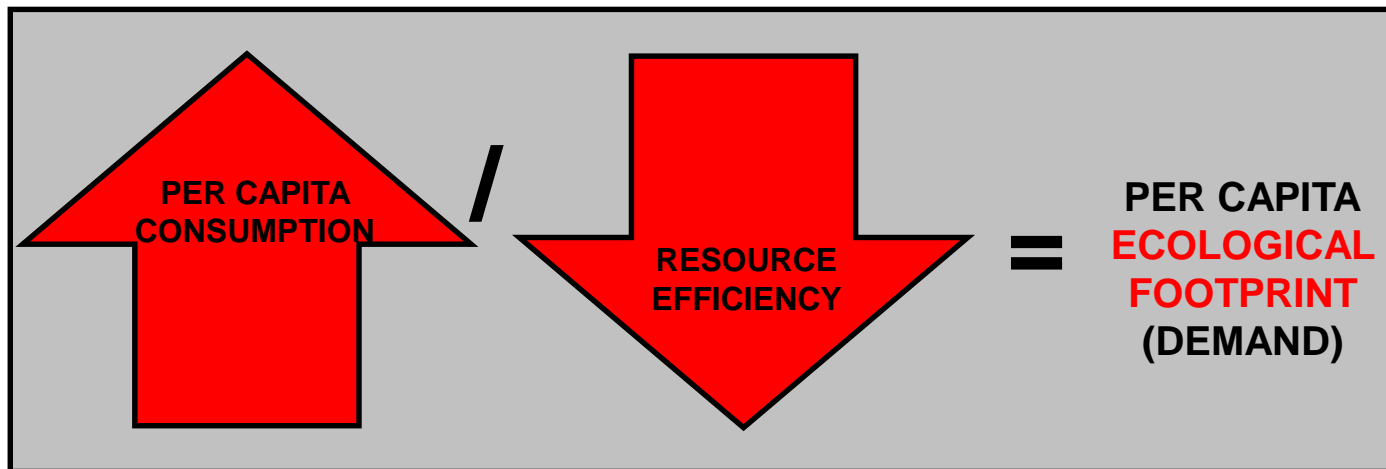


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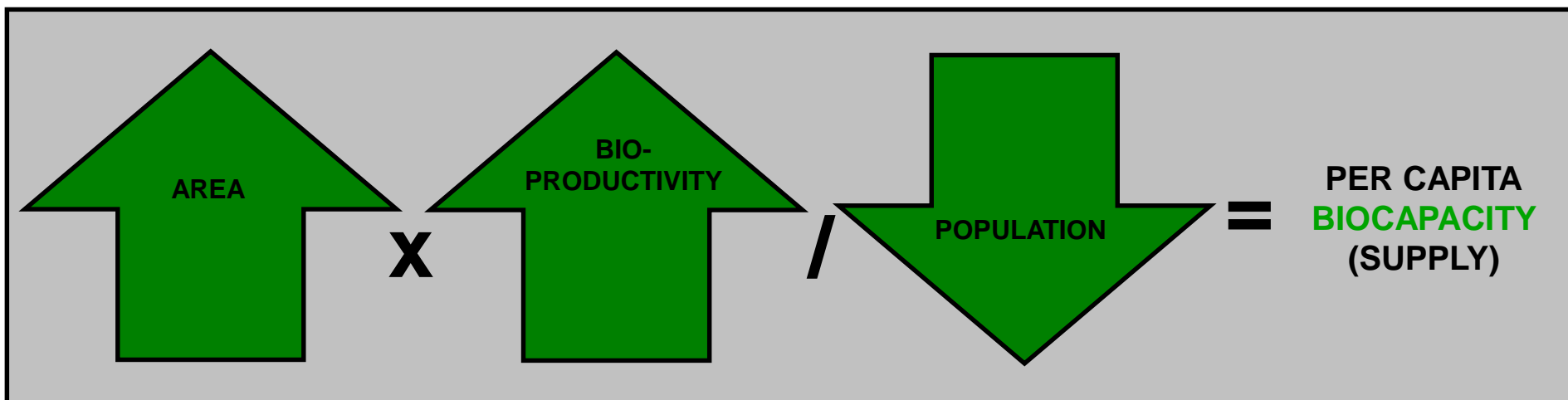


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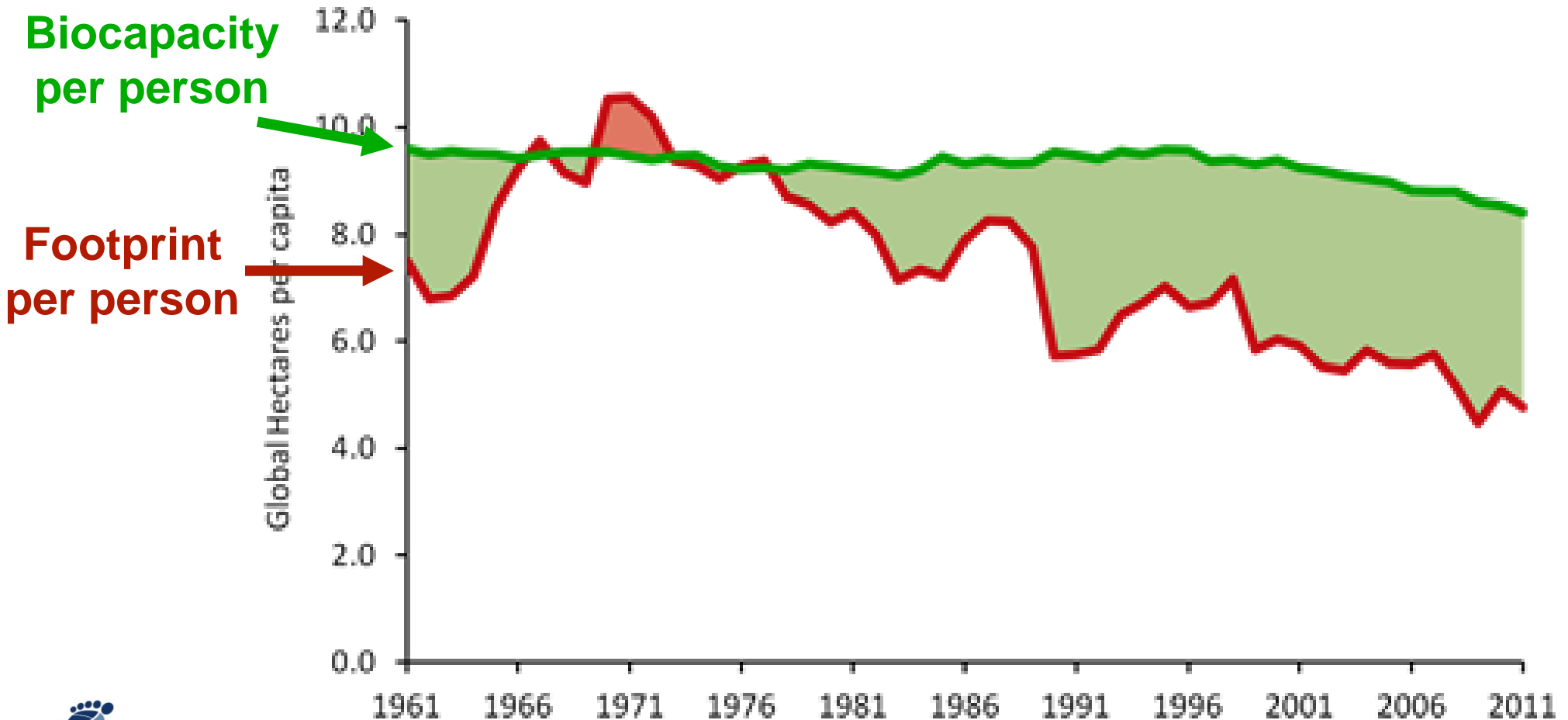




Five Factors



Norway: Footprint and Biocapacity per person

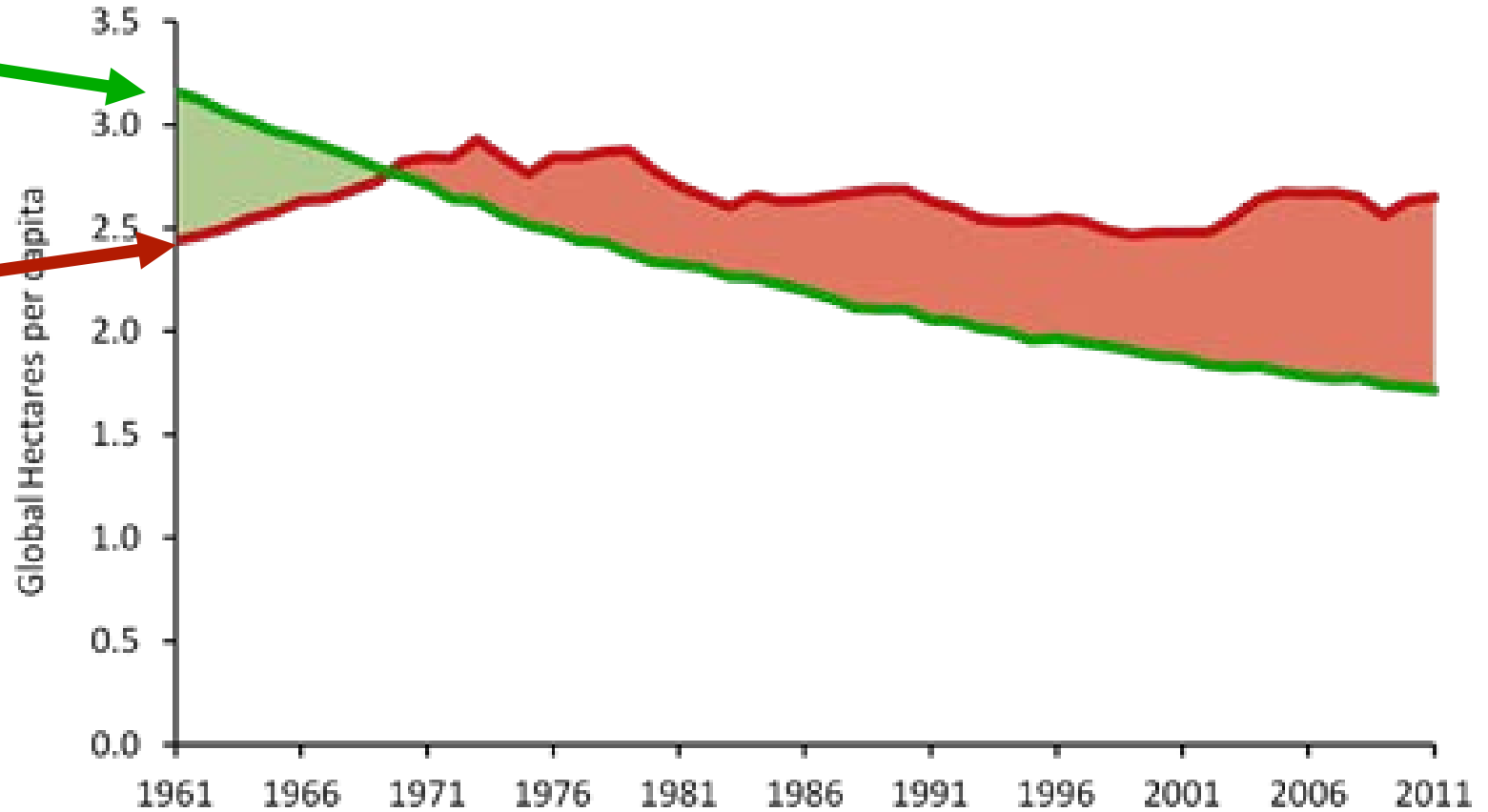


World: Footprint and Biocapacity per person

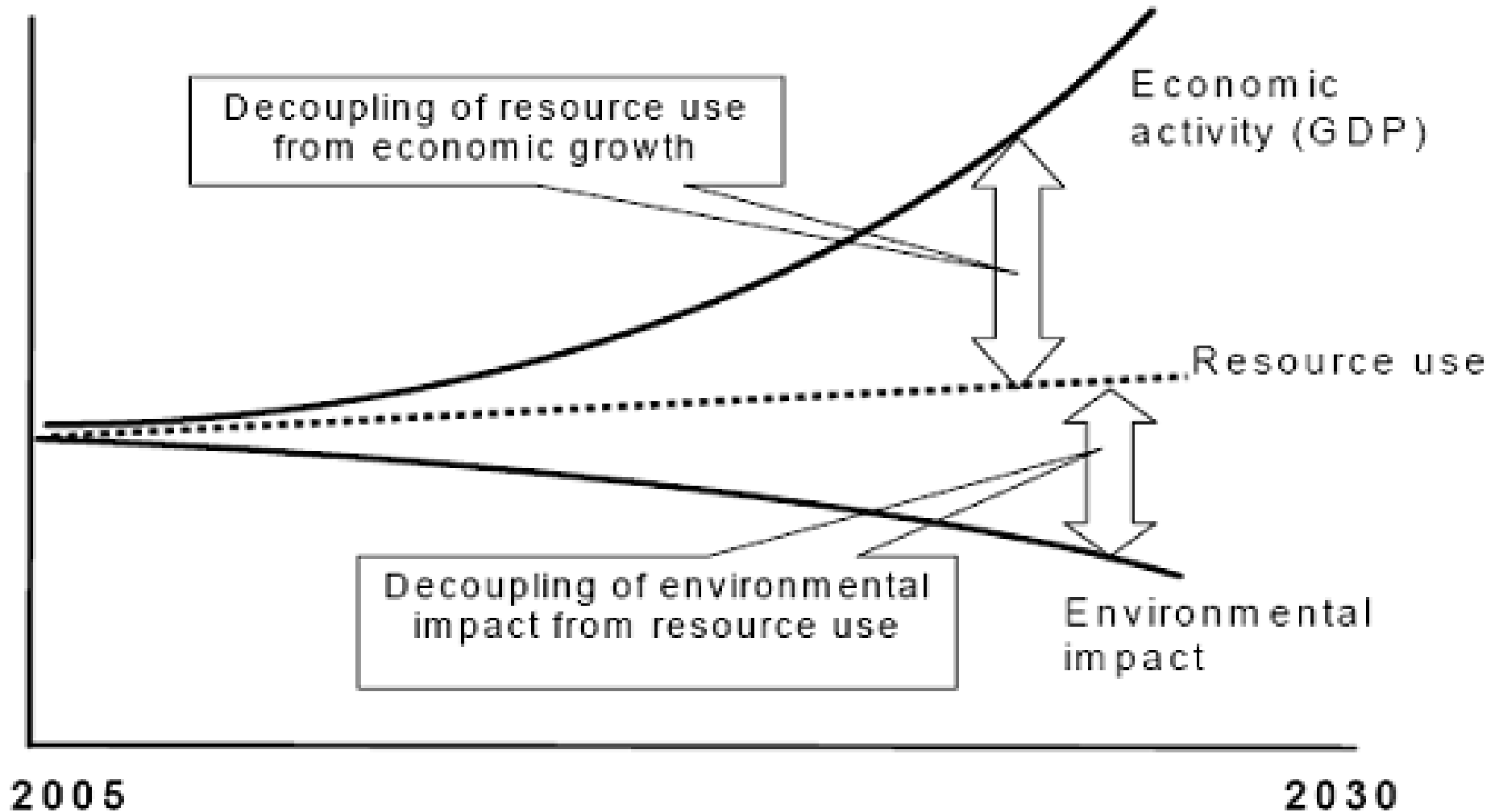


**Biocapacity
per person**

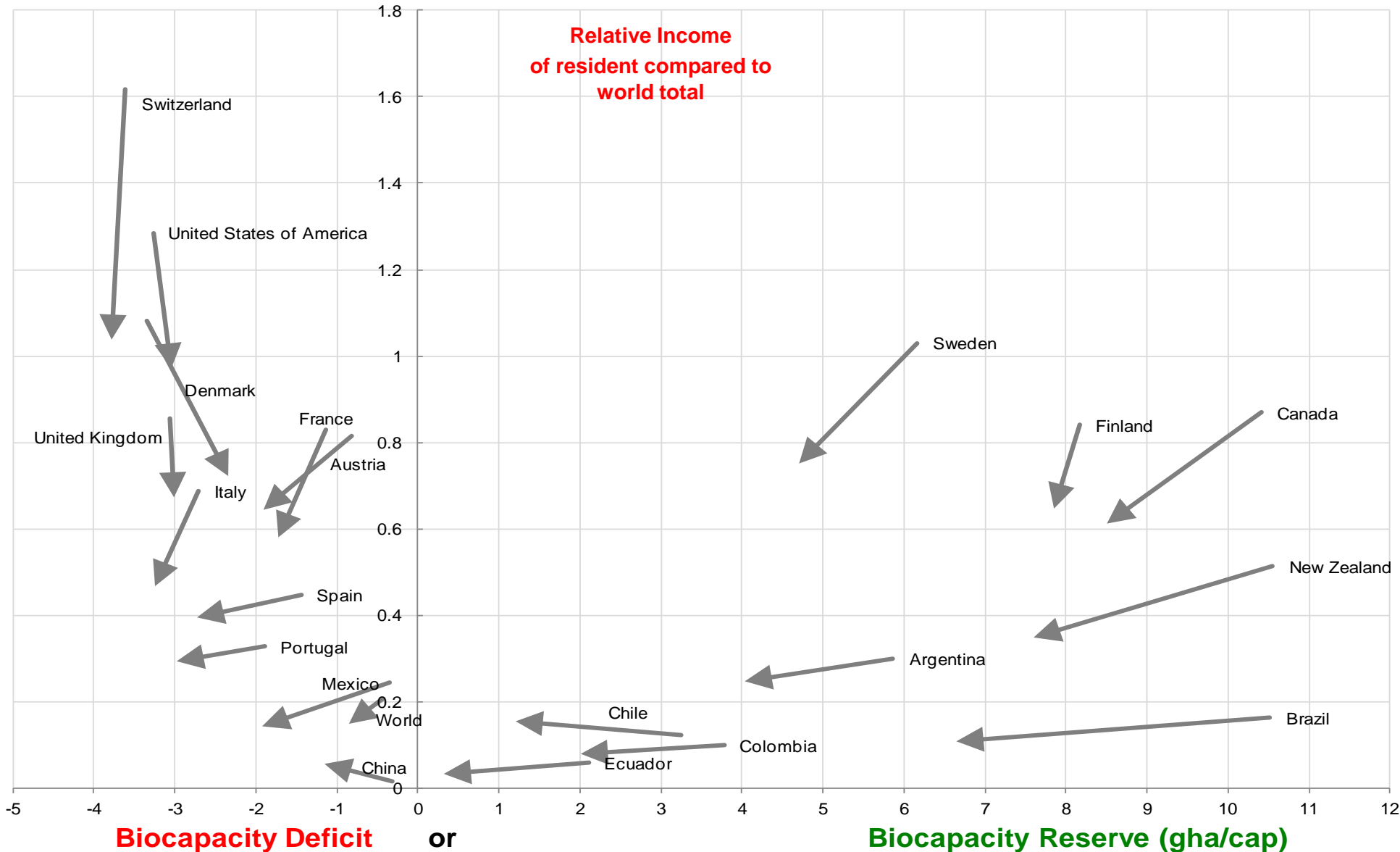
**Footprint
per person**



The Preferred Factor: Can We Decouple?



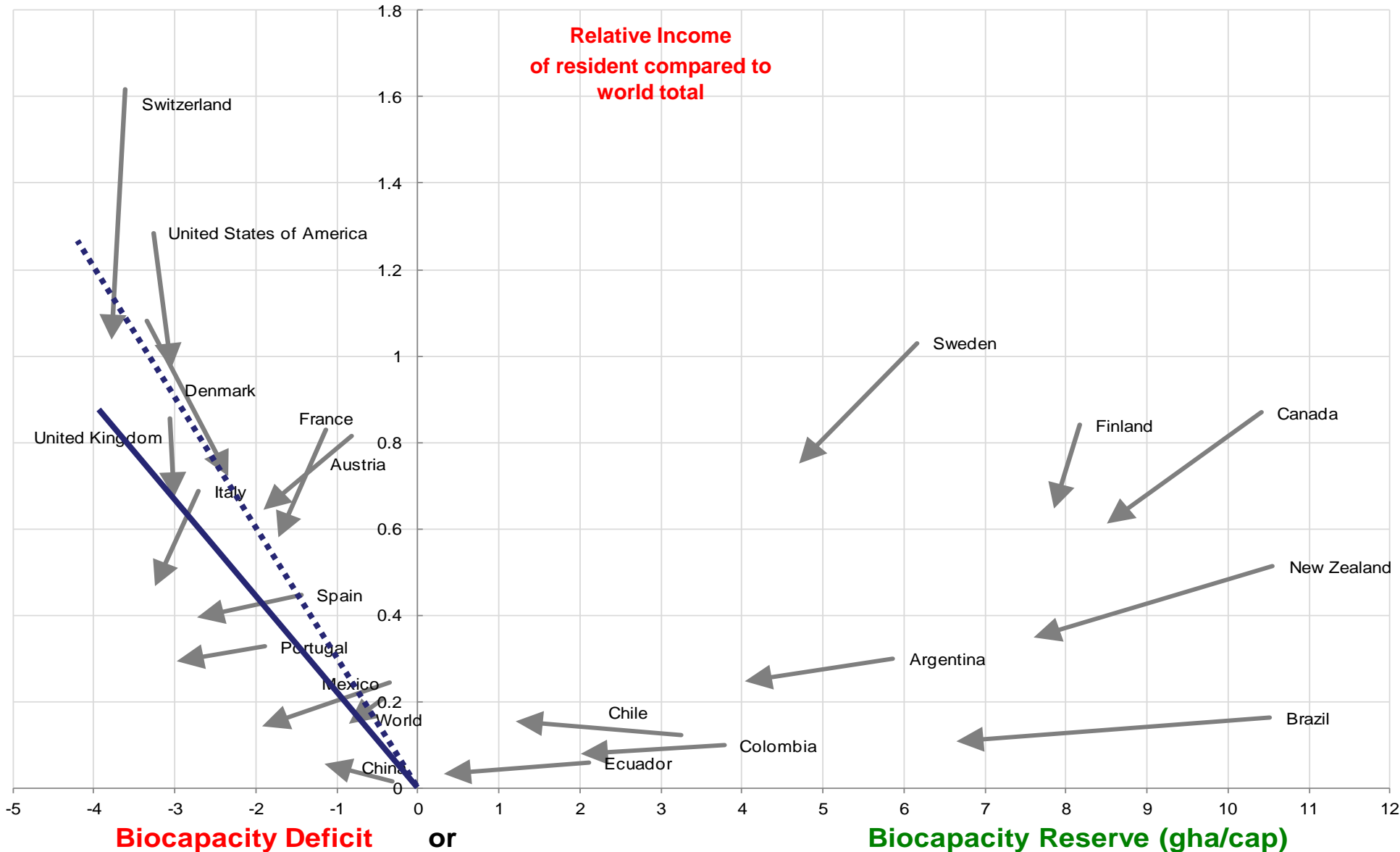
Fraction of world total GNI held by average resident (billionths)



Biocapacity Deficit and Global Income Share (1985 – 2009)

© Global Footprint Network with data from National Footprint Accounts for x-axis
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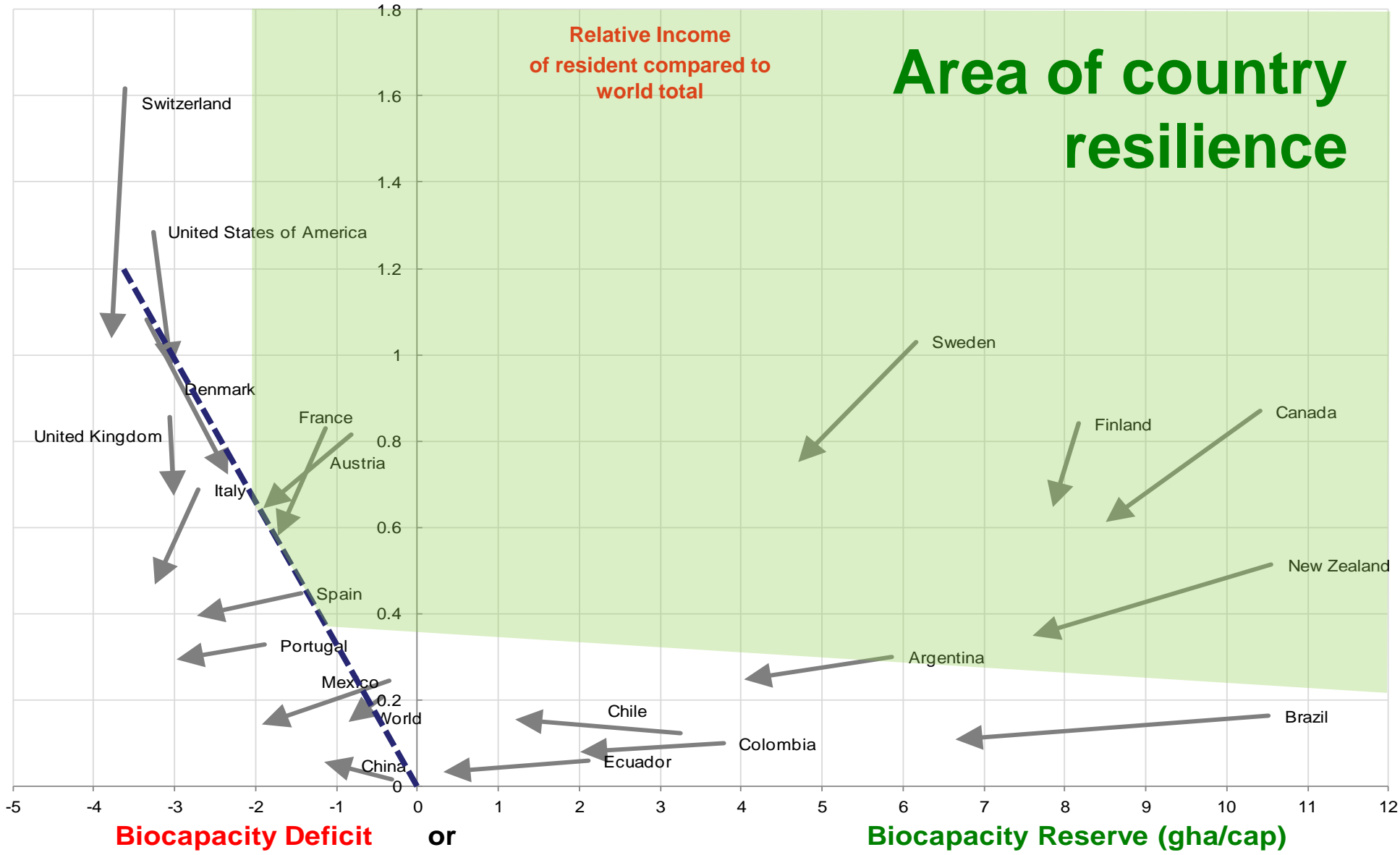
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© Global Footprint Network with data from National Footprint Accounts for x-axis
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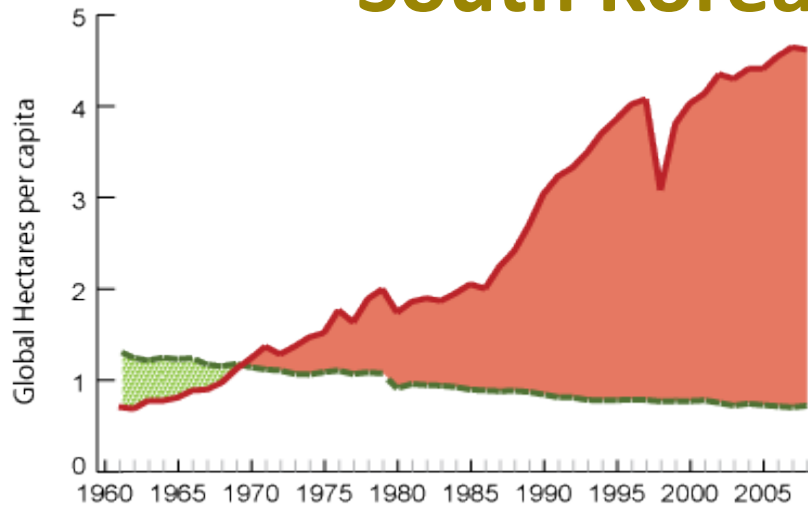


Biocapacity Deficit and Global Income Share (1985 – 2009)

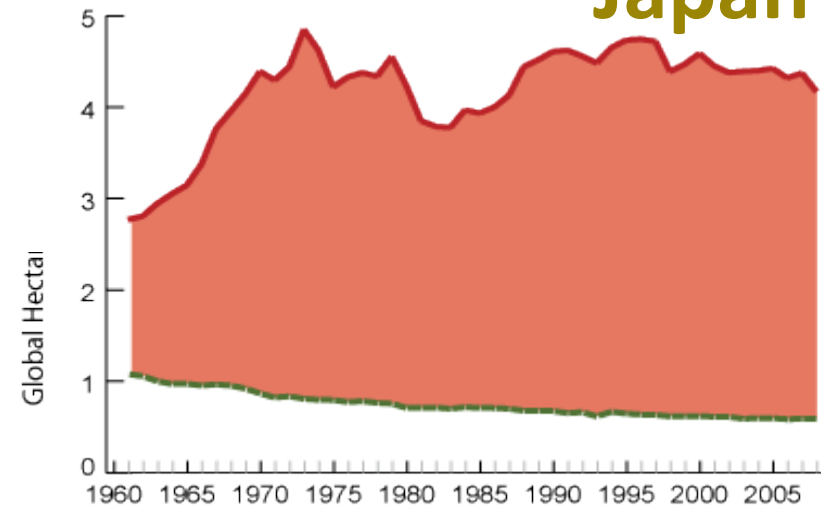
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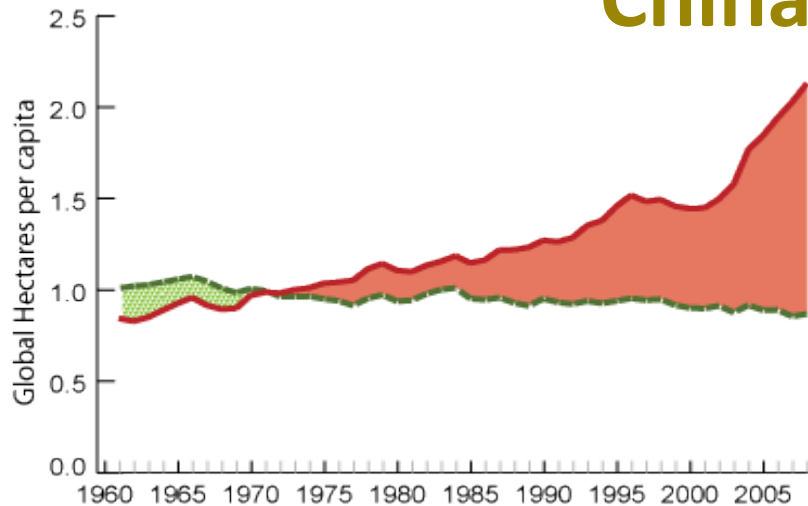
South Korea



Japan



China



Viet Nam

