

# The Ecological Footprint

What's in it for you?

Mathis Wackernagel, PhD



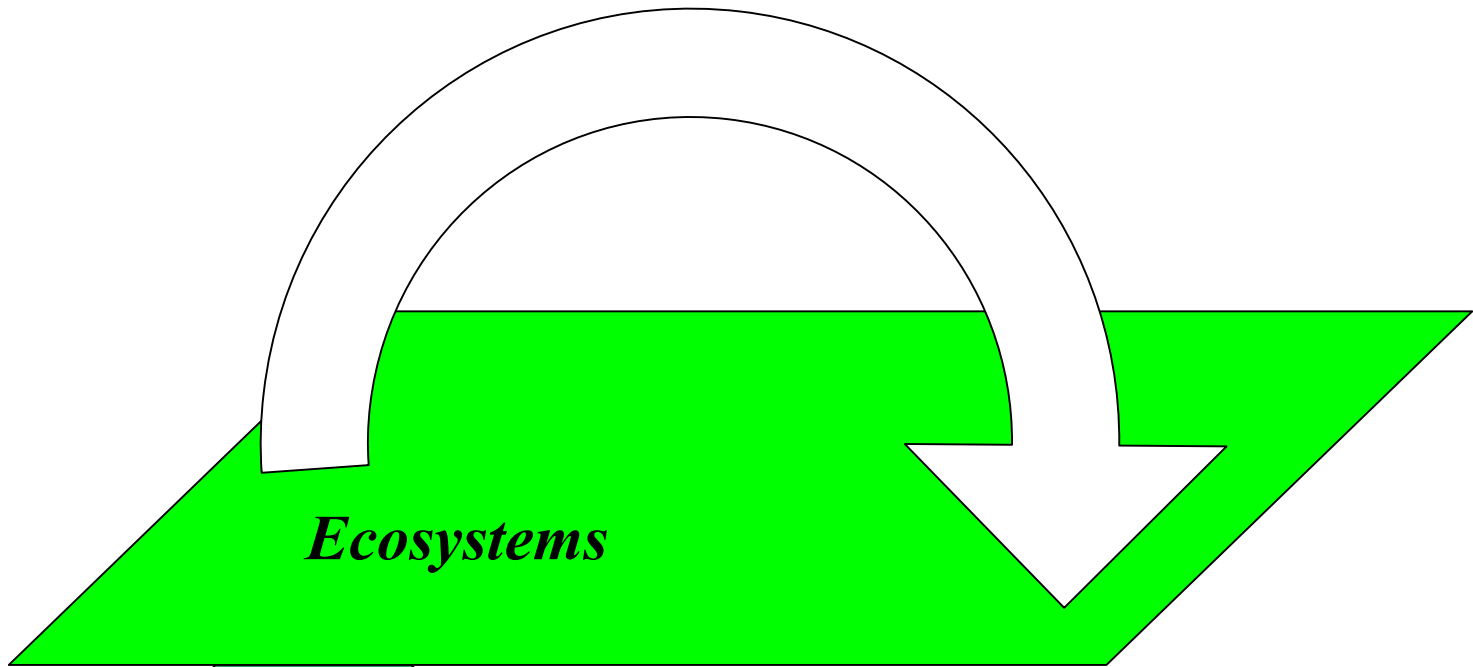
Global Footprint Network  
Advancing the Science of Sustainability



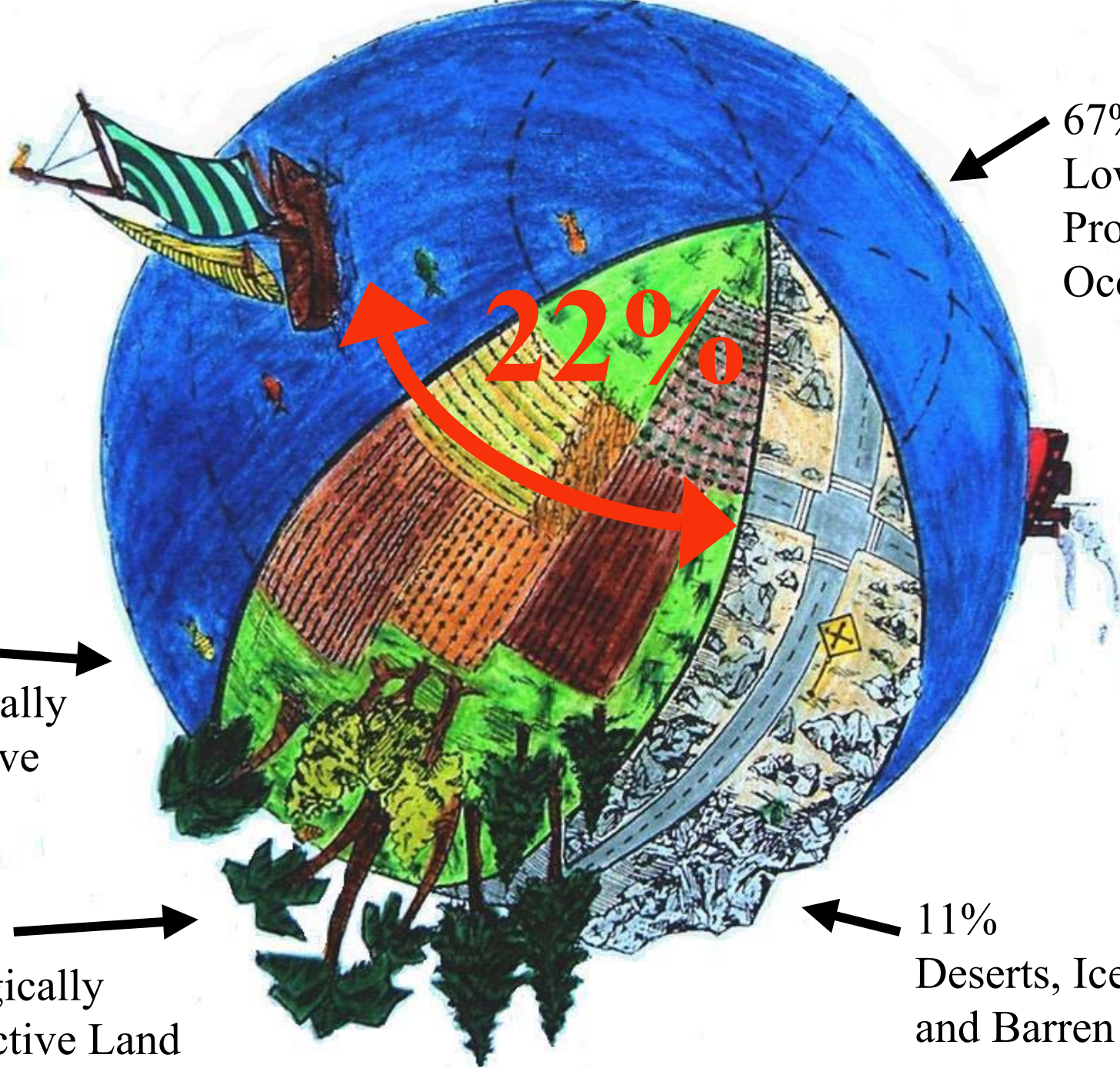
**Bundesverfassung der  
Schweizerischen Eidgenossenschaft  
*Art. 73 Nachhaltige Entwicklung***

Bund und Kantone streben ein auf Dauer ausgewogenes Verhältnis zwischen der Natur und ihrer Erneuerungsfähigkeit einerseits und ihrer Beanspruchung durch den Menschen anderseits an.

**Organism's or society's metabolism: food in, waste out.**



**Nature turns waste back into food**



67%  
Low-  
Productivity  
Ocean

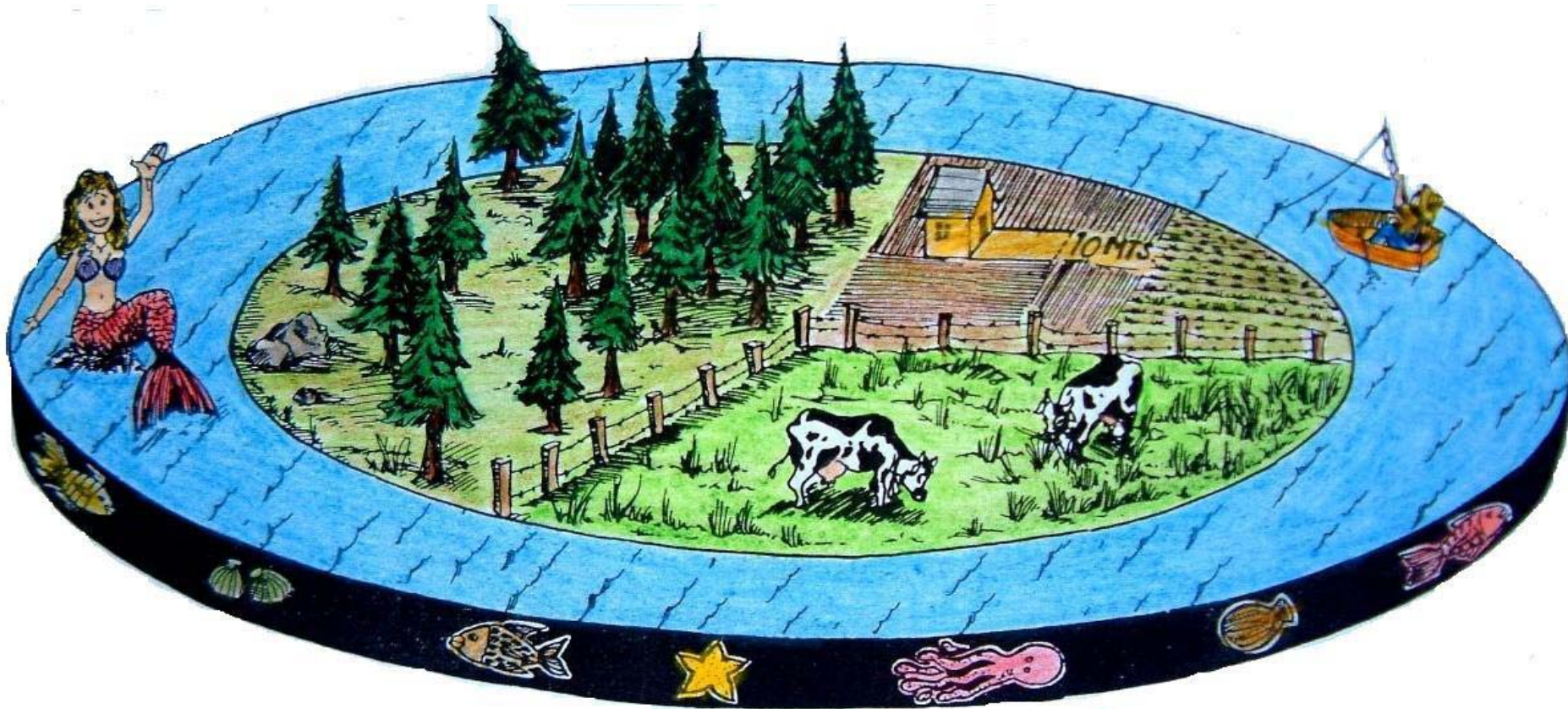
22%

4%  
Biologically  
Productive  
Ocean

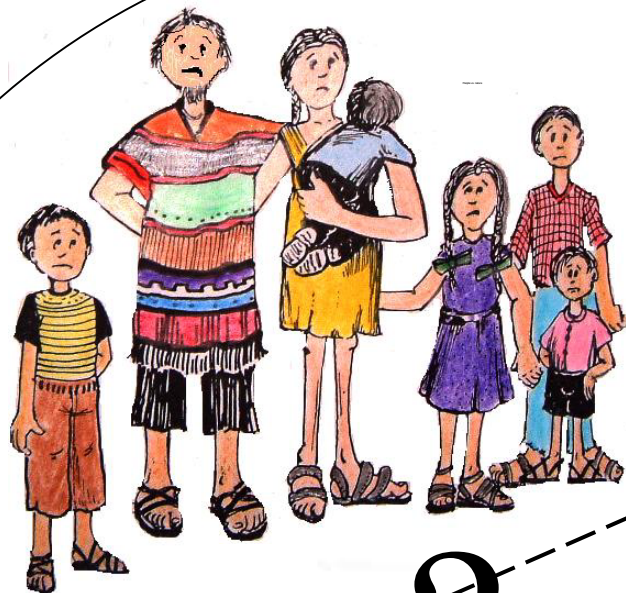
18%  
Biologically  
Productive Land

11%  
Deserts, Ice Caps  
and Barren Land

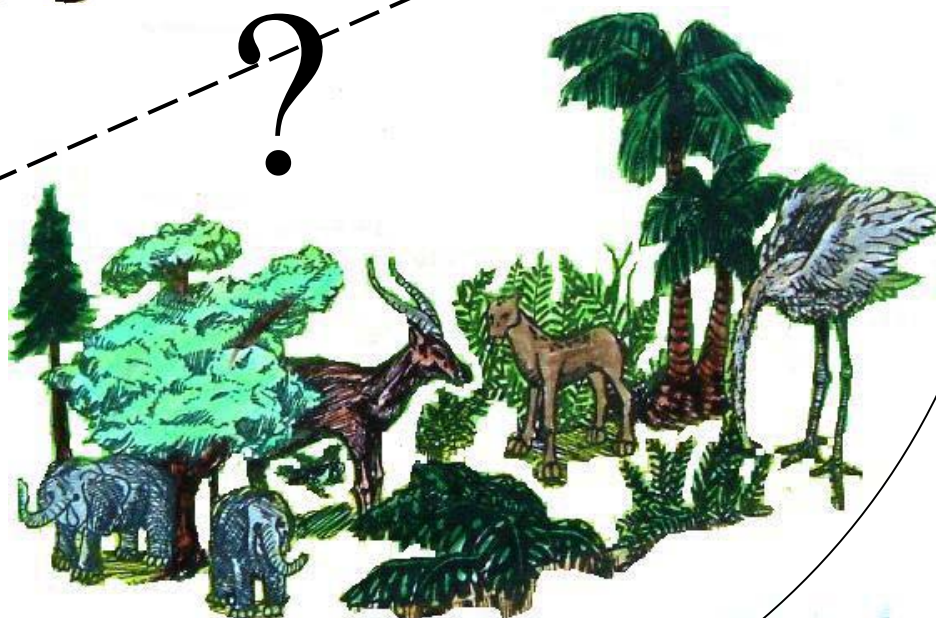




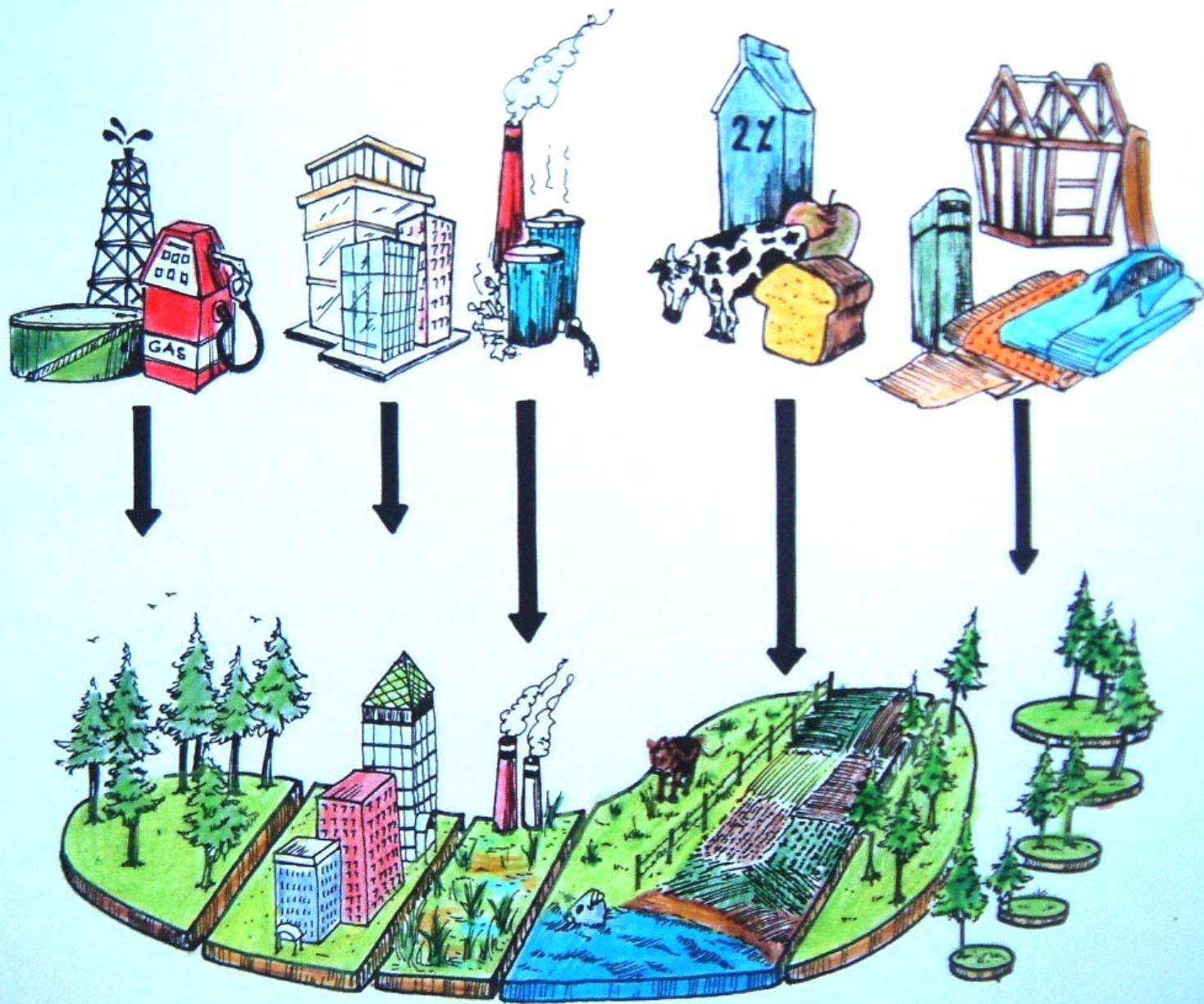
Global average availability of bioproductive  
Land + Sea = **1.8 global hectares/person**  
(in 2001)



?







Fossil Fuel Built-up Waste  
absorption

Food

Fibres

# What Does the Footprint Do?

**It answers:**

- How much of the regenerative capacity of the biosphere is used by human activities?
- How much is available within a region?



# Global Footprint Accounts

(in global hectares/person, 2001 data)

## Ecological Demand (*Ecological Footprint*)

### Footprint Areas for:

Growing Crops	0.49
Grazing Animals	0.14
Settlements & infrastructure	0.07
Producing timber & fuelwood	0.24
Absorbing excess CO <sub>2</sub>	1.12
Harvesting Fish	0.13

**Total Global Demand**      **2.2**

**Demand  
Exceeds  
Supply  
By  
20%**

**>**

## Ecological Supply (*Biocapacity*)

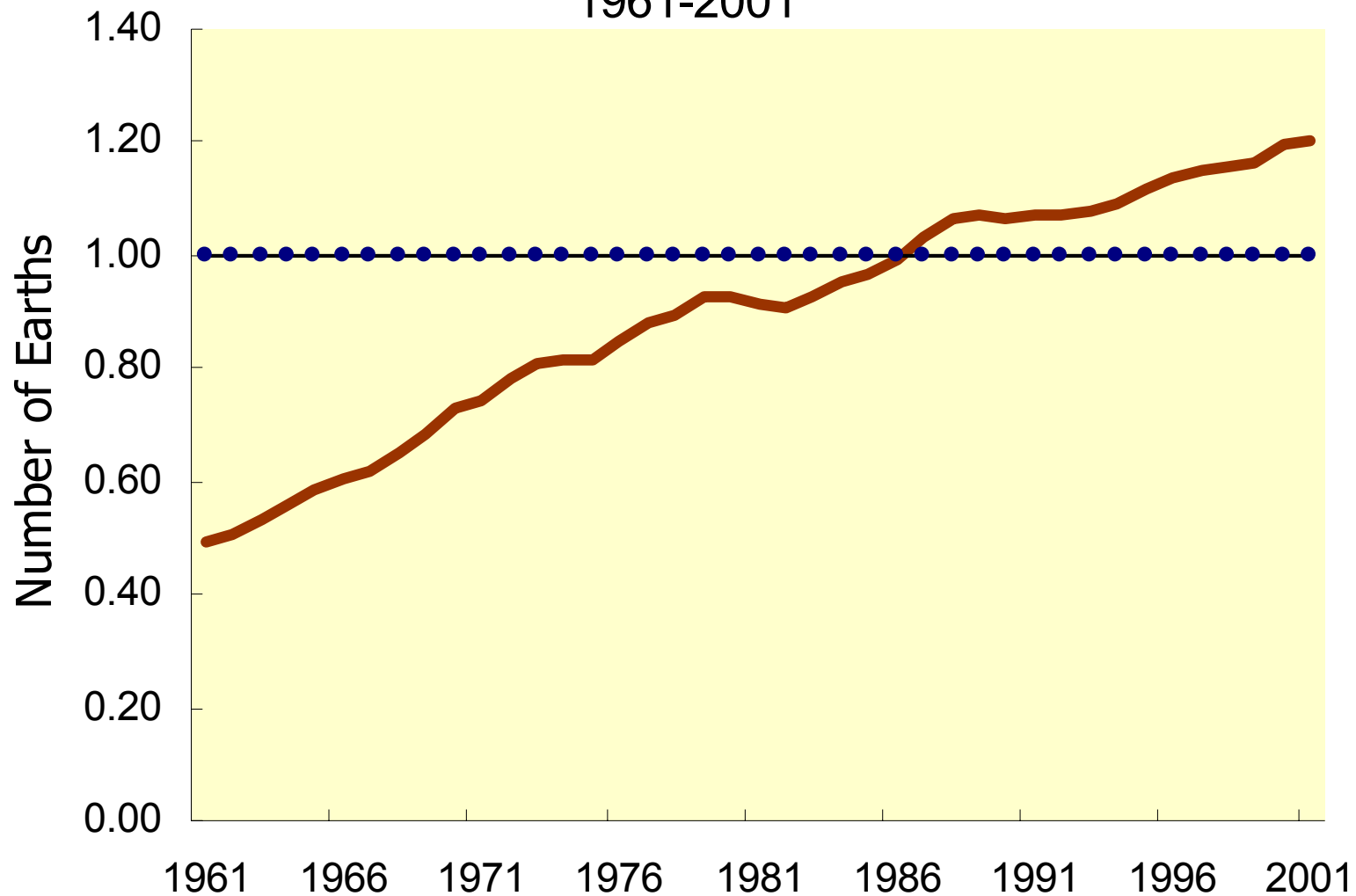
### Biocapacity Areas:

Crop land	0.53
Grazing land	0.27
Built-up area	0.07
Forest	0.81
Fishing Grounds	0.14

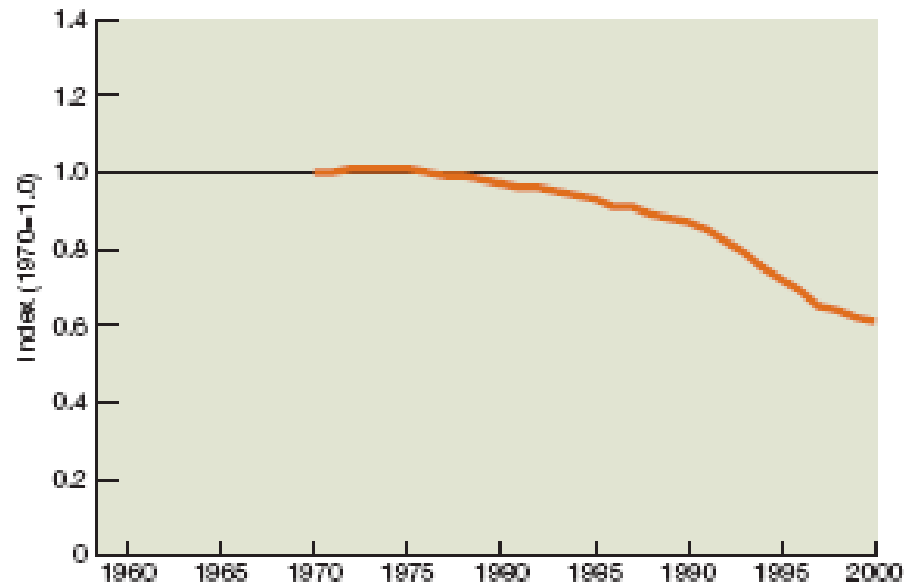
**Total Global Supply**      **1.8**

# World Ecological Footprint

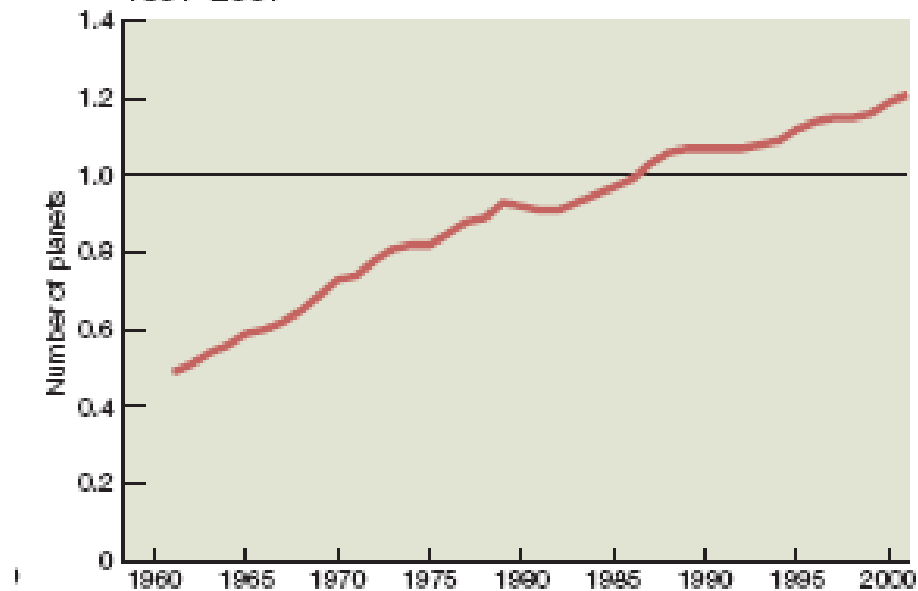
## 1961-2001



**Fig. 1: LIVING PLANET INDEX,  
1970–2000**



**Fig. 2: HUMANITY'S ECOLOGICAL FOOTPRINT,  
1961–2001**





# EUROPE 2005

## The Ecological Footprint



The European Union is firmly committed to sustainable development. It is a key principle for our policies and actions – within the EU and internationally. We want to achieve a better quality of life for all, now and in the future. This requires amongst other things safeguarding the Earth's capacity to support life in all its diversity and respecting the limits of the planet's natural resources. We need to prevent and reduce environmental pollution. We need to promote sustainable production and consumption and strike the right balance between economic growth and prosperity and the protection of environment at home and globally.

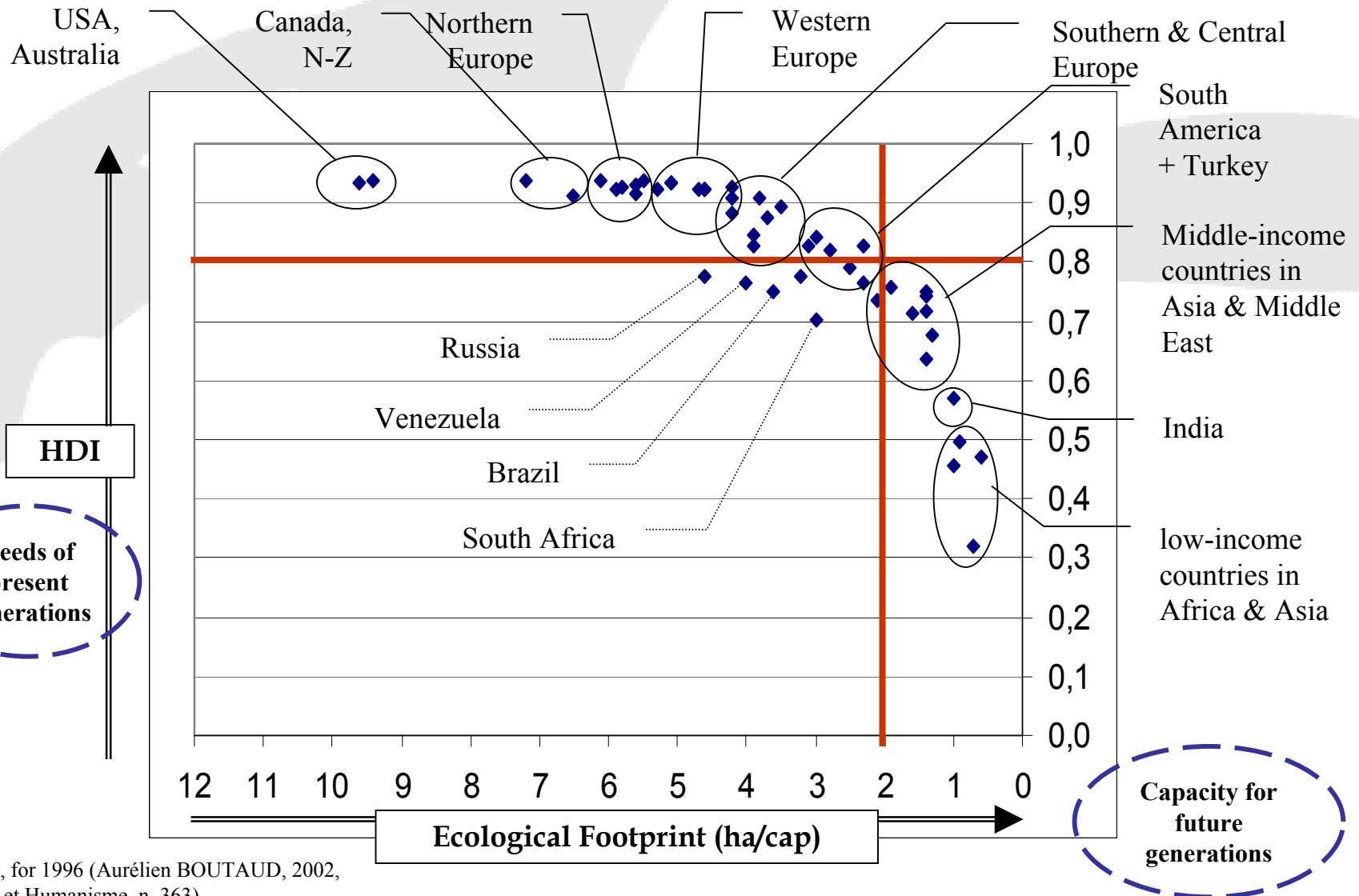
These objectives are confirmed in the Commission's recent proposal for a Declaration on Sustainable Development. Later this year this Commission will present a proposal for a new EU Sustainable Development Strategy.

I am convinced that to realise our vision, we need to engage stakeholders and citizens from across Europe and the world and get people to take real ownership of the sustainable development challenge. However, for people to do this, they need clear information on the challenges and the options available for more sustainable patterns of production, consumption and development. We also need to be able to assess progress made and target our actions which will allow all stakeholders to play their role in communicating with and engaging people. That is why I very much welcome initiatives such as this one taken by the WWF.

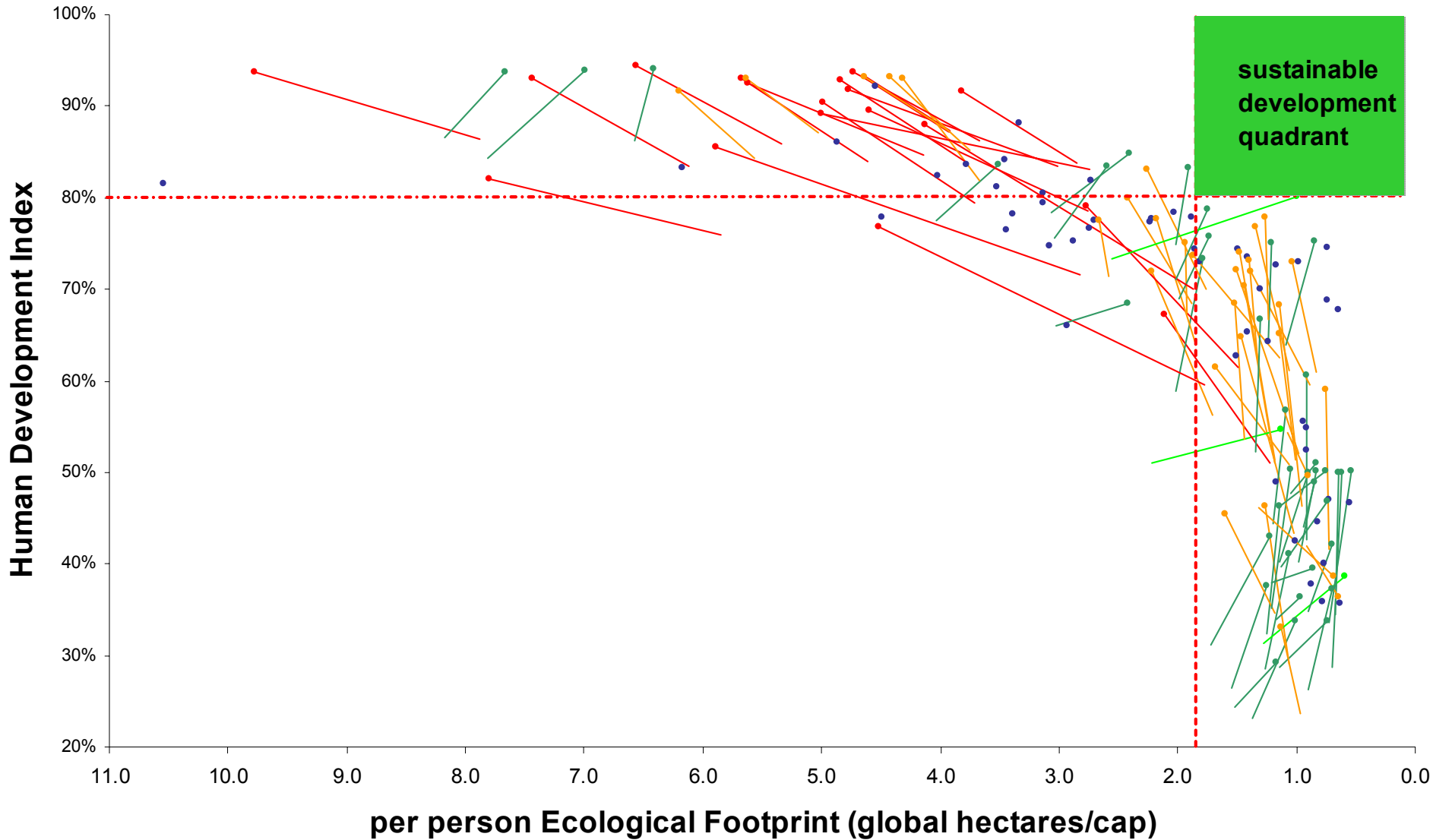


José Manuel Barroso  
President of the European Commission

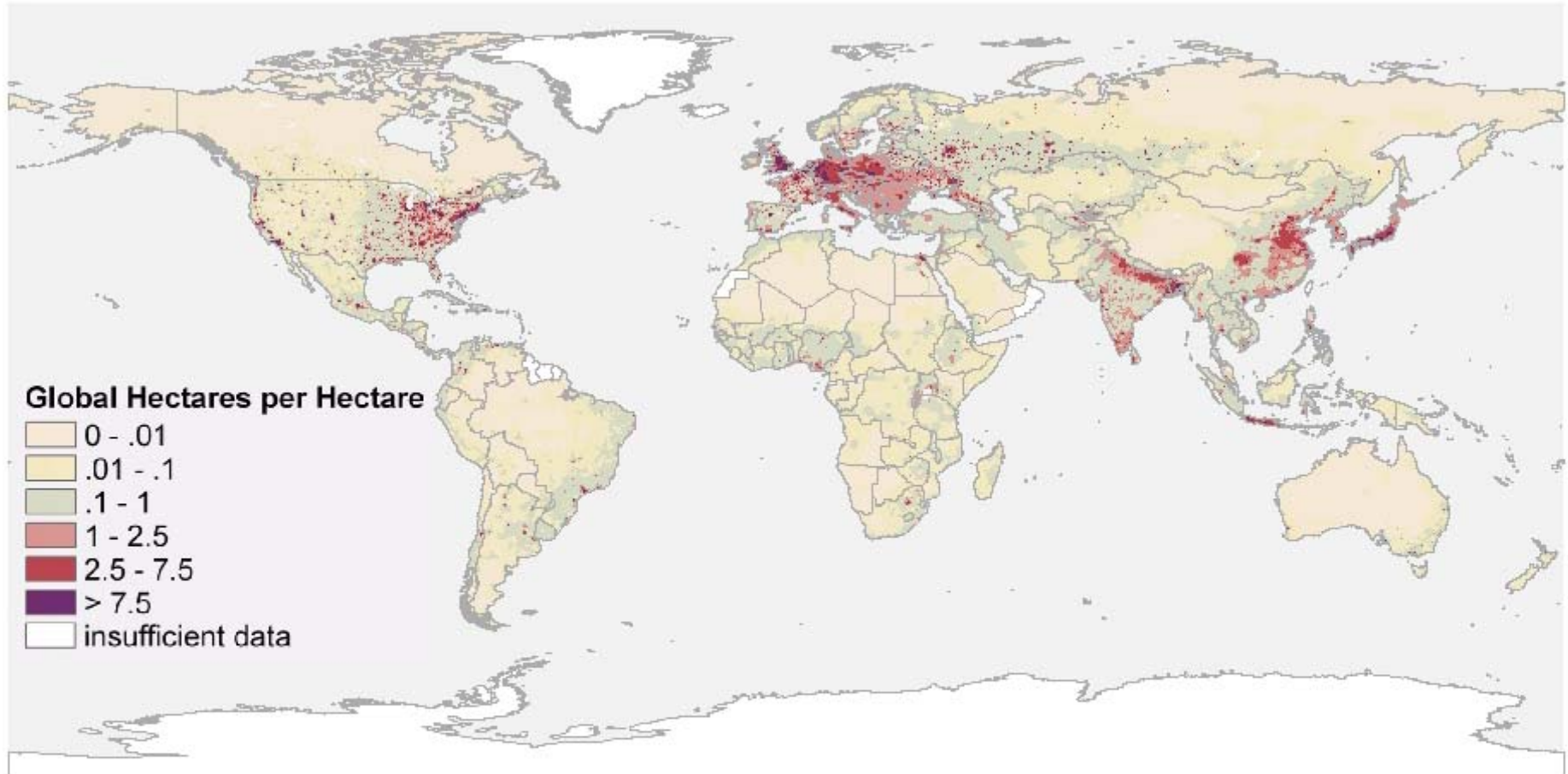
# Sustainable development : what about the nations of the World ?



# HDI v. Footprint 1975 to 2001



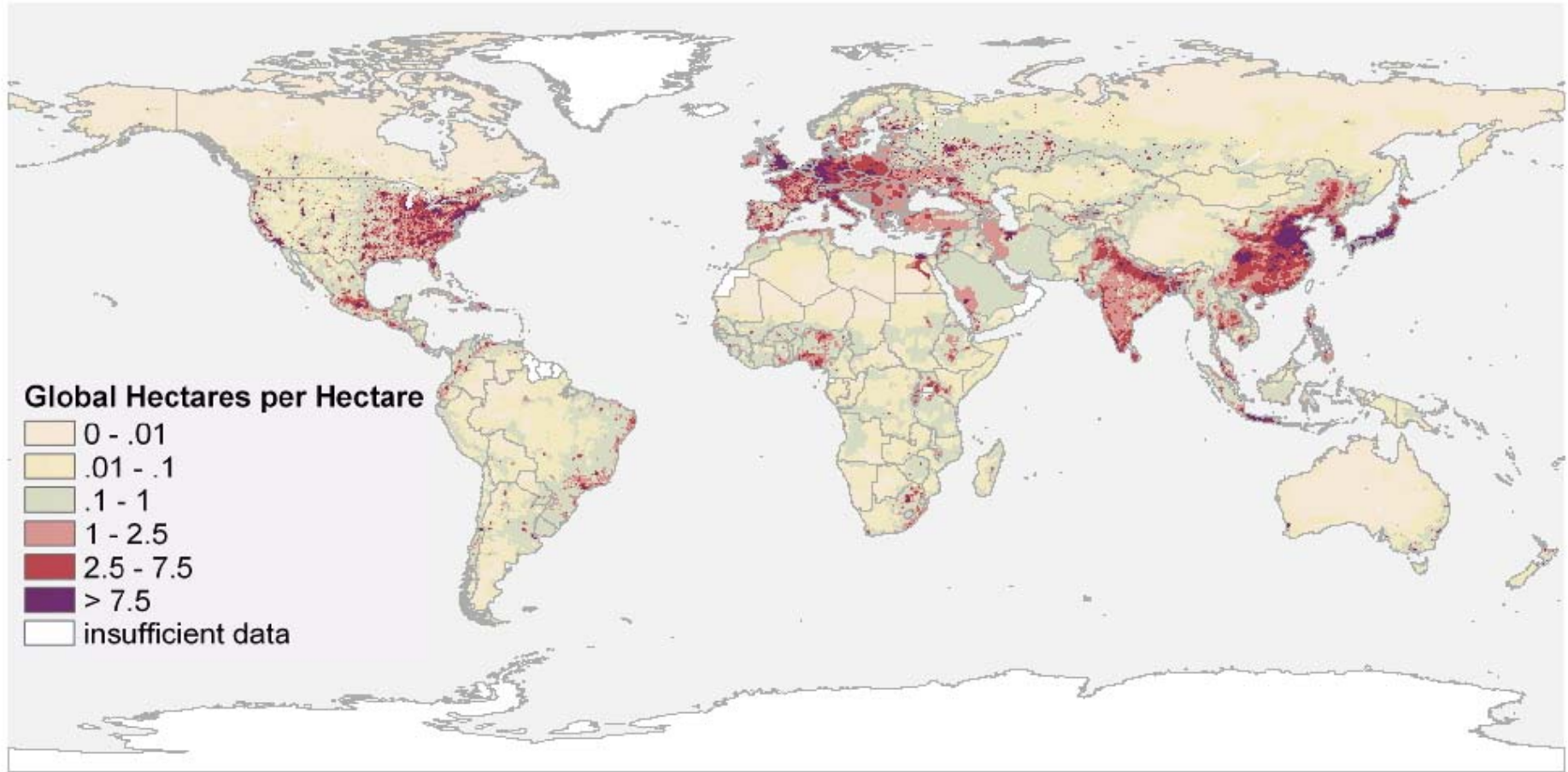




Percent of Earth Used: 49%

1961

Source: Global Footprint Network & SAGE - UW Madison

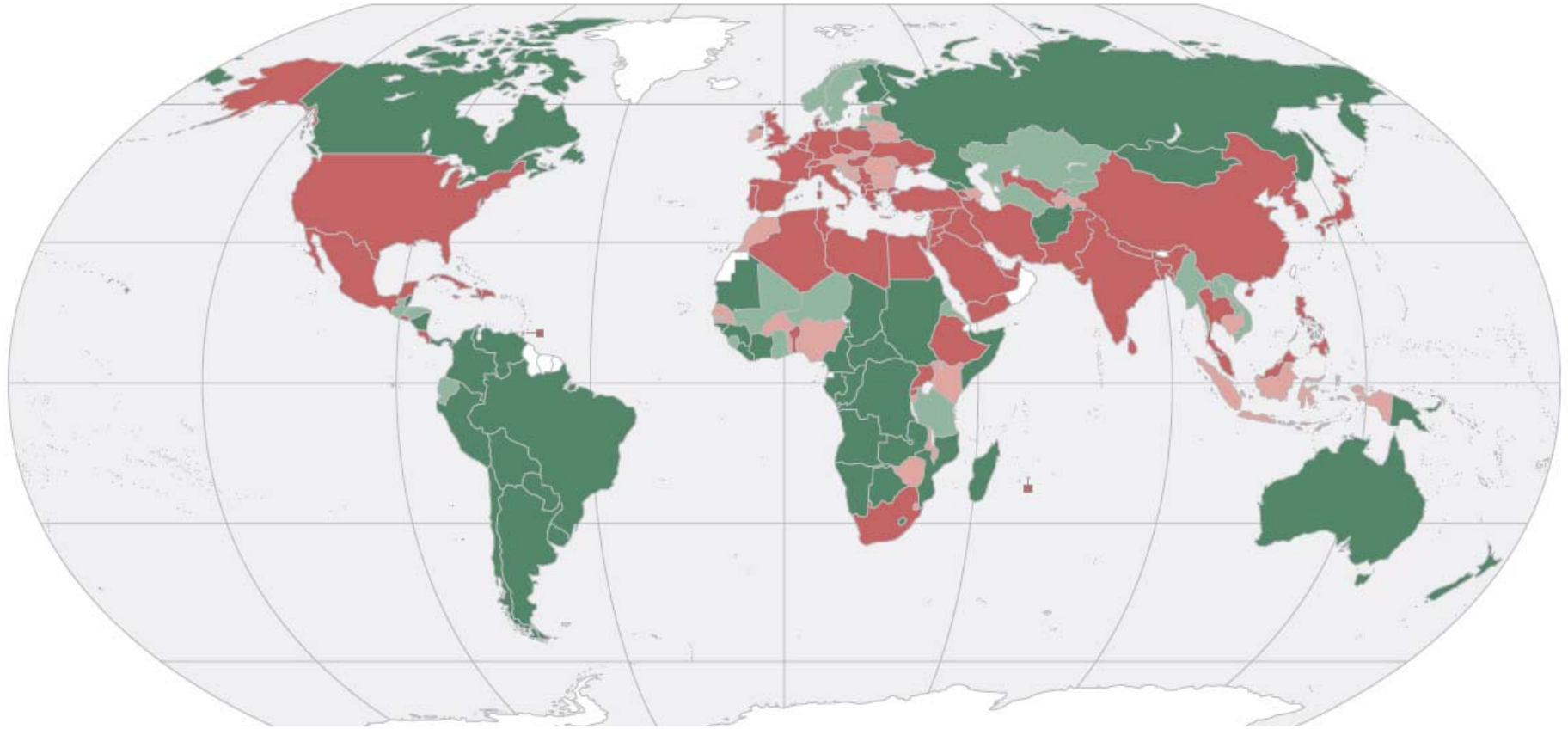


Percent of Earth Used: 121%

2001

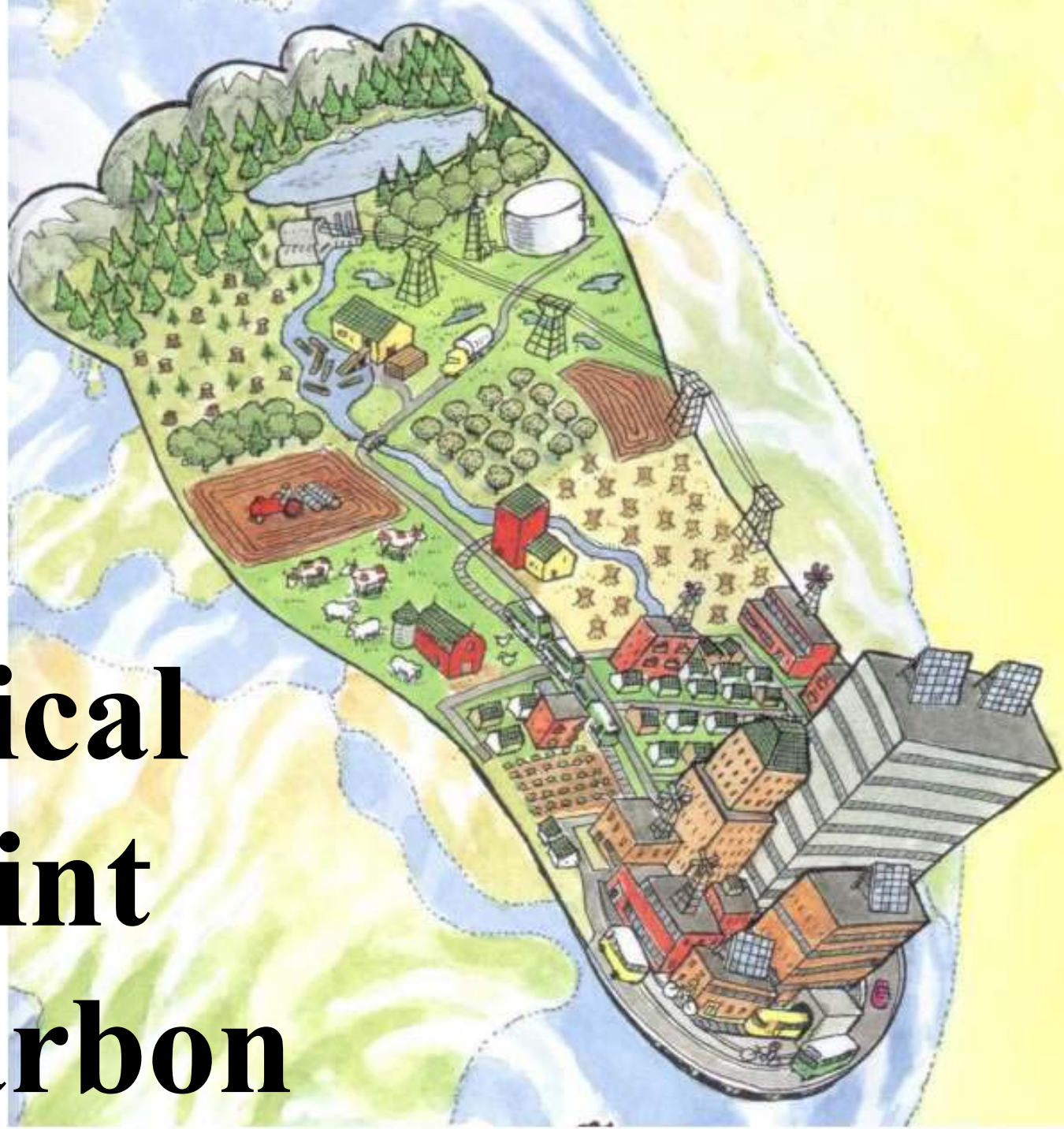
Source: Global Footprint Network & SAGE - UW Madison

# Ecological Creditors and Ecological Debtors





# Ecological Footprint and Carbon



# Opportunities

- Link to audience's core interests
  - securing prosperity and well-being
  - competitiveness
  - policy scenarios: consequences of choices
- Work with winners
  - leading cities
  - leading companies
  - finance analysis
- Policy and communication
  - what's at stake?
  - are the pieces adding to the total?



Global Footprint Network  
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# How does the Global Footprint Network operate?

- **40 partner organizations**
- **Standardization (3 committees)**
- **10-in-10 campaign**

# **Footprint Assessment for Urban Development**

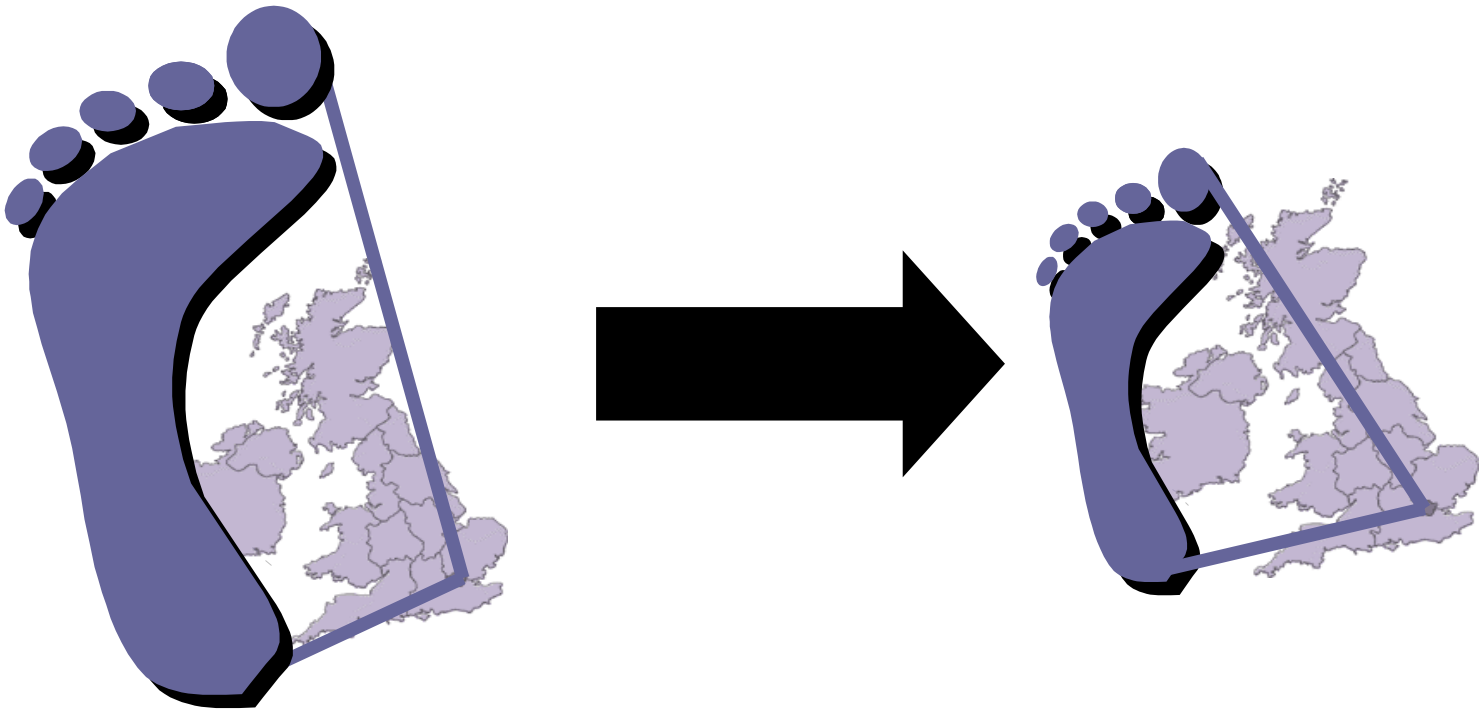




# **Case Study: Reducing London's Ecological Footprint**

# What is the potential for reduction?

- Total London Ecological Footprint = 50 million gha
- Possible to reduce London's Ecological Footprint by between 20 & 25 million global average hectares (gha)



London Remade with WSP Environmental, Global Footprint Network

# Scotland's Footprint

A resource flow and ecological footprint analysis of Scotland



**Best Foot Forward**  
*Bringing sustainability down to earth*



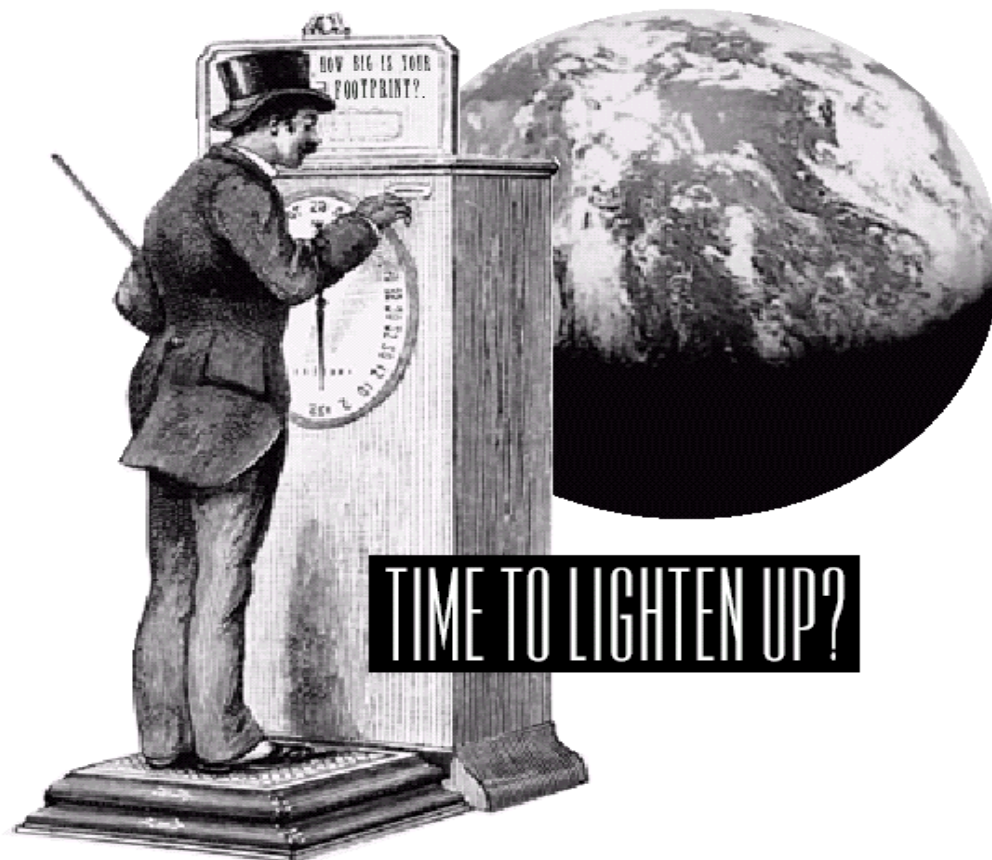
**Biffaward**  
Programme on Sustainable Resource Use

REPORT ON THE

**SONOMA COUNTY**

**ECOLOGICAL FOOTPRINT PROJECT**

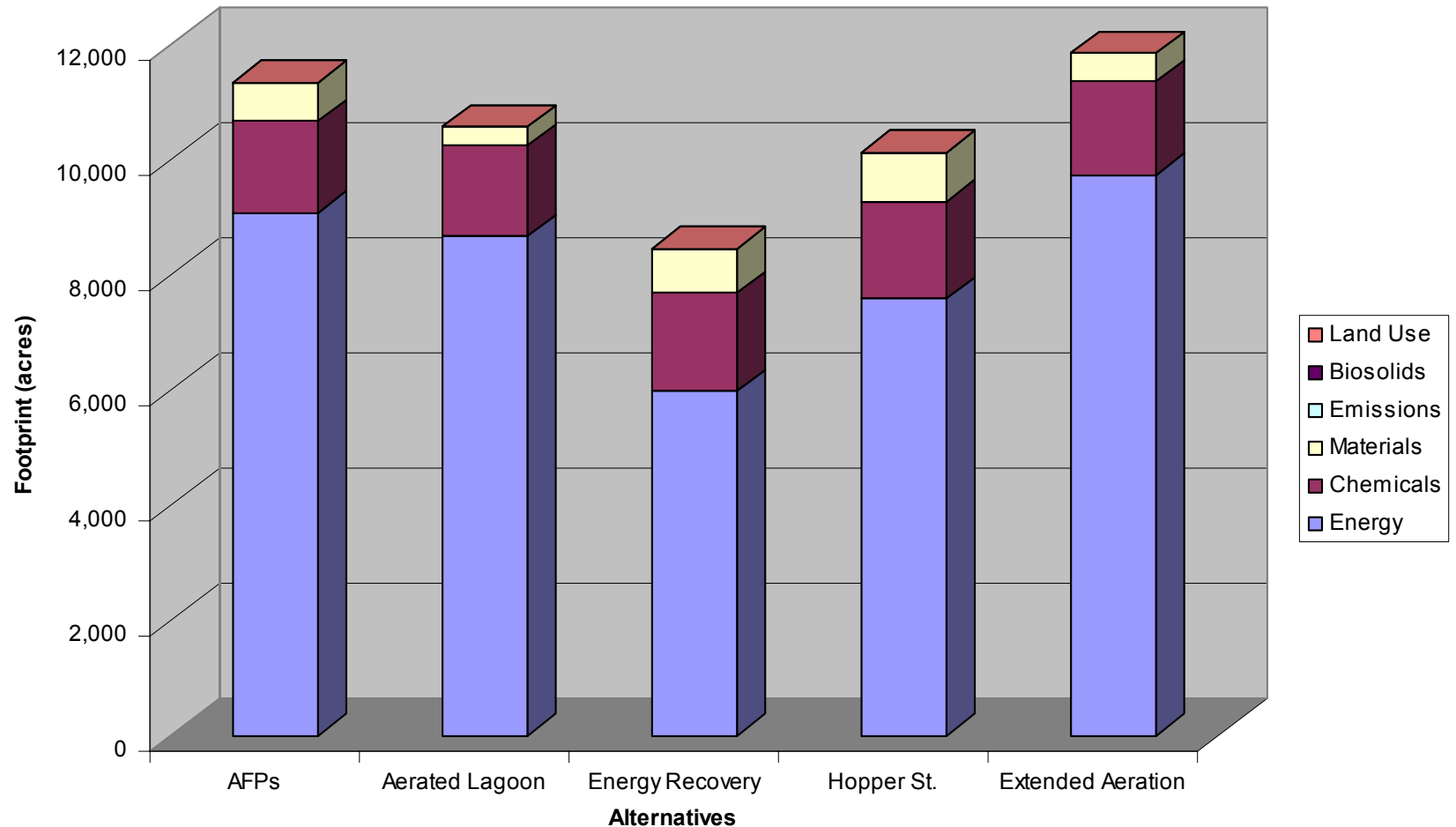
—MAY 2002—



**Sustainable Sonoma County**  
*with* **Redefining Progress**

# Petaluma Wastewater Treatment

Sustainability Analysis - DAFs Option  
(Assuming UV Disinfection)





**Can electricity  
be *Footprint Neutral*?**

# Our Impact: The Eco-Footprint of a General Retailer

## Business As Usual - General Retailer per 1m<sup>2</sup> NLA

### Annual Resource Inputs

#### Electricity consumption (kWh/m<sup>2</sup>)

Light	160
Power	107
HVAC (selling area only)	95

Greenhouse from energy (kg CO<sub>2</sub>-e/m<sup>2</sup>) 321

Water Consumption (litres/m<sup>2</sup>) 88

#### Waste (kg/m<sup>2</sup>)

Landfilled	21.5
Recycled	3.2

#### Travel to work

Private car	82%
Public transport	13%
Walk / other	5%

### Example Environmental Reporting

Electricity consumption (kWh)

Greenhouse from energy (kg CO<sub>2</sub>-e)

Water Consumption (litres)

#### Waste (kg)

Landfilled

Recycled

per \$1,000  
GTO

per FTE

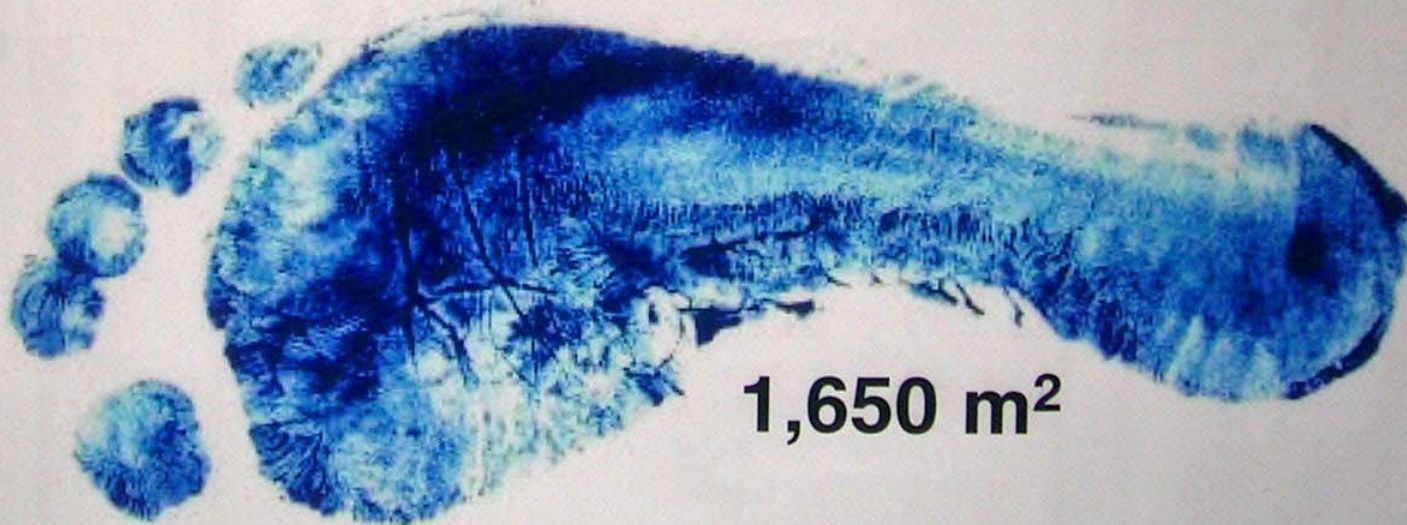
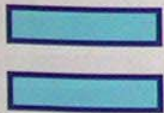
40.70	17,484
38.67	16,610
10.62	4,563
2.59	1,113
0.39	166

### Notes

Average gross turnover (GTO) data used

Assumed 4 equivalent full time employees (FTE) for 200m<sup>2</sup> store

1 m<sup>2</sup>



1,650 m<sup>2</sup>

**The Ecological Footprint  
is a standardized way to  
measure what has been  
immeasurable,  
contentious, and often  
misunderstood:  
ecological limits.**

# INVITATION!

➤ Don't ask what you can do for the Footprint, ask what the Footprint can do for YOU! (J.F.K.)

➤ Partnership?

➤ Contact us at:  
[www.footprintnetwork.org](http://www.footprintnetwork.org)

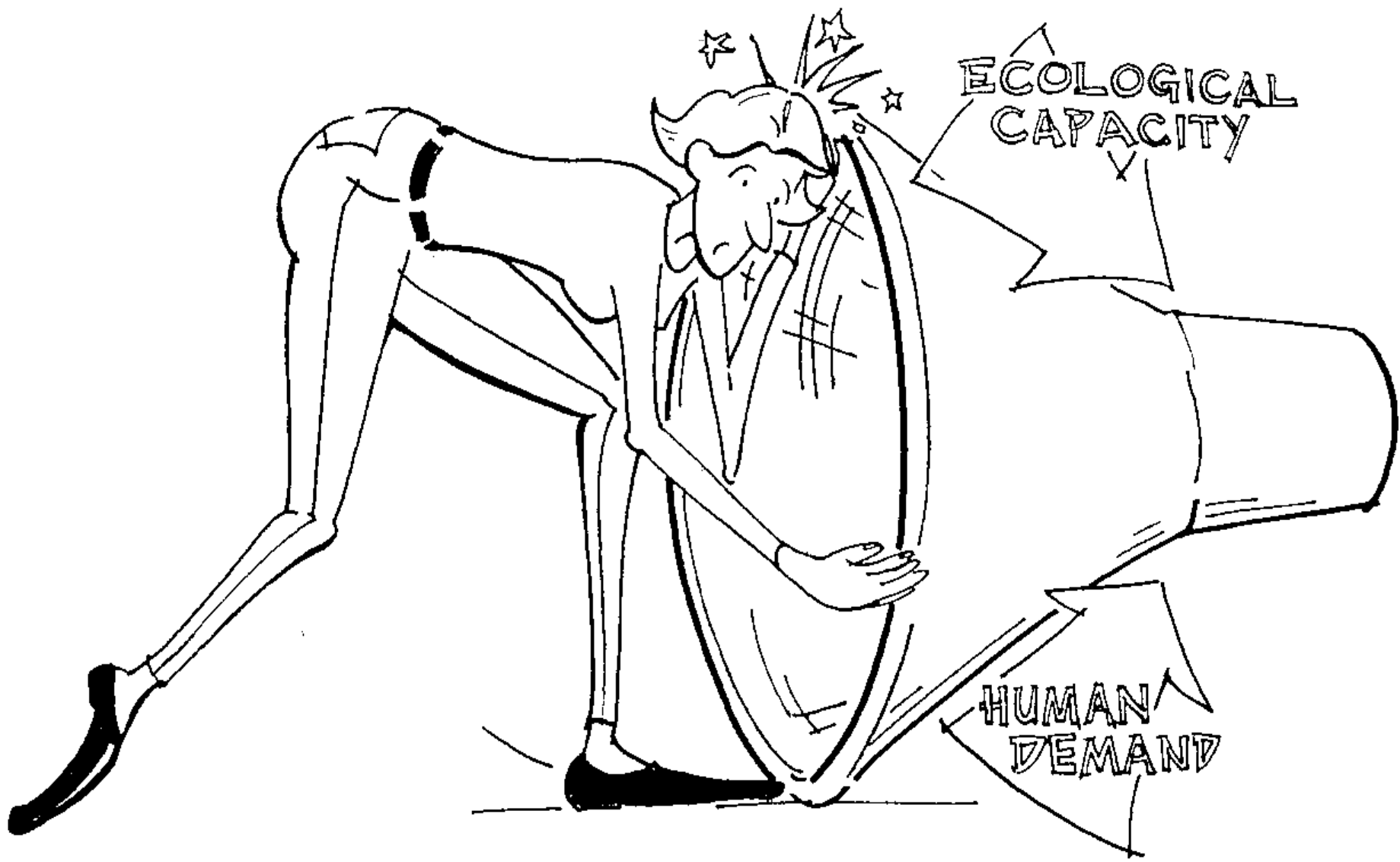



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The  
Economist

# How many planets?

A survey of the global environment | July 6th 2002