



# Planetary Boundaries and Ecological Footprint

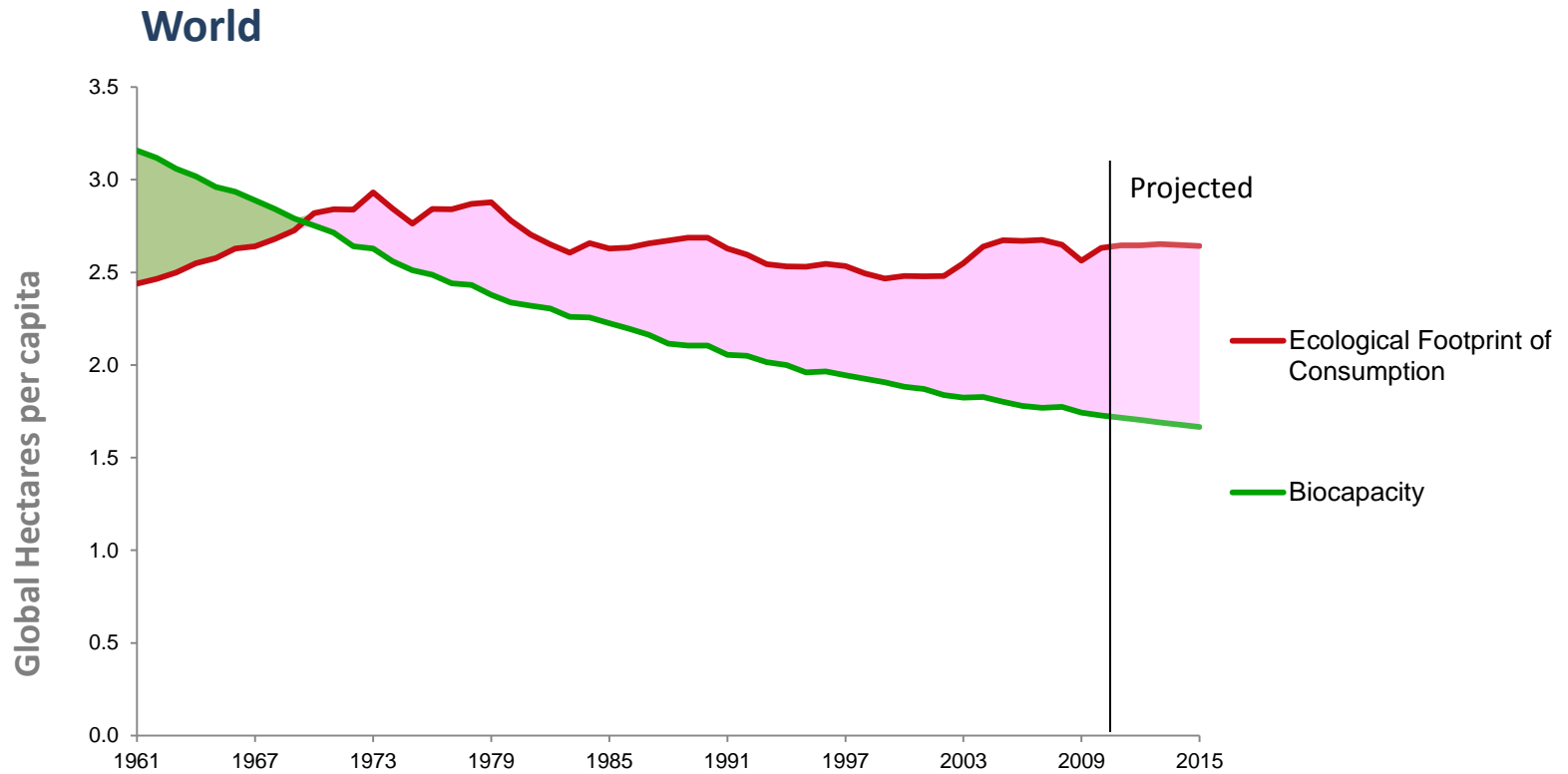
Is it still alive?

Michel Gressot



12<sup>th</sup> June 2015

# Is the global ecosystem approaching a tipping point?



# A glance at the Swiss consumption's impact on global resources

If every person on Earth consumed like the average person in Switzerland, we would need 3.1 Earths



Switzerland used up its territorial biocapacity for the year on April 10<sup>th</sup>.  
The Earth's population will use up the Earth's biocapacity on August 13<sup>th</sup>.

<b>Switzerland National Deficit Day</b>	<b>April 10, 2015</b>
Earth Overshoot Day	August 13, 2015

# Swiss consumption impact

## Assessing performance against limit



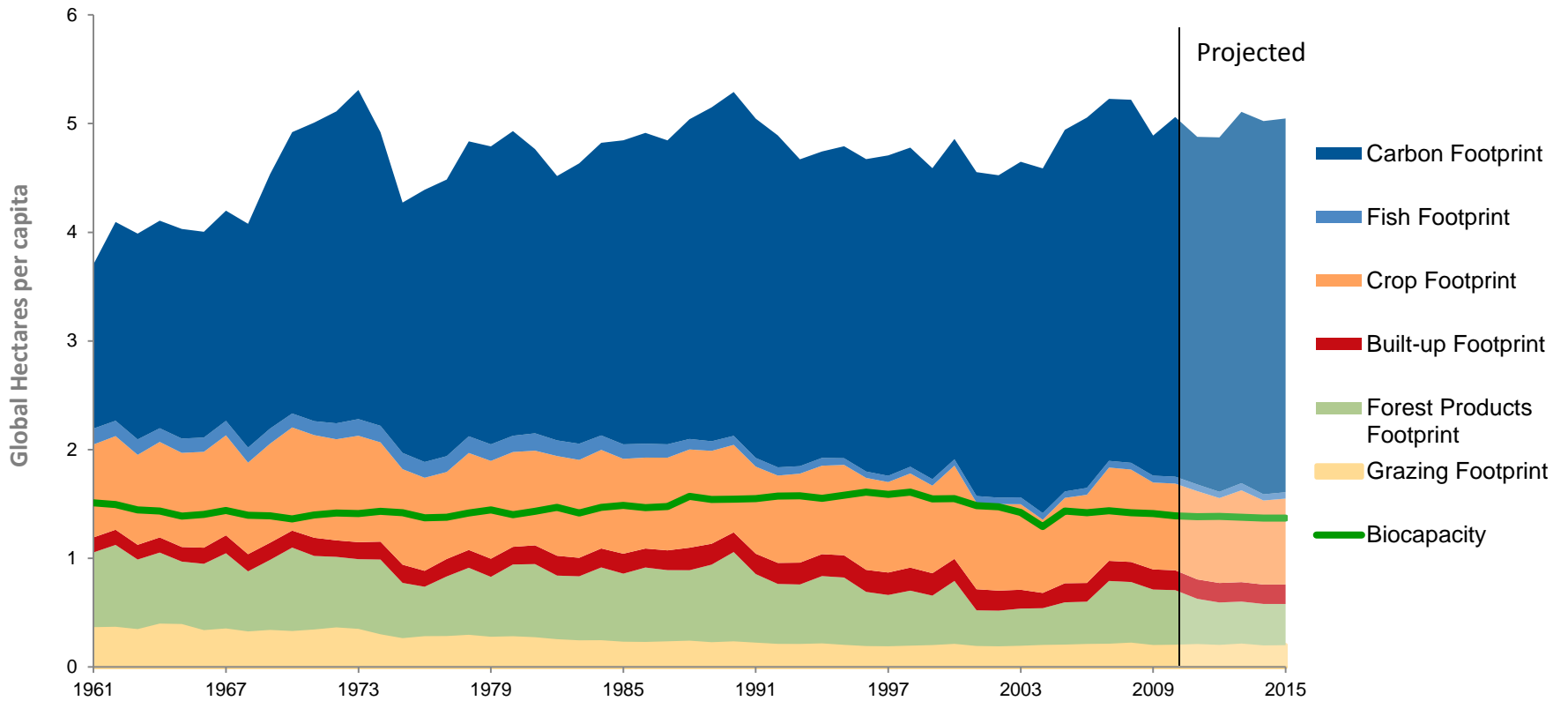
### CH Ecological Footprint of consumption as if the world biocapacity were the limit

<i>Performance</i>	<i>Score</i>	<i>Confidence in score</i>	<i>Trend</i>
<b>Clearly Unsafe</b>	Large overrun CH per capita EF >> World per capita Biocapacity	High by media & politicians Medium to low by experts	Slow evolution so far

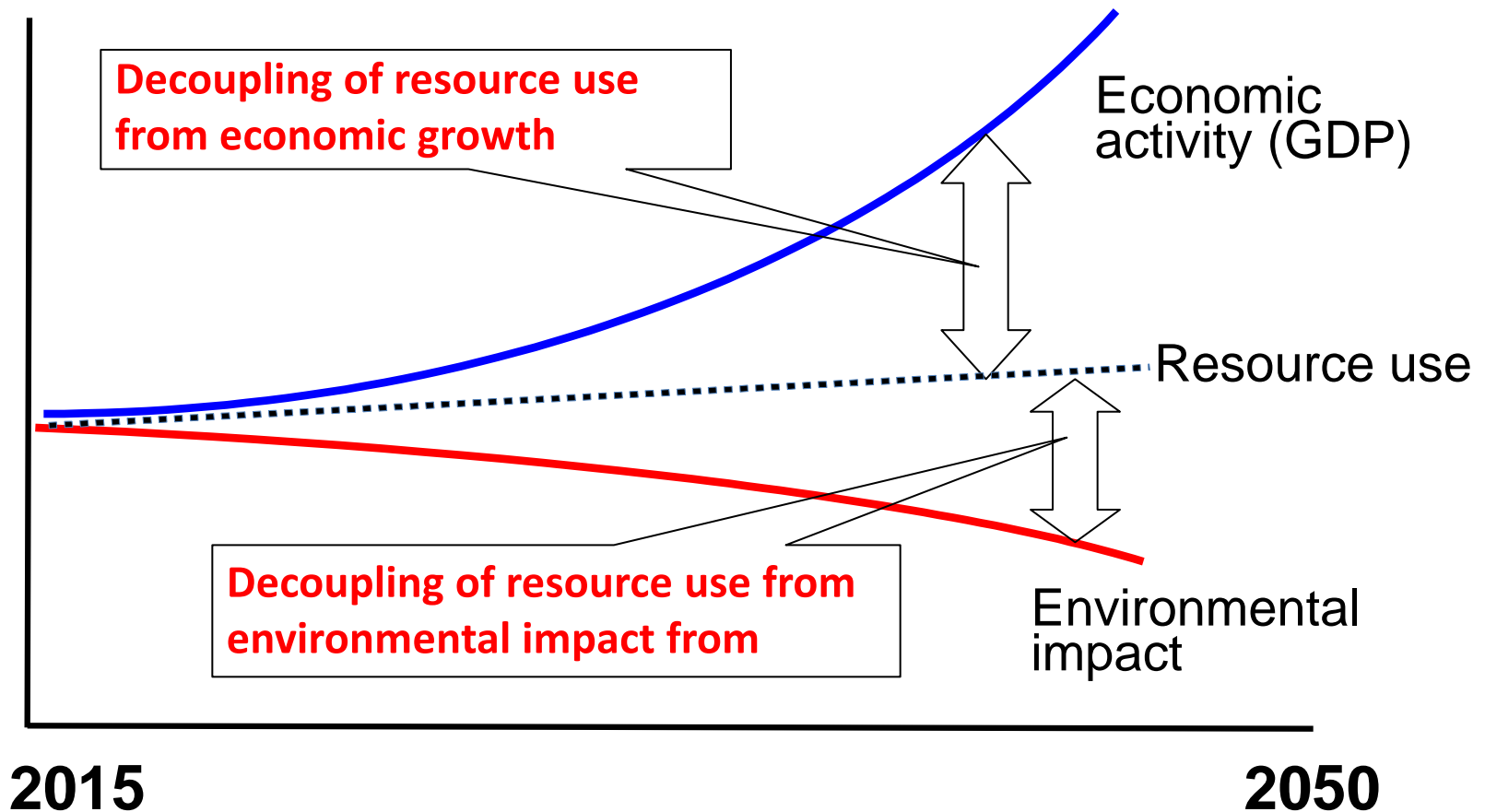
After "Environmental Limits and Swiss Footprints Based on Planetary Boundaries", FOEN, 2015

# De-carbonize, baby, de-carbonize! vs. drill, baby, drill!

## Switzerland Ecological Footprint of Consumption



# Die Vision







## A Mandate for the CH Sustainable Development Strategy (1)

After discussing out the four usual fixers invoked by mainstream economists to cope with resource global issues:

- Scarce resource → increased **price** → substitution → Resilience
- Int. **Trade** → Resilience
- **Technology** → Resilience
- High **Income** → Resilience

We argued that “Tragedy of the Commons” and the collective action dilemma do not exhaust the subject

And that, therefore, there is still room for unilateral action at country level  
In spite of international stalemate on Climate Change

Even long-sighted unilateral action without immediate co-benefits (like frontrunner standard-setting to control the country’s Ecological Footprint) would do a good job for CH competitiveness.



## A Mandate for the CH Sustainable Development Strategy (2)

Due to budget limitation, we could not run an econometric model of CH and panel countries in order to simulate the shocks to competitiveness resulting from increasing global overshoot

Instead, we empirically described the evolution over time for a number of ratios mixing macro-economic data and NFA data, looking at how CH compared with the panel

We showed that CH is not always best in class as one would believe





## A Mandate for the CH Sustainable Development Strategy (3)

1. Retreat from the World (safe by quitting cut-throat competition)
2. Embrace Hyper-Growth (safe by outperforming others for ever)
3. Hedge your Bets! (safe by relying on emergency savings)
4. Less Butter, More ~~Guns~~ Post-Oil Infrastructure (safe by investing now and ahead of others)
5. Forge Privileged Resource Relationships (safe by courting the resource-rich)



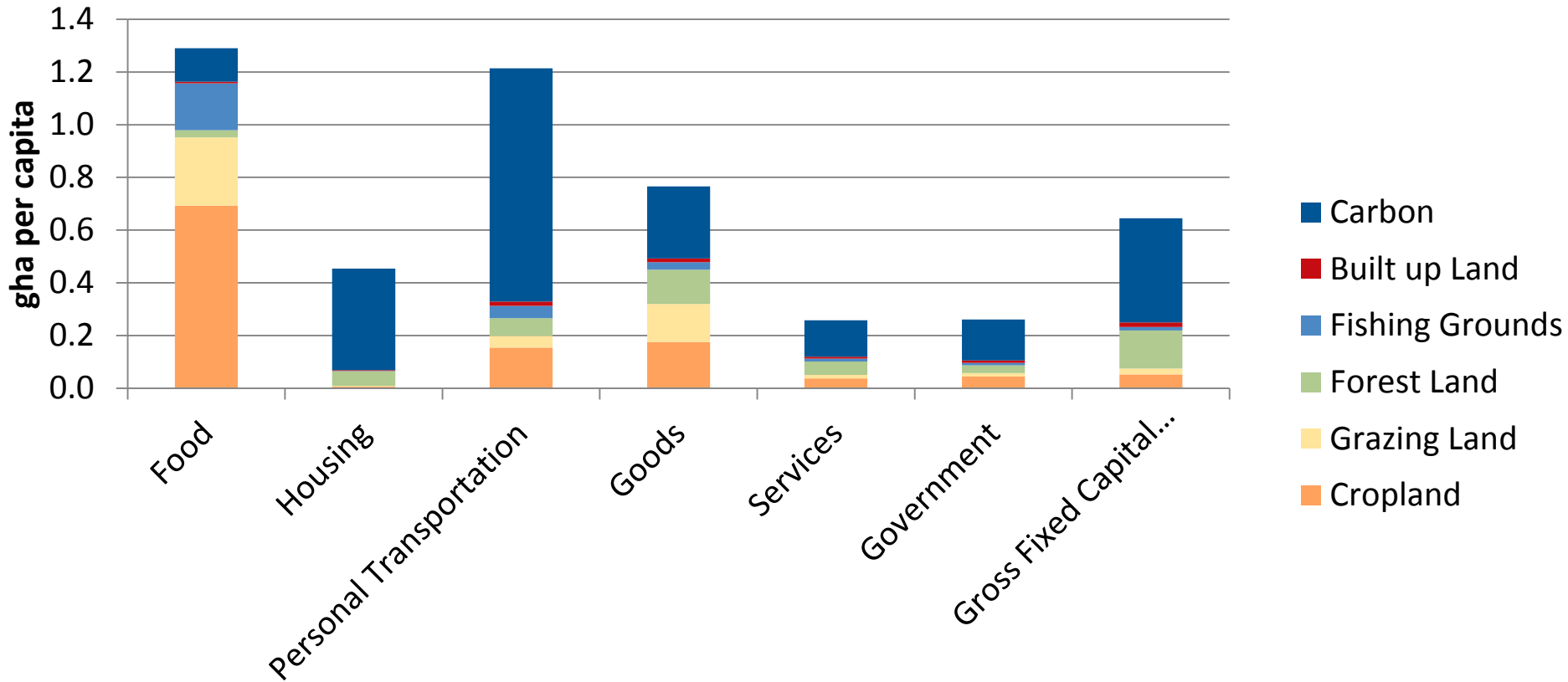
## A Mandate for the CH Sustainable Development Strategy (4)

### OUR CONCLUSION TO THE SWISS GOVERNMENT

Neither option is an obvious fix, which BTW doesn't make 'all of the above' a better fix either!

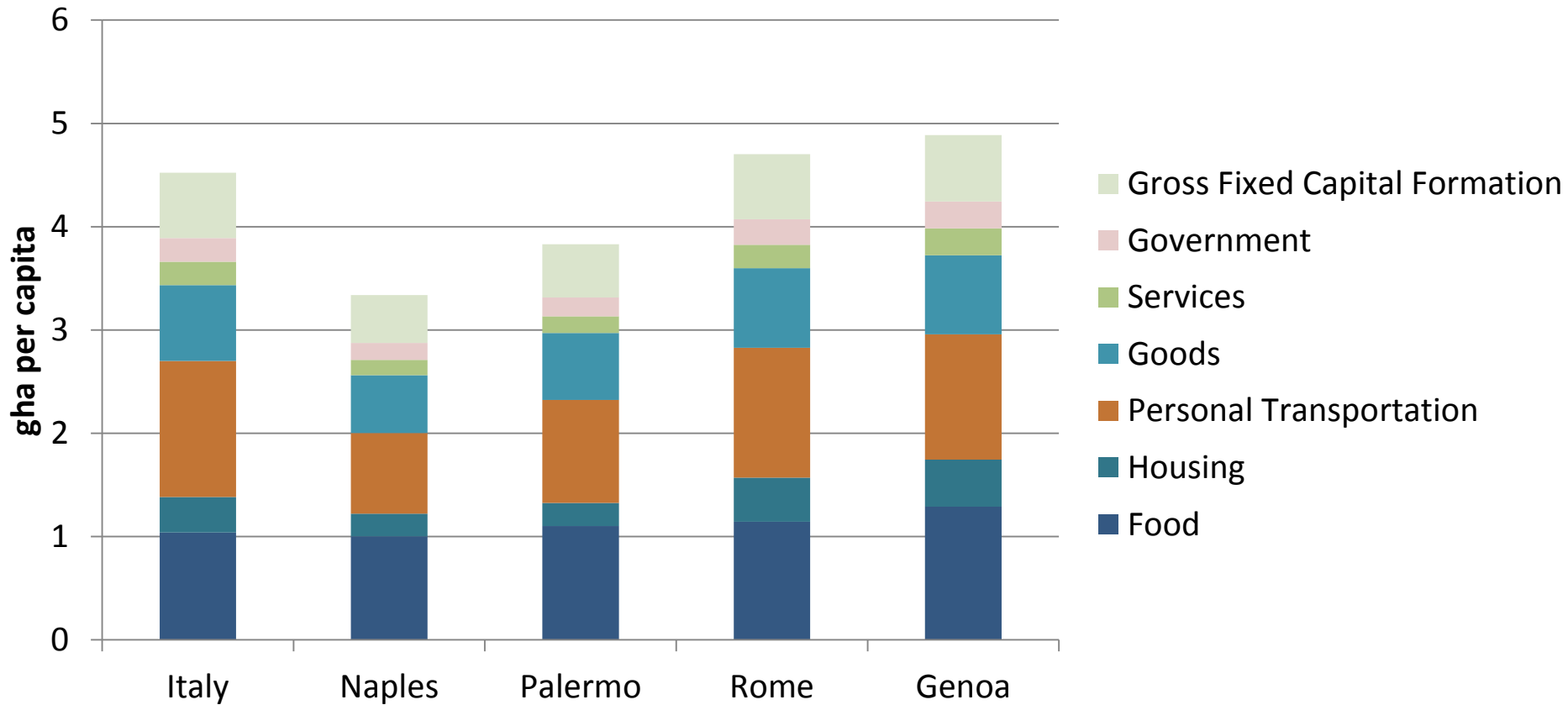
# Subnational and Sector Footprinting 1

Sector EF by Landtype: Genoa 2010



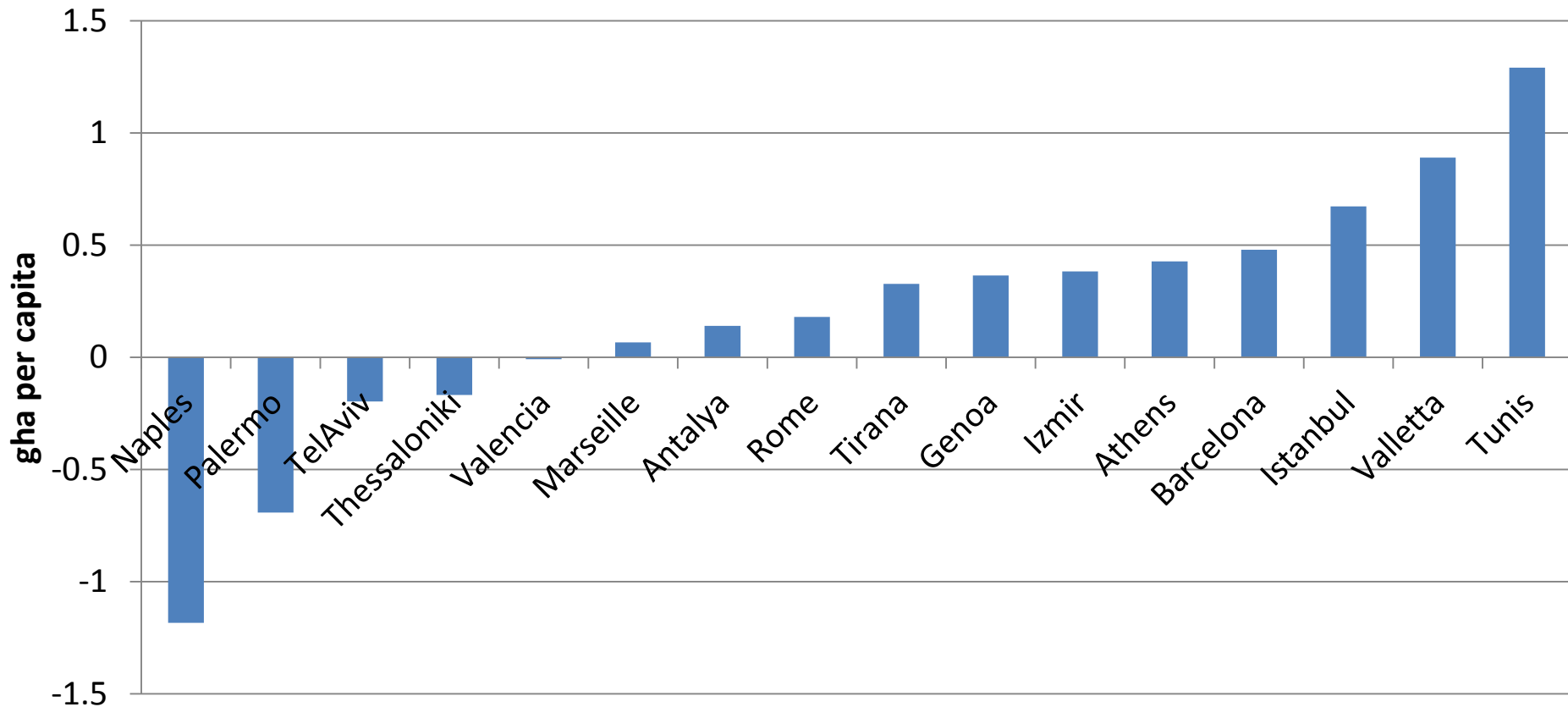
# Subnational and Sector Footprinting 2

EF Italy and Cities in 2010



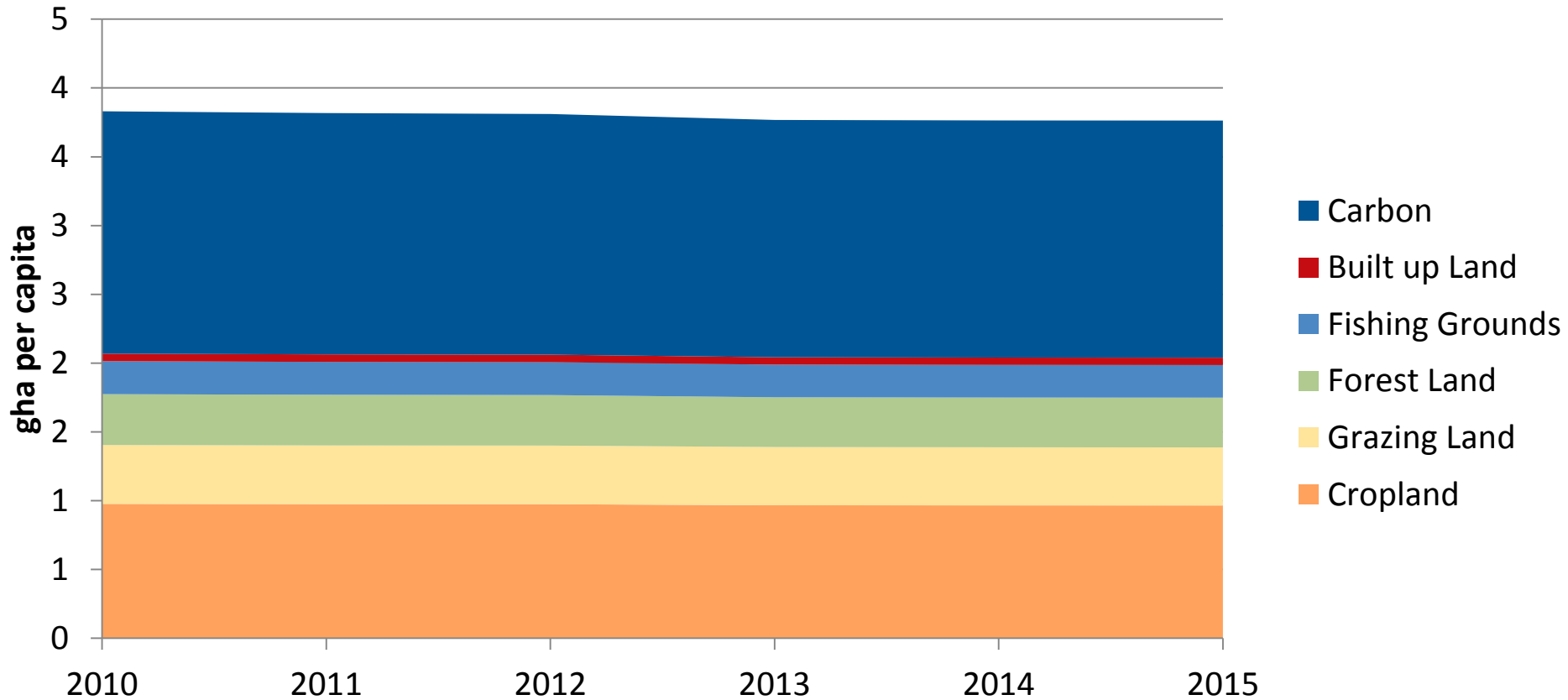
# Subnational and Sector Footprinting 3

Deviation from Country EF



# Subnational and Sector Footprinting 4

## EF by Landtype Palermo





# Subnational and Sector Footprinting 5

## Interpretation of the Results

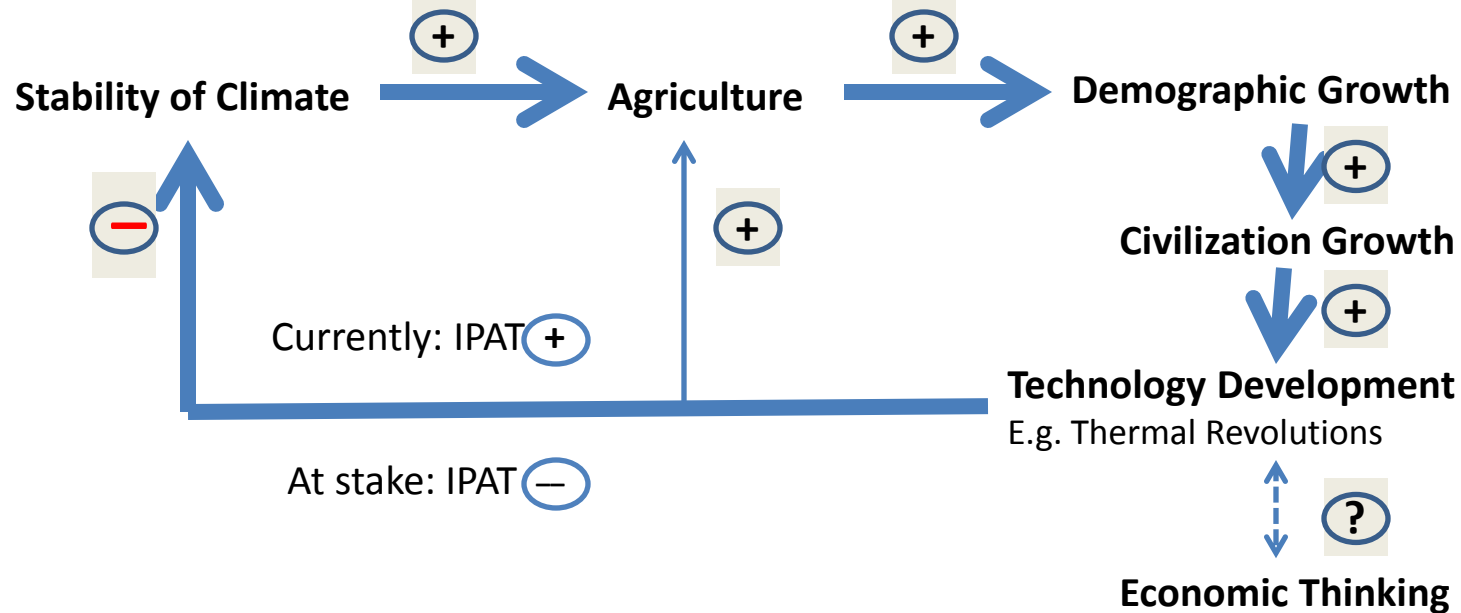
Observation:

- Difference between the cities and the national average
- Difference between cities within the same country

Potential drivers of the differences:

- Income
- Geographic Conditions
- Culture
- Policies: e.g. Existing Infrastructure

# Can PBs offer an additional framework for action? (beyond those already existing)



If **taking action against global warming** is really the mother of all battles, then:

“Klima-Wende” → “Energie-Wende” → “Ressourcen-Wende” ( *SWISSCLEANTECH Ressourcen-Strategie* )

**Not the other way round!** In other words, the other PBs risk turning out ancillary or second priority

# Our Research Agenda

- Robustness of existing measure
- Assess Fragility/ Vulnerability of Biocapacity
- Link Biocapacity to Specific Resource Constraints/ PB
- Enhance understanding of international relationships



Eine Wagenladung  
an Themen ...

und nur wenige  
einfache Antworten!

**Vielen Dank !**