An economist's perspective on degrowth

Mikael Malmaeus
2019-01-18

The neoclassical production function

Resources

$$GDP = A \times K^{\alpha} \times L^{1-\alpha}$$

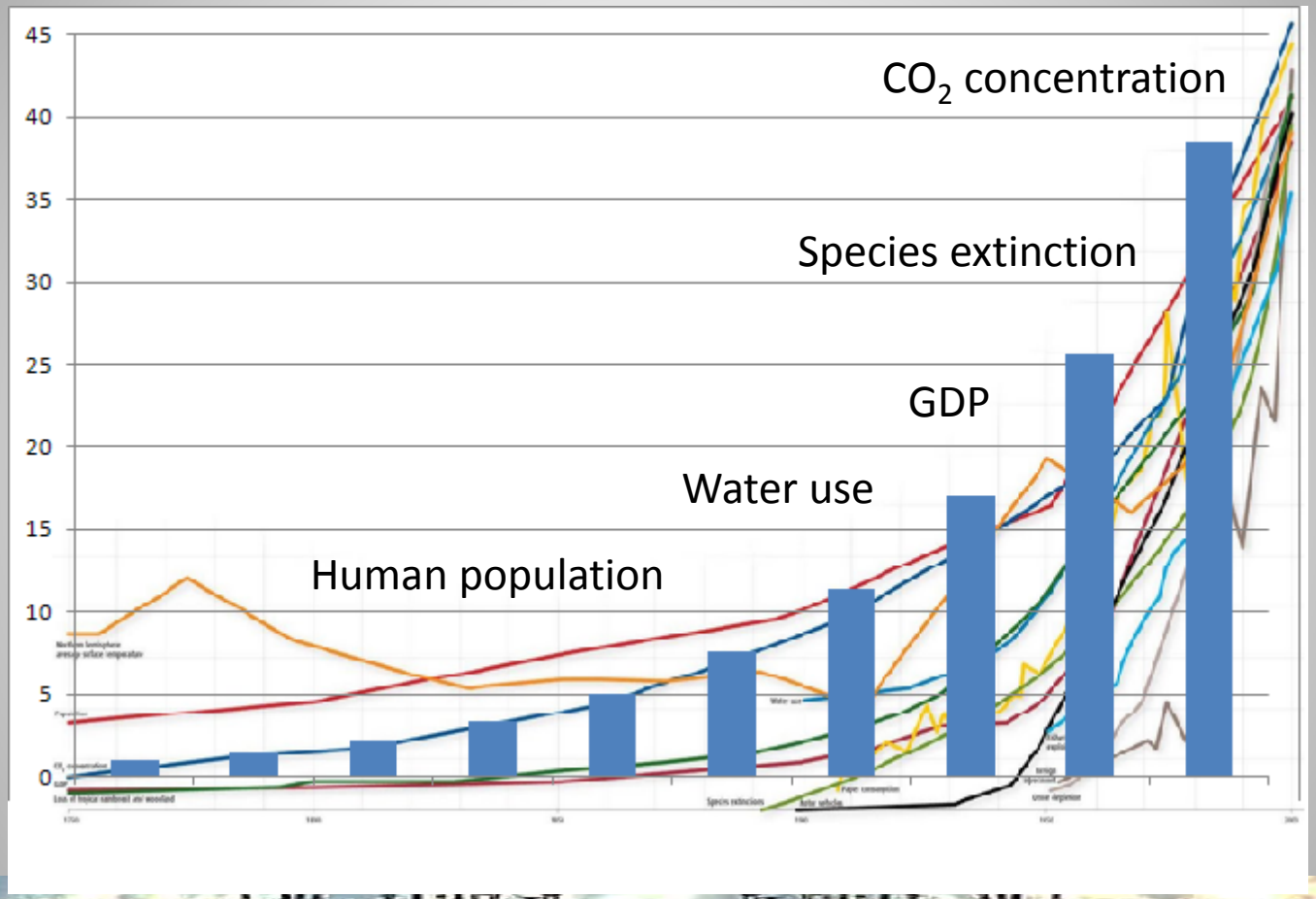
(Solow-Swan)

A = Technology

K = Real capital

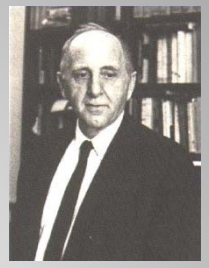
L = Labor

Environmental concerns

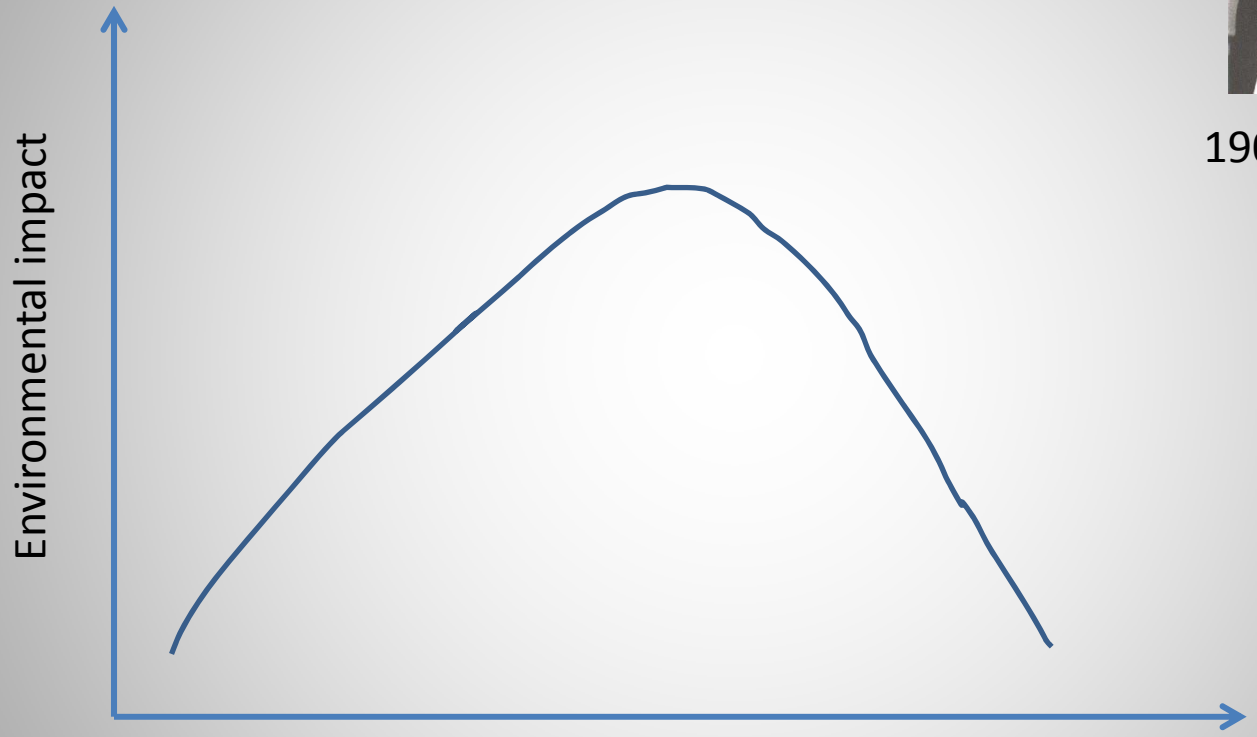


The ”environmental Kuznets curve"

Simon Kuznets

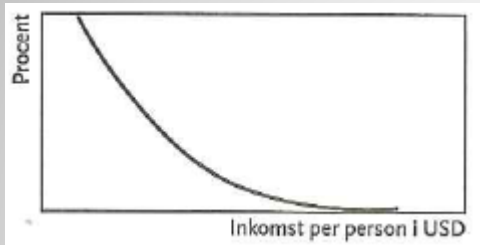


1901 – 1985

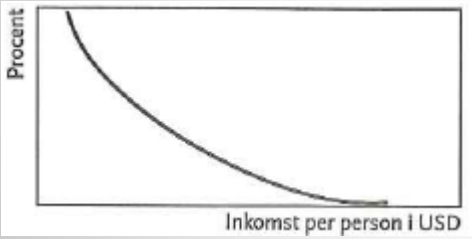


Relationship of affluence to various environmental impacts

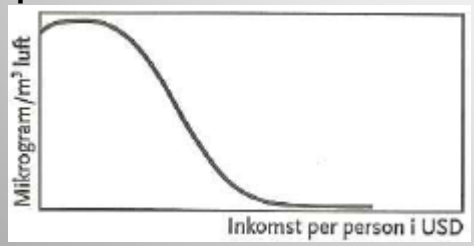
Population without safe water



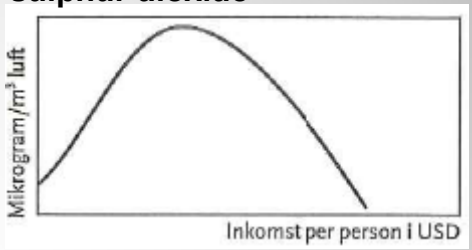
Urban population without adequate sanitation



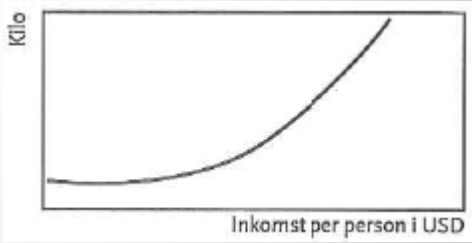
Urban concentrations of particulate matter



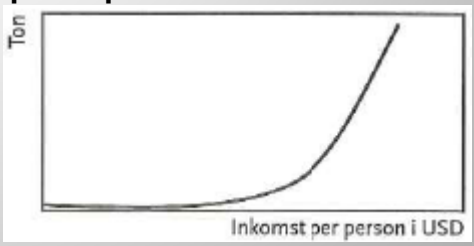
Urban concentrations of sulphur dioxide



Municipal wastes per capita



Carbon dioxide emissions per capita



Chertow, 2000

Environmental indices 2017

Environmental Performance Index (EPI)

1. **Switzerland (87,7)**
2. **Luxembourg (83,3)**
3. **Australia (82,4,1)**
4. **Singapore (81,8)**
5. **Czech republic (81,5)**
6. **Germany (80,5)**

9. Sweden (78,1)

Indicators: Environmental health, Air pollution, Water resources, Biodiversity and habitat, Productive Natural Resources, Climate change

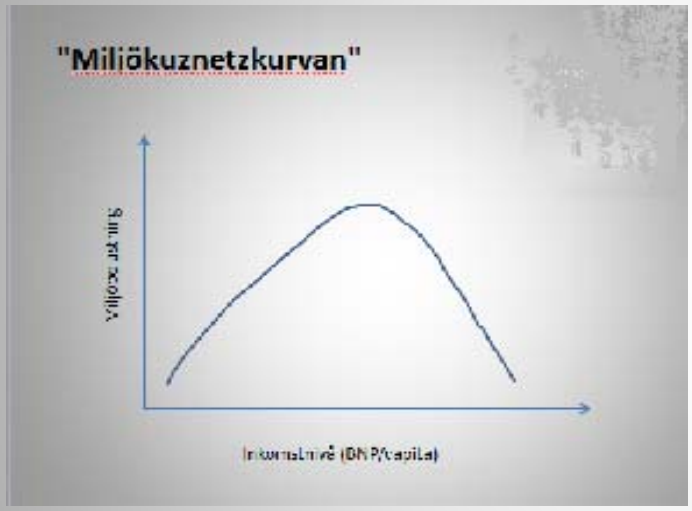
Ecological Footprint (WWF) [ha]

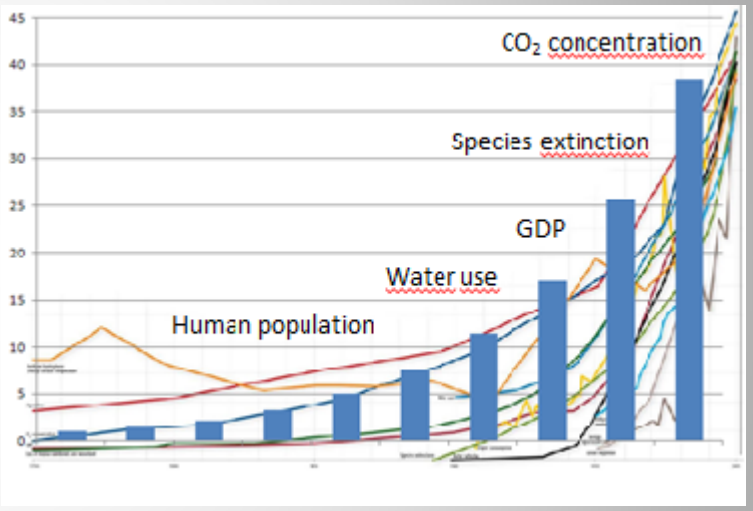
1. **Luxembourg (15,8)**
2. **Aruba (11,9)**
3. **Qatar (10,8)**
4. **Australia (9,3)**
5. **USA (8,2)**
6. **Canada (8,2)**

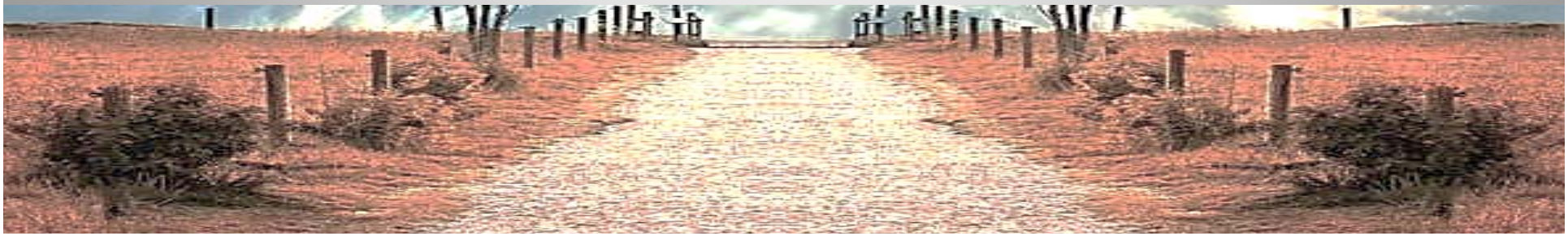
15. Sweden (7,3)

Indicators: Agriculture, forestry, carbon dioxide, fishing, grazing, settlement

Eco-modernism vs. Scientific economics

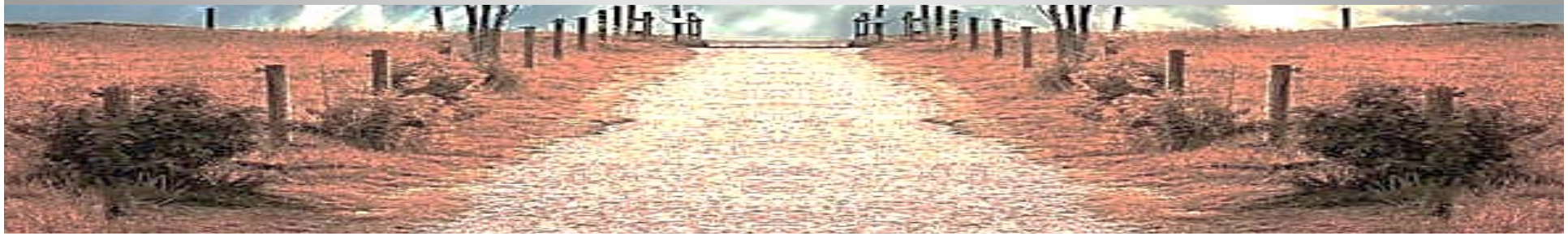




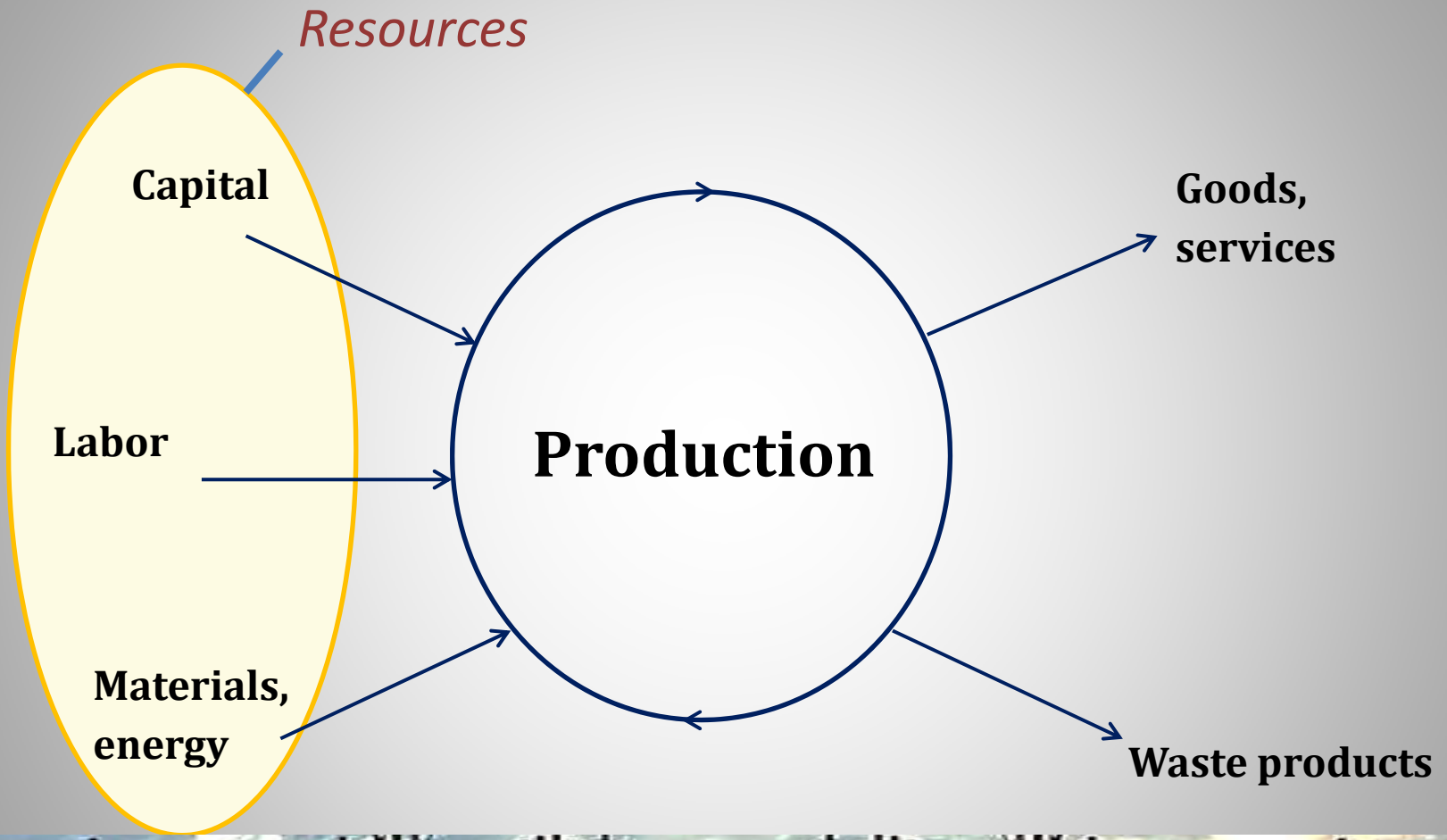


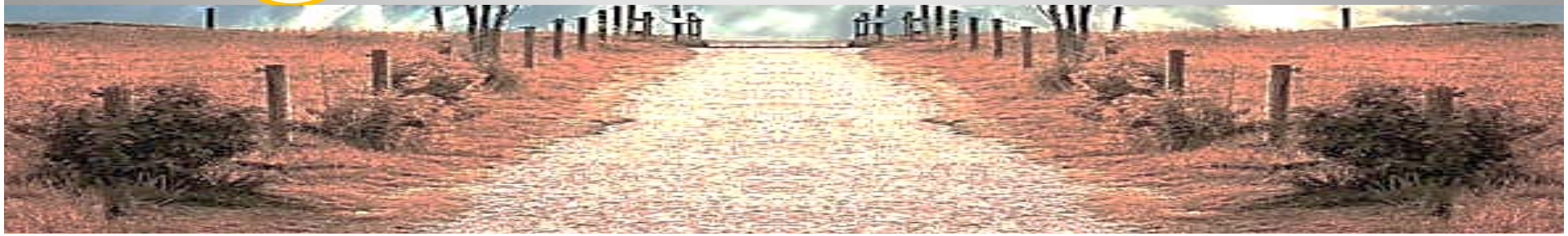
What is (GDP) growth?

Activity or welfare

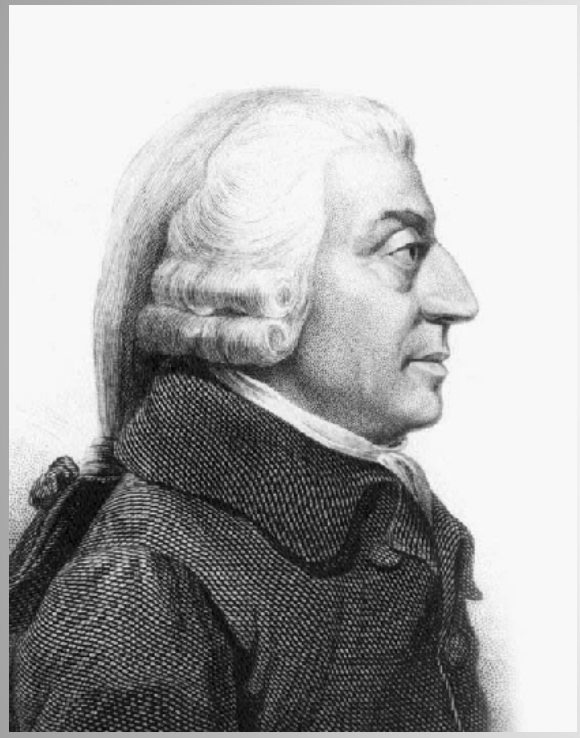


The process of production



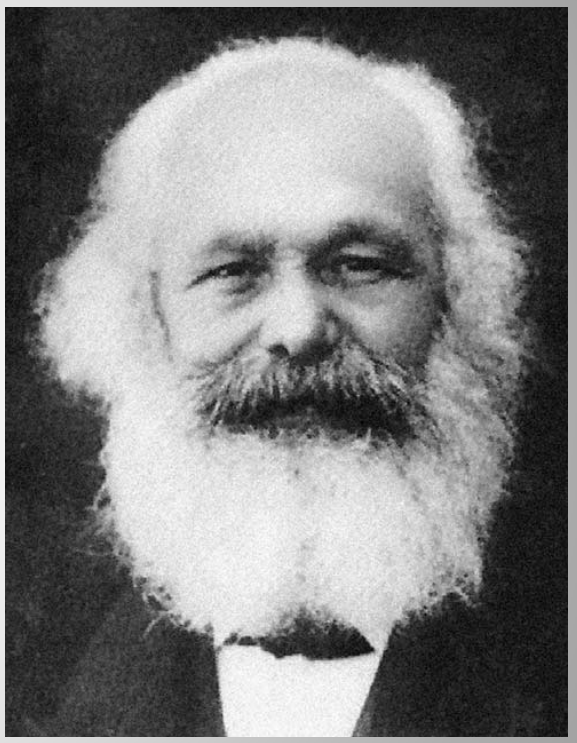


Classical economists



Adam Smith
1723-1790

David Ricardo
1772-1823

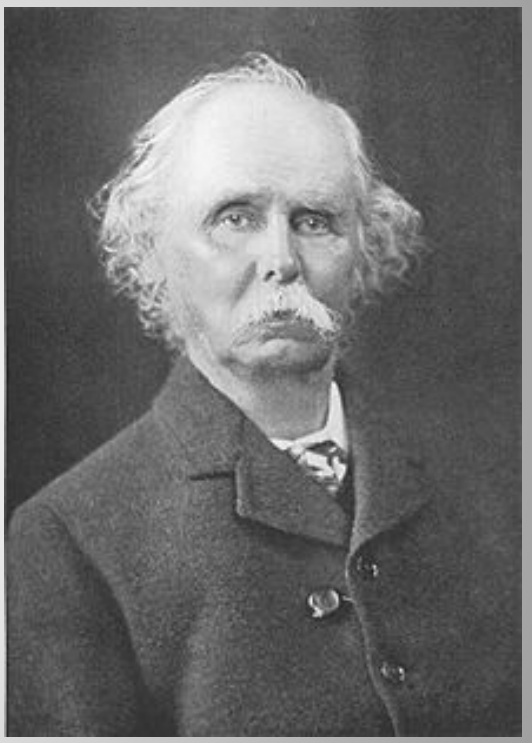


Karl Marx
1818-1883

Neoclassical economists

William Stanley Jevons
1835-1882

Léon Walras
1834-1910

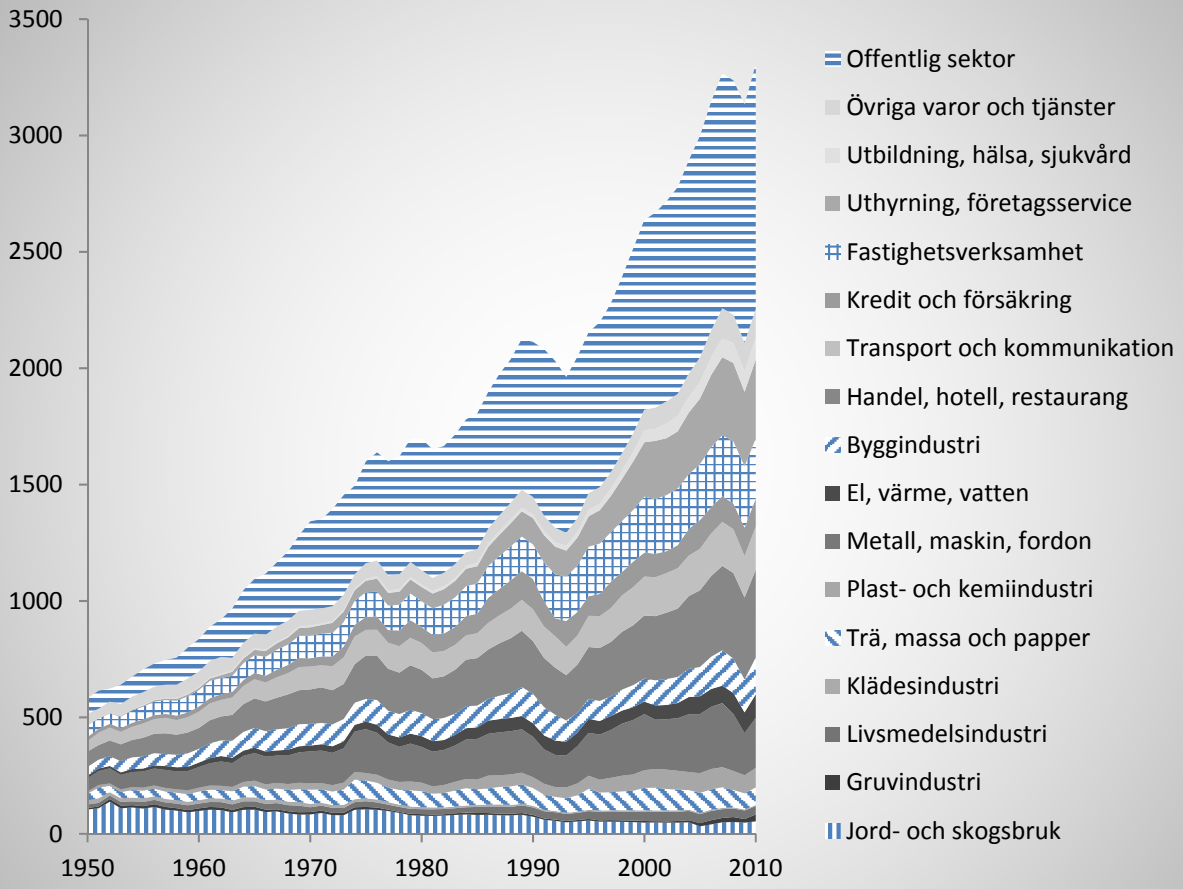


Alfred Marshall
1842-1924

Economic theories

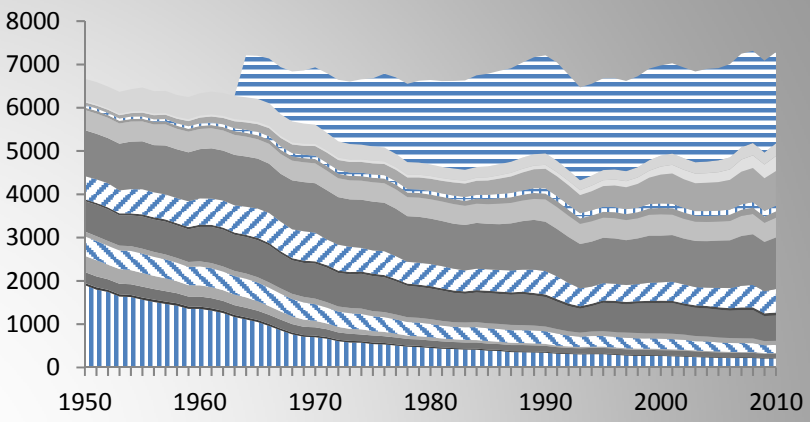
- Classical economics – focus on macro and input
- Neoclassical economics – focus on micro and output

GDP in Sweden (billions of SEK)

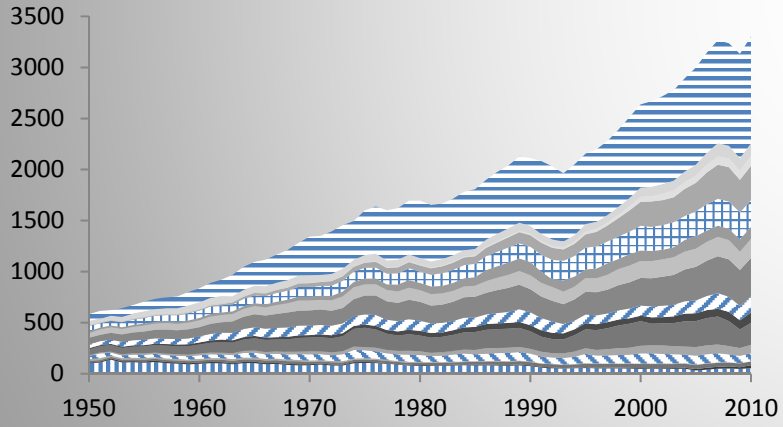


Sweden 1950-2010

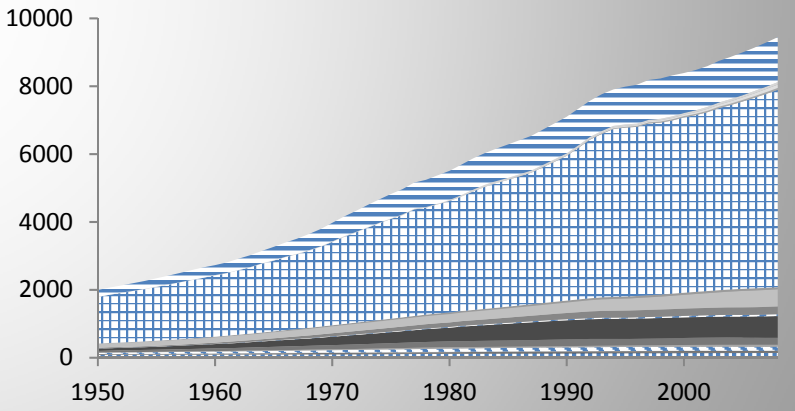
Labor:



Production (GDP):

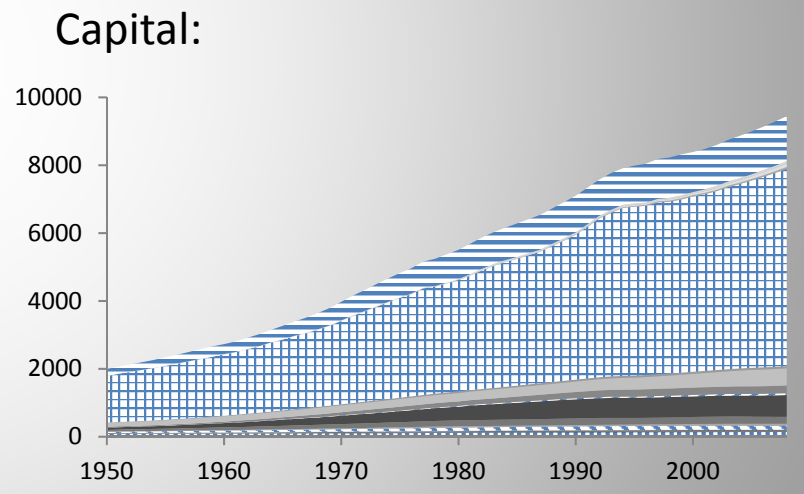


Capital:



Capital: 1 million invested Euros uses …

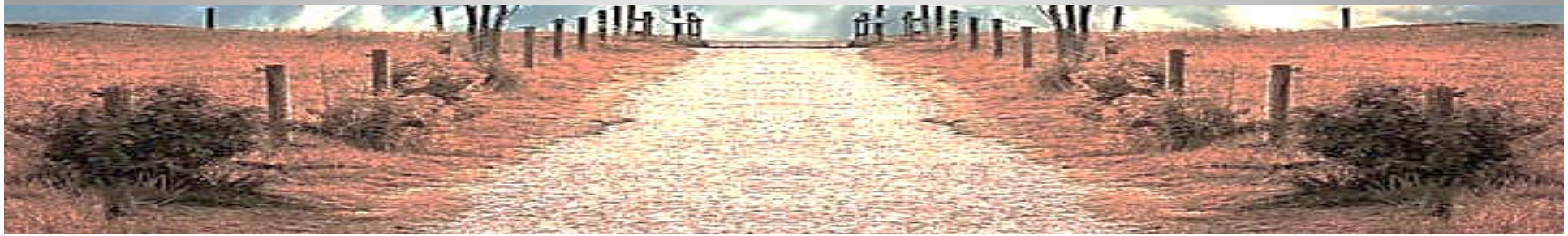
- 350 tonnes of CO2 emissions
- 1700 MWh energy
- 50 tonnes of iron
- 2 tonnes of aluminum
- 1400 tonnes of gravel and sand
- 170 tonnes of timber



The neoclassical production function

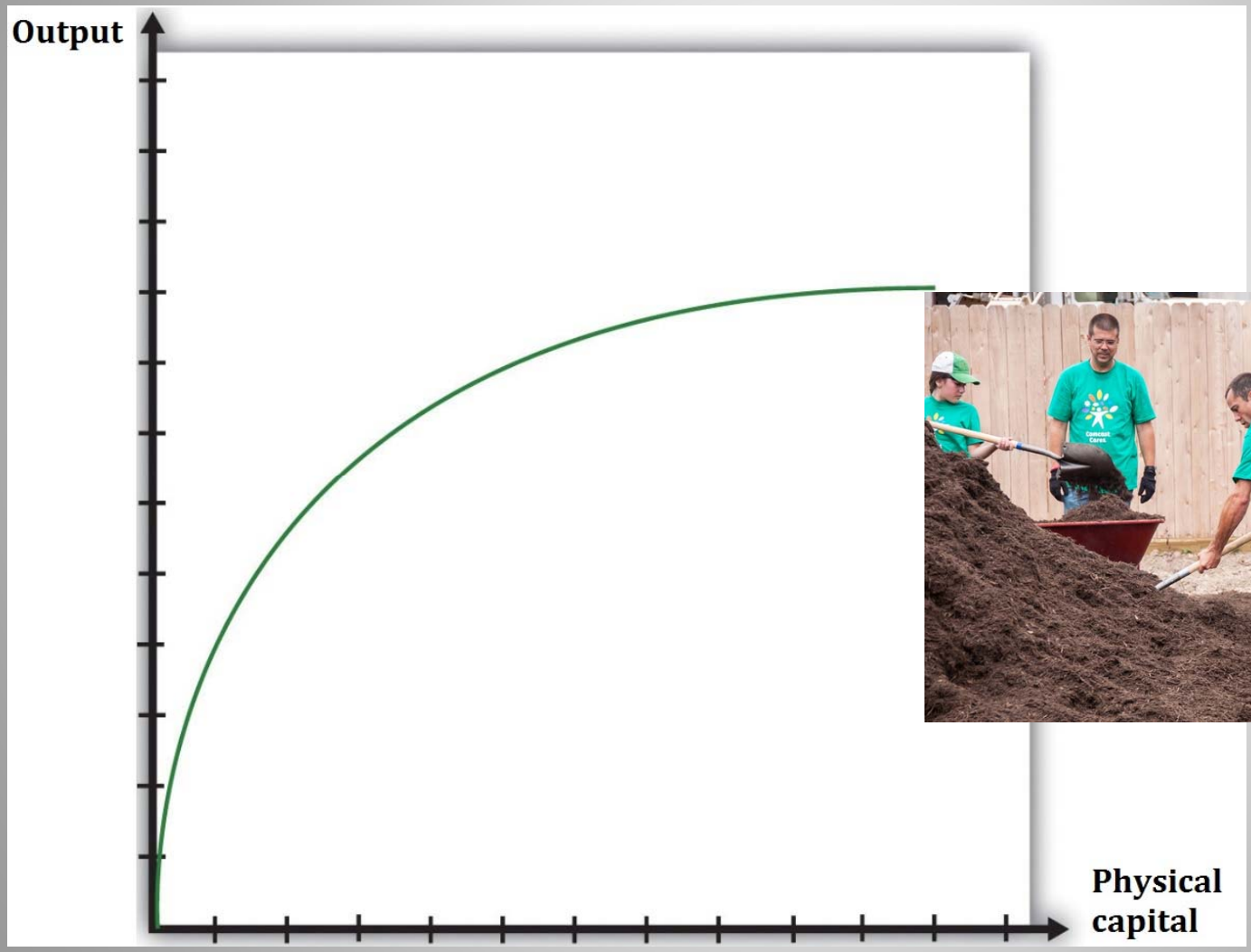
$$GDP = A \times K^{\alpha} \times L^{1-\alpha}$$

- Micro economic relationship
- Based on physical assumptions



€500
NOKIA
Tele2 EE
Menu
14:45
Commodore 64
Multi-purpose personal computer for educational and business use !
Personal computer dalle numerose possibilita e applicazioni sia nel campo degli affari che nel campo didattico!
€1000

Diminishing returns to scale



The neoclassical production function

$$GDP = A \times K^{\alpha} \times L^{1-\alpha}$$

(Solow-Swan)

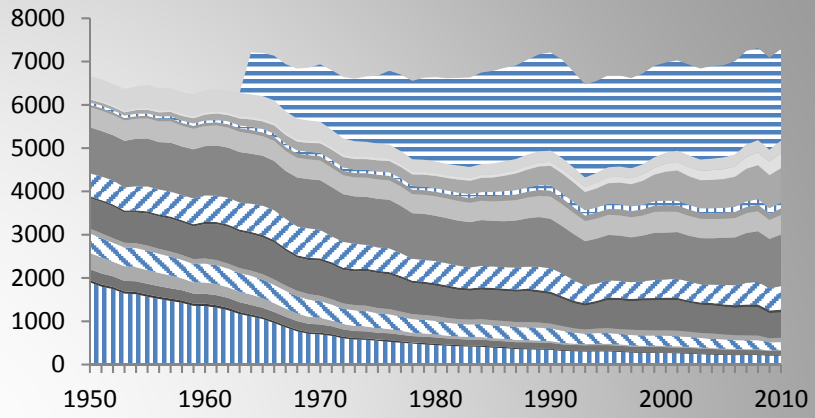
Diminishing returns to scale, based on microeconomic principles

A = Technology

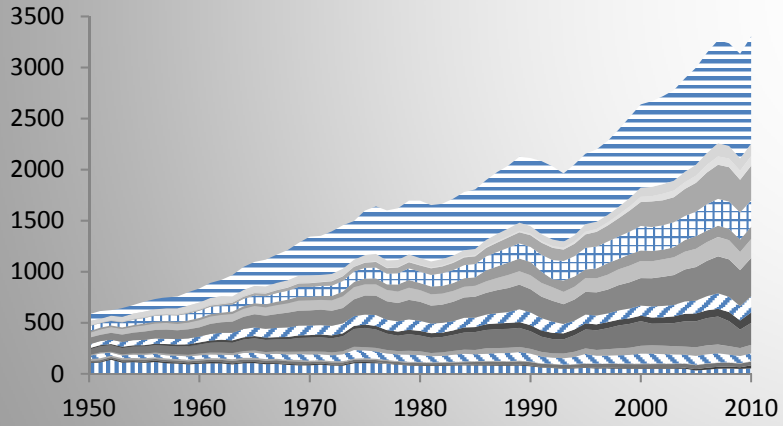
K = Real capital

L = Labor

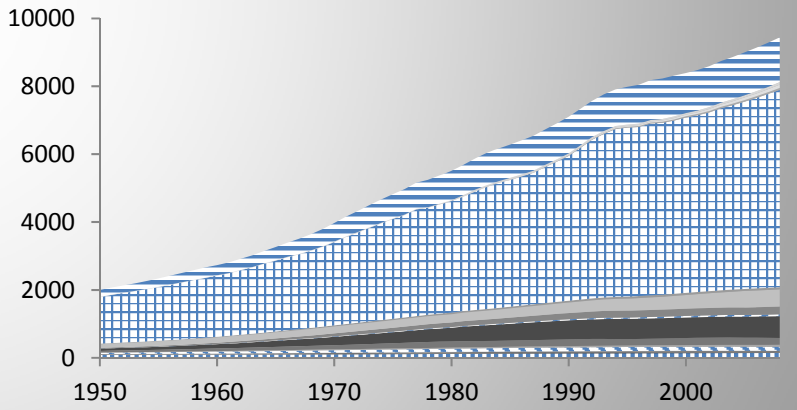
Arbete:

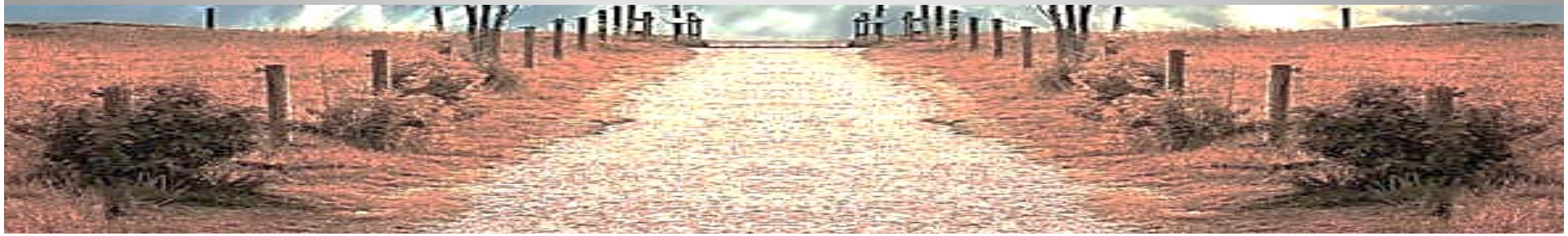


Produktion (BNP):

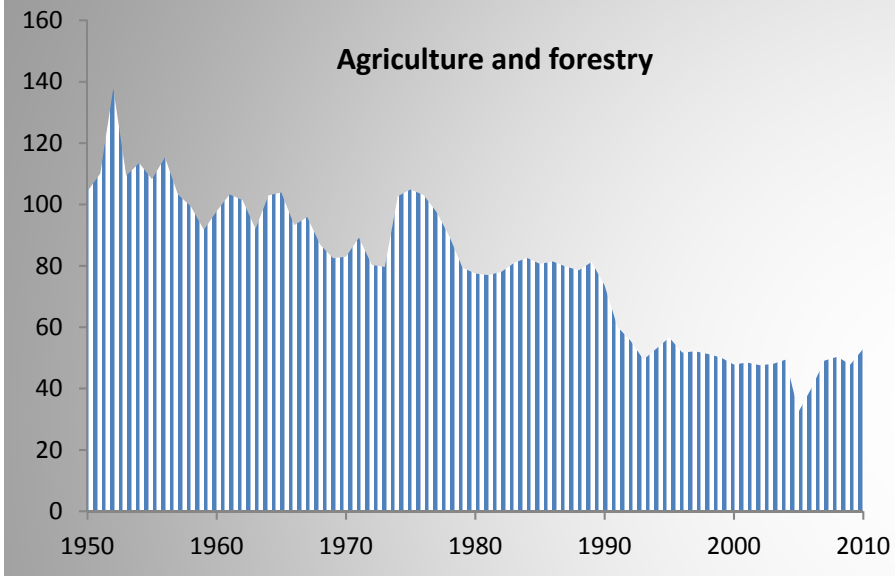


Kapital:

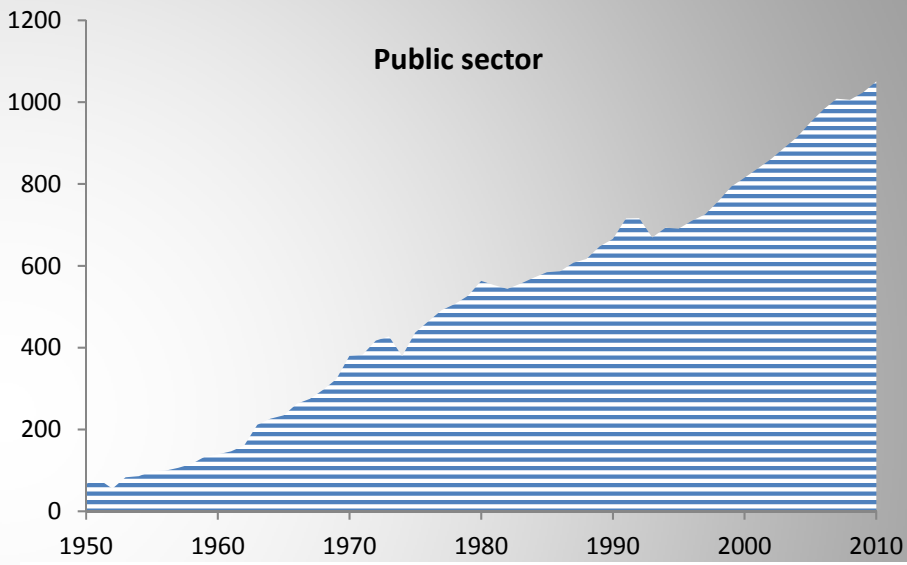


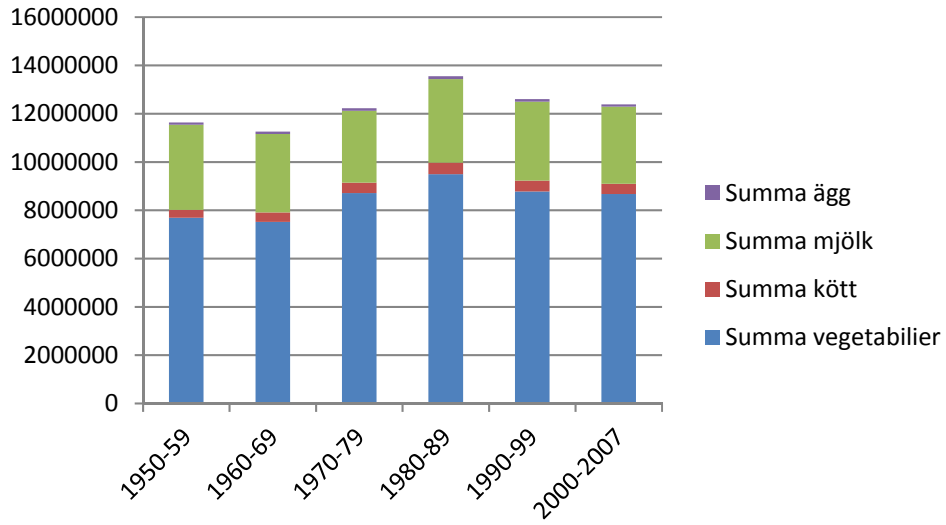


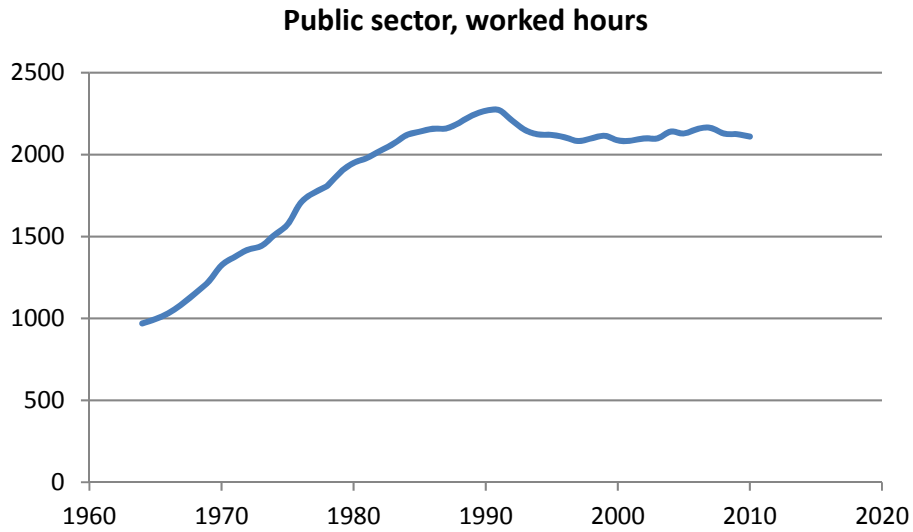
Capital intensive production



Labor intensive production







The disappointments of GDP growth

- Material growth: No real **decoupling** between growth and environmental impacts
- Growth in goods, not in services – hidden by relative price changes
- 100% growth in 30 years – what did we get?
  - More unemployment
  - Dismanteling of welfare
  - ***This is where real decoupling occurs!***

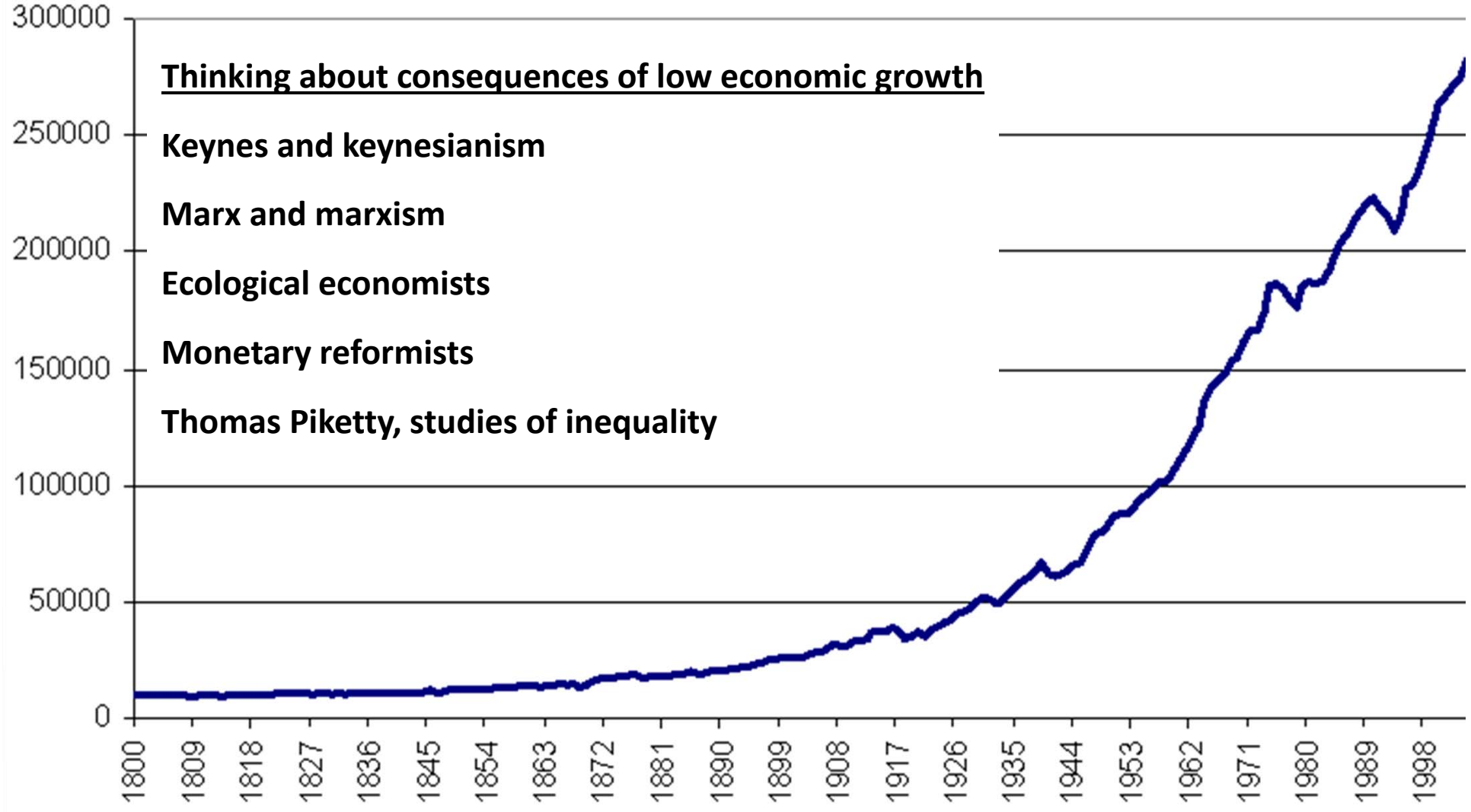
The disappointments of GDP growth

But perhaps the problem is not that we *want* growth …

… but that we *need* growth?

No real experience of low or no economic growth

Sweden's GDP 1800-2000



Economic effects of unmanaged low or no economic growth in the short and long term

	Short term	Long term
Government finances	Negative impact	Potentially balanced
Labor employment	Negative impact	Potentially balanced
Poverty	Negative impact	Potential effects
Inequality	Unclear impact	Potential effects
Indebtedness	Negative impact	Potentially balanced
Financial sector	Negative impact	Adaptions required
Businesses	Negative impact	Adaptions required
Globalization and trade	Negative impact	Adaptions required

Malmaeus & Alfredsson
(Ecological Economics 134, 2017)

Economic effects of unmanaged low or no economic growth in the short and long term

– Short term effects mostly linked to failed expectations and lock-in situations

– Long term effects strongly affected by political prioritizations

– Short term effects trigger pro-growth policy (long term)

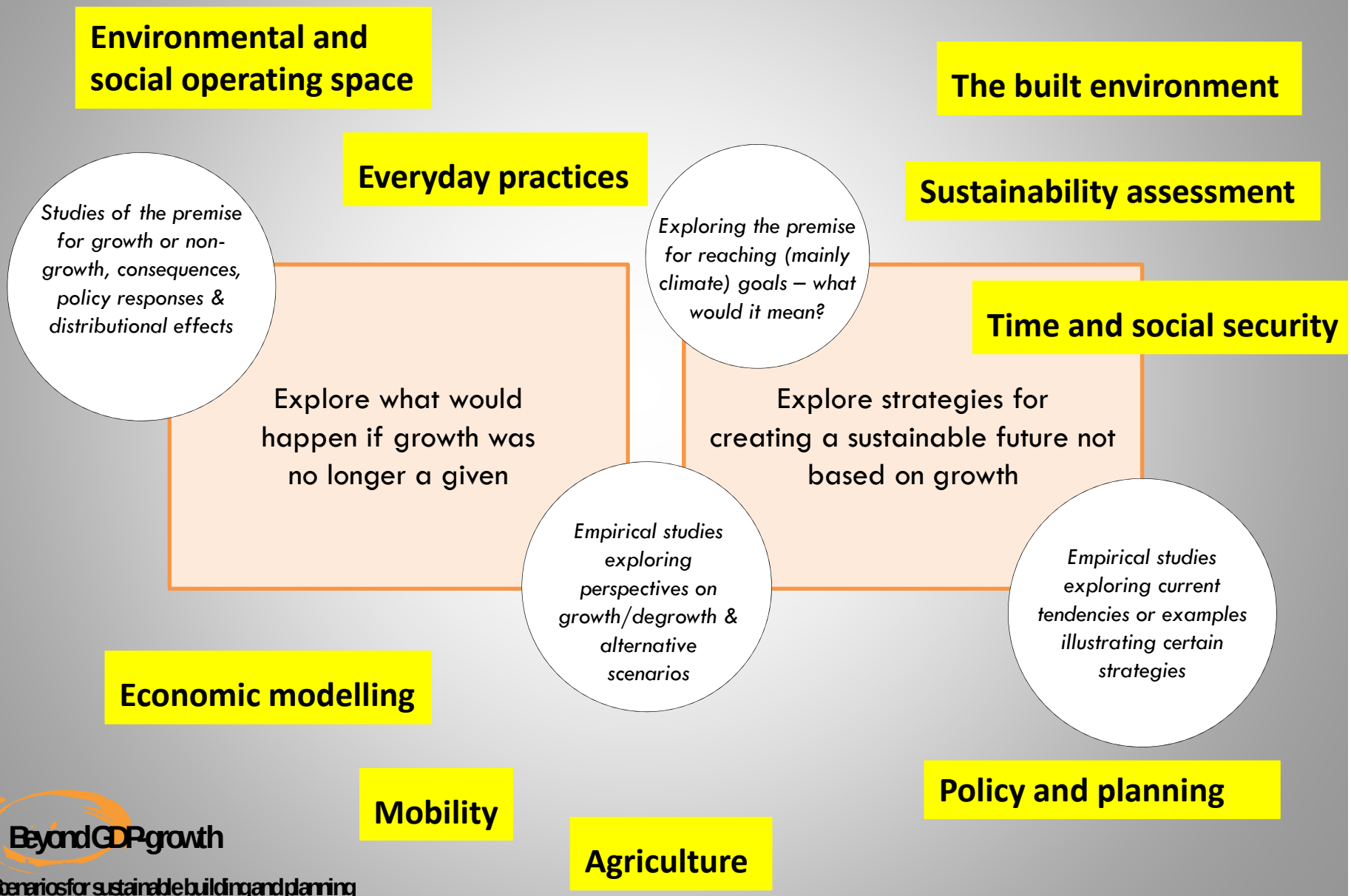
Malmaeus & Alfredsson
(Ecological Economics 134, 2017)

Economic effects of unmanaged low or no economic growth in the short and long term

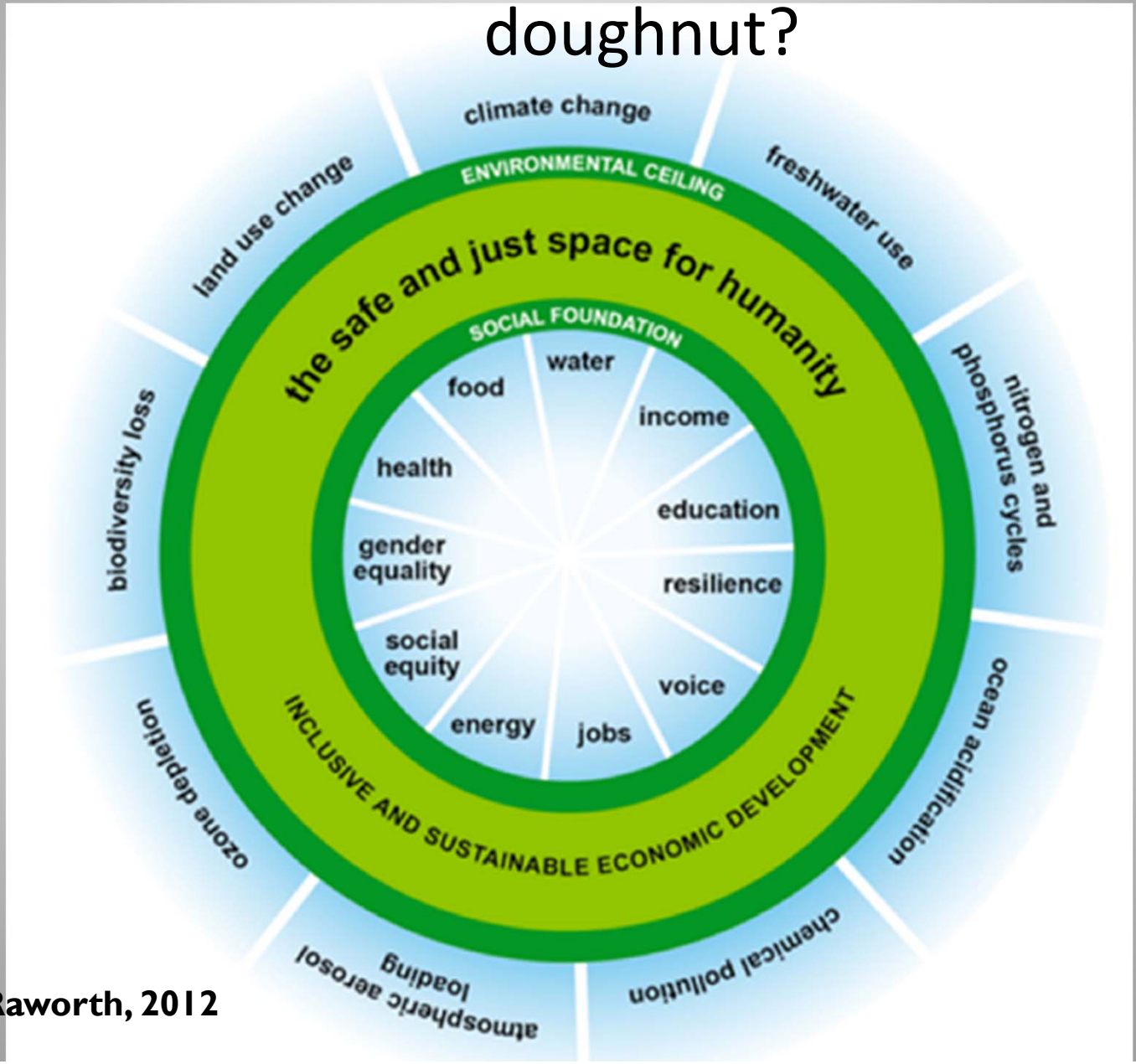
- Much more could be said about interactions and feedbacks ...
- ... between different parts of the economy and between the economy and society as a whole ...
- ... but the key message is that *expectations are very influential on the outcome*!

-> The importance of alternative scenarios

Scenarios for sustainable building and planning



A safe and just space within the doughnut?



Raworth, 2012

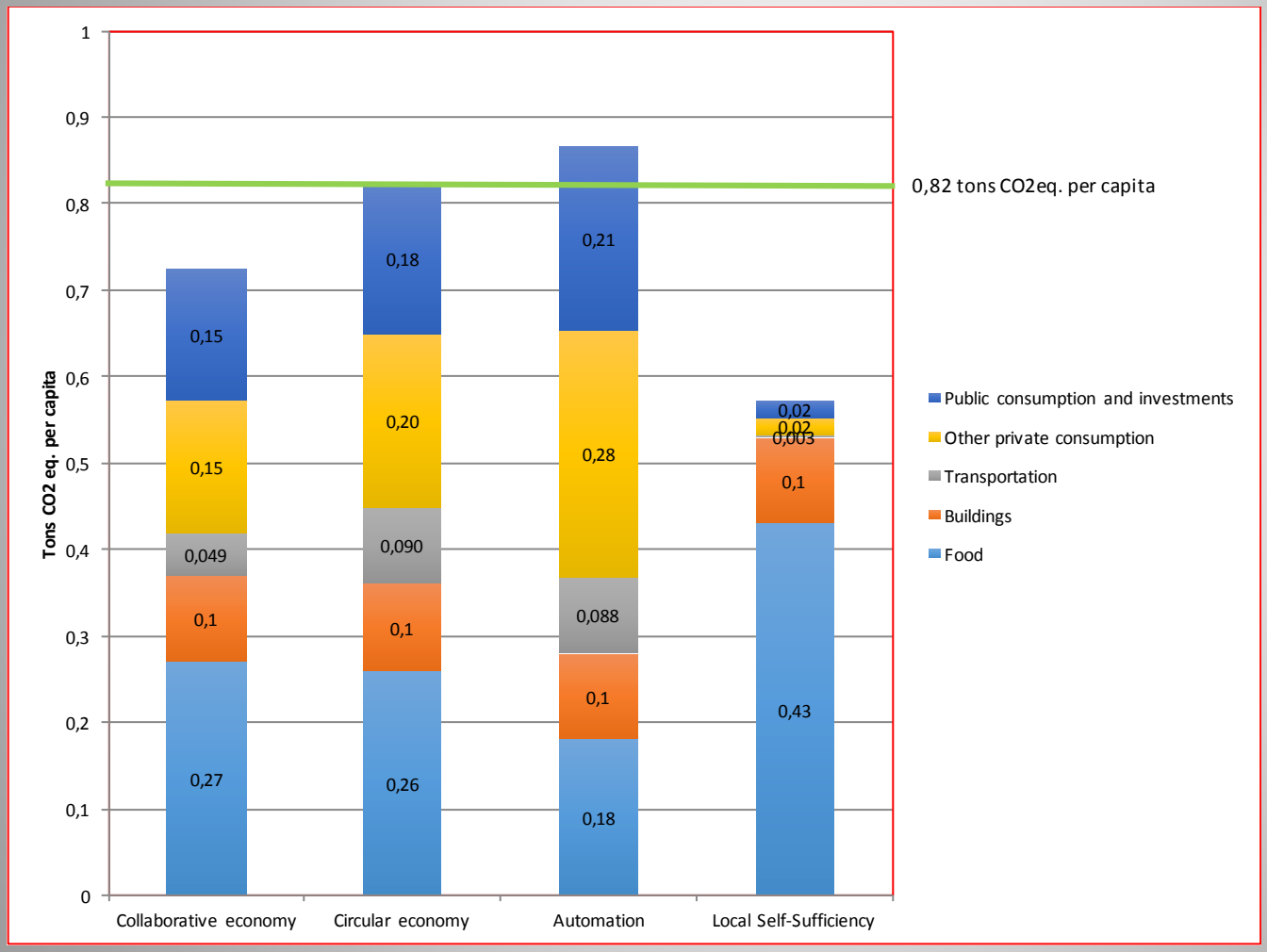
Climate	• Zero net emissions of CO_2 in production • Max 0.82 ton CO_2 eq per capita for Swedish consumption
Distribution of power	• All residents, regardless of, for example, gender, gender expression, sexual orientation, ethnicity and religious affiliation, age, disability, class and income level, should be entitled to participation and influence in political choices and decision making that affect their lives.
Land use	• Per capita land use for final consumption does not exceed global biocapacity = 50% decrease compared to 2015 (max 1,24 global hectars per person).
Resource security	• Residents in Sweden should have sufficient access to resources and services that can create opportunities for housing, education, social care and social security, as well as favorable conditions for good health. • Distribution of the same resources and services should be done according to fairness principles.

Fauré, Svenfelt, Finnveden, Hornborg (2016)

Four backcasting scenarios 2050:

Svenfelt et al. (in press)

Total emissions per capita (excl. international travel)



Focus groups in three Swedish municipalities

550 km^2
40,000 inhabitants
2 focus groups with 6
+ 6 participants

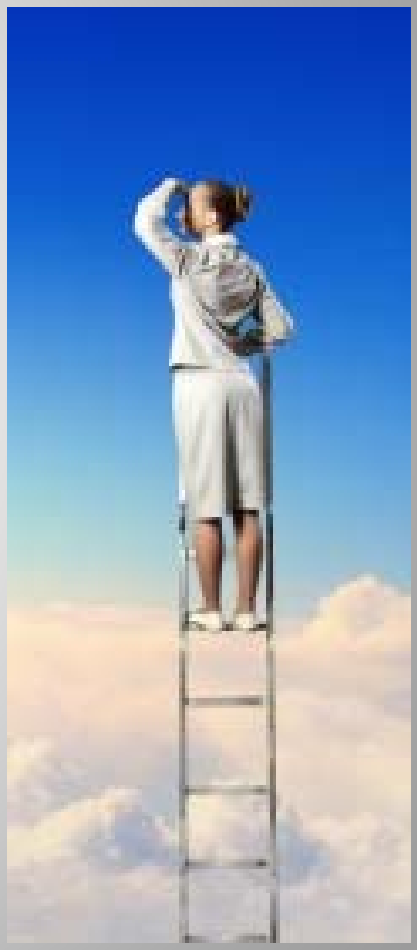
330 km2
350,000 inhabitants
2 focus groups with 6
+ 9 participants

2490 km^2
5,000 inhabitants
2 focus groups with 4
+ 5 participants

Focus question: If Sweden has developed in this way, what would it be like in this municipality? What would the consequences be?

Change expectations!

- Opening up for lower expectations of growth (or non-growth) prevents many negative effects of lower economic growth that generally comes from failed expectations.
- Changed expectations and perceptions of what society and life can look like (through i.e. scenario-based discussions and societal debate) is key for both deciding direction and spurring change
- Living experiences – use the living testbeds out there for testing out alternative practices, systems and ways of life.



Learn more …

www.bortombnptillvaxt.se