



Sustainable management of bio- resources

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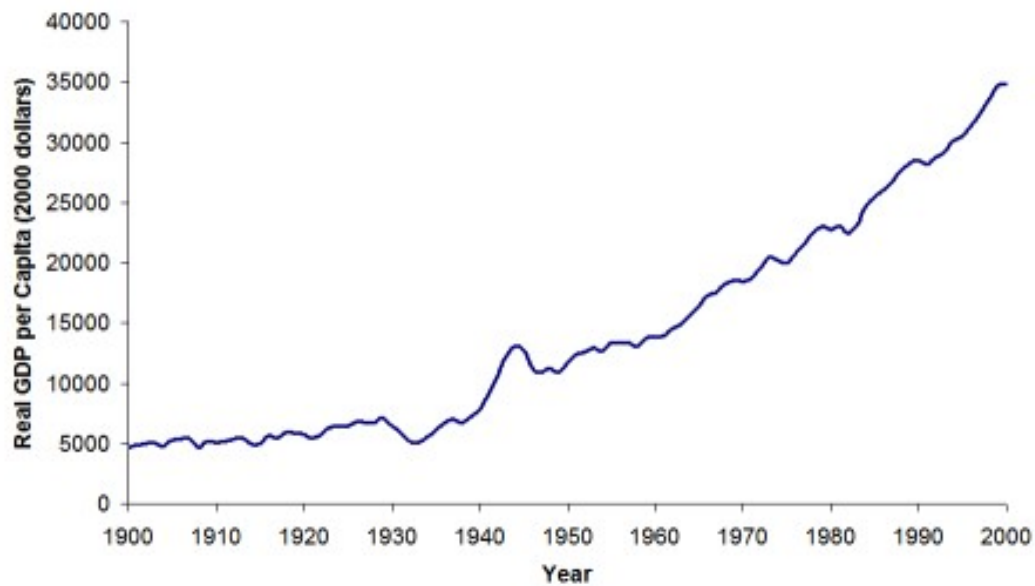


HÁSKÓLI ÍSLANDS
FÉLAGSVÍSINDASVIÐ



An ever improving world

Real GDP per Capita



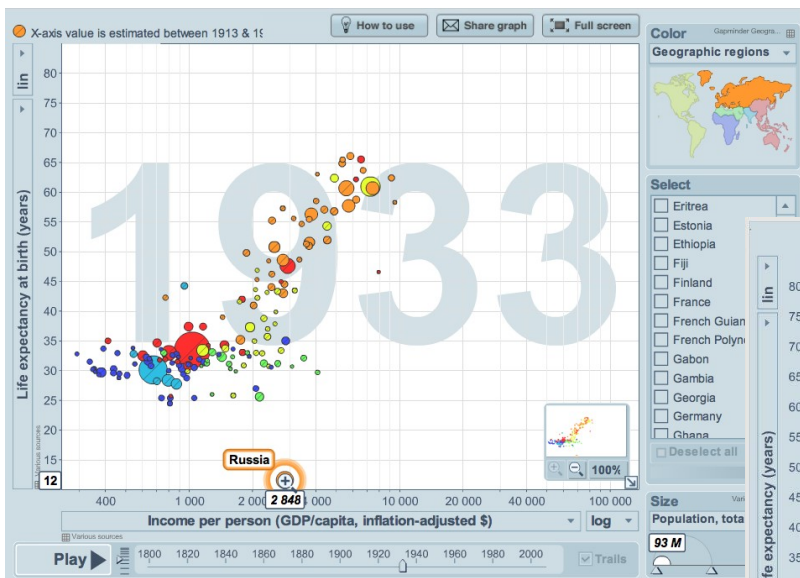
(Source: Maddison 2007)



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Richer and healthier



(Source: Gapminder)



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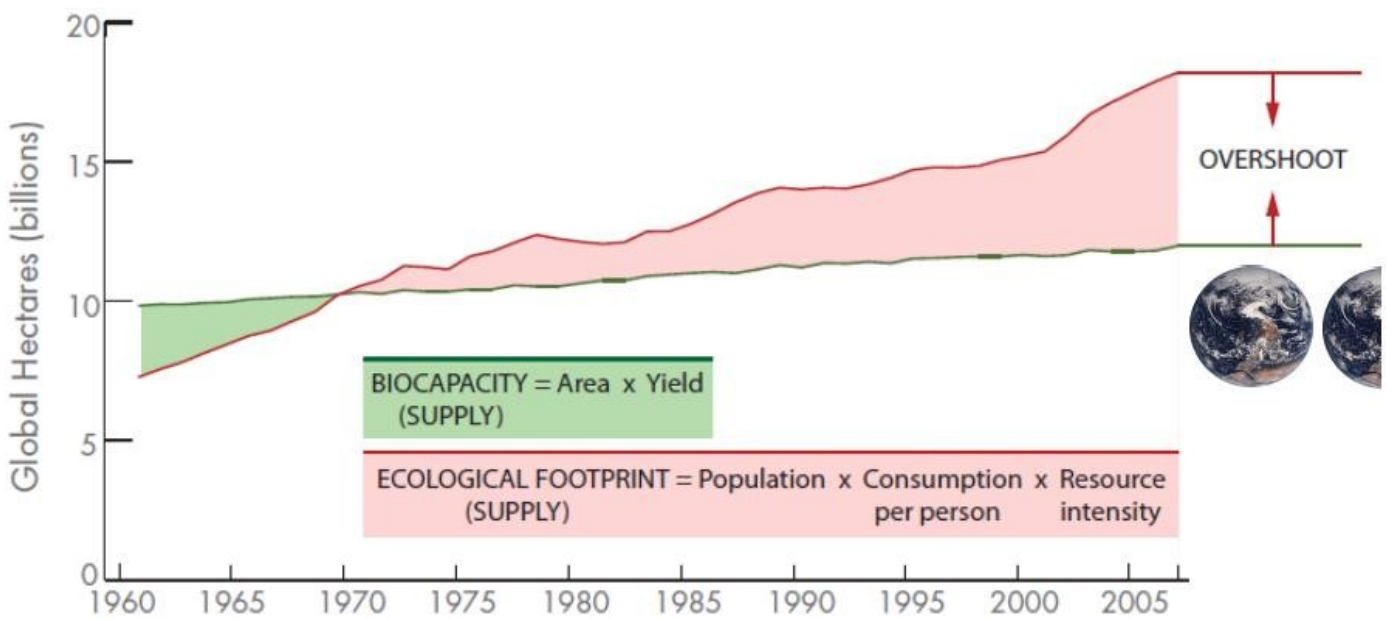
Flying – or falling with style?



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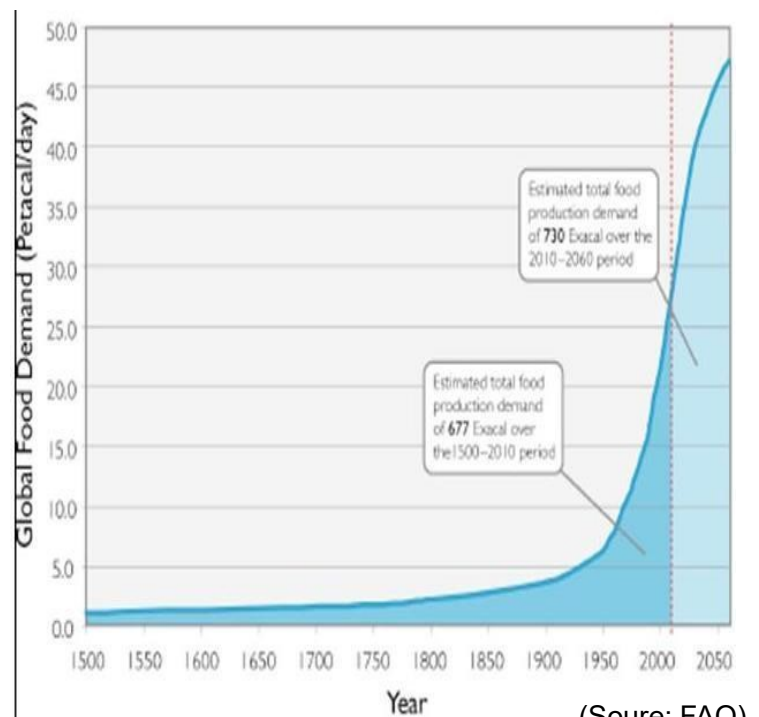
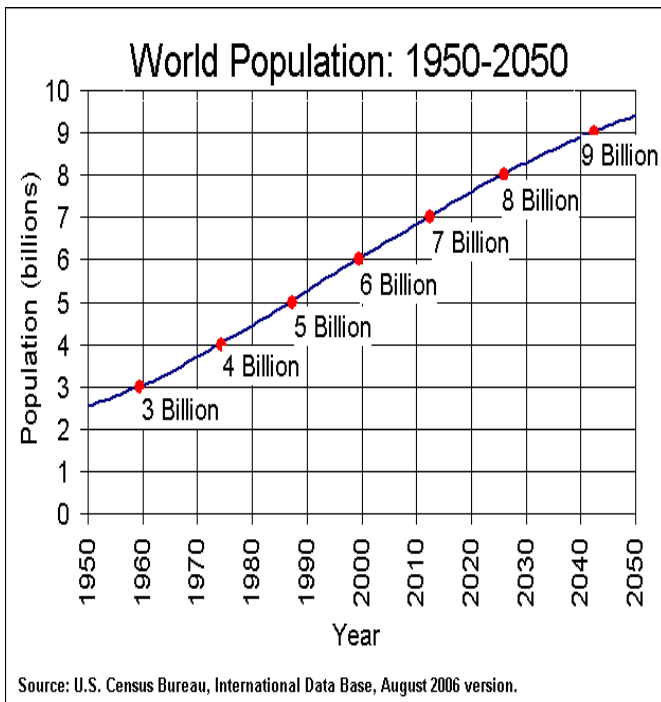


Is there no limit then?





And the pressure increases



(Source: FAO)



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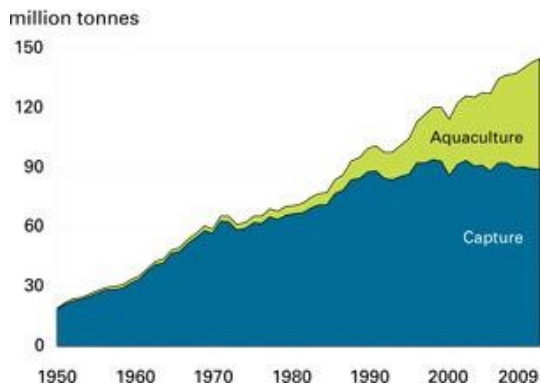
Key resources limited

- Renewable

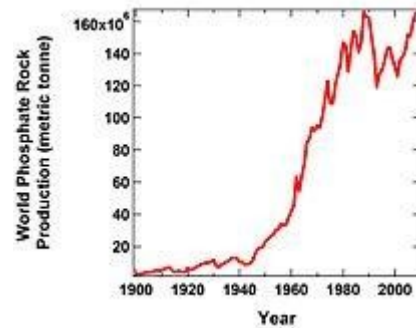
- Agricultural land
- Water
- Wild fish

- Non-renewable

- Oil
- Phosphorus
- ...



(Source FAO)



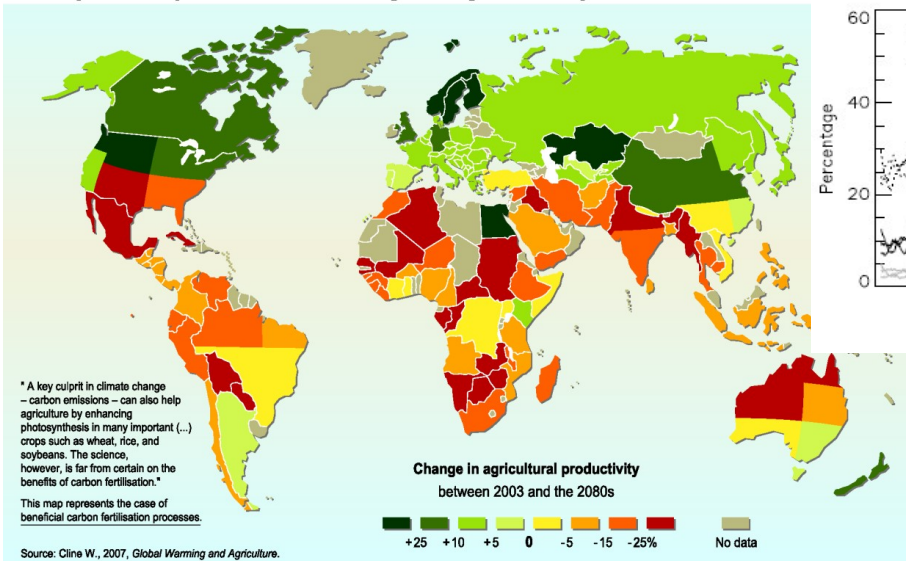
(Source Wikipedia)



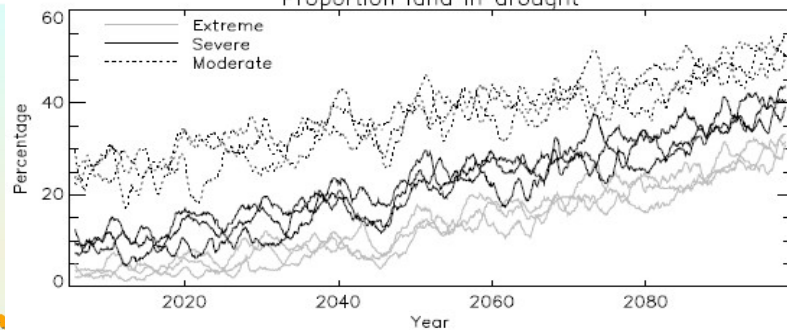


Additional challenges

Projected impact of climate change on agricultural yields

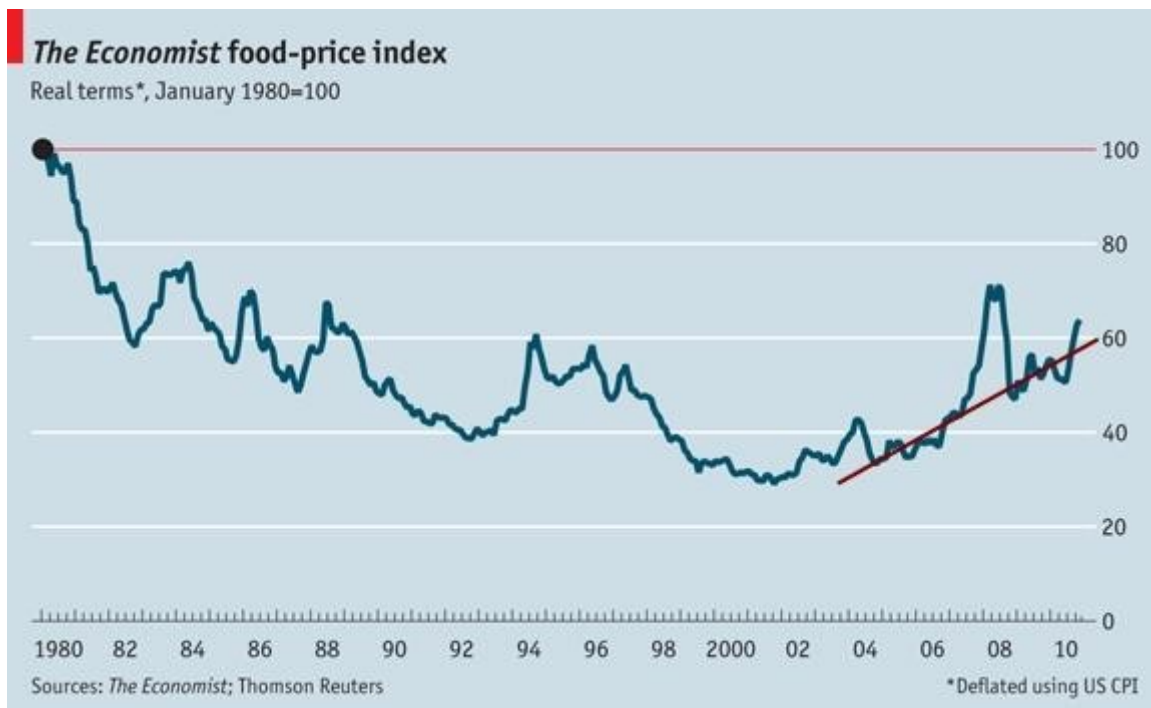


Proportion land in drought





Building pressures starting to show



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Can we meet the challenge?

- Possibly, but requires a shift towards sustainable production
 - Better resource management
 - Environmental inputs and impacts taken into account
 - Efficient solutions to common pool resource problems
 - Long run resource utilization policy
 - Shift from non-renewables to renewables
 - The bio-economy
 - Less wasteful use of resources





Taking environmental impacts into account

- Current environmental footprint non-sustainable
 - Pollution of air and water
 - Soil degradation
 - ...
- Can be dealt with by
 - Direct regulation
 - Economic incentives, e.g. green taxes
 - Support incentives, e.g. cross compliance





Efficient resource management

- Many bio-resources are common pools
- Leads inevitably to overexploitation
 1. Need for regulation – sustainable harvest rules
 2. Remove unnecessary competition between harvesters – harvest rights
- Very big institutional changes – so mind the social impacts!!





Shift towards renewables

The bio-economy

- True sustainability depends heavily on renewable resources – not least bio resources
- Huge and very urgent need for research into how this can be done
- A long run project requiring very patient capital





Less waste

- Improved efficiency
- Waste as a resource
- Changed attitudes towards consumption and awareness of environmental costs





Joint effort

Private sector

- Efficient production
- Efficient resource use
- Innovation

Governments

- Regulation
 - Environmental
 - Resource use regulation
- Green incentives
- Campaigning awareness
- Promoting research
- Promoting innovation





Joint effort

Private sector

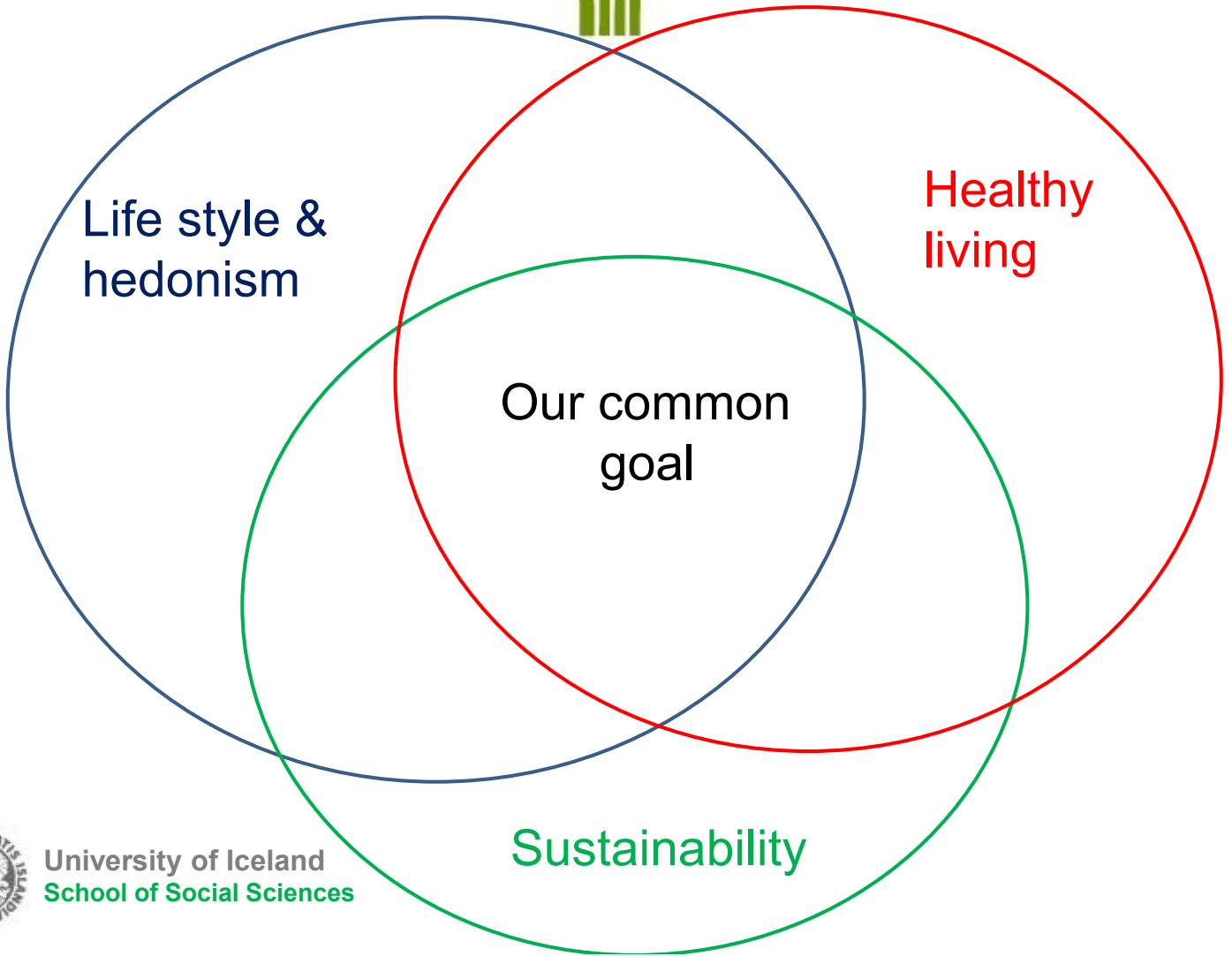
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**Best solved by
markets**

Governments

- Regulation
 - Environmental
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