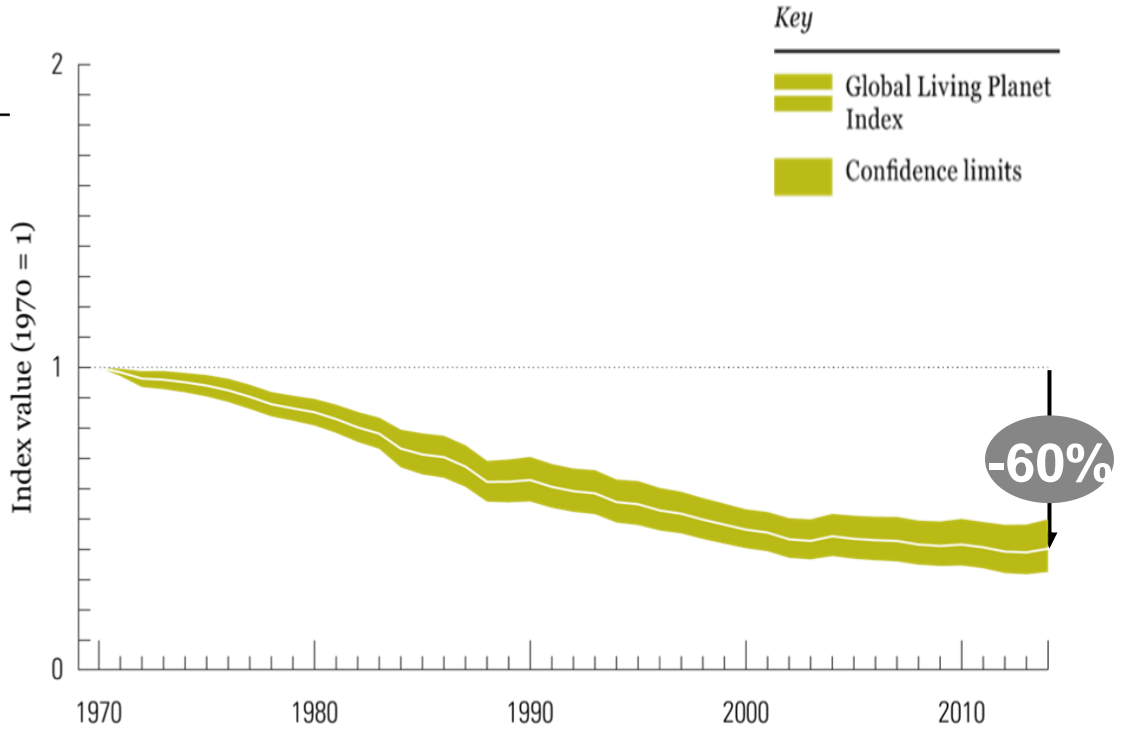
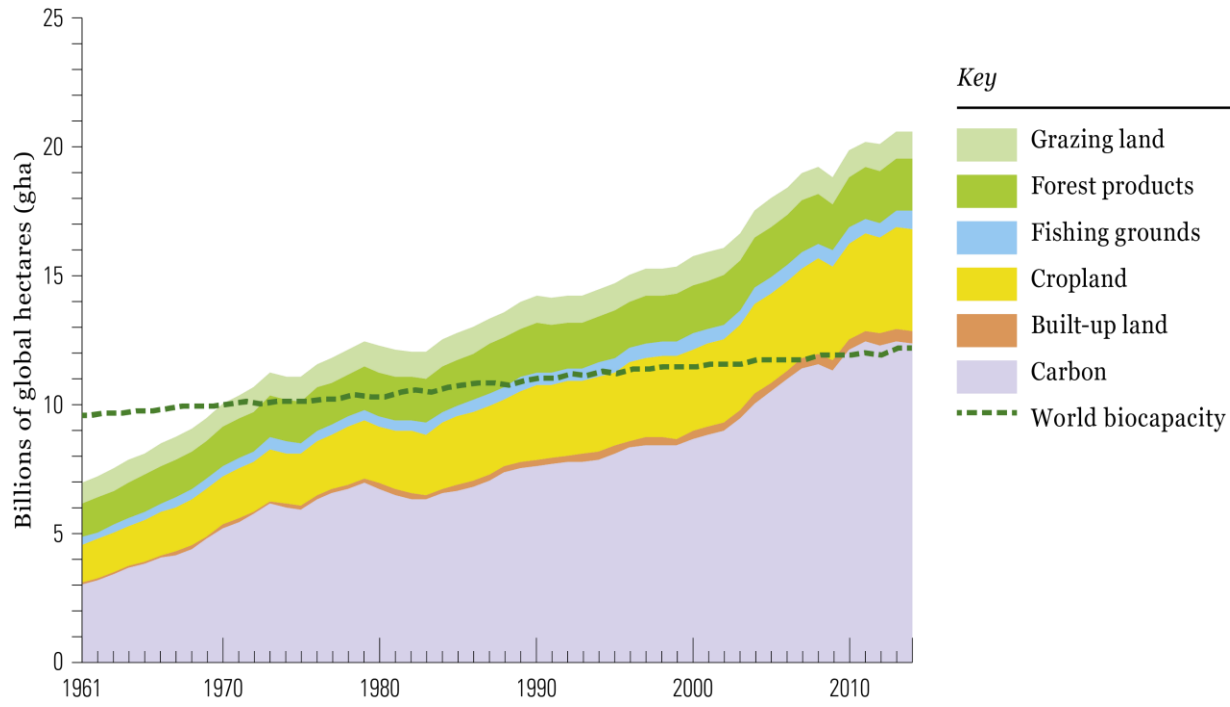




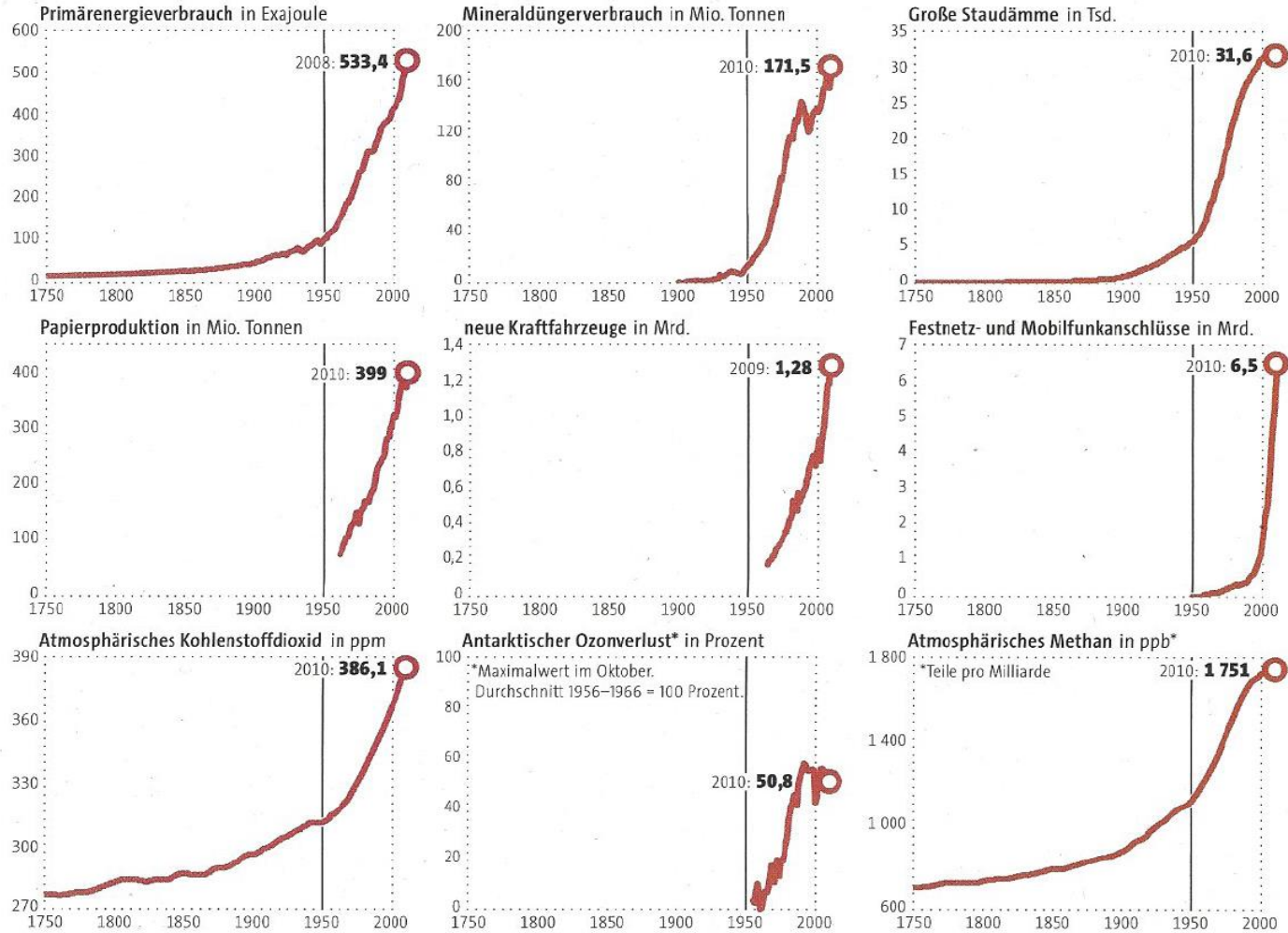
Environmental situation today and consequences on our economic system

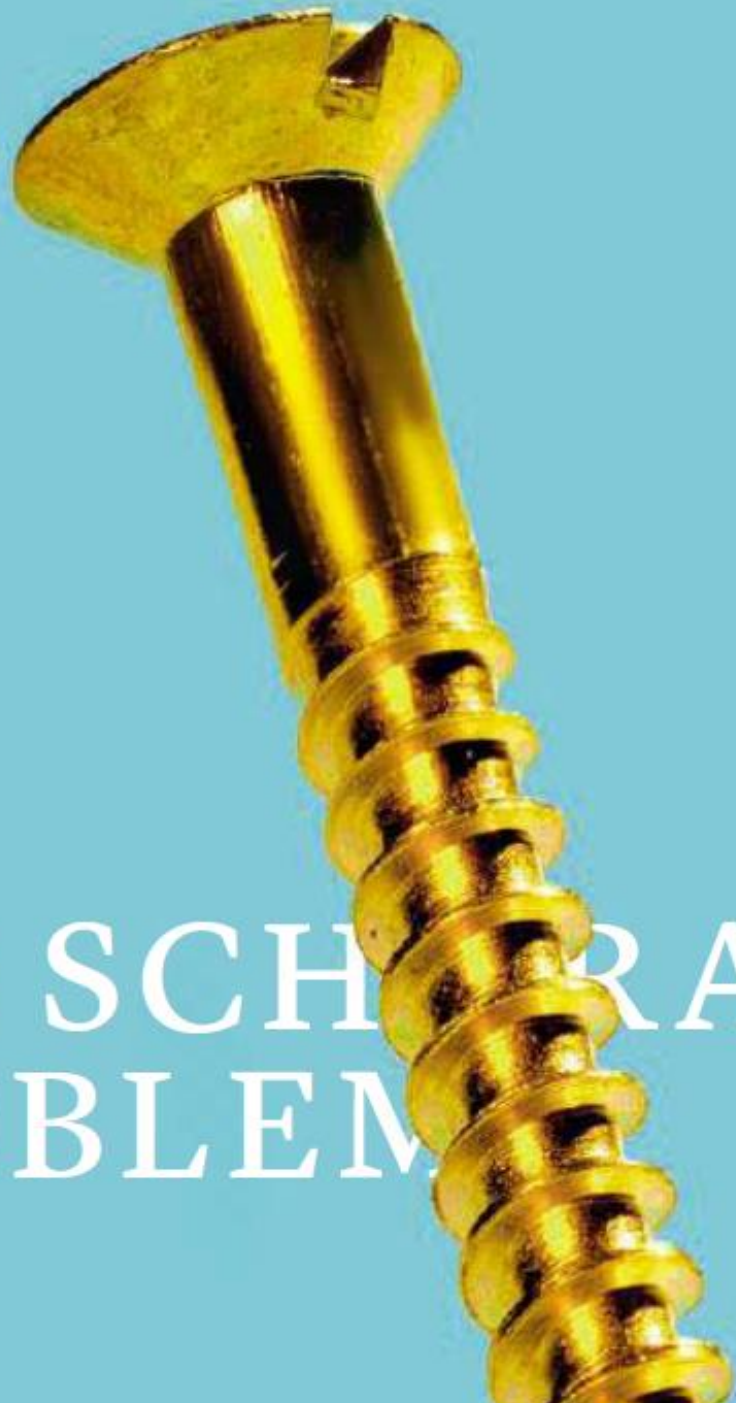
Ion Karagounis, Lead new economic models, WWF Switzerland
78th Jubilee LCA Discussion Forum Zurich, 13.9.2021

Increase of footprint and decrease of Living planet index



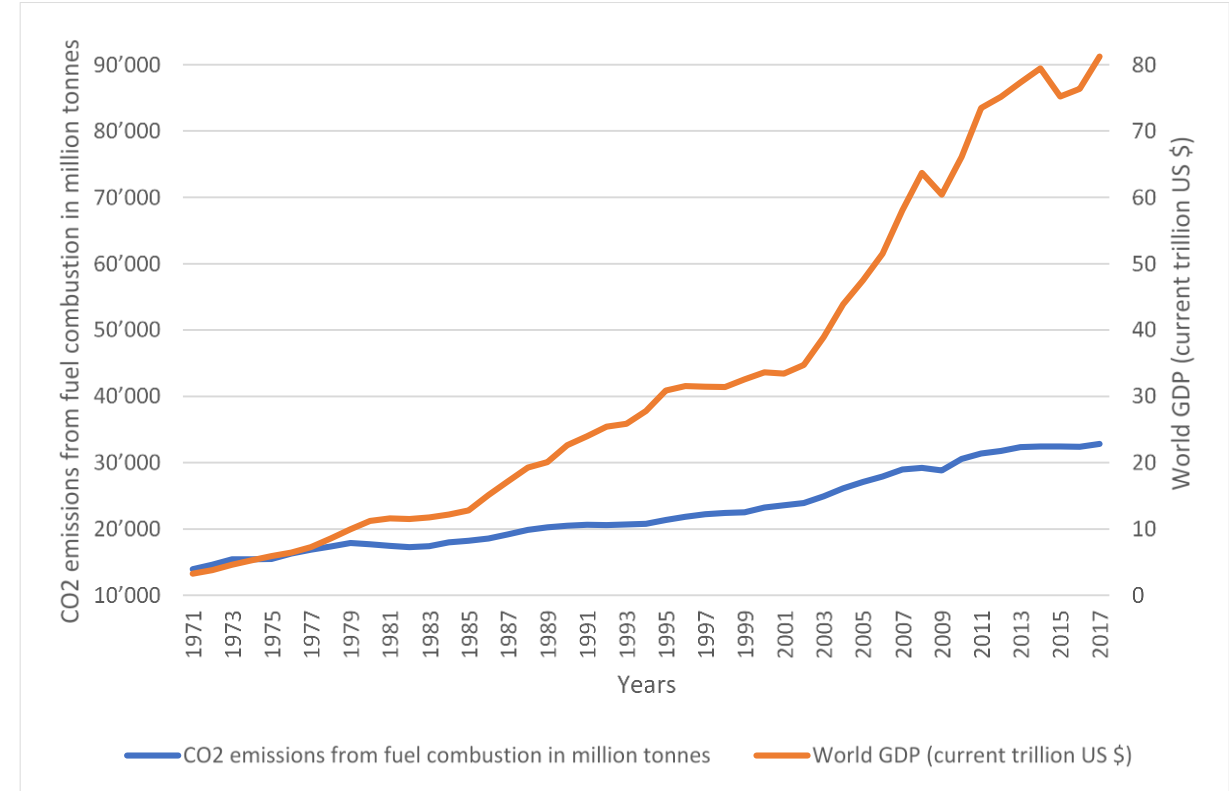
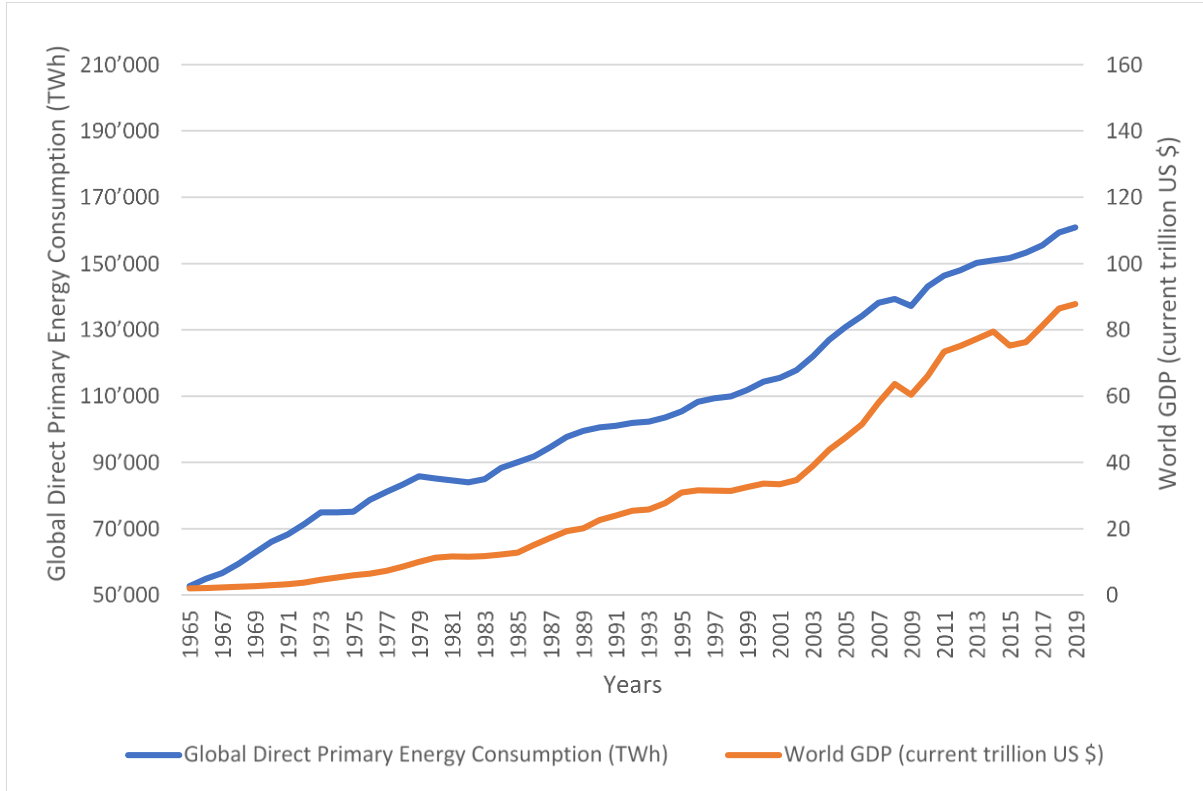
The great acceleration since the 1950s





DAS SCHRAUBEN- PROBLEM

Development of economic performance and environmental impact worldwide



[Global Direct Primary Energy Consumption \(TWh\)](#) von Our World in Data gegenüber [World GDP \(current trillion US \\$\)](#) der Weltbank. (Global direct primary energy consumption does not take account of inefficiencies in fossil fuel production.)

[CO₂ emissions from fuel combustion \(in million tonnes\)](#) der International Energy Agency (IEA) gegenüber [World GDP \(current trillion US \\$\)](#) der Weltbank.

5G - much more efficient, but ...



Die Untersuchung kommt zu einem eindeutigen Schluss. Wird das Mobilnetz im Jahr 2030 mit 5G betrieben und nicht mit der heutigen Technologie, verursacht das 86% weniger Treibhausgase pro übertragenem Gigabyte. Die Forscher nehmen dabei an, dass sich der Datenverkehr bis 2030 ungefähr verachtfach. Trotzdem würde die 5G-Technologie im Jahr 2030 praktisch gleich viele Treibhausgase verursachen wie das heutige Netz.

«Die Steigerung der Energieeffizienz und die Entwicklung des Datenvolumens halten sich also ungefähr die Waage», sagt Professor Lorenz Hilty, der sich am Institut für Informatik der Universität Zürich mit der Nachhaltigkeit der digitalen Welt beschäftigt. «Das ist in der Entwicklung von digitalen Technologien nicht ungewöhnlich, wie sich beim Speicherplatz oder bei der Leistung von Prozessoren zeigte.»

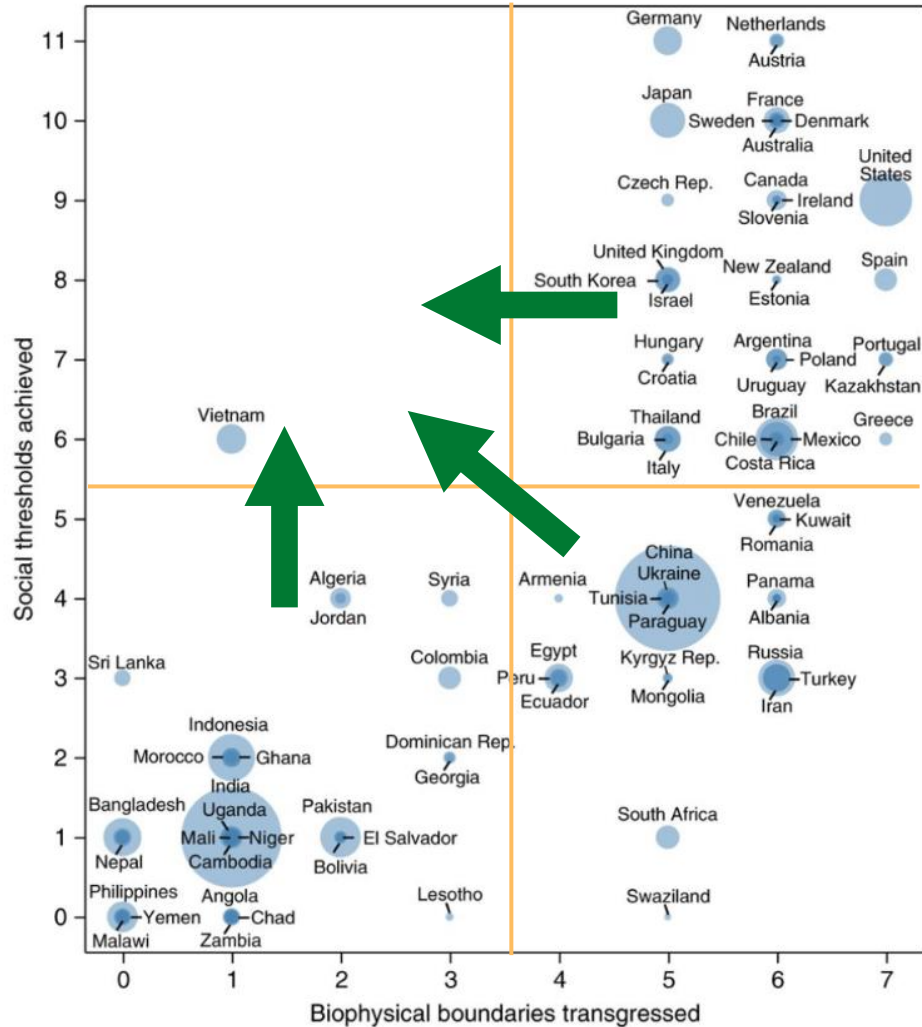
The investigation comes to a clear conclusion. If the mobile network in 2030 is operated with 5G and not with today's technology, this will cause 86% less greenhouse gases per gigabyte transferred. The researchers assume that data traffic will increase approximately eightfold by 2030. Nevertheless, 5G technology would cause practically the same amount of greenhouse gases in 2030 as the current network.

"The increase in energy efficiency and the development of data volumes are therefore roughly in balance," says Professor Lorenz Hilty, who works on the sustainability of the digital world at the Institute for Computer Science at the University of Zurich. "This is not unusual in the development of digital technologies, as has been shown in terms of storage space or processor performance".

Translated with www.DeepL.com/Translator (free version)

Is 5G climate-friendly? Study University Zurich et al., summarized in NZZ am Sonntag, 2020/08/29
<https://nzzas.nzz.ch/wirtschaft/5g-die-technologie-hilft-dem-klimaschutz-ld.1573892>

Development and environmental impact: **into the white zone**



Source and interactive country comparison
<https://goodlife.leeds.ac.uk>
 (big circles = big countries, small circles = small countries)

System change?

Neoliberalism

Communism

Capitalism

Socialism

Social-ecological market economy

Democracy

Precautionary post-growth option

Socialism with Chinese Characteristics

Free market economy

Planned economy

How do we get to a new system?



There is no such thing as «the new system»

- Complex systems, developed over centuries
- There are **system concepts and models** (e.g. post-growth economy according to Niko Paech, common good economy)
- You can't just flip a switch
- Many approaches to reduce resource consumption

What we can do: develop visions, formulate goals and frameworks

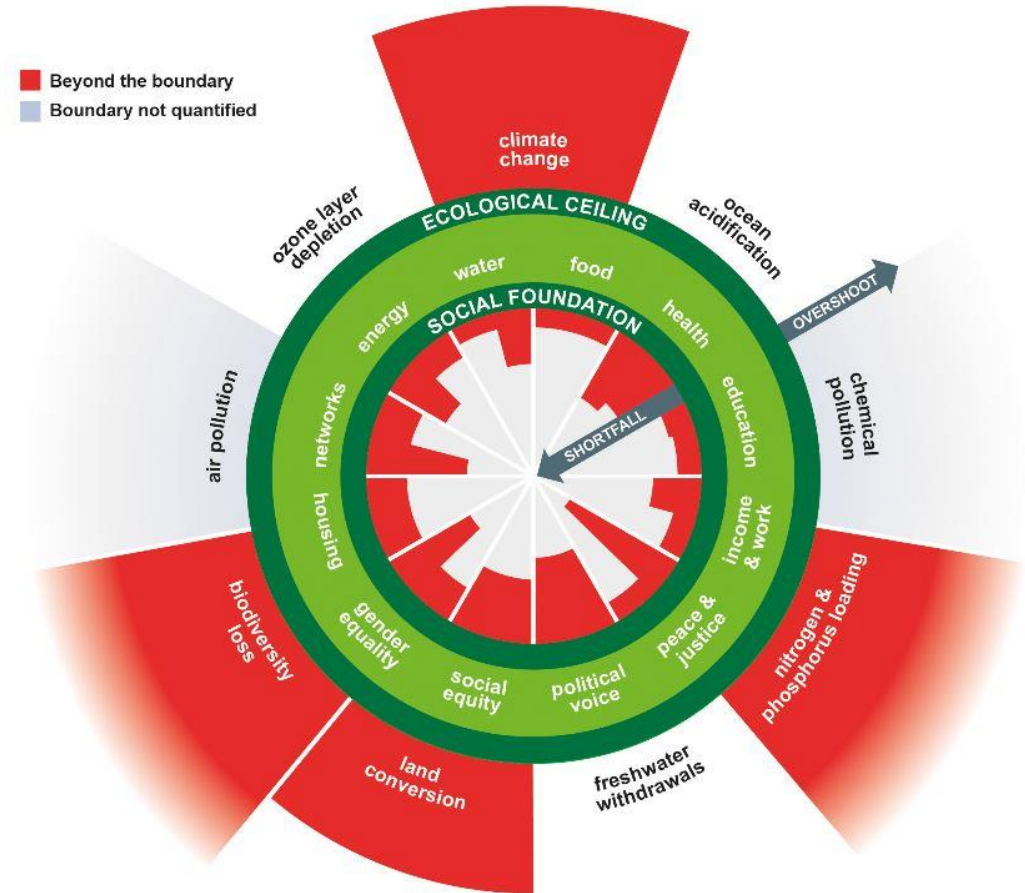
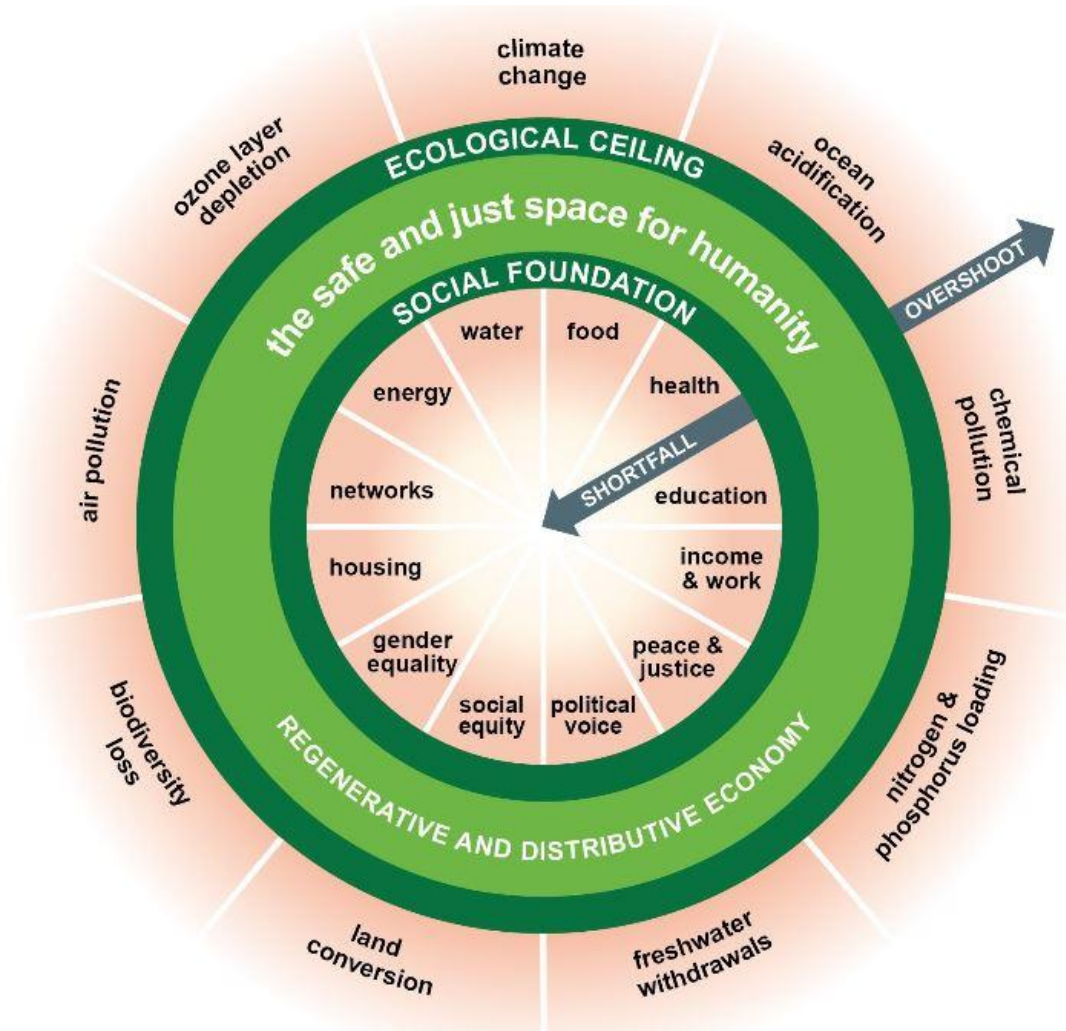
- Develop vision: How could world function that uses resources sustainably?
- Formulate goals: What are the limits that cannot be crossed?
- Establish framework conditions, test and introduce solution approaches



A good life for all



The goal: Donut-Economy

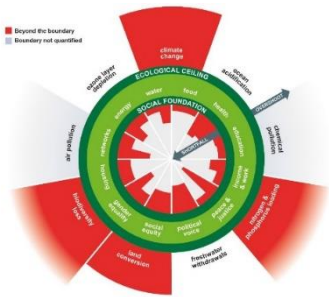


Quelle: Doughnut Economy von Kate Raworth

WWF-model for an Economy within planetary boundaries



Problem



Measures

Technical Innovation	<p>Partially reduces use of energy and resources</p> <p>Is not enough/is offset by growth, rebound effects, shifting of pressures, physical limits</p>
Lifestyle innovation (reduction of us and demand)	<p>Resources and biodiversity adequately protected</p> <p>Slows down growth and affects negatively social achievements, maintenance infrastructure, development in less developed countries</p>
System-Innovation (Design important achievements of our society in a way that they work independently from growth)	<p>Social security and modest prosperity guaranteed for all</p>

Consequences

Goals

(Donut-Economics, SDG)



$$I = P * A * T$$

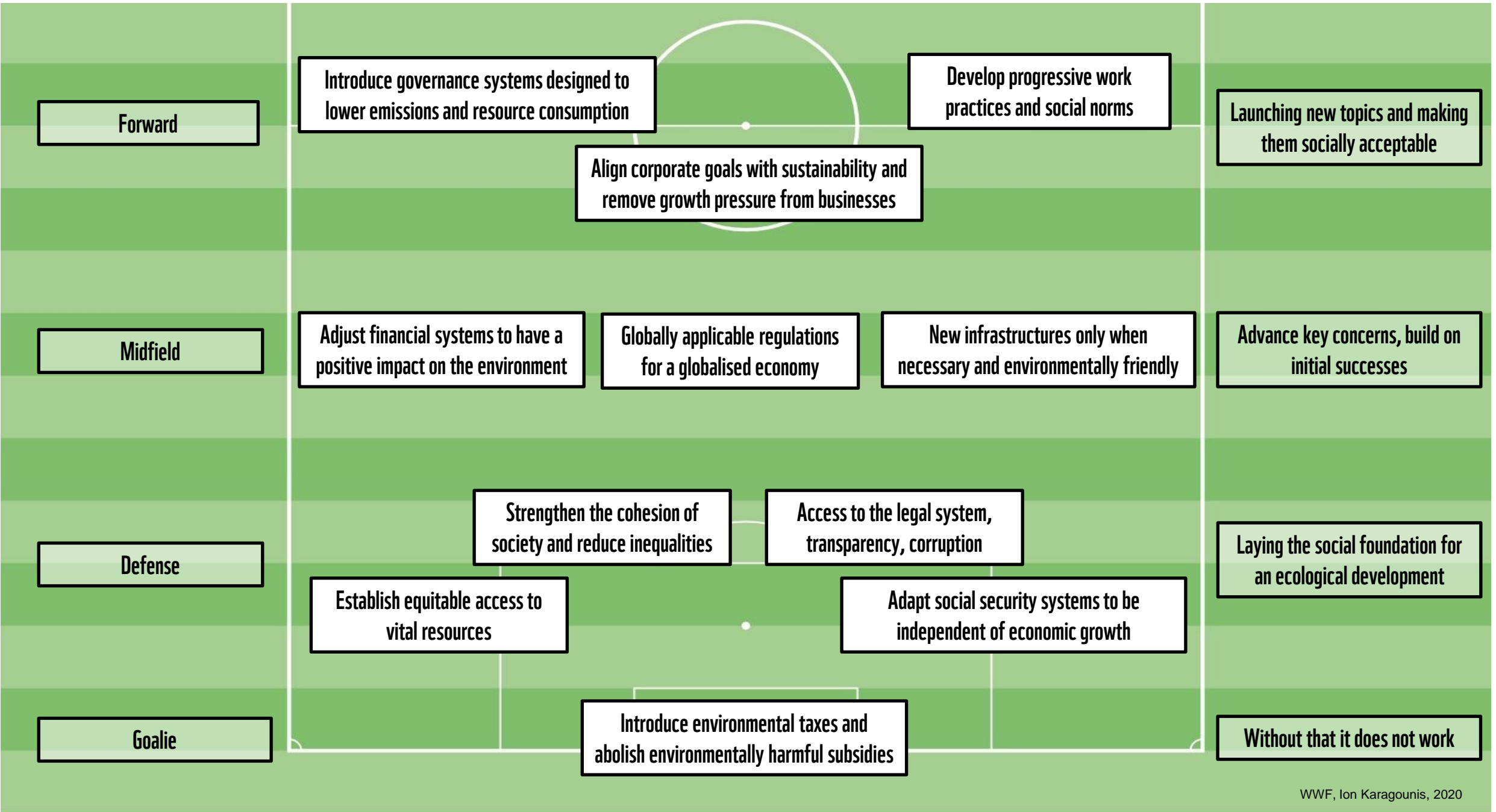
Impact = Population * Affluence * Technology

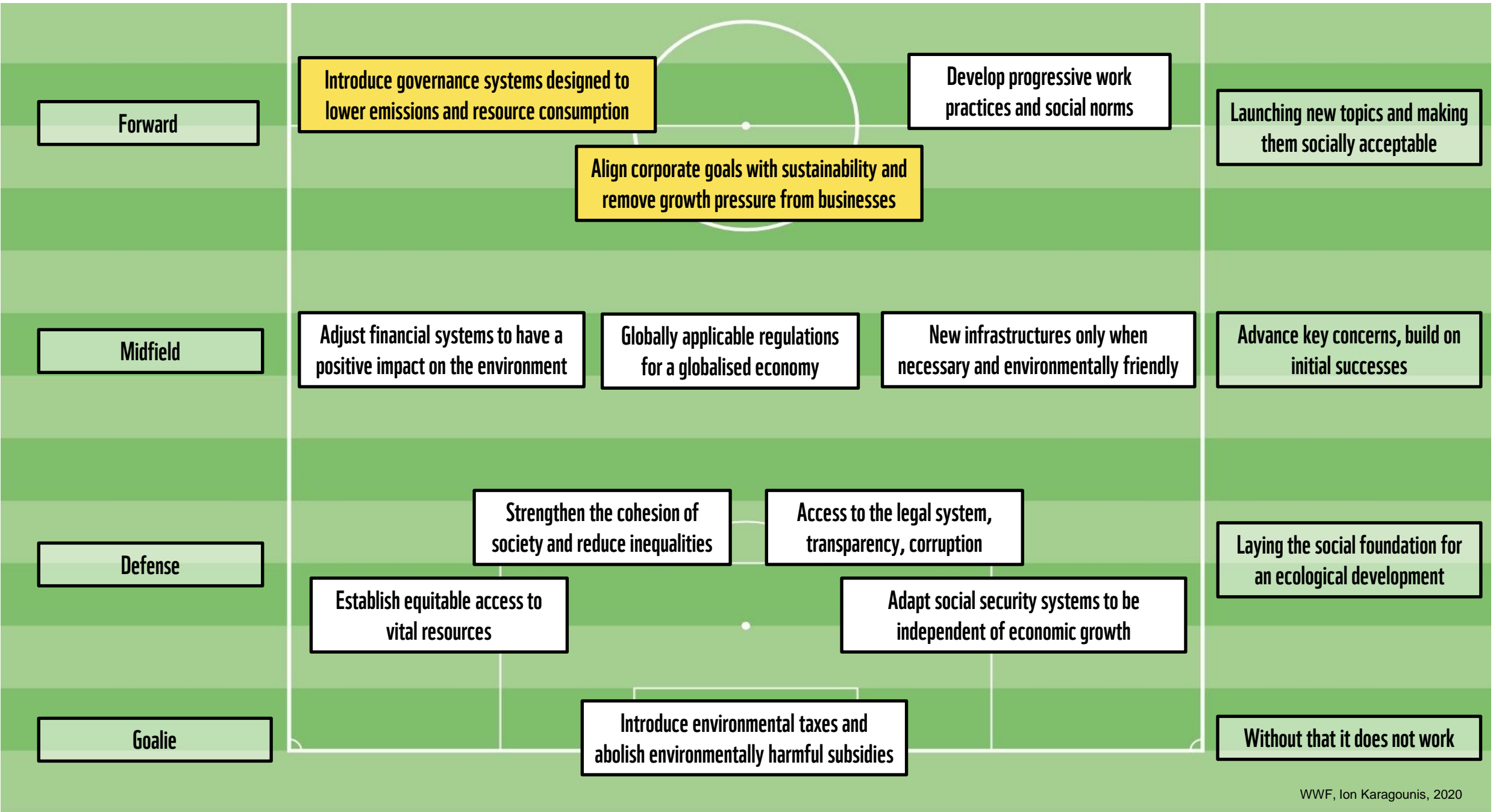
Umweltbelastung = Anzahl Menschen * materieller Wohlstand * eingesetzte Technologie



Eleven spheres of activity towards an economy within the planetary boundaries









Introduce governance systems designed
to lower emissions and resource
consumption in the long term

**System Change
not Climate Change**

Examples of possible approaches



Climate brake/resource budgets

- Absolute limitation of resource consumption
- Cap and ??

Scientific advisory bodies

- Improve relation between science and politics

Environmental impact assessment in legislative procedures

- What are consequences of new laws on the environment

Periodic effectiveness review of laws

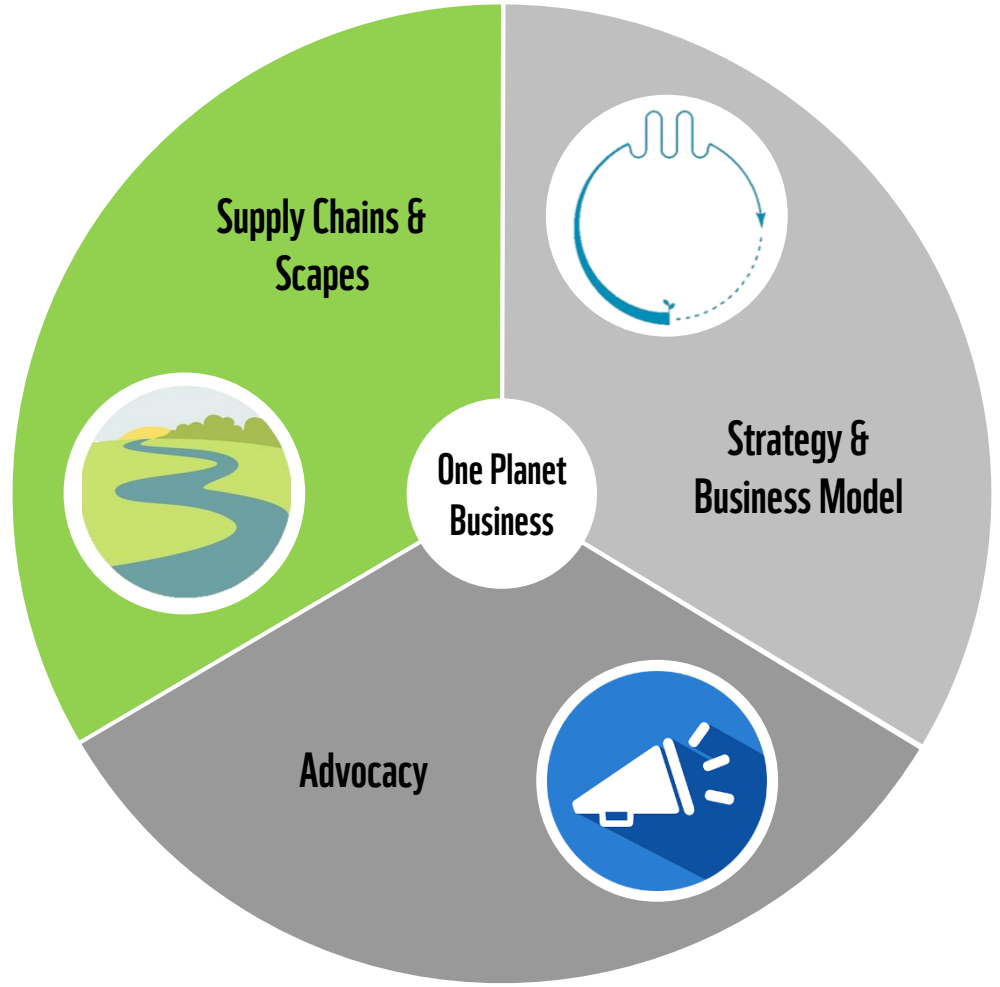
- Do environmental laws fulfill our expectations?



Align corporate goals with sustainability and remove growth pressure from businesses



Approaches: three sectors



Why are LCA important? How does WWF uses LCA?



WWF-projects that make use of LCA

- Footprint-Calculator
- Calculator for heating costs
- Criteria for food labels
- Naturemade/naturemade star-certification
- Classification and recommendations of motor vehicles
- Company-ratings
- Science based targets



www.wwf.ch

[Wege zu einer Wirtschaft innerhalb der planetaren Grenzen \(Download Whitepaper WWF\)](#)

www.karagounis.ch

ion.karagounis@wwf.ch

[Das Schraubenproblem \(Download Text\)](#)

[6 Regeln zur Bewältigung der Klimakrise \(Download Text\)](#)

[Das Klima schützen, ohne die Menschen zu bevormunden \(Download Text\)](#)



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WWF

Approaches 1/3: Production, products, business models

Requirements for products and production

- Design products to be durable, fewer cycles (fashion, technology)
- Design products to be repairable and recyclable

New business models that consume fewer resources

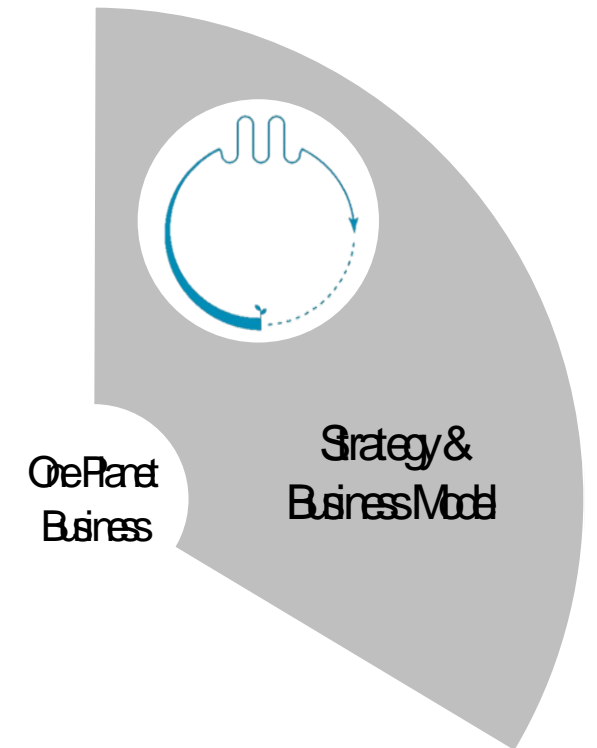
- Offer services instead of products, rent and share instead of buy

Evaluate technical improvements comprehensively (circular economy)

- Is there actually a reduction in resource consumption? Or simply a shift? -> Circular economy as a goal

Set Science-based targets SBT

- Today: What is feasible? Tomorrow: What is necessary from an environmental point of view?



Approaches 2/3: Guiding the company, role in the public

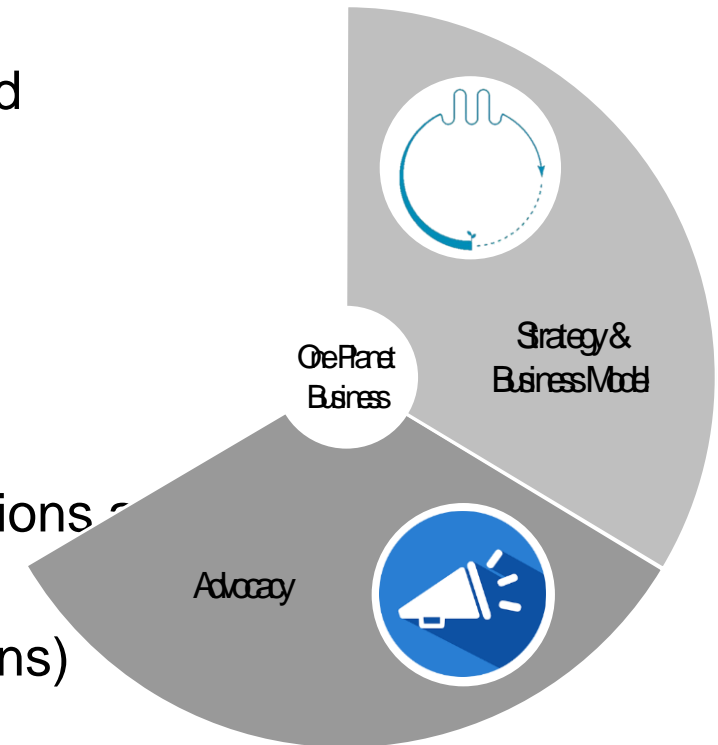


Corporate goals and governance

- Define social and environmental performance as equally important corporate goals (ESG approaches).
- Select social and environmental performance as corporate purpose and appropriate legal form: Social enterprises, benefit cooperations
- Adapt compensation systems, also reward environmental and social performance

The company in the public eye

- Active engagement with customers and the public for sustainable solutions and initiatives
- Cooperation (in the industry, supply chain, with civil society organizations)
- Commitment to environmentally friendly regulation



Approaches 3/3: Supply chains and production countries



Responsibility in subsidiaries, supply chains

- Environmental impact and social problems at suppliers abroad often higher than in Switzerland
- Failure risks higher

Investment in resilience of suppliers and supplier regions

- Direct compliance with environmental and social standards
- From compliance with standards to comprehensive responsibility for what happens at suppliers and their sites.

