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Minna Halme Sustainability in Business 2022

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Systems change for sustainability

Outline of the session

- Green growth and decoupling from systems perspective
- The current and new trinities for society and economy
- Systems thinking for business
- The new economic paradigm?
- (Mining questions for those who want to stay)



The possibilities and limits of business sustainability

- We began the course with a look into the major sustainability challenges the world is currently facing
- Over the course we have examined a variety of sustainability solutions of business enterprises
- to make their current business more sustainable (CR Integration; organizing, communication, mgt systems, supply chain management..)
- to innovate for new sustainable solutions (CR Innovation; Innovations, circular economy, Herman Miller case)
- Now it is time to lift our gaze to the "big picture", the system level again and reflect the effectiveness of the firm/organization level with regard to system sustainability

From firm level to systems perspective

- To understand the big picture of impacts of economic activity on ecological and social sustainability we must look at the system level.
- The solutions we have investigated during this **largely correspond with the so-called Green Growth idea. Green growth idea** assumes that GDP can grow without increasing negative environmental impacts ("decoupling").
- Green growth idea and the corresponding enterprise level solutions are not recent. Some have been there since mid 1990s, some since early 2000s. They have been tried and tested.
- In the big picture, how effective have the green growth and voluntary enterprise level solutions been?



Decoupling: A dream that did not come true



a), Figure 1, p. xiii

Decoupling here: Disconnecting harmful environmental impacts from economic growth (separating the environmental pressures curve from the GDP curve)

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UNEP 2011. Decoupling Natural Resource Use and Environmental Impacts from Economic Growth

Parrique T., Barth J., Briens F., C. Kerschner, Kraus-Polk A., Kuokkanen A., Spangenberg J.H. 2019. Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability. European Environmental Bureau.

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Global material extraction



Aalto Sustainability Hub Level of income: top 10% vs bottom 10%, World, 1981 to 2019

This data is adjusted for inflation and for differences in the cost of living between countries.



Social sustainability: Inequality

https://ourworldindata.org/global-economic-inequality

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Why hasn't decoupling succeeded?

- 1. It is so new there has not been time yet
- 2. Rebound effects = Efficiency improvements are often partly or totally compensated by a reallocation of saved resources and money to more (e.g. using a fuel-efficient car more often; more fuel-efficient cars reinforce a car-based transport system at the expense of greener alternatives, such as public transport and cycling)
- **3.** Problem shifting = Technological solutions to one environmental problem can create new ones and/or exacerbate others (e.g. the production of private electric vehicles puts pressure on lithium, copper, and cobalt resources)
- 4. The underestimated impact of services = Services have a significant footprint that often adds to, rather than substitute, that of goods
- 5. Limited potential of recycling = Recycling processes generally still require a significant amount of energy and virgin raw materials
- 6. Inadequate technological progress for combatting environmental pressures
- 7. Externalisation of environmental impact from high-consumption to low-consumption countries enabled by international trade



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Why hasn't decoupling succeeded?

- It is important to note that decoupling is neither a new nor a never-tried strategy. It has been the main sustainability plan, at least for the OECD and the European Commission, since 2001, and a key feature of many EU member states' environmental and industrial policies since the 1990s.
- At the business front, the related concept of eco-efficiency was introduced through World Business Council for Sustainable Development in 1992 (WBCSD is an international CEO level corporate association headquartered in Switzerland).



Should we just keep on trying green growth strategy (efficiency improvement, new technologies, decoupling efforts)? Sometimes things just take a bit longer, don't they?



Why the lure of green growth by decoupling is a threat?

- Given the historical correlation of GDP and environmental impacts as well as the required **implementation** of technological improvements needed for a sufficiently large and fast reduction in resource use and environmental degradation, relying on decoupling alone to solve environmental problems appears to be an extremely **risky and irresponsible** bet.
- Framing issues of social-ecological justice with the concept of decoupling is like trying to cut a tree with a spoon: it is likely to be a **long attempt and** most likely to **fail** in the end.
- Either we hope that somehow the problems of achieving green growth through decoupling (see the slide why hasn't decoupling succeeded) will solve themselves, continue growth-as-usual and risk social breakdowns, natural resource depletion and ecosystems collapse;
- OR we acknowledge that decoupling is likely to fail with irreversible consequences on the environment
- In this case, we ought to follow a precautionary principle approach, moving away from a risky green growth strategy and **directly reducing the problematic forms of production and consumption today**.





Walking faster does not help, if you are walking to the wrong direction







In your understanding, what is the reason for escalating environmental degradation and growing inequality despite the continued sustainability efforts?

Flinga FG8RFMK





Which key ideals underline the economy that has taken societies to exploit nature and divide the outcomes inequally?

Flinga F6NVFE6

The (un)holy trinity of contemporary society

Too narrow and partially Growth of the GO? misleading focus misguides governmental decision-making

Externalities:

Costs related to climate change, pollution, biodiversity loss, and dwindling natural resources

Growth of Short-term profits The exploitation of those that have weak negotiation power in the (global) marketplace

Ever-increasing efficiency

Grey text = Unintended consequences

Vulnerable the global supply chains, vulnerable socialecological systems



Efficiency or resilience?

Our economic system is aimed towards ever-increasing efficiency. But this creates problems with resilience.

Example: Optimizing for ultimate efficiency decreases supply chain slack, compromising resilience (evidence during Covid and the current Russian warfare in Ukraine) Harvard Business Review

Competitive Strategy

The High Price of Efficiency

Eliminating waste is the holy grail of management science—but veremphasizing it leads to a host of problems. Companies should pay just as much attention to resilience. **by Roger L. Martin**

From the Magazine (January–February 2019)





Martin, R., Jacob Greenspon, and Darren Karn. "Rethinking efficiency." *Harvard Business Review* 97 (2019): 1-41.

What should be the goal for the economy?

National level

GDP growth?

Green growth (= decouple GDP growth from environmental impact)?

Degrowth (definition below)?

Something else – being agnostic to growth?

Company/organization level

Short-term profits?

Long-term profitability?

Both short-term profits and long-term protability?

Discuss company level: Choose Flinga FHA5D52

Discuss national level: Choose Flinga F8TWTK5

Degrowth refers to downscaling of production and consumption that increases human well-being and enhance socio-ecological conditions at the local and global level, in the short and long term



The dilemma

Economic growth, even green growth, is unsustainable – at least in its current form. It entails burgeoning resource consumption, rising environmental harms and compounding profound disparities in social wellbeing. Unplanned de-growth is unstable – at least under present conditions. Declining consumer demand leads to rising unemployment, falling competitiveness and a spiral of recession.

Unplanned vs. Managed degrowth

Scholars distinguish between

- **Depression, i.e. unplanned degrowth** within a growth regime, and sustainable degrowth, a voluntary, smooth and equitable transition to a regime of lower production and consumption.
- **Sustainable degrowth** would be a democratic collective decision, a project with the ambition of getting closer to ecological sustainability and socio-environmental justice worldwide"



What does degrowth entail at macroeconomic level?

Reduced working hours

Employment for everyone

Universal basic income

Ecological investments

- Sustainable innovations
- Resource efficiency

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• Regenerative action: Ecosystem enhancement, reforestation, wetland renewal...

Rethinking ownership- what if we didn't need to own so much? How about public ownership? Resource and emissions cap

Fiscal reforms for sustainability

Support for developing countries & just prices for their labour and env. resources

Tobin tax (taxation for short-term financial transactions)

Tackle inequality

Measure wellbeing and the state of the natural environment

Strengthen social capital

Tackle culture of consumerism



Shaping the trinity

Introduce indicators aside of GDP that include ecology & wellbeing to governmental decision-making Too narrow and partially misleading focus misguides governmental decision-making Externalities: Costs related to climate change, pollution, biodiversity loss, and dwindling natural resources

Ground and the sploit at the s

Introduce evaluation of long-term profitability into corporate management and investment decisions and balance with the short-term ones

Ever-increasing efficiency

Vulnerable the global supply chains, vulnerable socialecological systems

Create resilience



From false efficiency to resilience: Economy

Currently (false) efficiency comes with environmental and social **externalities**. Continuously larger firms lead to concentration of power and reduced alternatives, and gaming the market, **reducing the system resilience** (Martin 2019).

Introducing resilience:

- Institutions that make firms focus on long-term productivity.
- Curbing the excess concentration of ever larger firms. This would leave room for smaller, often innovative, competitor firms and, through firm diversity and genuine competition, build resilience at the system level (Martin 2019).
- Reducing the domination of large corporations would pave the way for a resilient economy where other stakeholders can bargain for institutions, which divide economic benefits more justly (Piketty 2013).
- Re-deploying smart trade barriers
- Reducing the widening wealth gaps that breed social unrest and populism (Edelman Trust Barometer 2020).

Martin, R. 2019. The high price of efficiency. Harvard Business Review.

Halme et al. 2021. From efficiency to resilience: Systemic change towards sustainability after COVID-19 pandemic. In Boehm & Sullivan (eds.) Negotiating Climate Change in Times of Crisis: Social Science Perspectives. *Forthcoming*.

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From false efficiency to resilience: Food

Currently: The efficiency-driven agriculture system based on large **monoculture** farming, commercial **fertilizers**, **chemical** pest control, **fossil fuels** and **global logistics** comes with underlying **problems of loss of fertile top soils and biodiversity**, large-scale use of antibiotics in meat production and the subsequent threat of **antibiotic resistance** in humans, and the **lack of affordable healthy food**.

As a result, about **750 million people suffer** from severe food insecurity, and about two billion people lack regular access to nutritious and sufficient food.

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Introducing resilience:

- Localising considerable parts of food production
- Switching to organic farming and agroforestry to provide alternatives to monocultures
- Carbon sequestration through the agroecological practices adapted to local conditions.
- Ensuring land property rights and other support for the 600-750 million smallholder farmers

FAO, IFAD, UNICEF, WFP and WHO 2020, Thornton et al. 2018

Halme et al. 2021. From efficiency to resilience: Systemic change towards sustainability after COVID-19 pandemic. In Boehm & Sullivan (eds.) Negotiating Climate Change in Times of Crisis: Social Science Perspectives. *Forthcoming*.

From false efficiency to resilience: Energy

Currently: Large-scale fossil fuel-dependent energy systems. Despite relative efficiency gains (decreased emissions per unit), absolute amount of emissions continues to increase.

Introducing resilience:

- Distributed renewable energy systems will be key to enabling more resilient energy systems.
- Off-grid technologies and localizing energy production and consumption (O'Brien & Hope 2010).
- Reducing consumption-based carbon footprint with new sufficiency measures to reach the climate targets (Linnanen et al. 2020)

Suggestion for a new trinity

New goals: Set goals which have intrinsic value

New indicators: Don't measure the hammer unless you want more or larger hammers. Measure the quality of the house.

Double path: Evolutionary and revolutionary



Resilience





What does Mariana Mazzucato suggest for the governments and the public sector?

flinga.fi FTQP4U8

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Back to business – could systems thinking help?



Definitions

- **System:** An interconnected set of elements that is coherently **organized in a way that achieves something.**
- Systems consist of elements (system structure), interconnections (system dynamics), and a function or purpose.
- A system is more than the sum of its parts. It may exhibit adaptive, **dynamic**, goal-seeking, self-preserving, and sometimes **evolutionary** behavior (Meadows, 2008; Sterman, 2000).
- **Systems thinking:** A discipline for seeing wholes.



Why systems thinking?

Systems thinking is a framework for seeing interrelationships rather than things, for **seeing patterns of change** rather than 'snapshots' (Senge, 2006).

It is useful for:

- Avoiding unintended and unintuitive impacts
- Identifying root causes and leverage points
- Identifying a system's structure and typical behavior for systems

Systems thinking





Accessible system maps to aid decisionmaking?

Figure. A system map showing how the paradigmatic change and co-evolution at different levels could lead to a sustainable fashion and textile system. (Sahimaa, Miller & Halme, 2022; finix.aalto.fi)

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RFID tags Customer 2D optical demand for codes creates potential sustainable technologies Digital 0 textiles tracking of **START HERE** Systemic products and view on supply chains supports creates socio is a pre-requisite for ecological challenges 6 More 0 The cost of extensive partly enabled by Sufficieny pollution environmenand enables tal impact based radically increase data circular resource Θ economy overuse Legal, 0 Sustainable replaces paradigm The ethical jobs supply chain requires paradigm of New policies management 'growth at to ensure app for circular all costs' economy creates markets for Highrequires quality 0 assembly includes Sustainabl Cowork husiness evolution requires models with between including Materials and high value Design for different products with retention such as longevity actors is a part of multiple lifetimes SUSTAINABLE contributes to considers includes promote Use of FASHION Recycled durable means manufactured AND TEXTILE T materials cellulose 0 such as fibres SYSTEM Emotional Design for aspect of support Sufficiency-New circularity consumers contributes to oriented garment operators to contributes to society Clothing collect, sort rental. and recycle second fibres hand, repair Durable. contributes to including long-lasting contributes to clothing Use of optical requires 0 measurement increases technologies to identify enables Less clothing different textile enable consumption fibres for sorting enables Demand requires for sorted Share of textile should lead to recycled waste increases materials in production Long material and product lifetimes contributes to = product level = industry level C) = socio-ecological system level = key element for a systemic change

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contributes to

What philosophy could we have for businesses and consumption to adjust to a post-growth era?

Sufficiency-based business models deliver sustainability by reducing absolute material throughput and energy consumption associated with provision of goods and ser-vices by moderating end-user consumption: encouraging consumers to make do with less. As such, sufficiency is embodied in the three environmentally most preferable options of the waste hierarchy: avoid, reduce and reuse" (Bocken and Short, 2016). (Note: Applies for high-income consumers especially.)

Re-legitimizing "non-growing" and ordinary small business and entrepreneuring





An economic paradigm for the future?

Kate Raworth, Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist.

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Any Questions Regarding the Course Content ? Questions about resources, and materials provided? Questions about a particular session or an issue within? Questions about assignments ?