Sustainability, Artificial Intelligence and Professional Responsibility in Health and Social Fields

Between Planetary Boundaries and Digital Solutions

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What is at stake?

"Our house is on fire."

"AI is potentially more dangerous than nuclear weapons."

Greta Thunberg, 2019

Elon Musk, 2018

Who am I?

Dr. Lutz Siemer
- Psychologist and lecturer in Social Work and Clinical Psychology

Current roles
- Lecturer in Social Work; Saxion University of Applied Sciences (The Netherlands)
- Lecturer in Clinical Psychology; MEU / Diploma University of Applied Sciences (Germany)
- Research associate; HeurekaNet – Free Institute for Education, Research and Innovation (Germany)

Focus areas
- Digitalisation and Artificial Intelligence in social and health services
- Socio-ecological transformation and sustainability
- Professional responsibility in digitally transformed practice

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What this session aims to achieve

Goals
After this session, you should be able to:

- recognise how digitalisation and sustainability interact in professional practice

- identify potential benefits and risks of AI-supported services

- reflect on social, ecological and economic consequences of digital technologies

- develop a critical professional stance towards digital transformation

Structure
1. Two transformations shaping health and social systems (socio-ecological transformation and digitalisation)

2. Opportunities and risks of AI in professional practice

3. Environmental and social implications of digital infrastructures

4. A pragmatic reflection framework (Activities – Tools – Discourses × Sustainability)

5. Case example and group discussion

What do you think?

"AI will improve health and social services."

Write in the chat: 1 = Agree;   2 = Disagree

"AI will undermine sustainability and social inclusion."

Write in the chat: 1 = Agree;   2 = Disagree

Two transformations shaping health and social systems

Socio-ecological transformation
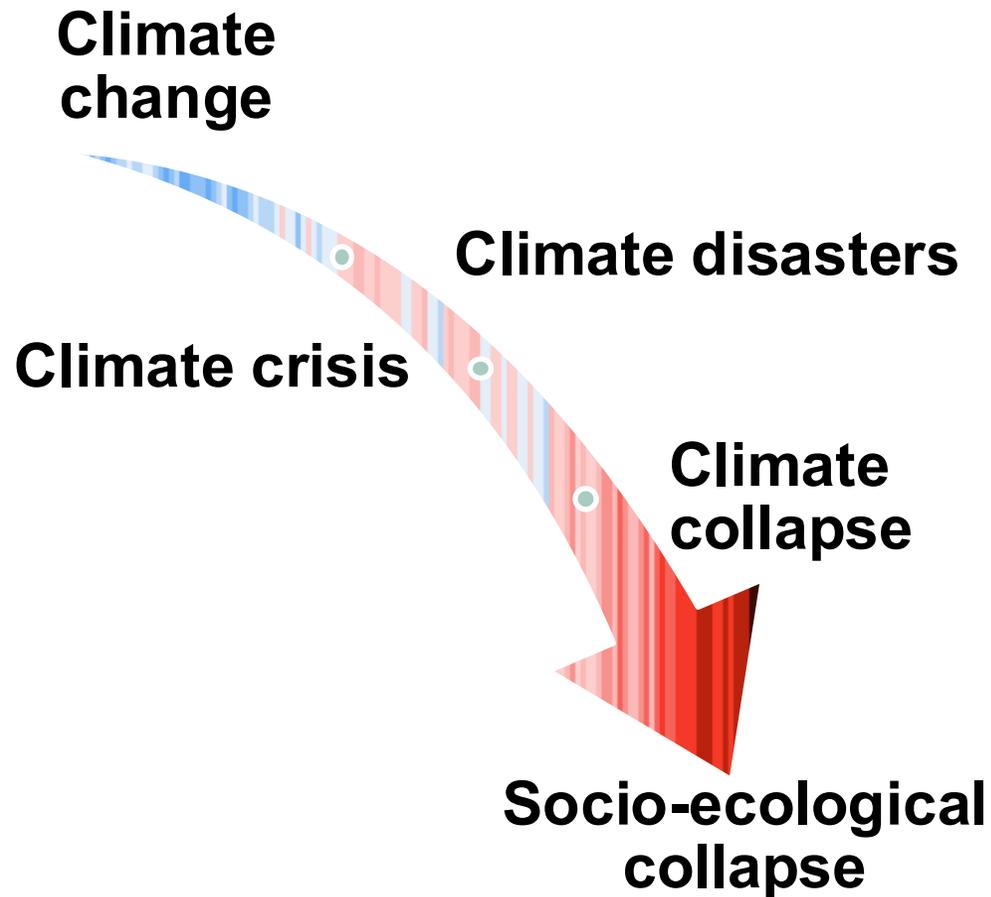
Digitalisation/AI

"WE ARE ON A HIGHWAY TO CLIMATE HELL WITH OUR FOOT ON THE ACCELERATOR."

António Guterres, Secretary-General of the United Nations, COP27

The Problem of "Socio-Ecological Collapse"

Climate change

Climate disasters

Climate crisis

Climate collapse

Socio-ecological collapse

Climate change:
Measurable changes in the global climate over longer periods of time.

Climate disasters:
Individual events with severe impacts, for example heatwaves or floods.

Climate crisis:
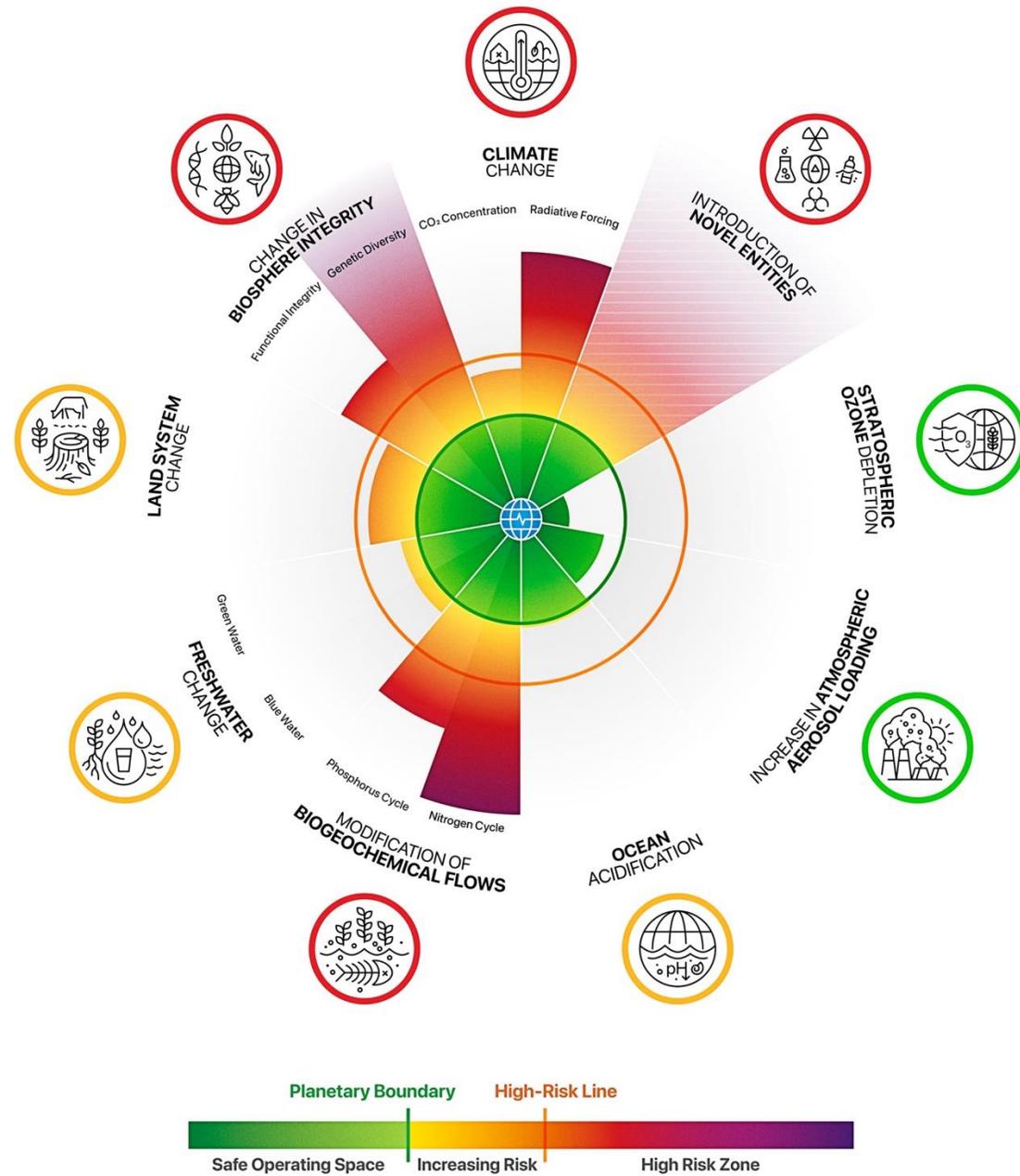Recognition of climate change as a systemic global threat.

Climate collapse:
Crossing tipping points in the Earth system – no longer reversible.

Socio-ecological collapse:
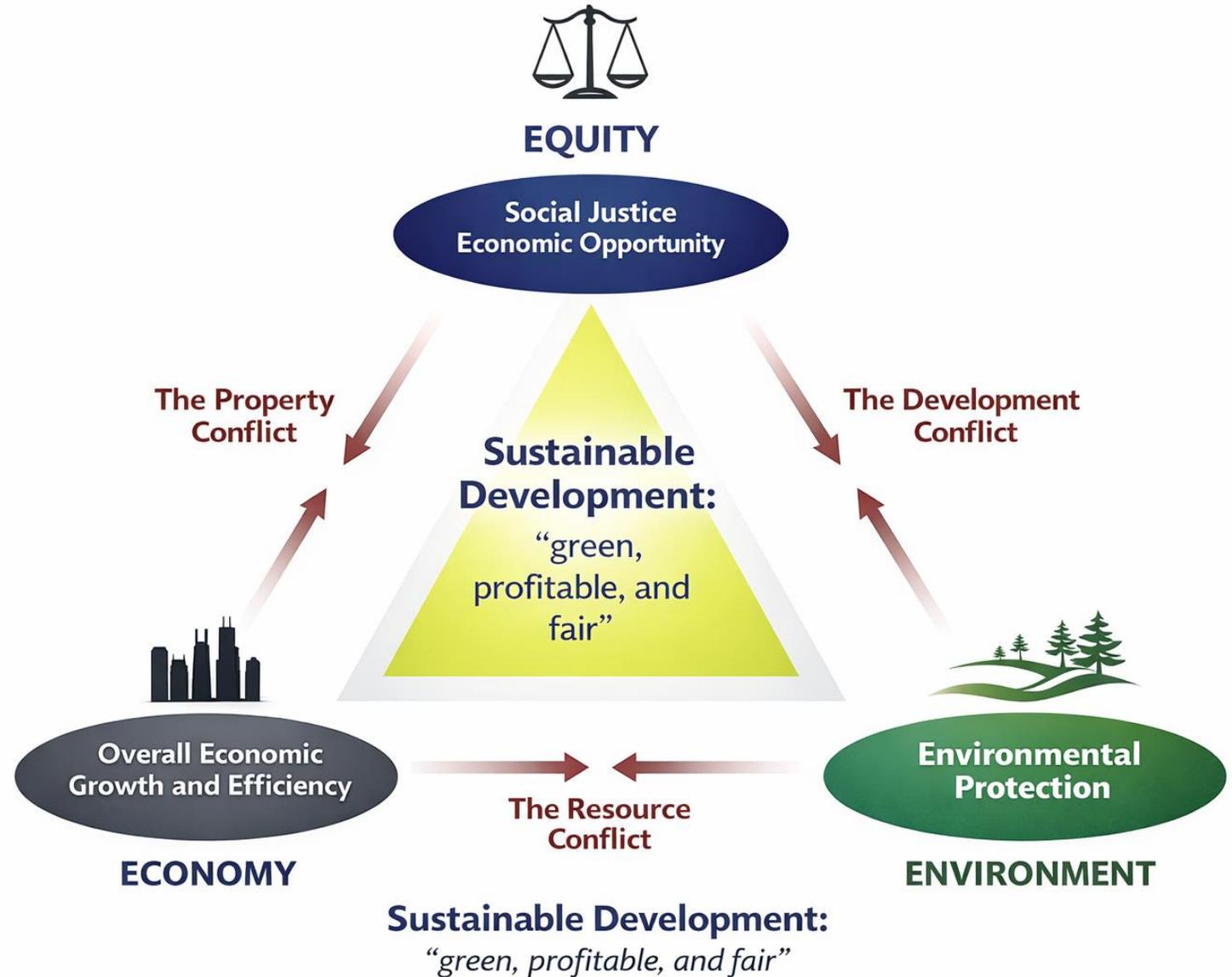Breakdown of society and the environment as a consequence of uncontrolled developments.

Planetary boundaries

Planetary Boundaries Science (PBScience),
2025: Planetary Health Check 2025. Potsdam
Institute for Climate Impact Research (PIK),
Potsdam, Germany.

What do we mean by sustainability?

EQUITY

Social Justice
Economic Opportunity

The Property Conflict

The Development Conflict

Sustainable Development:
"green, profitable, and fair"

Overall Economic Growth and Efficiency

Environmental Protection

The Resource Conflict

ECONOMY

ENVIRONMENT

Sustainable Development:
"green, profitable, and fair"

SDGs

17 global goals adopted by the United Nations in 2015 as part of the Agenda 2030, aiming to address major global challenges such as poverty, inequality, climate change, and peace by the year 2030.

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

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Digitalisation and AI in health and social fields

Examples:

- digital triage systems

- decision support tools

- chat-based counselling

- predictive analytics

- …

AI is increasingly used to support professional work.

Steiner, O., & Tschopp, D. (2022). Künstliche Intelligenz in der Sozialen Arbeit. *Sozial Extra*, *46*(6), 466-471.

**Source: Navel Robotics
(https://navelrobotics.com)**

Potential benefits of AI

AI systems can help to:

- analyse large datasets
- improve diagnostics and service allocation
- reduce administrative workload
- support decision-making
- …

Key idea: AI promises efficiency and improved services.

Steiner, O., & Tschopp, D. (2022). Künstliche Intelligenz in der Sozialen Arbeit. *Sozial Extra*, *46*(6), 466-471.

Digital systems do not only make processes more efficient — they also accelerate them and tend to standardise professional decisions.

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Risks and ethical challenges

Important concerns include:

- algorithmic bias
- lack of transparency
- data protection issues
- loss of professional judgement
- accountability problems

Key idea: AI changes not only tools but also professional responsibility.

Reamer, F. G. (2023). Artificial intelligence in social work: Emerging ethical issues. *International Journal of Social Work Values and Ethics*, 20(2), 52-71.

Digitalisation may not only exclude users — it may also overwhelm professionals.

Environmental impact of digital infrastructures

Digital technologies require:

- energy for data centres

- hardware production

- global infrastructures

Example: Global electricity consumption of data centres is growing rapidly.

Key idea: Digital technologies also have ecological footprints.

Freitag, C., Berners-Lee, M., Widdicks, K., Knowles, B., Blair, G. S., & Friday, A. (2021). The real climate and transformative impact of ICT: A critique of estimates, trends, and regulations. *Patterns*, *2*(9).

There is no "cloud" — only data centres somewhere else.

AI for/against SDGs

AI for SDGs

AI can act as a sustainability enabler by improving environmental governance and helping societies stay within planetary ecological limits.

- 6 – Clean Water and Sanitation
- 12 – Responsible Consumption and Production
- 13 – Climate Action
- 15 – Life on Land

AI against SDGs

AI can become a driver of ecological overshoot if its energy, material, and infrastructure demands are not aligned with planetary boundaries.

- 7 – Affordable and Clean Energy
- 9 – Industry, Innovation and Infrastructure
- 12 – Responsible Consumption and Production
- 13 – Climate Action

Take a deep breath… it's complicated, but to put it simply: sustainability and digitalization/AI shape each other

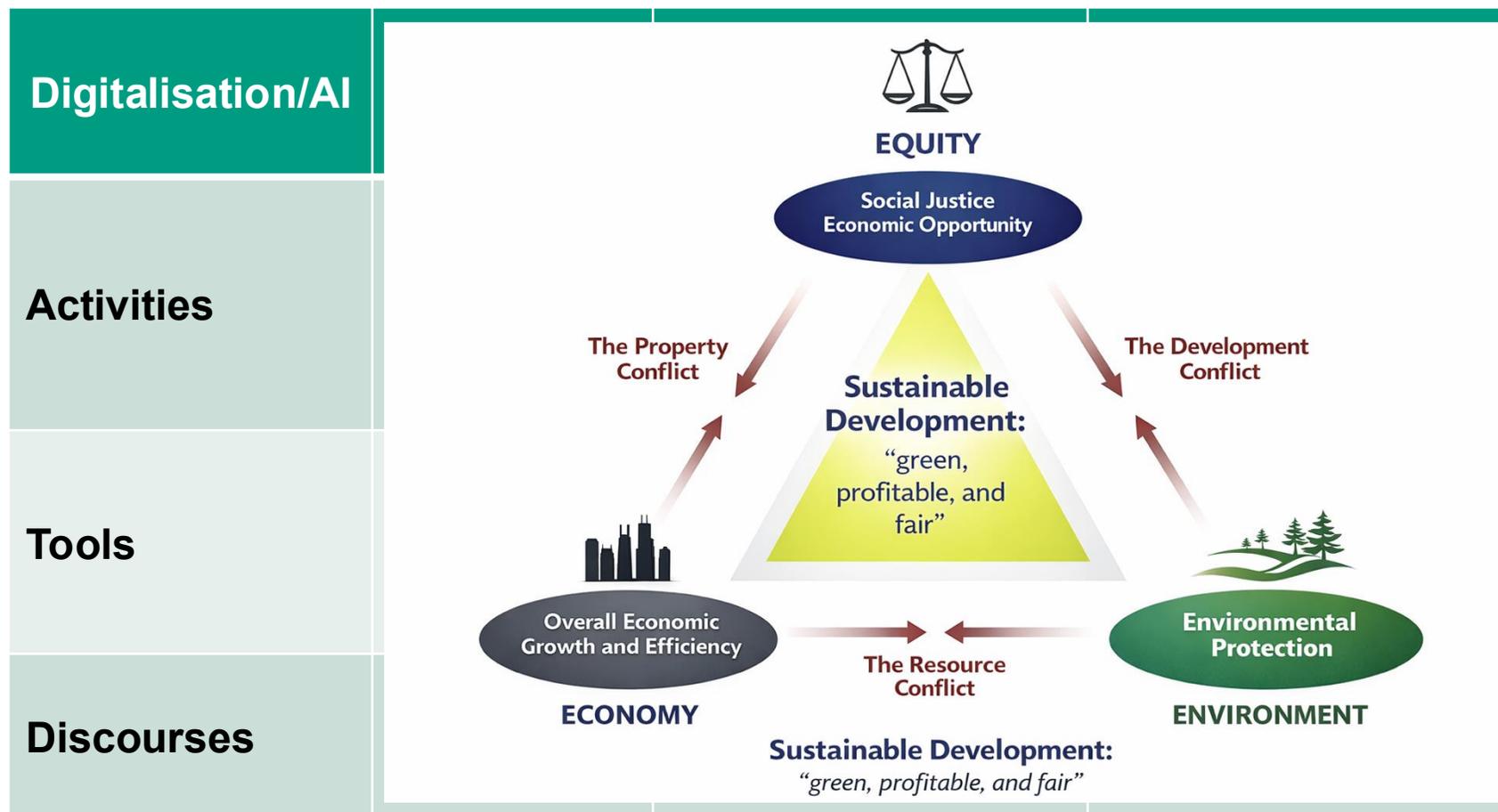**Sustainability**
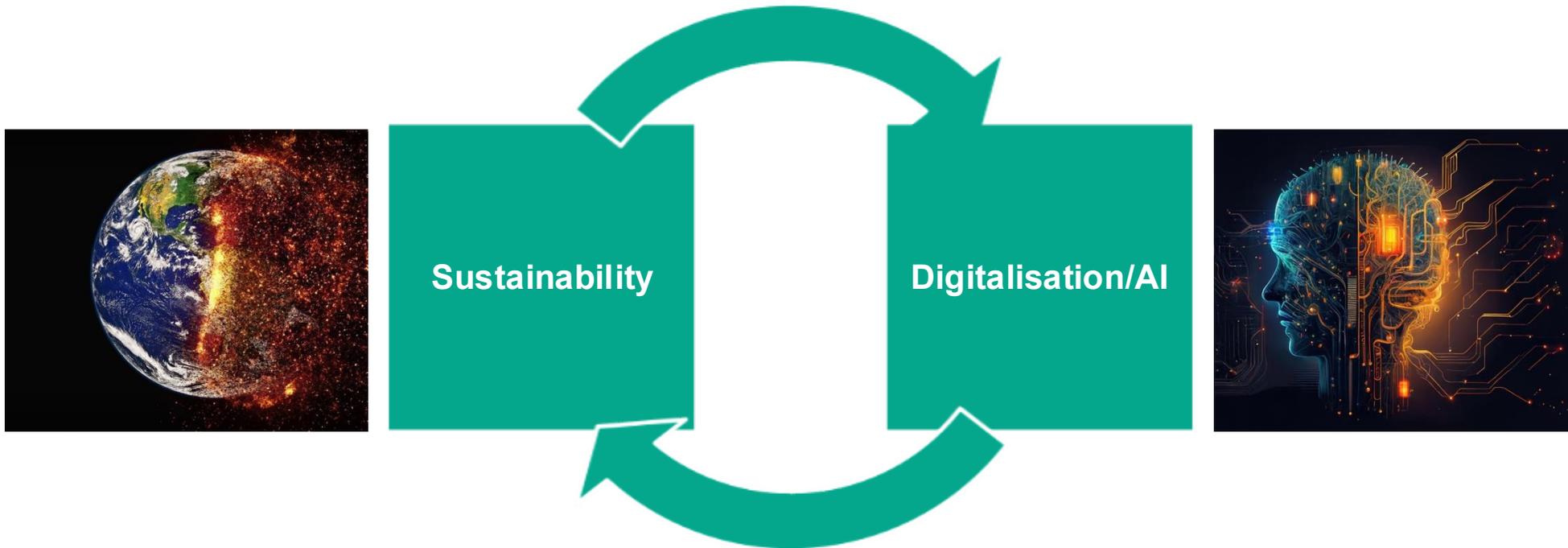
Digitalisation/AI

How digitalisation/AI appears in professional practice

Digitalisation and AI are reshaping professional practices in three key areas:

1. **Activities**: professional actions and interactions (e.g. counselling, decision-making, documentation)

2. **Tools**: digital infrastructures and technologies (e.g. platforms, algorithms, databases)

3. **Discourses**: professional narratives, values and policy frames (e.g. efficiency, innovation, participation)

Kiviniemi, T., & Størdal, T. (2017). *Digital youth work – Policy and practice*. Brussels: European Commission / EU Youth Partnership.
Shove, E., Watson, M., & Pantzar, M. (2012). The dynamics of social practice: Everyday life and how it changes

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„Activities, tools, discourses" <-> „green, profitable, fair": 3X3 …?

Digitalisation/AI	
Activities	
Tools	
Discourses	

A pragmatic framework for reflection

This is not a checklist.
It is a thinking tool.

Digitalisation/AI	Social sustainability	Ecological sustainability	Economic sustainability
Activities	Who gains or loses access to services? Does the activity support inclusion, participation, human interaction, or equity?	Does this practice increase or reduce environmental impact (travel, infrastructure, resources)?	Does the activity improve efficiency or create new costs?
Tools	Are the technologies fair and transparent? Could they introduce bias or exclusion?	What is the ecological footprint of the technology (energy use, hardware, data storage)?	Does the tool reduce costs or create dependencies?
Discourses	What values justify the use of the technology (participation, fairness, rights)?	Are environmental consequences considered in the debate?	Which narratives dominate (efficiency, innovation, cost reduction)?

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Case example and breakout discussion: AI-supported triage in community health services

Case example

A regional community health centre introduces an AI-supported system to prioritise incoming requests from patients and clients.

The system analyses:
- short digital intake forms
- previous service data
- risk indicators

It then assigns priority levels and suggests which professional should handle the case.

The organisation expects:
- faster processing
- reduced waiting times
- better allocation of limited staff resources.

However, some staff members raise concerns about:
- automated decision-making
- loss of professional judgement
- dependence on digital infrastructures.

Breakout discussion

You will work in small groups for 10 minutes.

Task
- Read the case example again.
- Use the reflection matrix to discuss two or three fields that you find most interesting.
- Identify possible opportunities or risks of the digital practice; e.g. Which professional decisions should not be delegated to AI?
- Prepare one short insight to share with the group.

When we return each group briefly reports:
- One issue you found particularly important
- One aspect that is often overlooked

A pragmatic framework for reflection

Here is a more detailed version you can use in practice

Digitalisation/AI	Social sustainability	Ecological sustainability	Economic sustainability
Activities	Access to services Equity in service provision Inclusion/participation of vulnerable groups Quality of human interaction and professional relationships	Environmental impact of service delivery models Digital vs. physical service provision Reduction of travel and material use Resource intensity of service processes	Efficiency of workflows Allocation of professional resources Service scalability Administrative workload
Tools	Algorithmic bias and fairness Transparency of AI systems Trust and user acceptance Accessibility of digital platforms	Energy consumption of data centres Digital infrastructure footprint Device production and lifecycle impacts Data storage and processing demands	Cost reduction through automation Productivity gains Investment and maintenance costs Dependence on technology providers
Discourses	Rights and participation Fairness and accountability Professional responsibility Digital inclusion narratives	Ecological responsibility Digital sustainability debates Awareness of environmental impacts Responsible innovation narratives	Efficiency narratives Innovation and growth agendas Cost-effectiveness discourse Digital transformation strategies

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Discussion questions

- Where does AI support professional work?

- Where might sustainability conflicts arise?

- Which decisions should remain human?

- Which aspect of digitalisation and sustainability was easiest to discuss?

- And which one was hardest?

What we (perhaps) have learned

Digitalisation and AI affect professional work in three key areas: activities, tools and discourse.

Digitalisation/AI is often discussed in terms of efficiency, innovation, and service quality.

Sustainability also requires us to consider the social consequences, ecological impacts and economic implications.

Professional competence today means having the ability to critically assess digital technologies in relation to sustainability.

Take-home question: **When we introduce digital technologies in health and social services, are we solving problems or creating new ones?**

The challenge is not only to develop new digital tools, but to shape digital practices that remain compatible with social justice and planetary boundaries.

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Thank you

Please leave a comment in the chat

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How digitalisation and sustainability shape each other (work in progress)