



Digital Transformation for Sustainable Development

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2023 – 03 – 07

Spaceship earth



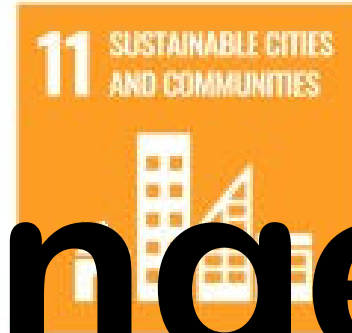
The Earth from Apollo 8 as it rounded the dark side of the moon. Photograph: Nasa/AFP/Getty Images

Earth is our paradise

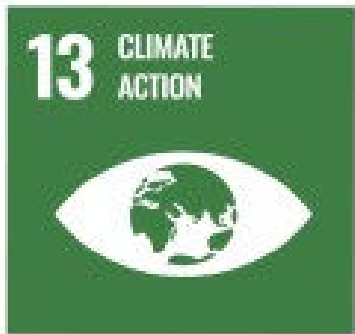




SUSTAINABLE DEVELOPMENT GOALS



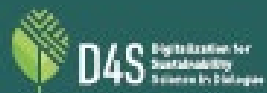
The challenges



DIGITAL RESET



« Redirecting Technologies
for the Deep Sustainability
Transformation



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Suggested citation: Digitalization for Sustainability (D4S), 2022: Digital Reset. Redirecting Technologies for the Deep Sustainability Transformation. Berlin: TU Berlin. <http://dx.doi.org/10.14279/depositonce-16187>

“First and foremost, it must be clear to us **where we want to go**, what we want to achieve (which **goals** we have), and how we will get there (which **strategies** we choose and the decisions we make). This may seem simple, but it is not.”

Digital Transformation Organisations, Processes, Decisions, page 2

1. “A clear **vision** for digital technologies is indispensable to address social and environmental challenges successfully.”

Digitalization for Sustainability (D4S), 2022: Digital Reset. Redirecting Technologies for the Deep Sustainability Transformation. Berlin: TU Berlin. Page 95

2. “The purpose of digitalisation needs to be **subordinated** to the goals of a deep and sustainable transformation of society”

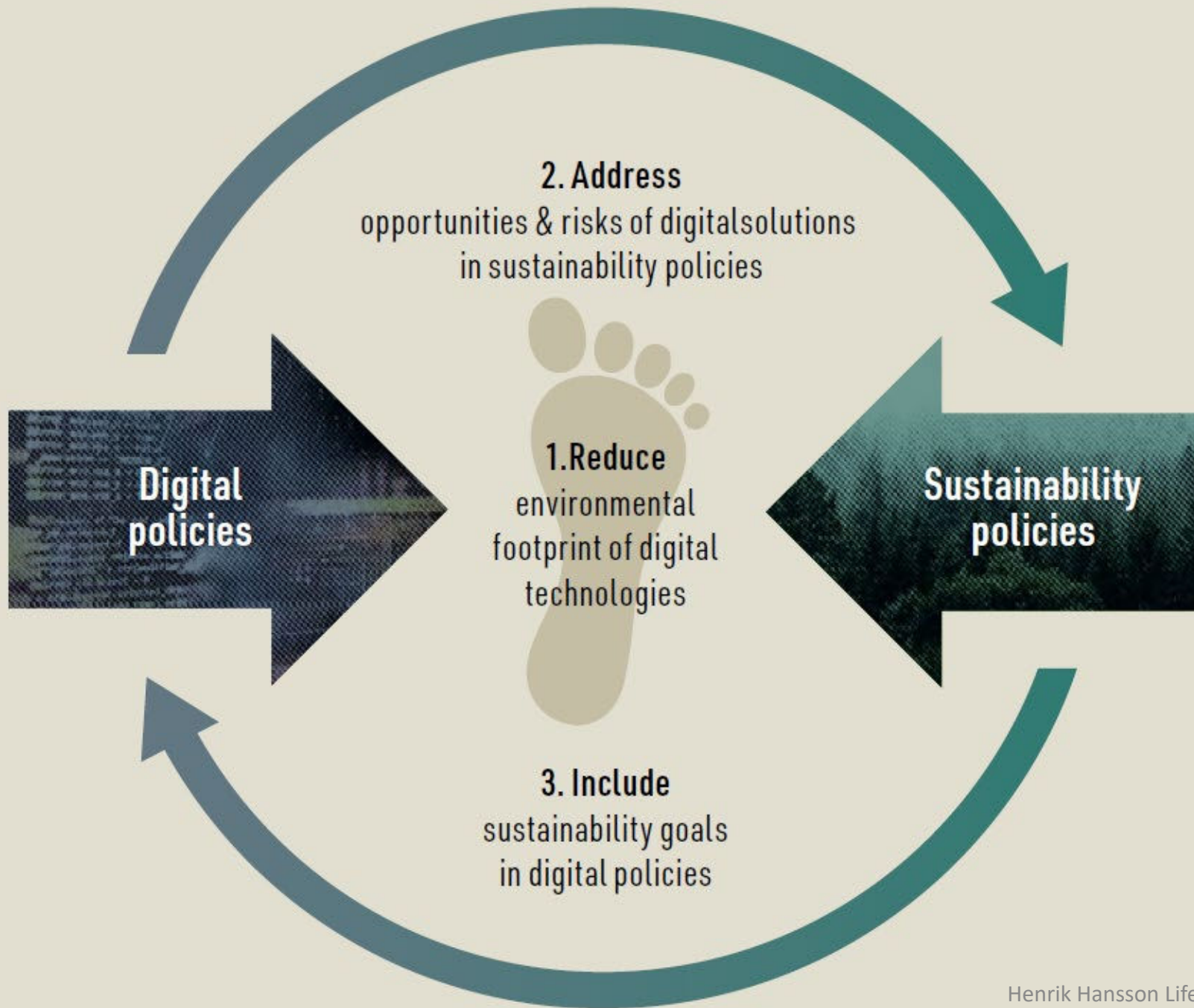
Digitalization for Sustainability (D4S), 2022: Digital Reset. Redirecting Technologies for the Deep Sustainability Transformation. Berlin: TU Berlin. Page 96

“Runaway climate change, biodiversity loss, increasing social polarisation and an erosion of democracy require swift and decisive action.”

“Digitalisation, in its current and mainstream form, does not deliver solutions and that incremental changes are insufficient to remedy this situation. What is needed, therefore, is a Digital Reset: a fundamental redirection of the purpose of digital technologies towards a deep sustainability transformation”

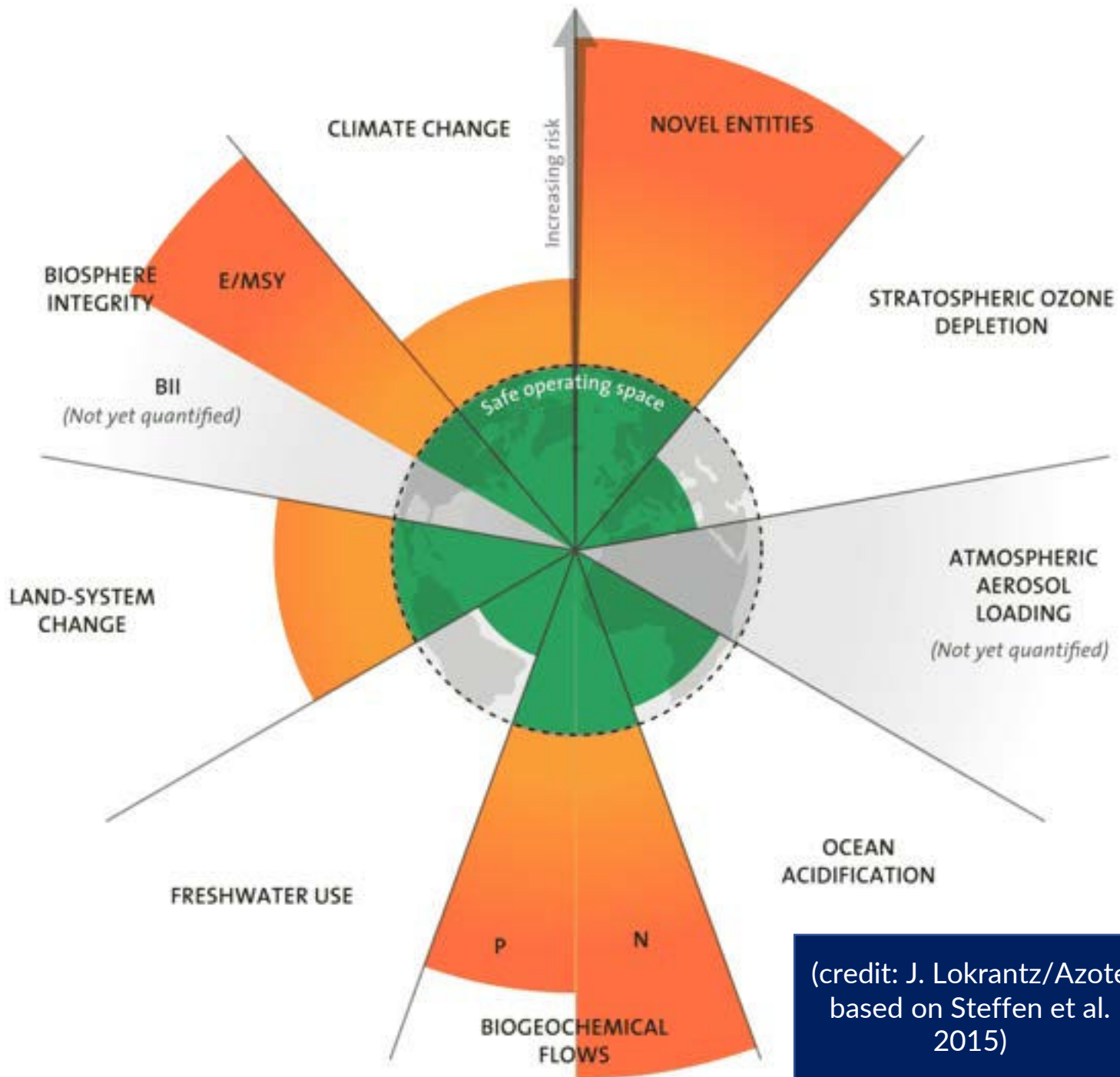
“Governments around the world, as well as the European Union and United Nations organisations, are currently putting forward new initiatives to govern digital technologies and media infrastructures. However, most of these policy initiatives disregard the broader implications of digitalisation for environmental sustainability and social justice.”

Digitalization for Sustainability (D4S), 2022: Digital Reset. Redirecting Technologies for the Deep Sustainability Transformation. Berlin: TU Berlin.



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Three policy strategies for a sustainable digitalisation



(credit: J. Lokrantz/Azote based on Steffen et al. 2015)

6 of 9 planetary boundaries are crossed over

A planetary boundary is an indicator - recognized and adopted at the European and international levels - which shows us the thresholds that must not be exceeded, as it risks causing abrupt environmental changes.

The data – Global changes



Understanding our planet to benefit humankind

Carbon Dioxide

↑ **420** parts per million (current)

+

Global Temperature

↑ **1.1** °C since preindustrial

+

Arctic Sea Ice Minimum Extent

↓ **12.6** percent per decade since 1979

+

Ice Sheets

↓ **427** billion metric tons per year

+

Sea Level

↑ **4** inches since January 1993

+

Ocean Warming

↑ **337** zettajoules since 1955

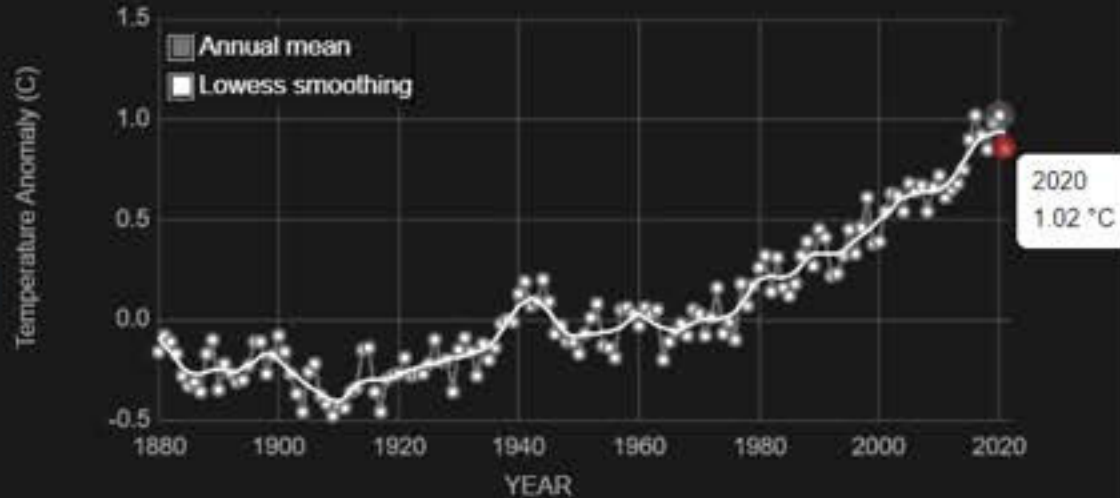
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<https://climate.nasa.gov/>

Global Temperature

GLOBAL LAND-OCEAN TEMPERATURE INDEX

Data source: NASA's Goddard Institute for Space Studies (GISS). Credit: NASA/GISS



Click+drag to zoom

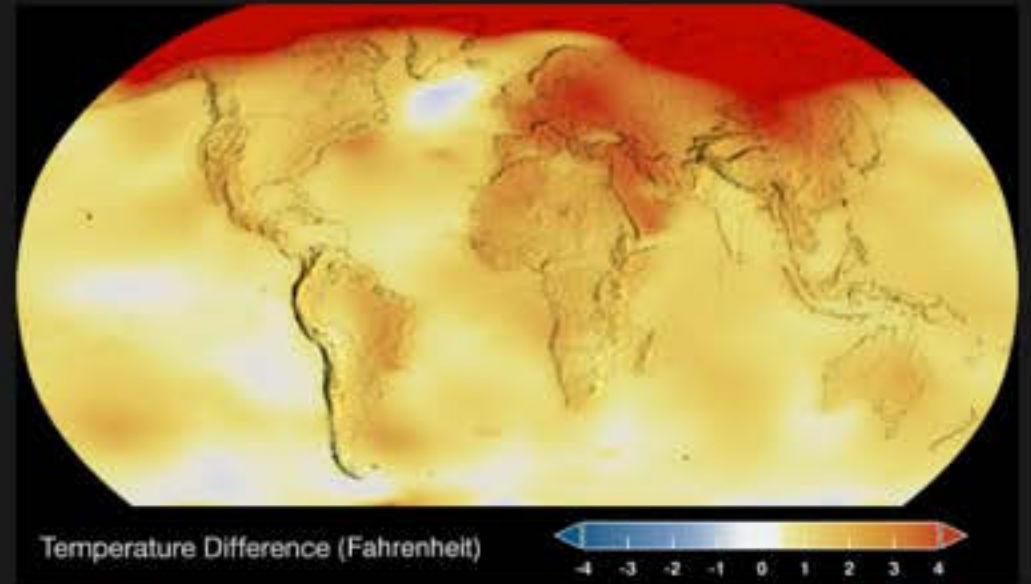
Get Data: [HTTP](#) | Snapshot: [PNG](#)

This graph shows the change in global surface temperature compared to the long-term average from 1951 to 1980. The year 2020 tied with 2016 for the hottest year on record since recordkeeping began in 1880 (source: [NASA/GISS](#)). NASA's analyses generally matches independent analyses prepared by the [Climatic Research Unit](#) and the [National Oceanic and Atmospheric Administration \(NOAA\)](#).

TIME SERIES: 1884 TO 2021

Data source: NASA/GISS
Credit: [NASA's Scientific Visualization Studio](#)

2021



▶ 1884 ————— ○ 2021

The animation above shows the change in global surface temperatures. Dark blue shows areas cooler than average. Dark red shows areas warmer than average. To smooth out variations due to short-term temperature changes (which are considered "noise" in the data), this map shows a 5-year running average.

<https://climate.nasa.gov/>