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U-turns

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Instead of going on talking about abstract goals, politics, economics and society must judge themselves by what concrete measures they are taking *now* to curb climate change and biodiversity loss and to protect us humans.

The impacts of crossing climate and ecological tipping points are likely to last centuries to millennia.

» Five extraordinary turnarounds are needed to substantially reduce risks:

Ending poverty
Key policy goal: Annual 5 % GDP growth in low-income countries until they achieve US$ 15,000 per capita/year income, combined with new wellbeing indicators.

Addressing gross inequality
Key policy goal: Richest 10 % take less than 40 % of national income.

Empowering women
Key policy goal: Gender equity contributes to stabilising global population below nine billion by 2050.

Making our food system healthy for people and ecosystems
Key policy goal: Avoiding expansion of agricultural land and ensuring soil and ecosystem protection to ensure healthy diets for all, while reducing food waste.

Transitioning to clean energy
Key policy goal: 50 % emission reduction per decade to reach 2050 net-zero.

These extraordinary turnarounds will be disruptive. There is no getting away from it. The turnarounds will interact with ongoing disruptive trends, for example the next phase of the exponential technological breakthroughs.

They are not an attempt to create some impossible-to-reach utopia; instead, they are an essential foundation for a resilient civilisation under extraordinary pressure.

And, what's more, there is sufficient knowledge, funds, and technologies in the world to implement them.
Dixson-Declève S. et.al. Earth for All. A Survival Guide for Humanity. Summary. 2022. PDF

Building Blocks

Our economy as a whole needs to become more resource-light.

The interplay of resource, energy and prosperity turnaround marks the cornerstones for a global civilisation that organises itself within the planetary ecological boundaries.

On a fundamental level, it is always about both a resource turnaround and an energy turnaround.

» The building blocks for sustainable development mainly consist of the following adjustments to our way of living, which are all closely linked:

Turnaround in prosperity and consumption
The question is how sufficiency - a "Culture of Enough" - is possible and how the formation of such a culture can be supported by politics with the introduction of framework conditions.

Energy turnaround
The goal of a revolution in our energy systems can only be achieved if the switch to renewable energy goes hand in hand with energy efficiency and energy sufficiency.

Resource turnaround
Only if resource consumption per capita of the wealthy is reduced by a factor of 4 to 5 will humanity remain within planetary boundaries in the long term.

Mobility turnaround
The change in mobility is closely linked to the energy turnaround and the resource turnaround and therefore needs more than just technological developments.

Nutrition turnaround
Today's food production is responsible for an important share of the burdens placed on global resources as well as CO_2 pollution. 30% of consumer-related environmental impacts in Europe are caused by our eating habits. Our consumption of meat and fish needs to be significantly reduced.

Urban turnaround
By the middle of this century, around 80% of the world's population will be living in cities. The nature of urban development is therefore of central importance for sustainable development as a whole.

Industrial turnaround
Two goals are paramount here: *decarbonisation* [Stop CO_2 - emissions] and the *recycling economy*. This requires technological innovation, cooperation, and an innovative policy framework.
Translated from Uwe Schneidewind. Book: Die Grosse Transformation - Eine Einführung in die Kunst gesellschaftlichen Wandels. 2018

Actions

We have to act *swiftly* while keeping a cool head. We need a level-headed policy without doomsday scenarios, without ideologies and without selfishness.

Stop CO_2 emissions

A successful climate policy will only succeed if climate change mitigation *and* adaptation to climate change take place *simultaneously* and rapidly now.

» Contrary to most problems, climate change is not complex, the causes well known, the necessary answers clear. The challenge we face is that we do not do what obviously should be done – urgently.
Theodor H. Winkler. Book: Living in an Unruly World – The Challenge We Face. 2019

» Climate change should be of concern to *all*, who care about health, who care about economic stability and investment value and who care about intergenerational justice - which should be *every one of us*.
Christiana Figueres and Tom Rivett-Carnac. 2020. The Future We Choose - Surviving the Climate Crisis.

Redesign food system

» Only if there is a fundamental change in the way we manage land can we reach the targets of climate-change mitigation, avert the dramatic loss of biodiversity and make the global food system sustainable.
German Advisory Council on Global Change WBGU. 2020. Rethinking Land in the Anthropocene: from Separation to Integration. PDF

It therefore applies:

Change dietary
Global dietary patterns need to converge around diets based more on plants.

Setting aside land for biodiversity
More land needs to be protected and set aside for nature. It is the most effective way of preserving biodiversity.

Adapting the way we farm the land
We need to farm in a more nature-friendly, biodiversity-supporting way.
Tim G. Benton etal. Food system impacts on biodiversity loss. Three levers for food system transformation in support of nature. 2021. PDF.

Implement circular economy

» Waste generation is rising globally. People and businesses in the European Union alone produce more than 2 billion tonnes of waste per year, or 4.8 tonnes per capita.

Yet today, less than 10% of global economic activity is circular.

The circular economy aims to fix this by eliminating waste altogether. This can be achieved by extending the life and use of resources, materials and products, by rethinking and redesigning products and business processes.

Circular economy interventions can also halt global biodiversity loss and help the world's biodiversity recover by 2035 to the same levels as in 2000.
Circular Economy Overview 2023. European Investment Bank. PDF

Reduce overconsumption by wealthy people

Powerful status symbols have always determined our consumer behaviour and have a big impact on environment and climate.

Large living space

It used to be the pompous castles of a few, then the spacious villas of some, the homes of many, and today the large apartments of most wealthy people.

In Switzerland, for example, each inhabitant occupies an average of 42 square metres of living space - twice as much as in 1965.

The construction of these residential buildings means a large consumption of resources and entails a large increase in energy consumption in heating and a large subsequent consumption, such as the purchase of furniture and many additional home furnishings.

« According to the Federal Statistical Office, the average German household now owns 10,000 items. 100 years ago, the figure was 180.
Translated from: Theresa Hein. Wann sind wir zu dem geworden, was wir haben? Süddeutsche Zeitung. 07.03.2024.

« Worldwide, construction accounts for one third of CO_2 emissions, 40 percent of final energy demand and 50 percent of material consumption.
Translated from: Interview of Christine Mattauch mit Lamia Messari-Becker. Ökologisches Wohnen darf kein Eliteprojekt bleiben. Süddeutsche Zeitung. 23. April 2022.

Big car

In the past, it was the pompous coaches of a few, then the Rolls-Royce of some, the Chevrolet of many, and today the ever-bigger car of almost all people. Since 1980, the average weight of a car has doubled.

Large consumption of meat

First, it was the feasting in the palaces of a few - in Europe 200 years ago over 90% of all people generally had no meat to eat - then frequent food in restaurants for the many, and today, almost all people eat meat daily.

« The production of meat and dairy products already takes up more than 70 per cent of global agricultural land, although it only covers 18 per cent of humanity's calorie needs.
Poore et al., Reducing food's environmental impacts through producers and consumers. Science 360, 987-992 (2018)

Align economy sustainably

« Given the existential threat of climate change, severe weather events, rising sea levels, loss of biodiversity, resource depletion and increasing economic inequality, we are reminded of the importance of developing a sustainable economy that balances economic issues with social and environmental responsibility.

The transition towards a more sustainable economy is a complex process, which needs disruptive innovations in many sectors and collaboration across disciplines as well as insights from practitioners, politicians and engagement with citizens.

Sustainability requires a transition towards a society and economy that are less vulnerable and more resilient in the long term.
Swiss National Science Foundation. 73 NRP. Sustainable Economy. 2023

« Getting humanity back within a safe operating space in this century may be complex and monumental, but like many other complex and monumental undertakings, it can be set in motion by a handful of well-chosen levers, by groups of committed people.

Those levers are in plain sight and waiting to be pulled. And they all reside in one sector: *the economy*. Key among them:

Creation of Citizens Funds
to distribute the wealth of the global commons fairly to all citizens.

Government intervention
(subsidies, incentives, and regulations) to accelerate the turnarounds**.**

Transformation of the international financial system
to facilitate rapid poverty alleviation in Most of the World.

De-risking investments
in low-income countries and cancel debt.

Investment
in efficient, regenerative food and renewable energy systems.
Dixson-Declève S. et.al. Earth for All. A Survival Guide for Humanity. Summary. 2022. PDF

Reshaping finance sector

« Six major shifts in the finance sector can drastically transform how investments are scaled and allocated for a sustainably future.

If these transformations are achieved together, it will enable the fundamental changes needed for the planet and people to thrive.

Measure, disclose and manage climate- and nature-related financial risks.
Accurate disclosures are needed to allow financial institutions and governments to deploy capital efficiently and monitor and manage risks.

Scale up public finance for climate and nature.
The public sector can play a significant role in the protection of climate and nature by investing directly in climate initiatives and steering private markets.

Scale up private finance for climate and nature.
Meeting climate and nature goals also depends on the participation of the private sector.

Extend economic and financial inclusion to underserved and marginalized groups.
Our current economic and financial system have failed to be inclusive in sharing economic prosperity, resulting in historical inequities that have been perpetuated and sometimes worsened, further marginalizing already underserved groups.

Price greenhouse gas emissions and other environmental externalities.
One of the largest challenges to shifting investments to a more sustainable future is the lack of accounting for the negative external costs generated by the fossil-fuel industry and other high polluters that get passed into society.

Eliminate harmful subsidies and financing.
The public sector continues to provide significant financing and investment to fossil fuel industry via subsidies, financing from development finance institutions and fossil fuel investment from state-owned companies.

Public financing for fossil fuels totalled $687 billion in 2022.
Anderson Lee. 6 Shifts the finance system can make to build a sustainable future. World Resource Institute. 03.06.2023

Place digitalization at the service of global sustainability

» In order to achieve the UN 2030 Agenda's Goals, we need to fundamentally change the way we do business and consume.

Although digitalization is hardly mentioned in the 2030 Agenda, it will greatly influence its implementation.
WBGU German Advisory Counsil on Global Change. Digitalization: What we need to talk about. 2018. PDF

» The three main objectives of ecological sustainability are decarbonisation, dematerialisation and renaturalisation.

In theory at least, the growth of digital services can be compatible with the goals of ecological sustainability. But today's reality is far-removed from that ideal.

The consumption of energy and material is actually increasing as digitalisation expands. This situation will not change unless the majority of affected companies adopt the three ecological objectives as binding principles.
Ortwin Renn, et al. The opportunities and risks of digitalisation for sustainable development: a systemic perspective. GAIA 30/1(2021): 23-28

» The enormous scope for shaping digitalisation as a formative force of the 21st century must be at the service of sustainable development, as the most pressing design task of the 21st century.
Wuppertal Institute (2021): Shaping Digital Transformation - Digital solution systems for the transition to sustainability: Study within the project «Shaping the Digital Transformation».

Apply clean technology

Obsolete, polluting and inefficient productions must be rapidly replaced with new technologies.

However, we are falling for a great fallacy if we think that we can continue our lifestyle *without change* with increasing technological efficiency.

After all, the huge impact on our environment caused by our excessive consumption and rapid population growth can only be partially offset by technological improvements.

In addition, environmentally harmful activities should no longer be kept alive with the argument of keeping jobs.

Overhaul of education

» A mindset based on nineteenth-century reductionist and linear causal relationships, as if the best way to build knowledge is to assume the world is like a machine that can be understood from the parts, is a big part of the problem.

The overhaul of education everywhere should build on two foundations: *critical thinking and complex systems thinking*. Arguably the biggest challenge in the world today is not climate change, biodiversity loss, or even pandemic. It is our collective inability to tell fact from fiction.

Most real-world systems are complex dynamic systems, whether ocean and climate or urbanization and stock markets. So, an education system that largely ignores these bedrock features until university is obsolete.
Dixson-Declève S. et.al. 2022. Earth for All. A Survival Guide for Humanity. A Report to the Club of Rome.

» The development of algorithms will be taken over by artificial intelligence. Our training should, therefore, be focussed on what is specifically human:

Social intelligence, creativity, unorthodox thinking, empathy, decision making in complex situations, interdisciplinary skills, moral and ethical questions and the resulting normative implications.
Theodor H. Winkler. Book: Living in an Unruly World – The Challenge We Face. 2019

» Utopian thinking should actually be practised at school. After all, the way knowledge is currently taught is driven by fear. Performance is scaled and compared, which creates the impression that there must always be a right and a wrong. Students are afraid of bad grades and memorise a lot in the short term. The entire education system restricts the creative mind. We train people to bring economic capital and do little to equip them with utopian capital.
Translated from: Katharina Erschov, Joana Hahn. Interview with utopian researcher Fátima Viera. Wo sind die Utopien hin? Süddeutsche Zeitung. 30. April 2025