



2. Sustainability – The Great Transformation



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Sustainable development is hardly conceivable without [1] moving away from the linear economy towards a *circular economy*, [2] simultaneously cutting back on *overconsumption* and [3] rapidly reducing *CO₂ emissions*.

Definition

» **Sustainability** is a development that satisfies the needs of the present without risking that future generations will not be able to meet their own needs.

Brundtland Report - Our Common Future. World Commission on the Environment and Development, 1987

» **Sustainability** [ecology] is a principle according to which no more can be consumed, than can respectively be regrown, regenerated, and provided again in the future.

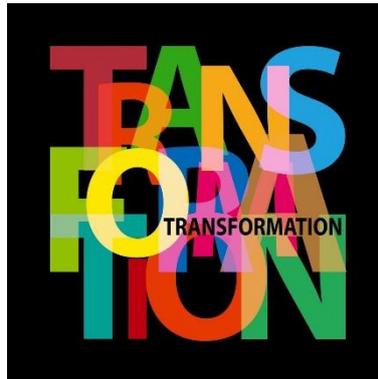
Translated from: Duden German Dictionary

» **Sustainability** means - concisely formulated - good life for about ten billion people within the ecological boundaries on our planet.

Translated from: Uwe Schneidewind. Die Grosse Transformation - Eine Einführung in die Kunst gesellschaftlichen Wandels. 2018

As simple as these definitions are, it is difficult to achieve a *unified, shared understanding* of sustainability. Without such a *common* understanding of sustainability, however, the transformation to a sustainable society can hardly be accomplished.

The great transformation



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What are Pathways to Sustainability?

[Animation Video on Youtube](#)

steps-centre.org

We have to move towards a sustainable life, even if there is *no master plan* on how to achieve the transformation of our present society - with its perpetual expansion - towards sustainable development.

» The transformation towards a more sustainable development will inevitably be linked to a structural change that knows *winners* and at least temporarily also *losers*.

In this respect, in addition to the *effectiveness* and *efficiency* of environmental policies, the associated *distribution effects* must also be taken into account. Issues of justice are thus to be taken seriously as the third central measure of environmental policies in order to ensure their legitimacy and approval.

Translated from: Konrad Adenauer Stiftung Nr. 310/August 2018: Verantwortliche Umweltpolitik - ökologisch wirksam und sozial gerecht.

» World Climate Council [IPCC] and World Council for Biodiversity [IPBES] independently agree that, from both a climate and a biodiversity perspective, a *profound and comprehensive societal transformation* is needed to halt biodiversity loss and global warming.

This change has a *sustainable development* as its goal and affects all sectors, including energy [moving away from fossil fuels in favour of renewable energies], land use [especially more environmentally friendly agricultural production] and forestry [protection and sustainable use of forests].

Translated from: Forum Biodiversität Schweiz. Akademie der Naturwissenschaften. Hotspot 43/2021

» Changes in *per capita consumption*, *shift in diets*, and progress towards *sustainable exploitation of natural resources*, including *reduced post-harvest waste*, could make substantial contributions to addressing the biodiversity crisis, climate change mitigation and adaptation.

IPBES-IPCC co-sponsored workshop report on biodiversity and climate change. 2021.

Facts on non-sustainability

Earth Overshoot Day

On this day, humanity has used up all the natural resources that the Earth can restore within one year and thus provide *sustainably*.

Earth Overshoot Day

1970 on 29 December
 1985 on 04 November
 2000 on 23 September
 2021 on 29 July

The example of Switzerland and its ecological footprint

On 11 May 2021, the Swiss population had already consumed more natural resources than it was entitled to for the whole year.

If all the people in the world lived like we do in Switzerland, then we would need three planets as big as our Earth.



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Every year, humankind consumes goods and services equivalent to the annual regenerative capacity of 1.7 planets.

The 8-tonne society

For a truly sustainable lifestyle Germany, for example, should reduce its resource consumption by a factor of 4 from today's approximately 30 tonnes per capita and per year to around 8 tonnes in the longer term.

In order to curb climate change, greenhouse gas emissions are also to be rapidly reduced in the coming years by a factor of 4 to 2 tonnes per person and year, from the current level of

around 8 tonnes.

According to Uwe Schneidewind. 2018. *Die Grosse Transformation - Eine Einführung in die Kunst gesellschaftlichen Wandels*

Calculate my own resource consumption



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Growing consumption

The US population is 60% larger than it was in 1970, but consumer spending is up 400% - and other rich nations aren't much better.

According to Jamie Waters. *Overconsumption and the environment: Should we all stop shopping?* *The Observer*. 30. May. 2021

The production of meat

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)

Within the lifetime of *one single* generation...

... the world population, global CO₂ emissions, resource and energy consumption increased at an unprecedented rate:

Population x 4
CO ₂ emissions x 7
Resource consumption x 8
Energy consumption x 10

Provision and Solidarity

Among other things, for us people in the rich countries, sustainable living means,

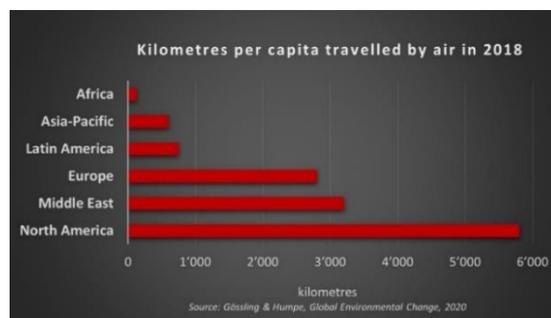
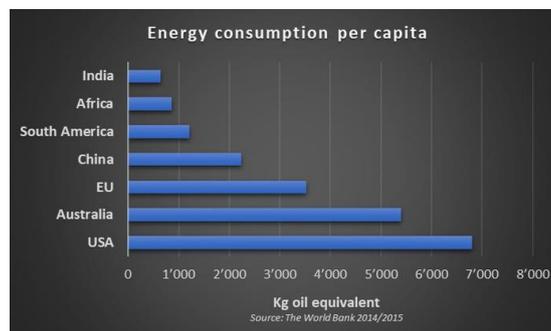
1. Providing for the future humans on our earth.
2. Showing solidarity with other people in the world.

Are we taking precautions today?

When it comes *to action*, environmental and climate protection has not yet reached the majority of us.

Are we in solidarity today?

Around 20 % of the world's population, mainly people in rich countries, but also the rich worldwide, account for around 80 % of total global resource consumption.

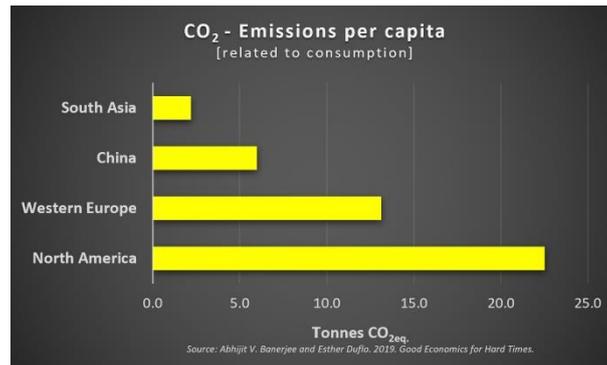


And what about greenhouse gas emissions?

» In fact, China is the single largest emitter of carbon. This is, however, largely due to goods produced in China but consumed elsewhere in the world.

If we attribute the emissions to where the consumption takes place, North Americans consume 22.5 tons of CO_{2e} per year per person, Western Europeans 13.1, Chinese 6, and South Asia just 2.2.

Abhijit V. Banerjee and Esther Duflo. 2019. Good Economics for Hard Times – Better Answers to Our Biggest Problems.



The facts are clear: We are living at the expense of future generations. They will probably pay a high price for our overuse and pollution of planet Earth and may have to live with severe restrictions.

Our way of life is *not sustainable* and therefore no longer an option for future generations.

Sustainable business practices



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Think about what's coming in advance.

The *circular economy* is one of the expedient concepts of sustainable economic activity, but is still far too little implemented today.

In the circular economy, resource use, waste production, emissions and energy waste are minimised by closing energy and material cycles.

Products should be developed from the outset in such a way that, after use, the raw materials can be extracted and reused without any loss of quality, or fed back into the biological cycle without damaging human health or the environment.

« Only 9 % of the world economy is currently circular. Just 9 % of the 92.8 billion tonnes of material that enter the economy are re-used annually.

The Circularity Gap Report 2019



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Perceive critical developments at an early stage.

The *precautionary principle* is probably one of the most effective ways of sustainably protecting our environment.

Initial measures against potential critical developments are taken at an early stage.

The precautionary principle applies when scientific evidence is *insufficient* or *uncertain* and *preliminary* expert reports indicate potentially dangerous effects on the environment, human beings, animals, or plants.

The precautionary principle is becoming more and more important, since today, as far as the environment is concerned, we are likely to cause far more *new* problems than we are to solve *existing* problems.

Sustainability worldwide



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**The year 2015
A milestone for global sustainability?**

1. UN Agenda 2030

September 2015

169 countries sign 17 Sustainable Development Goals to guide global policy towards sustainable development.

United Nations - Transforming our World: The 2030 Agenda for Sustainable Development

2. The Paris Climate Agreement

December 2015

196 member states of the UN Framework Convention on Climate Change agree to limit man-made global warming to well below 2°C compared to pre-industrial levels.

United Nations - Paris Agreement

3. Pontifical Enzyklika Laudato Si'

June 2015

Pope Francis proclaims his vision of the world. At the centre is the vulnerability of creation.

Laudato Si' by Pope Francis - On Care for Our Common Home.

Transformation of Our World

The 17 Sustainable Development Goals intend to guide world politics towards a sustainable development.

This means that all states are challenged to solve the urgent challenges of the world together.

People should have relevant information and awareness of sustainable development by 2030 - all across the world.





17 Sustainable Development Goals

The Sustainable Development Goals, with their 169 targets, form the core of the 2030 Agenda.

» The 2030 Agenda for Sustainable Development charts a new path of balance for humanity and the planet. The 17 Goals are highly interconnected.

Recent studies on the interactions between the Sustainable Development Goals identify the *conservation of biodiversity* as one of the most potent levers to achieve sustainability.
Swiss Academy of Sciences. Achieving the SDGs with Biodiversity. 2021



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» ***Unsustainable development* is rapidly degrading Earth's capacity to sustain human well-being.**

Making Peace with Nature. UN environment programme. 2021

***Sustainable development* is the new challenge with great opportunities for all of us, a learning process that demands all our creativity.**

