

Earth4All: Austria

Five turnarounds towards wellbeing
for all within planetary boundaries

JULY 2024



Citation for the report

Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

Citation for Inequality chapter

Bukowski, M., Lang, S., Paradigm shift of national inequalities. In: Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

Citation for Food chapter

Suschko, G., The future of food. In: Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

Citation for Energy chapter

Hoffmann, M., Hachenberger, P., How to achieve the energy turnaround. In: Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

Citation for Poverty chapter

Gaber, S., Poverty turnaround. In: Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

Citation for Empowerment chapter

Swoboda, H., Lang, S., Empowerment & gender equality in focus. In: Hoffmann, M., Spittler, N., Aigner, E., Körner, D., & Hinterberger, F., (Eds.), *Earth4All: Austria*. Earth4All, 2024

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I. Summary for policy makers

Earth4All is an international initiative to accelerate the systemic change we need for a just future on a finite planet. Building on the frameworks of The Limits to Growth and "Planetary Boundaries", business thinkers, scientists and stakeholders have joined forces to find ways to maximise social, environmental and economic wellbeing for all within planetary boundaries in this century. In 2022, on the 50th anniversary of the 1972 report to the Club of Rome - *The Limits to Growth* - their work was published under the title *Earth for All: A Survival Guide for Humanity*.

This report applies Earth4All to Austria.

Austria is one of the two pilot countries selected for an Earth4All initiative at national level. The national engagement work is being led by the Austrian Chapter of the Club of Rome and was launched in Autumn 2023 with a major kick-off event.

This report focuses on three closely interlinked systems: Economy, Society and the Earth System. It shows how different policy measures could affect human wellbeing, society and ecosystems in Austria up to the year 2050, based on two scenarios:

Too Little Too Late: In this scenario, the current path of economic development, unsustainable consumption, inequality and climate change is continued.

Giant Leap: In this scenario, societies make extraordinary decisions and investments that strengthen social cohesion, build trust, reduce poverty globally, transform food and energy systems and establish an economic system that aims for the wellbeing for all on a finite planet.

In order to achieve the positive scenario of a Giant Leap, it is necessary to activate several policy levers at the same time. Earth4All speaks of five "extraordinary turnarounds". They have the potential to significantly break unfavourable trends of the past, improve living conditions in the long term, tackle polycrises and prevent the collapse of our ecosystems.

The five turnarounds are:

- ▶ ending poverty
- ▶ addressing gross inequality
- ▶ empowering women
- ▶ making our food system healthy for people and ecosystems
- ▶ transitioning to clean energy

In addition, the transformation of the economic system plays a central role. The aim is to ensure a high quality of life while remaining within planetary boundaries.

Essential for contextualising Earth4All in Austria were a stakeholder process and modelling.

Modelling by a working group of the BOKU university Vienna and the Millennium Institute has shown that implementing all five turnarounds together in Austria can help to significantly reduce poverty and inequality in the country, while transforming the economy in a way that promotes the wellbeing of both Austrian society and the planet.

The stakeholder process has also shown that a Giant Leap is possible in Austria if all actors pull together, and the numerous existing solutions are quickly implemented and supplemented with innovative new ones. All stakeholders agree that we need a shared new vision for the future that we can work on together so that we can all live well within planetary boundaries in 2050 - in the sense of an "Earth for All". A key aspect of this is raising awareness in order to increase the acceptance and effectiveness of measures.

The model results largely overlap with the results from the stakeholder process. However, the two scenarios are very different: only in the Giant Leap scenario is a sustainable future for all within planetary boundaries possible. In this scenario, almost all sustainability goals could also be achieved. If, on the other hand, we follow the Too Little Too Late scenario, there will be stagnation at all levels - a bleak picture and a breeding ground for further crises.

Based on expert and stakeholder input, supported by modelling, this report proposes several recommendations for action for each of the five turnarounds in order to achieve the Giant Leap. The following table provides an overview of the challenges, levers and resulting prospects.

Turnarounds**INEQUALITY****Initial situation**

Global inequality has increased significantly in recent years: eight billionaires now own the same wealth as the poorest 3.6 billion people. The ecological footprint of the rich is so large that it must be reduced, and not just for reasons of social justice. There are also inequalities in the Austrian context. Austria is one of the frontrunners, particularly in terms of wealth inequality. This means that social, health and cultural inequalities in this context must not be ignored.

Levers to be implemented in Austria

- ▶ Redistribution and tax fairness
- ▶ Participation, equal opportunities and transparency
- ▶ Paradigm shift

Outlook

There must be no fundamental conflict between climate policy and social justice - on the contrary, the two areas are interdependent, and their problems can only be solved together. A truly climate-social policy offers the opportunity to overcome social disparities through climate and environmental protection.

FOOD

The world faces the challenge of providing enough affordable food for everyone - while remaining within planetary boundaries. To achieve this, the food system must be considered as a whole, i.e. across the entire value chain. One of the biggest challenges in Austria is to ensure that all stakeholders, especially people in agriculture, can make a good living from it.

- ▶ Change diets
- ▶ Food-system fairness and efficiency
- ▶ Socio-ecological land management

A healthy diet in harmony with a healthy - non-exploited - nature is possible. A more conscious and appreciative approach to food is not only an opportunity for us as consumers - it can also contribute to animal welfare, protect the climate and the environment and, last but not least, improve the quality of life and income of those people who provide "our daily bread".

Turnarounds**ENERGY****Initial situation**

From a global perspective, the aim is to establish a climate- and nature-friendly energy system in low-income countries that provides clean and affordable energy for all, while at the same time significantly reducing energy consumption in high-income countries and transforming their emissions-intensive energy system. While the electricity sector in Austria is already largely renewable, our greatest challenges lie in the areas of mobility and transport and the decarbonisation of the steel and cement industries.

Levers to be implemented in Austria

- ▶ Reduce energy consumption
- ▶ Increase efficiency and electrify (almost) everything
- ▶ Exponential growth of renewables
- ▶ Circular economy (across all levers)

Outlook

If the energy transition is considered systemically and in the long term, it can not only help to tackle the climate crisis, but also contribute to healthier living, energy self-sufficiency and thus political independence and greater distributive justice. We have already accumulated a wealth of knowledge about technical solutions and innovations. However, for their scaling and implementation there is a lack of a real transdisciplinary approach to the structural and social issues of the energy transition.

POVERTY

Poverty, combined with the consequences of climate change, is not just a problem for low-income countries. Poor and minority groups in middle- and high-income countries that are confronted with extreme weather phenomena are just as badly affected.

- ▶ Expand policy space and deal with debt of low-income countries
- ▶ New growth models (trade re-regionalisation)
- ▶ Transformation the financial architecture

The implementation of the poverty turnaround is not only a prerequisite for individual wellbeing and peaceful coexistence, but also for a successful climate policy strategy. It is therefore both Austria's responsibility and opportunity to implement a poverty turnaround, which will be easier in combination with the other turnarounds.

Turnarounds**EMPOWERMENT****Initial situation**

Globally, the topic of empowerment is primarily about the empowerment of women and education for all. In Austria, the challenges are more diverse. Here, the focus is on empowering all marginalised groups.

Lever to be implemented in Austria

- ▶ Participation
- ▶ Equality
- ▶ Lifelong education for all

Outlook

The empowerment of women and a transformation of the Austrian education system are the two major drivers of this turnaround. There is no lack of positive proposals for either challenge. Their implementation can have a profound and transformative impact on both individual and collective levels, so that we can achieve an inclusive, fair, future-orientated society in 2050.

II. Introduction

Globally speaking, the last few decades have brought unprecedented prosperity. Yet at the same time, societies remain extremely vulnerable to economic, health, humanitarian, geopolitical and environmental shocks. The current design of our economies does not provide for the wellbeing of most people or the planet, but rather produces huge social and environmental problems around the world. We know that the next ten years are crucial for transforming our economies to avoid existential threats on an unprecedented scale.

Launched in 2020 by the Club of Rome, BI Norwegian Business School, the Stockholm Resilience Centre and the Potsdam Institute for Climate Impact Research, the Earth4All initiative aims to develop solutions to these challenges. Earth4All is an international initiative that explores how wellbeing for all can be achieved in a timely manner within planetary boundaries. The initiative builds on the legacy of *The Limits to Growth* and the concept of "Planetary Boundaries" and rethinks our economic systems for a safe and liveable future in the Anthropocene. The full analysis can be found in the book "Earth for All: A Survival Guide for Humanity" (September 2022).

From the "Limits to Growth" to "Earth for All"

In 1972, the first report to the Club of Rome was published: *The Limits to Growth* by Donella and Dennis Meadows, Jørgen Randers and William Behrens. In the same year, the first global environmental conference was held in Stockholm and a Ministry of the Environment was established in Austria.

The central illustration in *The Limits to Growth* shows that the decline of industrial output, food production and ultimately the population was feared for the current decade. Unfortunately, we have to recognise: The scientists were right. We are seeing the limits to growth being reached everywhere.

We still have it in our hands to avert global decline. In its latest report, the Club of Rome shows that this requires a turnaround in five areas: We need an energy transition. We need a food transition. We need fundamental changes in the areas of international relations, income and wealth distribution. We need human empowerment and gender equality. If humanity manages to implement these five turnarounds, a Giant Leap - and thus a good life for all - can be achieved.

Transforming the economy as the foundation for wellbeing

More and more people are looking at new concepts for organising the economy and measuring social wellbeing. Examples include the circular economy, the sharing economy, the ecological economy, the feminist economy, green growth, the steady state, degrowth and post-growth.

The British economist Kate Raworth has proposed the image of a popular sweet to describe the connections (and differences) between economic, social and ecological systems: her doughnut illustrates that a good life for everyone, personal wellbeing and a healthy economy are possible as long as we stay within the limits set by "nature" - i.e. within the planetary boundaries.

The economy consists not only of the extraction, production, distribution and consumption of goods and services, of logistics steps, trade, recycling or waste disposal, of production factors such as human labour, materials and energy. Economic processes are always embedded in societies: all actors along the value chains want and need to be able to make a good living from their contributions to this system. Consumers expect high-quality, healthy and affordable goods and services. Moreover, societies, like the economy, are always part of their environments - part of and dependent on nature.

All of these systems and the actors involved in them (people and organisations through which people work) must work together if a major transformation - the Giant Leap outlined in this report - is to succeed. Especially in pluralistic societies and liberal democracies, such as Austria, it is a matter of coordinated, goal-orientated cooperation that is aware of different perspectives and interests.¹

The two scenarios in the global context

Earth4All focuses on the three closely interlinked systems of the economy, society and the earth system. Behind this are two intellectual drivers making bold proposals for the future: the Transformational Economics Commission, which brings together leading economic experts from around the world, and the Earth4All model.

The two scenarios for the world up to the year 2100 used in this report also originate from the model.

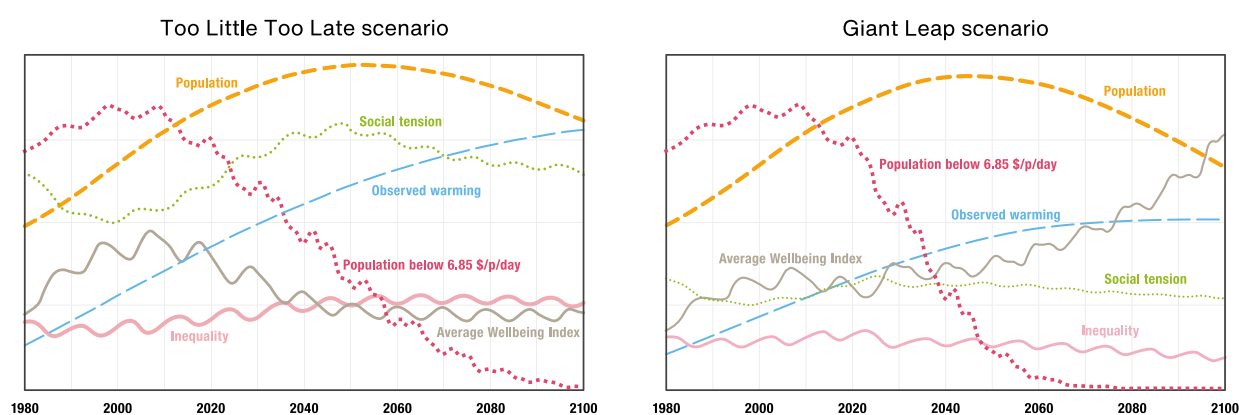


Figure 1: Main trends of the global Earth4All scenarios.

The Too Little Too Late scenario

This scenario analyses the joint development of the global economy and the Earth system from 1980 to the year 2100, assuming that politics acts in a similar way to the last 40 years. The economy continues to grow, but at the expense of social cohesion, prosperity and a stable planet. There will be enormous regional differences, leading to massive regional tensions. Sporadic social breakdowns cannot be ruled out. Rising income inequality is leading to increasingly dysfunctional societies, making cooperation in addressing existential threats like climate change more difficult.

The Giant Leap scenario

Like Too Little Too Late, this scenario examines the co-evolution of the global economy and the Earth system between 1980 and 2100, but assumes successful collaboration and extraordinary, far-reaching actions taken together, especially by 2030. Through bold decisions and investments, social cohesion is strengthened, trust is built and an economic system is established that ensures the wellbeing of all on a finite planet.

The Giant Leap requires five extraordinary turnarounds in order to strengthen social cohesion (see also Fig. 2):

- ▶ **Poverty:** Transforming and accelerating socio-economic development in low-income countries by reforming the international financial and trade system.
- ▶ **Inequality:** Changing the distribution of wealth by ensuring that the richest 10 percent do not own more than 40 percent of national income.
- ▶ **Energy:** Re-organisation of energy systems so that greenhouse gas emissions are halved every decade.
- ▶ **Food:** Regenerative and nature-friendly re-organisation of agriculture and food systems.
- ▶ **Empowerment:** Reducing the gender power gap, empowering women and investing in education for all.

The five extraordinary turnarounds

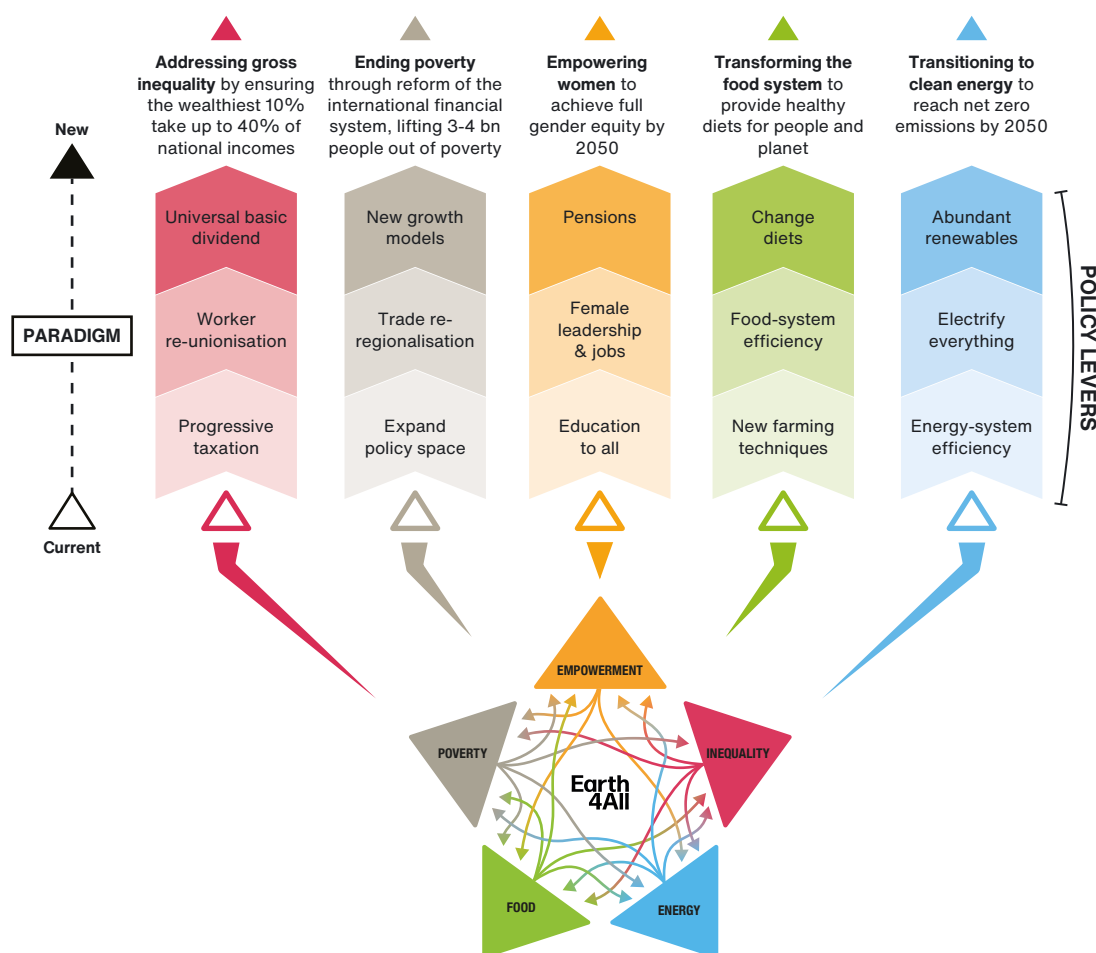


Figure 2: The five major turnarounds and the political levers to achieve them.

The five turnarounds are designed as a systemic framework for a fair and affordable action plan for the planet. A systemic approach means that isolated policy proposals are not sufficient to achieve the necessary leverage. Instead, comprehensive packages of measures are developed that are interlinked and understood holistically.

If the greatest efforts and investments are made now and over the course of this decade, many sustainable development goals can be achieved within a single generation and societies that respect planetary boundaries can be built. This future is built on a new social contract between government and citizens to transform the economic system in a sustainable way. By 2100, global temperatures can be stabilised below 2°C and extreme poverty and inequality eliminated.

The five turnarounds must be driven by a change in the economic system. This means, among other things, that economic growth expressed in GDP is no longer sufficient as a guideline for a healthy economy.

Earth4All in the national context

The global Earth4All analysis concludes that the leap into a new, desirable and sustainable future is possible. However, this requires the economy to prioritise the health and wellbeing of people and nature in the future.

Earth4All recognises that solutions need to be tailored to the specific circumstances of each country and location. Therefore, national engagement strategies are currently being developed that are in line with the core message of the initiative and turn ideas and visions into tangible, achievable actions.

The strategy involves close collaboration with local partners who are responsible for analysing and implementing it on the ground. Stakeholders include research institutions, policy makers, civil society organisations and established think tanks that have significant influence in their respective communities. The approach emphasises making underrepresented voices heard and ensuring that they are not only listened to but also actively involved in local implementation measures.

Earth4All and its partners focus on a number of specific goals aimed at accelerating progress on all five turnarounds. At national level, the strategy is based on four main pillars (Fig. 3):

Earth4All National Engagement



Figure 3: Components of national implementation.

- ▶ **Research:** Analysis to determine the applicability of the Earth4All principles in each country's unique context, identify opportunities and formulate policy recommendations related to the five turnarounds.
- ▶ **Citizen participation:** Encouraging participation in identifying local needs and priorities, forging alliances and promoting public engagement. This includes conducting surveys, organising citizens' meetings and holding workshops to ensure that the grassroots are involved.
- ▶ **Advocacy and persuasion:** Working closely with policy makers to support the proposed policy solutions and actively contribute to their implementation.
- ▶ **Public relations:** Launching public campaigns through a mix of digital and offline strategies, including media relations and social media initiatives.

Earth4All in Austria

Austria is one of two pilot countries selected for the Earth4All initiative at national level. The national engagement for Austria is led by the Austrian Chapter of the Club of Rome and was launched in Autumn 2023 with a public kick-off event. Together with stakeholders from science, civil society, business and administration, the first steps were taken to translate the international vision and the turnarounds into the Austrian context and discuss their implementation.

This report is an impetus for a broad discourse in Austria, encouraging all people and institutions in the country, as well as politicians and civil society, to engage in the project. The aim is to bring together the stakeholders relevant to the turnarounds and not only talk about what needs to be done but also to jointly develop a plan for how to do it - in other words, to get the implementation process underway. This requires expert input, networked, shared thinking, an understanding of the urgency of the measures and the motivation to transform the systems in which we all live: economy, society and nature.

In Autumn 2023, the visions, goals and levers for Austria were developed using interviews, surveys and workshops in collaboration with a selected pool of stakeholders. It was essential to establish links and relationships between the measures and the implementing actors in order to better understand dependencies, synergies, conflicting objectives and responsibilities. From the federal level to the smallest municipality, from civil society to companies, an understanding is needed of which measures work where, which obstacles need to be overcome, which resources and time horizons need to be worked with, and who the most important partners are in the joint implementation of the turnarounds.

In addition to the vision and joint path development, it is also important to jointly set clear and measurable goals that show whether the joint efforts and measures taken are having the desired effects. Well-measurable indicators prevent actors from deceiving themselves with token actions. This would require the development of a monitoring system that keeps an eye on the key categories of economic, social and ecological developments in the sense of the doughnut economy.



Figure 4: Own illustration based on the doughnut according to Kate Raworth^{2,3}. Graphic: Gerda Palmetshofer.

In addition, integrated models are needed that go beyond monitoring the current situation. Such integrated models make it possible to estimate how the measures taken will affect the social and economic system and the environment in the long term - and how everything interacts with each other.

Process and structure of the report

This report is the product of the first phase of Earth4All Austria. The central sources are the five events and workshops on the individual turnarounds that took place in Autumn 2023. Each turnaround event consisted of keynotes and panel discussions, which were documented and disseminated as videos. In addition, interviews were conducted with relevant experts and stakeholders. Each public event was accompanied by [workshops with selected stakeholders](#) in which - based on the global report - visions, goals and levers for Austria were jointly developed.

The half-day workshops introduced a format into the overall process that not only enabled an understanding of the existing challenges and opportunities of each turnaround but also allowed the participants to contribute their respective perspectives. Building on this, visions for the implementation of the turnarounds by 2050 were jointly formulated and initial steps were taken to develop concrete transformation paths to achieve these visions.

The proposed measures have been categorised according to their feasibility and urgency. Seeing them in combination is a first step towards the systemic development of an implementation strategy.

With the help of the system-dynamic iSDG model, the global modelling of Earth4All was transferred to the national level. The [modelling work](#) was intended to show how the sum of the measures affects the social, ecological and economic systems in the long term and what steps are needed to achieve a lifestyle in Austria within planetary boundaries that guarantees wellbeing for all. The indicators and turnarounds were adapted to the Austrian situation.

We would like to thank the experts and stakeholders who actively participated in our events and workshops, as well as all the interviewees who accompanied us on the way to this report. In addition to the global report and the national version of the system dynamics model as well as available documents, what is documented here is essentially based on their knowledge, insights and assessments. We have summarised them to the best of our knowledge and belief in this first (interim) report.

In terms of structure, we follow the global Earth4All report. Firstly, we explain the Austrian context, outline the Too Little Too Late and Giant Leap scenarios and then go into the five turnarounds in more detail. Connections between the five topics - i.e. synergies or conflicting goals for successfully overcoming the multiple crises - are only touched upon: the systemic connections will be a central component of the second phase of Earth4All in Austria. Finally, we formulate key messages, recommendations and conclusions.

Invitation to engage

This report is a first step in the Earth4All Austria process. It is intended to encourage further deepening, networking and broadening of the topics addressed. It is therefore open for comments until Autumn 2024 to which we would like to extend a warm invitation.

Beyond the content, our aim is to use this work to get people to take action or to network and support those who are already taking action and give them new insights to drive forward the necessary transformation at all levels of society.

We want to inspire people with a positive vision and empower them to take action. Would you like to contribute to this vision with your network? Would you like to think along with us about how a vision for the future can be realised for Austria and the world, and work towards its implementation in Austria? Then contact us at office@clubofrome.at! We look forward to working with you. The first steps have been taken - your project can also become part of the further work.

III. The Austrian context

This section provides an overview of the current situation in Austria.

The global model and the report based on it consider the systems of society, economy and earth system at a resolution that does not reflect the regional differences between individual countries. Similarly, systemic relationships that influence important national indicators cannot be depicted. For example, Austria's high resource consumption compared to many other countries is due to a combination of country-specific causes, ranging from climate and morphology (strongly influenced by the Alps), low population density and relatively few urban agglomerations⁴ and governance weaknesses in spatial planning, which lead to a high per capita demand for infrastructure.

This means that visions and transformation pathways will also look different for each country, even if all countries share the same vision - wellbeing for all. Each step identified as necessary for Austria is therefore context-specific and may differ substantially from the efforts of other countries.

Describing the Austrian context is done using the most common economic and climate indicators, which are also discussed in the global Earth4All report, and placing them in an international context for comparison. In addition - as a starting point for the efforts described - the status quo is described on the basis of the individual turnarounds.

Initial situation

Economy and society

With an economic output of 49,400 euros gross national income (GNI) per capita, Austria is considered a high-income country.⁵ As part of the European Union, we benefit from participation in the European Economic Area, the currency union and European trade and foreign policies. Austria is an industrial and service country. In 2022, 69.3 percent of gross value added came from the service sector, 29.2 percent from industry and only 1.5 percent from agriculture and forestry.⁵ This explains why economic output has so far been less sensitive to climatic changes or resulting natural disasters such as droughts, floods and crop failures than in other countries. Climate change is particularly noticeable in the tourism industry, which contributes 6.2 percent to Austria's economic output (excluding the leisure industry).⁵

Annual per capita material consumption has been stable since 2010 and was 19.1 tonnes in 2021 (see Fig. 5) - 5 tonnes more than the EU-28 average. This means that Austria clearly exceeds the planetary boundaries.⁵

Domestic material consumption per capita

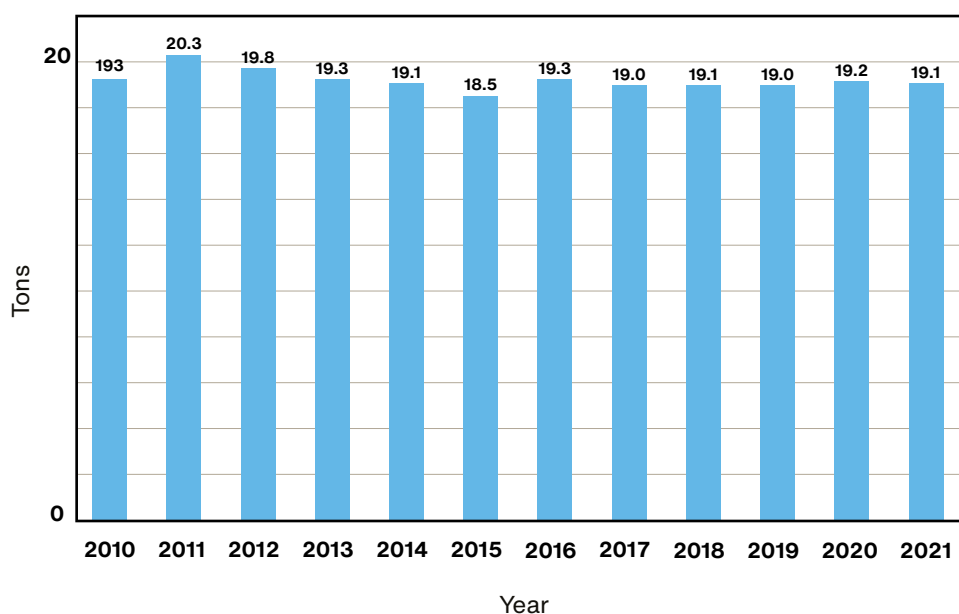


Figure 5: Austrian material consumption per capita (in tonnes).⁵

Although resource productivity - i.e. economic output divided by domestic material consumption - rose by 28 percent between 2000 and 2018, no absolute reduction in material consumption has been achieved in recent years. There are also hardly any examples of an absolute decoupling of material consumption from economic output in other countries. According to the Austrian Climate Ministry, such decoupling also seems difficult to achieve in the future.⁴

In order to counteract the linkage and comply with the European Union's Green Deal (2019) and Action Plan for a Circular Economy (2020), the Austrian federal government has presented a strategy for transforming the Austrian economy and society into a climate-neutral, sustainable circular economy by 2050. Among other things, the strategy aims to increase resource productivity by 50 percent and reduce domestic material consumption to a maximum of 14 tonnes per capita per year by 2030. The aim is to reduce the material footprint to 7 tonnes per capita per year by 2050.

However, in order to achieve these and other goals, much more specific and prioritised measures are needed. So far, for example, measures aimed at social progress by reducing gross domestic product have received little attention. This restricts the room to manoeuvre and makes the success of this strategy - as well as the success of climate policy goals - unlikely.¹

Climate

Austria is one of the European countries most affected by climate change. As a mountainous landlocked country, global warming is progressing faster than in some other countries. The temperature has already risen by 2.7°C compared to pre-industrial levels (average value excluding mountain stations), and by almost 3°C in the capital Vienna. Changes in precipitation show a mixed picture, but the maximum intensity of precipitation has increased by around 10 percent per degree of warming.⁶ Settlement areas in valleys are particularly at risk from rockfalls, mudslides and floods - consequences of the rise in the zero-degree limit, the thawing of permafrost and the rapid melting of glaciers. The spruce forests in Austria's mid-altitude regions are under pressure due to heat and drought as well as increased pest infestation. The flat east of the country is becoming drier and particularly hot. At the same time, cold air intrusions from the Eurasian land mass increase the risk of frost for vineyards and orchards, which sprout and blossom much earlier in the year due to the warming.

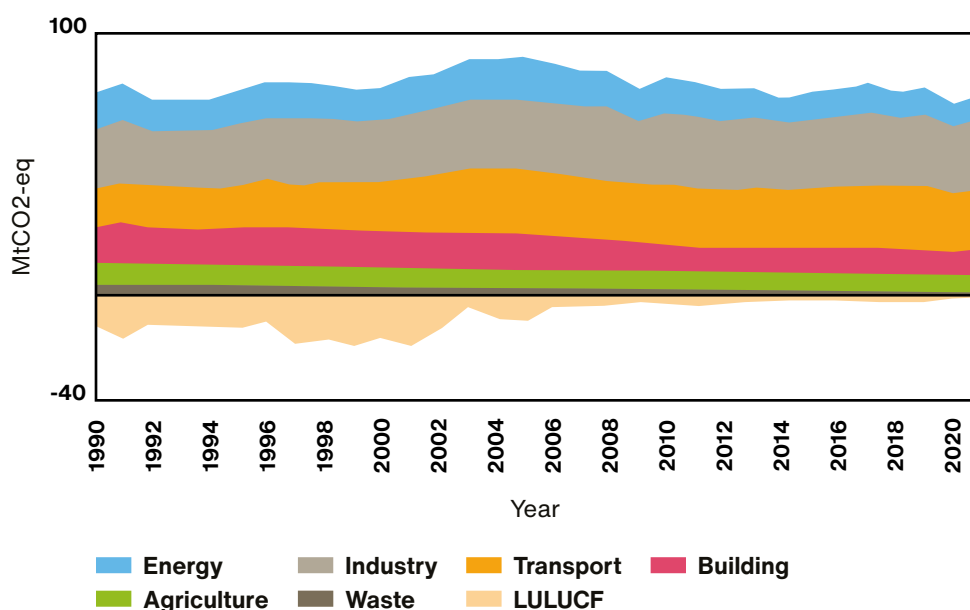
Thanks to the expansion of hydropower after the Second World War, Austria had a very good starting point in terms of greenhouse gas emissions per capita. At around 7 tonnes of CO₂, individual emissions were roughly on a par with Switzerland and half that of Germany. However, the subsequent economic upturn was also fuelled by coal, oil and most recently gas-fired power plants, with the result that the figures rose to around 9 tonnes of CO₂ per capita by 2005, whereas they had already fallen in Switzerland, Germany and the EU from the 1980s - partly due to the expansion of nuclear energy.

After an increase in renewables to around 30 percent by the 1980s, the split between fossil fuels and renewable energy remained relatively unchanged for a long time despite a rising total energy consumption. Although greenhouse gas emissions have fallen slightly since 2005, they have remained at a high level with fluctuations due to weather and economic conditions. A reduction to below 7 tonnes per capita did not occur until 2023, primarily due to significantly increased energy prices as a result of Russia's war of aggression against Ukraine.

Austria's greenhouse gas emissions are primarily generated in the energy sector (electricity and heat), followed by transport, buildings and agriculture (see Fig. 6).⁷ According to calculations, Austria's consumption-based greenhouse gas emissions are around 40 to 60 per cent higher than the production-based^a emissions.⁸ The intensity of emissions has fallen steadily in recent years: to 182 million CO₂ equivalents in 2022.

^a Product-based or consumption-based greenhouse gas emissions refer to the climate-damaging emissions that occur in a country (or region) in everyday life. While the former only refer to domestic emissions, the latter also include emissions occurring outside the country.

Greenhouse gas emissions by sector



Notes: (1) Energy sector refers to electricity and heat production and petroleum refining. (2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use. (3) Buildings include emissions from energy use in residential and tertiary buildings, and energy use in agriculture and fishery sectors.

* LULUCF: Land use, land use change and forestry.

Figure 6: Development of CO₂ emissions in Austria by sector between 1990 and 2020.⁹

The government programme 2020-2024 states the intention to make Austria CO₂-neutral by 2040. However, only some of the laws intended to achieve this have been enacted. The National Energy and Climate Plan, drafted in 2023 but not officially submitted to Brussels until June 2024, does not meet the EU reduction requirements: there is a gap of at least 13 percent. This could be closed with appropriate measures, particularly in the building and transport sectors.¹⁰

Based on current emissions, Austria's CO₂ budget calculated on the basis of population shares will be exhausted by 2025 or 2027 - depending on whether the 1.5°C target is to be met with a 66 or 50 percent probability.¹⁰ This makes Austria one of the latecomers in the EU.

Based on production, Austria contributes less than 0.2 percent to global greenhouse gas emissions. The APCC 2023 concludes that "the Austrian climate targets for 2030 and 2040 can only be achieved if structures for climate-friendly living are established and designed in a determined, coordinated, goal-oriented and continuous manner".¹

The five turnarounds in the Austrian context

Overcoming national inequalities

Despite the economic growth figures mentioned above, the risk of poverty in Austria has not fallen in the last 20 years, but has actually risen slightly from 12 percent in 2000 to 14.8 per cent in 2022. This puts Austria among the leaders in Europe in terms of income and wealth inequality.

Income inequality is lower than wealth inequality: one percent of people own more than half (55 per cent) of Austria's total net wealth,¹¹ 30 percent of total income goes to the top 10 percent.¹²

Sustainable nutrition

Although Austrian agriculture comprises a relatively small portion of Austria's monetarily valued production, its contribution to society is significant. Thanks to its own agricultural products, the country is self-sufficient in many areas, and exports help maintain a balanced trade account.

Austria is a leader in sustainable agriculture: it has already achieved the EU Farm2Fork strategy target of 25 percent organic farming area. However, only 11 percent of the food consumed is organic. People also consume almost twice as much meat per year as the global average. Reducing the consumption of animal proteins is essential in order to achieve a turnaround in nutrition.¹³

Successful energy transition

In 2022, Austria ranked 8th in the EU in terms of annual per capita energy consumption, with 0.15 TJ. Globally, Qatar has the highest consumption at 0.70 TJ per capita.

The level of self-sufficiency, i.e. the share of domestic energy production in total energy consumption, was 37.5 percent in 2022.¹⁴ In primary energy production, 86.5 percent came from renewable energy sources: 47.4 percent from biogenic energy and almost a quarter from hydropower. To date, around three quarters of electricity comes from hydropower. Overall, renewables have a share of 33.8 percent - which puts Austria well above the EU average (23 percent).¹⁵ According to projections by the Fraunhofer Institute, the share of renewables in Austria's electricity consumption will have risen to 87 percent by 2023 - in second place in an EU comparison behind Luxembourg (89.6 percent).¹⁶ This represents an increase of nine percentage points compared to 2022. The same increase took eight years before that.¹⁷

Global poverty

Countries with a high standard of living and diverse opportunities are obliged to support countries in poverty. In 1970, Austria, together with other countries, pledged to provide 0.7 percent of gross national income for development cooperation and humanitarian aid every year. According to provisional figures for 2023, the so-called ODA quota^b is 0.38 percent for Austria.

Empowerment

Despite many measures and efforts, Austria is still one of the EU countries with the largest gender pay gap. According to the Austrian Social Insurance Institution, women received gross retirement pensions that were 38.1 percent lower than those of men in 2020 (including intergovernmental partial benefits). Women are also still significantly less likely to be in management and decision-making positions.¹⁸

Whether turnaround measures are implemented and how effective they ultimately are is influenced by governance factors. According to the World Bank's Governance Indicator's, corruption in particular has increased since 2007. At the same time, political stability and the effectiveness of the government have declined.

^b Official Development Assistance Quota stands for public funds for development co-operation

Scenario analysis for Austria

This chapter shows the different development trajectories that can result from different political decisions and measures taken at national level. To this end, the main trends for a Giant Leap are analysed from a [modelling perspective](#) and compared with the Too Little Too Late scenario.

It is important to note that this is not about exact and absolute values, but rather about how the trends of the various indicators relate to each other. This shows what an integrated approach can look like that leads to increased wellbeing with a lower impact on the planet: by tackling social, economic and environmental aspects decisively and jointly.

Details on the individual turnarounds are discussed in the respective chapters.

This report works on the assumption that developments at the national level also correspond to developments at the global level. If, for example, stringent decarbonisation with high investment in the renewable sector is coupled with a CO₂ tax in Austria, this corresponds to the policy that is being promoted internationally.

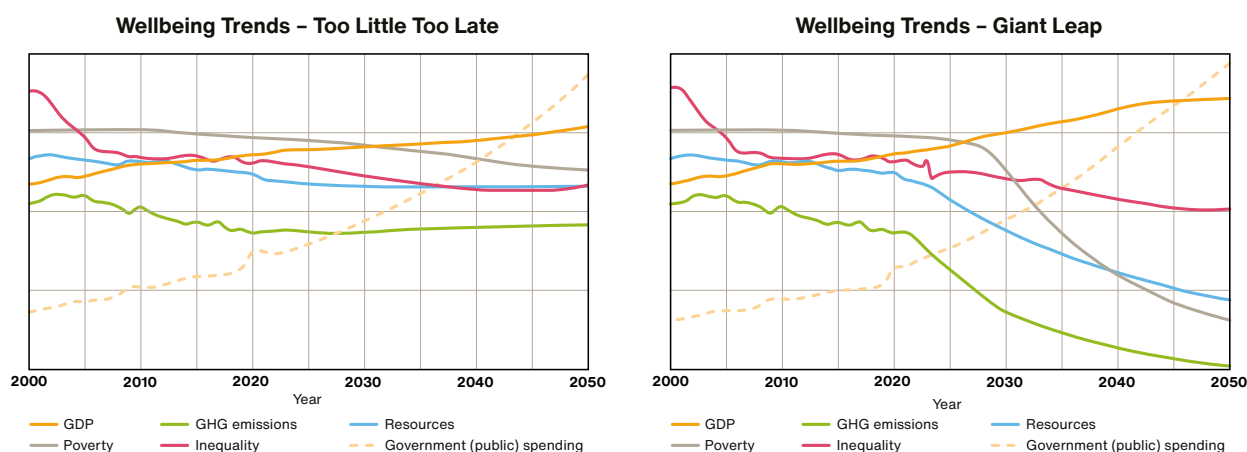


Figure 7: Main trends of the Too Little Too Late and Giant Leap scenarios based on the indicators for wellbeing: economic growth in GDP/capita, GHG emissions in tCO₂ eq/capita, resources in DMC (Direct Material Consumption) in tonnes/capita, poverty as proportion of the population below the national poverty line, inequality as income-based Gini coefficient, government spending as euros/year.

In the Too Little Too Late scenario, not everything necessarily continues as before; from a global perspective, however, political decisions in particular are largely unchanged. As a result, too little change happens too late. In the Giant Leap scenario, the five extraordinary turnarounds can lead to major global leaps in order to increase wellbeing within planetary boundaries. According to the model, the Austrian economy grows more strongly as a result of the Giant Leap. At the same time, there would be a socio-ecological transformation of the *economic* system. This means that in addition to the five turnarounds, a bold approach would lead to an economic turnaround towards a circular economy and the implementation of new socio-ecological economic models, which include approaches from the degrowth movement such as a reduction in working hours.

The comprehensive measures also have a positive impact on productivity. Increased government spending on services for all and investment in sustainable infrastructure means that everyone benefits from increased productivity and the resulting economic growth. Consistent redistribution and new labour models will not only significantly reduce poverty, but also inequality.

The reduction of CO₂ emissions also plays a central role in the Giant Leap scenario. New technologies and growth models are used, particularly in energy-intensive industry, which also significantly reduce emissions that are not generated in the energy system. In combination with the five turnarounds and the preservation or development of natural CO₂ sinks, these measures result in emissions falling much more sharply than in the Too Little Too Late scenario: according to the model, emissions initially fall but then slowly start to rise again because ambitious decarbonisation plans in the energy sector are not consistently implemented and industry continues to operate as before without significant investment in emissions and material efficiency. In this case, emissions would not stabilise until 2050.

In order to achieve the Giant Leap, however, strict guidelines for phasing out fossil fuels are implemented, affecting industry, households and the energy sector and leading to a rapid and significant reduction in fossil fuel emissions. At the same time, renewable energies are being rapidly expanded, enabling the necessary electrification of many sectors.

The transport sector is a particular challenge for Austria. There are delays in the gradual reduction of (fossil) combustion engines and in the development of a new infrastructure. In order to achieve drastic reductions in emissions, strict guidelines are essential to promote the switch to electric vehicles and a shift to other means of transport, especially active mobility (cycling, walking) and public transport; the overall number of cars should be reduced. Corresponding measures generate positive side effects for people and nature.

Stringent implementation of circular economy-related measures means that material consumption in 2050 is significantly lower in the Giant Leap scenario than in the Too Little Too Late case. The changes in the food and energy sectors also have a positive effect on domestic material consumption. Domestic material consumption performs better than the total material footprint in both scenarios.[°] In the Too Little Too Late scenario, domestic material consumption stagnates, while the total material footprint continues to grow. In the Giant Leap scenario, the former begins to shrink, while the latter continues to grow, albeit at a lower level. This could be further positively influenced by positive developments at a global level.

[°] Domestic material consumption (DMC) indicates the total amount of materials utilised for consumption within an economy.¹⁹ The material footprint (MF) takes into account the upstream material consumption of imports and exports and allocates the material consumption of the entire production and supply chains to the countries of final use.²⁰

IV. Paradigm shift in national inequalities

Summary for policy makers

Initial situation

Global inequality has increased significantly in recent years: eight billionaires now own the same wealth as the poorest 3.6 billion people. The ecological footprint of the rich is so large that it must be reduced, and not just for reasons of social justice. There are also inequalities in the Austrian context. Austria is one of the frontrunners, particularly in terms of wealth inequality. This is linked to social, health and cultural inequalities that should not be overlooked.

Vision

"By reducing structural inequality, income and wealth are distributed so fairly that there is hardly any monetary poverty anymore. All people have a secure existence. They have access to work and a basic income so that they can afford to live well within planetary and social boundaries, which also has a positive impact on the regional economy, climate and nature. There is also a broad range of socio-ecological services and infrastructures that are accessible to everyone and meet their needs. This includes medical care, educational opportunities, housing, mobility, local amenities and leisure activities. Social organisations play an important role and human-centred professions have been upgraded. The administrative and legal system is transparent and offers opportunities for participation free from discrimination, and it promotes integration."

Lever 1 - Redistribution and tax system:

- ▶ Progressive taxation of income
- ▶ Progressive taxation of assets including inheritance
- ▶ Avoidance of tax-efficient deduction of capital
- ▶ Compensation for social, ecological and economic disadvantages and damage
- ▶ Livelihood security

Lever 2 - Participation, equal opportunities and transparency:

- ▶ Strengthening operational and inter-company organisation
- ▶ Trade unions as citizens' councils instead of party politics
- ▶ Strengthening employee rights
- ▶ Work with young talent
- ▶ Strengthening the participation of people with low incomes at all levels of society. A better distribution of influence, including to the non-wealthy
- ▶ Transparency of asset/power distribution

Lever 3 - Deglobalisation and paradigm shift:

- ▶ Educational programmes on politics, ethics and media
- ▶ Away from the idea of performance, towards a life in dignity

- ▶ Addressing overconsumption and system change
- ▶ Development of positive target images

Outlook

There must not be a fundamental conflict between climate policy and social justice - on the contrary: these two areas are interdependent and their problems can only be solved together. A truly climate-social policy offers the opportunity to overcome social disparities through climate and environmental protection.

Global Background

"Our societies will no longer be torn apart by excessive inequalities. By redistributing wealth within and between nations, future generations will have greater opportunities to realise their dreams, regardless of family and country of origin."

—Earth4All (2022)

The latest report to the Club of Rome emphasises the need to reduce inequalities worldwide. The chapter "The Inequality Turnaround: Sharing dividends" is about reducing inequality within societies - i.e. at national level.

A joint consideration of poverty and inequalities, as assumed in Earth4All, is also scientifically relevant: The inclusion and differentiation of various inequality criteria is essential in poverty research.

A distinction must be made between inequality in outcomes - wealth, health and housing conditions - and inequality of opportunity - i.e. political participation, education, welfare state benefits.^{21, 22} In this turnaround, the focus is on opportunities and the realities of life for the many as opposed to the accumulation of wealth by the few (ibid.). This is not only a question of justice, but also of social prosperity, the development of social resources/resilience and therefore also an indication of a country's level of development. This is because countries with lower social and economic inequalities have higher standards of living in terms of education, social mobility, healthcare and life expectancy, for example.²³ This is also emphasised by the international Earth4All report.²⁴

This turnaround is therefore not simply about achieving all-encompassing equality. Rather, it is about reducing inequalities, which are the focus of attention due to their strong interactions with other sustainable development goals.

At a **global level**, the following three levers have been identified for the reversal of inequality:²⁴

- ▶ Progressive taxation
- ▶ Promotion of (renewed) organisation in trade unions
- ▶ Universal basic dividend

Austrian starting position and model-based scenario analysis

Wealth, poverty and environment

At a global level and in Austria, one of the biggest tasks in the coming years will be to think about climate policy and social justice together. There must not be a fundamental conflict between climate policy and social justice - on the contrary: the two areas are interdependent and their problems can only be solved together. This means that every climate policy measure must also consider the social impact, and

conversely, every social tax, public subsidy and benefit should take into account the potential impact on the climate. A truly climate-social policy will always keep an eye on how climate and environmental protection can also overcome social imbalances - such as a lack of participation, poor living conditions for lower income groups or poor pay for care work.²⁵⁻²⁸

We know from many studies that the ecological footprint of households with wealth or high incomes is significantly larger than that of comparable groups with lower incomes or wealth. Although poorer/lower-income households consume significantly less, they suffer more from environmental degradation, climate change impacts and resource scarcity. People on low incomes are also more exposed to environmental and extreme weather conditions, for example if they are homeless or live in poorly insulated buildings or unhealthy living environments, such as along busy transport routes or near landfill sites.²⁹

The ecological footprint of the rich is so large that it must be reduced not only for reasons of social justice but also to address ecological challenges. We cannot tackle environmental issues as long as the rich continue to produce an outsized footprint.

The pieces to be shared in the economic-ecological distribution pie are limited. When a few people have and consume a lot, there is less left for others. "Since there are clear planetary limits to economic growth, we can no longer pretend that economic growth is a substitute for fairer distribution," said Kate Pickett in her keynote speech at the Earth4All turnaround event on inequalities: because there would be no correlation between income inequality and economic growth.

The larger ecological footprint of the upper income groups and the greater financial and ecological burden of climate policy measures for the middle and lower income groups is an incentive to ensure greater fairness. Climate policy measures that go hand in hand with the scarcity and taxation of resources place a particular burden on people on lower incomes. Examples include CO₂ taxation or the eco-tax on petrol. In addition to inflation, they also lead to an increase in the prices of everyday necessities - from goods that have to be transported, such as food, to mobility, electricity and heating costs. Converting heating systems is also often associated with high costs and is difficult to finance from lower incomes, whether in the form of property renovations or indirectly by increasing rents.

Climate-friendly, ecologically valuable and socially responsible agriculture is also likely to cause food prices to rise further. The social marginalisation of people who cannot afford such food must be ruled out at all costs.

If measures are perceived as unfair, the potential for social conflict increases, especially when it comes to issues of everyday life - food, housing, heating or mobility. Numerous equalisation instruments can mitigate and even improve such problematic distribution effects. For example, a socio-ecological tax reform can not only contribute to climate protection, but also lead to a fairer distribution of resources.

Growth, prosperity and abundance

Global GDP is rising, but indicators of life satisfaction and wellbeing are not rising at the same rate and to the same extent. In richer countries, there is also no correlation between life expectancy and per capita national income.

The Spirit Level theory, developed by Richard Wilkinson and Kate Pickett, states that societies with less inequality are more liveable as people are less plagued by status anxiety. Empirical research has largely confirmed this. At the same time, inequality has sharply increased in recent years: Eight billionaires now own the same wealth as the poorest 3.6 billion people.³⁰ This increase in wealth emphasises the absurdity of the current economic system. The number of billionaires and the super-rich is also on the rise. So the problem is twofold: a few are getting richer - unspeakably so - but there are also more very rich individuals overall.

Less inequality and more needs-orientated justice centrally influence the health and social wellbeing of society.^{22,31,32} In countries with greater inequality, health and social care is often inadequate or less accessible to the general public. Kate Pickett and her team have developed an index that identifies problems such as life expectancy, social mobility, trust, homicide and imprisonment.²³

In countries with greater equality, citizen participation is also higher - as is the recycling rate. Scandinavian countries and Japan fare very well here, while the UK and the USA, countries where inequality is particularly high, fare much worse. Longitudinal studies also show that there is a clear correlation between inequality and other social and environmental problems.

Great inequality is also a basis for poverty. Poverty has always been - and still is today - socially determined. Those affected are stigmatised and marginalised, while the lack of benefits, corruption and environmental destruction by the wealthy are distracted from.

"The enormous accumulation and concentration of wealth is destroying our society," says Wilfried Altzinger^d. "We have to reduce [it]." The difference between income and wealth "is incredibly important": Everyone has human capital, everyone can work. But wealth is concentrated - and not everyone can multiply their money.

Wealth inequality is therefore the central issue when it comes to distribution. In the last 30 years, there has been a strong increase in private wealth in relation to gross domestic product in Austria, as everywhere in the OECD. Wealth often goes hand in hand with influence. Increases in wealth therefore also lead to more influence - visible in politics, in institutions, even at universities, according to Wilfried Altzinger: "Many institutes have long been dependent on private donors and industry".

It is therefore less about general redistribution than about reducing the extreme concentration of wealth among the top 0.1 percent of the population: it is about abolishing excess wealth.

Barriers, potential and players

Redistribution will undoubtedly provoke resistance. But inequality and affluence also generate resistance among excluded and marginalised groups. The global Earth4All report rightly states: "Solutions must be acceptable to the majority if they are not to fail resoundingly". The richest one percent of the population owns up to 39 percent, and the richest five percent even own up to 55 percent of total wealth.^e Other

^d Prof Dr Wilfried Altzinger, Research Institute Economics of Inequality, Vienna University of Economics and Business Administration

^e Data on wealth in Austria is difficult to obtain. The estimates mentioned here are therefore modelled using the so-called Pareto distribution of the second type.

studies and survey methods also show similar results. The Austrian National Bank publishes the Household Finance and Consumption Survey (HFCS) every three years.^{33,34}

Wellbeing and social needs

It is important to distinguish between wealth inequality and income inequality - and to consider both. With a Gini coefficient of 27.8 points, income inequality in Austria is low, in stark contrast to wealth inequality, which at 76.1 points tends towards complete inequality,^{f,35} "While the richest 1 percent of households own around 40 percent of total net wealth, the bottom half owns just 2.8 percent of total."^{g,33}

Above and beyond monetary inequality, the social, health and cultural inequalities that are often associated with it should not be overlooked. People with lower incomes are more often socially isolated, are more often ill and take advantage of cultural and educational opportunities to a lesser extent.^{36,37} and they often lack the means to heat their homes or protect themselves adequately from the heat in summer.⁸ In addition to financial barriers, the level of education also plays a role here, which can be predetermined by the parental home. However, a holistic education is necessary to understand climate and environmental policy changes. There is a particular need to involve and support socially weaker sections of the population.

Participation in decision-making processes

A completely different dimension of inequality relates to citizenship. There are around 900,000 dependent employees in Vienna. Almost half of them do not have Austrian citizenship. Although these people work here and pay their taxes, they are systematically excluded from political participation - i.e. also from decision-making processes - in the sense of a representative democracy.

Lack of wealth tax and less progressive taxation

Compared to most European countries, wealth taxation including inheritance tax is low in Austria. Nevertheless, the taxation of wealth in Austria is declining, particularly in the case of inheritance. This "benefit-free income through inheritance" primarily benefits the recipients of higher incomes.³⁹

Even the actually progressive taxation of income does not ultimately have a strong redistributive effect due to the maximum assessment base in social insurance and numerous loopholes.³⁹ Added to this are regressive consumption taxes. What contributes to a fairer distribution are above all public cash and in-kind benefits, such as family support, healthcare, social housing, kindergartens and public schools.^{39,40}

Of course, the financing of these services also depends on tax revenue. If reference is now made to the abolition of cold progression, there are certainly good arguments in favour of this measure; at the same time, however, consideration should be given to how the revenue can be generated that is needed for climate policy tasks and greater fairness.

There must be extensive investment in public transport, especially rail transport, the conversion of heating systems must be accelerated, and energy-saving housing construction and increased financial incentives for maintenance and refurbishment are needed in order to conserve resources.^{29,41,42}

In Austria, therefore, both are important and should be combined: more equality of income and wealth - at least after taxes and duties and taking into account public services - and a healthy financial basis for the social transformation to achieve climate targets. Under no circumstances should the financing be at the expense of the already financially weaker sections of the population.

^f A Gini coefficient of 1 means extreme concentration.

^g According to the HFCS method, the figure is 3.6 per cent.

Scenarios for turning around inequality in the Austria model

In order to test the consistency of the scenarios between the turnarounds at the Austrian level, the global scenarios were transferred to the national level using the iSDG model and the levers were translated accordingly. The first lever of the inequality turnaround for Austria - "increased taxation of the rich" - is modelled in the same way as at global level: as higher taxation of the top income quintile.

The second lever - strengthening trade unions - is interpreted as "equalisation of incomes through a narrower range between salaries" and "reduced working hours". The universal basic dividend is implemented in the model as "redistribution".

The Gini coefficient shows that the Giant Leap scenario reduces inequality more than the Too Little Too Late scenario. The model looks at income inequality,^h not wealth inequality, which is significantly higher in Austria.^{35,43} This is partly due to the greater tax pressure on top salaries and wages, which increases the government's revenue, which in turn is redistributed to the lowest salaries and wages. In addition, this increased revenue allows the government to make other necessary investments in terms of transforming the economic system and the other turnarounds without placing too great a burden on the national budget. This will result in further positive effects, such as additional infrastructure (including social infrastructure such as education, care, healthcare, etc.) and increased economic productivity. Newly set long-term targets for the difference between the minimum and average salary also make a positive contribution to reducing inequality.ⁱ

Overall, income is more evenly distributed in the long term when the comprehensive package of measures is implemented, as is access to public goods and services. In the short term, the median income in the Giant Leap is lower than in the Too Little Too Late scenario. At the same time, the at-risk-of-poverty rate falls constantly and, after the Giant Leap, is significantly lower than in the other scenario at around 3 percent in 2050. This means that a turnaround in inequality and the transformation of the economic system will have a positive impact on everyone's income, especially in the long term in Austria; even in the short term, they will have a positive effect on the risk of poverty and inequality.

Other measures that are not included in the modelling, but which can mitigate negative short-term effects on income, should definitely be considered and implemented, including those developed in the stakeholder process. These include a basic income or solidarity-based citizens' insurance and the expansion of social infrastructure.

In addition to the implementation of the turnaround package of measures itself, improved governance plays an important role in ensuring that redistribution is fair, effective and efficient.

^h Low income inequality is a characteristic of a welfare state. Income equality influences everyone's quality of life. Countries with a low Gini coefficient for income have a significantly higher quality of life.

ⁱ Due to the difficult data situation, limited time and resources, it was unfortunately not possible to incorporate the wealth-Gini index into the modelling.

Gini coefficient

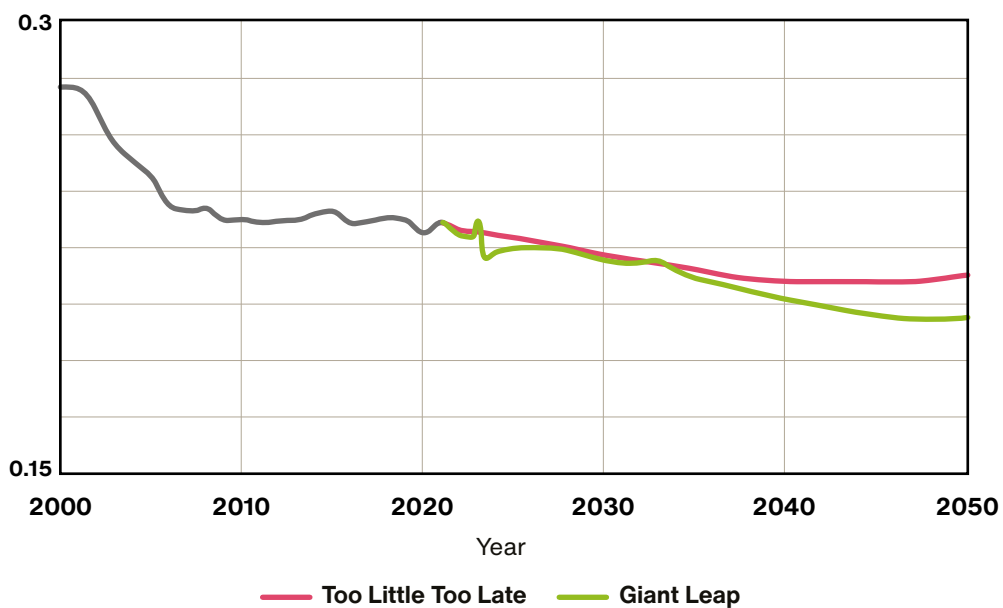


Figure 8: Income inequality, represented by the Gini coefficient (1=absolute inequality; 0=no inequality at all) in the Too Little Too Late and Giant Leap scenarios.

Risk of poverty

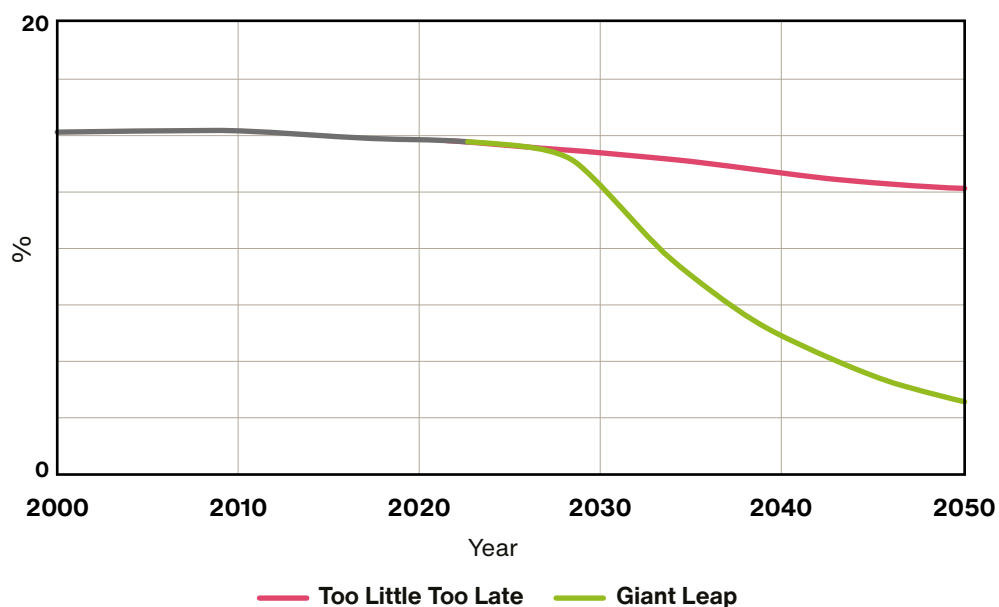


Figure 9: Percentage of people at risk of poverty in the population in the Too Little Too Late and Giant Leap scenarios.

Social benefits

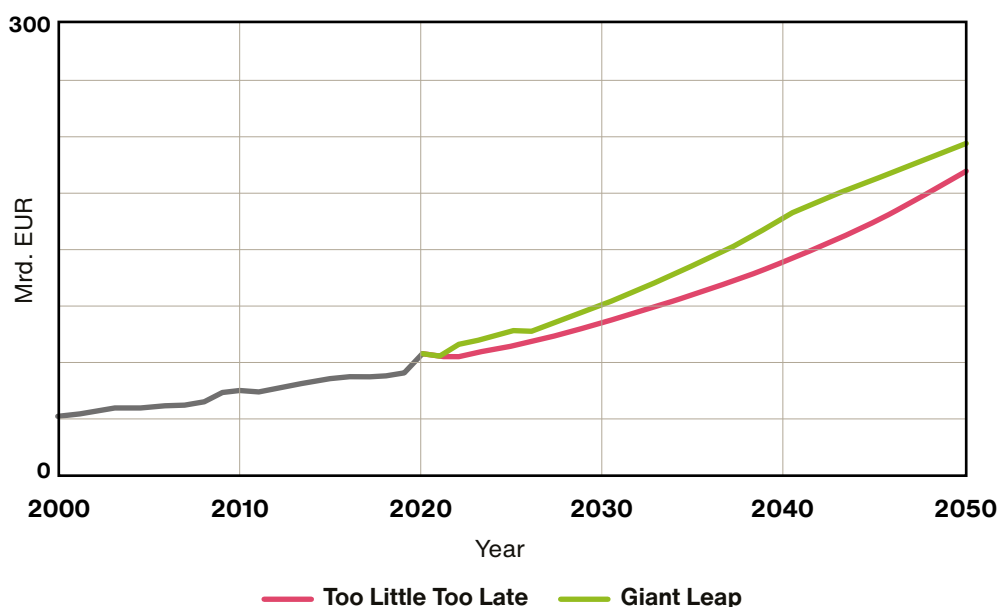


Figure 10: Government spending on social benefits (including education, etc.) in the Too Little Too Late and Giant Leap scenarios.

A Giant Leap and how to get there from the stakeholders' perspective

This section presents the vision, goals and levers for turning inequality around that were jointly developed in the workshops and that stakeholders believe are needed to achieve the Giant Leap in Austria.

Vision and goals

In order to understand how we can achieve the Giant Leap in Austria, it is first relevant to understand what a Giant Leap means from the perspective of the inequality turnaround in Austria. To this end, the stakeholders developed the following vision for 2050:

"By reducing structural inequality, income and wealth are distributed so fairly that there is hardly any monetary poverty anymore. All people have a secure existence. They have access to work and a basic income so that they can afford to live well within planetary and social boundaries, which also has a positive impact on the regional economy, climate and nature. There is also a broad range of socio-ecological services and infrastructures that are accessible to everyone and meet their needs. This includes medical care, educational opportunities, housing, mobility, local amenities and leisure activities. Social organisations play an important role and human-centred professions have been upgraded. The administrative and legal system is transparent and offers opportunities for participation free from discrimination, and it promotes integration."

Levers

The three levers of the global report were defined for the Austrian context in the stakeholder workshop and formulated as follows:

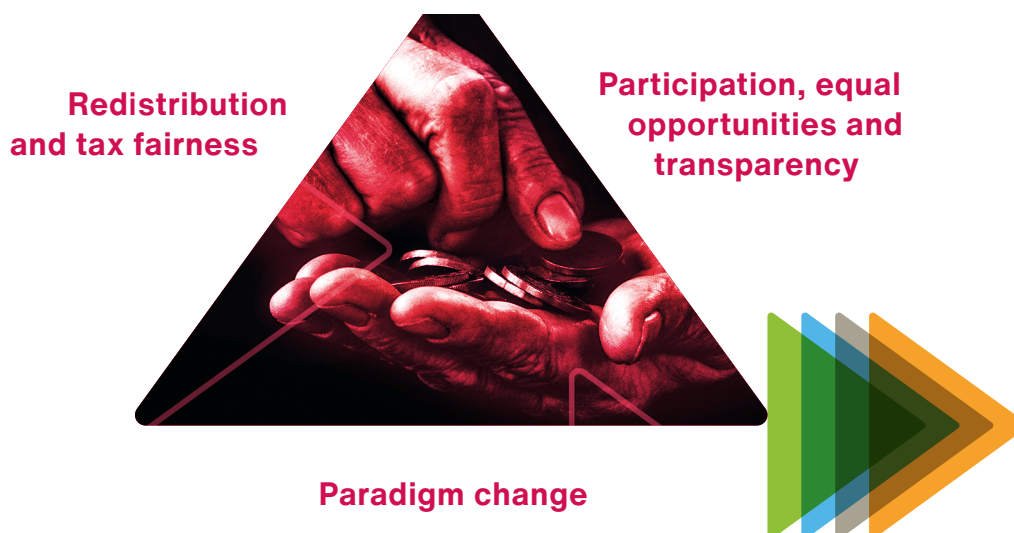


Figure 11: The levers of the inequality turnaround.

Photo: Frantisek Krejci @ pixabay.com

Level 1: Redistribution and tax system

Subject areas:

- ▶ Progressive taxation of income
- ▶ Progressive taxation of assets including inheritance
- ▶ Avoidance of tax-efficient deduction of capital
- ▶ Compensation for social, ecological and economic disadvantages and damage
- ▶ Livelihood security

The development of objectives and the anchoring of defined basic rights, such as basic child protection or the right to an intact environment, are fundamental to this lever. Basic child protection in particular must be implemented as a matter of urgency, as it is an important part of strengthening and applying the rights of marginalised groups. Reformed social assistance should also be introduced to support marginalised groups.

A central component of this lever is a comprehensive and stringent tax package that includes the reform of the following taxes:

- ▶ Abolition of the maximum contribution base
- ▶ Capping of capital assets and salaries

- ▶ Financial transaction tax
- ▶ Allowances for income tax and social security contributions (25,000 euros)
- ▶ Progressive capital gains tax (higher than the tax on labour income)
- ▶ Progressive VAT for luxury goods
- ▶ Reduction in VAT on basic consumption (allowances)
- ▶ Tax relief for the workforce
- ▶ Wealth taxation
- ▶ Additional income tax bracket of 25 percent

This comprehensive tax package enables the implementation of a (living) basic income, more childcare and socially responsible climate protection measures.

As tax redistribution (or tax changes in general) is usually received very critically by the population from a stakeholder perspective - even in groups that benefit from the changes - and these steps must be prepared and accompanied by a suitable communication strategy. Another empowering step is for networks that are in favour of redistribution to get involved.

In order to improve the situation of employees, more childcare and better working conditions are needed, as well as broader full-time employment with reduced working hours (35 hours) in order to enable or even guarantee full employment for as many employees as possible. Better childcare provides a basis for many parents to have the opportunity to work full-time in the first place.

This lever also provides for *socially responsible climate protection* measures. People have a right to an intact environment, so they also have a right to climate protection measures such as the *abolition/reorganisation of environmentally harmful subsidies* (e.g. commuter tax allowance). In order for these to be socially acceptable, the polluter pays principle must be more clearly enforced. One example would be to *introduce renaturalisation costs* for new buildings. Socially acceptable climate protection measures can also include free access to nature, which may require the *communitisation of private property*.

Permanent wealth monitoring by the state and the *public database on wealth and income* based on this are an essential prerequisite for redistribution measures. The accumulation of wealth can only be curbed or even reversed by tax measures if it is not possible to conceal assets or transfer them abroad.

Reducing inequality also includes a fairer approach to common goods. This first requires the step of *defining the commons (what must remain accessible?)* in order to determine which goods have not yet been recognised as commons but should be. These common goods should then be made accessible to all.

Material circumstances are closely linked to psychosocial conditions. Martin Schenk, poverty expert at the Austrian social welfare organisation Diakonie, points out that the cut in housing benefit, for example, leads to a 10 per cent increase in depression. The inflation of the years 2023/24 reveals gaps and problems here - whereby the "lower middle" should not be forgotten, but should be protected preventively. A distribution according to the "watering can principle" has fallen into disrepute, although it helps everyone, emphasises Schenk. This is actually about universal social benefits, which are effective precisely because they do not only focus on accuracy. Universal benefits for all provide significant relief for lower incomes in relation to household income, can be claimed without bureaucracy, protect the lower middle class and prevent poverty. They are important for general acceptance of the welfare state without stigmatising.

Lever 2: Participation, equal opportunities and transparency

- ▶ Strengthening the operational and inter-company organisation
- ▶ Trade unions as citizens' councils instead of party politics
- ▶ Strengthening employee rights
- ▶ Work with young talent
- ▶ Strengthening the participation of people with few assets at all levels of society. A better distribution of influence to the non-wealthy
- ▶ Transparency of asset/power distribution

In order to implement the lever of participation and equal opportunities, a number of steps are required that can be categorised as "educating", "campaigning" and "pushing". All three categories can be initiated by the state or an interest group and aim to change the behaviour of the population. They differ primarily in terms of how invasively they intervene in people's thoughts and actions and the time frame in which they take effect. Steps in these categories also occur in other turnarounds and are particularly important where more participation is to be achieved.

Educating refers to various forms of awareness-raising and knowledge transfer. The aim here is to initiate changes in thought patterns or behaviour without pressure or coercion by making citizens aware of and sensitising them to issues. Educating can be used both in the short term as preparation for further steps and in the long term for general knowledge building.

In the inequality turnaround, for example, *highlighting unequal income and wealth situations and publicising measures to improve them* are short-term steps to raise awareness of inequality and potential changes among the population. The integration of democracy education into curricula also falls under educating, but does not have a short-term effect.

Campaigning is more strategic and focused on the implementation of specific goals. Citizens are not told to do anything, but are clearly encouraged to engage with issues, actively advocate for them and shape them. This also includes stakeholder processes in which citizens actively participate in the development

¹ Martin Schenk, social expert, Deputy Director of Diakonie Austria

of reforms and laws. Steps such as *evaluating employee rights: what's the problem?* can be carried out externally or with the involvement of stakeholders.

Campaigning is usually more complex than educating and has at least a medium-term focus. The following steps fall into this category for the lever of participation and equal opportunities:

- ▶ Corporate Social Responsibility: in the co-creative-participative framework to further develop criteria
- ▶ Call for citizens' assemblies on the future of Austria
- ▶ Demand mandatory transparency
- ▶ Evaluation of employee rights: what's the problem?
- ▶ Encourage a compulsory social year for all
- ▶ Campaign for electoral law reform: voting rights for permanent residents with a centre of life and/or income in Austria
- ▶ Involve marginalised groups with concrete actions (signatures)

In *pushing*, citizens are not only asked to get involved or change their behaviour, but are urged to do so. This can be done through incentives, but also through the establishment of participatory institutions. These are usually steps that are implemented and effective in the long term. The following steps fall into this category for the participation and equal opportunities lever:

- ▶ Involve employee bodies equally with employer bodies in political decisions
- ▶ Citizens' assemblies lead to referendum
- ▶ Make "Workplace Democracy" mandatory for companies
- ▶ Socialisation of energy, housing, construction and mobility companies
- ▶ Anchoring the participation of those affected in political decisions in law

Steps in the three categories often build on each other. For example, the introduction of citizens' assemblies is prepared by educating and campaigning; participation in citizens' assemblies itself falls into the pushing category.

Lever 3: Deglobalisation and paradigm shift

- ▶ Educational programmes on politics, ethics and media
- ▶ Turning away from the idea of performance in favour of a life in dignity
- ▶ Addressing overconsumption and system changes
- ▶ Development of positive target images

As this lever was not dealt with in the stakeholder workshop, the inputs from experts are presented here:

Martin Schenk

The household incomes of the lower middle class are supported by state healthcare and housing benefits. However, their level of prosperity would be destroyed if welfare state benefits were restricted in Austria as they are in the USA or the UK. So-called "housing first" programmes offer a good solution for the homeless.

With Housing First, homeless people have their own home at the beginning, not at the end. This means: no working up from the bottom to the top, but starting with the whole - the flat. For decades, the hierarchisation of needs has prevented models such as Housing First, as people thought in terms of ladders. The hierarchy of needs leads to an attitude that only allows those affected by poverty the absolute necessities: food, drink, a roof over their heads - warm, full, clean. Off. This is a paternalistic and essentially authoritarian approach. In other words, the "roses" are missing to ensure more than mere survival; it is also about participation in society, in social and cultural life. Successful support is characterised by an approach that focuses on the many dimensions of people's lives at the same time.

In contrast to the upper middle class, people who belong to the lower middle class have no assets, no large savings or financial resources, and often no friends or relatives who can step in with money when things get tight.

Andreas Koch^k

Within the existing system, people turn from critics into followers as soon as they get their hands on money. That's why the system needs to change. Ownership sounds great at first, but it also means a larger financial framework. There needs to be greater support for rents and a sensible balance between a rent that allows owners to renovate and invest without being driven by profit. We also need to rethink public space. Car parks and private transport need to be reduced.

Christoph Streissler^l

Equally central is the better utilisation of regulatory levers. However, this will only work if there is broad support from the population. One prerequisite for this is fairer distribution. Only then will a more ambitious climate policy be supported by the many.

Against this backdrop, it is clear that we need a paradigm shift from "more for the few" to *"enough for all and nothing too much"*. There are many approaches, as Caroline Krecké, who coordinates the project "Enough of everything, not too much of anything - steps towards ecologically and socially just resource and energy consumption" together with the Poverty Conference, points out:

- ▶ Removing basic needs from the market orientation
- ▶ Staggered climate bonus and redistribution through progressive taxation
- ▶ Price on CO₂ consumption and thus redistribute money socially and ecologically
- ▶ Tax luxury goods more heavily than other goods
- ▶ Create and maintain consumer-free, green and public spaces
- ▶ Drastically reduce vacant properties, land consumption and property speculation

^k Univ.-Prof. Dr. Andreas Koch, Center for Ethics and Poverty Research, Paris Lodron Universität Salzburg

^l Christoph Streissler, Referent für Klimapolitik, Arbeitverkammer Wien

^m Caroline Krecké, ÖKOBÜRO – Allianz der Umweltbewegung

Taxing aviation fuel would also be central and unproblematic in terms of distribution policy. A European citizens' initiative has committed itself to this demand: "The tax exemption for jet fuel that still exists means an annual tax loss of around 27 billion euros in the EU. This subsidises one of the most climate-damaging forms of transport."⁴⁴

Indicators

Wilfried Altzinger

According to Wilfried Altzinger, **transparency** would be an important first step in this area. At the moment, uncovering this is left to journalists. There is no proper recording of wealth. Even the ECB does not collect this data. It usually estimates how much the top one per cent owns - with results between 30 and 50 percent of the assets of a country! That is a problem. Tax auditing in Austria is also extremely poorly organised in terms of personnel and quality. A good tax audit would certainly be technically feasible – it just lacks the political will.

At the international level, tax havens are of course a major factor.

Gross domestic product is not a perfect indicator. Nevertheless, it remains relevant for a country's economic performance.

If private wealth rises sharply in relation to GDP, the balance of power changes.

Karin Heitzmannⁿ

Poverty is a multidimensional challenge. The crux of the matter is not only to find indicators for poverty, but also to ensure that no single indicator ends up being singled out. It is a political task to collect indicators with which a goal can be adequately mapped.

The **Gini index** is a widely used indicator that suggests an accuracy in distribution that does not exist. Among other things, it is important whether the wealth is "under control" or used for corruption.

There is a need for better data on poverty and inequality issues, including qualitative issues. In the area of housing, for example, it is about the following: How many homeless people are there and why? What dynamics does the data show? How can these people get appropriate housing options? What are the levers and barriers? Which housing projects are suitable for improving the situation? How high is the proportion of socially and ecologically just housing in new housing construction? How can climate-friendly and affordable housing be harmonised?

Outlook: Enough of everything and not too much of anything

The contributions make it clear that there must be a comprehensive reversal of inequality, which can be brought about both through fairer taxation and the expansion of financial and in-kind benefits by the state. It is precisely these transfer payments that increase the "income share" of the lower third in Austria, while the share of the upper third decreases. Although these are not yet radical changes, they do make it clear where the climate policy and social journey must go.

ⁿ Univ.-Prof.in Dr.in Karen Heitzmann, Institut für Sozialpolitik, Wirtschaftsuniversität Wien

Martin Schenk argues that the limits imposed on the economy by planetary boundaries should be seen in close connection with the distribution of income and wealth and advocates a tax system that promotes social equality - primarily through wealth and inheritance taxes - contributes to combating the climate crisis and reduces taxes on labour.

According to Andreas Koch, many people still live according to the model of more and more: more money, more material, more capital, more reputation. There are people who don't want to consume too much and others who consume too much. A project by the umbrella organisation for the environment together with the Poverty Conference states: "Consumption corridors are an effective instrument for a responsible pursuit of a good life in a sustainable way. Defined by minimum consumption standards that enable everyone to live a good life and maximum standards that guarantee others the chance of a good life, consumption corridors enable the vision and implementation of the social change necessary to realise a good life within planetary boundaries. Minimum consumption standards ensure that people living today or in the future can meet their needs and that access to environmental and social resources is guaranteed in the required quality and quantity. Maximum consumption standards, on the other hand, are necessary to ensure that the consumption of some people does not jeopardise the chance of a good life for others."⁴⁵

Social participation also requires consumption-free spaces, i.e. sufficient opportunities to meet reference groups and friends without the pressure to consume and thus fulfil basic social needs.

Caroline Krecké advocates a city with a lively town centre that is used, without vacant lots, with consumer-free spaces and the opportunity to get around on foot. Services that are needed for everyday life should be available to everyone. These include a mobility guarantee, health insurance and high-quality, affordable food.

The workshop participants' proposals correspond closely to the scenarios that were also developed in the global Earth4All report - supplemented by a number of concrete ideas for measures and fields of action for the situation in Austria.

V. The future of food

Summary for policy makers

Initial situation

The world faces the challenge of providing enough affordable food for everyone - while remaining within planetary boundaries. To achieve this, the food system must be considered as a whole, i.e. across the entire value chain. One of the biggest challenges in Austria is to ensure that all stakeholders, especially people in agriculture, can make a good living from it.

Vision

"In 2050, Austria will have a sovereign, resilient and efficient food system in which healthy food is made available to everyone without exploiting people, the environment or animals. This system is fair for everyone involved along the entire value chain - from producers to consumers. Regionality, communication between all stakeholders, innovation and a high level of awareness of nutritional practices and appreciation for high-quality and sustainable food play an important role here. Climate protection and the preservation of biodiversity, water and soil are seen as central tasks of the system. Conflicts are tackled proactively."

Lever 1 - Dietary change

- ▶ Reduce meat consumption
- ▶ Reduce the degree of food processing
- ▶ Reduce waste

Lever 2 - Efficiency and fairness of the food system:

- ▶ Reduce soil loss
- ▶ Fertiliser reduction
- ▶ Direct marketing
- ▶ Fair prices

Lever 3 - Socio-ecological land management:

- ▶ Self-sufficiency
- ▶ Organic farming
- ▶ Biodiversity

Outlook

A healthy diet in harmony with a healthy - non-exploited - nature is possible. A more conscious and appreciative approach to food is not only an opportunity for us consumers - it can also contribute to animal welfare, protect the climate and the environment and, last but not least, increase the quality of life and income of those people who provide "our daily bread".

Global background

"We face the challenge of transforming the global food system so that it can safely provide 9 billion people with nutritious and flavoursome food without exceeding planetary boundaries. But this is possible. But it means that in order to protect the remaining flora and fauna, we must not take up any additional land or sea areas. And it means reducing our water consumption and reducing the excessive use of nitrogen and phosphate fertilisers in rich countries. At the same time, we must ensure that agricultural processes are structured as CO₂ sinks without increasing emissions of other greenhouse gases. And finally, it means recognising - and rewarding - our farmers as custodians of the biosphere. Because they are the ones who secure our universal human right to healthy food."

—Earth4All (2022)

Food and agriculture are closely linked. In Austria and far beyond, we eat the food that is produced, transported and traded in agriculture and industry - natural and industrial products. While people need good, healthy food that they can afford, economic players across the value chain expect to earn an appropriate income with good work and to preserve or improve the natural environment (air, soil, water, climate, biodiversity) in the process.

The importance and topicality of this issue was emphasised once again at COP28 in Dubai in 2023: For the first time, "food systems" were given a prominent place there as an integral part of sustainability solutions. In addition to Austria, 155 nations have signed the "Declaration on sustainable agriculture, resilient food systems, and climate action", which recognises the "great potential of food systems to provide strong and innovative responses to climate change and create shared prosperity for all" as well as the great opportunities for innovation in the food sector.⁴⁶

The agriculture of the industrialised and western economy has undoubtedly brought about an enormous increase in prosperity in these countries. However, it has only achieved this at great sacrifice. The victims in Austria are farmers who cannot keep up with industrial agriculture. Those who also suffer are the over-fertilised, overused soils and biodiversity, as well as farmers in countries of the global South, who have been and are being driven out of local markets by food exports due to the numerous subsidies in agriculture.

The industrialised production methods of recent decades have had a major impact on natural cycles. On the other hand, these production methods mean that we can now feed humanity with less land per capita than in the past.

At European level, the Farm2Fork strategy, which is the focus of the European Green Deal, has set a clear course towards a transformation towards fair, healthy and environmentally friendly food systems.⁴⁷

In order to enable a development towards the Giant Leap in the area of nutrition, the **global Earth4All report** identified three levers for the food transition:²⁴

- ▶ New cultivation techniques
- ▶ Efficiency of the food system
- ▶ Changing diets

Austrian starting point and model-based scenario analysis

Food is a cross-cutting issue

From a political perspective, food is a cross-cutting issue: it encompasses areas such as the environment and climate, health, agriculture and consumer protection, for which several ministries in Austria are responsible and whose cooperation is still underdeveloped.⁴⁸ From an economic perspective, the food supply comes from nature via agricultural production. It reaches our tables through industrial production, storage, transport and trade.

In industrialised countries, only around 10 percent of household expenditure is spent on food - in contrast to low-income countries, where on average around half of household income is spent on food.

From a production perspective, 10 percent also corresponds to the share that agriculture has in total greenhouse gas emissions in Austria and globally.⁴⁹ However, if a consumption-based perspective is applied - i.e. the "rucksack" of emissions from food is included in the calculations - the share of food production in greenhouse gas emissions is one third.^{50,°} A maximum of 5 percent of global emissions in connection with agri-food products are attributable to transport. Regionalisation is therefore not a major climate lever in this area, says Marianne Penker.^p

A healthy diet should be in harmony with a healthy - non-exploited - natural environment. Nutrition is the basis of the human pyramid of needs. It is therefore crucial that companies that provide us with food can also make a living from it. But food is not just agriculture - that is only the beginning of a complex value creation and logistics system. A more appreciative consumption of food - that means reducing waste and restricting the consumption of animal products - would therefore be very positive for both people and the environment.

Supply and demand meet an environment whose potential contribution to the production of high-quality food is limited - and decreasing due to increasing environmental degradation. It is about climate effects, soil, nitrogen and phosphorus as well as biodiversity, which agriculture needs on the one hand and influences on the other.

The nitrous oxide (N₂O) released by intensive farming in particular is a greenhouse gas that is around 265 times more harmful to the climate than carbon dioxide (CO₂). In addition to the problem areas of climate and biodiversity, the consumption of nitrogen and phosphorus is also reaching planetary limits. Currently, an average of 80 percent of the nitrogen that is introduced into the system in Europe in the form of mineral and commercial fertilisers is released again without being used for our food or by "end products". These are huge losses - and reducing them is expensive.⁵¹⁻⁵² There are solutions to bind nitrous oxide, for example through legumes, or it could be captured in sewage basins.

There are also technical options for collecting and storing nitrogen, phosphorus and other minerals in sewage treatment plants. However, the sludge in sewage treatment plants is actually incinerated, which requires a lot of energy. So we always need new phosphorus instead of using what is already there.

[°] Globally, the agricultural and food system also includes industry, trade, consumption and waste. In Austria, only agricultural production is included, without the effects of feed and food imports from other regions of the world.

^p Univ.-Prof. Dr. Marianne Penker, Deputy Director of the Institute for Sustainable Economic Development, BOKU University

Land consumption and self-sufficiency

One issue that is of particular importance in Austria is the land consumption of 11 hectares per day. While the global report Earth4All calls for "no more land expansion of the food system", valuable agricultural land and soil are being lost at record speed in Austria - with significant negative consequences for biodiversity and food security, among other things. While the EU is aiming for net zero land consumption by 2050, the Austrian government programme 2020-2040 defines a limit of 2.5 hectares per day - this must be implemented quickly and bindingly.

Thinking in terms of quality rather than quantity must also be applied to livestock farming. In many regions of Europe, including Austria, the EU's target limit of 90 livestock units per hectare (LU/ha) is being exceeded. Among other things, this reduces biodiversity due to over-frequent mowing or over-fertilisation with manure and slurry.

Finally, it must also be taken into account that food consumption in Austria can also have an impact on land use in tropical forests. This applies in particular to meat, for which animal feed such as soya is imported, and all food products that use palm oil as an ingredient. Tropical forests are often cleared for this purpose, destroying important carbon sinks and biodiversity hotspots.⁵³

Self-sufficiency in Austria

The food sector faces a number of challenges both globally and in Austria (see balance of trade). The strengths of the domestic food and nutrition system lie in the high degree of self-sufficiency: Austria's trade balance for food is balanced. While self-sufficiency is present in meat (except poultry) and dairy products, the situation is different for fruit and vegetables - a lot of these are imported. With a share of well over 25 percent of organically farmed land, Austria is the leader, although only 11.5 percent of the market share in trade consists of organically produced agricultural products. However, organically farmed areas are stagnating - as is the market share of organic products. In other words, almost 90 percent of Austrian consumption still comes from conventional agriculture.

One threat to self-sufficiency is the 30 percent fall in farm profits since 2006, which has gone hand in hand with a decline in the number of farms and acreage under cultivation (a fall of 30 and 20 percent respectively since the turn of the millennium).

A merciless price war is raging among the few large suppliers that dominate the food trade in Austria (Rewe, Spar, Hofer, Lidl). The pressure on farms to be represented on the shelves of these retailers is enormous. Those who are not listed here have virtually no chance of marketing their products on a large scale. This also applies to the sale of agricultural products to industrial processing companies.

Climatic changes cause additional uncertainties: for example, the water balance in Austria has deteriorated significantly over the past 20 years.

Agriculture is both a driver and a victim of these developments. A sustainable transformation of the sector offers great opportunities to tackle existing and emerging problems.

Domestic agriculture could also contribute to the solution, as it has a relatively small structure, already has a high proportion of organic farming and has a lower average CO₂ impact from livestock farming than in other countries.⁵⁴⁻⁵⁶ Sharing this knowledge and experience could be an opportunity for Austria and other countries.

(Young) Austrian farmers in particular are working on corresponding innovations that can bring systemic benefits for economic efficiency, the environment and product quality.

Austria's opportunities also lie in new business models, such as the stronger promotion of fresh food (fast food, seasonal cuisine, new partnerships in the food trade) or the stronger marketing of its relative (environmental) competitive advantage. The challenge that has not yet been solved is to maintain or increase yields per hectare while using fewer insecticides, pesticides and fertilisers.

The first positive signs are the reduction in climate-damaging emissions since 1990 and the use of antibiotics in animal husbandry. Another positive aspect is that organic farmers in Austria have largely been able to maintain their position on over 27 percent of the agricultural area.

The entire value chain

The issue of profitability must be considered across the entire value chain. Retailers have a great deal of room for manoeuvre here. However, they are currently struggling with labour shortages, while the concentration of trade is leading to disproportionate purchasing power and price pressure on suppliers. While the industry has largely exhausted its synergy potential in terms of costs, smaller companies hardly have the opportunity to sell their products. (E-commerce is less pronounced in agriculture due to the perishable nature of the goods or heavy or fragile containers).

From the stakeholders' perspective, there is currently little appreciation of the achievements of young, innovative farmers on the part of retailers, municipalities or consumers, which needs to be promoted and publicised. This also includes more opportunities for direct marketing.

It would be too short-sighted to see agriculture only as a tool for food production. The example of cattle reveals various aspects that need to be included in our overall view: it is always also about the preservation of the cultural landscape, the associated biodiversity, identity and the attractiveness of our natural and cultural areas for tourism.

Over the last 40 years, viticulture, for example, has succeeded in maintaining this image: new cultivation methods go hand in hand with the care of the cultural landscape and a strong economic focus on catering and tourism. Austria's (young) winegrowers have worked their way up from being a former "dirty child" (keyword: glycol scandal) to becoming world leaders.

Franz Sinabell⁹ says that in the future, agriculture will become even more multifunctional than it already is. For example, agriculturally produced biomass could replace plastic - another area for which agriculture is needed. It will be essential to ensure that material flows do not collapse.

Strengths

- ▶ Austrian agriculture produces so many products that we are self-sufficient in many areas.
- ▶ What we have to import can be offset by exports in other areas - the Austrian food trade balance is even.
- ▶ Austria is the leader in the proportion of organic land and clearly exceeds the EU target of 25 percent.

Weaknesses

- ▶ The strength of organic areas is only relative: the high percentage is partly due to the loss of total acreage.
- ▶ The share of land used for organic farming is at odds with the market share: this is stagnating at around 11.5 percent, although all major food retailers offer and heavily advertise organic lines.
- ▶ Conversely, this means that almost 90 percent of Austrian food consumption comes from conventional agriculture.
- ▶ Austrian agriculture is severely restricted in its ability to distribute its products.

Opportunities

- ▶ New business models, e.g. promoting fresh food (fast food, seasonal cuisine, new partnerships in the food trade) can reposition local farmers.
- ▶ The high organic content can be marketed as an (environmental) competitive advantage.

Dangers

- ▶ The profits of agricultural businesses have fallen by 30 percent since 2006!
- ▶ At the same time, the number of farms (-30 percent) and acreage (-20 percent) has fallen since the turn of the millennium.
- ▶ Climatic changes cause additional uncertainties for agriculture. The water balance in Austria has decreased by 15 percent over the past 20 years.
- ▶ Not only in Austria, but also worldwide, the available arable land per capita is decreasing. Existing areas must therefore produce ever more efficient results.

Eating habits and fair distribution

In everyday life, people act and make decisions within existing structures. As individuals (independent of others), we only have limited room for manoeuvre. "We have an abundance of food," says Marianne Penker (2024), but "we are currently unable to distribute the benefits fairly - otherwise we wouldn't have problems finding workers in the catering and agricultural sectors. We wouldn't be seeing farms disappearing either if jobs in food production were attractive."

⁹ Dipl.-Ing. Dr. Franz Sinabell, WIFO - Austrian Institute of Economic Research

However, the topic of food extends far beyond agriculturally produced, largely unprocessed products (i.e. we must distinguish between agriculture and nutrition). The increasing consumption of highly processed, industrially produced products is associated with a variety of health risks. After infectious diseases, malnutrition is the number one cause of premature death and chronic illness in the EU and Austria. Around a third of Austrians are overweight and almost 17 percent are obese. This limits their wellbeing and ability to work.

Scenarios for food in the Austria model

In order to test the consistency of the scenarios between the turnarounds at Austrian level, the global scenarios were transferred to the national level using the iSDG model and the levers were translated accordingly. In the Austrian modelling context, the lever "reduction of meat consumption" was implemented as "behavioural change of consumers". The global lever "Transformation of agricultural land towards regenerative and sustainable use" was modelled for Austria as "Investments in sustainable agriculture" and "Divestment in the fertiliser sector". As the expansion of agriculture is not a challenge in this country, this lever was not implemented as in the global model, but was strongly linked to the lever "Transformation of agricultural land". In addition, investments in water infrastructure for more efficient and sustainable water use were included in the modelling, which is particularly relevant from the perspective of climate change adaptation.

The two levers relevant for Austria lead to better control of land use and irrigation, which has a positive effect on the sustainably farmed area and water use. Although the area used sustainably is currently stagnating, it increases slightly in the Too Little Too Late scenario, but remains below 50 percent. Targeted investment and regulation in this area would increase it to 100 percent by the early 2040s. This effect is not only due to the implemented levers of the food transition in the Giant Leap scenario, but is also reinforced by the transformation and the associated increase in government spending. In addition, the expansion of sustainable agriculture leads to more regional value creation and employment in this area, which limits the negative economic effect of a reduction in meat consumption.

Sustainably managed land

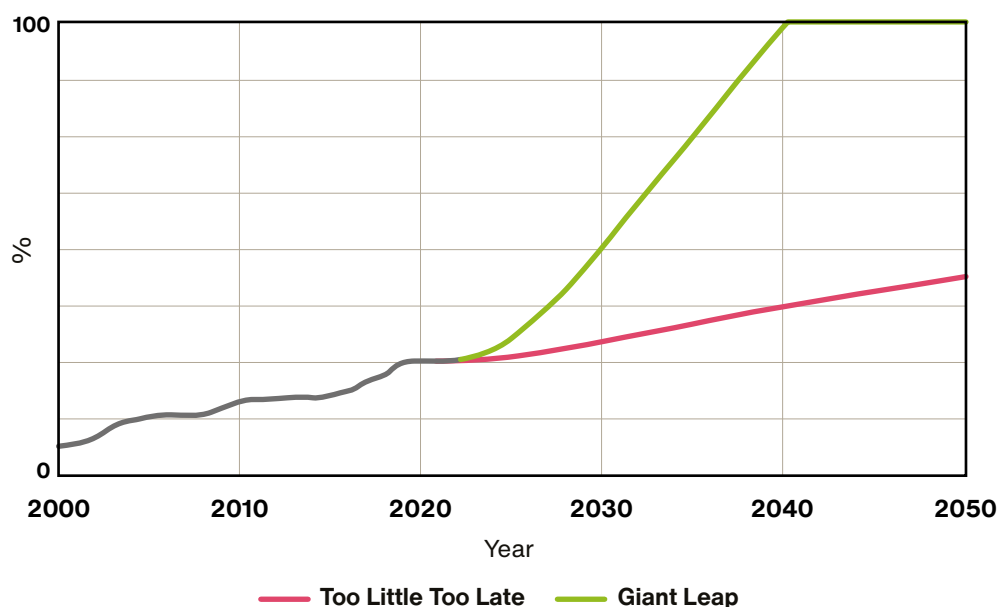


Figure 12: Sustainably farmed agricultural land in Austria, as a proportion of total farmed land.

The path to a Giant Leap from the perspective of stakeholders

Vision and Goals

In order to understand how we can achieve the Giant Leap in Austria, it is first relevant to formulate what a Giant Leap means from the perspective of food in Austria. To this end, stakeholders have developed the following vision for 2050:

"In 2050, Austria will have a sovereign, resilient and efficient food system in which healthy food is made available to everyone without exploiting people, the environment or animals. This system is fair for everyone involved along the entire value chain - from producers to consumers. Regionality, communication between all stakeholders, innovation and a high level of awareness of nutritional practices and appreciation for high-quality and sustainable food play an important role here. Climate protection and the preservation of biodiversity, water and soil are seen as central tasks of the system. Conflicts are tackled proactively."

Levers

Key levers of the food turnaround were already presented in the first part of the report. In addition, the three levers of the global report were defined for the Austrian context in the stakeholder workshop and formulated as follows.

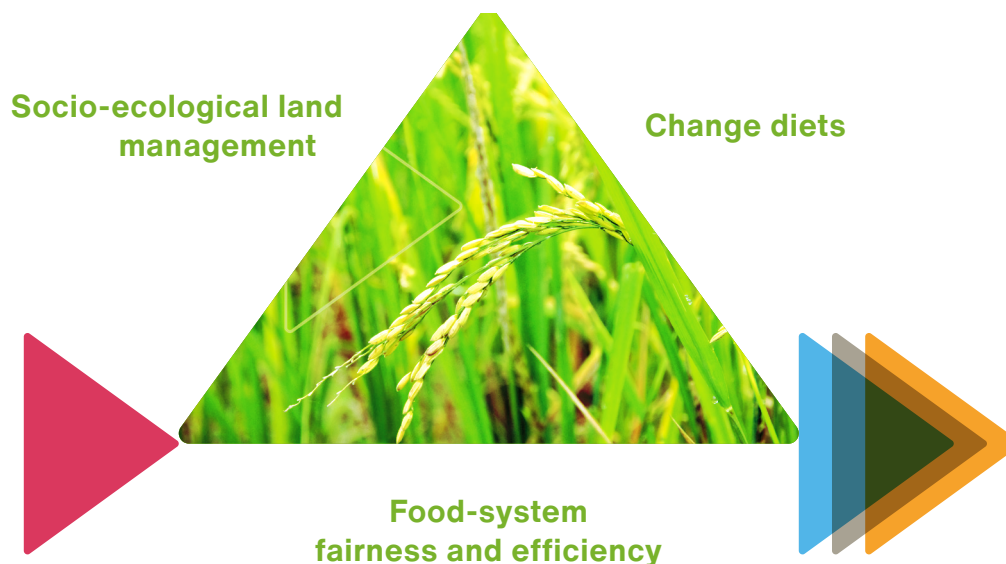


Figure 13: Levers of the food turnaround.

Photo: DEZALB @ pixabay.com

Lever 1: Dietary change

Previously discussed:

- ▶ Reduce meat consumption
- ▶ Reduce the degree of food processing
- ▶ Reduce waste

Thematic additions:

- ▶ Health
- ▶ Sustainability of food (animal welfare, climate, biodiversity)
- ▶ Protein transition
- ▶ Overconsumption

For a food system in which healthy food is produced for all, and in which a high level of awareness of diets and appreciation for high-quality and sustainable food play an important role, a change in diet is a key factor. A protein transition and a reduction in overconsumption can not only improve animal welfare and human health, but also promote climate protection and the preservation of biodiversity, water and soil.

Targeted support for low-income families and individuals to increase the proportion of sustainable, healthy and regional (organic) food, as well as the promotion of an affordable, healthy and sustainable product range, has high transformation potential. Both steps are aimed at making healthy and sustainable food affordable.

The latter requires a reorientation in trade, industry and public procurement as well as support for social markets, food banks and socially disadvantaged groups.

Teaching people about healthy and sustainable nutrition is also key. To this end, the topic of "healthy and sustainable nutrition" should become part of compulsory school education and basic and further training in all areas of education. Knowledge and education on climate-friendly nutrition and the mandatory use of non-climate-damaging, healthy and socially responsible menus in restaurants and canteens should also be promoted.

In addition, a legal framework is needed: for example, legal regulation of public procurement in all state-funded canteens, company kitchens, public hospitals, kindergartens and schools at state and federal level or a reorganisation of the EU's Common Agricultural Policy (CAP), which can be used to promote the provision of sustainable protein sources and new production cycles, for example. A supply chain law for agricultural products can also make a contribution.

To support this, training and further education as well as counselling for various professional groups along the value chain should also be adapted. There is also a need to promote research projects, for example to change consumer behaviour, reduce meat consumption or optimise and expand protein plant breeding.

This lever should also be driven by tax measures:

- ▶ Reduction of the reduced VAT rate for meat and sausage products and dairy products with socially acceptable compensation payments
- ▶ Higher taxation of processed (fatty, sugary and animal-based) foods
- ▶ Taxation of foods and food ingredients that are harmful to health, the environment and the climate

The taxes and subsidies called for here should be reorganised in a comprehensive tax reform for food together with other related federal and EU issues. Furthermore, the basis for calculating subsidies in the agricultural sector should be revised. The current subsidies do not take socially acceptable factors into account and primarily benefit large farms. Instead, subsidies should be allocated more strongly than before according to sustainability criteria and lead to a strengthening of the second pillar of the CAP, which includes subsidies for regional development and agri-environmental measures.

Since a tax reform for food is still quite difficult to implement, it is essential to guide the state in the right direction in advance. This requires lobbying and activism by a wide range of stakeholders such as NGOs, food councils, the arts and civil society, whose expertise, process and specialist knowledge of the reform must be consolidated in advance. The latter should be supported by scientific organisations such as UniNEtZ, CCCA or Scientists for Future with the necessary process, expertise and communication knowledge.

Lever 2: Efficiency and fairness of the food system

Previously discussed:

- ▶ Reduce fertiliser use
- ▶ Direct marketing
- ▶ Fair prices

Thematic additions:

- ▶ Circular economy
- ▶ Waste management
- ▶ Sustainable energy
- ▶ Food waste

In order to transform the food system towards greater fairness and efficiency, we first need a national food system vision and strategy, comparable to the national energy and climate plan (NEKP). A national food strategy not only has great potential for transformation, but is also the basis for a large number of other measures to be implemented. These include:

- ▶ Promotion of information and education campaigns on nutrition and food waste among the population and in educational institutions
- ▶ Ban on advertising unhealthy foods to children
- ▶ Increasing the (food) value

It is important that such a strategy covers the entire food system as far as possible in order to define common overarching goals and thus enable a standardised approach by all stakeholders. A newly created wage price commission for the entire value chain, in cooperation with an environmental commission, can ensure that the food system is fairer while reducing negative environmental impacts. Investments totalling 25 to 30 million euros (adjusted for inflation) could make European animal feed in Austria GMO-free.

An awareness-raising campaign on best-before dates and consumption dates, supported by the measure of promoting packaging alternatives for resources and shelf life, can help to prevent or reduce food waste. This also has a positive effect on increasing the (food) value.

There are many other "low-hanging fruits" that are urgent but also easy to implement:

- ▶ Food waste and organic by-products for further processing and animal feed: influencing current EU legislation
- ▶ Create framework conditions to promote innovation (information & security), for example small laboratories for testing new solutions and business models
- ▶ Set legal requirements for portion sizes in canteen kitchens and restaurants
- ▶ Make vacant lots available for food production, utilise space better
- ▶ Promote the harvesting and utilisation of unused food: direct marketing to catering businesses or consumers
- ▶ Create sales markets for flawless but non-standardised food and products

The following steps are urgent, albeit less easy to implement:

- ▶ Improve the database on by-products and waste streams and make it transparently available
- ▶ Increase contributions to global food security and the transparency of development cooperation (DC)
- ▶ Allow farmers to produce more renewable energies for value creation (comprehensive energy communities)
- ▶ Creating better framework conditions for the development of new products from biogenic raw materials

Decentralisation or regionalisation of the processing of agricultural products can make a further contribution to implementing the lever. A joint strategy, incentive systems and easier market access for (new) products can help here.

It is also important to implement a wide range of measures to protect agricultural land - on the one hand from degradation, and on the other hand from conversion and reutilisation. It is particularly urgent to curb the particularly high level of urban sprawl and sealing of valuable land in Austria.

"We currently live on a third of all food produced, the pharmaceutical industry and our doctors make money from another third - and we throw away the last third," Heinz Fuchsig.' (2024)

^r Dr. Heinz Fuchsig, Sachverständiger für Arbeits- und Umweltmedizin

Lever 3: Socio-ecological land management

Previously discussed

- ▶ Self-sufficiency
- ▶ Organic farming
- ▶ Biodiversity

Thematic additions:

- ▶ Land use
- ▶ Regional development
- ▶ Farm2Fork
- ▶ Productivity
- ▶ Sustainable agriculture

In the food and nutrition system, the type of land management and primary production are of crucial importance. In order to achieve the vision of a food transition in Austria, it is essential to achieve comprehensive socio-ecological land management. This is the only way to increase productivity in the long term and provide high-quality food for all, while at the same time promoting regional development and biodiversity and reducing negative environmental impacts and resource consumption.

The most urgent need is to limit the enormous daily land consumption in Austria. Other important steps are the (mandatory) introduction of a biodiversity and solar efficiency assessment - i.e. an energy potential assessment of the areas - for every land use, the remuneration of ecosystem services, and the internalisation of the currently external costs of agricultural production. Establishing a regionally anchored food system with stable and fair prices can enable socially, ecologically and economically resilient agriculture with high transformation potential across the board. This is of great importance, not least in conjunction with the lever of *efficiency and fairness in the food system* - and thus for the reversal of inequality.

Not all agricultural land can and should be organic. In addition to the organic farming mentioned above, there are also other forms of sustainable land management, which can be seen as complementary to organic farming.

Now that the topic of agriculture is firmly anchored at EU level, ground-breaking steps are also needed there so that a Giant Leap can be achieved in Austria.

Although these steps are outside the direct decision-making sphere of Austrian actors, intensive upstream lobbying work from the Austrian perspective is required from EU politicians, NGOs and other European interest groups in order to help the following steps to be implemented in the medium term:

- ▶ Fair trade agreements that protect and promote sustainable agriculture in Austria and beyond and tax transport transparently and according to its environmental impact
- ▶ Customs duties that follow sustainability criteria and take social and biodiversity aspects into account (e.g. carbon border adjustments)

All of this must be accompanied by the creation of educational programmes and an increase in awareness of socio-ecological land management.

Indicators: How do we know if we are getting closer to our goals?

- ▶ Meat consumption (and production) and its distribution across different population groups^s
- ▶ Greenhouse gas emissions from agriculture
- ▶ Food consumption
- ▶ Land use
- ▶ Biodiversity

Outlook: Overcoming resistance to achieve a good food system

Bold visions always generate resistance. The report identifies many obstacles on the path to transforming agriculture and nutrition - such resistance must be taken into account in the process.

Resistance is coming from large corporations that produce seeds and agrochemical products, for example. Although some companies have announced improvements under pressure from civil society organisations and the EU, there is still a lot of room for improvement. Resistance also comes from public and private stakeholders who see too little profit in agriculture.

But that should not discourage us. For a future worth living, we need sustainable production and sustainable consumption - however difficult some of the changes may be. The behaviour of the economy can give us hope: Many companies are already orientating themselves towards the new challenges; investments in sustainably used soils are being advertised. However, we must be very careful that this does not lead to speculation and to the detriment of farmers or consumers.

Overall, we can see that the journey towards a sustainable agricultural and food industry has already reached many circles - and that is encouraging.

The establishment of a focus on "Sustainable Food Systems" as a research and innovation priority for Austria, for example as part of the work of the Austrian Council for Research, Science, Innovation and Technology Development, has the potential to strengthen the entire Austrian innovation system from basic research to promoting technology development and implementation in Austria's cross-sector and cross-ministerial food system network.

Overall, Austria should work harder to meet the targets set by the EU and the projects already listed in national strategic plans. The weak and incomplete monitoring and evaluation of these targets does not meet the requirements of a climate-conscious agricultural and food policy. Even if we cannot expect all farmers or consumers to agree to the necessary restructuring, this does not change the fact that we need a forward-looking agricultural policy and, in particular, agricultural funding that is socially fairer and significantly more efficient and effective in terms of climate and environmental policy.

^s WIFO is currently working with the Ecosocial Forum to develop a comprehensive set of sustainability indicators. These also take into account economic indicators such as income

VI. How to achieve the energy turnaround

Summary for policy makers

Initial situation

From a global perspective, the aim is to establish a climate- and nature-friendly energy system in all countries that provides clean and affordable energy for all, while at the same time significantly reducing energy consumption and transforming emission-intensive energy systems. While the electricity sector in Austria is already largely renewable, our greatest challenges lie in the areas of mobility and transport and the decarbonisation of the steel and cement industries.

Vision

"A fossil-free, 100% renewable and truly CO₂-neutral climate change-adapted energy system that is safe and fair for all - meaning accessibility on a non-discriminatory basis - and also creates added value for the population and the economy. Energy consumption has been reduced through efficiency measures and awareness of the responsible use of energy at all levels of society and the economy. Innovative and decentralised solutions, such as extensive electrification, cross-sector networking and prosumers,^t are contributing to this success. Austria is not only a global role model, but is also a pioneer in the field of technology and a provider of flexibility in Europe. The expansion of the renewable energy system is being carried out in coordination with the population and is conserving resources and land/nature, which benefits both the climate and nature."

Lever 1 - Reduce energy consumption:

- ▶ Prioritisation according to Avoid-Shift-Improve
- ▶ Switching to active mobility and expanding public transport
- ▶ Reduce heat demand in the building sector
- ▶ Promote and foster industry and sector coupling
- ▶ Energy and CO₂ pricing
- ▶ Expand energy balancing

Lever 2 - Electrifying and increasing the efficiency of (almost) everything:

- ▶ Switch to renewable energy sources (incl. grids and storage)
- ▶ Promote e-mobility
- ▶ Transformation of the industrial sector

Lever 3 - Exponential growth of renewable energies:

- ▶ Expansion of renewable energy capacities and electricity grids
- ▶ Advancing spatial energy planning
- ▶ Raising awareness at all levels

^t Prosumers are people who both produce and consume a certain good. In the energy context, prosumers are, for example, homeowners who generate solar power, use it themselves and feed the surplus electricity into the grid.

Overarching lever: circular economy

Outlook

If the energy transition is considered systemically and in the long term, it can not only help to tackle the climate crisis, but also contribute to healthier living, energy self-sufficiency and thus political independence and greater distributive justice. We have already accumulated a wealth of knowledge about technical solutions and innovations. However, there is a lack of a truly transdisciplinary approach to scaling and implementing them in order to adequately address the structural and social issues of the energy transition.

Global background

"Scaling all solutions to reach net zero by 2050 is not only an extremely ambitious goal. We are also unlikely to realise it unless we can overcome the [...] barriers: the dramatic inequality in footprint and energy access between high- and low-income countries; and the political constraints within individual countries."

—Earth4All (2022)

A global energy transition

The socio-technical achievements of our current life are largely based on the use of fossil fuels. This has brought prosperity and many comforts to those who benefit from it. Our habitats have become increasingly intertwined with each other and with nature to form a complex global system. Our entire way of life is based on maintaining this system and is therefore dependent on a huge amount of easily accessible energy.

On the other hand, after several decades of warnings, we are slowly realising the toll that the extraction and use of fossil fuels is taking on nature. Ultimately, we will have to accept the need to restructure and decarbonise our entire energy system. The technical challenges are immense - but because of the central function of energy in the economy and society, they are only part of the problem.

Earth4All emphasises the central position of the energy transition by viewing it as one of the five extraordinary turnarounds. To manage the energy transition, the **global Earth4All model** identifies three main technical levers:²⁴

- ▶ Efficiency of energy systems
- ▶ Complete electrification
- ▶ Renewable energy in abundance

However, the chapter on the global energy turnaround does not only focus on technical approaches. It also highlights numerous economic, political and social aspects of the levers, some of which are also linked to other turnarounds. These include climate justice, power relations in the energy sector and sufficiency. Other aspects include the impact on biodiversity and adaptation to the already advancing climate change, as well as the purely physical finite nature of the planet's resources, which also makes a raw materials transition through a circular economy unavoidable (50 percent of global greenhouse gases

originate from the extraction and use of raw materials). It is important to grasp all parts of a lever, as we can only operate it if we understand it completely. In other words, technology cannot be redesigned if people are not involved in the process.

The energy transition is a further step in the debate about a fair and ecological transformation. This shows all the more that systemic and holistic thinking and action as well as social discourse with all population groups will be crucial.

Global responsibility

Around 700 million people in poorer countries have no (regular) access to energy, especially electricity. Stable energy systems are often only just being developed.

In the interests of the climate, this should be based on sustainable electricity generation. Due to the falling costs of photovoltaics (PV) and the rapid development of local storage technologies, the use of solar energy in particular has the potential to enable completely new, decentralised structures and thus contribute to the democratisation of energy supply worldwide. In countries with low average incomes, inefficient state structures or overpowering monopoly structures, villages and municipalities, but also individuals, can establish an efficient and climate-neutral energy system.

Of course, there is also the grand vision of a global network to utilise the potentially abundant solar energy in southern regions (especially Africa) for industry and consumer centres in the north (Europe). The technologies of energy conversion, transport and storage have developed further in recent decades and rely on various technological paths (hydrogen, ammonia, synthesis gases, but also power cables). However, the main focus must be on a fair partnership - i.e. also in the interests of the producing countries and their own supply needs for non-fossil energy. In addition, excessive dependence on individual sources should be avoided and decentralised renewable energy production should be favoured.

This requires large sums of investment, particularly in low-income countries, which these countries are unable to raise themselves. Particularly in view of the current high interest rates and high levels of debt, they are often unable to undertake the expansion of the energy supply in a socially just manner and in the interests of combating climate change. The pledges of support made by the rich countries to date are by no means sufficient to realise the most urgent concerns of the Paris climate goals - and not even the inadequate promises have been kept.

Countries with low average incomes in particular are suffering from global warming, even though they have contributed little to the harmful emissions. They need to be supported. The question also arises as to whether and how some of the CO₂ released into the atmosphere can be captured and safely stored for later use.

The European level

In the EU, climate policy targets have been raised in recent years and measures have been tightened. For example, it was decided to include the transport and buildings sectors in an emissions trading system, and a CO₂ border adjustment mechanism, which from 2026 will burden imports that were not produced under comparable emissions regulations in the country of origin. This could lead to a global increase in climate policy efforts.

In the context of the global energy transition discussed here, it is important to note that the EU CBAM ("Carbon Border Adjustment Mechanism") covers not only industrial products such as steel and aluminium, but also the import of energy sources. Thanks to the efforts of the European Parliament, it was ultimately possible to extend the CBAM to hydrogen as well as electricity imports. This ensures that future significant energy imports to Europe must either be CO₂-free or pay a CO₂-compensation price.

The European approach has already yielded initial successes. China, for example, has now also introduced an emissions trading system, which will be applied to the most important industrial sectors in 2026 - at the same time as the EU CBAM comes into force. However, this mechanism is globally controversial and is being opposed by many trading partners or mirrored by similar regulations in other countries in order to counteract any disadvantages in international competition.

Despite high climate policy ambitions, for example as part of the Green Deal or the "Fit for 55" package, there are also noticeable tendencies within the EU to weaken the current targets again. However, in view of the fact that the climate crisis is continuing and the post-Covid economic recovery has by no means been as "green" as hoped, and that the transport sector in particular is lagging far behind the necessary CO₂ reductions, there must be no reduction in climate policy efforts. Much remains to be done to achieve an energy transition in the industrial and construction sectors, which make an important contribution to reducing emissions and at the same time secure Europe as an industrial location in the long term.

Austrian starting position and model-based scenario analysis

From Austria's perspective, it is no longer a question of whether the energy transition will take place, but only how we shape it. In 2015, together with the European Union and 195 other contracting parties, Austria committed to reducing global warming at the UN Climate Change Conference in Paris. In order to achieve the Paris targets, the EU requires its member states to draw up a National Energy and Climate Plan (NECP), which Austria submitted to the European Commission in 2019. In the 2020-2024 government programme, the current government has set itself the goal of achieving climate neutrality by 2040 and has enacted the Renewable Energy Expansion Act (EAG), among other things, to achieve this goal. At the same time, it is clear that climate policy progress has only been achieved at EU level, at least until 2019. The current government has also taken action in some areas of climate policy and passed individual laws; however, it has not succeeded in initiating the necessary comprehensive transformation.¹

Although the EAG's expansion target of 27 TWh (on balance) by 2030 will be able to cover the electricity demand forecast up to that point but cannot make the whole energy sector climate-neutral, which was also not planned by the Legislation. This is because, on the one hand, the industry's own electricity generation is deliberately excluded and, on the other hand, the majority of the energy demand in Austria is currently still not covered by electricity but by gas - which is still mainly imported from Russia or, in future, in the form of liquefied natural gas (LNG), which will reach Austria via expensive, although somewhat more "correct" politically, import routes but is even worse in terms of the CO₂ balance.

In total, Austria consumes around 390 TWh (1400 PJ) of primary energy every year - from heating oil and fuels for transport to gas, biomass and electricity - around one third each in industry and business, for mobility and in private households.⁵⁷ In 2022, the 72.8 million tonnes of CO₂-equivalent greenhouse gas emissions (including emissions trading) were mainly distributed among energy and industry (45%), transport including national air traffic (28%), agriculture (11%) and buildings (10%).⁷ Biomass plays a role in Austria both in the building sector and increasingly in industry, for example in paper and pulp production.

It is often emphasised that Austria already obtains a large proportion of its electricity from renewable energy sources, primarily hydropower. According to Statistics Austria, almost 88 percent of the 61.08 TWh of electricity consumed in 2023 came from renewable energy sources. In fact, we are in many areas in Austria well positioned or are currently implementing important steps, as Christopher Lampport⁴ explained when he presented the update of the National Energy and Climate Plan (NEKP). However, the goal of climate neutrality requires a greater reduction in greenhouse gas emissions by 2040 than previously planned. Instead of the originally planned reduction of 35 percent by 2030, a reduction of 48 percent is now necessary. Improvements must also be made in the proportionate coverage of total energy consumption by renewables and in energy efficiency. The update of the NECP therefore provides for additional measures in the areas of renewable energy, electricity and gas, energy efficiency, heating and buildings, climate-friendly mobility, industry and CO₂ pricing.

In impact assessments, the new measures show effects in the areas of greenhouse gas reduction, reduction in overall energy consumption and the proportion of renewable energies.⁵⁸ The direction is right - but the quantity corresponds more to the Too Little Too Late scenario than a Giant Leap.

In Austria, therefore, great efforts are still needed to make the energy transition a reality. At present, the existing energy infrastructure, in particular grid and storage capacities, is already reaching its limits in many places, while its rapid expansion is being hampered by decentralised spatial planning. Another challenge is that some published scenarios for the expansion of renewable energy sources also include additional hydropower as a means of achieving the energy transition, although this can only be expanded slightly further and its capacity will be affected by the climate crisis (a study by Österreichs Energie⁵⁹ shows a shift in discharge volumes from summer to winter).

Systemic networking

Energy is closely interwoven with all areas of our lives, and we have to face many very different questions:

If the expansion of energy infrastructures lags behind demand, there is a risk of possible overloading of the grids, which could jeopardise security of supply and possibly increase dependence on imports. Energy imports create unwanted dependencies: How do we counter these? What about production conditions in the global South? Does the local population there benefit from regional value creation? How do we ensure Austria's competitiveness in the face of rising energy prices (jobs!)? What measures are needed to protect socially weaker groups?

The energy transition also has the potential to have a major impact on natural environments (even if it is not currently the *main* driver of sealing or encroachment on natural environments).

⁴ Mag. Christopher Lampport, Interim Head of Department VI/1, Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology

Biomass example

Not every use of biomass for energy is sustainable. Greenhouse gases are released during every form of combustion, and only in a long-term equilibrium is the healthy removal of trees from the forest actually "climate neutral" and does not damage the biological functions of the forest. The current trend towards using more biomass for energy production is therefore more likely to contribute to climate change.

Biomass will continue to play an important role in the energy system in the future; however, expanded utilisation for energy generation does not appear to be very realistic, taking into account biological cycles and capacities. Above all, we can expect competition for use to intensify further in the coming years if we want to "defossilise" industrial products made from crude oil and natural gas, especially fertilisers, building and insulation materials, and use biogenic raw materials instead. A recently published study identified an EU-wide CO₂ substitution potential of 161 Mt by 2025 - and at the same time predicts a "fibre supply gap" of 173 Mm³.⁶⁰

As part of the Green Deal, the EU has laid several important foundations for sustainable biomass production while at the same time protecting forests and promoting their CO₂ absorption capacity:

- ▶ In 2023, the Deforestation-Free Products Regulation (EU 2023/1115) came into force, which - in line with UN SDG Goal 15 ("halt global deforestation by 2020") - will no longer allow essential agricultural products such as soya, palm oil, coffee, cocoa, rubber, cattle and wood on the EU internal market from 2025 if a deforestation-free origin is not proven by geodata.
- ▶ The revision of the Renewable Energy Directive (RED III, EU/2023/2413) restricts the use of wood for energy purposes to sustainably produced wood, which must not come from primary forests or old-growth forests (to be redefined) that are worthy of protection.
- ▶ In 2024, an agreement was reached on the EU-wide "Carbon Removal Certification Framework", a legal framework that is primarily intended for the next greenhouse gas reduction stage by 2040 and will play an important role in sustainable carbon cycles.
- ▶ The existing bioeconomy strategy is to be revised in 2025 and will probably focus strategically on overcoming the expected biomass gap and competition for use, for example by promoting the circular economy and stricter cascading biomass utilisation.

Scenarios for energy in the Austria model

As at a global level, the modelling of the energy transition for Austria is primarily based on the phase-out of fossil fuels (including buildings and mobility), the expansion of renewables and the reduction of energy consumption in all sectors, whereby sufficiency strategies are also required in the Austrian context in addition to efficiency increases, such as the reduction of cars through a switch to active mobility.

Not only energy generation, but also the consumption mix^v has changed significantly in the Giant Leap scenario compared to Too Little Too Late. This is particularly evident in the significant increase in the

^v The consumption mix describes the composition of energy sources or resources used by a consumer/country.

share of PV, wind and biomass in the Giant Leap compared to the Too Little Too Late scenario (see Fig. 14). The remaining share of non-renewables is primarily covered by gas and oil - the demand for which comes mainly from the mobility sector. This is because the vehicle stock depicted in the model shows clear delay effects when it comes to replacing fossil-fuelled vehicles with electrified ones, which is mainly due to the lifespan of these vehicles. The European Union has decided to ban new registrations from 2035. Alternative fuels could provide a bridging solution but are not a long-term solution from today's perspective.

Further increasing the share of renewable energies in the primary energy²³ is a major challenge.^w It will not only be necessary to push ahead with electrification; where electrification is not possible, it will be necessary to switch to "green" gas, for example in the industrial or transport sector. In general, social factors (affordability) or the overall greenhouse gas balance over the entire life cycle must be taken into account. Even the production of a car, for example, causes many emissions. A forced switch to e-mobility therefore has its limits both socially and environmentally.

In the Giant Leap, not only is the share of electricity in total energy consumption higher, but the absolute share of electricity consumed is also higher than in the Too Little Too Late scenario. The reduction in energy consumption per capita is important, but this can be significantly reduced in the Giant Leap, which has a positive effect on the overall energy balance (see Fig. 15). All three levers together (phase-out, reduction strategies, expansion of renewables) make a significant contribution to reducing greenhouse gas emissions.

In addition, the food transition and - to an even greater extent - the transformation of the economy into a circular economy also contribute to a reduction in emissions. Due to the emissions-intensive industry in Austria, especially steel and cement, the significant reduction in emissions in the Giant Leap scenario (compared to Too Little Too Late) can only be achieved through a decarbonisation strategy for the entire industry, including energy and process emissions and additional negative emissions.^x

^w The primary energy mix is a consumption mix of primary energy sources (coal, wind energy, biomass, etc. as opposed to electricity and heat).

^x Negative emissions are defined as the removal of CO₂ from the atmosphere. This can be achieved through biological, chemical or physical processes. Examples include afforestation or CO₂ storage in concrete granulate.

Share of renewables

(hydropower, PV, wind, biomass)

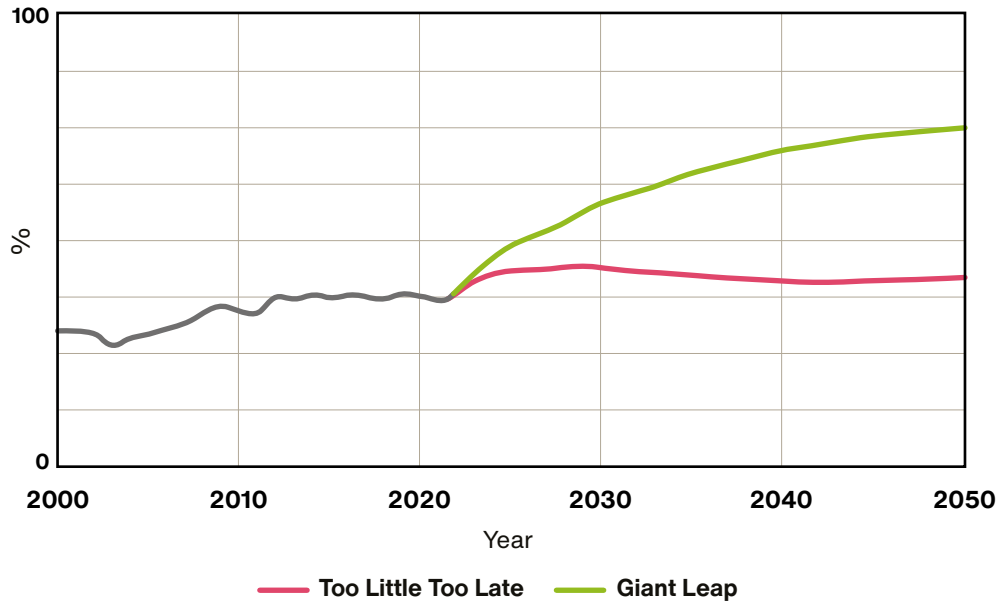


Figure 14: Development of the share of renewable energies in Austria in the Too Little Too Late and Giant Leap scenarios.

Electrification

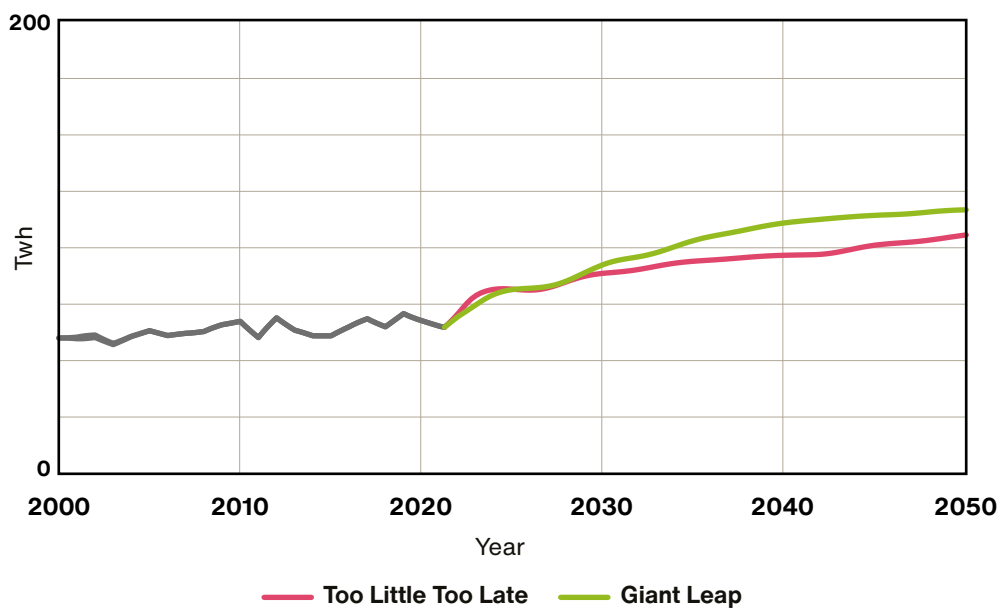


Figure 15: Development of the total electricity generation in Austria in the Too Little Too Late and Giant Leap scenarios.

Energy consumption per capita

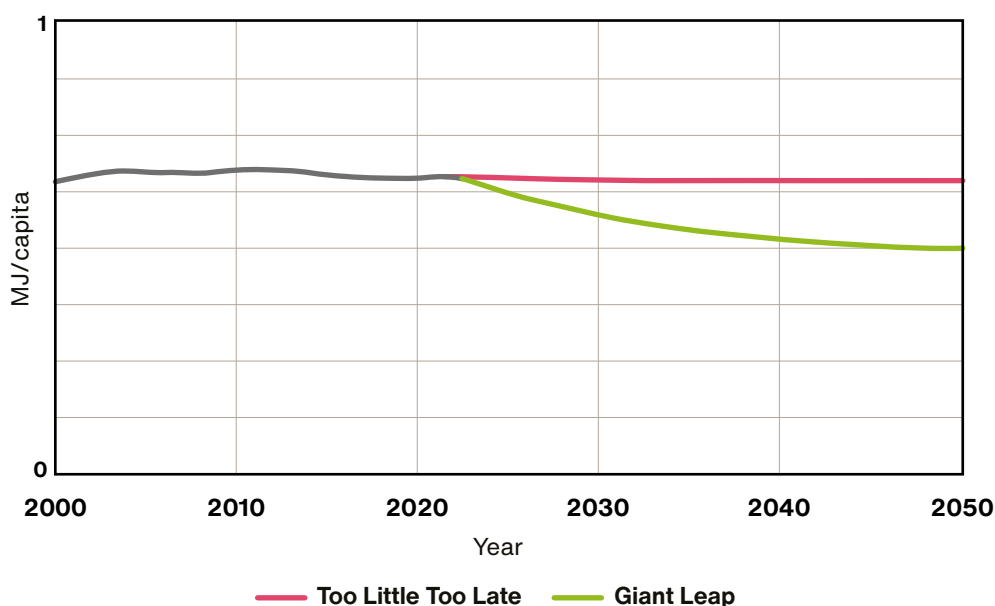


Figure 16: Development of energy use per person in Austria in the Too Little Too Late and Giant Leap scenarios.

A Giant Leap and the path to it from the perspective of stakeholders

In order to understand how we can achieve the Giant Leap in Austria, it is first relevant to understand what a Giant Leap means from the perspective of energy in Austria. To this end, the stakeholders developed the following vision for 2050:

Vision and goals

"A fossil-free, 100% renewable and truly CO₂-neutral, climate change-adapted energy system that is safe and fair for all - i.e. accessibility on a non-discriminatory basis - and also creates added value for the population and the economy. Energy consumption has been reduced through efficiency measures and awareness of the responsible use of energy at all levels of society and the economy. Innovative and decentralised solutions, such as extensive electrification, cross-sector networking and prosumer,^y are contributing to this success. Austria is not only a global role model, but is also a pioneer in the field of technology and flexibility provision in Europe. The expansion of the renewable energy system takes place in consultation with the population and conserves resources and land/nature, benefiting both the climate and nature."

^y Prosumers are people who both produce and consume a certain good. In the energy context, prosumers are, for example, homeowners who generate solar power, use it themselves and feed the surplus electricity into the grid.

Levers

The three levers of the global report were reformulated and finalised for the Austrian context in the stakeholder workshop and in collaboration with experts as follows.

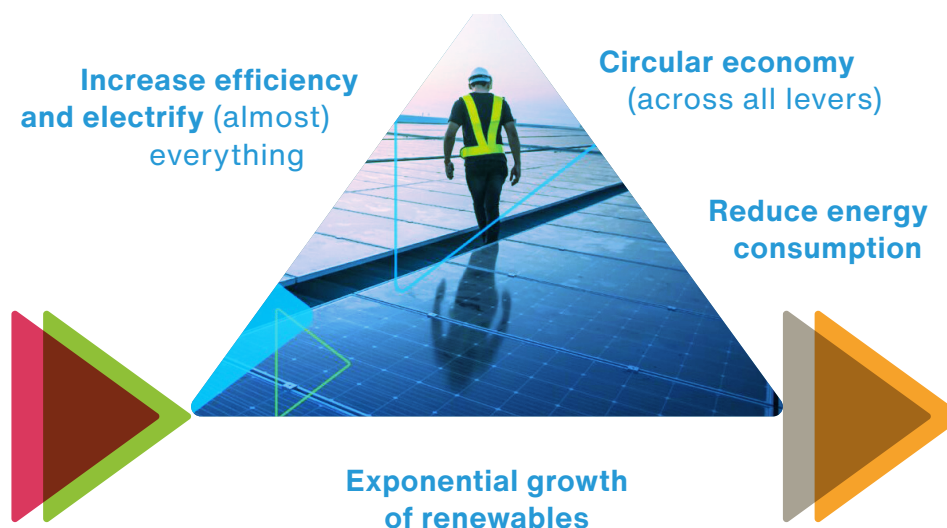


Figure 17: Levers of the energy turnaround.

Photo: ME Image @ shutterstock.com

Lever 1: Reduce energy consumption

- ▶ Mobility, buildings, heating, etc.
- ▶ Industrial and sector coupling
- ▶ Energy and CO₂ prices
- ▶ Energy accounting

The first lever follows the paradigm "avoid, shift, improve".

Electricity consumption can be reduced on the one hand through non-use – the keyword being *sufficiency* – and on the other hand through technical or process optimisation.

The above statements have already indicated the areas in which energy consumption can be reduced and the measures that can be taken. For our experts, one thing is clear: true costs are needed in the energy sector. The destruction of nature through resource depletion and emissions must be taken into account. This will primarily be ensured by an appropriate price on greenhouse gas emissions (300 euros/tCO₂ eq was discussed in the workshop).

Through social compensation ("climate bonus") of the eco-tax, which must also be adjusted if the CO₂ price rises accordingly, this measure is considered to have a high transformation potential and a high degree of urgency. From a systemic perspective, a high CO₂ price has a positive effect on many system components: Rising prices for emission-intensive consumer goods and processes promote alternatives – such as the expansion of local public transport and cycling infrastructure, freight transport by rail, less

transport overall (on the road) and private transport - and create space for process and social innovations with new business and mobility concepts.

Experts see in particular great urgency in mobility. However, without sufficient communication and a lack of good alternatives, it is difficult to implement measures here. If car-focussed traffic areas were reduced, advertising for fossil fuels banned and the maximum speed on traffic routes reduced, the chances of reducing private transport sufficiently would be good.

Efforts towards a circular economy also benefit from a higher CO₂ price. Among other things, it encourages circular product designs (before a product is even produced) - which is also urgently needed. The current Circularity Gap Report shows that the global share of the circular economy is declining: "The share of secondary materials consumed by the global economy has fallen from 9.1% in 2018 to 7.2% in 2023 - a decrease of 21% within five years."⁶¹

In this context, the same question that the global Earth4All report raises must be asked for Austria: what do we humans want to do with energy? In future, it will be important to focus on what energy is used for (i.e. its function), not on energy per se. We need warm spaces, the ability to move around, services. Earth4All and the IPCC emphasise that final energy demand can be significantly reduced if we take demand into account, not supply.

However, true cost accounting goes even further. Follow-up costs that have so far been less widely discussed must also be taken into account, for example health costs due to air pollution. A comprehensive perspective includes the ecological impact of each form of energy in the pricing by means of a complete life cycle assessment. Factors that have not yet been taken into account, such as military expenditure to secure fossil fuels, could (and should) be reflected in the overall costs in future.

Conversely, the potential negative effects of high CO₂ pricing must not be ignored. It must be ensured that climate-friendly and sustainable action by exporters from Austria is not penalised by higher costs and loss of competition. The EU's attempts to introduce a CO₂ border carbon adjustment mechanism (CBAM) are to be welcomed; however, it remains to be seen whether and how effective such measures will be.

A particularly important point is the acceptance and perception of measures by citizens, farmers and entrepreneurs. For example, price increases for products, the discontinuation of subsidies for fossil fuels or potentially higher energy prices - which could continue to rise due to higher infrastructure costs such as the expansion of the grid, storage facilities, etc. - may not be perceived well by people in the lower income bracket in particular based on their particular viewpoint.

Redistributions are not yet considered appropriate. In future, much better, comprehensible communication of the cushioning measures will be needed here.

The topic of acceptance in particular shows how strongly the five turnarounds are systemically interlinked. We discuss questions of justice in more detail in the chapter on the inequality turnaround. Earth4All's proposal to introduce a universal basic dividend can also lead to greater cost transparency and acceptance in the area of energy and emissions. Above all, transparency is needed: which taxes are raised on which common goods, and how exactly do these revenues benefit citizens?

Lever 2: Electrification and increased efficiency of (almost) everything

- ▶ Switch to renewable energy sources (incl. grids and storage)
- ▶ E-mobility
- ▶ Industrial sector

Increasing the efficiency and electrification of technical applications and processes, as well as social procedures and actions, is the second important lever for reducing energy consumption and thus greenhouse gas emissions. In many cases, such as mobility, electrification is a key step towards increasing efficiency. But there is more at stake: we need to transform our inefficient fossil fuel system into a clean and optimised energy system, with several goals in mind: halving greenhouse gas emissions by 2030, achieving net-zero carbon emissions by 2050 and halting biodiversity loss. From a systemic perspective, this will also lead to better availability and affordability of energy worldwide in the long term.²⁴

A systemic view requires us to consider the entire use of resources, including the material requirements for production, storage and application technologies, for land use and natural resources (water protection, competition for land) and to respect the planetary boundaries overall.

Investments are not only needed in the production of electricity from wind and sun. The expansion of and innovations in grids and systems are also crucial. Battery systems in particular, in which surplus electricity can be stored, will play a decisive role in the future, as solar and wind power plants do not always generate electricity when it is needed. Conversely, improved storage technologies allow decentralised structures in the energy system, which relieves the burden on the grid infrastructure and increases the resilience of the overall system to outages - and therefore the security of supply. The latter is particularly important in order to ensure the trust and security of all.

With the Renewable Energy Expansion Act 2021, Austria has succeeded in creating an economically attractive legal framework for renewable energy communities and citizen energy communities. It is a decisive competitive factor and accelerator that individuals or even smaller municipalities are no longer dependent on the developments of the large energy suppliers, but can instead quickly and independently take control of their own energy system and decarbonise more quickly. At the same time, "a systematic calculation of the actual requirements for grid expansion is needed, which also takes into account the fact that more and more of the energy generated is being used by households themselves as part of the expansion of photovoltaics and storage, which relieves the strain on the grids," emphasises Klaus Fronius.²

In such systems, storage technologies, especially batteries, are a decisive factor in establishing and maintaining a sustainable alternative energy supply system. However, according to the current state of technology, many rare earths and metals that are not available everywhere are required for this - as well as for the solar cells and wind turbines themselves. Mines for copper, cobalt, lithium, nickel, silicon, etc., and even more so the refining and processing of these raw materials, are highly concentrated, especially in China, which has gained a tremendous competitive advantage in the last few decades in terms of the extraction, preparation and processing of critical materials. This is where geopolitics comes into play.

² Ing. Klaus Fronius, formerly Fronius International GmbH

The disputes between the USA and China in particular, but also between China and the EU, are making the supply situation uncertain. Geopolitical tensions are jeopardising the supply of these key raw materials, especially for the European Union. We must now endeavour to build up the necessary capacities. Above all innovations are needed in the area of energy storage. But we also need to develop suitable business models, for example for large storage facilities.

The supply of critical raw materials and the expansion of corresponding processing facilities within the EU is taking a long time. Due to the current global uncertainties, there is also not enough investments in the extraction and processing of these important raw materials.

At the same time, research into the development of alternative storage options is being driven forward. Even if sufficient wind power plants were to partially compensate for the reduced electricity generation from solar energy in winter, it is still to be expected that the large amounts of energy generated in summer will be needed in winter. In order to compensate for these (but also shorter-term) fluctuations, the utilisation of former gas deposits enables the storage of hydrogen, which could be used when needed. Austria can already boast some interesting successes in this area. Corresponding plants are already being tested, although the expansion of hydrogen production remains a major challenge.

In addition, greater efforts must be made to recycle batteries. Only if progress is made here can we achieve the desired electrification of our lives and a genuine circular economy. This also applies in particular to batteries used in electromobility.

E-mobility

Regarding the positive development away from the combustion engine and towards electric cars we must not forget the resources needed. We also need a social transformation with mobility innovations: fewer vehicles overall that are used more intensively (keyword: car sharing), more flexible, needs-based mobility for both private individuals and companies ("Can this route also be travelled by bicycle or public transport?" "Do I need a car or van in this situation?") - and definitely a reversal of the trend towards ever larger vehicles!

Industry

Finally, the focus is also on efficiency and electrification in the industrial sector. This plays a decisive role in Austria, both in terms of greenhouse gas emissions and as an employer.

Reinhold Lang^{aa} deals with these so-called "hard-to-abate" (HTA) sectors - i.e. sectors in which decarbonisation is the most difficult. He emphasises that this is actually about "de-fossilisation", i.e. avoiding fossil source materials, and not necessarily about "de-carbonisation". This is because it seems certain that the complete avoidance of carbon and CO₂ in the processes themselves is neither possible nor sensible.

Various industrial sectors use carbon as a raw material for their products (e.g. the chemistry sector for producing plastics materials). This can be reused. According to Lang, this could be achieved by a cross-sectorial, circular and transnational "National Carbon Management Strategy" with a focus on HTA industries or HTA transport and traffic. "Behind this is [the idea of] 'cycling carbon', i.e. not releasing CO₂ into the atmosphere, but capturing it and reusing it," says Lang. This can also contribute to a reduction

^{aa} Univ.-Prof. Dr Reinhold Lang, Institute of Polymeric Materials and Testing, Johannes Kepler University Linz

in climate-impacting emissions, at least for individual sectors.

Another problem is generating the necessary energy for the industrial sector. There are various considerations in this regard. Industry is currently favouring the production and import of green hydrogen. Efforts are already being made to cooperate with foreign partners in order to secure production on the one hand and to jointly plan the corresponding infrastructures on the other. However, there are numerous geopolitical, social, environmental, logistical and technical challenges here.

The European Commission has taken a major initiative with the European Hydrogen Bank 2023. The first ten-year calls for proposals and awards of "Contracts for Difference" to enable long-term planning and financing have already been implemented. Seven projects received a support commitment of 720 million euros in April 2024. Further globally orientated tenders, which, similar to the German H2 Global system, also provide for international hydrogen production partners, are in preparation.

Systemic and socio-political aspects must be taken into account here. In terms of reversing poverty and inequality, long-term cooperation projects must be planned from the outset in such a way that the partners communicate on an equal footing and benefit from each other, especially the citizens of those countries that could potentially be hydrogen suppliers, such as Tunisia.^{bb} In March 2023, the Austrian Chapter of the Club of Rome was represented at a workshop in Tunisia organised by UNIDO and the BMK together with a number of leading Austrian energy and technology companies. There was great interest on the Tunisian side. However, it also became clear that cooperation at the level of smaller companies and committed stakeholders requires the support of larger political initiatives or industrial partnerships.

At the same time, Tunisia's current democratic deficit should be mentioned.

It is becoming clear that the success of an energy transition will depend on whether European politicians and companies are able to offer our neighbours a new and fair Green Deal partnership that not only focuses on imports and the use of the enormous solar and wind resources of potential partners for the European market, but also enables mutually beneficial socio-technological cooperation that can contribute to ecological, economic and social change in the partner countries of the South.

Lever 3: Exponential growth of renewable energies

- ▶ Expansion of renewables and electricity grids
- ▶ Spatial energy planning
- ▶ Raising awareness

Parallel to increasing the efficiency of the entire energy system, an even more ambitious expansion of renewable energies is needed as a third lever.

Reinhard Haas^{cc} states: "Without the rapid and broad expansion of renewable energies, the zero carbon emission economy will not be achievable. [The expansion] must go hand in hand with ambitious measures to increase energy efficiency."

^{bb} See [thematic in-depth discussion on 30 January 2023](#)

^{cc} Univ.-Prof. Dr. Reinhard Haas, Head of the Energy Economics Group, TU Vienna

As already mentioned, the expansion target of the Renewable Energy Expansion Act (EAG) is 27 TWh by 2030, which means that domestic electricity consumption should be completely covered by renewables - an important target for Austria's energy independence. However, as mentioned above, this target only increases the share of renewables in total energy consumption to around 40 per cent - i.e. the Too Little Too Late scenario. For a Giant Leap, this share would have to be around 60 per cent: that would be an expansion of at least 100 TWh.

The expansion of 27 TWh is already a very expensive and complex endeavour. The state is providing 1 billion euros per year for the EAG. Österreichs Energie, the organisation representing the interests of the Austrian electricity industry, estimates costs of 25 billion euros for the construction of the generation plants alone and speaks of a "moonshot" in the energy system. In parallel to the expansion of the generation plants, infrastructure and storage facilities must also be expanded, which requires, among other things, a large number of personnel and skilled workers - in a labour market that is already in short supply.

With the integrated Austrian network infrastructure plan (ÖNIP), the BMK has recently "a planning basis for important infrastructure decisions for 2030 on the way to a secure, climate-neutral energy system in 2040". This was preceded by a strategic environmental assessment and a multi-stage consultation process. An update is planned in five years' time.

Implementation is not only difficult in terms of planning, but is also regularly delayed by lengthy approval procedures. In addition, there is often resistance from the local population. Both wind turbines and electricity grids are often seen as a blight on the landscape and are not tolerated "on one's own doorstep". Opponents of wind power have already stopped numerous projects.

However, the scarcest resource currently available for a successful energy transition is time. Strong public support is essential for the smooth implementation. As with other turnarounds, the success of the energy transition is also directly linked to education and communication. Broad awareness-raising, training and strategic communication are required.

"There is a lack of an appropriate communication concept to take people along and draw their attention to the possibilities and potentials," says Siegfried Nagl.^{dd} "The energy transformation should be put beyond dispute, both politically and socially."

In contrast, the fossil fuel industry uses its networks ("Atlas network") in a very targeted manner and has been using strategic communication, disinformation and division for decades to slow down, delay or even prevent transformation efforts as far as possible.

^{dd} Mag. Siegfried Nagl, Special Energy Representative of the Executive Committee, Austrian Economic Chambers

Indicators

- ▶ Energy consumption per year
- ▶ Share of renewable energies in the private and industrial sectors
- ▶ Life cycle assessment instead of just calculating CO₂ emissions per year: a complete consideration of the consequences for the entire ecosystem
- ▶ Measurement of CO₂ emissions not only per capita, but in relation to economic output to enable a fair comparison with all other countries
- ▶ Measure of diversification and substitution of gas and fossil fuels
- ▶ Share of green hydrogen
- ▶ Circularity, savings, energy efficiency

Outlook: Beyond technical challenges

To summarise, the current plans for the expansion of renewable energies are both highly ambitious and "too little": they are Too Little Too Late. In view of the massive challenges, the current structures of our society - both nationally and globally - do not appear to be sufficient for a Giant Leap. We therefore urgently need to activate as many social actors and potentials as possible.

Ernest Aigner,^{ee} editor of the APCC Special Report, summarises: "It is currently difficult to live in a climate-friendly way in Austria. In most areas of life, existing structures encourage climate-damaging behaviour and make climate-friendly living more difficult."

The most urgent task would be to stop using gas and oil. However, the alternatives - especially sufficiency and social innovation, but also green hydrogen and the truly sustainable use of biomass - are rarely discussed objectively. In addition to making the topic more objective, renewable energies need to be depoliticised.

At the same time, fundamental rights must be safeguarded and conflicting objectives resolved. In all of this, it is important that the state utilises its legal possibilities. "At the moment, there is no predictability and long-term funding commitments for companies because the goals are constantly being shifted by politicians," says Nagl.

The APCC Special Report deals with the question: which structures does Austria need in order to make climate-friendly living possible and a matter of course quickly and permanently? Aigner emphasises the importance of thinking in terms of structures: "It is therefore not about changing the behaviour of individuals within existing structures, but about eliminating those structures that make climate-friendly behaviour more difficult and creating new structures that make climate-friendly behaviour easier or a matter of course."

Such a transformation requires the cooperation of all social forces. However, many actors are not in a position to shape structures themselves, and many of those who could are lacking the necessary commitment.

^{ee} Dr. Ernest Aigner, Social-Ecological Systems Institute, Leuphana University of Lüneburg

"Special competences, resources and decision-making responsibility for shaping a climate-friendly life lie with public decision-makers, legislation and government," says Ernest Aigner.

The position paper on the energy transition by CEOs FOR FUTURE makes it clear that holistic energy system planning and binding spatial energy planning are needed. Binding target achievement and land designation must be continued in the federal states.⁶²

We have more papers than ever before on the subject, more strategies than ever before on the subject, we have so many plans and know everything that needs to be done [...] - and we are getting nowhere in terms of implementation," comments Wolfgang Anzengruber.^{ff}

The energy transition is a Herculean task. Never before has such a major change had to be planned and implemented - and certainly not in such a short space of time. Solutions are primarily being sought in the natural sciences and engineering. However, although experts are convinced that the technical aspects of the energy transition in Austria have largely been discussed and planned, implementation is making slow progress. There are numerous technically and financially easily realisable and effective measures for the energy transition: the cancellation of the diesel privilege, the reduction of subsidies for fossil fuels or linking building permits to the installation of PV systems.

However, as these are unpopular with some of the population, they are not implemented.

Hildegard Aichberger⁹⁹ goes one step further and talks about counter-interests: "Who are those who are preventing? They are the ones who lose something in the new system. And those who lose are those who benefit enormously from the current system." Aichberger raises the question of how we can win over the few powerful opponents in particular so that they also have something to gain from change.

With reference to the APCC 2023, Ernest Aigner explains how difficult it is to break up existing structures and create new ones. He identifies a lack of knowledge about how change processes are set in motion and outlines a striking contrast: while the natural science approach suggests orientation in the climate sciences, for example, there is a great deal of disorientation from a social science perspective.

It is therefore all the more important to continue talking about social change as a whole and to scrutinise the social framework conditions. The interconnectedness with the other turnarounds becomes abundantly clear here: the energy transition is not an ecological, economic or social issue - it affects our entire lives. It is time for us to recognise this interconnectedness and start acting accordingly.

^{ff} Dipl. Ing. Wolfgang Anzengruber, member of the board, CEOs FOR FUTURE

⁹⁹ Dr.in Hildegard Aichberger, Business Leader of the Environmental Affairs Office

VII. Poverty turnaround

Summary for policy makers

Initial situation

Poverty, combined with the consequences of climate change, is not just a problem for low-income countries. Poor and minority groups in middle- and high-income countries that are confronted with extreme weather phenomena are just as badly affected.

Vision

"Global poverty has been eradicated, i.e. the basic needs of all people are met and there is equality of economic and social opportunity. In addition, everyone has access to political participation, education, health and cultural goods. There is an integrated climate, environmental, economic and social policy that makes it possible to live within planetary boundaries. Austria has contributed to this new reality through civil society engagement and an active policy at national level, within the EU and multilateral institutions. Balanced power relations and partnerships, including a migration policy based on human rights, enable sustainable development for all countries."

Lever 1 - Expanding the political room for manoeuvre and curbing the debt of low-income countries:

- ▶ Dealing with multinational corporations
- ▶ Debt relief
- ▶ Global coordination

Lever 2 - Establishment of new growth models (re-regionalisation of trade):

- ▶ Technology transfer
- ▶ Investment and consumption models
- ▶ Global (ESG) standards
- ▶ International trade

Lever 3 - Transformation of the financial architecture:

- ▶ Currency trading
- ▶ Special drawing rights (IMF)
- ▶ International Foreign Exchange Fund (IDF)

Outlook

Implementing the poverty turnaround is not only a prerequisite for individual wellbeing and peaceful coexistence, but also for a successful climate policy strategy. This is why it is Austria's responsibility and at the same time its opportunity to implement a poverty turnaround, which will be easier in combination with the other turnarounds.

Global background

"Fundamentally, a new, sustainable economic ecosystem must be established that turns away from the short-sighted focus on quantitative economic growth alone and instead primarily promotes qualitative growth. In this way, low-income countries should be enabled to increase their growth quantitatively and qualitatively in order to rapidly reduce poverty in an environmentally sustainable and equitable way in combination with the other turnarounds."

—Earth4All (2022)

Following the global report, the need for economic growth that increases the income of the poorest is emphasised. However, it is important for the transformation that this growth is based not only on economic, but also on ecological and social values. As part of the industrialisation of low-income countries, the fossil fuel economy must be clearly rejected - it is crucial for a successful global climate policy to learn lessons from the industrialisation of the past!

According to Earth4All, in view of the three to four billion people living in poverty, low-income countries with a GDP of less than USD 10,000 per capita per year should not only grow qualitatively, but also quantitatively: by 2050, at least USD 15,000 per capita per year should be achieved.

Poverty in a global context

Poverty is multidimensional, and focusing on just one factor (such as income) does not capture the entirety of the effects of poverty. Rather, such a perspective denies those affected by poverty sufficient provision of essentials and participation in social life.

Living in poverty often means being confronted with several disadvantages at the same time. Extreme poverty, malnutrition and hunger are widespread in the world's poorest countries. Humanitarian crises and ongoing conflicts are highlighted by international aid organisations, but are currently being pushed into the background by the Russian war of aggression in Ukraine and the conflict between Israel and Gaza.

The United Nations 2030 Agenda for Sustainable Development has set itself the goal of ending poverty in all its forms and everywhere. Sustainable Development Goal 1 is to end extreme poverty by 2030. The OECD's^{hh} Development Assistance Committee defines poverty as the inability to meet basic human needs. These needs include, above all, access to sufficient food, healthcare and education, security and dignity as well as decent work.

Extreme poverty primarily affects women. Compared to men, they have fewer opportunities for education or a job, are excluded from participation in public and political life, have no access to resources such as land, technology, income and capital and also experience gender-specific violence. As soon as women are given the chance of education, they can escape poverty: They become part of the labour market, part of the climate-related transition, generate income, have fewer children - and their children have a greater chance of better health and education. So it's not just women who benefit from equality: the whole of society benefits.

^{hh} Organisation for Economic Co-operation and Development (OECD)

According to the latest data from the World Bank, the number of people affected by extreme poverty worldwide rose by around 70 million to 719 million in 2020. This is a sad record. The World Bank has been collecting data on global poverty since 1990, and in all that time there has never been a comparable increase. The coronavirus pandemic has set back the fight against poverty; according to World Bank forecasts, achieving the goal of ending extreme poverty by 2030 is unlikely to be achievable. It is estimated that 647 million people will be living in extreme poverty by 2023 - that is 8.4 percent of the world's population.⁶³

The ten poorest countries in the world

According to International Monetary Fund statistics based on gross domestic product (GDP/inhabitant or GDP of a country divided by the total population), the poorest country in the world is Burundi in East Africa with a GDP/inhabitant of just USD 245.91. The majority of its population earns a living through subsistence farming. The people suffer from food shortages, a lack of water and an inadequate healthcare system.

The second poorest country, Sierra Leone in West Africa (GDP/inhabitant: USD 414.96), is struggling with the economic consequences of the Ebola epidemic and the coronavirus pandemic.

In the third poorest country, South Sudan (USD 417.44), more than half of the population is threatened by hunger.

The fourth poorest country is Madagascar (USD 529.56), which is rich in natural resources but severely affected by climate change and the consequences of regular crop failures.

The fifth poorest country, Sudan in north-east Africa (USD 533.85), and the sixth poorest, the Central African Republic (USD 539.24), are both threatened with high instability due to armed conflicts.

In Malawi, the seventh poorest country in the world (with a GDP per capita of USD 579.7), there is food insecurity and a lack of access to education and medical care.

The eighth poorest country, Yemen in the Middle East (USD 617.67), suffers from humanitarian and natural disasters.

In Niger, the ninth poorest country (USD 630.8), half of the population lives in extreme poverty.

Mozambique, the tenth poorest country in the world, is characterised by extreme poverty despite its wealth of resources, with a GDP per inhabitant of USD 647.14.

Global debt crisis

The global debt crisis is multidimensional. Accordingly, it needs to be analysed from a variety of perspectives, which is done below: To help the poorest countries, Hannes Swobodaⁱⁱ argues in favour of debt relief, but also points to the existing national political problems of countries with high poverty rates. Low-income countries have been hit disproportionately hard by the crises of recent years - with rising cost of living and higher interest rates, which add to the already high debt burden of many low-income countries.

ⁱⁱ Dr. Hannes Swoboda, President of the Club of Rome - Austrian Chapter and former Member of the European Parliament (1996-2014)

Gunther Beger^{jj} describes the situation in which "3.3 billion people live in countries where more money is spent on debt repayment than on education and health combined" as "devastating". This has created a vicious circle in which less and less money is available for education, health, investment in infrastructure and industrialisation measures.

Martina Neuwirth^{kk} emphasises: "The countries of the global South are becoming more and more indebted - which is partly due to global inequalities that are often still structurally attributable to the colonial era." In order to break out of this vicious circle, global mechanisms must finally be established that also involve private creditors to a greater extent, such as insolvency proceedings for states. However, there must also be fairer international rules in the area of taxation, as the poorest countries in particular are still unable to generate enough revenue - much of which is then used to repay debt rather than to combat poverty.

Sabine Gaber^{ll} emphasises that the economic debt crisis of many countries in the global South is closely linked to the climate crisis. In addition to other factors, the high level of debt leads to poor credit ratings from international rating agencies with additional risks of stranded assets caused by natural disasters as a result of climate change. As a result, these countries have no or only limited access to capital and affordable financing, which they urgently need to realise climate-relevant investments, for investments in economic development to reduce poverty and for measures to combat biodiversity loss.

Christian Just^{mm} sees debt cancellations as a possible measure, but the debt levels would return to where they were before after a few years.

Wolfgang Bergthalerⁿⁿ agrees with Just and emphasises: "There is no insolvency law for sovereign debt." Ultimately, a solid macroeconomic policy is therefore needed in the respective countries.

Financial support and financial architecture

Low-income countries face the dual challenge of climate change and poverty, which is closely linked to the global financial architecture, in particular the debt crisis. Public and private creditors must be considered equally and fairly in terms of debt cancellation, debt restructuring and debt sustainability. According to Sabine Gaber, many countries do not yet have an efficient tax administration system, resulting in a lack of tax revenue.

Countries need financial support to cope with climate change, pandemics and conflicts. According to estimates by the World Bank and the International Monetary Fund, the total annual expenditure will be around USD 2.4 trillion by 2030.⁶⁴ If such sums are to be realised, development financing must be reformed. The World Bank and multilateral, regional and national development banks must expand their mandate of poverty reduction to include the provision of public goods, particularly in relation to climate change, and should be provided with additional capital by their shareholders accordingly. The International Monetary Fund's special drawing rights^{oo} in relation to supporting the climate transition in developing countries are due for evaluation.

^{jj} Gunther Beger, Managing Director UNIDO

^{kk} Mag.a Martina Neuwirth, Senior Expert Development Finance at VIDC

^{ll} Mag.a Sabine Gaber, Vizepräsidentin des Club of Rome – Austrian Chapter, Executive Board of Eastern Development Bank AG

^{mm} Christian Just, Alternate Executive Director International Monetary Fund

ⁿⁿ Dr. Wolfgang Bergthaler, Assistant General Counsel International Monetary Fund

^{oo} Special Drawing Rights (SDRs) are the IMF's unit of account. Members' currencies are valued by the IMF in SDRs on the basis of their representative exchange rates, normally against the US dollar at spot market rates, where available. Gold held by the IMF is valued at average historical cost. (IMF, 2024)

It is not only public contributions to development and climate financing that should be increased. Gaber also explains that the immense need for investment cannot be financed by public funds alone. The mobilisation of private funds from private investors to implement commercial, economically viable projects in the private sector in low-income countries is therefore of great importance.

To achieve this, risk access and risk-bearing capacity in the existing financial architecture must be rethought and adapted to the real ecological, social and economic requirements - not the other way around, says Gaber.

Furthermore, it is not just about mobilising the necessary private capital, but also about providing expertise on how projects and investments need to be set up in this challenging environment in order to make a sustainable contribution to economic development. In particular, the "green" exchange of technology and a waiver of intellectual property rights for patented technologies are of great importance in view of the climate crisis.

Erwin Künzi^{pp} explains that innovations from companies that have been created with the support of public funds should not be completely protected as intellectual property, but that the public sector that made the innovation possible should also be able to use and disseminate it.

At the same time, caution is required. According to Holger Hestermeyer^{qq} the global system of intellectual property protection is in need of fundamental reform, but at the same time care must be taken to ensure that additional knowledge, some of which has not been published and which is linked to patent licences, is not lost. As part of a global reform, this infrastructure could be preserved, for example by reducing the term of patents. Hestermeyer argues in favour of strengthening rules-based trade, for a reform of the rules and against abandoning the trading system as a solution to global problems.

According to Gaber, a paradigm shift is needed with comprehensive reforms for an adapted global financial architecture and a fair, international trade policy. In addition to the political will, harmonised, common framework conditions are essential for this. CO₂ emissions should be recognised where the products are consumed.

New capital and the responsibility of governments

The need for infrastructure development and innovation in Africa is immense, both physically (infrastructure including energy and digitalisation) and socially (water and food security, health, education): it will amount to an average of 20 percent of the average gross domestic product of the poorest countries by the end of the decade. Given the limited availability of public funds and publicly financed investment programmes, the private sector must contribute more to economic development and climate transition in low-income countries. According to the International Monetary Fund, the private sector could provide an additional USD 50 billion per year by the end of the decade.⁶⁵

However, mobilising private capital for private investment is challenging in view of unstable economic and political conditions. Possible solutions include creating incentives in the form of various types of targeted grants and guarantees so that private investors are willing to realise private projects in low-income countries. This would enable more investment-ready projects to be launched that would otherwise not

^{pp} Mag. Erwin Künzi, Austrian Development Agency, Head of Themes & Quality

^{qq} Prof. Dr. Holger Hestermeyer, Professor of International Law and EU Law, Diplomatic Academy of Vienna

be realised. However, the incentives would have to be calculated in such a way that they do not lead to overcompensation of the private sector. In turn, the projects must help to create local jobs, tax revenues and value chains and provide access to clean, affordable energy and infrastructure.

When implementing projects, compliance with international environmental and social standards as well as good governance rules must be ensured. Local governments must take responsibility for this and work to develop the regulatory framework and investment environment in such a way that private donors are willing to support projects.

One proposal to mobilise private investors is for the federal states to reallocate some of their limited funds to finance incentives for private investors to get involved.

Opportunities for poverty reduction on the African continent

In the countries of sub-Saharan Africa in particular, extreme poverty is mainly concentrated in conflict areas and rural regions. In some places, the poverty rate is an alarming 40 percent. According to the International Monetary Fund, a rough estimate of the resources needed to close the aggregate poverty gap in sub-Saharan Africa is around 10 percent of gross domestic product in low-income countries in sub-Saharan Africa (equivalent to USD 50 billion per year).⁶⁶

Climate change is exacerbating the emergency situation: droughts or floods, crop failures, water shortages and dwindling habitable land and arable land due to droughts are increasing. More and more people are affected by humanitarian crises, even though the continent of Africa has contributed the least to climate change.

Insofar as people affected by poverty benefit from this, increasing average incomes is one way of combating poverty. "Growth" must therefore be designed inclusively so that all population groups benefit equally from an improved quality of life through economic development.

One of the continent's potentials is its rapidly growing population. While many industrialised countries are already experiencing demographic ageing with labour shortages - a development that will intensify in the coming decades - 40 percent of the population in Africa is currently under the age of 15. The continent will therefore have the largest and youngest labour supply in the future. This makes it all the more important to place a strong focus on climate protection and inclusive development approaches that enable greater participation and quality of life for all sections of the population.

The continent is rich in important raw material deposits. As a result, Africa has gained great geopolitical importance and the major international powers (USA, China, Europe, Gulf States) are increasingly competing for influence on the continent. In future, African countries must succeed in utilising their wealth of raw materials for their own local development. Sustainable extraction of raw materials, taking into account the circular economy, recycling, etc., is also necessary in Africa.

Austria can provide on the one hand even more financial resources to combat global poverty and on the other hand try to increase its influence on the content and the direction of European trade policy with the aim of placing social and ecological concerns at the centre, argues Alexandra Strickner.⁶⁷

⁶⁷ Mag.a Alexandra Strickner, trade policy expert & Managing Director Member of the Board Competence Centre for Infrastructure Economics, Public Services and Social Provisioning

Unequal power relations are a problem for local development - for example when it comes to existing free trade and investment agreements. Local elites and international corporations that profit from the exploitation of raw materials at the expense of the local population are also problematic. ESG criteria must therefore be implemented for all projects. In order to counter possible neo- or climate colonialism, third countries and Europe also have an obligation to provide expertise.

This is another reason why it is important to involve the local population in order to ensure transparency and binding standards with regard to trade contracts, payment flows, ownership rights, licences and conflict minerals across the entire supply chain - from the mine to the end product. Social and environmental risks must be taken into account equally. At the moment, this is not yet happening: the climate transition and the development of new technologies, including digitalisation, have increased the demand for extractive raw materials, and industrialised and emerging countries (BRICS countries) are pursuing the goal of unrestricted access to raw materials.

Africa has huge potential for solar power - over 60 percent of the global solar potential. Given the rapidly growing population and energy poverty in sub-Saharan Africa - 700 million people have no access to affordable, reliable, clean energy - this should be utilised.

It is only too understandable that African countries are reluctant to be admonished to leave oil, coal and gas in the ground when the admonishing voices come from countries that on the one hand have been using fossil fuels for a long time - and continue to do so today - and on the other hand provide African countries with so little support for economic development and climate transition. The expansion of photovoltaic systems would certainly be an alternative that is not only cost-effective but also climate-friendly. Solar modules are also well suited for a decentralised, needs-based power supply in rural regions of Africa.

According to Werner Raza,^{ss} the use of protective tariffs and similar measures is also permissible in the context of catch-up economic development. In some countries, such tariffs and other industrial policy measures for so-called "infant industries" could be important elements of a forward-looking economic policy. However, they would have to be accompanied by a comprehensive North-South technology transfer.

Austrian starting position and model-based scenario analysis

Austria's international responsibility

Countries like Austria, with its high standard of living and diverse opportunities, are obliged to support countries with high poverty rates. In 1970, Austria, together with other countries, pledged to provide 0.7 percent of its gross national income each year for development cooperation and humanitarian aid. This so-called ODA or "Official Development Assistance"^{tt} quota is in provisional numbers figures for 2023 only 0.38 percent for Austria, which is significantly too low. Efforts should be made here to achieve the promised quota (cf. Norway 1.09 percent, Luxembourg 0.99 percent, Sweden 0.91 percent, Germany 0.79 percent, Denmark 0.74 percent).

Austria in particular, with its social market economy model and many ecological approaches, can be a welcome partner for low-income countries. Our development policy principles and objectives, which focus

^{ss} Dr. Werner Raza, Scientific Director of the Austrian Research Foundation for International Development (ÖFSE)

^{tt} The Official Development Assistance rate measures the provision of financial, technical and personnel services as part of official development cooperation in relation to gross national income as defined by the OECD's Development Assistance Committee (DAC).

on poverty reduction and climate policy, are also moving in the right direction. Nevertheless, increased engagement in low-income countries could be mutually beneficial. Austria's strong commitment in its European neighbourhood should not stand in the way of this.

Migration as an opportunity

Migration from Africa to the European Union and specifically to Austria can help both sides - if it takes place in a controlled manner and leads to increased training of young Africans in the EU. On the one hand, training could help to alleviate the labour shortage in European countries, and on the other, new qualifications would come to Africa. What is needed, however, is a realistic and productive attitude. We must also not forget that Austria has always been a migrant society. This diversity must be emphasised and its potential recognised and realised.⁶⁷

This can work above all if migration is also understood and organised in a circular way. This means that it is not only attractive for migrants to stay in Austria, but also to return to their countries of origin. This will work above all if Europe helps to drive economic, social and ecological development in Africa, for example. Approached rationally and purposefully, migration can then help to strengthen the links between the continents. Such a strengthening is absolutely essential for an effective climate policy.

Scenarios for global poverty reduction in the Austria model

The globally modelled levers, applied to the Austrian context and the poverty turnaround, primarily amount to an increase in government spending to support lower-income countries. At national level, the turnaround also includes investments in additional infrastructure for the common good and climate change adaptation.

The biggest visible effect of this turnaround is therefore the increase in government spending and therefore debt - it is significantly higher in the Giant Leap scenario than in the Too Little Too Late scenario. If this turnaround were to be implemented independently of the others, government spending would rise significantly higher in relation to GDP and debt would also increase substantially. In combination with the other reversals, however, this effect can be significantly reduced (see Fig. 18). Although this is not evident in the national modelling results, this turnaround has many positive effects at a global level, which have a positive impact on Austria, for example in the form of international cooperation. The additional funds available in low-income countries can then also make a significant contribution to climate protection.

Debt ratio

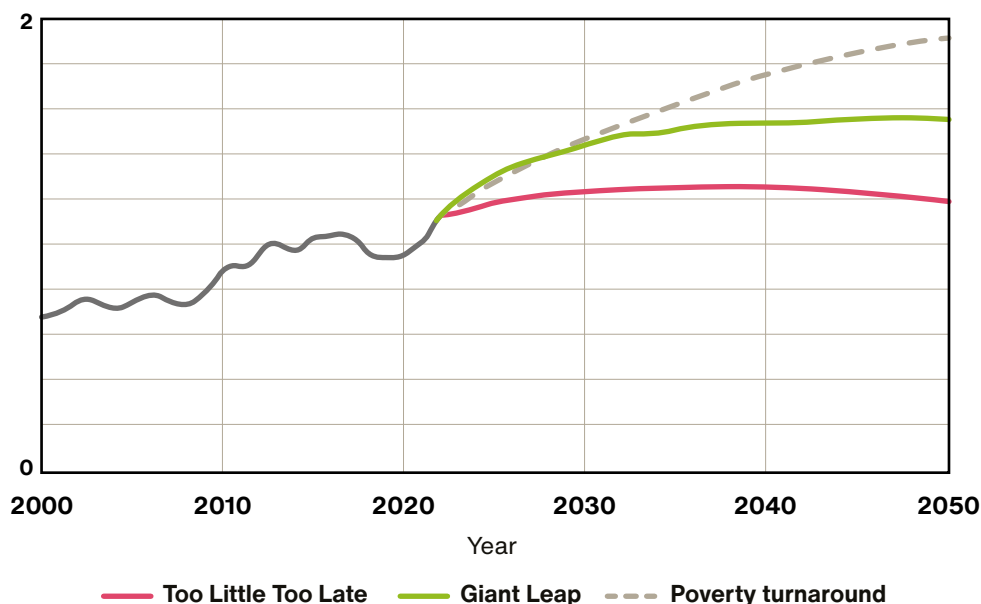


Figure 18: Development of the debt ratio in Austria (ratio of government debt to gross domestic product) in the scenarios Too Little Too Late and Giant Leap as well as with the sole implementation of the poverty turnaround.

A Giant Leap and how to get there from a stakeholder perspective

Vision and goals

In order to understand how Austria can contribute to a Giant Leap in the area of poverty at a global level, it is first relevant to develop a vision for 2050. The following vision was developed in the stakeholder process:

"Global poverty has been eradicated, i.e. the basic needs of all people are met and there is equality of economic and social opportunity. In addition, everyone has access to political participation, education, health and cultural goods. There is an integrated climate, environmental, economic and social policy that enables life within planetary boundaries. Austria has contributed to this new reality through civil society engagement and an active policy at national level, within the EU and multilateral institutions. Balanced power relations and partnerships, including a migration policy based on human rights, enable sustainable development for all countries."

Levers

The three levers of the global report were defined for the Austrian context in the stakeholder workshop and formulated as follows.



Figure 19: Levers of the poverty turnaround.

Photo: Bild von Xiamen @ pixabay.com

Lever 1: Expand policy space and deal with debt of low-income countries

- ▶ Dealing with multinational corporations
- ▶ Debt relief
- ▶ Global coordination

The lever for expanding the policy space and curbing the debt of low-income countries comprises several packages of measures. The first central package of measures primarily includes steps to reform processes and transparency situations. Firstly, this requires tax governance to promote transparency, which includes both a beneficial ownership register - public and searchable - and a wealth register. In addition, a progressive wealth tax must be enforced and international lobbying must be carried out for this.

In addition, a border adjustment tax based on the carbon footprint is needed to improve the situation of developing countries, as well as Austria's involvement in international organisations to make them more representative and fairer.

Another key package of measures includes steps to build institutional capacities in partner countries through better utilisation of Austrian development cooperation. Specifically, the following steps can be taken:

- ▶ Support with the development of competences in the area national tax systems and support for regional networks
- ▶ Strengthening institutional capacity in the framework development co-operation
- ▶ 0.7 percent of GDP for official development cooperation
- ▶ Lobbying for stricter EU minimum standards for multinational corporations and a voluntary commitment by the EU to close loopholes
- ▶ Consistent implementation, observance and further development of human and environmental rights
- ▶ Support for the UN process for UN framework agreements (and protocols) in the international tax area

- ▶ AI governance and AI capacity building: utilise Austrian expertise and oblige international corporations to pay local taxes (AI value creation must be regulated)
- ▶ Taxation of data coupled with a redistribution of these taxes
- ▶ Strengthening UN institutions, legally binding measures and sanctioning options

The last, but no less important, package of measures describes steps to strengthen partner countries in the protection of the global commons. In particular, small-scale and community-based projects that support the protection of the global commons are to be prioritised and promoted. For Austria, this is particularly about implementing pilot projects with other EU partners to protect the global commons in Austria and the partner countries. These projects should be designed in a participatory manner so that the local/regional voices lead the way.

Beyond these packages of measures, there must be policy coherence. This means that all legal measures must be analysed in terms of their impact on low-income countries. For example, the switch to electric private transport can lead to new conflicts due to the environmental impact and concentration of power in countries where the raw materials come from.

Other measures in this lever are to be understood as cross-sectional measures, as they require an overarching planning centre. This is intended to "de-silo" and increase effectiveness through the interplay of the various turnarounds, public relations work on the importance of the poverty turnaround and lobbying for government programmes and parliamentary work.

Lever 2: Establishment of new growth models (re-regionalisation of trade)

- ▶ Technology transfer
- ▶ Investment and consumption models
- ▶ Global (ESG) standards
- ▶ International trade

This lever is about taking different perspectives into account. On the one hand, it is essential to utilise financial resources and cooperation in poorer countries effectively in order to drive growth there as sustainably as possible. On the other hand, the growth concept itself should be reconsidered. Here, high-income countries have a role model function in the implementation. In addition, these countries should create enough space for low-income countries to be able to follow suit in terms of growth. Without (lived!) alternatives to the current growth model in high-income countries, it is to be feared that low-income countries will see no reason to avoid the ecological mistakes of the industrialised nations. Appropriate steps need to be taken to unite both perspectives.

The most urgent step for sustainable growth in low-income countries is to increase *funding for transformative research in the area of the circular economy in low-income countries*. Almost as urgent, but difficult to implement, are energy *co-operations: e.g. producing hydrogen through solar energy for local demand and export*. This step benefits considerably from *infrastructure development in low-income countries*, as it promotes the construction of corresponding plants and the transport of energy sources, among other things.

The step of supporting *Austrian companies that want to invest in "poorer" countries and transfer technology* is also urgent - and easy to implement. By identifying *organisations (e.g. universities,*

companies) that have points of contact in these countries, scientific cooperation can be expanded, particularly in the field of medical research, which increases local expertise.

The most urgent step towards developing new economic narratives that are not based on perpetual growth is a reform of business and economics programmes with regard to alternative economic models. This can be driven forward by increasing research funding for a non-growth-orientated economic theory. This must be coupled with awareness-raising: the targeted promotion of objectives beyond the consumer society should be promoted in Austria and Europe. There should also be practical and applied research and piloting to develop new business models in the circular economy, in which, among other things, apprentices work in locally important professions.

Further steps can contribute to the realisation of this lever:

- ▶ Support for a welfare state model derived from Austria, but adapted to local conditions
- ▶ Supporting the establishment of organisational framework conditions (in particular legal security)
- ▶ Supporting the development of educational institutions with a focus on vocational training
- ▶ Define the unique selling points of Austrian economic development; derive from this what can be proposed as a model for success (e.g. the social partnership)
- ▶ Regulations for the durability of products
- ▶ "Right for Nature": Inclusion of environmental pollution at national and international level
- ▶ Calculating the "happiness index" instead of focusing on GDP
- ▶ Awareness initiative on alternative prosperity indicators

Lever 3: Transformation of the financial architecture

In order to generate more investment in Africa, it is crucial to reorganise the international financial system. As UN Secretary-General António Guterres puts it: The current "morally bankrupt global financial system that prolongs poverty and inequality" must be changed, he said.

- ▶ Currency trading
- ▶ Special drawing rights (IMF)
- ▶ International Currency Fund (ICF)

A few steps have been formulated for this lever, but they can be realistically planned in budgetary terms with capital flows from Austria. The first step is to implement the following three difficult-to-implement steps on the subject of special drawing rights, which build on each other:

- ▶ Transformation of special drawing rights by the IMF
- ▶ Rededication of Austria's special drawing rights in favour of developing countries
- ▶ Use of voting rights to utilise special drawing rights for development and climate investments

In addition, the following three steps can contribute significantly to the realisation of this lever:

- ▶ Expansion of guarantees for foreign direct investments in high-risk countries
- ▶ Expansion of innovative financial instruments such as carbon credits, blended finance and soft loans
- ▶ Provision of budget funds for the mobilisation of private equity for direct investments

These three steps can be supported by bilateral co-operation agreements with the low-income countries. Joint economic missions or cooperation with the Austrian Economic Chambers to raise awareness of new economic powers also contribute to their realisation.

So-called low-hanging fruits in this lever are:

- ▶ Maintain or increase Austria's contribution to international climate financing at the UN
- ▶ Utilise Austria's voting rights to reform the international financial institutions (World Bank) (extension of the mandate of poverty reduction to the provision of public goods).

Outlook: Overcoming poverty through comprehensive reforms

A large number of challenges remain for the global fight against poverty. A few keywords are debt relief, a new financial architecture, reorganising the protection of intellectual property and comprehensive self-determination. It is important to always focus on the self-determination of the partner countries and to work towards this at all levels.

As Alexandra Strickner points out, Austria can have a stronger influence on the content and direction of European trade policy with the aim of placing social and ecological concerns at the centre. For example, the EU is currently trying to use trade agreements to create framework conditions that will give it easier access to raw materials and at the same time secure the development of EU industries (for example in the area of energy transition) through the possibility of protective measures against cheap imports, while at the same time supporting the expansion or preservation of development of low-income countries.

One example is the restriction of localisation requirements in public procurement via agreements in trade agreements. From the perspective of these countries, however, these are important measures to enable the development of their own industries or to secure a local economy or technology transfer. The use of protective tariffs and similar measures in low-income countries are also essential for this - accompanied by a comprehensive North-South technology transfer.

In all steps, it is crucial not to lose sight of those actually affected by poverty and their needs. Simply demanding "growth" without reflecting on the social, political and economic realities and power relations within and between the respective countries leads to a "business as usual" situation - and this cannot address the current challenges.

VIII. Empowerment & gender equality in focus

Summary for policy makers

Initial situation

Globally, empowerment is primarily about the empowerment of women and education for all. In Austria, the challenges are more diverse. Here, the focus is on empowering all marginalised groups.

Vision

"We live in a just and inclusive society in which collaboration and gender equality are prioritised at all levels of society, politics, business and religion. Everyone has the same opportunities if the state and society create the necessary structures. Transparency and opportunities for participation enable everyone to live in a society based on solidarity and to help shape it. Influence and creative power as well as paid and unpaid (care) work are distributed fairly. Everyone participates in a high-quality, lifelong and inclusive education system, which increases life chances and quality of life. We are aware that we are part of a larger global whole. We support the global transformation process through the way we live and do business. Conflicts are resolved without violence. Gender stereotypes are dissolved and marginalisation and discrimination are actively counteracted."

Lever 1 - Participation:

- ▶ Transparency
- ▶ Religion
- ▶ Marginalised groups

Lever 2 - Equal rights:

- ▶ Care work
- ▶ Managers
- ▶ Medical care
- ▶ Livelihood security

Lever 3 - Lifelong education for all:

- ▶ Equal opportunities
- ▶ Environmental and social education

Outlook

The empowerment of women and a transformation of the Austrian education system are the two major drivers of this turnaround. There is no lack of positive proposals for either challenge. Their implementation can have a profoundly transformative effect at an individual and collective level so that we can achieve an inclusive, fair, future-orientated society in 2050.

Global background

"The starting point for the future we want is to value diversity, equity and inclusion. Empirical data shows that economies that are committed to greater gender equality perform best in all areas of wellbeing and human development. These are conditions that also improve economic competitiveness. Above all, however, they increase resilience to shocks such as financial crises and pandemics. They promote social cohesion because fairness and justice are highly valued. This is the future we want."

—Earth4All (2022)

The Club of Rome's latest report focuses on gender equality. It is a central challenge for socially just, but above all climate-friendly and sustainable development. "Full gender equality in terms of representation, rights, resources and power in law and employment" was formulated as an overarching goal at the global level.

At the **global level**, the following three levers are defined for this turnaround:²⁴

- ▶ Education for all
- ▶ Female managers and jobs for women
- ▶ Pensions

Change from above, below and in organisations

The relationship between the state and its citizens has become increasingly individualised in recent decades. This can be seen as a liberation from many social constraints - which it undoubtedly is. On the other hand, state regulations that contradict familiar consumer behaviour are often met with resistance. For example, many people resist "dietary regulations" as soon as the importance of reducing meat consumption is emphasised.

A successful transformation therefore also involves considering how citizens and consumers can be more involved in climate policy decisions - without falling prey to the illusion that they would make the "right" decisions anyway if only politicians would let them. Ulrich Brand^{uu} emphasises the importance of a new narrative that combines social justice and ecological transformation: "We need a new economic operating system."

Brand also introduces the concept of "transformative cells", which describes how small groups or networks within institutions and organisations can drive far-reaching change processes. These cells often work against resistant structures within their own organisations in order to achieve major changes.

Zoe Lefkofridi^{vv} emphasises the need to always think about bottom-up measures such as awareness-raising through transformative education together with institutional top-down measures such as gender quotas. Synergy effects are only possible if gender equality is considered broadly and sufficiently addressed from both directions.

^{uu} Univ.-Prof. Dr. Ulrich Brand, Professor for International Politics, Head of Department, University of Vienna

^{vv} Univ.-Prof.in Dr Zoe Lefkofridi, Professor of Politics & Gender, Diversity & Equality, Paris Lodron University Salzburg

The disregard for long-term climate targets has now been brought before the highest courts by several citizens' initiatives in Europe.

In addition to the German Federal Constitutional Court, the decision of the European Court of Human Rights in Strasbourg has also recently caused a stir: it derives a human right to climate protection from the European Convention on Human Rights. The Swiss Climate Seniors' Association has been proved right in its argument that Switzerland is failing to take necessary climate action. Even if neither Switzerland nor the EU can stop global warming on their own, these countries are obliged to take appropriate measures. Going to court - provided that the formal rules are adhered to - is therefore sure to strengthen civil society.

When it comes to participation, the media play an important role. Traditional media also play a role in social debates, fluctuating between announcing impending disasters and rejecting necessary measures, and social media are becoming increasingly important. They are often the only source of information, especially for younger people, and must be included in the discourse.⁶⁸

Women in management positions and the exploitation of nature

Latvia currently has the highest proportion of women in management positions in the EU at 44.7 percent. At 33.5 percent, Austria is below the EU average of 35.5 percent.⁶⁹ Studies show that women - whether in the population or as parliamentarians - are more aware of environmental protection issues. Across countries and years, women are more concerned about the environment⁷⁰ and perceive the risks posed by environmental crises to be greater.^{71,72} Women are also more likely to act in favour of the environment than men. This gender gap widens the closer the problems come to everyday life.^{73,74} Women are more likely to consume sustainably than men.^{75,76} This "gender gap" in environmental behaviour is also evident in the European Parliament, where female MEPs vote in favour of the environment more often than their colleagues.⁷⁷ Studies also show that governments in which women hold leadership positions have higher ratification rates of environmental treaties, make greater progress in achieving the SDGs⁷⁸ and define more specific, more ambitious climate protection targets.^{79,80}

Unfortunately, however, gender equality is being tackled as hesitantly as the climate crisis. In many countries, women are still excluded from political participation to a greater or lesser extent than men.

Ecofeminism, which raises a strong voice for women, establishes a link between the role of women and environmental developments. On the one hand, it offers a critical theoretical framework and, on the other, drives a social movement that simultaneously challenges patriarchy and capitalism.⁸¹ Ecofeminists build on existing synergies between the environmental movement and feminism, strengthening the conceptual and political endeavours of both movements.

Corinna Dengle^{ww}

Feminist economics is primarily concerned with the fact "that every production process in the 'monetary economy' is based on unpaid care work and free access to nature". This means that "a feminist approach to the climate crisis cannot be limited to analysing unequal gender relations. Rather, it is about analysing the interplay of destructive social relations to nature, patriarchy, racism/coloniality and class relations (...) and daring to conduct an intersectional feminist analysis."

Norway has long played a pioneering role in improving gender equality in companies. In 2005, it was the first European country to require listed companies to include at least 40 percent women on their management boards. This quota has also been in force in France since 2011 (Copé-Zimmerman law).

Gender diversity at management level has an impact on the environmental footprint of companies: The more women there are on corporate boards, the lower the CO₂ emissions of companies.⁸²

With the "Feminist Framework for Foreign Policy", Sweden has established itself worldwide as a pioneer in the field of equal foreign policy. It aims to strengthen women's rights globally, combat gender inequality and promote the participation of women in all areas of society and politics. Concrete measures include support for women's organisations, the creation of networks for female leaders and the promotion of women's rights in international negotiations. The Swedish initiative has been recognised internationally and serves as a model for other nations.

The "Law on Effective Equality between Men and Women", which came into force in Spain in 2007, has also triggered significant changes. It aims to implement equal opportunities for both genders in all areas of life. One measure is the promotion of equality in the workplace, in political bodies and in education. It also supports the compatibility of work and family life by promoting parental leave and flexible working arrangements. The law has significantly increased the proportion of women in management positions and political offices in Spain and helped to reduce gender-specific discrimination.

Empowerment through education

A society that invests in education invests in its own sustainable development. Educated people are better able to contribute to economic growth and social stability. A functioning education system enables individual fulfilment and progress and is a crucial element in the transformation of social structures towards greater equality and gender justice.

Education and training are also closely linked to the emancipation of women. The more women are integrated into the education process, the more likely they are to be able to assert themselves in society against the prejudices and discrimination that still prevail.

If women - even after successfully completing the regular education system - do not enter the labour market, they remain financially - and therefore socially - dependent on their environment.

^{ww} Dr. Corinna Dengler, Institute for Multi-Level Governance and Development, Vienna University of Economics and Business Administration

Example: Kenya

In Kenya, government spending on women's education has been increased and initiatives such as the free primary education programme and the Elimu Tuitakayo programme, which aims to improve women's access to education, have been implemented, reports Jane Kabubo-Mariara.^{xx} Kenya has also made progress in the area of healthcare, as demonstrated by the implementation of the Linda Mama initiative to provide medical support for pregnant women and the Beyond Zero campaigns to promote maternal and child health. "In the turbulent transition period, public investment in education for all is a top priority. But not just any education: The entire education system needs to be rethought. We need to emphasise the importance of lifelong learning and the close link between people and ecosystems."

Empowerment through income for women

As far as the situation of women worldwide is concerned, the difference in pay for equal work remains a challenge. "Not only do women earn less than men, they are also disproportionately employed in the low-wage sector and face 'glass ceilings' that block their access to top jobs," says the global Earth4All report. Moreover, women in particular are often confronted with a double or triple burden. This is not only the case in many poorer countries, where women often do the heavy labour in agriculture, but also in Europe.

The global labour market participation rate for women is below 47 percent, compared to 72 percent for men. On average, the gap is 25 percent.⁸³ Women's share of total income from work was only 30 percent in 1990 and grew to less than 35 percent by 2022. Jane Kabubo-Mariara emphasises that discrimination against women's rights to equal education, pay and financial security is still widespread worldwide. Women, who make up around half of the world's population, remain disadvantaged in terms of income and wealth, are trapped in low-paid jobs and disproportionately work in unpaid or informal labour.

Overcoming deep-rooted stereotypes and prejudices

In order to adequately address the interdependent causes and consequences of the environmental crisis, the perspectives and voices of all groups - including marginalised groups - are needed.

Structurally, there are still enormous barriers for many women as well as people from marginalised groups in Austria. Access to resources, networks and mentoring, which often serve as entry points to leadership roles or social advancement, is often limited for them. These structural barriers are often based on deeply rooted stereotypes and prejudices,⁸⁴ which then manifest themselves in various forms of discrimination - be it interpersonal, organisational or institutional.

Education based purely on the transfer of information, as we have seen in schools and universities to date, can only make a very limited contribution to overcoming stereotypes and prejudices, as it does not take into account the emotional and somatic aspects of social categorisation. There are already some initiatives for transformative educational concepts that aim to overcome cognitive barriers and enable holistic experience and learning by integrating the rational-intellectual, emotional and physical levels.⁸⁵

^{xx} Prof Jane Kabubo-Mariara, Professor of Economics at the University of Nairobi and Executive Director at Partnership for Economic Policy (PEP) - Head of the Earth4All Kenya Initiative

Example of transformative learning

In the proseminar "The Inner Work of Social Justice" of the Gender, Diversity, and Equality study supplement at the Paris Lodron University of Salzburg, students from all degree programmes can experience how mindfulness and compassion practice not only has a theoretical, but above all a practical effect on the reduction of stereotypes, prejudices and discrimination. Through their own meditation practice, participants explore whether and how meditation affects prosocial behaviour and environmental awareness and behaviour. Numerous studies suggest effects.⁸⁶⁻⁸⁸

Stereotypes and prejudices in the area of care work are also problematic. Currently, the unfair distribution of time for unpaid care work and various community activities is a major problem in the empowerment of women.

Austrian starting position and model-based scenario analysis

Low proportion of women in management positions

Despite significant progress in gender equality in recent decades, women in Austria are still underrepresented in positions of power and decision-making - both in the political arena and in leadership positions in various sectors. In addition to structural barriers, such as a lack of access to resources, networks and mentoring opportunities, the gender imbalance in leadership and politics in Austria reflects deeply rooted social norms. Stereotypes and prejudices about gender roles and abilities continue to characterise perceptions of women's suitability for leadership positions.

Only 33.5 percent of senior management positions in Austria are held by women.⁶⁹ The situation is even worse on the supervisory boards and management boards of the top 200 listed companies in Austria: in 2024, the proportion of women here was 26.8 and 12.2 percent respectively.⁸⁹ In Austria, the Gender Equality Act has applied to the private sector (listed and large companies with more than 1,000 employees) since 1 January 2018, with a target of 30 percent for women on supervisory boards. The latest Women's Management Report from the Austrian Chamber of Labour shows that the proportion of women on the supervisory boards of listed companies affected by the Gender Equality Act has increased significantly since the introduction of the quota - from 22.4 percent in 2018 to 36.5 percent at the beginning of 2024.⁸⁹

Whether in politics or business, women are less visible, make fewer decisions and are therefore only able to play a limited role in necessary change processes. The consequences are serious. The very heterogeneous perspectives and experiences of women, which are nevertheless shaped by socialisation and gender-specific social roles, are not seen and heard to the same extent as male perspectives.

In environmental and climate policy in particular, however, the participation of women in decision-making processes is crucial, emphasises Lefkofridi.

At the political level, gender and women's quotas play a crucial role. The most effective quota laws, according to Lefkofridi, have placement mandates that require women to hold certain positions on ballots and strict enforcement mechanisms for compliance.⁹⁰

In Austria, there are currently no legally binding quotas at national level. However, various political parties have introduced their own internal quota regulations in order to increase the proportion of women in political office. The Greens, for example, have a women's quota of 50 percent for their candidate lists and committees, while the SPÖ has a women's quota of 40 percent for all committees and electoral lists. In the conservative spectrum, the quotas are set lower: 30 percent female candidates on electoral lists for the ÖVP, no regulation at all for the FPÖ.

Lack of transformative education

In 2020, around 44 percent of 25- to 64-year-olds had at least a school-leaving certificate or a comparable qualification - a significant increase compared to previous years (in 2010, it was only around 36 percent). The number of university graduates has also increased: in 2020, 18 percent of 25 to 64-year-olds had a university degree, compared to 13 percent in 2010.⁸⁹

The gender distribution of educational qualifications has also developed positively. Whereas men used to have significantly higher educational qualifications more often, this has now reversed: in 2020, around 46 percent of women and 42 percent of men had a school-leaving certificate. There are also no longer any major differences in higher education qualifications, which indicates the successful promotion of equal opportunities.⁹¹

Despite these positive developments, the education system is stagnating in some areas. Innovative concepts for transformative education that prepare students for future challenges and digitalisation are largely lacking. The further development of the system towards more flexibility and individualisation is still pending. Overall, the Austrian education system remains traditional and urgently needs to be adapted to modern requirements.

There are plenty of ideas for school reform in Austria: frontal teaching and rigid timetables should be abolished. A comprehensive school (from the first school level up to the compulsory school-leaving certificate) could continue to teach compulsory basics in German, English, maths and democracy education. This would also counteract the early segregation of social classes - because education is still inherited in Austria today. In the upper school, traditional school subjects would be replaced by courses, project work and specialisation modules based on the Finnish model - this would finally promote talents and interests. It would also be important to link practical knowledge more closely with general education and to reintroduce courses in democracy education.

A paradigm shift in education can also break down deeply rooted beliefs about gender roles. In a world of multiple and mutually reinforcing crises, critical thinking and an internalised understanding of the interdependence of systems are crucial. Education is a powerful tool that can have transformative effects on both an individual and societal level. Public investment in universal education must therefore have top priority - accompanied by a rethink of the education system as a whole. We are living in times of profound change. Girls and boys need the cognitive tools to navigate this new world.

Scenarios for empowerment in the Austria model

For the Austrian modelling, the focus was placed on the levers "Gender equality in management positions" and "a universally fair pension system"^{yy} As women are already highly educated in Austria, it is necessary

^{yy} Globally, the lever "right to education for all with a special focus on women" plays an important role in modelling the empowerment turnaround; this lever is less relevant when modelling the Austrian context.

to set higher targets for the gender quota and to adapt the market economy framework, for example by providing more childcare places.

The modelling shows that these two measures have a positive impact on the number of female managers. In addition, improved governance - a key component of the Giant Leap - is needed if the proportion of female managers is to rise to 50 percent by 2050. In order to better protect women and implement a fair pension system, the model also calls for a redistribution of monetary resources in the national context.

Female leaders



Figure 20: Proportion of female managers in management positions in Austria in the Too Little Too Late and Giant Leap scenarios^{zz}

A Giant Leap and how to get there from a stakeholder perspective

In order to understand how the Giant Leap can be achieved in Austria with the turnaround in empowerment, it is first necessary to define what a Giant Leap means in this area in Austria. To this end, the stakeholders developed the following vision for 2050:

Vision and goals

"We live in a just and inclusive society in which collaboration and gender equality are prioritised at all levels of society, politics, business and religion. Everyone has the same opportunities if the state and society create the necessary structures. Transparency and opportunities for participation enable everyone to live in a society based on solidarity and to help shape it. Influence and creative power as well as paid and unpaid (care) work are distributed fairly. Everyone participates in a high-quality, lifelong

^{zz} According to the definition of <https://ilostat.ilo.org/topics/women/>

and inclusive education system, which increases life chances and quality of life. We are aware that we are part of a larger global whole. We support the global transformation process through the way we live and do business. Conflicts are resolved without violence. Gender stereotypes are dissolved and marginalisation and discrimination are actively counteracted."

Levers

The three levers of the global report were defined for the Austrian context in the stakeholder workshop and formulated as follows.

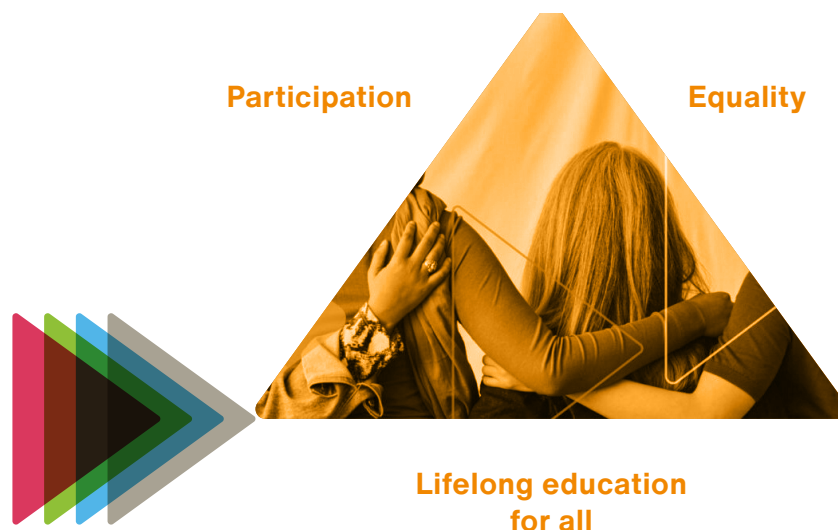


Figure 21: Levers of the empowerment turnaround.

Photo: SouthWorks @ canva.com

Lever 1: Participation

- ▶ Transparency
- ▶ Religion
- ▶ Marginalised groups

This lever is intended to achieve greater diversity - in general and among managers in particular - and thus break down the current unjust power relations.

A first, easily realisable and urgently necessary step is to consistently implement those instruments that already exist. Examples include anti-discrimination laws, quotas for managers in business, quotas in politics and interest groups (federal states, municipalities, chambers; also internationally and at EU level). In addition, minimum income or part-time work should be promoted in order to make time resources available for social participation. In this way, more people should possibly be employed for longer, i.e. the total number of hours worked should increase.

Schools also play an important role in promoting equality and empowerment, for example through further training, modified curricula, improved teaching situations in schools (more teachers, smaller classes), media training to raise awareness, events in schools with *all* families - with and without a migration background - or ethics lessons (including gender equality and diversity) for all.

Some religions reinforce patriarchal systems. As it is difficult to dissolve the dimensions of power here, upstream dialogues are essential. Gender stereotypes in religions and connections between gender equality and religious ideals must be uncovered. There needs to be more discussion about (the influence of) religions in the media or religious programmes during prime time, as well as campaigns to promote understanding between religions (and non-religious groups). In addition, the funding of religious communities should be linked to criteria.

Marginalised groups that are organised under private law do not have the status of interest groups and therefore only have a limited say or little political influence. This deficit should be remedied.

Lever 2: Equal rights

- ▶ Care work
- ▶ Managers
- ▶ Medical care
- ▶ Livelihood security

This lever focuses on overcoming role models and gender norms - because only when new ways of thinking are established can change take place, for example in the area of division of labour. This is why many steps are needed to raise awareness as well as educational campaigns, for example:

- ▶ Mandatory gender and diversity courses for all teachers, medical staff, etc.; anchoring this topic in school curricula
- ▶ Targeted projects with boys, young men and men

There is a major deficit in the distribution, recognition and payment of care work. More awareness-raising and consideration in the pension system are essential in order to increase its prestige. Paid care work must also be valorised through higher wages and the range of public childcare options must be expanded. A central element of this lever is a fair pension system that does not only count years of employment. The following further steps contribute to gender equality and the protection of women:

- ▶ Structural accompanying measures for women- and gender-appropriate language
- ▶ The promotion of gender medicine including active education
- ▶ More awareness in media coverage of women
- ▶ Mandatory salary transparency
- ▶ Increase in the minimum share of parental leave benefits (target ~50:50)
- ▶ Programmes against violence against women and girls, including implementation of the International Labour Organisation (ILO) Convention

Lever 3: Empowerment through lifelong learning for all

- ▶ Equal opportunities
- ▶ Environmental and social education

In order for lifelong education to contribute to a sustainable lifestyle, it is essential to restructure the education system. The central goals are the elimination of the marginalisation of minorities and all-day care to relieve the burden on families:

- ▶ Free comprehensive and all-day schools
- ▶ Wide rolling out of targeted support measures for disadvantaged pupils
- ▶ Inclusion in all areas
- ▶ Introduction of a free lunch for all schoolchildren

The transformation of schools from places of purely informative education to holistic education also plays an important role. To achieve this, curricula need to be relieved of specialised content and space needs to be created for new teaching and learning formats and content, such as the teaching of psychosocial and transformative skills (compassion, connectedness, mindfulness). It is also about moving towards an experience-based learning experience. The aim is to strengthen the desire to learn, creativity and experiences of self-efficacy through more choice and individualised offerings.

In order to enable this new type of education, teaching staff need to be trained differently and given more space and support for their work. The teaching profession, including early childhood education, must be upgraded by showing it more appreciation. The teaching profession needs more resources for teaching (time, money, staff), while the bureaucratic burden should be reduced.

The holistic education process for all must be continued at universities and in professional life by offering compulsory courses on social and environmental sustainability and teaching them on an experiential basis. Peer support and mentoring programmes, especially for women, contribute to this. There are mandatory continuing education programmes for all people in professional life and time off for education (degrees) for care workers.

Last but not least, universities must de-precarise post-doctoral positions, for example by introducing research and teaching "tracks" from the doctorate onwards. This promotes the science location and increases diversity.

Indicators

Education: Public and widely accessible education as a prerequisite for empowerment

Health: Financial security and a gender-equitable healthcare system

Working environment: Focus on decent work

Power relations: Changing patriarchal structures

Outlook: Change through new power relations

Educational institutions are places where social norms can be shaped and renegotiated. The structured school as an institution makes something possible particularly valuable: social mobility. For many, this is accompanied by the opportunity for a better life - it opens up new perspectives in terms of thinking and income.

In order to become fit for the future, Austria urgently needs comprehensive educational reforms. We cannot afford to maintain an education system that does not teach pupils the necessary personal responsibility and self-organisation from the outset. People who start university or enter working life straight after school often feel unprepared because they have not learnt to recognise and develop their potential during their time at school. Those who are always trimmed to be average instead of being encouraged to develop individual strengths and pursue their own (even unconventional) ideas will later find it difficult to conduct cutting-edge research or successfully found a company.

Educational pathways must not become dead ends. School systems should be geared towards reducing social inequalities rather than cementing them. It is crucial to expand and improve access to comprehensive education for people from all sections of the population, regardless of their socio-economic background or previous educational pathways. This requires the right framework conditions, which are closely linked to the four reversals of poverty, nutrition, energy and inequality.

A hot lunch, green electricity, internet access and free school books are a basic requirement that can hardly be met in some countries to this day. Ulrich Brand emphasises: "Education [must] have the prerequisite that it is public and widely accessible. This is not exactly trivial when we talk about national education systems."

Transformative learning encourages critical engagement with subjective perspectives. It teaches us to reflect critically - how we perceive, what we value, how (often) we interpret or what a person refers to - and thus has the potential to initiate profound changes and promote qualities such as awareness, listening, meaning-making and integration in societies.

Or, to paraphrase UNESCO: "Transformative learning for people and the planet is a necessity for our survival and that of future generations. The time to learn and act for our planet is now."⁹²

IX. Closing words

Systemically and together

The key challenges of our time can only be solved together and holistically. That is why Earth4All Austria - like the global Earth4All initiative - is pursuing a systemic approach that shows that the Giant Leap can only succeed if the turnarounds are considered together - with all the overlaps that arise between the turnarounds.

There are overlaps wherever similar overarching steps are taken so that the levers of the turnaround can be implemented, for example in raising awareness. However, overlaps also result from the fact that positive synergies and trade-offs can arise.^{aaa}

In order to change a system, it is first important to know and understand the individual elements that interact with each other in the system. Not all challenges and levers for solving them on a global level can be transferred one-to-one to Austria. This is why Earth4All Austria focused on developing visions and paths for the individual turnarounds in the first phase of the project. There is already a large number of overlaps between the turnarounds and the - overarching! - transformation of the economic system.

Some of the overlaps identified here arise from the results of the modelling, others are the result of the stakeholder process. Here are some examples from the first phase of the process:

Improved governance is a key prerequisite for the Giant Leap to succeed at national level. This realisation is the result of both the modelling and the stakeholder process. Governance should not be specifically assigned to one of the turnarounds, but should be viewed as overarching.

Better governance with more rigour and transparency increases the effectiveness of measures. However, a recent survey by Earth4All^{bbb} shows that this could become a challenge for Austria: Only 23 percent of people in this country trust the government to make decisions for the good of all, and only 18 percent trust it to make decisions that have a positive long-term impact. [This is far below the average of the G20 countries.](#)

This is why proposed measures that would strengthen trust and thus governance are an important and urgent first step in the Giant Leap. This includes customised, open and honest communication at eye level between decision-makers and citizens. Breaking up existing power structures and empowering currently disadvantaged groups can also increase trust again. Both of these were key issues in the turnarounds on poverty and inequality and on food and energy, in addition to the empowerment turnaround itself. Improved governance also requires better coordinated cooperation and distribution of competences between the various levels (municipal, state and federal).

^{aaa} If a measure taken within a lever has a positive effect on the achievement of the primary objective as well as a positive effect on other objectives, this is referred to as synergy. Trade-offs arise when a measure to achieve one goal has a negative impact on the achievement of another goal. It is also possible that an objective can only be achieved by combining several measures with different levers and turnarounds.

^{bbb} In March and April 2024, 22,000 people from 18 countries aged between 18 and 75 were surveyed for the representative Earth4All Survey regarding their values and world views, attitudes towards nature, responsibility for the planet, national and global political and economic systems and social transformation. In Austria, 1,000 people took part in the survey.

Clear strategies and goals were called for in all turnarounds - but also new indicators for wellbeing or a "good life". Any awareness-raising among the population must begin with the question of what a good life actually means. All stakeholders are asked to contribute to the answers.

The media have been identified as important players across the board. They can make a significant contribution to communicating key issues and information to the general public and highlighting solutions in their reporting instead of just reporting on negative and catastrophic events.

Taxes play a major role in all turnarounds. Broadly speaking, it is about a socio-ecological tax reform that not only contributes to the conservation of resources, climate and nature, but also ensures greater affordability and fairness. A tax reform can not only ensure cost transparency, but also make resources available for the transformation. In the survey conducted by Earth4All, a total of 63 percent were in favour of a wealth tax to finance the transformation.

In principle, as soon as levers also affect imports and exports, Austria not only influences its own development, but also the development in those countries from which it imports or to which it exports. This means that "regionalisation" is almost always linked to the food and/or poverty turnaround. Clarifying these overlaps - as well as deepening synergies and reducing trade-offs - should therefore be at the centre of further work.

Outlook

We are faced with crucial questions: what evidence-based and democratically legitimised socio-political measures and developments will enable us to achieve a global, European and Austrian turnaround? How and by what means are the various social groups prepared, or how and by what means are they empowered, to initiate or support this major transformation? How can conflicts of interest and local and global distribution issues be resolved fairly and democratically? (Especially as we are facing numerous other transformations that will present us with completely new challenges...)

The German sociologist Uwe Schimank speaks of three integration problems: Social integration, system integration and ecological integration. With regard to ecological integration, he says: "In detail, however, it is very difficult to determine the extent to which disintegration, i.e. unsustainability, is still socially acceptable, at what cost and for how long - and which tipping points are irreversibly exceeded."

The fact that we are approaching tipping points - and the associated question of irreversibility - concerns many authors, but also climate activists. The director of the Max Planck Institute for the Study of Societies, Jens Beckert, says: "We have to prepare for a temperature increase of 2.5 to 3°C by the end of this century", and in this context speaks of "thoughtful realism". For him, however, this does not mean resignation, but rather a call to action: "We must prepare for global warming, but at the same time utilise the options that remain to us: tripling investment in green growth and not determining climate measures from above, but rather allowing them to be developed much more with the involvement of the population."

Details on the further process

The Earth4All project in Austria has reached its first turning point. You are holding this report in your (digital) hands - now it is up to you what you want to do with it. For us, at any rate, this is by no means the end of the journey.

Over the past few months, we have relied on the "Double Diamond Model" - a design thinking process. The model visualises problem solving and innovation in four main phases, with each phase serving a specific purpose. Together they form the overall design process. As it works iteratively, solutions can be continuously refined and adapted.

In the first diamond, the central goal is to discover and define. This has happened: we broadened our horizons in dialogue with experts at interviews, events, informal discussions and in methodically supported workshops. In order to summarise everything in this interim report, we had to condense the strands of action, measures and information again - which brings us to the middle of the double diamond.

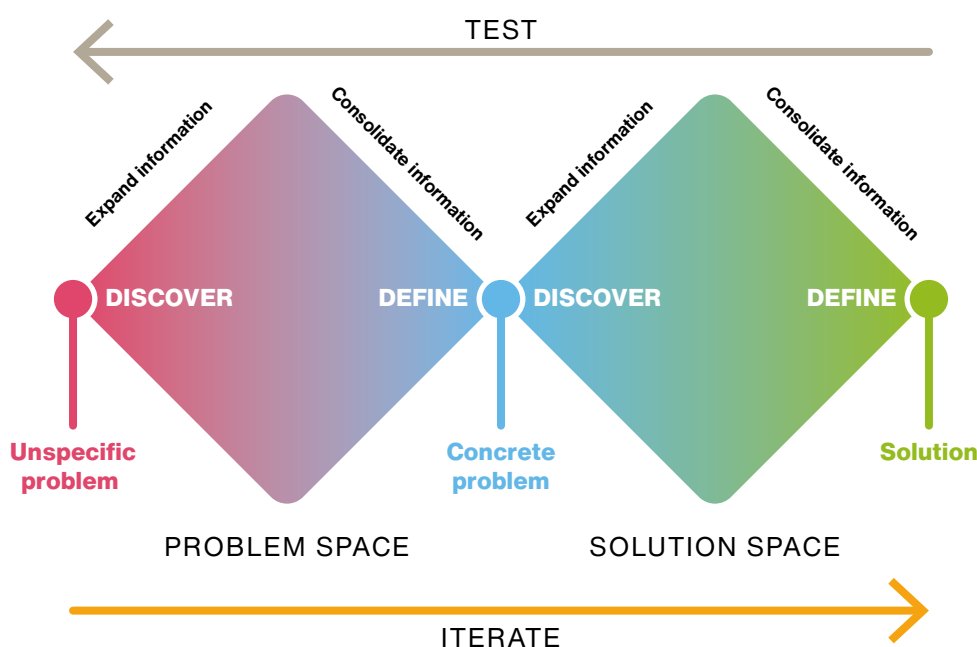


Figure 22: The design thinking process – double diamond.

In the next stage of the process, we need to "expand" again, develop something new and create something concrete. With this report, we are enabling you - and ourselves - to take another look at the information we have gathered - a second look, so to speak, that goes even deeper.

We are doing this in two steps: On 8 July, the preliminary report with all chapters will be [publicly presented](#) and released for [public consultation online](#). There will be an opportunity for further comments. The finalised report will then be presented again in the second half of the year.

This will be followed by a further round of talks, events and workshops with people and organisations that can and want to contribute to a Giant Leap in the spirit of Earth4All.

The two diamonds in the model represent the change between divergent and convergent thinking: The first diamond emphasises the opening of the problem space (divergent) and the subsequent focus on a clear challenge (convergent). The second diamond again promotes an expansion of possible solutions (divergent) and leads to their concrete implementation (convergent).

The Double Diamond model is particularly effective because it structures the overall process in such a way that we do not prematurely commit to a single solution. Instead, we are all encouraged to fully understand the problem space and encourage creative solutions along the way.

Invitation to get to work!

As I said in the introduction: this report can only be a first step, a suggestion to further deepen, network and also broaden the topics addressed in it. We look forward to working with you! The first steps have been taken and are documented here. Your project is also welcome to become part of the further process.

Acknowledgements

This project and this report are the result of successful collaboration and the support of a large number of people and institutions from a wide range of sectors.

In the following list, we would like to thank all those who have been part of the process in various ways over the past 10 months and who have contributed to the successful implementation of this report through their support at turnaround events, their participation in stakeholder workshops or their expertise and feedback in the development process.

Thank you for your time, your professional input, ideas, visions and working together. This is the only way we can achieve the Giant Leap in Austria!

We would like to thank all our supporters and companions!

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The Climate Change Centre Austria (CCCA) is a network and competence centre for climate research and climate protection in Austria. It aims to promote scientific knowledge on climate change and climate policy and to translate this into socially relevant measures. The CCCA coordinates activities and promotes exchange between researchers, politicians and the public.

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<https://ceosforfuture.at/verein/>



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<https://www.hagel.at/>



UniNez:

climate protection. The aim is to strengthen cooperation between universities and to promote joint projects in the field of sustainable development. UniNez supports the exchange of knowledge and the implementation of sustainable practices at universities.

<https://www.uninetz.at/ueber-uns>



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The Paris Lodron University of Salzburg is a renowned university in Austria that offers a wide range of courses in the humanities, natural sciences, social sciences and law. It places great value on interdisciplinary research and teaching as well as international cooperation. The university promotes holistic education and contributes to social and scientific development.

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Earth4All is an international initiative to accelerate the systems changes we need for an equitable future on a finite planet. Combining the best available science with new economic thinking, Earth4All was designed to identify the transformations we need to create prosperity for all. Earth4All was initiated by [The Club of Rome](#), the [Potsdam Institute for Climate Impact Research](#), the [Stockholm Resilience Centre](#) and the [Norwegian Business School](#). It builds on the legacies of [The Limits to Growth](#) and the [planetary boundaries frameworks](#).

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