Research results of a study by the
'Global Economy and Social Ethics'
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Food security, climate protection and biodiversity: Ethical perspectives for global land use

An interdisciplinary study in the context of the dialogue project on the contribution of the Catholic Church to a socio-ecological transformation in the light of *Laudato si'*

German Bishops' Conference Commission on International Church Affairs (ed.)

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The interdisciplinary expert panel "Global Economy and Social Ethics" was set up in 1989 by the German Bishops' Conference Commission on International Church Affairs to advise institutions of the Catholic Church on questions of global economic development. In terms of its objectives and its personnel composition, the panel aims to combine economic and social-ethical expertise.

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Table of Contents

Key messages of the study

1. In view of increasing land use conflicts and large-scale soil loss, a global change in the use of agricultural land is urgently needed. Such a change must pursue food security, climate protection and biodiversity conservation equally, while exploiting as many synergies as possible.

2. The study aims to raise awareness of the numerous factors contributing to the current and future scarcity and rising price of land, as well as to the increase in ecological damage in agricultural landscapes. Based on this, it promotes integrated solutions for which farmers, politicians and society bear joint responsibility.

3. Soils interact dynamically with climate, biodiversity and the water cycle. In this interplay, they are of great importance for humans and nature. Due to indispensable ecosystem services such as CO_2 sequestration through humus formation or the purification and regulation of the water cycle, soils – like bodies of water or the earth's atmosphere – are *commons* from a social and ethical point of view. To ensure the long-term functionality and regenerative capacity of commons, their management must be based on clear rules, appropriate incentives, cooperation, transparency, reconciliation of interests and international solidarity.

4. What is needed is not only a fair balance of interests between people – regionally, globally and intergenerationally – but also between people and the interests of nature and non-human living beings. This is accompanied by a wide range of conflicting interests that are inevitably linked to fundamental questions of justice. Drawing on *principles of Christian social ethics and universal human rights*, the expert group formulates socio-ethical guidelines for a global land use transition, centered on the perspective of the *common good*. This makes it possible to understand the relationship between humans and nature more comprehensively, to justify an intrinsic

value of nature as well as the fiduciary responsibility of humans for their fellow world, in religious terms, the Creation.

5. Furthermore, this perspective also allows us to deepen our understanding of freedom and property rights in the face of planetary boundaries. In this respect, Christian social teaching is based on the principle of the universal destination *of the Earth's goods for all people*. On this basis, Thomas Aquinas formulated the principle of the social obligation of property, which is also enshrined in the German Basic Law (Art. 14 Para. 2 'Property obliges'). *Property rights are therefore never unlimited but are subject to the proviso that the use of property is compatible with the principle of the universal destination of the earth's goods*. Consequently, personal freedom is also never unlimited but ends where the freedom of others begins. Appropriate rules protect the individual and extend the common freedom and scope of development for all. For this reason, landownership in large parts of Europe has always been subject to certain limits in terms of its utilisation. The necessary differentiation between various rights of use for the same piece of land (traditionally for agricultural use, hunting, mining, water rights...) must be maintained and further developed in line with the times.

6. A broader concept of *efficiency, aiming at the common good is the decisive compass for the land use transition*. It makes it possible to overcome a narrow understanding of efficiency that puts pressure on farmers, the state and civil society alike: Land efficiency (yield per hectare) and economic efficiency (profit per resource input) are important decision-making criteria for farmers, but without the broader context of social and ecological consequences, they represent a limited view that comes at a high cost to society. Government regulation and subsidy policy should therefore be based on the broader perspective of efficiency aiming at the common good and ensure that this is also worthwhile for individual farms.

7. Soil (and associated biodiversity) should not be viewed simply as a resource that can be used and consumed, but rather as a valuable natural

asset, in the sense of a capital asset. It provides numerous ecosystem services and must therefore be preserved and maintained in order to ensure permanent yields. Farmers are members of a profession that is more entrusted with this fiduciary duty than any other. They deserve social recognition and support and, specifically, appropriate financial compensation when they conserve valuable natural capital and enhance its productivity.

8. Politicians have a duty to actively shape the necessary change in economy and society with coherent long-term strategies. To this end, it is essential to provide a regulatory framework that is orientated towards the common good and enables compliance with planetary boundaries. This includes objectives for large-scale landscape design and priorities for land-based resource management by means of nationally and regionally adapted usage targets (including appropriate limits for fertilisers and pesticides, targets for CO_2 storage capacity and the networking of ecosystems, quotas for animal husbandry, grassland and wetland farming where appropriate). As the renaturalisation of floodplains and moors (which in many cases still allows site-appropriate use) must be carried out on a large scale and as these protection and retention areas are increasingly important, the voluntary nature of the participation of landowners must also be questioned in individual cases: The mere insistence on the status quo and the associated blocking of large-scale re-wetting projects (often supported by a broad consensus) by a few individual users is in the same way subject to justification as proposals for change. Due to the high potential for conflict, state and church lands, for which the common good perspective has always played a strong role, should take on a pioneering role here.

9. To ensure that all participants in a market can benefit from its advantages, it is important to counteract price distortions and externalisation, i.e. the passing on of consequential costs to weaker or uninvolved third parties. Efficient common-good-oriented regulatory policy also means, in particular, combating externalisation effects as directly as pos-

sible and with market-based means. This requires putting an end to misguided taxes or subsidy policies (abolishing harmful subsidies), combating the dominant market position of individual players in the food trade and reducing a lack of transparency (including confusing and misleading product labelling). *Carbon pricing and a nitrogen surplus levy* are effective instruments against shifting the costs of environmental pollution onto the general public. Equally important are positive incentives such as *rewarding measures that maintain and increase the natural capital* (especially for water protection, promoting biodiversity and carbon sequestration). Tradable certificates (e.g. for the formation of CO_2-storing soils) can further increase flexibility. In order to enable general welfare-oriented regulatory policy and social equalisation mechanisms, state institutions serving the common good must be strengthened or newly created. These include, among other things, a central CO_2 bank and a CO_2 border adjustment for trade with third countries, as well as an appropriate expansion of EU certification trading for the agricultural and food sector.

10. The costs and benefits of this common good-orientated increase in efficiency must be distributed fairly through accompanying measures. To achieve social balance, it is advisable to strengthen the solvency of weaker groups in a targeted manner, rather than to exclude individual groups from the necessary pricing. On the consumer side, flat-rate *per-capita eco-premiums* can be helpful, while for producers/entrepreneurs, *transformation premiums* that are paid as support are more appropriate. In view of the global scope of the agricultural and food markets, *cross-border compensation* must also become the norm by updating the rules of international trade.

11. For sustainable land use, it is important to consciously consider the associated cultural dimension. Important guiding principles such as sufficiency or a circular economy are deeply rooted in the rural and farmers' way of life. Anyone who misinterprets these as a 'break with tradition' or as an imposition on achieved prosperity, loses sight of the actual goal that

economy and, in particular, agriculture should serve: to enable a 'good life for all' now and in the future in the face of limited resources. It is therefore important to promote the guiding principle of a *culture of mutual recognition orientated towards the common good* and to take decisive action against individual groups that deliberately propagate a distorted or false understanding of culture and tradition just to protect their particular interests. The fight against the populist appropriation of the cultural dimension is above all a fight for more transparency and better participation of all social strata.

12. *The church has a threefold responsibility to* promote this dialogue and change throughout society: (1) as a *facilitator of dialogue* that brings together various actors and encourages them to live up to their shared responsibility, (2) as an *advocate for the common good* and as a *voice and advocate for marginalized* and unheard groups. In order to credibly fulfill this function, it is essential that it (3) serves as a *role model* within its own area of responsibility. To this end, it is important to manage or lease church land according to the criterion of the common good, to convey the importance of responsibility for creation and sufficiency in church educational institutions, or to follow the recommendations of the "Planetary Health Diet" when procuring food in all church institutions.

1 The central importance of a global land use change for agricultural land

Healthy soils are a key prerequisite for sustainable agriculture, for protecting biodiversity and for limiting and adapting to climate change. The type and intensity of land use has an impact not only on local ecosystems, but also on the wider landscape. Soils interact dynamically with the climate, biodiversity and the water cycle. In this interplay, they are of far-reaching importance for humans and nature. Due to indispensable ecosystem services such as CO_2 sequestration through humus formation or the purification and regulation of the water cycle, soils – just like water or the earth's atmosphere – are *commons*[1] from a social and ethical perspective. When utilising them, it must be ensured that they remain functional and regenerative in the long term.

However, the simultaneous use and protection of commons is not possible in a market system that relies solely on competition and rivalry - the risk is too great that individuals will overuse such easily accessible resources as 'free riders' and pass the consequential costs on to others, which in eco-

[1] In the original German version, the Expert Group, following its socio-ecological tradition, refers to land as a 'Gemeingut' (literally 'a common good'). The English term 'commons' describes cultural and natural resources accessible to all (like air, water and land) even when owned privately. These terms can be misunderstood in interdisciplinary and public debates. This is because traditional economic terminology even struggles with the precise translation between different languages and the clear distinction between excludable goods (private goods and club goods) and non-excludable goods (common-pool resources and public goods). Soil as a commons must be considered in an even more differentiated way: A piece of land can be used and resold by an individual farmer just like a private good in its function as arable land. However, the overall system of soil, which cannot be clearly distinguished from the single piece of land, must be considered a common-pool resource as it is also a shared habitat and reservoir for groundwater and CO_2.

nomics is referred to as the 'externalisation of costs'. Therefore, the management of common property always requires clear rules, suitable incentives and cooperation, transparency and a balance of interests – and international solidarity, because the overexploitation of many commons has now reached alarming proportions particularly on a global scale.

While the need for more cross-border cooperation on climate and water protection is now recognised, soil protection is often neglected and at best seen as a purely national issue.[1]

However, a global land use transition is urgently needed that goes beyond a mere agricultural and food transition: it is only through sustainable land use that more than 8 billion people can be fed in the long term and the Earth's major life-sustaining resource cycles (water, carbon, nitrogen and phosphorus) and the closely related biodiversity of our planet can be preserved in the long term.

In recent decades, global land use (see Fig. 1) has changed more rapidly and drastically than ever before in human history. In particular, agricultural land, which currently covers around 5 billion hectares or almost half of our planet's ice-free land surface, is coming under increasing pressure.[2]

Tens of thousands of hectares of arable and pastureland are lost every year due to the disproportionate increase in the demand for meat and resources from a growing world population, which also distributes its resources in a highly unjust and inefficient manner, as well as due to unsustainable land use practices and an increasing number of extreme weather events. The world population is expected to stagnate from the 2080s onwards and then start to decline again,[3] but a reversal of the trend is not in sight for other factors. The clearing of forests or draining of wetlands, once referred to as the 'cultivation of new land', is no longer an option for the future, because it further exacerbates climate change and species loss.

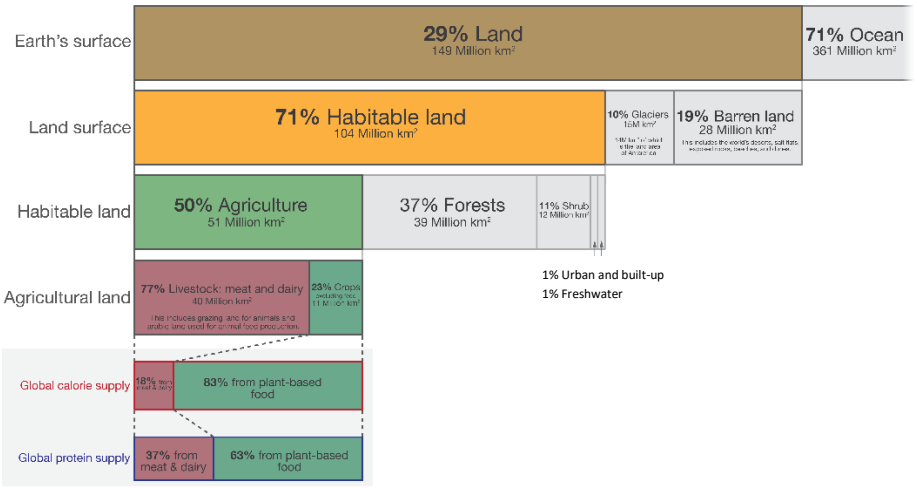

Figure 1: Global land use for food production (data source: UN Food and Agriculture Organization. Graphic licenced under CC-BY by the authors Hanna Ritchie and Max Roser for OurWorldinData.org in 2019).

Competition for the scarce resource of land is also intensifying the societal debate on land use, which must combine the goals of food security, climate protection, ecosystem conservation and the limitation of soil loss within the framework of sustainable land use (Fig. 2).

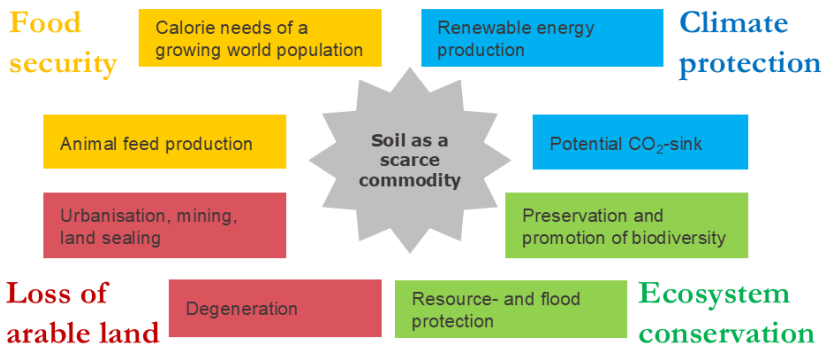

Figure 2: Four groups of factors contribute significantly to the scarcity of land. Many of these factors are gaining in importance due to a growing world population and the increasing demands of individuals. Unfair distribution, waste and inefficient use have always been additional factors. Financial influences (such as land-related subsidy payments or the increasing acquisition of land by investors) are not shown here. Although these are not directly responsible for the scarcity of land, they are all the more responsible for the associated increase in the cost of land use.

At a time when a willingness to compromise and new, fair solutions are more important than ever, the way we deal with land plays a key role: food security, climate protection, the preservation and promotion of biodiversity and livable cultural areas – these goals often appear to be in conflict with each other, but in the long term they can only be achieved simultaneously. With this study, the members of the *Expert Group on Global Economy and Social Ethics* aim to contribute to a joint and constructive dialog on the goals, means and ways of using agricultural land (i.e. arable land and agriculturally used grassland) in a socially and ecologically balanced and therefore sustainable way. To this end, the experts from various scientific disciplines work in close exchange with representatives from politics, business and civil society and are supported by expert and practical discussions as well as a digital dialogue platform[4].

This transdisciplinary work process is intended to help (1.) raise awareness of the numerous factors that contribute to the scarcity and rising cost of the common good of land, both now and in the future. To this end, the

fragility of the status quo of land use and the urgency of a global land use transition are first described using a few concise key figures.

A further central aim of the study is (2.) to provide a comprehensible ethical reflection of the identified conflicts of interest for a broader public. This is because the increasing competition in land use inevitably leads to far-reaching discussions about fundamental questions of justice – regionally, globally and intergenerationally. A pluralistic society draws its strength and legitimacy not only from openly addressing controversial issues, but also from the struggle for common ethical convictions, which are essential to making democratic compromises sustainable. As a common normative basis, the group of experts draws primarily on the principles of Christian social ethics and human rights in their various dimensions, with the human right to adequate food (as a core element of the 1966 UN Social Covenant ratified by 171 states) playing a central role. Philosophical-ethical reflection can also help to understand guiding principles and concepts such as property, efficiency, freedom and the common good in their interconnection in a more comprehensive and future-oriented way, in order to derive starting points for new alliances and innovative forms of use.

Against this background, the study finally (3.) identifies common obstacles to transformation processes and proposes a range of options for action and solutions.

Food and land use in a global perspective

The study primarily addresses those affected as well as experts and an interested public in German-speaking and European countries. For reasons of justice and in the spirit of an option for the poor, the concerns of the Global South deserve special attention. As a benchmark serves the '2030 Agenda for Sustainable Development' with its 17 Sustainable Development Goals (SDGs). In this agenda the international community has recognised since 2015 that social, economic and ecological vulnerability are closely linked. At the same time, the states have made a joint commitment to

provide all people worldwide, now and in future, with basic opportunities for a good life – free from poverty, hunger and other human rights violations. This corresponds to the responsibility to refrain from doing anything that reduces the opportunities for sustainable development and to work together with poorer people and countries towards a fairer distribution of resources and opportunities.

The reality of life for many people in the Global South is far removed from these goals. They often live in particularly vulnerable hotspots of climate change, biodiversity loss and water scarcity. They are thus particularly affected by the man-made degradation of once fertile soils, which has already affected a quarter of the world's ice-free land area.[5] While the majority of the rural population in industrialised countries no longer depend directly on agriculture for their livelihoods, people in the rural areas of poorer countries are often left behind in several respects: Most lack the means and access to land needed to increase agricultural production; they feel the consequences of uncontrolled urbanisation and in many cases are also governed by administrative apparatuses shaped by big cities, which often lack the knowledge, will or means to fulfil their state mandate to shape and care for the 'distant' rural population. In addition, there is the increasing competitive pressure of international, and in some cases still unfair, trade relations in the agricultural sector.

After some progress in the fight against hunger and malnutrition at the beginning of the millennium, the number of people suffering from malnutrition increased from 604 to 735 million between 2014 and 2022.[6] This negative trend has been significantly exacerbated by the coronavirus pandemic and Russia's war of aggression against Ukraine, which is a violation of international law. According to FAO estimates, approximately 9.7 billion people are expected to demand around 50 per cent more food, animal feed and biofuels in 2050 than was the case in 2012.[7] If this increase were to be achieved in the 'conventional way', i.e. by continuing the current food and production trends (in particular, the further increase in meat consumption), up to 6 million square kilometers of new agricultural land

(the size of Europe excluding Russia) would be needed. At the same time, the Paris climate targets would be massively exceeded by 2050.[8] Experts are already complaining that the food sector is about 30 years slower than the energy production sector (which is also not moving fast enough) in its efforts to adequately protect planetary boundaries (especially the water, carbon , nitrogen and phosphorus cycles, as well as biodiversity) – even though more than enough technical and organisational solutions are known (more on this in Chapter 4).[9]

Even though urbanisation, mining and extreme weather events are leading to ever faster soil loss globally, agriculture is by far the main cause of negative changes to the earth's surface due to (slash-and-burn) clearances, interventions in the water balance and unsustainable cultivation (especially inappropriate use of fertilisers and pesticides, and the use of cultivation methods that are not suited to the location)[10] – and the food sector is considered the 'greatest threat to biodiversity' worldwide.[11] In addition, agricultural irrigation accounts for 72% of all human freshwater withdrawals.

Soil erosion in agricultural fields is currently 10 to 100 times higher than the rate of new soil formation – although this varies greatly from region to region. A study by the European Commission's Joint Research Centre shows that between 1999 and 2013, around 20% of the Earth's vegetated land surface experienced a sustained decline in productivity. This dangerous development was most pronounced in Australia and Oceania (affecting 37% of the area), South America (27% of the area) and Africa (22% of the area). In Asia, 14% of terrestrial ecosystems were affected, in Europe 12% and in North America 18%.[12] The main drivers are ongoing deforestation (which is not only alarmingly high in countries of the Global South) and the expansion and unsustainable use of agricultural land, which is thus losing its protective function for humans and animals. The enormous loss of biodiversity and the dwindling resilience of many areas go hand in hand.[13] The degradation of terrestrial ecosystems is both a driver and a

consequence of a global downward spiral that urgently needs to be broken by joint efforts.[14]

Narrow focus of efficiency reduces societal surplus

From a global perspective, it is also clear that in the search for sustainable land use practices, neither a sweeping 'less is more' nor a defiant 'more of the same' are viable approaches: On the one hand, there are more than 800 million subsistence farmers who produce approximately one tonne of maize, rice or wheat per hectare per year from an average of 500 m^3 of water on small individual plots with very limited resources but a high level of personal labour input.[15] Poverty, the lack of adequate means of production and knowledge often lead to these farmers using (and exhausting) all of their human labour power, but not making sufficient use of the available land and water (i.e. 'inefficiently' according to common opinion); in the event of crises, they are quickly coming under pressure to give up their arable land or expand at the expense of neighbouring ecosystems.

This low *productivity per hectare* contrasts with around 12 million intensive farms. These produce on average eight times the annual crop per hectare (1,500 m^3 of water for more than eight tonnes of corn, rice or wheat) with a much higher capital investment (and significantly fewer working hours per hectare) and three times the amount of water per hectare.[16] However, this supposedly *higher land efficiency* is often not sustainable. This is because the overuse of land and the excessive use of synthetic chemical resources put a strain on ecosystems and reduce agricultural productivity in the long term.

The knowledge that more people will have to be fed with less land in the future could give hope to farmers in the North and South. Instead, they are currently united by the feeling of being in ruinous price competition, carried out at the expense of nature and their own health, and the realisation that an increase in intensity or short-term higher land efficiency alone is not enough to secure the future of their families.

This example shows how problematic it is when agriculture is guided by an *overly narrow understanding of efficiency*: All too often, a narrow *business efficiency* only considers the easily quantifiable costs of using a few resources to achieve a single goal (one that is financially rewarding for the user), while many other (positive and negative) consequences of this use of resources for individual farmers and the general public are (consciously or unconsciously) ignored. Thus, for example, yields per hectare are compared, but the additional burdens shouldered by families in return for no financial compensation (especially in the case of underfinanced but also over-indebted farms in the North and South) are ignored; and the 'efficient use of fertiliser' is concerned almost exclusively with the production volume of a single crop in a single year that can be achieved with it, but not with the associated effects on the CO_2 storage capacity of the soil, the protection of drinking water or the maintenance of local biodiversity.

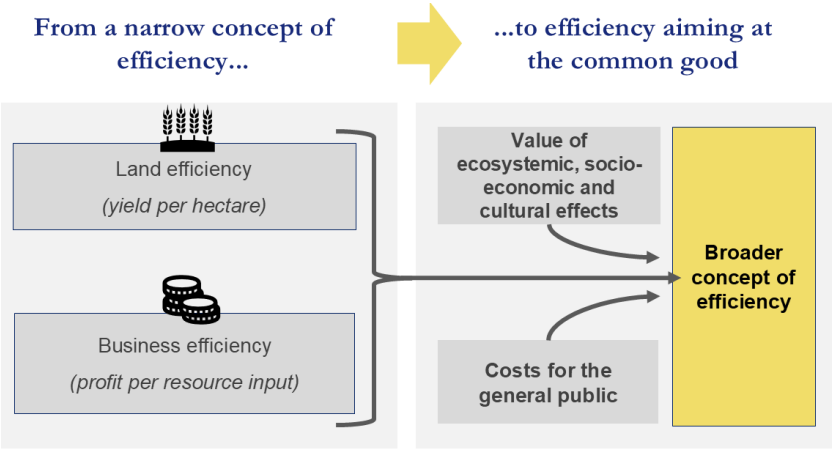

Figure 3: Land efficiency and business efficiency are important decision-making criteria for individual farmers. But if the idea of efficiency is reduced to only these two criteria, this represents a dangerous narrowing. Government regulation and subsidy policy should therefore be orientated towards the broader perspective of 'efficiency aiming at the common good' to ensure that sustainable practices are efficient and 'worthwhile' for individual farms.

In order to be able to take into account all the consequences of agricultural activity that are relevant to society, such one-dimensional, narrow concepts of efficiency must be overcome in favour of a more sustainable understanding of welfare for society as a whole. To do this, a change of perspective is needed towards *efficiency aiming at the common good*: This aims to permanently increase the welfare of society as a whole, taking into account the costs to society as a whole and their appropriate distribution. For example, a measure that is technically effective but imposes high costs on poorer people cannot be considered efficient in terms of the common good. The general-welfare-oriented cost-benefit-calculation would pursue relevant societal objectives – sustainable productivity of agricultural activity, securing farmers' incomes, safeguarding ecosystem services, contributing to socioeconomically and culturally viable communities – in an integrated way. This would help to build consensus and strengthen the resilience of rural areas as a whole.

The so-called *multi-benefit strategies for land use*, as advocated by the German Advisory Council on Global Change (WBGU), for example, are an important contribution to the search for efficient solutions.[17] The core issue here is to make multiple uses of land more intelligent and to make cross-sector cooperation more attractive along the entire value chain (from the land or energy farmer, through trade and processing, to the end user and subsequent recirculation/closure of the resource cycle). These strategies for increasing profits include, among other things, (1) making more targeted use of the CO_2-binding potential of agricultural systems, which has often been ignored in the past, in land use and renaturation measures, for example through agroforestry systems, adapted use of rewetted soils or targeted humus formation; (2) not making a categorical distinction between protected and utilised areas, but combine both functions more closely and provide financial compensation for the provision of ecosystem services; (3) make agricultural systems generally more resilient through diversification; (4) manage resources more efficiently globally, which means significantly reducing animal product-heavy diets and food waste,

and (5) develop the untapped potential of digitalisation and bioeconomics and make them more usable for farmers and foresters worldwide.

Such surplus-profit strategies increase the utilisation potential of the available land and contribute to social welfare efficiency, especially if the benefits achieved are distributed in such a way that at least the costs of all parties involved are offset. This alleviates some, but by no means all, distribution conflicts. Intergenerational distribution problems in particular can be mitigated, but not resolved, by social efficiency and surplus strategies. The short-sighted fixation of many actors on the present is one of the main reasons for the overuse of natural resources. And since future generations have little to offer to those currently in power, but cannot punish them either, it ultimately takes normative persuasion that investing in a good future is the right and valuable thing to do, even if it does not pay off immediately.

New guiding principles to overcome supposed contradictions

This study is intended to contribute to the discussion in society on the new guiding principles needed to achieve this. Calls for a strengthening of agroecology[18] through a gradual transformation that takes into account the social and economic situation of the people affected rely on mediation between alleged contradictions. However, they also require further clarification to avoid being reinterpreted as ideologically charged battle cries or random buzzwords, or being robbed of their meaning altogether. To ensure this, we should no longer emphasise *irreconcilable opposites* and ignore the wide range of possibilities in between. This applies not only to the (existing, but not insurmountable) contradictions between 'small-scale' and 'large-scale' agricultural businesses or 'organic' and 'conventional' agriculture. In the future, it will be important for all of them to manage their land in a more sustainable and appropriate way, learning from each other and cooperating with each other. Geographical polarisa-

tion such as 'urban versus rural', or 'north versus south', or even the simplistic distinction between 'protected areas and polluted areas' no longer reflect the complex reality. Furthermore, the importance of human rights and the special value of each individual is not being relativised by emphasising the intrinsic value of nature.

The following chapters are thematically linked to earlier publications by the expert group.[19] In particular, the structure follows that of the expert group's previous study 'How social-ecological transformation can succeed'.[20] Thus, challenges and obstacles to a successful land use transition will first be identified. Subsequently, ethical guidelines for dealing with conflicts of interest will be outlined, to then propose ways and concrete reform steps that will advance the global land use transition in a socially balanced way while respecting planetary boundaries.

2 Learning from crises - identifying obstacles

A whole range of obstacles stand in the way of sustainable, common-good-oriented land use. These obstacles often reinforce each other, so that solutions can only be successful if several 'levers of transformation'[21] are activated together. To ensure this, a well-coordinated and cross-border regulatory policy is needed. However, this is hardly consistently available, especially in the area of global agricultural markets. Neither the EU Common Agricultural Policy (CAP) nor the similarly inadequate current agricultural policies in the US and other industrialised and emerging countries are suited to addressing two (closely related) fundamental problems of the global agricultural and food markets: the enormous *imbalances of power* between different market participants and the tendency to *externalise costs*, i.e. to pass on consequential costs to uninvolved third parties.

Deficient regulatory structures and misguided funding policies

The difficulty of reforming a globally effective policy that primarily attempts to alleviate the consequences of externalisation with expensive subsidies instead of tackling them directly is clearly illustrated by the common EU agricultural policy (CAP). The EU spends almost 58 billion euros (and thus 36% of the EU general budget) annually in the form of 'EU support for farmers'. Meanwhile, with a population of 449 million, there are still around 10 million farms in the EU (with 17 million regularly employed).[22] European businesses (farmers, food retailers and food industry) import almost €120 billion of agri-food products annually and export (mostly higher-processed) agri-food products worth €150 billion.[23] The highly competitive (and very price-sensitive) European food market is therefore an influential customer and business partner for many millions

of farmers around the world, who receive varying degrees of support and regulation from their respective governments.

Since 1962, European agricultural subsidy policy has been trying to reconcile the two main objectives of 'low prices for consumers' and 'adequate incomes for farmers'; the wording has not been changed in the treaty reforms that have taken place since then. Objectives such as the 'protection of natural resources', which were added later and in a less prominent place, did little to correct this prioritisation. Rather, they led to significantly more complex requirements. For most European farmers, it is therefore crucial to produce as cost-effectively as possible while also making the best possible use of the (changing) government support programs.

Meanwhile, the focus of funding has shifted from price support and quantity regulation to 'area-based decoupled direct payments': This means that state premiums depend less on which crops are grown in which way or how many animals are kept, but primarily on how much land is farmed – where 'farming' does not have to involve agricultural production. If, as in the current system, around 70 per cent of EU funding per hectare is paid out without significant conditions, it is primarily land *ownership* that is encouraged rather than land *management*.[24] In 2016, research showed that of the direct payments received by an average farm in Germany (which, at almost €27,000, accounted for around 30 per cent of the usual farm income), a not inconsiderable portion was passed on to non-farming landowners in the form of higher rent prices.[25]

In contrast, the exclusively ecologically oriented subsidies of the second pillar of the CAP play only a minor role in Germany – they only generated a little over €3,000 and thus less than 4 per cent of the farm's annual income.[26] The long-term effect: in this system, the preservation of natural resources becomes a cost factor and a source of additional bureaucratic work. While new market players regularly establish companies in other sectors, fewer and fewer people are deciding on the use of ever larger areas of land in agriculture. And the longer reforms are postponed and state

support is granted not for the protection of ecosystem services but as compensation without direct service in return, the more bureaucratic it becomes to promote environmental and resource protection under these conditions.

The CICES project (Common International Classification of Ecosystem Services)[27] of the European Environment Agency shows how cumbersome state regulatory systems are. Since 2013, the project has been setting an internationally recognised standard for 'environmental-economic accounting'. This regularly updated accounting method reflects the effects of economic activities on the environment as well as the importance of the environment for the economy and could be the basis for a modern funding system in Europe and beyond. After all, agricultural policy in the US and much of the world is in similar need of reform and cooperation and contributes significantly to severe income distortions and environmental damage in the Global South. But even if the current CAP system would have to be completely restructured anyway with Ukraine's prospective accession to the EU, it currently seems more than questionable whether European policy-makers will actually dare to take this leap for the new funding period (which begins in 2027): According to current plans, all European greenhouse gas emissions should actually be priced from 2027 onwards, but the agricultural sector (with its extremely emission-intensive factory farming) will remain excluded from the necessary polluter-pays pricing.[28]

A lack of diversity and unequal power relations fuel conflict and reduce resilience

A failed funding policy is not only expensive, but also unfair – and it is often both a reflection and a support of unequal power relations. According to the FAO, around 540 billion US dollars will be spent on direct and indirect agricultural subsidies worldwide in 2021. Not only is this money distributed very unevenly across regions (the lion's share falls to the highly developed industrialised countries), but it is also distributed in a socially

highly unbalanced way: 'It is mainly the large producers who benefit from the tax breaks, while the smaller and medium-sized farms only receive *peanuts*.'[29] A new form of integrated land use – with corresponding incentive and funding programs – also affects these established power structures. Often, there is a lack of transparency that would be needed to adequately describe the unjust status quo and to conduct an honest general debate on the fair distribution of the costs and opportunities of more sustainable land use.

In the agricultural sector in particular, unequal power relations are often associated with the problem of *a lack of diversity* – in the fields as well as in the committees that decide which incentives are given for land use and which are not. In recent decades, the mechanisation of food production, global trade and the standardising requirements of agricultural policy have intensified the homogenisation of land use: although humans (still) cultivate around 6,000 plant species for food production, nine species now account for 66% of the global harvest. Corn, wheat and rice alone provide almost half of the total calories consumed by humans (and about 60% of our plant-based calories)[30] – an unprecedented one-sidedness.

The enormous decline in diversity in the field also shifts social power structures: while a few companies dominate the global market for seeds, fertilisers and pesticides (and they are becoming increasingly important as vulnerability increases) local *resilience* is dwindling: Diversity in the field not only strengthens the stability of the regional ecosystem (which is essential for pollination, natural pest control and protection of the water cycle), but also reduces the farmer's dependence on individual trading partners, price fluctuations or seasonal fluctuations in the harvest quality of individual crops.

Long-term research into the resilience of small farmers in southern Africa emphasises this connection between flexibility, diversity and fair market participation, which is likely to apply worldwide: Those farmers who have

been most successful in securing their economic survival despite numerous crises since 2000 have focused (1) less on increasing their arable land and more on making the best possible use of the most productive parts of their land. On this basis, they (2) sought to become more market-oriented for some of their products, but as flexible and self-confident trading partners, they (3) relied on a higher diversification of their farming methods – in other regions, integrated agroforestry systems were particularly crisis-resistant. [31]

Four factors were crucial to the successful implementation of these diversification strategies: (a) the availability of appropriate (especially technical) resources, (b) sufficient financial support, especially in the face of unexpected crises, for which (micro) credit and good income opportunities for family members outside of the agricultural sector were particularly important, (c) the degree of social organisation, which, among other things, enables (further) education and cooperation (including cooperative forms) and (d) clear ownership structures in order to be able to plan at all in the long term.

Unfortunately, the resources and potentials mentioned are often distributed extremely unequally and thus become the focal points of a wide range of social power struggles. The role of education and knowledge on a global scale cannot be overestimated and increasingly includes the value of intellectual property – new intelligent land use concepts will be more and more tied to patents (for machines, but also for seeds) in the future, which, if they are not allowed to be shared and further developed in a cost-effective and user-friendly manner (keywords 'open source' and 'public property'), they are likely to lead to massive new dependencies and imbalances.

Unequal distribution of land ownership and influence

As a scarce commodity, land – especially since it can hardly be increased and is therefore relatively well protected against loss of value – is also a popular investment object. Whether investment funds (with short-term

profit interests), wealthy families (with mostly longer-term horizons) or foreign states (with geostrategic goals) – all three investor groups are at best neutral towards the interests of the local rural population. As a rule, the local population hardly benefits at all: a study of large-scale land acquisitions in sub-Saharan Africa shows[32] that regional employment declined, the hoped-for transfer of knowledge and increase in productivity were lower than expected, and only the cultivation of cash crops for export increased significantly.

An impressive example of regionally distinct, but ubiquitous imbalances and power asymmetries is the *distribution of land ownership*: in the EU, less than 3% of farms account for around half of the available arable land; worldwide, the 1% of the largest farms cultivate more than 70% of the agricultural land.[33] A closer analysis reveals further aspects of unjust distribution, for example between the genders: in Madagascar, women own around 15 per cent of the registered land, in Kenya only 1 %; in India, 41% of those employed in agriculture are women, but only 14% of farms are owned by women.[34] This gender inequality is much more pronounced in the countries of the South in social, cultural and legal terms, but it is also clearly visible in Germany.

And in all regions of the world, women are more likely than men to be threatened by hunger and food shortages, own less land, receive lower wages for their work and have fewer opportunities to have a say – with enormous impacts on global land use. Numerous studies show that women who have a say in decision-making produce a more diverse and nutritious food mix on their own land (fewer cash crops, more fruit and vegetables, with complementary poultry and small livestock farming). A more equal distribution of resources between men and women can achieve significant productivity gains.[35] In some countries, women play a significant role in the economic stability of family farms as 'guardians of the seeds' or those responsible for direct marketing. Female landowners have often proven to be more risk-averse in their investments, which means that they are significantly less likely to incur debt and are more

likely to pass on the family estate to the next generation.[36] Not only are workers in African agriculture predominantly female, but they are also mostly over 60 years old. It is therefore essential to provide young people with good training regardless of gender and to make agriculture more attractive in order to be able to cultivate the land sustainably and economically in the future.

For sustainable land use, not only should the ownership of land be fairly distributed, but also the *responsibility for land use*. For example, small-scale landownership does not automatically lead to more small-scale and thus more diverse fields. A comparison of the level of biodiversity in German fields shows that small-scale organic farming allows for more than three times the biodiversity per hectare than large-scale conventional farming.[37] However, there is a wide range between these two extremes because a small-scale conventional agriculture (i.e. one that relies on field hedges and a varied landscape design) has a similar effect on promoting species as organic farming. A maximum improvement in conditions for biodiversity therefore results from the combination of both measures. [38]

Power structures in terms of political influence are often much more subtle and far-reaching than mere ownership structures – this becomes clear when you regard the regulations that apply to agricultural land in areas that are actually 'protected': In Germany, over 125,000 hectares of arable land and almost 16,000 hectares of fruit and wine-growing areas are located in officially protected areas (European Flora-Fauna-Habitat protected areas or other German protected areas). However, the protected area regulations often allow agriculture to continue within these official protected areas, with fertiliser and pesticides being used largely without restriction.[39] Discussions about the necessary changes in land use are inextricably linked to the (only half-hearted) debate about the open and hidden opportunities for various interest groups to have a say in the principles and individual case regulations of state regulatory policy.

A lack of transparency and one-sided lobbying come at the expense of the common good

The success and acceptance of a parliamentary democracy depends largely on the extent to which it succeeds in ensuring, through participation and transparency guidelines, that the representation of interests of well-organised social groups does not mutate into the covert manipulation of decisions by influential individual interests.

A study conducted for the first time in 2002 and expanded in 2019 on the 'lobbying networks of German agriculture' concluded that the covert political influence could hardly be reduced in recent years and was not oriented towards the common good, but rather towards particular interests. Thus, 'many ambitious efforts at reform and adaptation in agricultural and environmental policy, as well as in agricultural practice, are systematically prevented or significantly diluted by representatives of interests. The results at the end of negotiations (...) often contradict the original approaches, proposals and, above all, scientific recommendations.'[40] Political action is 'apparently still based on avoiding burdens on agriculture and, superficially, on securing agricultural incomes. However, the differentiated agricultural structure, different needs and interests within (German) agriculture are insufficiently taken into account.'[41] The influence of international corporations and large national companies that can afford to invest a lot of money in 'political landscape maintenance' and approach MPs with already formulated legislative proposals, is significantly stronger in such networks than that of small and part-time farmers. By contrast, the farming families of the Global South, who are also affected by these decisions, have a real 'lobby' only in aid organisations.

Increasing income imbalances also lead to growing inequality in the political influence of the various social interest groups. This trend is reinforced by a media landscape in a state of upheaval. In particular, the operators of so-called 'social media', whose economic success depends on maximising their reach rather than on the quality of the information published there

(mostly by users), have traditionally felt little obligation to media-ethical standards or journalistic professional ethics. Excessive emotionalisation, scandalisation and the toleration of fake news – and the associated social fragmentation into individual 'bubbles' or 'echoes' – are not only tolerated but are often part of the business model. This development (and the associated loss of importance of 'traditional media') increases the risk that individual financially strong actors, as owners or customers of media companies, will 'buy reach' and thus not only influence public discourse and political decision-making, but also massively impair it.

This was evident, for example, in the Netherlands' attempt to reduce the enormous nitrogen emissions from pig farming by offering high demolition bonuses for stables and exit payments: The Netherlands, smaller than Lower Saxony but with 17 million inhabitants significantly more densely populated, is the second largest agricultural exporter in the world after the USA.[42] In 2019, the Supreme Administrative Court obliged the government to comply with the EU Nature Conservation Directives, whereupon, in the context of the 'nitrate crisis', representatives of individual sectors (construction, transport, agriculture) put the main blame on each other and the government. A destructive alliance of political populists and financially powerful lobbyists, who not only accompanied the protests but also orchestrated and instrumentalised them, blocked discussions on appropriate solutions – until the offer of high financial compensation payments and an elaborate communication campaign – involving social media – calmed tempers for the time being.

Particularly when it comes to discussions in the agricultural sector, most citizens are affected as consumers (and quite emotionally) but are hardly 'experts' – which increases the risk of influence, one-sided and hasty blame, and polarisation (including the overemphasis of positive or negative scenarios). This is already having a significant negative impact on the ability to reach a consensus in such complex and important discussions as those about modern breeding techniques or attempts to find new middle ways (or hybrid systems) between 'conventional' and 'organic' agriculture.

Political appropriation of the cultural dimension

The common origin of the Latin words 'cultura' (the cultivation and improvement of arable land) and 'cultus' (care, education, worship) points to the extent to which art, culture and nature are interwoven with each other and with agricultural practice. Since cultural change affects everyone in many ways but is also experienced at very different speeds and intensities, it is particularly susceptible to being either ignored or (especially when it receives little public attention) emotionally instrumentalised. The tensions that arise from this are currently more evident in the transformation of our land use and eating habits than in any other area.

This problem is particularly evident in the discussion about the necessary reduction in meat consumption. While there is general consensus on this issue in the health, nutrition and climate sciences, the public debate is characterised by increasing polarisation. Taking into account the environmental costs the German Nutrition Society (DGE) has reduced its recommendation to consume no more than 300 to 600 grams of meat products per week for reasons of health to a maximum of 300 grams (the average weekly consumption in Germany is 600 grams for women and about one kilogram for men).[43] The 6th Assessment Report of the Intergovernmental Panel on Climate sees a crucial role for meat substitutes in halving global emissions by 2030, since people's eating habits are not changing fast enough and a transition to food from more sustainable production is needed that is supported by broad acceptance.[44]

Analyses of media contributions[45], on the other hand, show that this gradual, appropriate reduction is hardly discussed in the public debate. Instead, most published articles give the impression that the scientific data is still insufficient and that a choice has to be made between maintaining the status quo (which is equated with a commitment to civil liberties and traditional values) and a general ban on meat or a 'vegan forced happiness' by out-of-touch decision-making elites. Often, the origin of this misinfor-

mation can be traced back to direct (open or hidden) influence by representatives of large-scale industrial meat and sausage production.[46] In a second step, this (initially purely commercially motivated) misinformation is increasingly being taken up by populist politicians from various parties (again with completely different vested interests), further distorted and incorporated into their culture war narratives. More and more farmers feel uncomfortable about being drawn into unwanted and opaque coalitions – they are in danger of becoming supernumeraries in a fight that is hardly about their original concern of being able to make a good living from producing high-quality food.

Land is not just a location, it is also home: large-scale land use changes not only have significant financial implications for various groups of people, but there is also a (often even more far-reaching) cultural component. When discussing the rewetting of moors, the return of wolves, the construction of wind turbines or even the introduction of a sugar tax, the affected interest groups are quick to interpret and instrumentalise questions of power and money in cultural terms. In this way, customary rights and behavioral routines that are hardly older than one or two generations are equated with 'traditions' and 'culture' and personal conflicts of interest are elevated to a 'cultural struggle'. This is particularly disastrous when the cultural aspects of reform proposals are only addressed very late in political decision-making processes.

3 Ethical guidelines for the land use transition

The considerations so far have made it clear that a land use transition is accompanied by a wide range of conflicting claims that are inevitably linked to fundamental questions of justice. This is not only about a fair balance of interests between people – regionally, globally and intergenerationally – but also between people and nature, and especially non-human living beings. Here, too, there is a danger of creating false dichotomies (such as that between human needs and the inherent value of nature) or of considering a single normative justification to be the only valid one.

The ethical guidelines for a global change in land use outlined below are therefore based on two traditional lines of argument that resonate with many people and schools of thought: the principles of Christian social ethics and universal human rights, which ultimately also form the normative basis of the global Sustainable Development Goals. Both follow an anthropocentrism that is enlightened in the sense that it also recognises and can justify the intrinsic value and need for protection of nature and sentient beings. The necessity of a *land use transition oriented towards the common good* is justified on this basis. The perspective of the common good not only helps to deepen our understanding of appropriate freedom and property rights in the 21st century, but also to understand the relationship between humans and nature more comprehensively and to justify the fiduciary responsibility of humans for their fellow world, in religious terms the Creation.

Human rights foundation of food security

The universal human rights offer a common key for the ethical assessment of the many challenges of food security, climate change and biodiversity

loss. They do not represent a closed catalogue but have been and will continue to be updated in the face of new threats to human life and new experiences of injustice. The focus was primarily on civil and political rights before the International Covenant on Economic, Social and Cultural Rights, adopted in 1966, gave the human right to food, among other economic, social and cultural rights, a binding legal character in Article 11. This establishes not only the 'right to be protected from hunger' but also the 'right to adequate food'. In the overall context of human rights, this also means that every person not only has a right to *be fed* in an emergency but must also be put in a position to *feed* themselves and their family in general.

The added value of the human rights-based approach to food security lies in the fact that the principles of universality and indivisibility apply to human rights. All people have a right to adequate food, regardless of where and when they live, which generation, gender, ethnicity or religion they belong to. Furthermore, this right never stands alone, but is reciprocally linked to other rights. For example, people cannot realise any of their other rights if they cannot obtain adequate nourishment. Conversely, the ability to reliably access adequate food, e.g. to reliably secure the corresponding purchasing power, depends on the guaranteed rights of political participation, freedom of expression and association, or the right to work.

The amount of food currently produced would be sufficient for everyone in terms of calorie requirements: according to current estimates, around 2,884 kcal of food is available per person per day worldwide[47] while the average requirement is 2, 2,285 kcal and could grow to 2,425 kcal by 2050 due to increasing body size and BMI.[48] However, far too little fruit, vegetables and high-quality proteins are produced worldwide for a healthy diet, and instead, significantly too much sugar, oil and grain.[49] This is mainly due to the high proportion of so-called 'commodity crops', low-cost field crops with a high energy density that are easy to store, transport and trade and can be exported as animal feed. This misguided development is responsible not only for the fact that, as quoted at the beginning,

over 700 million people (including an above-average number of women) suffer from chronic malnutrition, but also for the fact that around 1.3 billion are affected by food insecurity and around 3.1 billion cannot afford a balanced diet financially. They lack proteins and micronutrients such as vitamins, minerals and trace elements.

To guarantee the human right to adequate food for all, a change in land use is imperative for reasons of global justice *even today*: vulnerable groups are already disproportionately affected by the climate crisis; hunger and abundance, fertile soil and resources are distributed extremely unevenly worldwide; and wealthy countries and a few companies have a disproportionate influence on global food production.[50]

The universality of human rights also means their *intergenerational validity*. While the problems of prevailing land use practices in food production are already visible today, many other negative consequences will only become fully apparent later: Depending on the agricultural practice, the soils used can be a significant source or a sink of CO_2 emissions that should not be underestimated. The reduction in biodiversity and the decreasing ability of soils to store and purify water will also have an enormous impact on human nutrition and the survival of future generations in the long term. The commitment to universal human rights thus justifies the obligations not only to ensure adequate nutrition for all people here and now, but also – depending on specific responsibilities – to promote, with appropriate financial resources, technologies and institutional measures to promote sustainable land and soil use that ensures the formation of humus and the fertility of soils in the long term, as well as the absorption and storage capacity of greenhouse gases.

A conception of freedom and property, oriented towards the common good

A land use that ensures the right to food security and the preservation of soils and their ecosystem services in an integrated way is closely linked to

the question of property rights over agricultural land: Who owns nature, land, soil and other natural resources? In this regard, Christian social teaching is based on the principle of the universal destination of the Earth's goods for all people. On this basis, Thomas Aquinas formulated the principle of the *social obligation of property*, according to which personal property must always be used with consideration for others – a position that is also enshrined in the German Basic Law (Art. 14 para. 2 'Property entails obligations'). Thomas Aquinas justifies private property rights by saying that individuals are more concerned about what belongs to them personally, and that human conditions would be better organised and social peace better secured if everyone could dispose of a definable, manageable share of earthly goods. Property rights in his view are therefore never unlimited and are explicitly subject to the proviso that the *use of* property be reconciled with the principle of the universal purpose of the Earth's goods.

This justification (and at the same time limitation) of personal property rights in the common (and thus for the common good oriented) possession of the Earth's goods contradicts every form of absolute individual protection of vested rights and a narrow understanding of freedom. One of the central demands of the Enlightenment (which had long been established in the European philosophical and legal tradition) is the self-limitation of freedom out of freedom, i.e. the claim to grant all members of society as much freedom as one claims for oneself. Personal freedom is therefore never unlimited but ends where the freedom of others begins – which in turn expands the common freedom and the space for development of all. For this reason, land ownership in large parts of Europe has always been subject to certain limits: for example, farmers have the right to use the upper layers of the soil, but not the coal seams below – and the owners of a protected forest have never had the right to endanger neighboring settlements or watercourses by cutting down the forest. This indicates that natural goods differ from other goods because of their specific

potential to deliver ecosystem services. Therefore, property rights for natural goods are subject to different requirements.[51]

This also has implications for the claim to freedom in the handling and use of these goods. A libertarian restriction, according to which freedom – understood negatively – means that individual autonomy must never be restricted, is thus ruled out in any case. Freedom is not only the absence of coercion or prohibition, but: We are free to act in accordance with our well-founded rights.[52] A good life for all must therefore be realised in the recognition of the necessary limits to individual freedom. In concrete terms, this means, for example, that a reductive concept of freedom is limited to protecting individuals from a ban on disproportionate pesticide use or to defend the entrepreneurial right to ever more intensive factory farming, while a contemporary concept of freedom is more strongly oriented towards the rights of everyone to enjoy clean groundwater, intact ecosystems and landscapes worth living in.

If we take the universal character of the equal rights of all people seriously, then this also includes a responsibility towards those who are affected by our actions in far-off regions – specifically, poorer people in areas that are already suffering particularly from the consequences of climate change, water scarcity or the loss of biodiversity. This also means that the limits of individual freedom can only be determined collectively and ideally in a global community of solidarity and orientation towards the common good.

Accordingly, in its ruling on the German Federal Government's Climate Protection Act of April 2021, the German Federal Constitutional Court emphasised that the freedom of future generations must also be considered in our actions. In the grounds for the ruling, the highest court confirmed that freedom must necessarily be linked not only to responsibility in a social sense, but also in an ecological sense. In his *encyclical letter Laudato si' (LS)* of May 2015, Pope Francis pointed out that the central ecological and social problems of our time are closely interlinked and can therefore

only be solved together. 'There are not two crises side by side, one environmental and one social, but a single complex socio-ecological crisis.' (LS 139). He expresses this in a figurative way when he speaks of the earth and our community as 'our common home', which can only be preserved and made habitable for all its inhabitants through a sustainable economic and social transformation based on mutual consideration.

Enabling freedom

Amartya Sen's *capability approach* offers a helpful way of broadening our perspective when it comes to applying the definition of the liberal limits of land use geared towards the common good to individual questions of the land use transition. This approach avoids reducing questions of justice and distribution that are crucial for humanity to the purely material level. The long debate about the fair distribution of wealth ranges from Plato's historic demand to limit the unequal distribution of (land) property so that no one owns more than four times as much land as those who can just feed their own family with it,[53] to John Rawls's difference principle, that inequality can only be justified if the most disadvantaged benefit most from it in the long term. Sen takes up these debates but expands them to include the question of what these possessions *enable* people to do. Instead of getting lost in the dispute over a globally just distribution of all resources, he recommends first meeting the (material and non-material) *basic needs* of all people to enable everyone to lead an individually 'good life'. In this way, Sen combines the demands for justice and freedom in the sense of an *ability to be free*. In the context of land use, this means that *all people* have (among other things) *the same* right to healthy nutrition, adequate mobility and a healthy environment. If these basic needs are met, it is not inconceivable that some individuals may continue to use their personal freedom to consume disproportionately more meat, for example. However, they have no right to do so at the expense of those whose basic needs have not yet been met.

The basic idea of the capability approach also facilitates debates on sustainable land use: the ever-increasing concentration of land ownership in fewer and fewer people's hands must be addressed, but the discussion must not be limited to the mere distribution of land ownership. In Europe's past – and still in many countries of the Global South today – land ownership was the first guarantor of a certain independence and self-determination, as well as regional participation.

Today, non-landowners are also entitled to vote and have a legitimate interest in having a say in how the landscapes in their homeland are used and preserved. Anyone who owns a single piece of land is always also a co-owner of a larger landscape – and only a differentiated view of the associated rights and duties of *all those* who live of and in this land will enable everyone to live a good life. This broadening of perspectives can also help to restore respect for traditional forms of collective *ownership or cooperative land use, but also to further develop new models of consultation and participation such as a citizens' assembly. In Chapter 4, these and other proposals are further substantiated – the core aim being to counteract the risk of a progressive polarisation and narrowing of the social debate by enabling citizens, both regionally and globally, to better contribute their legitimate interests, ideas and skills to improved democratic decision-making.*

Ecological orientation towards the common good as a compass for the land use transition

Land use oriented towards the common good can only be successful in the long term if it considers questions of social justice and the value of nature and respects its ecological limits. But what exactly is 'nature' and how is this 'respect' expressed? The different forms of agricultural management practice – which go hand in hand with terms as diverse as agri*culture* and *farming* – reflect the wide range of opinions in society regarding an appropriate relationship between humans and nature. Although it is not possible to capture this complex relationship (and the resulting obligations)

with a single, universally valid principle, the discussions about it are indispensable: by debating the 'value of nature', its 'significance' within our human system of order or its independent 'intrinsic value', we raise society's overall awareness of the overarching necessity of a more ecological land use.

An important step towards this can be an attitude of *enlightened anthropocentrism*. Traditional anthropocentrism already recognises that animal and environmental protection is necessary in human self-interest: Accordingly, nature has an 'instrumental value for the fulfilment of basic human needs, for physical and mental well-being'[54], but also a 'eudaimonic intrinsic value' in the sense of aesthetic, cultural or spiritual value for humans.

An enlightened anthropocentrism goes further and understands that although we can only ever judge the value of nature from a human perspective and by human standards, we still have a special responsibility towards nature and especially non-human creatures: The more we recognise the ability of animals to feel pain, but also to experience joy in life, the more the idea of an 'intrinsic moral worth in nature'[55] and our obligation to respect the right of sentient animals to a 'good life' and to preserve the diversity of life in its entirety, becomes apparent to us. The importance of animal welfare must therefore also be recognised beyond the human use of animals. In the context of land use, this requires consideration for the retreat areas of wild animal species, and especially a clear rejection of industrialised factory farming, which causes animal suffering or (through the concentration of animal feed and excrement) ecological stress on soils and water.

The responsibility for protecting nature therefore remains in the hands of the global community. Human freedom must be constantly renegotiated in line with planetary boundaries and our commitment to specific goals such as climate protection, food security and the preservation of biodiversity. An expansion of the orientation towards the common good, initially

understood in social terms, to include an ecological dimension is necessary to combine these many perspectives into a common direction. The ideal of an 'ecological orientation towards the common good' thus expresses the fact that the (only in the short term contrary) needs of people and the concerns of nature must not be played off against each other. When formulating ethical guidelines for land use, ultimately, 'an attentive regard, filled with love and awe' (LS 97) for creation is also necessary to adequately appreciate the complex relationship between humans and nature.

As the following chapter makes clear, these ethical guidelines can help state actors to achieve social consensus more quickly on specific individual measures. In this context, geopolitical strategies and trade policy interests are also playing a role that is currently growing stronger again. However, these necessary considerations should also be placed under the primacy of an ecological orientation towards the common good: The principles of world trade and the organisation of international relations can have a massive impact on global land use, both positive and negative – and setbacks in the fight for climate protection, food security and species protection will harm everyone equally.

4 Key levers of the land use transition

A land use transition committed to the principle of efficiency aiming at the common good (Fig. 3) no longer pits food security, climate protection and the preservation of ecosystems against each other, but seeks to achieve these goals together through intelligent forms of cooperation and fairly distributed prosperity gains.

In this context, it would be helpful to understand land (soil and the associated biodiversity) not just as an economic asset, judged mainly from a business point of view. Nature should no longer be considered a simple resource to be used and consumed, but as precious *natural capital* in the wider sense of a natural asset that provides numerous services and must therefore be preserved and cared for to ensure lasting yields.

Farmers are members of a profession that is entrusted with this fiduciary task like no other[56]. They deserve social recognition and support for providing services for the common good – and specifically, appropriate financial remuneration when they protect and permanently conserve the common natural capital. The agriculturally used soils in Germany store about 8.8 billion tonnes of CO_2 (the greatest potential for positive and negative changes in these stores lies in grassland and on former peatland); in addition, there are about 4.8 billion tonnes stored in forest soil. Together, they contain about 30 times as much CO_2 as Germany emitted in 2023. Since, according to current conservative estimates, each tonne of CO_2 released causes damage of EUR 195/t_{CO_2eq} according to the Federal Environment Agency's methodology convention, the climate value of the soil carbon pool in Germany alone is approximately EUR 2,700 billion.[57] This exceeds the current market value of agricultural and forestry land by several times.[58]

Valuable services such as humus formation for CO_2 storage, protection of groundwater or the promotion of biodiversity through field margins or di-

versified crop rotations should therefore no longer mean merely additional bureaucratic work and costs for farmers. State payments for such verifiable services would not be uncommitted social transfers, but future investments in natural capital tied to the provision of ecosystem services. They would better reconcile private and public interests than has been the case so far. By adequately valuing and accounting for natural capital services, including remunerating their provision, price-sensitive production and consumption decisions could actually become more 'environmentally conscious'. In the global context, millions of people who make their living from the sustainable use of fields, pastures, forests and wetlands would be transformed from supplicants to recognised partners in the fight for greater food security, climate protection and the preservation of biodiversity.

On this basis, the following section presents selected policy reforms that are particularly important for a land use transition. Such reforms are the joint responsibility of politics, business and civil society. These measures will only realise their full potential if they are closely linked, coordinated and implemented at regional, national and international level, taking into account the principle of subsidiarity.[59]

Shaping regulatory policy for the common good

When talking about the 'primacy of politics' [60] in the struggle for concrete steps towards a socio-ecological transformation, this describes the *primary obligation of all those with political responsibility* to explain the meaning and goal of sustainable land use in sufficient detail and to actively shape the necessary changes in economy and society implementing *coherent long-term* strategies that are oriented towards the common good. Concrete targets, broken down to the respective land use levels, appropriate incentive systems and effective regulations must be used to ensure that all other stakeholders (in particular landowners and land users, industry, trade and consumers) can and should fulfil their own responsibilities. The most important tasks of state regulatory policy undoubtedly include:

(1.) Guaranteeing a 'safe operating space' by setting and monitoring appropriate upper and lower limits. It is one of the most fundamental prerogatives and primary duties of state action to set the framework *within which* private individuals and companies can develop as freely as possible and act on their own responsibility, by means of restrictive regulations. These safe corridors are often defined by upper and/or lower limits.[61]

In the context of land use, it makes sense to use the concept of 'planetary boundaries' as a guide. These describe a safe framework ('safe operating space') within which humanity can use the so-called 'Planetary Commons'[62] (such as global wetlands, tropical and temperate forests, the ozone layer, important water, carbon, nitrogen and phosphorus cycles...) without endangering its long-term future. On this basis, the legally binding *Biodiversity Framework* adopted in Montreal in 2022, for example, calls for at least 30% of the global land and sea surface to be placed under appropriate protection by 2030, and for 30% of the area of ecosystems that have already been significantly damaged to be restored with human assistance. The restoration act as part of the European Union's *European Green Deal* is an important milestone in this regard, but it is not enough on its own – after all, it is estimated that around 80% of European habitats currently belong into the category of 'poor ecological status'.[63]

Recent studies underscore the many positive effects of large-scale landscape design initiated by the state (such as the extensive climate effects of reforestation in the eastern United States since around 1920).[64] On this basis, states should increasingly implement nationally and regionally adapted land use regulations (including appropriate limits on fertilisers and pesticides, targets for CO_2 storage capacity and the interconnection of ecosystems) and set *priorities for land-based resource management*. In Europe, the more appropriate use of grassland (including ecologically valuable pastures) and wetlands (so-called paludiculture) is particularly promising. The renaturation of floodplains and moors[65] (which in many cases still allows for site-appropriate use) must be carried out on a large scale. Considering the increasing importance of floodplains and moors for

society as a whole with respect to their function as protection and retention space, the voluntary principle[66] of landowners must be questioned in individual cases. In view of the increasing climate change, the mere insistence on the status quo needs to be ethically justified not less than any proposed changes. Finally, the intensity of animal husbandry must also be more strictly aligned with regional ecological capacities, especially the available land and the effects on water systems and groundwater. Such requirements for the protection of public goods are and will remain central tasks of public services.

(2.) *Regulatory framework (including compensation payments) to correct externalisation effects that reduce the common good*. Within this safe corridor for action, the state has a variety of different options for strengthening the functioning of agricultural and food markets in the interest of the common good. In doing so, it is useful to first address the question of how to overcome the externalisation of negative environmental impacts as directly as possible and at the point where they arise. This concerns, for example, price distortions that are promoted by inappropriate tax or subsidy policies, the market-dominating position of individual retailers, a lack of transparency or the passing on of the consequential costs of environmental pollution to the public.

It is particularly urgent and expedient to *end subsidies that do not serve the public good* or to phase them out within appropriate transition periods. The end of the current CAP funding period in 2027 is a good time to do this. According to calculations by the German Environment Agency, in Germany alone, climate and sustainability-promoting financial aid amounted to around 16 billion euros, compared with environmentally harmful subsidies of over 65 billion euros.[67]

Correcting externalisation effects can be associated with negative or positive payments (state pricing or subsidisation). These should not be allocated according to criteria that are contrary to the common good. Particularly efficient and urgent measures include appropriate pricing of CO_2

emissions (which already occurs in the industrial and energy sectors through CO_2 emissions trading), of nitrate inputs and of pesticides, as well as an animal welfare levy in which a moderate increase in the cost of meat consumption would finance significant improvements in livestock farming.[68]

Farmers should continue to receive substantial state support, but increasingly as compensation for services to society, such as the maintenance of ecosystem services, rather than as a flat-rate payment for land use. Based on the motto *aligning today's subsidies towards tomorrow's priorities*, subsidies that were granted retrospectively and at a flat rate should become targeted and future-oriented investments in common natural capital.

This provides public policymakers with numerous market-based instruments that increase the efficiency of land use within the 'safe operating space'. These include pricing mechanisms that reflect the negative and positive consequential costs of economic activity: this encompasses various options for carbon pricing and a nitrogen surplus levy, as well as rewarding measures for more biodiversity or for increased carbon capture (from carbon capture and storage to carbon farming). Tradable certificates (e.g. for the formation of carbon-rich soils) can further increase flexibility. This lowers the costs to society as a whole and makes it easier to comply with the necessary upper and lower limits – which can ultimately help to boost acceptance if the costs and benefits of this efficiency increase are distributed fairly through accompanying measures.

If state corrective measures lead to significantly higher prices for consumers or to costs that are difficult for producers to bear, the necessary social balance must be taken into account from the outset. It is more effective to strengthen the solvency of weaker groups (e.g. by raising their income) than to exclude them from the pricing system, because this would weaken the incentive set.

(3.) *Establishing and strengthening appropriate institutions and instruments for the effective implementation of the politically defined objectives*.

To keep pace with technical and social progress and the associated challenges, it is always necessary to create new institutions (decision-making systems, regulatory bodies, advisory and implementation bodies, etc.) that serve the common good and to maintain the necessary capacities for them.[69] Such institutions are usually set up by government and parliamentary decisions. However, the experts working in these institutions are as far as possible removed from party-political day-to-day events in their decisions. Thus, the pioneering proposal to establish a CO_2 central banking system[70] results from the insight that global carbon cycles should be protected by a similarly professional and adaptable system of national and global institutions, as has been the case with circulating money for much longer.

Standards for sustainability-oriented 'true-cost accounting'[71] (which are set and required by public institutions) and the accounting of natural capital, as recently called for in the EU with the CSRD initiative (Corporate Sustainability Reporting Directive), are particularly important for *cross-sector and international cooperation*. They have the potential to create the necessary transparency and comparability, thus enabling cross-sector and cross-border equalisation mechanisms. For example, following the launch of EU emissions trading for transport and buildings from 2027, the agricultural and food sectors should also be rapidly included in a correspondingly harmonised further *EU emissions trading*. An ecologically and economically functioning European emissions market with a *CO_2 border adjustment mechanism* for imports and exports (comparable to VAT equalisation) promotes innovative companies and would encourage many of Europe's trading partners to also advance their national climate protection efforts by introducing CO_2 levies.

For this to succeed, a *state program to strengthen efficient and common-good-oriented administrations* is needed. The main aim here is to counter the strong sectoral division of environmental responsibilities and, for example, to jointly shape the fields of climate protection, water and resource management and the protection of biodiversity. The example of sewage

treatment plants shows that there is still considerable technical potential for optimising the simultaneous handling of several resources (in this case water, soil, greenhouse gases, phosphorus and energy),[72] but also that the responsibilities of the authorities need to be coordinated in a more flexible and user-friendly way.

Fair distribution of impositions and opportunities

A socially balanced transformation policy transparently distributes both impositions and opportunities. Transparency is indispensable for this, because it is a basic prerequisite for a successful public discussion process in which our society's various and complex ideas and demands around 'efficiency' and 'justice' can be weighed against each other and finally result in practical actions.

Measures that are based on the *polluter pays principle* (in particular, by pricing or rewarding actions that decrease or increase the common good) make the previously ignored consequential costs of production and consumption visible and thus ensure a *more efficient use of available resources*. Under this principle, most ecologically sensible services would lead to positive income effects and would also be perceived as contributing to greater justice. However, the associated price changes can be highly uneven (e.g. agricultural practices on moorland with a high CO_2 binding potential would be priced/rewarded significantly higher than on sandy soils which store less CO_2) – and the burdens (e.g. due to higher prices for food or energy) can be borne differently by those affected (depending on personal income or wealth). To cushion social hardship and minimise distribution conflicts, these *pricing measures must be accompanied by appropriate social measures*.

In order to maintain social balance in the event of price increases, it is recommended that the revenue generated from the taxation of environmental use be used not only to finance government expenditure on environmental measures, but also to relieve the burden on private households,

for example, by means of a *per-capita sustainability premium*. This would preserve necessary incentive mechanisms (in the form of appropriate prices for the use of commons), but the income of poorer households would increase disproportionately – ultimately benefiting society as a whole for reasons of efficiency and fairness.[73]

While (relatively cheap) per capita premiums can be used to strengthen the income position of weaker and less competitive consumer groups, adequate support for producers is more difficult. On what basis should e.g. an agricultural unit receive blanket funding: the individual 'farm' or the different tax-relevant business units registered on this land, the landowners, land users or land workers? The abolition of many controls for farms under 10 hectares also represents a problematic 'quick fix'; although it reduces some bureaucratic burdens, it does not compensate for many other competitive disadvantages – and the consequential ecological costs are likely to increase further if these farms are not considered.

A much more expedient approach would be to offer flat-rate *transformation bonuses that are limited in time and dedicated to clear targets.* To this end, co-operation should be supported to compensate for some of the competitive disadvantages of smaller businesses and to ensure a more efficient use of resources (especially in the case of agricultural machinery, and in the future also in the use of information technologies). In this context, it is recommended to try out different innovative funding and cooperation methods (including innovative auction models) and to promote regional 'real laboratories'[74] – ideally with government start-up funding and further funding for ecological services on the basis of results-based remuneration. Regional networks (such as the often praised and pioneering BioRegio 2020 program with its numerous ecomodel regions,[75] organic and direct markets, as well as communal catering, where products with ecological and social added value can command higher prices, also benefit from start-up and cooperation support. Beyond these subsidies, which should be as simple and limited as possible, all further state payments

should be made according to a comprehensible, ecosystem-friendly catalogue of services.

The fairer distribution of opportunities for action cannot and must not end at national borders. For example, the high consumption of meat and milk in Germany currently requires 11.7 million hectares of additional agricultural land abroad[76] – by comparison, the total agricultural area in Germany is 16.7 million hectares.[77] Not only does meat consumption in Germany need to be reduced to a level that is healthy for people and nature, but the orders of magnitude mentioned also show how necessary and useful *international compensation payments would be for the maintenance and care of natural capital*. If these were paid directly to those who actually provide these services, it would be a paradigm shift that would benefit many marginalised groups who make indispensable contributions to the protection of species and resources in biodiversity hotspots or particularly vulnerable regions. Despite ongoing digitalisation, a functional and fair implementation of this ideal is likely to remain difficult in the medium term, which is why second-best interim solutions through various project activities also remain important.

At the international level, too, compensation payments should not be made in isolation but should be coordinated with measures that support a common-good oriented economic order and trade policy. Some expert papers such as the 'recommendations for a development-friendly organisation of global agricultural markets'[78] provide helpful orientation. For example, products that meet high social and environmental standards should be given better market access, while, conversely, the import of feed whose production has a massive impact on ecosystems in other parts of the world should be made more costly by border levies. The international trade agreements should provide for regular increases in their minimum environmental and social standards but must also grant poorer countries the right to protect their markets for a limited period, for example by imposing import duties. However, permanent decoupling from international markets would be highly dangerous in times of increasing weather and

harvest fluctuations – so complete *food self-sufficiency (food autarky)* should not be sought at the national level alone. Rather, local communities must be able to organise their agricultural production according to their own goals with equal rights to participate in the global food trade to the extent that is advantageous for them (food sovereignty).

Promoting knowledge, transparency and participation

The aforementioned principles of a fair distribution of impositions and opportunities also apply to immaterial resources such as knowledge. In a knowledge society, Article 14 of the German Basic Law ('Property obliges') refers not only to the commons 'land', but increasingly also to education and various forms of intellectual property. In view of the need for better energy efficiency, for example, not only the use, but also the rejection and non-proliferation of new resource-saving technologies and practices require sound moral justification. Advances in digitalisation (with implications particularly for breeding and geoinformation systems, for example in the form of 'digital twins' that virtually map agricultural land and simulate various management options) will allow a far more targeted and efficient use of resources in the future, which could lead to a significant reduction in the use of fertilisers and pesticides in 'conventional agriculture'. At the same time, the danger of new economic dependencies is growing. Here, state institutions are challenged not only as regulatory authorities and competition regulators, but also in education and the transfer of knowledge.

There is particular potential in *interdisciplinary and international learning alliances*, which should be promoted across the entire spectrum – from practical education for sustainable development (BNE in German) to basic academic research. Educational alliances promote and disseminate innovation and facilitate cultural change by enabling an integrated and solution-oriented dialogue to overcome perceived contradictions (such as urban vs. rural, organic vs. conventional, north vs. south). For example,

plant-based meat substitutes are now making a significant contribution to the acceptance of healthier and more sustainable eating patterns.

In the future, hybrid solutions will combine the advantages of conventional and organic agricultural practices. For the land use transition, this joint learning with, from and about each other must take place even more in an international context and with as few barriers as possible, for example through cross-border online learning and exchange programs. In this context, it is important not only to promote the academic exchange of 'educational elites' between the rich and highly technologised regions of the world. The exchange at the societal and global level must also include the ecological and social 'responsibility elites' and the particularly vulnerable people who are existentially affected. To this end, balanced formats are crucial that safeguard the rights, duties and roles of the various stakeholders. At the international level, the Committee on World Food Security (CFS) of the United Nations can serve as an example.

When it comes to shaping a sustainable land use transition, all social groups not only have a say, but also an ethically grounded duty to participate. This requires the earlier and more targeted involvement of as many stakeholders as possible, because large-scale landscape design can only succeed if the entire 'rural area' is included in the consultations, in addition to representatives from politics, the farming community and landowners. They can (and must) all contribute a great deal of their own knowledge and ideas, but also a willingness to compromise and to support each other. In Germany, the Competence Network for Livestock Farming (Borchert Commission) and the Future Commission on Agriculture have recently shown that committees in which a wide range of stakeholders from science and practice, from business, politics and civil society come together can develop far-reaching reform proposals how sustainable agriculture and more sustainable land use can go hand in hand.

Furthermore, in recent years numerous *citizens' councils*[79] – such as the citizens' report commissioned by the German Bundestag on 'Nutrition in

Transition' – have shown that there continues to be a great willingness for compromise across society when issues for the future are discussed in as concrete, inclusive and transparent a manner as possible. If they are not misunderstood as 'side parliaments', such expert and consensus-building bodies can make an important contribution to strengthening democratic culture. It is the responsibility of politicians and associations alike to work together in a fact-oriented manner and to punish polemical, populist or opportunistic violations of the culture of debate. Carefully balanced reform proposals from the aforementioned bodies should be boldly implemented if they are supported by a broad consensus.

Meaningful product labelling also promotes greater transparency and appropriate awareness of problems. In view of the growing number of voluntary quality and origin seals, it is easy to forget that the statutory labelling requirements are usually based more on the wishes of individual manufacturers' associations than on the information needs of consumers, let alone ecological requirements. More transparency regarding the influence of interest groups on legislative procedures would be a first step towards more transparency in the food sector. Furthermore, the responsibility for healthy and sustainable nutrition must not be shifted onto consumers alone due to the complexity of the requirements. Politicians and companies have a duty to ensure that product labelling is clear and comprehensible and to take more consistent action against misleading claims. The procurement of food for publicly funded or subsidised canteens, cafeterias and kitchens should also be more strongly aligned with guidelines for sustainable nutrition, without restricting freedom of choice. Finally, specific advertising bans can also be an effective means of protecting children and young people.

Utilising the cultural dimension of change

A historical look at far-reaching change processes such as the European unification after the catastrophes of the two world wars in the 20th century can help to identify key success factors for successful change: political

action oriented towards the common good, the integration of market forces, democratic participation, transparency and clear responsibilities, the creation of a wide range of innovations and the broad distribution of the profits generated by them – all these factors worked together and were accompanied and supported by a cultural transformation. The land use transition also needs such a positive transformation and can learn a lot from the experiences of previous transformation processes.

Successful cultural change often draws on existing traditions, rediscovers them and updates them, or breathes new life into the norms and ideals on which they are based. Many ostensibly 'modern' guiding principles, such as *sufficiency* or the *circular economy*, are deeply rooted in the rural way of life; the traditional 'ethics of moderation' shaped guiding principles such as 'less is more' and 'no waste of food'. Today, these guidelines are often being misunderstood as modern offenses, especially when viewed as an affront to the prosperity we have achieved (and interpreted as a 'cultural break'). This is especially the case when we lose sight of the deeper goal that our economy (and agriculture in particular) should serve: to enable a 'good life for all', now and in the future, in the face of limited resources.

Here it is important to bring to life the guiding principle of a *recognition culture oriented towards the common good* in all areas of regulatory, social and educational policy, in both the private and public sectors. Often, supposedly new guiding principles are also met with skepticism because they are experienced as superficial slogans (keyword 'greenwashing') instead of as formative guidelines for business and society. The aforementioned rules for true-cost accounting are an example of how the provision of services relevant to the common good deserves more recognition, both socially and financially – appreciation and value creation must not develop into diametrical opposition.

Recognition requires knowledge: the *self-image and the external image of the farming* community must also be repeatedly questioned and adapted

by all parties involved to reflect social reality. For example, a series of studies attributes the above-average psychological stress experienced by many farmers – especially those on family-run businesses – not only due to increasing uncertainties (related to weather, prices, subsidy programs, regulation and farm succession), but also to unfulfillable social expectations and the associated tensions and reproaches.[80] The European Union's 'Comprehensive Approach to Mental Health' is now making greater efforts to take into account the causes and consequences of this high level of mental stress, also in the individual measures of the *European Green Deal*[81], but overall, the counselling and support services still fall well short of demand. The feeling of social isolation particularly affects family businesses, where the high workload and the increasing debt burden are passed on internally – exacerbated by the problem of old role perceptions and a lack of exchange. What is needed here is not only state offers of help, but also more social dialogue and joint learning.

In this exchange about different role perceptions, it will become clear in many cases that the *cultural and economic contribution of women farmers* has often been and still is insufficiently recognised. To this day, women worldwide make fundamental contributions to food production, do most of the work to ensure healthy nutrition and care for their families, invest for the long term and with greater risk awareness, and pass on ecologically and socially sustainable practices to the next generation – and yet they are massively underrepresented in political and social decision-making.[82] If women, who make up around 45 per cent of the agricultural labour force in developing countries (in some parts of Africa and Asia even 60 per cent), had equal access to land, education, finance and co-determination worldwide, global food production would increase more than through any other single measure.[83] A sustainably successful land use transition must therefore always include a strategy for gender equality in Europe and worldwide. This means not only strengthening and appreciating women in their important but hitherto undervalued roles (such as in the transmission of knowledge and in providing essential social and ecological care

services) but also breaking down old stereotypes and learning from each other how individuals can combine personal success and contribution to the common good.

Positive examples and the role model of pioneers of change are crucial to this, showing that change can succeed and that the associated efforts can bring and foster joy, meaning and community. These pioneering achievements require incentives and funding, but above all they need *niche areas* in which cultural change can take place and spread faster (and more freely). Many farm shops and pioneering cooperation projects emerged from marginal 'real laboratories' far from the economic and social hotspots – these experimental spaces must be kept open in the future and their successes must be appreciated and made much better known.

A positive culture of this kind gives hope and counteracts the populist misuse of cultural concepts, which usually relies on fear and rejection rather than on recognition and inclusion. For example, 'Heimat' (home, homeland) has always been a shared, communal place of encounter (and thus also of friction), shaped and maintained by a multi-layered cultural fabric of meaning, to which each generation added its own layers. Our pluralistic society and democratic culture are an expression of this closely interwoven complexity – here, civil liberties and duties of solidarity and the social and ecological market economy based on them are inseparably linked, mutually dependent and mutually enabling. Accordingly, the land use transition can and should also tie in with the mature *democratic culture* of our country. Efforts to ensure future-proof and more inclusive land use are ultimately an expression of the same fundamental values (such as a focus on the common good and a commitment to principles of justice) that have given rise to our democratic traditions.

Many interest groups, often in close alliance with political populists who finance them, want to use a narrow understanding of culture and tradition for their own vested interests and against necessary reforms. They fear the power of fair and democratically open dialogue and competition. Their

underlying motives and non-ideals must be uncovered and made public. Every business, every interest group and every social group that owes its existence and well-being to our constitutional democracy also has the duty to maintain this free basic order and to recognise its opponents as their own opponents. The fight against the populist appropriation of our culture is above all a fight for more transparency and for better participation of all social classes and milieus.

Agricultural actors naturally cultivate a *culture of long-termism*. This concerns the cross-generational understanding of ownership, which has made many collective forms of ownership and land management (and thus the first idea of 'common property' in the literal sense) possible in the first place. Cooperatives can represent an important middle way between family businesses and large corporations. They can help to make generational change more fluid. When promoting new innovative models, it would be desirable to also consider how 'non-landowners' can become part of such networks of cooperation and shared responsibility.

However, promoting a culture of long-termism also means respecting the limits, especially the emotional barriers, of individual generations. For example, many farmers, especially from the older generation, find it difficult to accept changes to 'traditional' land use practices – particularly drastic ones such as rewetting or the construction of wind turbines. This shows that natural capital must be understood as part of the intergenerational contract – in this way, investments in climate and flood protection would be understood not as a loss of arable land, but as a 'reallocation' in the common wealth that continues to be profitably maintained, in line with the motto 'property obliges'.

Churches as agents of change

Churches and religious communities, whose 'DNA' has always included educational work and the appreciation of a moderate lifestyle, can and

should contribute a great deal to a successful land use transition and the cultural change necessary for it.[84]

Among the many recommendations for promoting socio-ecological transformation[85], three categories are particularly noteworthy with regard to the land use transition. For example, the church can and should be much more (1) a *place of encounter and benevolent exchange* that extends beyond the circle of its own believers – at the societal and international level. The Christian mission 'that all may be one' obliges the church, in an increasingly fragmented and polarised society, to act more as a 'facilitator of dialogue' that brings together various actors and encourages them to live up to their shared responsibilities. (2.) In this multi-layered dialogue, the church should primarily be the *advocate of the common good* and the voice and *advocate of marginalised* and unheard groups. In order to fulfil this function credibly, it is essential that it becomes even more (3.) aware of its role model function within its own area of responsibility and, in particular, of the *obligation of church property to serve the common good*.

As one of the world's largest providers of educational institutions, as a purchaser of food for countless kitchens and canteens, but also as a major landowner that must preserve and sustainably manage this property in the long term, the Catholic Church has enormous potential to contribute to a change in land use. However, the *decentralised and often non-transparent structures* represent a particular obstacle to the widespread introduction of common good oriented management guidelines for church resources: In addition to 27 Catholic dioceses, there are 64 male religious orders in Germany with 376 monastic settlements, and an even larger number of female religious orders with 923 settlements. Of the approximately 24,500 Catholic churches in Germany, most are now grouped into administrative communities, but many older parishes continue to have independent church foundations with often fragmented land ownership. Decisions about landownership (and, to some extent, land use) are often made locally. Nevertheless, there are ways to exert influence: joint funding and governance structures, guidelines for the leasing of church land, but also

guidelines for orientation towards the 'Planetary Health Diet' for food procurement in all church institutions could quickly release enormous potential.

The Catholic Leasehold Agency in Regensburg is a promising example: it combines the administration, management and leasing of agricultural property of the seven Bavarian (arch)dioceses. Church land that is owned by individual church foundations can also be leased through this central office on a voluntary basis. Such joint administrative services should be consistently expanded, their supervisory bodies supplemented by external experts, reporting requirements modernised and their ecological award criteria strengthened.

The joint and common good oriented leasing of church land (which could also be organized at an ecumenical or interreligious level) would also contribute to large-scale landscape design. Particularly when it comes to the emotionally sensitive but socially necessary topic of the rewetting of former wetlands (floodplains and moors), the state and the church should set a good example and make their own land available as a matter of priority.

Ultimately, churches and religious communities can do more to ensure that, in the coming decades, there is less *struggle over land* and more of a *struggle for good governance of land*. The commitment to the common good and the special obligation to care for the marginalised, which is fundamental to all world religions, precludes any nationalistic appropriation of religion for any fight for land. Land is intended for all people according to the principle of the universal destination of the Earth's goods. This obliges us all to protect it from any form of selfish and nationalistic appropriation and to preserve its functional and regenerative capacity through fiduciary use.

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